REPORT OF THE COMMITTEE ON INFECTIOUS DISEASES OF HORSES

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Vice Chair: James A. Watson, MS

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The Committee met on November 15, 2010 at the Minneapolis Hilton Hotel in Minneapolis, Minn., from 1:00 p.m. to 7:00 p.m. There were 38 members and 45 guests present. The meeting was chaired by W. Kent Fowler. The Chair asked for volunteers to review the 2010 OIE Chapters for Comment on Equine Influenza and Equine Viral Arteritis. Peter Timoney agreed to review and comment on these chapters. The Chair also commented on his frustration over the limited allowed time for the Committee to meet considering all the pertinent equine infectious disease issues and requested committee members provide feedback on the possibility to lengthen the allotted time for the Committee to meet at next year's USAHA meeting. Such a request would move through Steve Halstead, the Executive Committee Liaison with the Committee.

Time-Specific Papers

Maria Barrandeguy, National Institute of Agricultural Technology (INTA), Buenos Aires, Argentina, presented a time-specific paper on "Equine Viral Arteritis Outbreak in Argentina". Donald Knowles, Animal Disease Research Unit, Agriculture Research Service, Washington State University, presented a time-specific paper on "Chemotherapeutic Treatment of Horses Chronically Infected with *Babesia equi".* These papers are presented in their entirety at the end of this report.

A Reality Check on EVA: Is the Disease Under-Reported, Over-Sensationalized?

Peter Timoney, Maxwell Gluck Equine Research Center, University of Kentucky

Notwithstanding the fact that EVA has been recognized as a separate disease of the horse for over half a century, it continues to be a source of misinformation and confusion among numerous veterinarians and members of the horse industry. The widespread occurrence on TB breeding farms in Kentucky in 1984 resulted in EVA being sensationalized by many in the USA and abroad, and the subject of significant restrictions on international trade in horses and germplasm. Although there are some who would contend that EVA occurs relatively commonly, this is not supported by laboratory confirmed diagnoses of the disease. What is indisputable is that the number of *bona fide* outbreaks of the disease does not reflect the global distribution of the causal agent, equine arteritis virus; the former can truly be considered "the tip of the iceberg" with respect to this infection. What is also a fact is the unpredictability of outbreaks of EVA. When outbreaks do occur, however, they can be economically very damaging especially in naïve populations of breeding animals. Thankfully, much is known about the biology of the virus and epidemiology of EVA and this has enabled the development of effective measures for the prevention and control of the disease. Much useful information is provided in a USDA video as well as in a Uniform Methods and Rules for EVA. Because of the unpredictability of its occurrence and its potential economic impact, this disease should be a source of continuing concern for the equine industry.

National Equine Piroplasmosis Update

Angela Pelzel, Western Region Epidemiologist, USDA-APHIS-VS

In October 2009, *Theileria (Babesia) equi* infection was confirmed in a herd of domestic Quarter Horses on a large ranch in south Texas. Nearly 2,500 horses were tested for equine piroplasmosis (EP) as part of the traceback and epidemiological investigation with a total of 412 *T.equi*-positive horses disclosed in connection with the outbreak. Active natural transmission of *T. equi* to horses on the index ranch was confirmed to have been occurring via *Amblyomma cajennense* and *Dermacentor variabilis* ticks. Epidemiological investigation and testing of the horses sold from the premises indicates that *T. equi* infection had likely been present in horses on the ranch since prior to 1990.

In response to disclosure of the EP-infected herd in Texas, many states implemented movement testing requirements for horses originating in Texas. In November 2009, New Mexico began requiring EP testing of Quarter Horse racehorses entering New Mexico racetracks. Racetracks in other states subsequently began requiring EP testing to enter sanctioned racetracks. This recent enhanced surveillance and movement testing has to date led to the disclosure of 130 EP-positive horses in the U.S. These findings are unrelated to the 2009 Texas ranch outbreak and were found in a total of 16 states. Of the 130 EP-positive horses, 124 are infected with *T. equi* and 6 are infected with *Babesia caballi* The EP-infected horses include 103 Quarter Horse racehorses, 8 Thoroughbred racehorses, 1 Quarter Horse roping horse, and 18 horses previously imported to the U.S. before August 2005, when the complement fixation test was the required import test for EP. Investigation of the EP cases in racehorses has revealed no tick-borne transmission between horses, but indicates iatrogenic transmission via unsanitary management practices as the likely source of transmission.

The National Equine Piroplasmosis Working Group (NEPWG) consisting of state, federal, research, laboratory, and industry representatives was established in November 2009. The charge of the group was to provide perspectives and recommendations on equine piroplasmosis in the U.S. to USDA-APHIS-Veterinary Services. Interim guidance drafted by the group in February 2010 led to the development of current VS policy on domestic EP reactors. Long-term recommendations from the NEPWG were completed in April 2010 and are under review by Veterinary Services.

Florida 2010 EP Thoroughbred Track Investigation

Mike Short, Veterinary Manager, Equine Programs, Florida Department of Agriculture and Consumer Services, Division of Animal Industry

In August of 2010, the Florida State Veterinarian's office received a trace from New Mexico due to detection of a *Babesia equi* positive horse. The thoroughbred horse was tested for routine movement to a racetrack and had recently traveled to New Mexico from Calder Race Course, located in south Florida. Initially, Florida state officials quarantined and tested three barns associated with the same owner and trainer of the index horse. The three barns included one at Calder Race Course and two at the adjacent training facility. A total of 94 horses were tested in the three barns. As a result of this initial testing four additional horses, all located in the quarantined Calder barn, tested positive for *B. equi*.

During the subsequent investigation fourteen additional quarantines were issued in Florida, with 119 horses being tested. One additional horse tested positive at a farm in Ocala, which was owned by the same individual as the previously test positive horses at Calder. This horse had spent time at Calder with the other positive horses. There are only two horses, associated with this investigation, remaining in Florida that requiring testing. Both horses are considered to be low risk.

In addition to the Florida investigation, traces were sent to seven other states, with one additional horse testing positive for *B. equi*. This mare was in the Calder barn with the other positive EP horses and has since been euthanized.

Six of the seven EP positive horses have been euthanized. The only remaining positive horse remains under quarantine at the Ocala farm and is awaiting export to South America.

The source of the organism is thought to be due to cross over from bush track Quarter Horses. The assistant trainer of the Calder positive horses and manager of the Ocala farm was part of the Quarter Horse bush track investigation in Florida in 2008. The assistant trainer/Ocala farm manager was reported to have routinely treated sick or lame bush track horses using management practices that would be considered high risk for transmission of the Babesia organism.

Equine Piroplasmosis in Texas: Is it Endemic?

Andy Schwartz, Texas Animal Health Commission State Epidemiologist

Investigation of the south Texas Equine Piroplasmosis (EP) incident, begun in October 2009, is now complete. Affected horses are safely quarantined or have been euthanized. Results on testing of cohorts to positive horses across the U.S. and horses on properties adjacent to the index premises indicate that transmission of EP via ticks has occurred only on four other premises near the index premises. A number of states and equine events implemented movement test requirements on Texas horses, leading to the disclosure of 52 EP positive horses not related to the south Texas incident. These additional positive horses are in distinct populations: Quarter Horse racehorses, or horses of any breed imported into the U.S. in 2005 or prior, while the compliment fixation test was the test for entry. Equine Piroplasmosis positive horses have been found in these distinct populations in a number of states, and should not be considered endemic to Texas. Unified, broad based support is needed to advance research into diagnosis, treatment, and transmission of EP, and to maintain free status for the U.S.

Highlights from the Co-hosted USDA-AHC Equine Infectious Diseases Workshop and Forum
Josie Traub-Dargatz, Equine Commodity Specialist at USDA-APHIS-VS, Centers for Epidemiology and Animal Health

A co-hosted workshop and forum on the control and prevention of equine infectious diseases were conducted as part of the June 2010 American Horse Council (AHC) meeting in Washington D.C. Staff from APHIS and AHC spent several months developing a list of invitees and planning the workshop. The workshop included participation from many groups, including representatives of breed associations, specialty equine event associations, equine transporters, equine veterinary associations, State horse councils, equine extension, State animal health officials, university researchers, the League of Agricultural and Equine Centers, the American Horse Council, and three USDA agencies. The workshop consisted of opening remarks followed by break-out group discussions of two equine infectious disease scenarios.

In his opening remarks for the workshop, Dr. Jere Dick, Associate Deputy Administrator of Veterinary Services, APHIS, said he hoped that the workshop would help strengthen collaborative efforts to optimize equine health in the United States. He also said that the workshop presented a unique opportunity to bring together diverse segments of the equine industry to discuss how to address preparedness for, and response to, equine infectious diseases in this country.

Jay Hickey, president of the AHC, in his opening remarks for the workshop, thanked the U.S. Department of Agriculture, (in particular Drs. John Clifford and Jere Dick of APHIS' Veterinary Services) for sponsoring the workshop to bring together USDA staff, State Animal Health officials and equine industry representatives to discuss one of the most important concerns facing the horse industry – the potential effects of a major infectious disease on the health of our horses and the economic health of our industry. He expressed that, unfortunately, the importance of this issue is often not recognized until it affects a person's own horse, farm, breed, or event.

As part of the workshop, Dr. Barbara Bischoff indicated that Veterinary Services has fulfilled several critical support functions related to equine diseases. Examples of these functions included serving a national regulatory role, developing disease guidelines in collaboration with stakeholders, coordinating efforts to address equine diseases, and providing education and outreach materials about equine diseases.

These opening remarks were then followed by discussion among four working groups that addressed a set of five questions pertaining to roles of various entities, support necessary for those roles to be carried out, and positive and negative impacts related to two equine disease scenarios: equine herpes myeloencephalopathy and equine piroplasmosis. Several key areas emerged as priorities for USDA, the States, the equine industry, and academia to effectively address equine infectious diseases. Participants expressed needs they had and also offered ways their organizations could help address some of the needs of others.

Five categories evolved during the workshop discussions that allowed summarization of needs determined by workshop participants: planning, education, communication and media, research/testing and diagnostics, and equine identification.

Overarching themes

- Need uniformity across the U.S.; industry benefits when States adopt uniform policies that facilitate the equine industry's ability to implement them.
- Need for buy-in from owners, trainers, farm managers
- Need for foundations to have better understanding of disease problems to focus funding appropriately

- Need to consider the levels and aspects of the event regarding procedures and regulatory authorities (State regulated events vs. association/volunteer run)
- Need for the equine industry to have a unified voice to have the most impact on Congress for funding, and on USDA to make industry priorities clear.

Positive measurable results that would accrue from focusing on priorities identified (as identified by workgroups):

- Improved welfare of the horses
- Improved economic health of industry
- Impacts all aspects of the industry: owners, breeders, veterinarians, event managers, and import/exporters
- Increased marketability of horses
- Unified Industry

Results of the Workshop and Next Steps

The workshop resulted in an atmosphere of cohesiveness among the three key segments: industry, States, and VS.

- Inroads were made in educating participants about the havoc equine infectious diseases could cause at equine events without advance planning to develop a response plan.
- Consensus was expressed around key needs such as funding, education, communication, and research.
- Participants suggested ways their organizations could become more involved, such as using E-extension to disseminate educational information, or using the requirement of one association for its events to have a safety plan as an example of what could be required by associations for an infectious disease outbreak response plan.
- Awareness of equine infectious disease issues and funding needs was improved among equine industry representatives through the workshop discussions.
- The disease scenarios made several equine association event organizers see the need to develop a response plan; it seems there is momentum to go home and start this planning. This is an opportunity for associations to work with VS, State animal health officials, and the AAEP to combine subject matter expertise for plan development.
- Commitment was expressed by NASAHO, AHC, and VS to continue discussions about how to maintain the momentum generated by this workshop, to develop a list of prioritized issues, and to determine how to best address those priorities.

The issues forum was conducted on the second day of the meeting and included presentations from Veterinary Services on several topics of interest to all attendees of the AHC meeting. Presentations included updates on equine infectious anemia testing and number of reactors, contagious equine metritis (CEM), and equine piroplasmosis (EP); take home messages from the Equine Herpesvirus Myeloencephalopathy report; and highlights from the National Animal Health Monitoring System (NAHMS) Equine 2005 study. In addition, a summary from the previous day's workshop was provided and Dr. Guy Hoenhaus discussed the roles of the State Animal Health officials, USDA-APHIS-VS and the industry in the control and prevention of equine infectious diseases.

Development of a National Equine Health Program

Barry J. Meade, Staff Veterinarian, USDA-APHIS-NCIE-NAHPP

The United States (U.S.) equine industry, animal health regulatory officials and other external stakeholder groups view the establishment of a national equine program as a necessity. To date, the United States Department of Agriculture (USDA), Animal Plant Inspection Service (APHIS), Veterinary Services (VS) has promulgated few regulations addressing equine health issues. The increased occurrence of equine piroplasmosis (EP), equine viral arteritis (EVA), along with incursions of contagious equine metritis (CEM) within U.S. equine populations illustrates vulnerabilities within the industry and also shows the need for an equine health program to control those vulnerabilities. This document explains an equine health program that allows for regulatory flexibility, an equine program that allows for the response to equine disease issues or threats and an equine program that is in-line with goals of the VS2015.

The American Horse Council and associated constituent groups support the establishment of a national equine health program. (The complete text of this presentation is included at the end of this report.)

FEI World Equestrian Games 2010

Rusty Ford, Kentucky Department of Agriculture, Staff Assistant to State Veterinarian

During the period September 25 through October 10, 2010 the Commonwealth of Kentucky served as host to the Alltech FEI World Equestrian Games 2010 at the Kentucky Horse Park in Lexington. This was the first time in the event's history the Games were held outside Europe, and they were promoted to be:

- Largest Equestrian Spectator Event Ever Held in the United States
- Largest Sporting Event Ever Held in Kentucky
- Largest Ever Network Broadcast of an Equestrian Event
- Largest Airlift of Horses to a Single Event in History

The Kentucky Department of Agriculture's Office of State Veterinarian was a Key Component of the Games. Responsibilities included establishing and implementing the veterinary plan that encompassed importation of horses as well as disease monitoring and response. In fulfilling this role a temporary import quarantine facility was constructed at the Northern Kentucky/Cincinnati International Airport and was operated under the management of the Kentucky State Veterinary Office. A total of 449 horses imported on one of 12 flights and completed their post arrival quarantine at the facility. In addition to state veterinary officials, others working at the center on a daily basis at included USDA veterinary staff, World Games veterinarians and World Games volunteers. The import center was operational between September 15 and October 1 with the Kentucky State Veterinary Office having greater than 720 man hours worked at the facility.

Horse activity at the Import Center is summarized to include:

449 Horses Imported through the facility

Number of Horses Requiring Extra Veterinary Attention was 77 (17%)

- 16 (3.5%) Fevers Detected
- 7 on Arrival 7 @ 6-12h Post Arrival 2 @ 13-18h Post Arrival
- 14 horses treated with Banamine (no closer than 36 hours of Quarantine Release)
- 2 horses treated with Antibiotics (Moved to Onsite Isolation)
- 54 (12%) Horses Administered Intravenous Fluids to Correct Hydration
- 17 (3.8%) Horses Treated for Minor Injury or Other Condition
- 2 (0.4%) Referred to Equine Hospital
- 1 Colic Resulting in Surgery 1 Low Pathogenic Viral Pneumonia

Most significant issue having potential negative impact we had to overcome involved a wildcat strike of air traffic controllers in Belgium that 'grounded' flights. Our Fed Ex flight was granted 'permission' by FAA to depart CVG in route to LGG and subsequently allowed to depart LGG for return to CVG on September 29 with last load of horses.

Activity at the Kentucky Horse Park is summarized to include:

Each horse coming onto the grounds was subjected to a visual inspection by KY Veterinary officials and documentation examined to insure compliance of our health requirements.

746 Horses Representing 58 Countries Competed in the Games

- 164 Imported on CEM Waivers
- 62 Imported on Piro Waivers stabled in secured isolation and under KY Dept Agriculture supervision

Additional 323 Horses were brought onto the grounds to participate in demonstrations for viewing by general admission ticket holders.

Kentucky veterinary officials participated in daily meetings/briefings of the World Games Veterinary Commission. During the course of the Games, there was no evidence or suspicion of communicable disease. No significant issues with monitoring piro positive horses and no ticks were discovered on any of the horses. The Kentucky State Veterinarians Office had greater than 2,054 Inspection Hours at the KY Horse Park during the 34 days the stable area was open. USDA veterinary officials assumed esponsibility for structured monitoring of horses participating on CEM Waivers.

Games Summary:

- Largest Sporting Event Ever Held in Kentucky
- 411,022 Tickets Sold in 63 Countries
- 507,022 Visitors to the Park (Includes volunteers, media, workers, etc)

    - Largest Ever Network Broadcast of an Equestrian• Largest Equestrian Spectator Event Ever Held in the United States Event
- NBC Broadcast 6.5 hours live coverage + European Television Coverage
    - Largest Airlift of Horses to a Single Event in History
- 504 Horses Imported

In comparison to Previous Games

- 2006 Aachen Germany – Total Ticket Sales of 570,000
- 2002 in Jerez de la Frontera Spain - 300,000 Tickets Sold

The Alltech FEI World Games 2010 – is described and considered throughout the World to have been – A GREAT SUCCESS!

Equine Infectious Anemia Laboratory Approval Working Group Report

Eileen Ostlund, Head of the Equine and Ovine Viruses Section, Diagnostic Virology Laboratory, NVSL

USDA-APHIS regulates laboratories approved to conduct official tests for equine infectious anemia (EIA). There are approximately 480 approved EIA testing laboratories in the United States but large state-to-state variations in number of laboratories per state and in laboratory oversight. In June of 2009, USDA-APHIS-Veterinary Services (VS) established an *ad hoc* working group to review EIA laboratory procedures and address criteria for fair and appropriate consideration of applications to establish new laboratories. The working group encompassed representatives from NVSL, the Eastern and Western Regions, and VS headquarters staff. The group examined current laboratory activities and reviewed USDA oversight practices among the VS Areas. The group has developed recommendations for revision of the VS Memorandum 555.16 *Approval of Laboratories to Conduct Tests for Equine Infectious Anemia*. The proposed changes in the VS Memorandum address expectations for maintenance of laboratory approval and criteria for consideration of new EIA laboratories. Upon signature by the VS Deputy Administrator, the Memorandum will be distributed to relevant VS personnel and to all EIA approved laboratories. In addition, the EIA Laboratory Approval Working Group is working with a member of the APHIS Professional Development Staff to develop a portable instruction module to assist EIA laboratory inspectors.

Committee Business

Following conclusion of the scientific program, the Committee went into Business Session. Four resolutions on Equine Piroplasmosis (EP) were considered, approved and forwarded to the Committee on Nominations and Resolutions for approval by the general membership. A resolution to develop a framework for an equine health program with emphasis on equine infectious diseases was considered, approved and forwarded to the Committee on Nominations and Resolutions for approval by the general membership. A resolution from the USAHA/AAVLD Committee on Animal Health Surveillance and Information Systems to establish a National List of Reportable Animal Diseases was considered but IDOHC membership declined to offer support.

REPORT OF THE SUBCOMMITTEE ON EQUINE PIROPLASMOSIS (EP)

Mike Short, Chair
Florida Department of Agriculture and Consumer Services

Since the USAHA meeting in November of 2009 there have been several significant events with respect to EP in the U.S. The most significant events include the discovery of an EP outbreak in Texas with a new competent EP tick vector, multiple positive horses found throughout the U.S. and in a noteworthy progress in EP research, primarily occurring at ARS in Pullman Washington.

These recent events prompted the formation of the National Equine Piroplasmosis Working Group (EPWG). The EPWG consists of representatives from Veterinary Services, State Animal Health Officials, research, and industry which has reviewed and discussed options on many topics relating to EP including management of domestic positives, recommendations for needed research, consideration of surveillance and national policy, impacts on stakeholders, and national disease status. The EPWG has done exemplary work including producing both short term and long term recommendations submitted to the USDA for consideration. The short term recommendations were implemented by the USDA in March of 2010, with the revised VS Memorandum 555.20 *Guidance for Managing Domestic Equine Piroplasmosis*. The long term recommendations document is more comprehensive with further recommendations on the management of domestic positives, recommendations for needed research, consideration of surveillance, national policy and disease status, impacts on stakeholders and other topics.

During the past year the EP Subcommittee held two meetings which took place via conference calls. The primary efforts of the subcommittee were focused on discussing the findings and recommendations of the EPWG, the recent EP detection in Texas and other states, discrepancy in international import requirements between Canada and the U.S. and the need for continued research. The issues below were points of significant discussion:

1. The EP Subcommittee recognizes the long term recommendations made by the EPWG are very thorough and comprehensive. The recommendations cover many areas of importance with respect to EP and the subcommittee feels the USDA should strive to review and implement the recommendations as soon as possible.
2. While ARS in Pullman, Washington and National Veterinary Services Laboratories in Ames, Iowa, have done significant research on EP, the subcommittee recognizes that there is considerable need for continued research. This includes research in the areas of treatment for clearance of organism, testing that identifies presence of organism and identification of competent EP vectors in the U.S.
3. In recent testing of EP positive horses in the United States, the cELISA appears to be more sensitive than the IFA in detecting sero-positive animals. The primary import test for horses entering Canada is the IFA. Horses imported into Canada from other countries may move into the U.S. with no further testing for EP after spending at least 60 days in Canada. This effectively allows horses from EP-endemic countries to enter the U.S., through Canada, without being tested on the cELISA test. The EP Subcommittee is concerned over the difference in import testing requirements and feels the cELISA should be used in both countries for uniformity and to maintain EP-free status of the two countries.

The EP Subcommittee introduced four resolutions at the 2010 USAHA annual meeting.

REPORT OF THE SUBCOMMITTEE ON EQUINE INFECTIOUS ANEMIA (EIA)

Becky Brewer-Walker, Chair
Oklahoma State Veterinarian

Report of activities since the last meeting in 2009:

The EIA Subcommittee working specifically with the Five State EIA group (Texas, Oklahoma, Louisiana, Arkansas, and Mississippi) has,

- Presented a request for EIA Program enhancements to USDA APHIS Administrator, Cindy Smith and USDA-APHIS Deputy Administrator and Chief Veterinary Officer, Dr. John Clifford, September 2009. (See Attached)
- Participated in a conference call with USDA-APHIS-Veterinary Services Equine Programs Manager, Dr. Barry Meade, July 22, 2010 concerning the writing of a new equine disease rule that will include the following:
    1. Publishing a proposed rule for EIA to incorporate select elements of the guidelines (formerly known as the UM&R) into the *Code of Federal Regulations.*
    2. Facilitating the posting of a new web-based EIA video/booklet educational packet.
    3. Revising VS Memo 555.16
    4. Requesting supplemental information on EIA investigations from states in order to better characterize EIA reactors.
    5. Incorporating an EIA work plan into a proposed National Equine Health Program.

Additionally, we outlined the points from the September 15, 2009 Cindy Smith letter requesting funds for the five states to increase EIA mitigations.

Referenced letter to Ms. Cindy Smith:

September 15, 2009

Ms. Cindy Smith
USDA APHIS Administrator
1400 Independence Ave, SW
Jamie L. Whitten Building Rm. 312E
Washington, D.C. 20250

Dear Ms. Smith:

On June 21 and 22, 2009, animal health officials from Oklahoma, Texas, Arkansas, and Louisiana (Mississippi was unable to attend) met in Ruston, Louisiana to discuss strategies for the eradication of Equine Infectious Anemia (EIA). Dr. Tim Cordes and Dr. Chuck Issell were kind enough to come to the meeting and serve as advisors and subject matter experts. The goal of the conference was to develop a strategic plan to improve surveillance and detection of previously untested reservoirs of infection.

With the initiation of testing for EIA in 1972, Texas, Oklahoma, Arkansas, Louisiana, and Mississippi had the highest rates of test-positive equidae. Since the mid-1990s, these states have had the most stringent requirements for testing, with Arkansas and Louisiana requiring an annual test and Louisiana requiring permanent identification (brand, tattoo, and microchip). All five states require a negative EIA test for attendance at equine events both intrastate and interstate as well as a mandatory negative test for change of ownership . Despite these testing requirements, a high percentage of horses remain untested and data indicates that the untested horse is the major threat for introduction of EIA into the mobile test negative population.

All members of the group agreed to join in a five state strategy to aggressively work toward elimination of this disease. It was agreed that a letter would be drafted to you and Chief Veterinary Officer Dr. John Clifford requesting support for this plan.

Strategies identified:

1. Appropriate portions of the EIA UM&R be published in the 9CFR.
2. Three-Tiered EIA Laboratory testing required protocol for all states.

3. Funding is made available to the five state region to support personnel to increase surveillance, augment testing fees, mapping, data entry and epidemiology focused on regions of each state that contains pockets of untested horses and jack stock.
4. Criteria for new EIA laboratories are revised, that revision to include a minimum number of tests run yearly to ensure proficiency.

We request a five year commitment on the part of USDA-APHIS-Veterinary Services, that commitment to include a minimum of two FTEs or equivalent funding to be divided between the five states using a State/Federal Cooperative Agreement funding vehicle.

We feel that with a federal and state coordinated commitment, we can eradicate this disease.

We respectfully request your thoughtful consideration of this request. We wish to express the desire of each of us to pursue this goal to its appropriate end, the eradication of this disease and the decreased burden placed on the population of test negative horse owners.

Sincerely,
Becky Brewer, DVM
Oklahoma State Veterinarian

c Dr. Dee Ellis, Texas Assistant State Veterinarian
Dr. Bob Hillman, Texas State Veterinarian
Dr. Martha Littlefield, Louisiana Assistant State Veterinarian
Dr. Pat Badley, Arkansas State Veterinarian
Dr. Jim Watson, Mississippi State Veterinarian
Dr. Tim Cordes, VS Equine Programs Manager
Dr. Chuck Issel, Wright-Markley Chair of EID, Gluck Equine Research Center
Dr. Mike Herrin, Oklahoma Assistant State Veterinarian

The following Recommendation submitted by the EIA Subcommittee was approved in the IDOHC:

RECOMMENDATION:
SOURCE: COMMITTEE ON INFECTIOUS DISEASES OF HORSES
SUBJECT MATTER: EQUINE INFECTIOUS ANEMIA
BACKGROUND INFORMATION:

Equine infectious anemia (EIA) has been controlled in the United States because individual states with support of their equine industries have instituted regulations which require testing for entry, movement and/or congregation, as well as quarantine of test-positive equids. Testing for EIA has been widely accepted, and today includes both the agar gel immunodiffusion (AGID or Coggins) and enzyme linked immunosorbent assay (ELISA) test formats. Each year, approximately 2 million equid samples are tested for EIA, and over the last three years, 0.01 percent of the samples were reported as positive. The true prevalence of the infection is not known. In recent years, many of the reported cases have been from states with historically low numbers of cases, and a substantial proportion of those positives were in equids not previously tested for EIA. It is assumed that a population of untested equids exists in the United States. The rate of EIA infection is expected to be higher for that population in those states with historically higher reported numbers of positive tests, such as Arkansas, Louisiana, Oklahoma, Texas and Mississippi.

In the considered opinion of experts and regulators, active surveillance should not be reduced but should be improved. Changes are needed because the traditional methods have reached their plateau, and testing in the mobile tested population greatly exceeds the actual risk. The changes deemed most appropriate are those directed toward: 1) identifying the true prevalence of the infection, 2) reducing the interval of testing where appropriate, 3) devising methods to address the untested population, with a focus on states with historically higher rates of test-positive equids, 4) implementing a three tiered testing system utilizing sensitivity and specificity of tests in appropriate sequence for maximum efficiency, and 5) Collating epidemiologic findings related to the traceback investigations of EIA reactors in the USA in order to better determine future initiatives to eliminate EIA, a disease that has an ever decreasing but persistent prevalence in the USA.

RECOMMENDATION:

The United States Animal Health Association (USAHA) requests that the United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Veterinary Services (VS), in

cooperation with states and the equine industry, such as the American Horse Council, state horse councils, American Association of Equine Practitioners and breed registries, request funding to support an enhanced Equine infectious anemia (EIA) control/eradication program. Five (5) basic components encompass:

Section A: Fund Program

1. USDA-APHIS-VS to incorporate specific elements of the Equine infectious anemia (EIA) Uniform Methods and Rules (UMR) into the Code of Federal Regulations (CFR), Title 9, part 75, Communicable diseases in horses, asses, ponies, mules, and zebras, in order to assure that only equines having negative EIA testing status are moved interstate except as described under section 6;
2. Requests funding for an enhanced EIA control program leading to eradication with new money:
    - At -risk states are to receive focused federal funds in an eradication program; the initial funding emphasis should be in the states with historically higher rates of infection (Louisiana, Arkansas, Oklahoma, Texas, Mississippi); and
    - At-risk states must meet certain minimum standards including: change of ownership testing, minimum 12 month negative test for interstate movement, required euthanasia of reactors (grandfather existing reactors that are isolated), individual permanent identification of tested horses, utilization of a 3-tiered testing system.

Section B: Prevalence Working Group

1. USDA-APHIS-VS should create a national EIA prevalence working group that includes representatives from all “At Risk” states.
2. The EIA prevalence working group would continue collaboration with the National Surveillance Unit (NSU), Centers for Epidemiology and Animal Health (CEAH) existing equine prevalence model for:
    - Identification of industry stakeholders;
    - Accurate equine census;
    - Accurate prevalence data;
    - Consistent case definition – herd vs. head; and
    - Address other issues as appropriate.

Section C: Diagnostic Laboratory Component

1. USDA-APHIS-VS should adopt national laboratory reporting system for accurate electronic test data.
2. Re-evaluate laboratory certification (moratorium) policy with input from state/federal regulatory authorities and National Veterinary Services Laboratory (NVSL).
3. Utilize and request funding for a 3-tiered laboratory testing system (enzyme linked immunosorbent assay (ELISA), agar gel immunodiffusion (AGID), immunoblot).
4. USDA-APHIS-VS should request funding for the NVSL laboratory system to fully support an expanded program.

Section D: Expand Epidemiologic Data Base

USDA APHIS-VS collect pertinent epidemiologic data as determined by the USAHA EIA subcommittee, from all states with EIA reactors over the next several years

EQUINE VIRAL ARTERITIS OUTBREAK IN ARGENTINA

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Introduction

Equine viral arteritis (EVA), a contagious viral disease of equids, has been described since the 19th century. The causative agent, equine arteritis virus (EAV), was first isolated during an extensive outbreak of respiratory disease and abortion on a Standardbred breeding farm near Bucyrus, Ohio, in 1953 (Doll et al., 1957). The equine industry worldwide was re-awakened to the significance of this infection following a widespread occurrence of EVA on a large number of Thoroughbred breeding farms in Kentucky in 1984 (Timoney and McCollum, 1993; Holyoak et al., 2008).

Because EVA represents a potential major threat to equine breeding industries worldwide, it has become a “reportable disease” in many countries, is a listed equine disease by the World Organization for Animal Health (OIE), and is included by United Kingdom’s Horserace Betting Levy Board in the ‘Codes of Practice”. In addition, the United States Department of Agriculture – Animal Plant Health Inspection Service – Veterinary Services (USDA-APHIS-VS) has developed a Uniform Methods & Rules for EVA, which has been endorsed by the American Horse Council, American Association of Equine Practitioners and the United States Animal Health Association; this provides minimum standards for detecting, preventing and controlling the disease (Anonymous, 2004).

Although infrequently reported in the past, confirmed outbreaks of EVA appear to be on the increase. In the last decade, occurrences of EVA have been reported in the United States (Timoney et al., 2006), France (ICC, 2007; Pronost et al., 2010), Denmark (ICC, 2008), Belgium (Gryspeerdt et al., 2009), the United Kingdom (ICC, 2010), Ireland (ICC(a), 2010) and Argentina (Barrandeguy, 2010).

EVA background in Argentina

In 1984, Nossetto et al. (1984) were the first to report serological evidence of EAV infection in Argentina, finding 23 out of 250 (9.2%) warmblood horses positive for antibodies to the virus. In 1998, several EAV-antibody positive animals were detected on two sport-horse breeding farms that practiced artificial insemination using imported semen. Although the National Animal Health Authorities (SENASA) carried out an epidemiological survey, the original source of the virus could not be identified (Echeverria et al., 2003). A follow-up study on one of those farms between July 2001 and December 2003 revealed a prevalence of 45.8%; the carrier state was detected by virus isolation in three out of four stallions on the premises (Echeverria et al., 2007). In addition, EAV was reportedly isolated from the testicle of a seropositive stallion that had been imported to Argentina in 1998 (Metz et al., 2008). The testicle, which had been collected in 2000, had been stored at -20º C for several years.

Prior to this year’s occurrence of EVA in Argentina, the virus had not been previously involved with respiratory disease, abortion or foal death. The prevalence of EAV infection was low and restricted to sport-horse breeds, and in some cases, to certain breed lineages (Vissani et al., 2008).

Although EVA vaccination was not permitted in Argentina, the importation of vaccinated stallions accompanied by official certification of vaccination was allowed.

Based on these collective findings, a very high proportion of the Argentinean equine population, essentially 100% of Thoroughbred, polo, Arabian, “criollo” and Standardbred horses, is totally naïve with respect to EAV and, therefore, fully susceptible in the event of possible future exposure to the virus.

Equine viral arteritis surveillance and prevention measures imposed by SENASA in Argentina include annual certification of stallions of all breeds (both indigenous and imported) as a prerequisite of approval for breeding. All imported horses have to be isolated and serological tested (two serum samples 14 days apart). If seropositive, virological examination of semen as well as test mating is required as it is on all imported frozen semen.

Following implementation of these measures, the introduction of EAV infection has been, with two exceptions, avoided. In the first instance, EAV was isolated from the semen of an imported warmblood stallion while in quarantine (Echeverria et al., 2003). In the second, two mares seroconverted after insemination in January 2010 with frozen semen imported from the Netherlands. Semen straws from the stallion were submitted to the INTA laboratory from which EAV was isolated (Olguin Perglione, personal communication).

The foregoing is the known status of EAV infection in Argentina prior to the EVA occurrence in 2010.

Horse industry

Since the 1960s, there has been an unprecedented upsurge in the growth of the horse industry in any countries worldwide (Timoney, 2007). Argentina ranks fourth in numbers of Thoroughbred foals produced each year, after the United States, Australia and Ireland (Anonymous, 2009), and first in production of polo horses (Buchanan, 2009).

There have also been significant changes in equine reproduction; with registries of most major breeds except Thoroughbreds now permitting the use of artificial insemination (AI), embryo transfer (ET), oocyte collection and transfer, and even cloning. One of the main changes in the horse industry is the widespread, including international acceptance of the use of cooled/frozen transported semen for breeding.

According to data reported by the Argentinean Association of sport horse breeders, there are approximately 2000 warmblood mares in Argentina, of which about 200 are inseminated with imported semen annually. artificial insemination with imported frozen semen is also performed in Arabian mares (60-70 annually) and American Quarter Horses (20-30 annually).

In contrast, the Thoroughbred industry allows only natural mating. During the 2009 breeding season, 25 shuttle stallions covered approximately 3000 mares in Argentina, as well as mares from Uruguay, Chile and Brazil, which were temporarily shipped into Argentina to be live-covered by the imported stallions (Ricardo Soler, Argentinean Thoroughbred Breeders Association, personal communication).

Objectives

The purpose of this report is to describe the 2010 occurrence of EVA in Argentina that resulted in abortion in Thoroughbred mares on the index premises; these were presumably infected by the respiratory route from contact with jumping mares inseminated with virus-infective frozen semen. Also included will be an account of the spread of EAV infection from the initial infected premises. The consequences of this occurrence of EVA for the Argentinean equine industry will also be considered.

2010 EVA outbreak

Index case

On 23rd March, a private veterinarian and owner of a stud farm located in San Antonio de Areco, province of Buenos Aires, submitted tissue samples from an aborted equine fetus and placenta for virological examination. On 31st March, the INTA laboratory reported to SENASA that EAV had been isolated in tissue culture and also detected by RT-PCR from the samples (Timoney, 2008); the farm was immediately placed under quarantine and investigations to establish the source and extent of the spread of infection were initiated.

Based on the information provided by the veterinarian, the fetus had been aborted by a Thoroughbred mare and was the third abortion to have taken place on the premise. The abortions had occurred on the 7th, 9th and 22nd of March. Once a diagnosis of EVA had been confirmed, a pregnancy examination was carried out on the remaining pregnant mares; a number of mares which had been previously confirmed in foal at 60 days were found to be “empty”. On 3rd April, a 45-day-old foal on the premise developed weakness and incoordination of the hind limbs and died within 48 hours of the onset of clinical signs. The

foal had not exhibited any antemorten evidence of pneumonia or enteritis. Samples of lung, liver, thymus and spleen were collected and submitted for laboratory examination. Equine arteritis virus was isolated from all the tissues. On 20th April, an additional aborted fetus without placenta was submitted for examination, but this turned out to be negative for virus. The pregnancy losses (abortion and early pregnancy losses) associated with EAV infection in this group of Thoroughbred mares reached approximately 50%. The mares (n=40) comingled in the same paddock with sport-horse mares (n=16) that had been inseminated with semen from five stallions (four standing outside of the country and one domestic stallion). Imported semen from two of the four stallions had been used on the farm for the first time this year. Evidence pointed to semen from one of these two stallions as the source of EAV infection in the sport horse mares, which in turn, were believed to be responsible for spreading the infection to the in-contact pregnant Thoroughbred mares. Based on serological testing of mares on other farms inseminated with semen from the second stallion's imported semen, there was no evidence that this stallion was a carrier of EAV.

On 14th April, straws of frozen semen from the five stallions were submitted for virological examination. EAV was detected and isolated from the semen of one of the stallions. This semen had been imported from the Netherlands; testing carried out by the Animal Health Authorities at the time of entry had given negative results for EAV.

Three mares at the index premises had been inseminated with semen from this stallion on 7th and 27th January and on 5th February. These mares were comingled with the group of pregnant Thoroughbred mares. The first inseminated mare is thought to have been the index case for the outbreak.

On 5th April, all the horses on the farm (n=140) were blood sampled. These comprised 54 mares, 14 foals, 1 stallion, 34 yearlings, and 37 other (work) horses. The serological findings revealed a very high prevalence of infection in the mares and foals (98%) and a very low prevalence in the yearlings (3%); the latter had been kept physically separated from the mares.

Tracing infective semen imported into the country

Once the source of infection on the index premise was identified, it became a priority to trace where this infective semen had been distributed. All the straws still available from the stallion were confiscated by SENASA. Three additional farms located in General Paz, San Vicente and Vicente Casares (all in Buenos Aires province) and one equestrian club located in downtown Buenos Aires had also used this semen. These premises were put under quarantine and the respective horse populations sampled for serological evidence of infection (Timoney, 2008). In each case, the number of mares inseminated with the infective semen were two, one, one, and two respectively, all of which tested seropositive. Exposure by the respiratory route was likely responsible for the prevalence of EAV infection in each horse population, namely 5% (5 out of 99), 13% (9 out of 69), 16% (6 out of 38) and 81% (97 out of 120) respectively. An important factor in the spread of EAV infection in the equestrian club was the number of horses kept in close physical contact with one another.

In addition to the very high prevalence of EAV infection found in the equestrian club, the veterinarian to this facility indicated that a few months previously, he has observed several horses with signs of respiratory disease accompanied by fever and limb edema; these signs were not associated with ***EVA*** at the time.

National and international Disease alert

Argentina's Department of Agriculture notified the Office International des Epizooties (OIE) on 7th May of confirmation of EVA in the country. Furthermore, it declared a health alert for horses throughout the country. Movement of horses was prohibited from 6th May to 4th June in Buenos Aires province, where all the main equestrian clubs, horse breeding farms, and racecourses are located.

All the premises where a seropositive horse was found were kept under quarantine and additional serological studies were performed. The criteria used to confirm a premise, which had been epidemiologically linked with an affected premises, as free from active infection were: a) all the horses tested were seronegative b) some horses tested seropositive but all the seronegative horses remained seronegative on consecutive testing 14 days apart and no clinical signs of disease (fever, abortion, respiratory signs) were observed.

Spread of infection throughout the country

Considering that infection can be transmitted between horses via the respiratory route as well as the venereal route (i.e. by droplets from coughing and snorting) and that there had been significant movement of horses off the five primary affected premises, all horse movements from early January to 7th May, 2010 were traced and the horses involved serologically tested. In the case of the index premise, one of the mares inseminated with infective semen on 28th January was moved on 27th March once she had been confirmed pregnant. Although this mare tested seropositive, no other animals on the premise to which she had been moved had been infected.

Furthermore, a statistically representative blood sampling was carried out at the main racecourses and equestrian clubs in the country. From 1st January to 30th June, 16,403 samples from 13,822 horses of all breeds were serologically tested.

Seven additional affected premises were identified as a result of this surveillance.

These premises were located in Zarate, Pilar, Suipacha, and Avellaneda (all in Buenos Aires Province), and three additional equestrian clubs in downtown Buenos Aires. The prevalence of infection on those premises was 70% (7/10); 4% (6/141); 15% (3/20), 58% (56/97), 19% (42/227), 40% (19/47) and 2% (4/212), respectively. Dissemination of EAV had evidently occurred as a result of the movement of horses that were either incubating the infection or subclinically infected with the virus.

All 12 affected premises that were identified (five as resulted from the use of infective semen and seven because of the movement of infected horses) were located in Buenos Aires province.

The serological survey revealed that apart from the involvement of the Thoroughbred mares on the index premise in San Antonio de Areco, infection was limited to sport horses. The prevalence of EAV antibody was 8% (286 out of 3772) in sport horses while Thoroughbred, Polo, Criollo, Arabian, and other breeds (n=10,050) had not been exposed to EAV during this occurrence of EVA.

A total of 38 stallions of the breed Silla Argentina became seropositive during this outbreak. All these horses were identified with micro-chips, included in a public data base by SENASA and not allowed to be used for breeding until it had been determined whether any of them were carriers and semen shedders of EAV.

Aside from the first confirmed case of abortion and foal mortality due to EAV infection, specimens from all other cases of abortion and foal mortality submitted to INTA laboratory since 31st March (n=125) have been tested and found to be negative for EAV infection.

Phylogenetic analysis of the EAV isolates

In view of the fact that semen imported from the Netherlands was the original source of the 2010 occurrence of EVA and subsequent spread of infection, genetic characterization of this and other isolates of the virus was considered a high priority. As previously reported (Zhang et al. 2007; 2010), ORF-5-based phylogenetic analysis clustered globally isolated strains of EAV into North American and European groups; the latter could be divided into European subgroup 1 and European subgroup 2.

The partial sequence (positions 11296-11813) of the ORFs and subsequent phylogenetic analysis of each isolate (Stadejek et al., 1999) revealed that the EAV strains isolated from the case of abortion, foal death and the imported frozen semen responsible for the 2010 EVA occurrence in Argentina, all clustered with the EU-1 subgroup.

Consequences of 2010 EVA outbreak on the Argentinean equine industry

The 2010 EVA outbreak in Argentina has resulted in severe economic consequences for both the breeding and performance sectors of the horse industry and even for the country's economy. Those consequences can be summarized as follows:

- -All horse movements within Buenos Aires province were interrupted from 6th May to 4th June.
- -Disruption of training schedules, reduced race and competition entries.
- -Losses due to abortion, early fetal losses and death of a young foal in the index premise.
- -Veterinary and laboratory expenses.
- -Additional monitoring and surveillance throughout the country.
- -Conflict at international (the Netherlands) level because of the importation of infective semen.
- -The number of stallions (some of them very valuable sport horses) that have been infected, some of which may turn out to be carriers of EAV.
- -Additional expenses and inconvenience involved in vaccinating and isolating stallions just before the start of the 2010 breeding season.

- -Closed export markets for Argentinean horses to Colombia, Uruguay, Ecuador, Peru and Chile.
- -Potential denied export markets for seropositive horses.

Further preventive measures

The feasibility of applying preventive measures to protect the country's valuable horse industry against the possible risk of future introduction of this disease was considered. A vaccination program for Thoroughbred stallions was officially approved on 13th July and then authorized for other breeds on 11th August. The vaccination program is voluntary and based on international guidelines (Anonymous, 2010). Vaccination is permitted subject to official supervision, seronegativity of a stallion prior to initial vaccination, isolation for 3 weeks following vaccination, and finally, the requirement that all vaccinated stallions must be micro-chipped as a means of permanent identification. A database of all vaccinated horses that is accessible to the public is being kept by SENASA.

To this point, 98 Thoroughbred, 150 Argentinean Polo, 19 Warmblood, 7 Arabian and 6 Quarter Horse stallions have been vaccinated with the commercial modified live vaccine against EVA (ARVAC, Pfizer Animal Health).

Conclusions

The source of EAV responsible for the 2010 outbreak of EVA in Argentina was imported infective semen from a warmblood stallion. The semen had been used to inseminate mares on five premises from which the infection subsequently spread through animal movement to seven other premises.

This re-introduction of EAV, which took place in spite of a strict import control policy, reinforces the necessity of checking the current protocol used in screening frozen semen prior to its entry into the country and highlights the importance of maintaining monitoring and surveillance programs for this infection.

It is important to emphasize the importance of having available the necessary laboratory expertise and capacity to deal with a situation such as transpired this year. Resources as these were critical to the rapid detection and identification of EAV and the ability to test an unprecedented number of serum samples.

The increase in international movement of horses for competition and breeding, and the use of semen for AI have increased the risk of introducing or reintroducing EVA (Timoney, 2007). Unless strict controls are implemented, there is a continuing risk of importing EAV carrier stallions or virus infective semen. Furthermore, active surveillance of horses within the country and investigation of suspect cases of infection are critical to early detection of incursions of this virus and allowing timely measures to be taken.

This outbreak is another example of rapid dissemination of an infectious disease through entry and use of frozen semen.

In the case of infectious diseases like EVA, which can be spread worldwide through trade in frozen semen, it would be very useful to concentrate the virological testing only in reference laboratories with the proven technical expertise to guarantee the freedom of semen from seropositive non-carrier stallions of EAV.

This occurrence of EVA was the first in Argentina in which Thoroughbred horses were involved.

Although spread of infection by the respiratory route no longer occurs, as confirmed by extensive serological surveillance, the existence of an unknown number of carrier stallions within the seropositive stallion population is still a major threat and concern for the horse industry in Argentina. Some sections of the horse industry which have their horses free of infection (Thoroughbred, Polo, Criollo, Arabian, Quarter horses) are exerting pressure on SENASA to take action immediately in accordance with current legislation, and castrate or euthanize any carrier stallion(s). The Association of Sport Horse Breeders is reluctant to support such drastic measures because some highly valuable sports horses became seropositive, some of which may turn out to be carriers.

The country's horse industry as represented by the National Committee for Equine Health has been urging SENASA officials to take action on this matter in order to prevent possible further spread of EAV infection and future reintroduction of EAV into Argentina.

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CHEMOTHERAPEUTIC TREATMENT OF HORSES CHRONICALLY INFECTED WITH *BABESIA EQUI*

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The insidious emergence of tick borne *Babesia* (*Theileria*) *equi* infection and disease (piroplasmosis) recently in the U. S. has increased interest in determining the efficacy of certain chemotherapeutics in the treatment of horses infected with either *Babesia caballi* or *B. equi*. These apicomplexan pathogens cause persistent infection. Pathogen persistence is the ability of an infectious organism to remain in the host long-term, even for life in the absence of easily detectable clinical disease. A critical outcome of persistence is infected populations which are clinically silent reservoirs for transmission. There are two potential goals in the use of chemotherapeutics for pathogens which cause persistent infection. One goal, in endemic regions is to control acute parasitemia. Treatment isn't intended to eliminate infection but to control clinical disease and allow the development of premunition (immunity of persistence). However in a low prevalence country such as the U. S. treatment of persistently infected horses is with the intent of pathogen elimination and removal of transmission risk.

While a number of drugs have been tested the majority of data has been derived using imidocarb dipropionate (ID). Published data clearly shows that ID is an effective anti-babesial chemotherapeutic in that it reduces *B. equi* parasitemias associated with acute and persistent infections. Recent data (6) showed that 4 mg/kg of ID given IM, four times at a 72 hr interval removed transmission risk from horses infected with *B. caballi*. Removal of transmission risk was defined by the absence of detectable transmission by *Dermacentor nitens* and transfer of 100 ml of blood from infected-treated horses to naïve recipients. These definitions are currently being applied to the treatment of horses infected with *B. equi*.

However controversy exists concerning the ability of ID to completely eliminate *B. equi* or *B. caballi* from persistently infected horses (1,2,3,7). There are at least two reasons for this controversy, first past use of the CFT to measure the expected decrease in anti-*B. equi* antibody following parasite removal may have given false negative results (4) and secondly due to the number of different recommended ID doses and treatment protocols, some may have led to ID resistant strains and variable outcomes. Alternatively, there may be naturally occurring strains or sub-populations of *B. caballi* and *B. equi* which are resistant to elimination by ID. Further complicating assessment of chemotherapeutic efficacy in the complete elimination of *B*. *caballi* or *B. equi* is the potential of persistence specific antibody titers, even in the absence of stimulating antigen. Antigen independent models have been proposed to explain the persistence of long-term antibody titers. These models include memory B lymphocytes with special "memory" qualities that need fewer signals to mature to plasma cells (5) and /or the presence of long lived antibody producing plasma cells. A possible outcome of persistent antibody titers is finding treated horses which are PCR negative but antibody positive for *B. equi* suggesting parasite elimination but antibody persistence. Should such data be forth coming, consideration must be given to changing the premise that specific antibody titers always indicate *B. caballi* or *B. equi* infection and transmission risk.

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Development of a National Equine Health Program

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INTRODUCTION

The U.S. equine industry is a highly valued, highly mobile sector of animal agriculture that provides both direct and indirect benefits to the economy and contributes to the financial and emotional well being of equine owners. There is a wide geographic distribution of equine throughout the U.S. Additionally, owners of these horses engage in a broad range of activities that encompass the sport, recreation, entertainment, gaming and breeding industries.

The current impetus for the development of a National Equine Health Plan (NEHP) stems from a workshop organized jointly by the USDA-APHIS-VS, state veterinary authorities and the American Horse Council (AHC.) This workshop was held during the AHC's National Issues Forum, June 2010. The purpose of this workshop was to discuss the issues surrounding the handling of equine infectious disease prevention, diagnosis, and containment. This workshop allowed USDA, state representatives and the horse industry to discuss a coordinated approach to the equine industry's needs and priorities. Discussions centered on equine diseases of concern prevention, control, and eradication. Additionally, discussions occurred on the funding necessary to ensure the health of U.S. horses and the economic viability of the equine industry.

The workshop conclusions and identified action items include the following:

- Develop a comprehensive equine health program plan with associated budget
- Develop state/regional/national response plans for various types of equine infectious diseases
- Assist industry with the development of templates for response to an equine infectious disease outbreak at venues where horses from different sources congregate such as racetracks, shows, sales, and organized trail rides
- Provide oversight and assurance for the implementation of long range guidance recommendations as developed by the National Equine Piroplasmosis Working Group (NEPWG)
- Assist industry representatives with the re-establishment of monthly equine calls.

RATIONALE FOR DEVELOPING AN EQUINE PROGRAM

Recent events

Identification of a highly infectious or contagious equine disease may restrict the movement of horses via interstate and or international commerce while regulatory officials determine an appropriate response. Establishing an equine program is necessary to address domestic equine infectious diseases, to address control activities, to address varying disease control issues seen from individual state agencies conducting the activity, and to address questions raised among trading partners regarding the status of U.S. equine diseases.

In the past decade, numerous disease outbreaks have occurred that adversely affected the health of domestic equine populations and the economic viability of the U.S. equine industry.

- The emergence of West Nile Virus (WNV) in 1999-2000
- An outbreak of equine herpes virus in 2006 forced officials to close a major Grand Prix Championship
- Outbreaks of EVA and Vesicular Stomatitis (VS) affect the interstate and international movement of horses.
- An outbreak of CEM, first recognized in Kentucky in December 2008, required the testing and tracing of nearly 1,000 horses in 48 states.
- In October 2009, a focal area of EP transmission was identified on a premises in Texas. To date, thousands of horses have been tested and over 500 have been found to be positive for EP.

Economic Value of the Equine Industry in the U.S.

According to *The Economic Impact of the Horse Industry in the United States*, a 2005 study done by Deloitte Consulting for the American Horse Council Foundation shows the equine industry has a total economic impact of $102 billion on the U.S. economy. The equine industry also supports 1.4 million full-time jobs, and involves over 4 million taxpaying Americans.

The study estimated the horse population in this country at 9.2 million animals, with approximately 3.9 million involved in recreation, 2.7 million horses in showing, 845,000 in racing and the other 1.7 million

used for working and other types of activities. The breeding and training segment of the industry alone has a total economic impact of $6 billion on the economy, supports 100,000 jobs and involves 425,000 horses.

Statistics compiled by the USDA, Foreign Agricultural Service show that the value of U.S. equine exports exceeds the combined value of U.S. swine, cattle, poultry, and sheep live animal exports for each year from 1996 through 2009. On average, U.S. exports of live equine exceed 375 million dollars annually. Additionally, the contribution that equine genetics makes to the U.S. export market can easily exceed 4-5 million dollars annually.

ROLES, RESPONSIBILITIES AND AUTHORITIES

Regulatory perspective

The Animal Health Protection Act of 2002 grants the Secretary of Agriculture the authority to carry out operations and measures to detect, control, or eradicate any pest or disease of livestock, including those that affect horses. Historically, equine have not been considered as livestock and, consequently, USDA has never directly addressed equine specific disease issues or conducted out-reach activities targeted to U.S. equine owners. Additionally, when equine issues arise the lack of funding contributes to an inconsistent and fragmented response to state and national equine prevention, control and response activities.

Today, APHIS's mission focuses primarily on regulating equine and equine products (semen & embryos) moving in international commerce, the approval of EIA laboratories and the permitted movement of horses infected with a contagious/communicable disease across state lines. While state animal health officials have the regulatory oversight for domestic equine diseases, the extent of a state agency's involvement depends on the contribution that equine make to local agricultural economy.

Most states have regulations that address the interstate movement of horses with regard to their test-negative status for EIA. Yet, these regulations are not uniform in statue or uniformly enforced across states. Since the veterinary accreditation standards do not currently apply to the interstate movement of equids, the USDA is unable to bring enforcement actions against private practitioners for failure to adequately identify a horse, properly prepare an interstate certificate of veterinary inspection (ICVI), or to complete all tests and statements attesting to the health status of the horse.

Industry perspective

While there is no over arching organization that represents the interest of all equine owners, the AHC is supported by approximately 160 organizations and 1,200 individuals representing every facet of the horse world. Their membership constitutes the principle commercial interests of the equine industry.

As opposed to the poultry or swine commercial industries, the U.S. equine industry is highly segmented by breed, geographic location, and the intended use of the animal. Horses tend to move as individuals and health regulations are directed at ensuring that individual horses are adequately identified and in compliance with health requirements of a specific state. This focus on the health status of individual horses is unlikely to change and means that planners of future prevention, surveillance and response activities need to be cognizant of this fact.

GUIDING PRINCIPLES

A plan that addresses the prevention, detection, diagnosis and control of equine diseases should encompass the interest of all stakeholders including tribal governments and should adhere to the guiding principles outlined below.

Infectious diseases adversely impact the health of horses

- The equine industry is an important part to the U.S economy
- International and domestic trade of horses and equine semen and embryos is important to the financial viability of the U.S. equine industry
- The ability to move horses while minimizing the risk of infectious disease spread through application of disease surveillance and biosecurity protocols is key to all components of the equine industry, including competition, breeding, and domestic and international trade

POTENTIAL EQUINE PROGRAM

APHIS is committed to assisting the equine industry and individual horse owners with protecting and improving the health of U.S. equine populations. APHIS will take steps to protect our national equine herd and ensure access to domestic and international markets by mitigating the impact of occurrences of

equine infectious diseases through the integration and leveraging of capabilities and resources of the Federal Government, States, Tribal Nations, local communities, and private organizations within a National Equine Health Program.

APHIS has the capability to contribute to a National Equine Health Program in several ways. The specific contributions will be determined by the stated needs from the equine stakeholders and available funding. Potential APHIS contributions include:

- Prevention/detection/response/control
    - Develop a comprehensive laboratory surveillance system, including an active surveillance component, for domestic equine diseases determined by industry and state regulators to be important
    - Provide epidemiological support and diagnostic services for outbreaks of high priority equine diseases or disease outbreaks that occur in high-risk settings
- Minimize impact of diseases on domestic equine populations through advanced planning
    - Develop bio-security protocols and for equine sporting events, performance venues and stables
    - Promote the development and use of industry standards of care for equine industry sub-specialties such as equine semen collection and processing centers.
- Cost recovery
    - Assist industry stakeholders and state regulatory agencies via support for activities (e.g. testing, surveillance, response, control) initiated as part of equine health activities and/or in response to an outbreak of an infectious equine disease
- Promote trade
    - Develop risk assessment, surveillance, response and control activities to assess status, mitigate spread and reduce adverse impacts of equine disease on international and domestic trade in equine and equine semen and embryos
    - Support the development and acceptance of newer laboratory diagnostic techniques for use in international trade
    - Perform certification and inspection services in support of equine commerce to verify disease free status as well as the development of risk/economic assessments to identify cost efficiencies in international trade regulations