

Equine Medication Monitoring Program (EMMP) Advisory Committee
April 10, 2019 Meeting Minutes

Item No.

(1) Call to Order

- a. The meeting was called to order on Wednesday, April 10, 2019 at 10:02am by Chairperson Ms. Sandy Arledge.

(2) Roll Call

Present:

Ms. Sandy Arledge, Chair, California Farm Bureau Federation
Ms. Jody Cutler, American Driving Society
Mr. Robert Gage, California State Horsemen's Association
Dr. Marta Grandstedt, California Veterinary Medical Association
Dr. Michele LaMantia, Pinto Horse Association of America, Inc.
Dr. Jeanette Mero, American Endurance Ride Conference
Ms. Mari Naten, California Dressage Society
Dr. Russell Peterson, American Association of Equine Practitioners
Mr. William Pettis, American Morgan Horse Association
Dr. Chris Smith, Pacific Coast Horse Show Association
Ms. Rae Stambuk, California Reining Horse Association
Ms. Julia Tarnawski, National Plantation Walking Horse Association

Absent:

Ms. Karen Dagnan, Equestrian Trails, Inc.
Mr. William Hughes, Arabian Horse Association
Ms. Jo Ann Jackson, California Draft Horse & Mule Association
Ms. Christine Oswald, Pacific Coast Cutting Horse Association
Ms. Lori Pfaff, Pacific Coast Quarter Horse Association
Dr. Mike Tomlinson, U.S. Equestrian Federation
Dr. Stephen Schumacher, U.S. Equestrian Federation (non-voting member)

CDFA Present:

Dr. Katie Flynn, Staff Veterinarian Equine Programs
Mr. Lee Harrison, Agricultural Program Supervisor, EMMP
Ms. Katie Hatch, Research Scientist, EMMP
Ms. Nancy Ragen, Management Services Technician, EMMP

Others in Attendance:

Dr. Heather Knych, Professor, UC Davis California Animal Health and Food Safety Laboratory

(3) Review of Minutes

Minutes of the September 27, 2018 meeting were reviewed.

MOTION #1: Ms. Jody Cutler motioned to approve the minutes and Dr. Jeanette Mero seconded the motion.

Yes: Ms. Sandy Arledge, Ms. Jody Cutler, Mr. Robert Gage, Dr. Michele LaMantia, Dr. Jeanette Mero, Dr. Russell Peterson, Mr. William Pettis, Dr. Chris Smith, Ms. Rae Stambuk, Ms. Julia Tarnawski

No: None

Abstain: Ms. Marta Grandstedt, Ms. Mari Naten

(4) Research Update

Dr. Heather Knych, Professor at the UC Davis K.L. Maddy Equine Analytical Chemistry Laboratory, presented an update on EMMP funded research studies. The first study presented was the pharmacokinetics and quantitation of serum and urine concentrations of hydroxyzine and its major metabolite cetirizine. Hydroxyzine is a first-generation antihistamine that can cross into the central nervous system and cause sedative effects. It is also an H1-receptor antagonist and antipruritic. The elimination half-life was determined to be approximately 7-7.5 hours for both hydroxyzine and cetirizine. In serum concentrations, both hydroxyzine and cetirizine were still detectable at 96 hours post administration (with slightly higher serum concentrations of hydroxyzine). In urine concentrations, hydroxyzine was still detectable at 72 hours and cetirizine was still detectable at 96 hours (with higher concentrations of cetirizine than hydroxyzine).

Dr. Knych also gave an update on the CBD oil study. The project has gotten its Institutional Animal Care and Use Committee (IACUC) protocol approved by UC Davis as well as has gotten its request approved by the University of Mississippi (who will be supplying the CBD oil for the project). Dr. Knych has applied for a DEA Schedule I Research License and has submitted the protocol to the California Research Advisory Panel at the Attorney General's Office. Once all the protocols are approved, Dr. Knych will be able to start the study.

Additionally, Dr. Knych provided an overview of the study of dexamethasone's effects on hydrocortisone and eicosanoid concentrations. Dexamethasone is a potent anti-inflammatory (25 times more potent than the naturally occurring cortisol) and is used as a corticosteroid. The study showed that dexamethasone was still detectable at 96 hours post administration in serum samples and at 48 hours post administration in urine samples. The study also showed that dexamethasone significantly suppresses natural cortisol levels for up to 72 hours post administration and that it decreases biomarkers for cortisol.

Furthermore, Dr. Knych gave an update on the Acepromazine study. Acepromazine is a tranquilizer that metabolizes into 2-(1-hydroxyethyl) promazine (HEP) and 2-(1-hydroxyethyl) promazine sulfoxide (HEPS). During the

study, they determined that when acepromazine was given intravenously, acepromazine and HEPS were detectable until 48 hours post administration and HEP was detectable until 72 hours post administration. When acepromazine was given orally, acepromazine, HEP and HEPS were detectable until 72 hours post administration. They also witnessed a decreased step count (one measure for sedation), especially when the drug was given orally. However, there was no significant effect noted on heart rate when the horses were resting.

Lastly, Dr. Knych discussed bisphosphonates. Bisphosphonates are used in human medicine to treat disorders of bone resorption as well as in nuclear scintigraphy scans. Bisphosphonates are used in veterinary medicine in the formulations of Tildren, Osphos and Zoledronic acid (not approved by the FDA) with the label indication to control clinical signs associated with Navicular syndrome. However, many owners and trainers use the drug off label and this can cause negative effects. Bisphosphonates are not evaluated for use in horses under four years old as it can possibly disrupt bone growth and the natural healing process in young horses. Bisphosphonates can be detected in the bone for months to years, and urine for up to one week, even though the half-life in blood is only for a few hours. Bisphosphonates are also known to have analgesic properties in other species for up to one month post administration.

The committee discussed different proposed projects including a study on bisphosphonates, the effects of genetic mutations on drug clearance and the validation of inflammatory biomarkers in clinical cases. Any proposed study on bisphosphonates should not duplicate any efforts of other entities such as the American Association of Equine Practitioners. The committee also discussed their desire to fund a second study on CBD oil at a later time.

MOTION #2: Mr. Robert Gage motioned to have EMMP help fund an integrated study with the California Horse Racing Board (CHRB) on bisphosphonates. Ms. Sandy Arledge seconded the motion. Motion was unanimously approved.

(5) United States Equestrian Federation (USEF) Update

As Dr. Stephen Schumacher was unable to attend the meeting, he provided a written report which was presented by Dr. Flynn.

In 2018, USEF enacted a rule requiring event managers to submit a written isolation plan for an infectious disease outbreak at their event. Due to equine influenza detections this winter, some event isolation plans were implemented. The executions of these isolation plans were considered successful.

The USEF update included an update on the continued use of the Medroxyprogesterone acetate (MPA) forms. USEF requires competitors to fill out an MPA disclosure form which allows owners and trainers to keep their horse in

competition while on MPA. USEF has been collecting data from the MPA forms since June 2018. The USEF MPA panel met in February 2019 and will continue to evaluate the status of usage of MPA in competition horses.

Furthermore, the USEF permits use of Pergolide Therapeutic Use Exemption (TUE) forms. Pergolide is a drug used to treat Cushing's in horses. Owners or trainers can fill out a Pergolide TUE form online and then the horse's veterinarian submits online evidence demonstrating medical necessity of the drug. Approved TUE form allows to the horse to continue Pergolide treatment during competition.

(6) Program Updates

Administrative Updates

Dr. Katie Flynn welcomed the new members to the EMMP advisory committee, Ms. Mari Naten representing the California Dressage Society and Ms. Sarah Rajoy representing the California Professional Horsemen's Association. Dr. Flynn discussed the current vacant positions on the advisory committee and the requirements and responsibilities for advisory committee members. Dr. Flynn mentioned that EMMP is still looking for additional field testers and presented the current and future plan for advertising for those positions.

The Bagley-Keene Open Meeting Act was recently updated to allow committee members to phone in for a meeting. However, the meeting must have a quorum in person, the agenda must list all members who will participate remotely (but will not list location) and remote votes must be counted by roll call. With these stipulations, it is unlikely to benefit EMMP to allow phone participation as there still must be a quorum in person.

An update was provided on assembly bill 434 which now requires all material (both printed and online) to be compliant with the Americans with Disabilities Act (ADA) as of July 1, 2019. EMMP is therefore in the process of updating all forms, brochures and factsheets and has started rolling out updated forms, including the Drug Declaration and Application to Register Events forms.

Dr. Flynn presented a summary of 2018 violations, informal hearings, public records requests and plans for future testing. Research Scientist, Ms. Katie Hatch presented a review of the drug declarations submitted to EMMP in 2018.

Dr. Flynn summarized 2018 travel to meetings as a representative of CDFA and EMMP as well as planned trips for 2019.

MOTION #3: Dr. Chris Smith motioned to approve funds to support out-of-state travel expenditures for Dr. Katie Flynn to attend the American Horse Council, United States Animal Health Association, American Quarter Horse Association, United States Equestrian Federation, American Association of Equine Practitioners and any other trips deemed necessary

for the Equine Staff Veterinarian representation. Dr. Marta Grandstedt seconded the motion. Motion was unanimously approved.

Program Data Summary

Ms. Katie Hatch presented the following program summary data for the 2018 calendar year:

- A total of 1,220 events were held (approximately the same as previous two calendar years)
- 366 events were tested (30%) (still trying to reach targeted percentage of 40%)
- The highest number of events by event type were hunter/jumper events then dressage and open (multi-breed/multi-discipline) events. Note, these numbers are based on event type listed by the event manager at the time of event registration.
- A total of 718 urine samples and 912 blood samples were collected from selected horses at EMMP registered events.
- Most testing was done on the weekends (Saturday and Sunday) but there was an increase of the number of events tested during the week in 2018.
- The overall percentage of horses selected in 2018 was 69% geldings and stallions and 31% mares. This is consistent with the competition equine demographic data obtained by program which indicated 68.2% geldings/stallions and 31.8% mares.

Regulation Update

Dr. Katie Flynn discussed the ongoing regulation changes for EMMP. Due to setbacks with the legal and a potential need to change the Food and Agriculture Code (FAC) before additional regulation changes, EMMP decided to only pursue the previously agreed upon fee increase in 2019. The regulation package has been submitted and the public 45-day comment period starts on April 19th and ends on June 3rd. After the comment period, EMMP will consider any comments received and then submit the file to the Office of Administrative Law (OAL) for review. If OAL has any changes, the regulation text would be posted again for public review, this time for fifteen (15) days. The goal to have the final regulation package submitted to OAL for final approval in mid-June to early July 2019. OAL then has thirty (30) working days to either approve or deny the file. If OAL denies the file, EMMP will make the necessary changes and resubmit. If OAL approves then the fee increase will be approved in regulation. The target effective date for fee increase is January 1, 2020. EMMP will notify advisory if there are any delays or concerns related to this process.

All other regulation updates are on hold.

IT Update

Ms. Katie Hatch provided a status update on the IT project to develop and enhance the computer horse data capture system and reports for EMMP. The initial request was to create a web-based data entry form to capture individual

record of sample collections into the EMMP data system (project section 1) and to update some reports in the websystem (project section 2). EMMP modified the scope of section 2 by adding new reports which were subsequently identified to address program needs. Additionally, EMMP added a request to upload of previous years' data into the system (project section 3). The IT group has been working closely with EMMP to ensure the reports being produced/updated meet program needs. So far, IT has been on time with the sections of the report changes. The plan is still to have all the reports updated and completed by July 1, 2019.

(7) Animal Health Updates

Ms. Katie Hatch and Dr. Katie Flynn presented California's animal health updates on the following topics; the Extended Equine Certificate of Veterinary Inspection (EECVI), West Nile Virus (WNV), Equine herpesvirus-1 (EHV-1), Contagious Equine Metritis (CEM) imports, Influenza and equine euthanasia issues. Other national equine issues include closure of the Florida import center, horses imported into California and a nationwide EHV-1 survey.

Dr. Flynn discussed the EECVI/equine passport system developed by Global Vet Link. The purpose of the EECVI is to extend the length of a Certificate of Veterinary Inspection (CVI) to six (6) months. The veterinarian would examine the horse, fill out the EECVI online and provide it to the owner. The owner would then have to log on to the system to obtain a permit before each movement. In the event of a disease outbreak in the state, the owner would not be issued a permit and they would be notified that a new CVI was required for the movement. Global Vet Link (GVL) has developed the EECVI but the system is not currently approved for use in California as the documents produced do not meet California entry requirements, specifically there is a lack of signature on the document. GVL is working on correcting this and hopefully it will be complete by summer 2019.

Ms. Hatch discussed the 2018 equine WNV cases. There was a total of eleven (11) cases confirmed in 2018. Five (5) of the affected horses were not vaccinated against WNV, three (3) were vaccinated and three (3) had an unknown vaccine history. Six (6) of the WNV positive horses were euthanized and the other five (5) are alive and recovering. The age range of the infected horses was four (4) months to seventeen (17) years with an average age of 6.6 years.

Since the last EMMP advisory committee meeting, there have been two Equine Herpesvirus Myeloencephalopathy (EHM) incidents. In November 2018, a 24-year-old Arabian mare in San Mateo county displaying neurologic signs was confirmed positive for EHV-1. The mare was transported to an off-site veterinary hospital for treatment and there were no additional cases, so quarantine was released after fourteen (14) days. In March 2019, a 3-year-old Thoroughbred filly at the Golden Gate Race Track was euthanized due to severe neurologic signs. On necropsy, the filly was confirmed positive for EHV-1. A quarantine was issued

for one (1) barn on the premise. No additional cases were identified, and quarantine was released after fourteen (14) days.

For 2018, a total of 188 imported horses completed testing requirements for Contagious Equine Metritis (CEM) at the California CEM Import Quarantine facility at the UC Davis Center for Equine Health (CEH). The total included twelve (12) stallions and 176 mares. The average age of horses of these horses was 7.4 years. Based on arrival date into California, the most popular months for imports were December, January and September.

Dr. Flynn acknowledged an increase number of imported horses testing positive for equine influenza. Four (4) horses imported into California destined to private facilities, were confirmed influenza positive and one case resulted in five (5) additional clinical test positive horses at the destination facility. An additional four (4) influenza positive horses were shipped from LA Import Quarantine to the UC Davis Center for Equine Health CEM quarantine facility. There, two (2) horses receiving lay-up services as well as six (6) horses owned by CEH also became influenza positive. Ultimately, due to disease spread, all research and teaching activities at CEH had to be stopped until horses tested negative for influenza.

Dr. Flynn discussed the current challenges related to equine euthanasia and disposal. The Food and Drug Administration (FDA) recently instituted a zero tolerance for barbiturate residues in rendered products. As most horses are euthanized using sodium pentobarbital, horses can no longer be rendered if they are euthanized in this manner. The methods of disposal of equine carcasses is limited due to many local ordinances. With renderers no longer accepting horses euthanized with barbiturates, veterinarians have been exploring other methods of euthanasia such as potassium chloride, magnesium sulfate or intrathecal lidocaine, or gunshot or captive bolt. A resolution was passed by the US Animal Health Association, urging FDA to develop a safe tolerance levels for residues of euthanasia and anesthetic agents in the final product of rendering. However, FDA denied this request and will not create a tolerance level. Next steps include researching alternatives for euthanasia and encouraging industry and local regulatory officials to collaborate to address this local carcass waste management issues.

Dr. Flynn presented an update on the closure of the Florida import center. Eight (8) horses imported into the Miami import center between mid-December and mid-January displayed clinical signs of laminitis and enterocolitis. Four (4) of the horses died or were euthanized and salmonella was suspected. The Miami import center was closed January 19-March 11 and was thoroughly cleaned and disinfected. Approximately, 180 environmental samples were taken, and no pathogen was identified. One of the sick horses was released from the Miami import center and shipped, along with thirteen (13) other horses, to California. During transport, results were received back, and the horse was Salmonella

positive. The horses were isolated upon arrival at a large polo facility in Riverside county, and no additional cases occurred.

Ms. Hatch presented a review of the horses imported into California from other countries. A total of 3775 horses imported into the United States listed a California destination. Majority of the horses were imported through New Mexico(1866/3775) or Los Angeles(1088/3775). Of the 3775 horses destined for California, the address listed on the USDA paperwork was a valid location for equines 85.7% of the time. Some of the addresses listed were for subdivisions/apartment buildings (8.8%), shopping centers/industrial parks (2.9%), trailer parks (1.0%) or the address listed was not a correct address (0.6%).

For horses imported through LAX, 39.2% were geldings, 28.0% were mares, 34.9% were stallions/colts and 0.8% did not have a gender listed. For horses destined for California, 58.5% were geldings, 27.8% were mares, 11.8% were stallions/colts and 1.8% did not have a gender listed. The most common country of origin for horses imported through LAX were the Netherlands, Germany, United Kingdom and Spain while for horses destined for California, the most common country of origin was Mexico, Canada, Netherlands and Germany. The most common reason for import was competition/exhibition/ show then companion, transit and racing. The most common breeds imported were Quarter Horses and Quarter Horse crosses, Warmbloods, Andalusians, Friesians and Thoroughbreds.

A total of 231 horses destined for California were refused entry due to testing positive for, or exposed to, a foreign animal disease, namely, equine piroplasmiasis, equine infectious anemia and Glanders.

To address equine health concerns associated with international equine movement, a national working group was formed under the United States Animal Health Association. Their goals are to evaluate risks for imported equines and equine products, evaluate current protocols at import enters and border land ports, summarize disease incidents related to imported horse movement and identify potential solutions for the identified risks. Dr. Flynn is participating in this working group.

Dr. Flynn discussed the recent EHV-1 paper presented in October at the annual meeting of the US Animal Health Association Committee on Equine. The paper summarized the 2018 EHV-1 incidents in the United States. Data was collected for a total of forty-nine (49) incidents which occurred in seventeen (17) states between October 2017 and August 2018. Eleven (11) of the seventeen (17) states reported more than one incident during this time. Forty-three (43) of the incidents included at least one Equine Herpesvirus Myeloencephalopathy case, whereas six (6) only included EHV-1 febrile or respiratory cases. The reported incidents included a total of 154 confirmed cases, 74 of which were Equine

Herpesvirus febrile/respiratory cases and 80 confirmed equine herpesvirus myeloencephalopathy cases. A total of 28 horses were euthanized or died due to the severity of the neurologic disease.

Of the incidents reported, 78% (38/49) involved the wild type (non-neuropathogenic/A Strain) of the virus and 20% (10/49) involved the mutant type (neuropathogenic/G Strain) of the virus. Of the 154 confirmed cases, 89 (58%) involved the wild type (non-neuropathogenic/A Strain) of the virus, whereas 63 (41%) were the mutant type (neuropathogenic/G Strain) of the virus and two cases were not strain typed. Fifty percent (40/80) of the EHM cases and 66% (49/74) of the EHV-1 febrile/respiratory cases involved the wild type (non-neuropathogenic/A Strain) of the virus.

The peak of reported incidents occurred in February 2018 with 14 incidents and in May 2018 with eight incidents. Seven incidents were recorded in January 2018. Five incidents were reported in each March and April of 2018. Two incidents were reported in June 2018. One incident was recorded in the months of November and December 2017 and September 2018.

State Animal Health Officials issued quarantines for 44 of the 49 reported EHV-1 incidents. Data provided indicated 31 of the quarantines were issued for the entire premises and 11 of the quarantines issued were for a portion of the population on the premises based on exposure risk assessment. The average duration of the quarantine was 30.3 days. The longest quarantine period was 92 days and the shortest quarantine period was 14 days.

Horse gender was provided for the 154 horses confirmed positive by diagnostic testing for EHV-1. Among the 74 febrile/respiratory cases of EHV-1 there were 29 mares (39%), 44 geldings (60%) and one stallion (1%). Of the 80 confirmed EHM cases, 54 were mares (68%), 25 were geldings (31%) and one stallion (1%).

Some of the lessons learned from these incidents included: lack of funding and experience to respond to equine incidents, each incident presenting unique challenges, a delay or lack of reporting of diagnostic test results from laboratories, some laboratories do not provide strain or viral load, obtaining accurate inventories onsite, compliance with biosecurity measures, a critical need for early identification of horses shedding virus, challenges with testing, limited isolation stabling, ensuring business continuity and communication challenges.

(8) Committee New Business Discussion

No new items were discussed. The next meeting is tentatively planned for Wednesday, October 9th, 2019 at the California Animal Health and Food Safety (CAHFS) laboratory at UC Davis.

(9) Closing Comments

Mr. Robert Gage motioned to adjourn the meeting. Ms. Jody Cutler seconded the motion. Chairperson Ms. Sandy Arledge adjourned the meeting at 2:41pm.