

Merck Animal Health Equine Respiratory Update

IN COLLABORATION WITH THE UNIVERSITY OF CALIFORNIA, DAVIS SCHOOL OF VETERINARY MEDICINE

Tracking an Uptick in Equine Influenza

The most recent six months of biosurveillance data collected (January – June) indicate the same pathogens circulating amongst various horse populations, with equine influenza virus (EIV) being the most common respiratory pathogen detected. In order of frequency, the pathogens include EIV, *Streptococcus equi* subspecies *equi* (*S. equi*), equine herpesvirus 4 and 1 (EHV-4, EHV-1), and equine rhinitis A/B viruses (ERAV/ERBV).

“The detection rates vary a bit with time of the year and some of the spikes are due to individual outbreaks,” says lead researcher Nicola Pusterla, D.V.M., Dipl. ACVIM. “June, by far, was the most active month for EIV cases, and the most active month for any infectious upper respiratory disease.”

Recent EIV outbreaks in the Northwest, along with cases early in the year in the Northeast and Southwest comprise the bulk of the EIV positive data. However, cases were documented across the country, from New York and North Carolina to Nebraska and Nevada.

A variety of demographic factors were observed among the EIV positive cases in the past six months, including:

AGE: Approximately 60% of horses were either ≤ 3 or ≥ 7 years of age. The oldest was 15 years and the youngest was 2 months old.

BREED: More than 25% of the horses were Quarter Horses; with the remaining primarily consisting of Saddlebred, Arabian, Morgan and Friesian.

DISCIPLINE: More than 60% of horses were used for show or performance.

TRAVEL: More than half of horses had traveled recently.

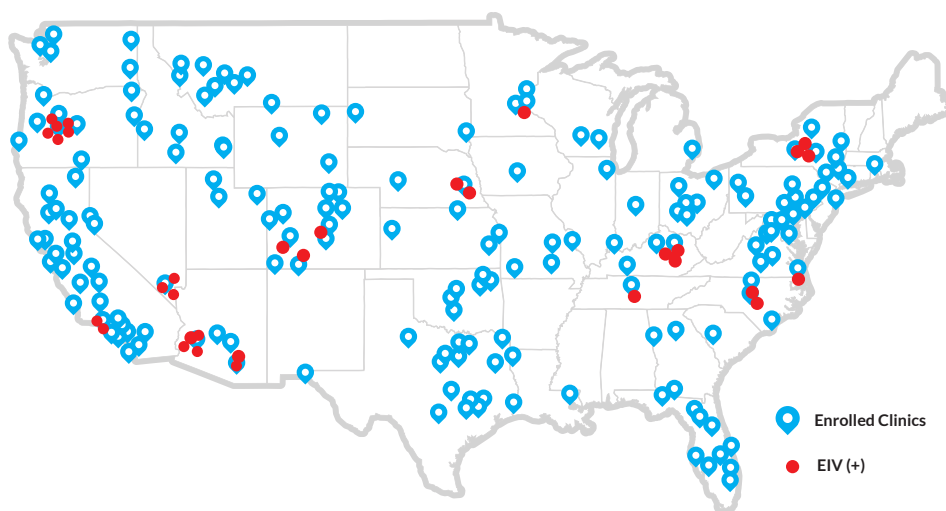
VACCINATION HISTORY: 37% of horses had been vaccinated against EIV (34% vaccinated ≤ 6 months prior to illness; 3% > 6 months); 24% had no history of vaccination; 33% had an unknown vaccination history; 6% had no information provided.

Oregon experienced the most active EIV outbreak during the month of June. Wendy Krebs, D.V.M., of Bend Equine Medical Center in Bend, Ore., says the Merck Animal Health biosurveillance program has helped them quickly and accurately diagnose respiratory infectious diseases. In turn, helping them to make informed treatment and quarantine decisions.

“We recently used the program to diagnose a large outbreak of influenza at a horse show at our county fairgrounds, and to rule out EHV-1,” says Dr. Krebs. “The outbreak impacted hundreds of horses in terms of future showing, quarantine precautions, and future use of the showgrounds. A quick and accurate answer to the identity of the respiratory pathogen was key in making these decisions.”

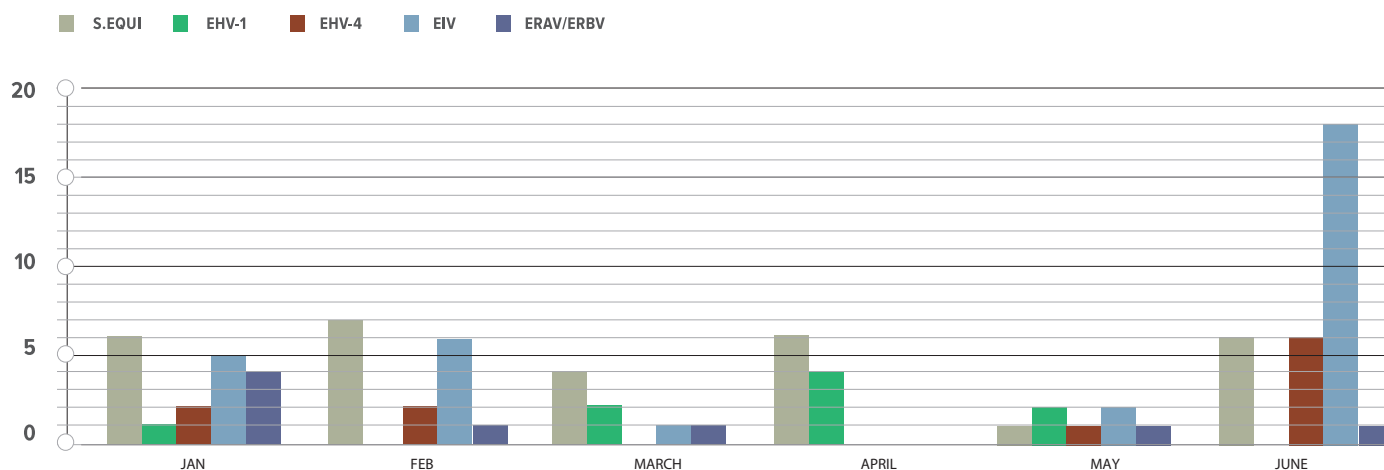
“As a result of the biosurveillance program, I recommend more consistent use of the FLU AVERT® I.N. vaccine, and have implemented client education campaigns on Facebook.” Dr. Krebs says the diagnostic cost savings have been very helpful for some clients, as well.

Through the program, Merck Animal Health covers the cost of the diagnostic kits (nasal swabs and viral transport media), overnight shipping and testing.



This map shows positive EIV cases reported from January to June 2015, alongside the approximately 250 Merck Animal Health customer clinics enrolled in this biosurveillance program. To date, those clinics have submitted more than 5,000 samples and have been provided quantitative PCR results courtesy of Merck Animal Health.

Disease Trends from January to June 2015



From January to June 2015 EIV was the most prevalent infectious upper respiratory disease reported, followed by S. equi.

Demographic summary	EIV (33 cases)	S. equi (31 cases)	EHV-4 (12 cases)	EHV-1 (9 cases)
Age	≤ 3 years; ≥ 7 years	≥ 4 years	4-8 years	≤ 3 years
Breed	Quarter Horse	Quarter Horse	Quarter Horse, Arabian	Quarter Horse
Discipline	Show/performance	Show/performance	Show/performance	Pleasure and performance

The above table provides a summary of primary demographic parameters for the four major pathogens.

Importance of Complete Submissions

One objective of this study is to gain a better understanding of the epidemiology and risk factors associated with these viral and bacterial pathogens in order to improve patient care and prophylactic protocols. Therefore, it is critical that program participants gather pertinent patient information, including signalment, clinical signs, vaccination status and recent travel history.

A complete patient history ensures timely release of test results and enables us to provide you with even more detailed information about how to improve management strategies to better protect the health of horses in your care.

“We sometimes encounter farms or owners that do not vaccinate regularly, and then they experience a respiratory outbreak. The biosurveillance program allows us to prove the real cause of the outbreak and reassure owners of the need to vaccinate. Owners love it because they get answers to so many questions.

It’s not just about getting positive results. There is as much value in getting negative test results – we know to continue digging into the true cause or condition. The program is so simple and efficient there’s no reason not to do the diagnostics, and it’s amazing how quickly results are returned.”

- Pedro De Pedro, D.V.M., Dipl. ACVIM,
Park Equine Hospital, Lexington, KY

About the Newsletter

This bi-annual newsletter is being sent as a value-added service to clinics enrolled in the biosurveillance program. Merck Animal Health is passionate about this program, and is providing this newsletter to customer veterinarians to help them stay up-to-date on the latest trends and historical information the study has yielded to date. Technical veterinary advice, interpretation and case management support will be provided by Merck Equine Veterinary Technical Services (Drs. Barnett, Vaala, MacKenzie, Gaughan, Craig and Chappell) and Nicola Pusterla, D.V.M., Department of Medicine and Epidemiology, UC Davis.

If you have questions about the program, please call our technical services team at (866) 349-3497, or email one of the technical services veterinarians at the addresses listed below.

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Relevant Supporting Research

For more information on the latest respiratory disease published research from Merck Animal Health, click on the links below.

[1\) Voluntary Surveillance Program for Equine Influenza Virus in the United States from 2010 to 2013](#)

Pusterla, N., Kass P.H., Mapes S., Wademan C., Akana N., Barnett, D.C., Mackenzie, C., Vaala, W. Voluntary Surveillance Program for Equine Influenza Virus in the United States from 2010-2013. *J Vet Intern Med* 2015; 29:417-422.

[2\) Voluntary surveillance program for important equine infectious respiratory pathogens in the United States](#)

Pusterla, N., Kass P.H., Mapes S., Johnson C., Barnett, D.C., Vaala, W., Gutierrez, C., et. al. Voluntary Surveillance Program for Important Equine Infectious Respiratory Pathogens in the United States. AAEP Proceedings 2010.

[3\) Surveillance programme for important equine infectious respiratory pathogens in the USA](#)

Pusterla, N., Kass P.H., Mapes S., Johnson C., Barnett, D.C., Vaala, W., et al. Surveillance programme for important equine infectious respiratory pathogens in the USA. *Vet Rec.* 2011 July 2;169(1):12. doi: 0.1136/vr.d2157.

About the Program

Since 2008, Merck Animal Health has been conducting an ongoing, voluntary equine biosurveillance program to study the prevalence and epidemiology of relevant viral and bacterial respiratory pathogens. More than 5,000 samples from U.S. equids of all ages, genders and breeds presenting with fever and signs of acute upper respiratory disease and/or acute neurological disease have been collected since the study began. Samples are submitted by participating Merck Animal Health customer clinics and tested via quantitative PCR at the University of California, Davis School of Veterinary Medicine (UC Davis). To be eligible for testing, horses must have an unexplained fever ($T \geq 101.5^{\circ}\text{F}$) AND one or more of the following signs: Depression, nasal discharge, cough, and/or acute onset of neurologic disease. The results are then returned to the Merck Animal Health customer within 24 hours and provide invaluable diagnostic and treatment information.

Four-Fold Purpose:

- 1) To provide a valuable diagnostic tool to participating Merck Animal Health customers to assist in obtaining an accurate and timely diagnosis during an acute respiratory disease outbreak so they can provide optimal treatment, quarantine and vaccination strategies to their clients and patients
- 2) To provide the horse industry with a better understanding of the prevalence and epidemiology of these respiratory pathogens
- 3) To identify and monitor the current circulating strains of major equine respiratory pathogens
- 4) To evaluate the efficacy of current vaccination protocols