

Infectious Disease: Strategies for risk reduction on your own farm...

By: Robert C. DeWard, DVM

Disease outbreaks affecting horses in various parts of the country evoke genuine concern for the welfare of the animals. Herpesvirus, influenza, strangles, Salmonella and Rhodococcus are just a few examples of infectious diseases that commonly impact horse populations, causing substantial economic losses and drawing attention to herd management practices. Emerging foreign diseases like African Horse Sickness, Babesiosis, and Hoof and Mouth Disease are also finding their way into domestic horse populations, making the task of disease prevention, control, management and recovery more daunting and complex. Furthermore, some of these diseases pose a significant threat to public health, putting veterinarians and horse caretakers at particular risk.

Many of these diseases can be prevented or better controlled by a comprehensive "wellness" program that includes routine health exams and vaccinations. Frequent visits from your veterinarian allows for more rapid identification of sick and at-risk animals. It also provides farm managers an opportunity to discuss and develop a vaccination protocol specifically tailored to meet the needs of horses on your farm. However, no vaccine is 100% effective and some diseases are beyond the foothold of current vaccine technology. Further, vaccination is just one aspect of healthcare and disease prevention at large. Consider the affect of age, genetics, immune competency, parasites, housing, occupation, diet, and the multitude of other factors that influence disease resistance. With so many factors involved, how do we deal with the risk of disease in the 21st Century?

The best plan for combating disease outbreak remains a combined approach to farm management that emphasizes:

1. resourceful use of veterinary services an expertise, and
2. a commonsense approach to "housing" and "moving" horses (and personnel) that helps minimize or eliminate the spread of infectious diseases.

Early recognition and diagnosis of disease by your veterinarian is imperative so that proper steps can be taken to treat sick animals and provide you with specific information for diffusing an outbreak. The remainder of this article will focus on several basic farm management techniques intended to reduce the overall risk of disease outbreak, and allow for better control of most diseases encountered in high-density horse operations. Not all are strictly labor intensive, and the suggestions outlined are intended to help get you thinking about how the structure and use patterns of your farm influence the introduction and control of infectious diseases. So, with that in mind, please keep reading!

Group horses of similar use: Show horses, yearlings, broodmares, pleasure horses and school horses should not be kept together. Commingling horses of varied age, occupation and use tends to be a bad idea, and is an almost assured way to create an unhealthy stable. Try to keep horses on the premises in smaller groups, and separate them physically as much as possible (i.e. separate barns, stall, paddocks, etc.). As a general rule, a distance of 30-40 ft should be maintained between horses of different categorical age and use.

Isolate new horses for 3 weeks: This rule also applies to horses returning from a hospital stay (nosocomial infections are those acquired or originating in a hospital) and horses that have traveled long distances, or been in remote, commingled situations (poker rides, shows, sales, etc.). The stress of transportation and medical procedures can weaken a horse's immunity, making them more susceptible to disease. These horses are also exposed to foreign pathogens and parasites that can be carried back to the barn and introduced to others. Isolation allows the horse to be monitored for signs of illness, and provides ample opportunity for administration of necessary vaccines and dewormers. A minimum of 30-40 ft of open space should be maintained on all sides, so that isolated horses are not permitted to come into close proximity with resident animals (this includes dogs, cats, birds, and other farm critters that can serve as vectors for disease). Ideally, isolated animals should be inspected and cared for by a consistent team of people who understand barn protocol and have rehearsed the proper steps.

Isolate horses observed to be sick: A cough, snotty nose, runny eyes, diarrhea, depression or fever are justification to move a horse to an isolated area. Caretakers working with the horse (or its food, water, tack or bedding) should be instructed to take precautions. Protective clothing, gloves, antiseptic foot baths, and a dedicated caregiver are reasonable. Alternately, suspected sick horses can be isolated and cared for last, with attention to a "one way" or "shower out" approach. Try to maintain a "barrier" of 30-40 ft. of open space on all sides of the isolation area, and make sure that the area is clearly marked so that visitors and personnel know to avoid handling any sick animals. Again, healthy resident animals of all species should be kept away from isolation areas, as they may serve as vectors for transmission of disease.

Stalls of isolated or sick horses should be mucked out last.

Preferably, this is done with separate, dedicated equipment (i.e. separate tools for healthy and sick horses) or tools that are properly disinfected prior to reuse. Manure, bedding and spent feed collected from the stall of a sick animal, or one who has aborted, should not be spread on fields. This material should be composted away from all animals or disposed of in a manner consistent with local ordinances.

Provide running water, liquid hand soap, disposable paper towels and proper trash receptacles in every barn. If running water isn't available, provide liquid gel or paper hand sanitizers (minimum 62% ethyl alcohol). Post signs to warn patrons of sick or isolated animals, and to remind everyone that frequent hand washing and proper hygiene are imperative. Employees and barn personnel should wash their hands at the beginning and end of their shift at a minimum. In the midst of a disease outbreak, they should thoroughly wash their hands after working with a sick animal, even if they are wearing protective clothing and gloves.

Plan traffic patterns for barn personnel and visitors.

Attempt to create a logical pattern of traffic flow to move farriers, veterinarians, and other personnel to and from pastures and barns. At risk horses, such as pregnant mares, neonates, and geriatric horses should be encountered first. Work toward horses who are less susceptible or who have had greater exposure to pathogens, such as trail, lesson and show horses, and horses suspected or confirmed ill.

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NORTHWEST EQUINE VETERINARY ASSOCIATES, INC. P.S.

EQUINE NEWS

Our 2007 News

We are pleased to introduce you to our new Associate.



Photo: Dr. Chantal Rothschild with a piroplasmosis infected pony.

She speaks a little funny and has an accent that most people cannot place...Uhhmm?! Who is this new gal? This would be our newest doctor:

Chantal M. Rothschild!

She was born and raised in the city of Rio de Janeiro Brazil but all her family is European (English and German)... She grew up speaking English (the British kind) and of course Portuguese the native Brazilian language (that's right! Brazil is the only South American country that does not speak Spanish, although she can speak that too!).

Dr. Rothschild did most of her veterinary studies in Brazil but also in Germany (Hannover and Bochum), England (New Market) and here in the US, always focusing in equine medicine and reproduction. She grew up with horses and was very involved in horse jumping and 100 mile endurance training and riding. When she first came to the US after receiving her DVM degree she thought it would be for only one quick year for an internship program at a large equine private practice in Texas. She ended up staying there for nearly 2 years doing mostly general medicine and reproductive work. Because of her great interest in colics and neonatology she then decided to follow her training with a residency program in Equine Internal Medicine at Washington State University in Pullman, WA. At the University despite her hectic schedule and long hours she found time to meet her husband who was majoring in mathematics at the time. At WSU she completed the 3 year residency program focusing mostly on intensive care of neonates (foals), colics, diarrheas, neurologic diseases, respiratory diseases and sick horses in general becoming Board Certified by the American College of Veterinary Internal Medicine. After the residency she continued at WSU engaging in a Master of Science program studying Equine Piroplasmosis (you haven't

heard of this disease? Fortunately it is uncommon in our area, but it greatly impacts those exporting and importing horses. Dr. Rothschild can give you additional information if you would like to know more...) and vaccine development using molecular biology and genomic technologies.

Dr. Rothschild and her husband moved to the West side and she has recently joined Northwest Equine Veterinary Associates to provide us with her specialty internal medicine services!

She has now been in the US for over 8 years and there are no signs of returning to Brazil! But, that is OK as she goes home whenever possible, speaks Portuguese and cooks Brazilian food as often as she can!

If you have a horse suffering from a respiratory condition, colic or diarrheas (especially those that come and go), eye problems, neurologic problems (signs such as stumbling, incoordination, head tilt, or suspect Wobblers, EPM, West Nile, Herpes virus, etc...), a mare with late term pregnancy problems, a neonate or foal that is not doing well, among other problems you may request a consultation with Dr. Rothschild by calling the office and scheduling an appointment. Dr. Rothschild is also in close contact via online specialty networks with various other specialists at universities and referral centers to provide the best quality of consultation and care for even rare or unusual cases that sometimes emerge.

Dr. Rothschild is looking forward to providing your horse with the highest quality of care and we are very pleased to welcome her to our practice!

Let's talk about the Equine Herpesvirus scare...

By Chantal M. Rothschild, DVM, ACVIM

In the last few years there have been an increased number of outbreaks of the neurologic form of equine herpesvirus (equine rhinopneumonitis or "rhino") across the United States. In the last couple of years some of the outbreaks on the East coast have received much attention due to presentation of severe clinical signs with an increased number of affected nearby horses (119 out of 135 in one equestrian facility) and resulting deaths. Studies are being conducted to better understand the genetics (DNA) of the different EHV-1 strains (the neuropathogenic is the one involved in many neurologic cases). After those devastating outbreaks the equine community has been alarmed whenever a horse presents signs of or is diagnosed with the neurologic form of equine herpesvirus. In July of this year during a horse show in Oregon a few horses presented neurologic clinical signs and one of these tested positive for the neuropathogenic EHV-1. Some Washington resident horses presented similar neurologic signs after returning from the show but none was positive to the virus. Conversely, horses with no neurologic signs have randomly tested positive to the neuropathogenic strain of EHV-1 in our State, making even more confusing the interpretation and diagnostics involved in this disease. This has understandably resulted in many concerned owners and veterinarians in our region.

We, at Northwest Equine Veterinary Associates would like to assist horse owners and fellow professionals to the best of our ability to be well informed about equine herpesvirus infections and understand the guidelines for its prevention for in case of an outbreak. We do not recommend panicking whenever a horse is diagnosed with neurologic or respiratory disease, however understanding the disease and practicing good biosecurity measures at the facility where your horse (s) is housed is important and can help protect many horses in case an outbreak occurs.

What causes equine herpesvirus infections?

Equine herpesvirus type-1 causes late-term abortions, respiratory disease, neurologic disease, death of newborn foals and a more recently described fatal fulminating infection of the lungs in adult horses that are usually found dead. There are other equine herpesviruses such as the type-4 and type-3 typically involved in respiratory disease and coital exanthema (a venereal disease), respectively. EHV-1 is the primary virus involved in the neurologic form of the disease and differences in the strains may be responsible for the variation in clinical signs presented.

Where does EHV-1 come from?

Nearly all young horses are exposed to EHV-1 as it is well spread in our horse population. Typically they have a transient bout of respiratory disease with mild or moderate severity that many times resolves on its own. Once a horse is infected with EHV-1 it will carry the virus for life and disease may re-emerge if this horse is stressed (like after long transport, shows, changes in pasture herd mates, excessive heat, etc...) or immune suppressed due to some other disease. Occasionally, these stressed horses do not show any clinical signs but shed large quantities of the virus so that other nearby horses end up contracting the disease.

How is EHV-1 spread to horses?

By direct nose to nose contact between uninfected and infected horses, through coughing and sneezing, by contact with fetal tissues, placenta and uterine fluids from mares that have aborted and by fomites (shared feed and water, buckets, blankets, tack, equipment, personnel hands, boots, and clothes as well as anything that can come into contact with an infected horse). People petting horse after horse at events or barns may be important vehicles for transmission of the virus.

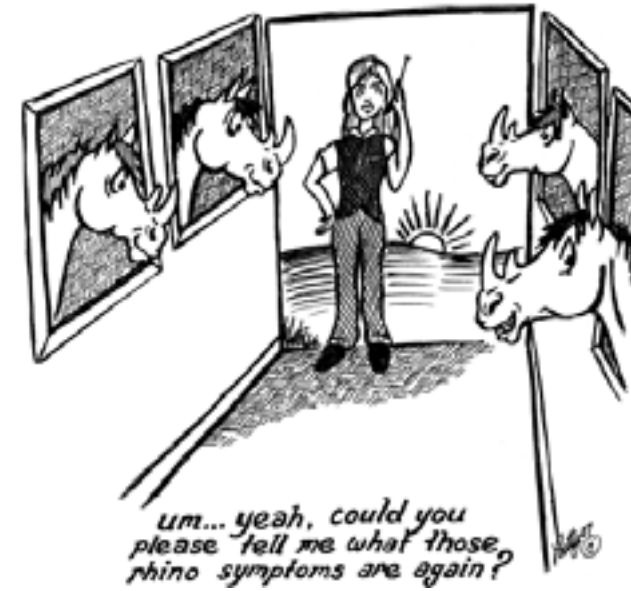
What are the clinical signs typically observed with EHV-1 infection?

EHV-1 commonly causes upper respiratory infection in young horses resulting in fever, depression, a watery or snotty nose (may start watery and end up dry and crusty around the nostrils), loss of appetite, swollen legs/abdomen, and cough. Most horses recover uneventfully. Pregnant mares that become infected often abort their foals late in gestation; deliver stillborn or weak foals that die within days of birth. Neurological symptoms are not common and usually include fever and leg/abdomen swelling of a few days followed by incoordination most commonly in the rear end that can progress to paralysis with inability to stand, difficulty to urinate or pass manure, urine dribbling, and reduced tail and anus tone. The neurologic form may or may not be accompanied by signs of respiratory disease during the initial febrile phase (6-12 days before neurologic signs appear). The neurological deficits appear suddenly and reach their peak intensity within 48 hours. Horses 5 years or older seem to be more likely to develop the neurologic form and younger horses to develop the respiratory form of the disease.

What is the treatment and prognosis for the neurological form of EHV-1?

EHV-1 is a virus and therefore does not respond to antibiotics. The treatment relies on supportive care until clinical signs are resolved. This is tailored to the individual patient as the signs may vary and different complications may arise but usually includes non-steroidal ("Bute" and Banamine) and steroidal (dexamethasone) anti-inflammatory therapy, fluids to maintain hydration, assisting horses to eat, pass feces and urinate, assisting to stand or remain standing. An anti-viral drug named Acyclovir may provide some benefit as to decreasing the severity of signs if used during the initial stages of the disease. A sling may be necessary if the horse can hold its weight once it is up. In most cases, horses that remain standing have a good prognosis, although recovery may take weeks or months and few subtle neurologic deficits may remain. Horses that go down and are unable to stand for a greater period than 24h have a poor prognosis.

Let's talk about the Equine Herpesvirus scare... (continued)



Do other diseases cause clinical signs similar to those caused by EHV-1?

Yes. There are several organisms that can cause similar respiratory signs, abortions and neurologic disease. So, if your horse has any signs that might resemble EHV-1, do not panic, but contact your veterinarian right away for further evaluation

Are some horses at more of a risk of contracting the disease?

Young, old, weak, immune challenged and stressed horses are more likely to get sick. Horses that are exposed to a high challenge (close to a severely infected horse with EHV-1 or that is shedding large quantities of the virus) even if healthy are also at high risk. Horses frequently participating in shows are at an increased risk since traveling is an important stress factor which when combined to housing with a high concentration of horses can result in increase incidence of EHV-1 disease.

How long does it typically take for a horse to show clinical signs of the disease after he/she has been exposed to the disease?

Once a horse is infected with EHV-1 it typically takes 7-10 days for the first clinical signs to appear, although in some cases it has taken nearly 4 weeks. After resolution of clinical signs a horse can shed EHV-1 in large amounts for up to 1-2 weeks.

How is EHV-1 infection diagnosed in suspect horses?

There are three main tests currently used and these must be collected by your veterinarian:

- Blood sample (red top tube) for acute EHV-1 serologic antibody titers. A second sample should be obtained 10-14 days later for convalescent titer measurement.
- Blood sample (purple top) for whole blood EHV-1 PCR.
- Nasopharyngeal swab for EHV-1 PCR.

What about pregnant mares? Are these vaccines safe?

Pregnant mares should routinely receive the killed vaccine at 5, 7 and 9 months of gestation. Pfizer Animal Health advertises that the modified live Rhinommune® is safe for pregnant mares of 2 or more months of gestation, however many veterinarians avoid its use due to perceived risks of abortion. As with all others vaccines labeled safe for use in pregnant mares pregnancy losses related or not to a vaccine reaction have been sporadically reported by owners and potential risks should be acknowledged.

Is there a vaccine available to help prevent the spread of EHV-1?

Yes. Vaccination can be effective in modulating the severity of EHV-1 respiratory disease in young horses and in limiting the occurrence and severity of abortion outbreaks in broodmares. However, no current vaccine has been demonstrated to protect against the neurological manifestation of EHV-1 infection. We recommend using the modified live virus preparation (Rhinommune®, Pfizer Animal Health) for horses 3 months or older that do not travel or are exposed to new horses at least twice a year and every 2-4 months for those traveling to shows or in barns with great circulation of horses. For best results it should be boosted 10-14 days prior to potential exposure.

What is ZYLEXIS™ and why are some people using it for EHV-1?

ZYLEXIS™ (Pfizer Animal Health) is an immunomodulator that may aid in the reduction of upper respiratory disease associated with EHV-1 and EHV-4. Evaluation of its protective effect against the neurological form of EHV-1 infection has not been performed. Although, it is unknown if ZYLEXIS™ helps against the neurological form of EHV-1 we have been offering it to our clients as an adjunctive to our vaccination protocol to potentially aid at inducing an improved immune response against EHV-1, especially for those horses frequently traveling, participating in shows or in barns with large circulation of horses. ZYLEXIS™ should not be given together with Rhinommune® vaccine

What are other measures that can be implemented to avoid my horse of contracting EHV-1 respiratory and neurologic disease?

Keep your horse away from other horses, especially non-vaccinated horses and those that recently arrived from shows or other facilities. Selecting the environments and the events your horse participates in to avoid excessive traveling and exposure to other horses may be helpful too. When at a show avoid allowing your horse to have nose to nose contact with other unknown horses and do not share grooming, tack or feeding/watering materials. Also avoid unknown visitors petting your horse. If you have been in contact with other horses, wash and disinfect your hands prior to handling your horse. The implementation of strict biosecurity measures where your horse is stabled (especially if a large circulation of horses occurs) and when a suspect case is present in your horse's environment can be fundamental to protect your horse and prevent an outbreak.

Infectious Disease: Strategies for risk reduction on your own farm... *(continued)*

Pest control is paramount year-round. In addition to serving as mechanical vectors of disease, mouse and rat droppings contain enormous amounts of bacteria. A single mouse can ingest Salmonella and be a replication vessel vastly more efficient than any Petri dish. *Sarcocystis neurona*, the bug responsible for the dreaded Equine Protozoal Myelitis (EPM), infects barn environments and feed supplies through the droppings of opossums. Flies also serve as inconspicuous carriers of bacteria, and have been incriminated in some viral infections like Equine Sarcoidosis. Female mosquitoes of several different species are essential in the transmission of viruses like West Nile and Eastern and Western Encephalitis. Other pests such as birds and bats, can aid in propagation and/or transmission of these and other deadly diseases like rabies! Consider: Screening and fly/rodent traps; repellents and fly sheets; eliminating standing water and loose feed; feed-through IGR's (insect growth regulators), fly predators, and religious manure removal and composting.

Clean and disinfect stalls, water buckets, grooming tools, pitchforks and other items routinely. Don't forget to clean feed and tack rooms, aisle ways and obscure areas. Increase the frequency of cleaning during outbreaks and most importantly: communicate, educate, and enforce your barn's biosecurity measures,



Other helpful online bibliography on the topic that you may want to read:

EHV-1 outbreak information from the Florida Department of Agriculture and consumer services:

<http://www.doacs.state.fl.us/ai/ehv1/index.shtml>

AAEP horse health article on EHV-1:

<http://www.xcodesign.com/aaep/displayArticles.cfm?ID=222>

USDA—APHIS equine biosecurity folder:

http://www.aphis.usda.gov/lpa/pubs/HorseBioSecurity_final.pdf

AAEP horse health article on biosecurity:

http://www.aaep.org/health_articles_view.php?id=310

Share your photos and stories...

We are in the process of building a website for Northwest Equine! We are very excited and are gathering photos for some of the pages. If you have good quality, or even professionally taken photos with your horse that you would like to be included, please submit those electronically (via email) to: nw-equine@msn.com with a brief description of horse, location/event and your name (if you would like that to be included). Remember that although it will be a copyrighted web page, it has public access. Of course, we will have professionals involved in the selection of the photos as not all can be included, but we will do our best to include as many as possible. Also any comments, testimonials or website links that you would like us to add may be submitted for selection.

We are looking for representation of all of our patients, from donkeys, minis, pasture ornaments to high level performance horses! Don't miss the opportunity to participate, we appreciate it!

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24-Hour Emergency Care

Northwest Equine provides 24-hour emergency care, 7 days a week. Our practice is fully ambulatory and each vehicle is stocked with state of the art medical equipment. Whether scheduling a routine appointment through our office, or if you find yourself in need of emergency service, our doctors and staff are available to help at any time.

Business Office Hours

Monday through Friday
8:30 a.m. to 5:30 p.m.

Our business office is closed Saturday and Sunday.

Check our after hours message at (425) 432-1914 for the phone number of the doctor on call.

*All artwork created by our very own
Patty Capps - Veterinary Assistant*

Driving Directions

- ◇ I-90 to Highway 18 Westbound
- ◇ Issaquah/Hobart Exit
- ◇ Left (south) off of exit onto Issaquah Hobart Road, or 276th
- ◇ Approximately 1.5 miles, left hand side
- ◇ Just past Hobart Store and Union 76 station
- ◇ Office located on Northwest corner of 208th and Issaquah Hobart Road, or 276th
- ◇ Just across from the Hobart Fire Station
-
- ◇ Highway 169 to Highway 18 Eastbound
- ◇ Issaquah/Hobart Exit
- ◇ Right (north) off of exit onto Issaquah Hobart Road, or 276th
- ◇ Approximately 1.5 miles, left hand side
- ◇ Just past Hobart Store and Union 76 station
- ◇ Office located on Northwest corner of 208th and Issaquah Hobart Road, or 276th
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