



West Nile Virus

Nathan Voris, DVM

In September of 1999, veterinarians and horse owners in the Northeastern United States were introduced to yet another infectious disease causing neurological problems in horses. West Nile Virus (WNV) is the world's most widely distributed flavivirus, endemic to Africa, the Middle East, much of Asia, and parts of Southern Europe. Unfortunately, the disease does not limit itself to the equine population as birds and a host of other mammals, including humans, are at risk as well. WNV was first isolated in a febrile Ugandan woman in 1937, and until 1999, had never been reported in the Western Hemisphere.

West Nile Virus, like Western Equine Encephalomyelitis (WEE), Eastern Equine Encephalomyelitis (EEE) and Venezuelan Equine Encephalomyelitis (VEE), is a mosquito-borne disease. WNV utilizes birds (especially crows, blue jays, and raptors such as hawks) as amplifying hosts off which mosquitoes feed to become vectors in spreading the disease. Horses, humans and other mammals are terminal, or dead-end hosts, meaning once infected, they cannot spread WNV to other animals. The bird/mosquito association is widely believed to be the only mode of transmission, as other animals do not become viremic enough to spread the disease. Since 1999, the disease has followed the migratory pattern of infected birds south and west. In October 2001, the first infected crow was found in St. Louis, Missouri. West Nile Virus has now migrated throughout the United States.

Symptoms of WNV usually appear during the months of August through October. Signs of disease range from subtle illness to acute recumbency and death. Most horses with WNV appear listless and have varying degrees of incoordination and weakness. Other signs include low-grade fever, lack of awareness, stumbling to their knees, and hypersensitivity to touch and sound. Clinical signs appear quickly following infection. While a majority of cases respond to treatment, severely affected animals progress to recumbency, seizures, paralysis and death over a period of 2-9 days. The mortality rate for horses infected with WNV is 39%.

As with other viral disease, there is no specific treatment for horses infected with WNV. Treatment strategies revolve around general nursing care (IV fluids, antibiotics, nutritional support), anti-inflammatories (steroids and NSAIDS) and prevention of injury secondary to ataxia and recumbency. Horses that respond to treatment recover over a period of 5-15 days.

Given the vital role of the mosquito in transmission of the disease, limiting exposure and reducing the mosquito population in and around horse facilities will reduce the risk of WNV infection. Two of the most important management considerations include elimination of standing water (drill holes in containers which accumulate water, clean water troughs monthly, keep gutters free of debris, dispose of old tires) and avoidance of turnout between the hours of dusk and dawn when mosquitoes are most active. Insect repellents can be helpful, but as everyone recalls from last summer's horse fly population, they are very limited in effectiveness.

Vaccination of horses to protect against West Nile Virus has been shown to be very effective. The vaccine requires two initial injections 3-6 weeks apart. The current recommendation for annual boosters is every 4 months during mosquito season. As with all insect-borne disease vaccinations, the best time to vaccinate is in the spring, prior to heavy insect activity.

Illness, in whatever form, can cause significant loss of performance due to loss of appetite, loss of condition, time taken out of training to recover, or even loss of the animal. Vaccination is an effective way to help prevent serious illness. Because different regions of the country have different diseases of concern, consult your veterinarian concerning the immunization needs of your horse. If you have questions regarding the health and well-being of your horse, do not hesitate to call our clinic. A veterinarian will be glad to assist you with all of your equine medicine, lameness, surgery or reproductive needs.