

Late summer is when the West Nile virus (WNV) poses the greatest threat to the health of horses in the United States. It's important for veterinarians to educate horse owners concerning the prevention, detection and accurate diagnose of WNV. Yearly, TVMDL tests between 500 and 1,000 horses for West Nile virus. In 2016, TVMDL confirmed over 130 cases of WNV, while in 2017 we saw only 17 cases with the last case detected in early December. TVMDL has also confirmed cases as early as March.

The death rate among U.S. horses exhibiting clinical signs of WNV ranges from 30 to 40%. Of horses that recover from the disease, up to 40% may exhibit residual neurological signs for six months or more.

TVMDL recommends that veterinarians:

- Continue to educate horse owners about the WNV, especially on how it is transmitted.
- Alert them to the clinical signs of West Nile disease.
- Select the best available test for the virus, because an accurate diagnosis requires more than an interpretation of the clinical signs.
- Advise owners to vaccinate their horses against the West Nile virus.

Transmission

West Nile virus is a worldwide pathogen that is commonly found in Africa, Asia and the Middle East. First detected in the U.S. in 1999, the virus is now considered endemic to North America. Nature maintains the virus through a transmission cycle between mosquitoes and wild birds. The virus uses the birds as reservoir hosts and the mosquitoes as the vectors to move from host to host. Periodically, mosquitoes spread the virus to horses and humans. Thus, mosquito control is essential around barns, stables and homes to reduce the risk of exposure. There is no evidence of horse-to-horse or horse-to-human transmission.

Clinical signs

All equids appear to be susceptible to WNV, which can affect any age group. The incubation period averages between three and 15 days in horses. In the U.S., clinical signs develop in 10 to 39% of infected horses. Clinical signs usually include neurological signs such as depression, ataxia (including stumbling, staggering or wobbly gait), a weakness of the legs, lameness, partial paralysis, muscle twitching, recumbency, or the inability to stand. The horse may also exhibit an altered mental state, a reduced appetite, grinding of teeth, blindness or a fever. Diagnosis of West Nile disease cannot be based solely on clinical signs. Other diseases that may cause similar signs in horses include rabies, equine protozoal myeloencephalitis, equine herpes virus-1, botulism, bacterial meningitis, wobbler syndrome, and Eastern, Western and Venezuelan encephalomyelitis.

Diagnostic tests

Several serological tests may be used to diagnose West Nile virus, the most reliable test for clinically ill horses is the IgM antibody-capture ELISA which can confirm recent exposure to the virus. The IgM antibody rises quickly after exposure but is relatively short lived. A positive result indicates infection likely occurred within the previous six weeks. Data indicates that little IgM is detected as a result of recent West Nile vaccination.

Vaccination

The primary method of reducing the risk of infection in horses remains vaccination. It involves an initial administration of two doses at an interval of three to four weeks, followed by an annual or semi-annual booster. It is unknown whether a horse that recovers from a WNV infection can become re-infected. The American Association of Equine Practitioners suggests that recovered horses should be vaccinated one year after the acute illness and thereafter included in a routine vaccination program. Horse owners should consult their veterinarians to create a vaccination protocol for this and other equine diseases.

For more information on TVMDL's diagnostic testing services, visit tvmdl.tamu.edu.