

West Nile Virus

*Diagnostic guidance
for veterinarians*



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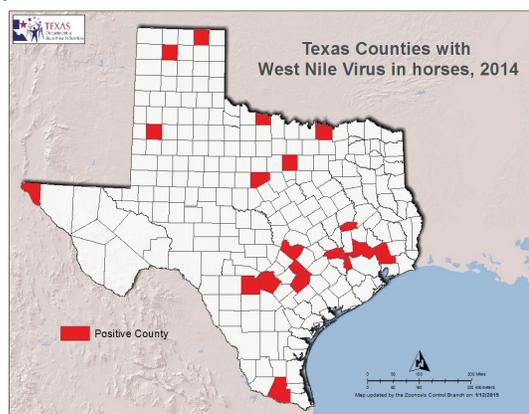


Summer is when the West Nile virus poses the greatest threat to the health of horses in the United States. It's important for veterinarians to work with horse owners this time of year to prevent, detect and accurately diagnose a potential infection. Yearly, the Texas A&M Veterinary Medical Diagnostic Laboratory (TVMDL) tests between 500 and 1,000 horses for West Nile virus (WNV).

The U.S. Department of Agriculture (USDA) and the Texas Department of State Health Services (TDSHS) tracks WNV cases annually.

YEAR	TEXAS	UNITED STATES
2014	25	134
2013	69	328
2012	120	627

Recent rains across Texas, Oklahoma and neighboring states provide a fertile ground for mosquitoes to reproduce, increasing the opportunity for animals to contract WNV.



TDSHS 2014 positive WNV cases in Texas

The death rate among U.S. horses experiencing clinical signs ranges from 30- to 40-percent for West Nile disease. Of horses that recover from the disease, up to 40-percent may exhibit neurological signs for six months or more after the initial diagnosis.

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
- Utilize diagnostic testing as the best means to quickly determine the presence of WNV on a neurologic case.
- 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-percent of infected horses.

- lameness or inability to stand
- neurological signs such as depression
- ataxia (stumbling, staggering or wobbly gait)
- paresis
- muscle twitching, recumbences

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 Herpesvirus-1, botulism, bacterial meningitis, wobbler syndrome, and Eastern, Western or Venezuelan Encephalomyelitis.

Diagnostic tests

Though 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. The IgM antibody capture ELISA 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 three months. Data indicates that the IgM antibody capture ELISA test is not significantly affected by a recent WNV 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 six 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 be included in a routine vaccination program. Horse owners should consult their veterinarians to create a vaccination protocol.

For more information on TVMDL's diagnostic testing services, visit tvmdl.tamu.edu. Both full service laboratories, in Amarillo and College Station, provide testing for West Nile virus. College Station also can test for Eastern, Western and Venezuelan Encephalomyelitis.



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