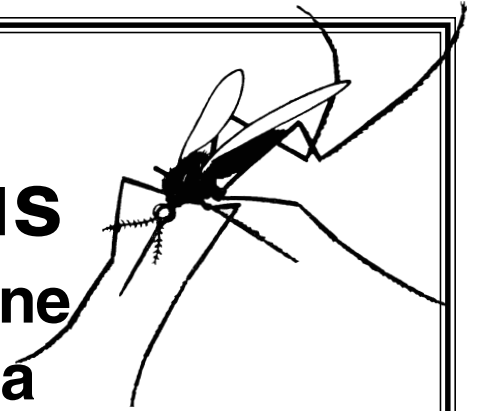


Questions About West Nile Virus A New Mosquito-Borne Disease in Louisiana



What is it?

West Nile Virus (WNV) is a virus disease of humans and animals that is usually transmitted by mosquitoes. Mosquitoes obtain the virus when they bite infected birds, which is where the virus is maintained in nature. WNV is closely related to St. Louis encephalitis, but it normally causes a milder disease in people.

Historical Background

Worldwide: WNV was first identified in 1937 in a woman in Africa. The earliest epidemic of WNV was reported from Israel in 1950. Since then, additional epidemics have occurred in Europe, Africa, the Middle East and North America.

United States: WNV was not known to occur in North America before 1999. It was apparently introduced into New York City during the summer of that year. By the end of 1999, there had been 25 equine (horse) cases and 62 human cases, of which seven people died. The disease has spread rather rapidly since the initial epidemic in the New York City area. In 2000, there were another 21 human cases from three northeastern states and 60 more equine cases from seven northeastern states. WNV-positive birds were reported in 13 states, the southernmost being North Carolina. In 2001, WNV spread throughout most of the eastern half of the United States. WNV-positive birds were reported from 28 states. There were 738 equine cases in 20 states and 66 human cases in 10 states. Southeastern states that reported human WNV cases in were Florida, Georgia, Alabama and Louisiana.

In 2002, WNV spread westward over most of the continental United States. By the end of the year, evidence of WNV in birds, horses or mosquitoes had been reported in 44 states, while human cases had been reported in 39 states. The total human case

count was 4,156, of which 284 of those cases resulted in death. In 2003, there were 9,862 human cases in 46 states, with Colorado having the highest number of cases. In 2004, there were 2,539 human cases in 42 states, with California having the highest number of cases. These statistics suggest WNV is firmly established in the continental United States.

Louisiana: WNV spread from New York to Louisiana much faster than originally predicted. The first sign of the disease was a WNV-positive blue jay reported in July of 2001. Afterward, there were nine equine cases from four southern parishes and one human case in Jefferson Parish (New Orleans area). In 2002, 329 human cases were reported from at least 23 parishes, and 25 of those cases resulted in death. Although human cases were reported from all areas of the state, the greatest concentration of cases occurred in the southeastern quarter. The human case count was 124 in 2003 and 109 in 2004. Although human cases of WNV have declined since the 2002 epidemic, WNV is expected to remain a threat to the inhabitants of Louisiana.

How did WNV spread so fast?

The rapid spread of WNV can probably be attributed to infected migratory birds.

Which animals can be infected with WNV?

Birds are the most commonly infected. Other animals include equines (horses, mules, donkeys), bats, alligators, chipmunks, skunks, squirrels and domestic rabbits. From a veterinary perspective, horses are the most at risk. WNV infections have occurred in most domestic animal species, but these cases are extremely rare.

The Vector – How is the disease transmitted?

WNV is transmitted to people and animals by infected mosquitoes. Although ticks have also been reported to transmit WNV, mosquitoes are by far the most important vector (carrier).

Which mosquitoes can transmit WNV and are they present in Louisiana?

More than 25 species of mosquitoes in the United States have been found infected with WNV to date. Mosquitoes of the genera *Culex* are thought to be the most important group and potentially the main vectors. Louisiana mosquitoes that have been found infected with WNV either in Louisiana or elsewhere are *Aedes albopictus*, *Culex restuans*, *Culex quinquefasciatus*, *Culex salinarius*, *Culiseta melanura*, *Psorophora ferox*, *Ochlerotatus triseriatus* and *Aedes vexans*. This indicates that mosquitoes in Louisiana can transmit WNV.

The normal disease cycle.

WNV is usually maintained in nature by birds and mosquitoes. Mosquito-to-bird transmission and bird-to-mosquito transmission both occur when mosquitoes take a blood meal from birds. Although many birds die from the disease, they probably serve as the natural reservoir for the virus. Humans and other animals become involved in the cycle when they are bitten by an infected mosquito. They are, however, thought to be dead-end hosts, meaning that they can not pass the virus on to other mosquitoes, as birds do.



The Reservoir-How are birds affected?

WNV has been isolated in more than 200 species of birds found dead in the United States. Certain bird species, such as crows, appear to be much more susceptible than others. Large die-offs of crows have occurred in some areas. Mortality is less frequent in other bird species, and these birds probably serve as carriers of the WNV. Most birds are thought to be infectious for only four to five days, but some migratory birds can travel several hundred miles in this short period.

Can people get WNV from birds?

There is no documented evidence that people can get WNV from handling live or dead birds infected with the virus. WNV is transmitted by infected mosquitoes, but precautions, such as wearing gloves, still should be exercised when handling dead birds.

The Disease – WNV in people.

Most people infected with WNV will not become ill or severely ill. Less than 1% of the people who are infected will develop serious illness. Healthy children and young adults are in the low-risk category, but people older than 50 are considered to be at a higher risk to develop a serious illness. Symptoms occur three to 15 days after the initial infection. Mild cases usually result in slight fever and headaches. More severe cases result in high fever, head and body aches, disorientation, tremors and possibly convulsions. Extreme cases can result in paralysis or death. Of those people who develop a serious illness, the mortality rate ranges from 3% to 15%. The mortality rate in Louisiana was approximately 6% in 2003 and 2004.

Is a human vaccine available?

No.

Can people get WNV from horses or other infected animals?

No. People may become infected when an infected mosquito bites them. There is no documented evidence of animal-to-man transmission of WNV.

Can people get WNV from other infected people?

People normally get WNV from infected mosquitoes, but there are some alternate ways in which the virus may occasionally be transmitted. In a very few cases, WNV has been spread through blood transfusions, organ transplants, breast feeding and even during pregnancy (mother to child). It should be emphasized, however, that these cases were very rare. The risk of transmission through medical procedure is very low.

Can people get WNV from eating



turkey or other animal meat that is infected with the virus?

There is no evidence that people can be infected by eating WNV infected meat. Proper handling and thorough cooking will eliminate any small, theoretical risk that might exist.

The Disease — WNV in Horses



Some horses that become infected do not show signs of illness. Clinical signs of illness in horses may include weakness, staggering, mild tremors and a sleepy appearance. The mortality rate appears to be approximately 30%. In reaching a diagnosis, a veterinarian must consider several diseases including other types of virus encephalitis, “moldy corn poisoning,” rabies and equine protozoal myeloencephalitis. The veterinarian can submit a blood sample for an encephalitis test.

Is a WNV vaccine available to protect horses?

Yes. Horses vaccinated for the first time must receive two injection dosages at a three- to four-week interval. The two dose series is essential to obtain an effective immune response. A booster shot should be given in the spring each year thereafter. Booster shots may be indicated at six-month intervals. Currently, WNV vaccine is available only through veterinarians.

Will other encephalitis vaccines such as Eastern Equine (EEE), Western Equine (WEE) and Venezuelan Equine (VEE) protect my horse from WNV?

No. Your horse must be vaccinated with a WNV vaccine. Combination vaccines containing WNV, EEE and WEE are now available.

What should I do if I suspect WNV symptoms in my horse?

Contact a local veterinarian to determine the exact cause of illness. WNV symptoms can mimic other types of equine illness. Some horses that become infected do not show signs of illness. Therefore, the safest course of action is to have your horse vaccinated.

Can a horse get WNV from another infected horse?

There is no documented evidence of animal-to-animal transmission. WNV is transmitted to horses by infected mosquitoes.

Can people get WNV from caring for or handling an infected horse?

There is no documented evidence of animal-to-people transmission. WNV is transmitted to people by infected mosquitoes.

How can people protect themselves from WNV?

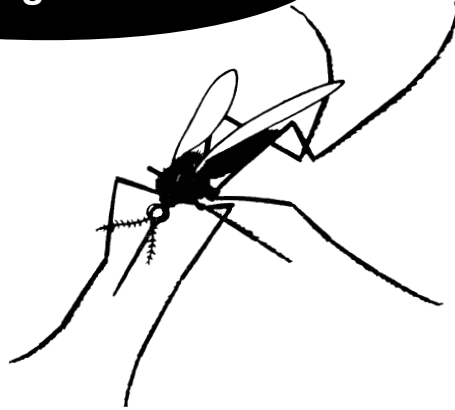
Since there is no approved vaccine, the best way to protect yourself from WNV is to protect yourself from mosquito bites.

1. Avoid outdoor activity during periods of heavy mosquito activity.
2. Use an effective repellent such as DEET to protect exposed skin areas when working or playing outdoors.
3. Eliminate standing pools of water and empty containers that hold water around the home. Mosquitoes breed in water.
4. Approved, general use insecticides can be applied around the perimeter of the house and the home to eliminate resting areas for mosquitoes.
5. Small, portable foggers are available to homeowners for a reasonable price. They can be used to kill live mosquitoes around the home, but they provide no residual control.

How can people protect their horses from WNV?

1. Have your horse vaccinated with a WNV vaccine as directed above.
2. Insecticides will give some protection to horses from mosquito bites, but this does not guarantee protection from WNV. Insecticides are not totally effective, and they must be applied regularly at short intervals. They do not provide total protection, because horses are constantly exposed to mosquito activity outdoors.

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