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G02-1464 West Nile Virus - Getting Prepared

Grasso M. Ebako

University of Nebraska - Lincoln

Sheila Scheideler

University of Nebraska--Lincoln, spurdum2@unl.edu

Wayne Kramer

Nebraska Department of Health and Human Services

Ron J. Johnson

University of Nebraska-Lincoln, ronj@clermson.edu

David R. Smith

University of Nebraska at Lincoln, dsmith8@unl.edu

See next page for additional authors

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Authors

Grasso M. Ebako, Sheila Scheideler, Wayne Kramer, Ron J. Johnson, David R. Smith, Del Wilmot, and David J. Steffen



West Nile Virus - Getting Prepared

This NebGuide provides background information and answers to commonly asked questions about this disease.

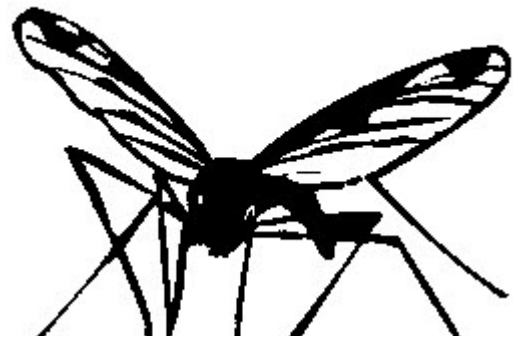
Grasso M. Ebako, Extension and Diagnostic Poultry Veterinarian
Sheila Scheideler, Extension Poultry Specialist
Wayne Kramer, Epidemiologist, Nebraska Department of Health and Human Services
Ron Johnson, Extension Wildlife Specialist
David Smith, Extension Dairy/Beef Veterinarian
Del Wilmot, Deputy State Veterinarian
David J. Steffen, Director, Nebraska Veterinary Diagnostic Center

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West Nile Virus is spread by mosquitoes and affects birds (mostly Corvidae such as crows, blue jays and magpies), horses, and people. As West Nile Virus appears in neighboring states, the threat of diagnosing a case in Nebraska becomes more likely.

History

West Nile Virus is a viral disease previously seen only



in Southern Europe, Asia, and Africa. Outbreaks have occurred in Egypt, Israel, South Africa, and some parts of Australia. It is a mosquito-borne virus that can cause encephalitis (inflammation of the brain), or meningitis (inflammation of the lining of the brain and spinal cord).

West Nile Virus was first found in the United States in New York City in the fall of 1999. Since then, it has rapidly spread throughout more than 27 states. It has not been diagnosed in Nebraska but the presence of the virus in neighboring states places us at high risk. West Nile Virus is expected to continue to be a threat in the years to come potentially causing illness and death in humans, wildlife, and domestic animals.

Etiology

West Nile Virus is a member of the Japanese Encephalitis Virus Complex, which includes St. Louis Encephalitis, Kunjin Virus, and Murray Valley Encephalitis Virus. All belong to the family Flaviviridae, genus *Flavivirus*. They are single-stranded RNA viruses that are transmitted by mosquitoes.

Although *Culex* mosquitoes are the primary vectors of West Nile Virus, worldwide, West Nile Virus has been isolated from other species of mosquitoes. Birds are the primary reservoir and amplification hosts. West Nile Virus has survived over-winter in *Culex* mosquitoes.

How is West Nile Virus Transmitted?

The principal transmitter of West Nile Virus is an infected mosquito. Mosquitoes first become exposed to the virus when they feed on birds that are infected with the virus. Many birds can be infected and not exhibit clinical signs, but crows and blue jays are most likely to die from the infection. The reason why these two species die of West Nile Virus infection is unknown.

Once the mosquito is infected, it may transmit the virus to people or other animals by biting. West Nile Virus is not spread by person-to-person contact.

A bite from an infected mosquito will not always make you sick; most people infected with West Nile Virus either have no symptoms or experience mild illness. The incubation period is three to 15 days, and if sickness does occur, symptoms would be noticed within this time period.

Symptoms in Humans

West Nile Virus is important because it may affect people. Mild infections are common and symptoms include skin rashes, headaches, body aches, fever, and swollen lymph nodes. More severe infections may include high fever, headaches, disorientation, neck stiffness, tremors, occasional convulsions, stupor, coma, and death. Influenza-like illness may lead to aseptic meningitis, encephalitis, and death, especially in immuno-compromised and elderly people.

Does West Nile Virus Pose a Threat to Game Bird Hunters?

There is no evidence at this time that West Nile Virus can be transmitted from mammals or birds to humans through direct contact with blood. However, every hunter is urged to take precautions and to wear rubber gloves when field dressing game birds. Proper cooking (well-done) kills West Nile Virus and there is no danger associated with eating properly cooked game that might have been infected. Game that act unusual with no apparent illness or injury should be handled with caution. Hunters should

understand that they will play a crucial role in helping the state agencies in monitoring West Nile Virus by reporting and especially submitting dead crows or blue jays for testing.

Do All Mosquitoes Carry the West Nile Virus?

This is an important question, and the answer is NO. Although mosquitoes are a nuisance pest, they occasionally transmit disease. The principal transmitters of West Nile Virus are Culex mosquitoes. While most cannot transmit West Nile Virus, several mosquitoes common to Nebraska could be carriers of the virus. It should be noted that only female mosquitoes bite to get a blood meal.

When Are Mosquitoes Most Active?

Many mosquitoes are most active two to three hours before and after dusk, and at dawn when the air is calm. Although some species can feed at anytime during the day, this is the time when female mosquitoes are most likely to bite for a blood meal. Most people have become infected in summer or in early fall when mosquitoes are more prevalent. During the winter months of 2000, health workers in New York City found over-wintering mosquitoes that contained evidence of West Nile Virus.

Are Crows and Blue Jays the Only Birds That Can Be Affected?

No. The reasons why crows and blue jays appear to be most susceptible are not completely understood. During the last three years, the states reporting West Nile Virus activity have found many different species of birds infected with the virus. Experimental inoculation of other birds (cranes, chickens, and turkeys) demonstrated limited viral replication, lesions, and clinical illness.

Are Some People More Susceptible to West Nile Virus Infection?

Exposure to a mosquito carrying the West Nile Virus makes anyone susceptible, but people at greatest risk are those more than 50 years old, and people who are immuno-compromised. During early outbreaks in New York City in 1999, people who died of West Nile Virus infection were 75 years of age or older. However, in 2001, two people in their forties died from West Nile Virus infection. There is no vaccine or specific treatment for West Nile Virus infection in humans. Antibiotics or antiviral medications cannot be used in the treatment of West Nile Virus, and all therapy is supportive.

Some Ways to Protect Yourself From West Nile Virus - Infected Mosquitoes

- Read and follow label directions when using DEET. Use repellents sparingly, and use the lowest concentration, especially on children. It is generally recommended that persons should use products that contain 30 percent or less DEET. Because West Nile Virus is transmitted by mosquitoes, the best way to avoid mosquitoes is to eliminate the sites where mosquitoes breed.
- Wear light-colored clothing, long-sleeved shirts and slacks when working outdoors, especially during months when mosquitoes are active or when working in infested areas.
- Use mosquito netting when sleeping outdoors.
- Citronella candles and mosquito coils can be used outdoors in mosquito populated areas.
- Avoid mosquito-infested areas or stay indoors when mosquitoes are most active.
- Avoid or use colognes and perfumes sparingly. These together with other gases such as carbon dioxide emitted during physical exertion, attract mosquitoes.
- Properly discard used tires and children's toys that may catch water and serve as a breeding ground. Turn over plastic wading pools and wheel barrows when not in use. Aerate ornamental pools or stock them with fish.

- Eliminate standing water on your property because mosquitoes will breed in any puddle that exists for more than four days.
- Dispose of tin cans, paint containers, flower pots, and other similar containers that have accumulated on your property.
- Trim shrubs and mow tall grass close to your home because they provide excellent nesting sites for adult mosquitoes.
- Empty bird baths and refill at least weekly to interrupt the mosquito breeding cycle.
- Clogged roof gutters can be a breeding site for mosquitoes, and they should be checked periodically for proper drainage.

Reporting Dead Crows, Magpies, Jays, and Raptors Only

As part of Nebraska's surveillance program for West Nile Virus, the Nebraska Department of Health and Human Services and the Nebraska Department of Agriculture in collaboration with the University of Nebraska Veterinary Diagnostic Center, are monitoring West Nile Virus infections in crows, magpies, jays, and raptors. Any dead bird that shows no sign of injury or reason for death should be treated as a suspect of West Nile Virus infection and should be submitted for testing. Bird deaths have preceded outbreaks of this disease in other cities where West Nile Virus infection has been diagnosed. **Call toll free (877) 220-1237 or (402) 471-0506 or (402) 450-7915 for shipping instructions if a dead bird is found.**

What To Do If You Find a Dead Crow, Blue Jay, Magpies, or Raptor

Take precautions by wearing rubber gloves when handling the dead bird. Place each bird in a plastic bag, tie shut the bag, and then place inside a second bag and tie shut. This system of double bagging prevents cross contamination of individual specimens and leaking during shipping. Contact your local health department or call the phone number listed above for instructions regarding the collection and shipment of animal carcasses for evaluation to:

**Nebraska Veterinary Diagnostic Center
Fair Street & East Campus Loop
P. O. Box 830907
Lincoln, NE 68583-0907**

Because of the number of birds that may be tested, not all dead birds, apart from those mentioned above, will be tested. Other bird species may be tested if deemed necessary. It is important to report a dead bird, and if the bird is determined to be suitable for testing, further instructions will be provided at that time. If testing is not required, wear gloves or use a shovel to handle carcass and double bag it in two plastic bags. Tie the bags firmly and dispose of them in the trash.

There is no evidence at this time that West Nile Virus is spread directly to humans from handling a dead bird. However, health professionals advise that bare-handed contact with dead animals should always be avoided. Because an infected bird can possibly show neurological symptoms, any bird that acts unusually strange (ataxic, uncoordinated) should arouse suspicion.

West Nile Virus Infection in Poultry, Pet Birds, and Pet Animals

Domestic poultry do not seem to be seriously affected by West Nile Virus, and whether or not pet birds exposed to it will develop clinical symptoms is unclear. Infections without clinical signs are possible. As a precaution, pet birds should be protected from mosquitoes, especially when outdoors. To date, there is

no evidence that pets exposed to dead birds have acquired West Nile Virus infection although there is serological evidence that a small number of dogs and cats have been exposed to the virus. Therefore, it is advisable to protect your pets from biting mosquitoes.

Web Sites That Provide Other Background Information

U.S. Department of Agriculture, APHIS <http://www.aphis.usda.gov/oa/wnv/index.html>

Center for Disease Control and Prevention <http://www.cdc.gov/ncidod/dybid/westnile/index.htm>

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