



Nebraska

Epidemiology

Nebraska Health and Human Services System P.O. Box 95007 Lincoln, NE 68509-5007

TO: Nebraska Healthcare Providers

FROM: Thomas J. Safranek, M.D., State Epidemiologist, 402-471-2937

DATE: June 5, 2007

RE: Human Surveillance for West Nile Virus, Nebraska, 2007
<http://www.hhs.state.ne.us/puh/epi/wnv/healthpros.htm>

The arrival of summer heralds the start of West Nile Virus (WNV) season in Nebraska. Our state continues to have one of the highest amounts of WNV activity in the nation, both in terms of actual numbers of cases and in rate per 100,000. This is probably due to a combination of factors, including:

- the presence and in some areas the abundance of *Culex tarsalis* mosquitoes
- water use patterns that facilitate *C. tarsalis* propagation
- ecologic conditions, including drought, that promote the amplification of WNV through the mosquito-bird life cycle

Public health authorities will again monitor the mosquito and bird populations to anticipate the likelihood and severity of WNV in the human population. In addition, state and local health department staff will monitor for this disease in the human population. Because WNV is a reportable disease, physicians, laboratories and hospitals should report human cases to a public health agency. Local health departments are prepared to document and report on such occurrences.

Public health will again offer WNV laboratory testing at public health expense for persons with suspected neuroinvasive (meningitis, encephalitis, acute flaccid paralysis, etc) WNV disease. Specimens from such patients should be submitted to the Nebraska Public Health Laboratory (NPHL) at UNMC using an official NPHL requisition (<http://www.hhs.state.ne.us/wnv/forms/WNVnphltestrequisition.doc>). Any person suspected of neuroinvasive disease will be routinely tested at public health expense, providing the following conditions are met:

- The person has signs and symptoms consistent with neuroinvasive disease*
- The specimen is accompanied by a completed NPHL requisition*
- The sample collection date is between June 1 and October 31*
- The submitted specimens include a CSF for WNV IgM antibody testing. Health care providers should routinely include a serum specimen for IgM/IgG WNV testing on patients suspected of neuroinvasive disease. Serum specimens will be tested for WNV IgM/IgG antibodies at public health expense provided there is an accompanying CSF*

specimen. Convalescent serum will routinely be tested in patients with suspected neuroinvasive WNV disease provided that CSF from the patient is or was previously submitted. (Serum specimens without a concurrent or prior CSF specimen require pre-authorization.)

Clinicians with patients who do not meet these criteria and who desire WNV testing at NPHL at public health expense must contact my office (402-471-2937) for authorization. The NPHL has established courier service for specimen transport in communities throughout the state. There is no shipping fee for specimens sent through this system. Contact information for these courier pick-up locations can be located on the web at: <http://www.hhs.state.ne.us/wnv/NPHL-Courier-Network-List.xls> Costs for specimen transport outside of this established courier system is the responsibility of the ordering provider.

Physicians who order and interpret WNV tests should follow these guidelines:

-Because serum IgM antibody can persist for over 16 months in some patients, when a patient tests positive for both IgM and IgG antibodies, a “convalescent” serum (collected at least 14 days following the initial specimen) should be obtained.

-Stable antibody titers on acute and convalescent specimens suggest infection in the distant past. Rising IgM and IgG titers between the acute and the convalescent specimens are consistent with acute infection.

-Serum which tests positive for IgM and negative for IgG is consistent with acute WNV infection. CSF which tests positive for IgM is consistent with acute meningitis/encephalitis. A positive IgG and a negative IgM antibody test is consistent with infection in the distant past, and is not consistent with acute infection.

-Because the serology test for WNV is non-specific and can cross-react with other Flavivirus infections, the Nebraska Public Health Laboratory will send positive WNV specimens obtained early in the season to the CDC for confirmatory testing. If WNV infection becomes more widespread, as was the case in 2003, the EIA serology run at NPHL would suffice to make the diagnosis. Confirmatory testing at CDC would not be necessary.

Please report any positive WNV tests results to your local health department.

(<http://www.hhs.state.ne.us/puh/epi/wnv/healthpros.htm>)

Contact NHHSS for additional assistance by phone 402-471-2937.

