Nebraska Epidemiology

Nebraska Health and Human Services System P.O. Box 95007 Lincoln, NE 68509-5007
Epidemiology Reports are available on the Nebraska HHS Website at: http://www.hhs.state.ne.us

TO: Nebraska Physicians and Health Care Providers

FROM: Thomas J. Safranek, M.D.
State Epidemiologist

Carol Allensworth
Douglas County Health Dept.

Tim Timmons, R.N.
Lincoln-Lancaster County Health Department

To contact a public health official regarding West Nile Virus infection or other reportable diseases:

Douglas County	**Lancaster County**	**all other counties:**
444-7214 (work hours)	441-8053 (work hours)	402-471-0565 (all hours)
444-7000 (after hours)	441-8000 (after hours, request Communicable Disease Program)	402-471-3601 (fax)
444-6267 (fax)		
441-6205 (fax)		

RE: West Nile Virus Surveillance/Reporting in Nebraska

In late July public health surveillance activities detected West Nile Virus (WNV) in a bird in Lancaster county. Since then, surveillance has identified additional birds and equines with WNV-positive laboratory tests. Because of the emergence of this disease in our state, and in light of the clinical WNV disease in humans being identified in other states, the Office of Epidemiology at Nebraska Health and Human Services, in collaboration with local health departments, is requesting that through October 31, 2002, all suspected cases of viral encephalitis (all ages) and viral meningitis (adults only) be reported immediately by telephone or facsimile. For patients with encephalitis, Guillain-Barré Syndrome, and adults with aseptic meningitis, public health staff can arrange for serologic testing for WNV free of charge through a public health laboratory. Public health staff will assist in arranging for appropriate laboratory specimens (cerebrospinal fluid and sera) to be submitted for testing for West Nile virus (WNV).

In addition to WNV encephalitis, physicians need to consider and test for other causes of encephalitis, including herpes simplex, varicella zoster, CMV, Epstein-Barr virus, Western equine encephalitis, and St. Louis encephalitis. Patients with aseptic meningitis should be evaluated for enterovirus. This is the leading cause of aseptic meningitis in children, and can be diagnosed with a PCR test performed at reference laboratories.

Serologic testing for patients who have milder symptoms (such as fever and headache only) or who have simply been bitten by mosquitoes is neither necessary nor recommended. The likelihood of WNV infection in these patients is extremely low. Since there is no specific antiviral therapy for WNV, mildly symptomatic patients do not require diagnostic testing. Mildly ill patients should be advised to seek medical attention if they develop more severe symptoms, such as confusion, lethargy, muscle weakness, severe headache, stiff neck or photophobia.

Physicians and other health care providers play a critical role in detection of outbreaks. Health care providers, laboratorians, and public health practitioners must continue to be vigilant for suspected human cases of WNV during the remainder of the mosquito season. While all persons with viral meningitis and encephalitis are reportable to public health under the state's reportable disease regulations, we are requesting immediate reporting by telephone of all suspected cases of viral encephalitis.

In particular, physicians should be on the alert for cases of viral encephalitis in older adults, or those associated with diffuse muscle weakness, a unique characteristic of the more severe WNV encephalitis cases during the past three years. When reporting a suspected case, we will assist you in determining whether testing is necessary. If testing is approved through the public health system, we will provide instructions to your office for the submission of specimens for laboratory testing. Proper collection and shipment of laboratory test specimens, and selection of the appropriate type of test are critical to public health surveillance for WNV.

Although we are focusing on encephalitis surveillance for detection of WNV, we are also asking physicians to promptly report hospitalized patients with aseptic meningitis (ages 17 years and older) and Guillain-Barré syndrome (all ages). Neurologic involvement (i.e., meningitis or encephalitis) is more common among older adults infected with WNV than it is in younger persons; therefore, testing for WNV should also be considered for adult patients hospitalized with aseptic meningitis. This is in contrast to children with aseptic meningitis, who are more likely to have enteroviral infection, as enteroviruses circulate widely during the late summer and early fall. Since severe muscle weakness and flaccid paralysis were notable findings during the 1999 and 2000 outbreaks, physicians should also consider WNV infection in the differential diagnosis of Guillain-Barré syndrome.

The most sensitive screening test for WNV is the IgM-capture enzyme linked immunosorbent assay (ELISA) for cerebrospinal fluid (CSF) and/or sera. Specimens positive for WNV will be confirmed by plaque reduction neutralization testing (PRNT). Confirmatory testing is necessary to rule out cross-reactivity with other flaviviruses. Data from recent outbreaks suggest that testing for WNV RNA by polymerase chain reaction (PCR) testing (by either standard reverse transcriptase or the real time quantitative method - TaqManTM) is not as sensitive as serologic assays. Only 18% of laboratory-confirmed New York City case patients (1999-2001) tested positive by PCR on CSF.

Commercial laboratories are beginning to offer tests for WNV (IgM capture ELISA or PCR). While public health authorities are prioritizing WNV testing for patients with encephalitis, Guillain-Barré syndrome, and adults with aseptic meningitis, physicians who wish to test patients with milder symptoms may order testing though commercial laboratories. Physicians must promptly report any patient testing positive for WNV at a commercial laboratory to a state or local public health agency so that confirmatory testing by PRNT can be arranged.

The best available WNV reference for clinicians was published in the August 6, 2002 issue of Annals of Internal Medicine. Physicians wishing a fax or e-mail copy of that article should place the request at 402-471-0137.

We appreciate our ongoing partnership with health care providers in Nebraska in reporting and investigating unusual disease manifestations or clusters. Successful detection and control of WNV disease in our state will require enhanced communication and cooperation between our medical and laboratory communities, and public health authorities.