

Connecticut Epidemiologist

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State of Connecticut, Department of Public Health
Joxel Garcia, M.D., M.B.A., Commissioner

Update on West Nile Virus and Encephalitis: Reporting and Laboratory Testing

In 1999, West Nile virus (WNV) was found in dead birds in coastal towns of Connecticut from Greenwich to Madison. To monitor for WNV infection in people, the Department of Public Health (DPH) encouraged submission of appropriate CSF and serologic specimens from persons hospitalized with encephalitis or meningitis. Hospitals in Fairfield and New Haven counties were actively contacted. Approximately 123 specimens from 78 persons were screened for WNV by the State laboratory and the Centers for Disease Control and Prevention (CDC). None were positive for WNV.

The recent reports of isolations of WNV from overwintering mosquitoes collected in Queens and a hawk that died in February in Westchester County heighten concern that WNV will reemerge and pose a threat to human health beginning with mosquito activity this spring. **In response to this threat, encephalitis was made a health care provider reportable disease beginning this year and we will be offering free laboratory testing for WNV and other arboviruses in persons hospitalized with encephalitis or meningoencephalitis.**

The primary objectives of surveillance for WNV encephalitis are: 1) to serve as a "back-up" to bird and mosquito surveillance systems for WNV; 2) to determine whether transmission of WNV is occurring outside the bird-mosquito cycle; 3) to assess the WNV threat to humans and guide the implementation of control measures; and 4) to provide information on the extent of the geographic distribution of WNV.

In New York in 1999, nearly two-thirds of all persons who were hospitalized with WNV infection had encephalitis. Thus, surveillance for encephalitis should be a sensitive and efficient way to conduct surveillance for WNV infection in humans. In addition, we have included meningoencephalitis as a condition for which free testing is available because the distinction from

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encephalitis is not always clear. Physicians should also be on the alert for cases of viral encephalitis associated with diffuse muscle weakness, which was commonly seen with WNV infection during the 1999 outbreak in New York.

Currently, there is minimal mosquito activity, no build-up of infection in the mosquito-bird maintenance cycle and, thus, little risk of infection with WNV in humans in Connecticut. However, as warm weather arrives and mosquito populations begin to build in May, health care providers should be alert to the possibility of WNV infection, especially in persons with heavy mosquito exposure around the home setting.

Criteria for reporting cases of suspected WNV encephalitis

Encephalitis is a reportable disease in Connecticut. Because of the current importance of WNV, we request that you report immediately by telephone any patient with a presumed diagnosis of viral encephalitis. **To report a case of viral encephalitis, please call the DPH Epidemiology Program at 860-509-7994 during business hours or 860-509-8000 after hours.**

Testing for WNV

Free testing for WNV and other arboviruses (Eastern Equine Encephalitis, California encephalitis group, St. Louis encephalitis, Jamestown Canyon) will be performed on appropriate acute and paired specimens submitted to the State laboratory. **We request that you call the DPH Epidemiology Program at 860-509-7994 to provide the patient information needed to process specimens in a timely manner.** The case report form (see pages 6 and 7) includes the necessary information for testing to be done.

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Current Treatment

(Antiviral or antibacterial)

Type

Date Started

____/____/____

____/____/____

____/____/____

Risk Factor Information

(During 1 month before onset)

Travel Information

Location

Date Range

Outside the country?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk	_____	_____ - _____
Outside Connecticut?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk	_____	_____ - _____
Outside county of residence?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk	_____	_____ - _____
To New York City?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk	_____	_____ - _____
To Westchester County, NY?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk	_____	_____ - _____

Have you been bitten by a mosquito in the 4 weeks prior to your illness? Yes No Unk

Have you had any other animal or arthropod contact? Yes No Unk If yes, specify: _____

Vaccination / Disease History

Date Vaccinated/Diagnosed

Have you ever been vaccinated for Yellow fever?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk	____/____/____
Have you ever been vaccinated for Japanese encephalitis?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk	____/____/____
Have you ever had previous history of viral encephalitis?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk	____/____/____
Have you ever had Dengue fever?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk	____/____/____

Specimens Being Submitted for Testing

CSF? <input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, date collected ____/____/____	<input type="checkbox"/> Initial <input type="checkbox"/> Repeat
If no, was lumbar puncture performed?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Serum? <input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, date collected ____/____/____	<input type="checkbox"/> Initial <input type="checkbox"/> Repeat
Other _____	Date collected ____/____/____	<input type="checkbox"/> Initial <input type="checkbox"/> Repeat

Requesting Physician

Date of Report ____/____/____
m d y

Last Name: _____ First Name: _____

Work Address: _____ State: _____ Zip Code: _____

Telephone - W (____) _____ - _____ Pager (____) _____ - _____

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West Nile Virus, Encephalitis Reporting Form

Specimen types and amounts:

- Acute specimens can be collected within 14 days of onset of symptoms. Convalescent specimens should be collected 2-3 weeks later.
- **Please send ≥ 5.0 ml of serum and ≥ 1.0 ml of CSF. Please *do not* send whole blood.**
- Frozen brain tissue and acute CSF specimens can be submitted for virus isolation free of charge. Unless specifically requested, however, virus isolation will not be attempted.
- **To obtain free testing please write "WNV testing" or "encephalitis" on the DPH Laboratory Virology form.** Convalescent specimens should be clearly labeled as such so appropriate testing can be done. Forms can be obtained from the Epidemiology Program (860-509-7995) or the DPH Laboratory (860-509-8501)
- **The case report form must be completed and accompany each specimen/set of specimens submitted for testing.**

Tests to be done and reporting of test results

- Acute serum and CSF specimens will be examined only for IgM antibodies to WNV unless otherwise requested. Negative results will be reported out from 2-4 days after receiving the specimens and completed case report form.

Positive results will take longer as confirmatory testing must first be done at the CDC laboratory.

- Free testing of paired serum specimens will be done for IgG antibodies to other arboviruses listed. Tests for IgG antibodies for herpes, varicella, and cytomegalovirus will also be included.

Mild illness

Testing for WNV is not available or indicated for persons suspected of having WNV infection on the basis of mild illness, such as fever or headache, and recent mosquito bites. Levels of WNV activity in the community would have to be very high (i.e., many confirmed cases of WNV encephalitis) for such symptoms to be due to WNV infection. In addition, as persons with mild illness will most likely recover completely, testing is not necessary for prognostication. Rather than testing these persons, they should be advised to seek medical attention if more severe symptoms develop such as confusion, severe muscle weakness, lethargy, severe headache, stiff neck or photophobia.

As always, we appreciate our ongoing partnership with the medical community in reporting or investigating unusual diseases. If you have any questions, please feel free to contact either Tara McCarthy, MD or Randall Nelson, DVM at DPH (860-509-7994).

Division of Infectious Diseases

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State Epidemiologist

AIDS Epidemiology	(860) 509-7900
Epidemiology	(860) 509-7994
Immunizations	(860) 509-7929
Pulmonary Diseases	(860) 509-7722
Sexually Transmitted Diseases (STD)	(860) 509-7920

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