



NEW YORK CITY DEPARTMENT OF

HEALTH AND MENTAL HYGIENE

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Commissioner

2020 DOHMH Alert #26: West Nile Virus – Detection of First Positive Mosquito Pools in 2020

Please distribute to staff in the Departments of Internal Medicine, Pediatrics, Family Medicine, Neurology, Infection Control, Infectious Disease, Emergency Medicine, Critical Care, Obstetrics and Gynecology, Oncology and Laboratory Medicine

- **West Nile virus (WNV) has been detected in mosquitoes collected from the Bronx, Brooklyn, Manhattan, Queens, and Staten Island.**
- **Mosquito activity in New York City (NYC) usually peaks around July 20. To date, no human cases have been reported in NYC this year.**
- **WNV disease should be suspected in patients presenting with viral meningitis or encephalitis, acute flaccid paralysis, and/or symptoms compatible with West Nile fever, particularly now through October 31.**
 - **The most sensitive screening test for WNV in humans is IgM enzyme immunoassay on cerebrospinal fluid and/or serum. Testing is widely available at commercial laboratories.**
 - **PCR testing, while confirmatory, is less sensitive. However, it may be the best option for patients who are severely immunosuppressed and unable to mount a detectable immune response.**
- **Advise patients, especially adults 50 years and older or persons with weakened immune systems, to protect themselves from mosquito bites.**
- **Report all cases of encephalitis or any laboratory evidence of current or recent infection with WNV or any other arboviral infection to the Health Department.**

August 4, 2020

Dear Colleagues,

West Nile virus (WNV) has been detected in mosquitoes from all five boroughs of New York City (NYC). You can find real time surveillance data to monitor WNV activity in NYC at <http://www1.nyc.gov/site/doh/health/health-topics/west-nile-virus-activity.page>. To date in 2020, there are a total of 59 positive mosquito pools (Bronx=1, Brooklyn=10, Manhattan=1, Queens=20, and Staten Island=27) compared with at least 78 positive pools at the same time last season (2019). Mosquito populations are rising significantly following recent heavy rains. The NYC Department of Health and Mental Hygiene (NYC Health Department) has begun widespread larviciding and enhanced mosquito surveillance activities.

To date there have been no human cases of WNV in NYC this year. Across the United States, a total of 17 cases of WNV disease have been reported this year.

West Nile Virus Surveillance and Reporting

The NYC Health Department reminds medical providers to be alert for possible cases of WNV disease now through October 31, the peak adult mosquito season. Consider WNV in any patient with unexplained encephalitis, viral meningitis, or acute flaccid paralysis, as well as in patients with symptoms compatible with West Nile fever, which can include fever, maculopapular rash, headache, fatigue, weakness, joint and muscle pain, as well as nausea, vomiting and diarrhea.

Laboratory Testing

Specimens for serologic testing for WNV should be sent to a commercial laboratory or your hospital laboratory, if available. **The most sensitive screening test for WNV in humans is IgM enzyme immunoassay (EIA) on cerebrospinal fluid (CSF) and/or serum.** WNV-specific IgM antibodies are usually detectable within 8 days of symptom onset. **Viral RNA testing using polymerase chain reaction (PCR) can be done on CSF and serum but it is less sensitive than the immunoassay.** A positive PCR result confirms infection, but a negative result does not rule it out. *As such, always attempt to submit serum for serology when submitting specimens for PCR.* PCR testing on CSF or serum or plasma may be useful for **severely immunocompromised** patients and the only way to diagnose WNV infection in individuals who are unable to mount a detectable humoral immune response. Immunohistochemical (IHC) staining is also offered by the Centers for Disease Control and Prevention, if brain tissue is available for testing. Health care providers wishing to submit CSF from patients with encephalitis to the New York State Wadsworth Center for the viral encephalitis PCR panel must adhere to the submission guidelines (links listed below). In special cases, the NYC Health Department can assist with testing or transporting specimens to Wadsworth, e.g., cases potentially due to an unusual source of transmission, such as transfusion, transplant or laboratory exposure.

NYC Health Department “Testing and Reporting Guidelines for Cases of West Nile Viral and Other Arboviral Infections” are available at:

<http://www1.nyc.gov/assets/doh/downloads/pdf/wnv/wnv-testing-instructions.pdf>. This document includes a list of commercial laboratories that provide West Nile virus serologic testing, viral PCR or viral isolation testing, and links to the Wadsworth Center guidance for submitting CSF and serum for the PCR Viral Encephalitis* and Arboviral Serology* panels.

Viral Encephalitis PCR Summer Panel and Arboviral Serology Screen testing* at Wadsworth Center’s Viral Encephalitis Laboratory (VEL)

PLEASE NOTE: Always attempt to submit serum for serology along with specimens submitted for the Arboviral PCR panel.

* The PCR Summer Viral Encephalitis Panel includes: *arboviruses (West Nile, Powassan virus St. Louis encephalitis, Eastern equine encephalitis, California serogroup [including La Crosse and Jamestown Canyon], and Cache Valley viruses), adenovirus, cytomegalovirus, Epstein-Barr virus, enterovirus (all serotypes including echovirus and Coxsackie virus, poliovirus and others), herpes simplex viruses 1 and 2, human herpes virus 6, and varicella zoster virus.* The Arboviral Serology Screen includes: *West Nile, Powassan, Eastern equine encephalitis, Western equine encephalitis, St. Louis encephalitis, California serogroup encephalitis.* Testing for *chikungunya* and *Zika* viruses is only available upon request and in consultation with the New York State Department of Health.

Instructions, forms and information for submitting specimens to the Wadsworth Center VEL for viral encephalitis PCR testing can be found at

<http://www.wadsworth.org/programs/id/virology/services/encephalitis>:

- 1) Collection and submission of specimens for viral encephalitis testing
- 2) Infectious Diseases Requisition Form
- 3) The Wadsworth Center VEL shipping address for viral PCR panel specimens

Zika, Dengue and Chikungunya

Zika, dengue, and chikungunya are three other types of arboviruses occasionally diagnosed among NYC residents. These viruses are associated with travel to an endemic area or, for Zika virus, unprotected sex with a person who has traveled to an endemic area. They rarely are associated with encephalitis and more often result in illness similar to West Nile fever in which patients present with fever and rash. For information on recognizing, diagnosing, and reporting these diseases, visit our website at

www.nyc.gov/health and search by disease, or click on the following links:

- Zika information for providers: <https://www1.nyc.gov/site/doh/providers/reporting-and-services/zika.page>
- Dengue testing and reporting guidelines: <https://www1.nyc.gov/assets/doh/downloads/pdf/cd/dengue-testing-and-reporting-guidance.pdf>
- Chikungunya testing and reporting guidelines: <https://www1.nyc.gov/assets/doh/downloads/pdf/cd/chikungunya-testing.pdf>

Reporting to the Health Department:

Encephalitis should be reported routinely throughout the year, as required by the NYC Health Code. Arboviral infections, including West Nile virus, with laboratory evidence of recent or current infection should be reported immediately, as required by the NYC Health Code. For consultation or to report a case of WNV or other arboviral infections to the NYC Health Department:

- Call the Provider Access Line at 866-692-3641 OR
- Fax the completed Universal Reporting Form to 347-396-2632 OR
- Complete the electronic Universal Reporting Form at: <http://www1.nyc.gov/site/doh/providers/reporting-and-services/reporting-central.page>.

The successful detection and control of WNV in NYC has been due in large part to the NYC Health Department's ongoing excellent partnership with the city's medical and laboratory communities. Thank you for your continuing efforts.

Sincerely,

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