



Philadelphia Department of Public Health
Division of Disease Control

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Health Advisory
West Nile Virus Activity in Philadelphia and Clinical Review
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Mosquito activity in Philadelphia and the surrounding region has been high this summer. A total of 18 mosquito pools infected with West Nile Virus (WNV) have been identified this season in Philadelphia, mainly in the major park and water treatment areas in the city. Mosquito control activities have been stepped up in recent weeks, however these high rates of infection suggest that the risk of human infections is currently very high in the region. To date, a total of 236 confirmed human cases have been reported from 28 states, primarily from western and south central regions. One human case of WNV infection has been confirmed in Pennsylvania (in Montgomery County) thus far. No cases have been confirmed in Philadelphia this season. This summary is provided to assist clinicians with the diagnosis of WNV infection during this period when the risk of disease is high.

Clinical Presentation of WNV Infection

The majority of infections due to West Nile Virus are asymptomatic. Approximately 20% of individuals develop a self-limited febrile illness called West Nile Fever, characterized by fever, headache, myalgia, and gastrointestinal symptoms. A transient maculopapular rash may also be present. Fewer than 1% of infected individuals will develop neuroinvasive disease - aseptic meningitis, encephalitis, or flaccid paralysis. The risk of neuroinvasive disease increases with age, and is highest among adults > 60 years old and among organ transplant patients. Residual neurological deficits are not uncommon among cases of encephalitis and flaccid paralysis.

Diagnosis of WNV Infection

The incubation period of WNV infection ranges from 2-14 days (up to 21 days in immunocompromised persons). Serum and cerebrospinal fluid (CSF) may be tested for specific IgM antibody to WNV; however serum collected within the first 8 days of illness may not have detectable IgM and repeat testing may be necessary. A four-fold rise in WNV-specific IgG in acute and convalescent serum is also diagnostic. Viral culture and nucleic acid amplification tests can also be performed on serum collected early in the illness, and on CSF. Testing performed in commercial laboratories may not be reliable. Testing should be performed by the Pennsylvania Department of Health Bureau of Laboratories, which participates in the Centers for Disease Control Laboratory Response Network. The Philadelphia Department of Public Health Division of Disease Control (DDC) can facilitate specimen submission.

Treatment and Prevention

Treatment for mosquito-borne viral diseases is supportive; there is no specific therapy for these infections. Personal prevention remains the best way to decrease the risk of acquiring mosquito-borne diseases. Mosquito repellent containing no more than 30% DEET should be applied whenever one is outdoors during mosquito season. Products that contain 10% DEET can safely be used on children > 2 months old. Eliminating standing water on personal property (e.g., unused swimming pools, tires) will decrease mosquito-breeding sites.

Mosquito complaints and dead bird sightings can be reported to the Philadelphia Department of Public Health Vector Control Program at 215-685-9027. Clinicians should consider WNV and other mosquito-borne viral infections in the differential diagnosis of encephalitis and aseptic meningitis during summer and early fall months; obtain serum and CSF on all suspected cases for diagnostic testing. To report suspected human mosquito-borne diseases and/or to request testing of human specimens, please call DDC at 215-685-6740 during regular business hours, or 215-686-1776 after-hours (ask to speak with the representative on-call for the division).