Department of Public Health
CITY OF PHILADELPHIA

Philadelphia Department of Public Health
Division of Disease Control

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Health Advisory

Increased Seasonal Risk for West Nile Virus Infection: Clinical Recognition and Testing Reminders

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SUMMARY POINTS

- The first Philadelphia residents with symptomatic West Nile virus infections have been identified for the 2024 season.
- Collect serum and CSF from patients with encephalitis, meningitis, or acute flaccid myelitis for WNV IgM testing.
- Report suspected and confirmed WNV cases to PDPH immediately.
- Advise patients to use repellent when outdoors and remove standing water.

The Philadelphia Department of Public Health (PDPH) has recently identified the City's first symptomatic West Nile virus (WNV) infections for the 2024 season. Two adult residents were hospitalized with acute flaccid myelitis due to WNV infection in late July. To date for the 2024 mosquito season in Philadelphia, the proportion of mosquitoes testing positive for WNV has increased earlier and is higher (42%) compared with previous peak seasons (13%–39%). Over the next few weeks, the risk of human WNV infection will remain higher and persist through October while infected mosquito pools are present. Testing and prompt reporting of suspected and confirmed WNV infections enables us to direct mosquito-control efforts and accurately monitor severe WNV.

WNV is caused by an arthropodborne Flavivirus and transmitted by the bite of infected mosquitoes. Symptoms develop 2-14 days after exposure. About 20% of infected persons develop WNV fever, which is generally characterized by fever, headache, muscle and joint pain, vomiting, diarrhea, or a transient rash. Neuroinvasive disease, most commonly meningitis, encephalitis, or acute flaccid myelitis, develops in <1% of infected individuals. Treatment for WNV infection is supportive. Most patients with WNV fever or meningitis fully recover without long term effects. Recovery from WNV encephalitis or acute flaccid myelitis can take several weeks to months with long lasting neurologic deficits. The case fatality rate among persons with severe illness is 10%.

Laboratory Testing for WNV Confirmation: Clinicians should collect both serum and cerebrospinal fluid (CSF) for WNV testing from patients who have onset of unexplained encephalitis, meningitis, or acute flaccid myelitis. Serum can be tested for those with suspected WNV Fever. WNV-specific IgM in serum or CSF is preferred for laboratory confirmation. Antibodies in serum are typically detectable 3–8 days after symptom onset. Absence of detectable antibodies in serum within 8 days of illness does not rule out WNV. Recollect serum after day 8 if there is ongoing concern for WNV. Testing of patients with neuroinvasive infections for other arboviral infections (e.g., Powassan, Jamestown Canyon virus, Eastern Equine Encephalitis, etc.) may also be considered given detections of infected vectors in Pennsylvania and New Jersey.

Many commercial laboratories offer serologic or Polymerase Chain Reaction (PCR) testing for WNV. Any positive specimen should be forwarded to the Pennsylvania Department of Health Bureau of Laboratories (PADOH BOL) for confirmatory testing. For WNV or other arbovirus testing assistance, contact the Acute Communicable Disease Program at 215-685-6741.

Report Suspected and Confirmed WNV Cases Immediately: All suspected and confirmed cases of WNV infection (neuroinvasive and non-neuroinvasive) should be reported **immediately** to the PDPH Division of Disease Control at 215-685-6741 (business hours) or 215-686-4514 (after-hours). Report mosquito problems and dead bird sightings to the PDPH Vector Control Program's Mosquito Complaint hotline at 215-685-9000.

Prevention: Advise patients to use an EPA-registered repellent with DEET (≥20% to also prevent tick bites), Picaridin, oil of lemon eucalyptus or other approved ingredient when outdoors, especially during peak mosquito hours (dusk and dawn). Indoors, use screens on windows and doors along with air conditioning. To reduce mosquito breeding sites, regularly check and remove standing water outside home (e.g., unused pools, tires). For seasonal updates on local WNV activity visit: https://hip.phila.gov/data-reports-statistics/west-nile-virus.