

Health Advisory

First Symptomatic West Nile Virus Cases Identified for the 2023 Season

September 18, 2023

SUMMARY POINTS

- The first Philadelphia residents with symptomatic West Nile Virus infections have been identified for the 2023 season.
- Collect serum and CSF from patients with unexplained encephalitis or aseptic meningitis for WNV-specific 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 2023 season. Two adult residents ≥ 50 years of age were hospitalized with neuroinvasive WNV infection in late August. One of the 2 cases had a significant underlying medical history and was fatal. An adult resident with WNV fever and an asymptomatic, presumptive viremic blood donor also have been reported in 2023. Although lower than recent peak WNV activity seasons (34-46%), WNV mosquito trap positivity has reached 28% in 2023. Over the next few weeks, the risk of human WNV infection will remain high and persist through October while infected mosquito pools are present. Providers should consider WNV infection when evaluating patients with unexplained encephalitis or aseptic meningitis. Testing and prompt reporting of suspected and confirmed WNV infections enables PDPH to direct mosquito-control efforts and 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 or meningitis. 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 exclude a possibility of WNV and the sample should be recollected again after day 8 if there is continued concern for WNV. Testing of patients with unexplained meningoencephalitis for other arboviral infections (e.g., Powassan virus, Jamestown Canyon virus, etc.) may also be considered given detections of infected vectors in Pennsylvania.

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. Serum can be tested for those with suspected WNV Fever. 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 repellent with DEET ($\geq 20\%$ to also prevent tick bites), Picaridin, or oil of lemon eucalyptus when outdoors, especially during peak mosquito hours (dusk and dawn). To reduce mosquito reservoirs, 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/>