

Health Advisory

First Neuroinvasive West Nile Virus Cases Identified for the 2022 Season August 29, 2021

The Philadelphia Department of Public Health (PDPH) has recently identified the City's first neuroinvasive West Nile virus (WNV) infections for the 2022 season. Two adult residents developed neuroinvasive WNV in mid-August and were subsequently hospitalized. Additionally, one adult resident with WNV fever and an asymptomatic presumptive viremic blood donor have been reported in 2022. The WNV mosquito trap positivity in 2022 is higher than year-to-date historic rates observed in 2010, 2018 and 2021 (22-39%), peak WNV activity seasons in Philadelphia. Over the next few weeks, the risk of human WNV infection will remain higher 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 us to direct mosquito-control efforts and accurately monitor severe WNV illness.

SUMMARY POINTS

- The first Philadelphia residents with neuroinvasive West Nile virus infections have been identified for the 2022 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.

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 with suspected WNV infection. WNV-specific IgM in serum or CSF is preferred for laboratory confirmation. Consider specimen type and timing of collection when ordering testing.

- Serum: Collect 8 to 14 days after illness onset. Repeat test on a convalescent sample if initial test is sent <8 days from illness onset.
- CSF: Collect within 8 days of illness onset.

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 testing assistance or inquiries, 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). Visit the following websites for regular updates on local, state, and national WNV surveillance:

- PDPH: [Philadelphia Department of Public Health - West Nile Virus - PDPH Health Information Portal](#)
- Pennsylvania Department of Health: <https://gis.dep.pa.gov/WNV/index.html>
- Centers for Disease Control and Prevention: <http://www.cdc.gov/westnile/statsMaps/>