

Health Advisory

Testing and Reporting Requirements for West Nile Virus and Other Arboviruses

July 21, 2023

The first mosquitoes infected with West Nile Virus (WNV) have been detected in Philadelphia, increasing the risk for human infection. Area healthcare providers should consider the potential for WNV and other arboviral infections (e.g., Powassan virus, Jamestown Canyon virus [JCV]) in patients presenting with unspecified neuroinvasive infections, as well as travel-related arboviral infections (e.g., dengue, chikungunya, etc.) among Philadelphia residents returning from subtropical and tropical regions.

SUMMARY POINTS

- Mosquitoes infected with WNV have been detected in Philadelphia.
- Through October, collect both serum and CSF for WNV IgM testing of patients who have unexplained encephalitis or meningitis.
- Assess travel and outdoor activity history, and order testing for other arboviruses as needed.

All suspected and confirmed arboviral infections including WNV and unspecified encephalitis cases should be reported immediately to PDPH Division of Disease Control (DDC) at 215-685-6741 during regular business hours or 215-686-4514 after-hours (ask for DDC on-call staff). **Your assistance with testing and reporting of suspected arboviral infections enables us to implement mosquito-control measures in a timely manner.**

West Nile Virus (WNV) and Other Arboviral Encephalitides

Among persons infected with WNV, 20% will develop an acute febrile illness. Often fever is accompanied by myalgias, back pain, anorexia and headache. However, <1% will develop neuroinvasive disease (aseptic meningitis, encephalitis, or flaccid paralysis), which can result in residual neurological deficits or death. The risk of neuroinvasive disease is highest among adults >50 years old and individuals with weakened immune systems. Between 2018-2022, 3 to 14 neuroinvasive WNV infections and up to 3 deaths occurred annually in Philadelphia. Seasonal WNV activity updates for Philadelphia are available online at <https://hip.phila.gov>.

Providers in our area should also recognize that other arboviral infections (e.g., Powassan, Eastern Equine Encephalitis, La Crosse, JCV, etc.), although rare, can result in severe illness similar to WNV meningoencephalitis. In Philadelphia, Powassan has been identified in black-legged ticks since Fall 2019. [Pennsylvania's first mosquitoes infected with JCV](#) were recently identified in Lackawanna and Luzerne counties.

Laboratory Diagnosis of WNV: Now through the end of October or when the first hard frost occurs, 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.

Many commercial laboratories offer serologic and polymerase chain reaction (PCR) testing for WNV. A negative PCR does not rule out infection. Any WNV positive specimen should be forwarded to the Pennsylvania Department of Health Bureau of Laboratories (PADOH BOL) for confirmatory testing. DDC can help facilitate specimen submission for WNV and other arboviral testing at PADOH BOL and the Centers for Disease Control and Prevention. For arbovirus testing inquiries, call 215-685-6741.

Mosquito Bite Prevention: Discuss the following prevention measures with your patients, especially those who work or spend time outdoors and those traveling to areas where other mosquito-borne infections are endemic.

- Use repellent with DEET (≥20% to prevent tick bites), Picaridin, or oil of lemon eucalyptus when outdoors.
- When weather permits, wear long-sleeved shirts and long pants.
- Keep well-fitted screens on windows and doors to keep out mosquitoes, along with using air conditioning.
- Regularly check and empty standing water outside the home (e.g., unused pools, tires, containers).
- Report mosquito problems and dead bird sightings to the PDPH Vector Control Program's Mosquito Complaint hotline at 215-685-9000.