

Health Advisory

Testing and Reporting Requirements for West Nile Virus and Other Arboviruses

July 23, 2020

Given the detection of mosquitoes infected with West Nile virus (WNV) in Philadelphia, neighboring PA counties, and in New Jersey, risk for human infection is increased. Area healthcare providers should consider the potential for WNV and other arboviral infections (e.g., Powassan virus) 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 neuroinvasive and non-neuroinvasive WNV, dengue, chikungunya, Zika, yellow fever, and unspecified encephalitis cases should be reported immediately to PDPH Division of Disease Control (DDC) at 215-685-6740 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 with some symptoms that could be similar to COVID-19. 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 2014-19, 1 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, Jamestown Canyon, etc.), although rare, can result in severe illness similar to WNV meningoencephalitis. In Philadelphia, Powassan was first identified in black-legged ticks collected in November 2019.

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

- Serum: Collect 8 to 14 days after illness onset. Draw and test additional serum if collected too early.
- CSF: Collect within 8 days of illness onset.

Many commercial laboratories offer serologic and polymerase chain reaction testing for WNV. 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 215-685-6742.

Mosquito Bite Prevention: In addition to COVID-19 prevention measures (e.g., masking, distancing), discuss the following prevention measures with your patients, especially those who work or are active outdoors. Regardless of season, prevention tips should also be shared with patients 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.