

2024 West Nile and Other Arboviral Infections in Pennsylvania

DATE:	05/31/2024
TO:	Health Alert Network
FROM:	Debra L. Bogen, MD, FAAP, Acting Secretary of Health
SUBJECT:	2024 West Nile and Other Arboviral Infections in Pennsylvania
DISTRIBUTION:	Statewide
LOCATION:	Statewide
STREET ADDRESS:	n/a
COUNTY:	n/a
MUNICIPALITY:	n/a
ZIP CODE:	n/a

This transmission is a “Health Advisory,” and provides important information for a specific incident or situation; may not require immediate action.

HOSPITALS: PLEASE SHARE WITH ALL MEDICAL, PEDIATRIC, NURSING AND LABORATORY STAFF IN YOUR HOSPITAL; **EMS COUNCILS:** PLEASE DISTRIBUTE AS APPROPRIATE; **FQHCs:** PLEASE DISTRIBUTE AS APPROPRIATE **LOCAL HEALTH JURISDICTIONS:** PLEASE DISTRIBUTE AS APPROPRIATE; **PROFESSIONAL ORGANIZATIONS:** PLEASE DISTRIBUTE TO YOUR MEMBERSHIP; **LONG-TERM CARE FACILITIES:** PLEASE SHARE WITH ALL MEDICAL, INFECTION CONTROL, AND NURSING STAFF IN YOUR FACILITY

SUMMARY

- Pennsylvania’s first WNV-positive mosquito pools were identified in Adams, Bucks, Philadelphia and York counties in May.
- Health care providers should have a heightened clinical suspicion for West Nile and other arboviral infections in persons with clinically compatible symptoms.
- For questions, please call your local health department or DOH at 1-877-PA-HEALTH.

As of Tuesday May 21, 2024, the first WNV-positive mosquito pools of the year were identified in Pennsylvania in Adams, Bucks, Philadelphia, and York counties through the routine seasonal monitoring conducted by the Pennsylvania Department of Environmental Protection (DEP) West Nile virus (WNV) surveillance program. The first mosquito positive pools indicate WNV may have begun to circulate in Pennsylvania. Risk of human WNV infection is likely to remain elevated over the next several months. Additional surveillance data is available at [WNV Mosquito Surveillance](#).

The Pennsylvania Department of Health (DOH) reminds health care providers to consider the diagnosis of arboviral infection in persons presenting with undifferentiated febrile illness or signs of meningoencephalitis, to ask about recent travel history (past 3 weeks) and outdoor exposures, and to collect appropriate diagnostic specimens. All arbovirus infections (e.g., infections due to West Nile, St. Louis, Jamestown Canyon, La Crosse, dengue, chikungunya, Zika, Powassan, etc.) are reportable to DOH within 24 hours of diagnosis in Pennsylvania.

EPIDEMIOLOGY OF WEST NILE AND OTHER ARBOVIRAL INFECTIONS IN PENNSYLVANIA

In Pennsylvania, WNV is the most commonly reported locally acquired arboviral disease and human infections are most commonly seen during the months of July through September. Risk continues until the first hard frost. Most human WNV infections (80%) are asymptomatic. Approximately 20% of infections result in a non-specific febrile illness (West Nile fever), and <1% of infections develop into severe neuroinvasive disease (e.g., meningitis, encephalitis, acute flaccid paralysis, etc.). Neuroinvasive disease is more likely to occur in patients ≥ 50 years of age or those with compromised immune systems. During the 2023 WNV season, Pennsylvania reported 18 neuroinvasive and 4 non-neuroinvasive cases from 11 counties.

Other locally acquired arboviral infections that have been reported in Pennsylvania include St. Louis encephalitis virus (SLEV), eastern equine encephalitis virus (EEEV), and Jamestown Canyon virus (JCV). During the 2023 mosquito surveillance season, both JCV and La Crosse encephalitis virus (LACV) were identified in addition to WNV. The emerging tickborne arbovirus, Powassan virus (POWV), was also identified last year with two cases from Butler and Pike counties. While Powassan is rare, consider testing for this arbovirus when outside the mosquito season (November–April), or if other arboviral testing results are negative.

WHEN TO CONSIDER ARBOVIRAL TESTING FOR YOUR PATIENT

1. Remember to ask about each patient's recent (past 3 weeks) travel history and potential exposures, as this can help determine for which arbovirus to test. The following clinical syndromes presenting during summer months among patients with no recent travel history should prompt consideration for WNV testing: **Viral encephalitis, characterized by:**
 - Fever $\geq 38^{\circ}\text{C}$ or $\geq 100.4^{\circ}\text{F}$ and,
 - CNS involvement, including altered mental status (altered level of consciousness, confusion, agitation, or lethargy) or other cortical signs (cranial nerve palsies, paresis or paralysis, or convulsions) and,
 - Abnormal CSF profile suggesting a viral etiology (negative bacterial gram stain and culture with a pleocytosis [WBC between 5 and 1500 cells/mm³] and/or elevated protein level [≥ 40 mg/dl]).
2. **Viral meningitis, characterized by:**
 - Fever $\geq 38^{\circ}\text{C}$ or $\geq 100.4^{\circ}\text{F}$ and,
 - Headache, stiff neck and/or other meningeal signs and,
 - Abnormal CSF profile suggesting viral etiology (negative bacterial gram stain and culture with a pleocytosis [WBC of 5-1500 cells/mm³] and/or elevated protein level [≥ 40 mg/dl]).
3. **Poliomyelitis-like syndromes:**
 - Acute flaccid paralysis or paresis, which may resemble Guillain-Barré syndrome, or other unexplained movement disorders such as tremor, myoclonus or Parkinson's-like symptoms, especially if associated with atypical features, such as fever, altered mental status and/or a CSF pleocytosis. Afebrile illness with asymmetric weakness, with or without areflexia, has also been reported in association with WNV.
4. **Unexplained febrile illness:**
 - Especially if accompanied by headache, fatigue, myalgias, stiff neck, or rash.

DIAGNOSIS OF ARBOVIRAL INFECTIONS

For most arboviral infections, serology can facilitate diagnosis. WNV diagnosis is usually serological, by detection of WNV-specific IgM antibody in serum or CSF. **WNV IgM may not be detectable until day 8 of illness.** Specimens collected less than 8 days after onset may be negative for IgM, and testing should be repeated 2-3 weeks later.

Specimens (serum and/or CSF) collected from patients with suspected WNV can be submitted to the DOH Bureau of Laboratories (BOL). WNV IgM testing is performed free-of-charge. Instructions for submitting specimens can be found at [Arbovirus testing form](#). Requests for testing of SLEV, EEEV, JCV, LACV, and POWV can also be sent to DOH BOL using the arbovirus testing form. These specimens are then sent to CDC (via BOL) for testing and the same instructions apply for collection and submission. At least 1mL of serum or cerebrospinal fluid is needed for each arbovirus testing request.

For questions, please call your local health department or DOH at 1-877-PA- HEALTH.

Individuals interested in receiving future PA-HANs can register at:
<https://ondemand.mir3.com/han-pa-gov/login/>.

Categories of Health Alert messages:

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This information is current as of May 31, 2024 but may be modified in the future.
