

MLS Laboratory Update: Arbovirus Testing for the 2024 Vector-borne Disease Risk Season

MAY 13, 2024

Purpose of this Message:

To alert clinical laboratory partners that the Minnesota Department of Health-Public Health Laboratory (MDH-PHL) will resume mosquito-borne arbovirus testing for the 2024 summer season.

Action Item:

Submit serum, cerebrospinal fluid (CSF), and urine specimens to MDH-PHL for arbovirus testing, especially in patients presenting with neurologic symptoms after outdoor exposures.

Background:

With the arrival of warmer temperatures, Minnesotans are heading outdoors, putting them at risk for exposures to ticks and mosquitoes and the diseases they carry. In 2023, Minnesota continued to see infections due to emerging arboviral pathogens, like Powassan virus (transmitted by the blacklegged tick or deer tick) and Jamestown Canyon virus (transmitted by various species of mosquitoes). Both viruses are rare but can cause serious illness, especially in older patients, or those with compromised immune systems. Healthcare providers should be suspicious of arboviral disease throughout the warmer months in patients presenting with fever, headache, and myalgia after spending time outdoors, particularly if symptoms progress to encephalitis, meningitis, or other neurologic disease.

MDH is working to learn more about how these diseases affect Minnesotans, and encourages providers to submit serum, cerebrospinal fluid (CSF), and urine specimens to MDH-PHL for arbovirus testing, especially in patients presenting with neurologic symptoms after outdoor exposures. It is critical to have the symptom onset date for arbovirus testing to provide the most relevant information. This will assist with results interpretation and facilitate confirmatory testing, if needed. Testing for more common bacterial and parasitic tickborne diseases (i.e., the agents of Lyme disease, anaplasmosis, and babesiosis) is not available at MDH and should be ordered through commercial laboratories.

Additional Information:

Key Points:

- MDH-PHL will resume arbovirus testing for the 2024 season.
- **Symptom onset date must be provided** for testing to be performed. [The General Infectious Disease Submission Form \(https://www.health.state.mn.us/diseases/idlab/forms.html\)](https://www.health.state.mn.us/diseases/idlab/forms.html) provides a place for this information to be recorded.

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- Healthcare providers and clinical laboratories are required to report all suspect and confirmed arboviral disease cases to MDH within one working day.

Testing Done at MDH-PHL: Any specimen submitted for arboviral testing will be tested for the entire endemic arboviral panel for the presence of IgM antibodies through an EIA, IFA, or RT-PCR (WNV only).

Our endemic arboviral panel currently includes:

- Serum and/or CSF specimens:
 - Powassan (POW).
 - Jamestown Canyon Virus (JCV).
 - West Nile Virus (WNV).
- Serum specimens only:
 - California Group Encephalitis Viruses (CAL).
 - St. Louis Encephalitis Virus (SLE).
 - Western Equine Encephalitis Virus (WEE).
 - Eastern Equine Encephalitis Virus (EEE).
- Urine specimens:
 - WNV only.

Specimen Requirements:

- 1 mL serum (preferred).
- 1 mL CSF (preferably with a paired serum).
- Urine specimens submitted with a paired serum.
 - Approximately 10 mL, in a sterile container.
 - Testing on urine for WNV only.
- Please ship within 48 hours of collection at refrigeration temperature. Otherwise, freeze and ship to MDH frozen. Specimens received at refrigeration temperature more than 48 hours after collection will not be tested for WNV IgM antibodies.

If travel associated arboviral infections are suspected, such as Zika, dengue, or chikungunya, or if you have additional questions about arboviral disease, please contact our Epidemiology department at 651-201-5414.

For more information about arboviruses, please see the MDH [Vectorborne Diseases web page \(https://www.health.state.mn.us/diseases/vectorborne/index.html\)](https://www.health.state.mn.us/diseases/vectorborne/index.html).

For the most up to date submission form, please see [Forms for the Infectious Disease Laboratory \(https://www.health.state.mn.us/diseases/idlab/forms.html\)](https://www.health.state.mn.us/diseases/idlab/forms.html).

Questions:

For specimen or assay-specific questions, please contact:

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Scott Cunningham, Virology Unit Supervisor
Phone: 651-201-5032 or email Scott.Cunningham@state.mn.us

For case reporting or arbovirus information:
Vector-Borne Disease Epidemiology at 651-201-5414

Thank you for your partnership and continued arboviral disease surveillance efforts in
Minnesota.

Thank you,
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To obtain this information in a different format, call: 651-201-5200.