

MLS Laboratory Update: Arbovirus Testing for the 2022 Vector-borne Disease Risk Season

MAY 4, 2022

Purpose of this Message:

To notify clinical laboratory partners of updates to the arboviral testing services at the Minnesota Department of Health-Public Health Laboratory (MDH-PHL).

Action Item:

None

Background:

With the arrival of spring-like weather, warm temperatures bring Minnesotans outdoors, putting them at risk for exposures to ticks and mosquitoes and the diseases they carry. In 2021, 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. Health care providers should be suspicious of arboviral disease throughout the warmer months in patients presenting with fever, headaches, and muscle aches 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. Symptom onset date will be required for arbovirus testing to be performed at MDH. 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 continues to offer Arboviral testing for the 2022 season.
- **Symptom onset date must be provided** for testing to be performed. The general IDL submission form (<https://www.health.state.mn.us/diseases/idlab/forms.html>) provides a place for this information to be recorded. Specimen testing will be delayed until symptom onset information is provided.

- 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 of serum (preferred)
- 1ml 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 our vectorborne disease site (<https://www.health.state.mn.us/diseases/vectorborne/index.html>).

For the most up to date submission form, please see IDL forms (<https://www.health.state.mn.us/diseases/idlab/forms.html>)

Questions:

For specimen or assay-specific questions, please contact:

Anna Strain, PhD, Infectious Disease Laboratory Manager at anna.strain@state.mn.us

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

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

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