

To: Vermont Health Care Providers and Veterinarians
Date: August 13, 2025
From: Natalie Kwit, State Public Health Veterinarian

Mosquito-borne Virus Risk in Vermont

Summary

Mosquito-transmitted arboviruses that can potentially cause severe disease in humans were detected in mosquitoes: West Nile virus (WNV) in St. Albans and Stowe, and Jamestown Canyon virus (JCV) in Rutland, Marshfield, and Whitingham. Mosquito surveillance results are posted weekly to our [website](#) during mosquito season.

Requested Actions

- **Consider Arboviral Infection:** Maintain a high index of suspicion for arboviral infections in patients presenting with febrile or neurologic illness (e.g., meningitis, encephalitis) who have had recent mosquito exposure, especially during late summer and early fall.
- **Diagnostic Testing:** Test for arboviral infections, including Eastern equine encephalitis virus (EEEV), WNV, and JCV, by ordering IgM antibodies in serum and/or cerebrospinal fluid (CSF). Acute and convalescent samples may be necessary for accurate diagnosis.
- **Reporting:** Report all suspect or confirmed arboviral infections to the Health Department Infectious Disease Epidemiology Program by calling 802-863-7240.
- **Clinical Guidance:** Review updated clinical guidance for arboviral neuroinvasive [diseases](#).

Background

Arboviruses, most transmitted by mosquitoes, typically circulate in Vermont from July through October, until the first hard frost. While human cases are relatively rare, these infections can cause severe and potentially fatal disease.

- **Eastern Equine Encephalitis (EEE):** A rare but very serious disease with a high case-fatality rate and significant neurological sequelae among survivors. EEE virus activity was elevated in Vermont in 2024, causing two human illnesses, including one death, and two horse deaths.

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- **West Nile Virus (WNV):** The most commonly reported mosquito-borne illness in the United States. While most infected individuals are asymptomatic, WNV can cause febrile illness or neuroinvasive disease, particularly in older adults and immunocompromised individuals.
- **Jamestown Canyon Virus (JCV):** An emerging arbovirus that can cause febrile illness, meningitis, or encephalitis. Cases of JCV have been identified in surrounding states, underscoring its presence in the region.
- **Powassan virus (POWV):** A rare but serious illness spread by ticks that is on the rise in the United States. The first two confirmed cases of Powassan virus disease in Vermont residents since 1999 were reported from Windsor County in 2022, and Orange County in 2023.

The Vermont Department of Health conducts mosquito surveillance for WNV, EEE, and – new this year – JCV, from June to mid-October to inform communities about potential risks.

Clinical Presentation and Evaluation

Most people infected with an arbovirus are asymptomatic or experience mild, non-specific symptoms. However, symptomatic infections can range from febrile illness to severe neuroinvasive disease (meningitis or encephalitis). Individuals with weakened immune systems, older than 50, and younger than 15 years are at greater risk for severe disease. Signs of neuroinvasive disease include headache, confusion, focal neurologic deficits, meningismus, seizures, or coma.

Diagnostic Testing

Serologic testing (IgM antibody in serum and/or CSF) is the primary method for diagnosing arboviral infections. PCR testing of CSF may also be diagnostic early in the course of illness. Positive IgM results should be followed by confirmatory testing submitted through the Vermont Department of Health Laboratory. A negative PCR test alone does not rule out infection. If an acute sample (collected 0–7 days after illness onset) is negative, a convalescent sample (collected 2–3 weeks after acute sample) should be tested.

Commercial IgM testing for California serogroup viruses is available and can be used for initial testing for JCV. JCV-specific IgM testing should be coordinated through the Health Department.

Contact the Infectious Disease Epidemiology Program at the Health Department by calling 802-863-7240 to coordinate confirmatory testing.

For Veterinarians

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Both WNV and EEE virus infections can cause severe illness and death in unvaccinated, susceptible animals. Consider diagnostic testing in animals with one or more of the following clinical signs:

- Ataxia or stumbling and incoordination
- Inability to stand
- Acute paralysis or limb weakness
- Sudden death with no other diagnosis
- Severe hemorrhagic enteritis (EEE in emus)

The Vermont Department of Health can coordinate [free postmortem testing](#) of highly susceptible species (e.g., horses, donkeys, mules, alpacas, llamas) by request. For antemortem diagnostic testing, please submit serum or CSF specimens to your routine veterinary diagnostic reference laboratory for IgM-capture ELISA and PCR testing. Report cases of WNV or EEE in animals by calling the Health Department at 802-863-7240.

Additional Resources

- [Mosquito Surveillance webpage \(Vermont Department of Health\)](#)
- [Eastern Equine Encephalitis Virus webpage \(CDC\)](#)
- [Eastern Equine Encephalitis webpage \(Vermont Department of Health\)](#)
- [West Nile Virus webpage \(CDC\)](#)
- [West Nile Virus webpage \(Vermont Department of Health\)](#)
- [Powassan Virus webpage \(CDC\)](#)
- [Jamestown Canyon Virus webpage \(CDC\)](#)
- [Eastern Equine Encephalitis and West Nile Virus Testing in Animals \(Vermont Department of Health\)](#)

If you have any questions, please contact Natalie Kwit at: Natalie.Kwit@vermont.gov

To have your information updated please email the
Vermont HAN Coordinator at: vthan@vermont.gov.

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HAN Message Type Definitions

Health Alert: Conveys the highest level of importance; warrants immediate action or attention.

Health Advisory: Provides important information for a specific incident or situation; may not require immediate action.

Health Update: Provides updated information regarding an incident or situation; unlikely to require immediate action.

Info Service Message: Provides general correspondence from the Vermont Department of Health, which is not necessarily considered to be of an emergent nature.

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