

---

**SUBJECT:** Eastern Equine Encephalitis Virus (EEEV)  
**Date:** July 31, 2025  
**Pages:** 3  
**To:** Primary Care Providers, Hospitals, Emergency Departments  
**From:** Dr. Matthew Tenenbaum, Associate Medical Officer of Health

---

- A locally acquired equine case of EEEV has been confirmed in Wellington County.
- EEEV infection is rare in humans, but severe. Neurological disease is associated with high fatality and often results in long-term disability.
- Consider EEEV serology in patients with febrile or neurological illness and exposure to mosquitos. Consider testing for WNV and other causes of encephalitis as appropriate.
- Emphasize mosquito-bite prevention techniques.

A horse in Wellington County has tested positive for Eastern Equine Encephalitis virus (EEEV) after developing fever and acute neurological signs. This animal had no travel history, indicating local acquisition. This is the first confirmed EEEV case in an animal in WDG.

Birds are the natural reservoir for EEEV. Mosquitoes can transmit the virus from infected birds to horses and humans, who are considered dead-end hosts and do not spread the virus further.<sup>1</sup>

Human cases of EEEV are rare. However, it has a high case fatality ratio (30-75%) and carries significant risk of permanent neurological sequelae.<sup>1</sup> To date, no human cases have been reported in WDG, and only four have ever been reported in Ontario.

## Clinical Features

Most cases are asymptomatic. When symptoms occur, the incubation period is 4-10 days.

- **EEEV febrile illness** includes fever, chills, body aches, and joint pains. It lasts 1-2 weeks, with most people recovering fully provided there is no neurological involvement.<sup>2</sup>
- **EEEV neurological disease** can occur at the onset of illness or after several days of febrile illness. It manifests as meningitis and/or encephalitis with symptoms such as fever, vomiting, seizures, and neurological deficits.<sup>2</sup>
- In fatal cases, death usually occurs 2-10 days following onset of symptoms. Those who survive are frequently left with ongoing neurological disability.<sup>2</sup>

## Testing Guidance

Consider testing patients with the compatible signs/symptoms and a history of mosquito bites or outdoor activities.

- **Serology** is the primary diagnostic method. Specimens should be sent to Public Health Ontario Lab using **both** the [General Test Requisition](#) and the [Vector-borne and Zoonotic](#)

[Virus Testing Intake Form](#). Reactive results from PHO will be sent to the National Microbiological Laboratory and final results can take up to 21 days.<sup>3</sup>

- **PCR** testing of CSF, plasma, or other specimens require approval by PHO's Microbiologist. Call 1-877-604-4567.

Consider concurrent testing for West Nile virus and other causes of encephalitis, based on the patient's history.

## **Management & Reporting**

There is **no specific therapy** for EEEV. Clinical management is supportive, focusing on symptom relief, seizure control and management of increased intracranial pressure.<sup>4</sup>

**EEEV causing encephalitis is reportable to Public Health.** Call 519-822-2715 ext. 4752 during business hours or 1-877-884-8653 after hours.

## **Prevention**

No human vaccines against EEEV exist. Counsel patients on mosquito-bite prevention, e.g.:

- Use Health Canada-approved insect repellents containing DEET or icaridin;
- Wear light-coloured, long-sleeved clothing especially at dawn and dusk when mosquitoes are most active;
- Ensure window and door screens are intact;
- Eliminate standing water (e.g., planters, birdbaths, kiddie pools, clogged gutters).

## **References:**

1. Public Health Ontario. Eastern Equine Encephalitis Virus, History and Enhanced Surveillance in Ontario, accessed July 31, 2025. Available at: <https://www.publichealthontario.ca/-/media/documents/E/2014/eeev-report.pdf>
2. Centers for Disease Control and Prevention. Eastern Equine Encephalitis: Symptoms, Diagnosis, and Treatment, May 15, 2024. Available at: <https://www.cdc.gov/eastern-equine-encephalitis/symptoms-diagnosis-treatment/index.html>
3. Public Health Ontario. Eastern Equine Encephalitis Virus – Serology and PCR, accessed July 31, 2025. Available at: <https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Eastern-Equine-Encephalitis-Serology>
4. Centers for Disease Control and Prevention. Treatment and Prevention of Eastern Equine Encephalitis, May 15, 2024. Available at: <https://www.cdc.gov/eastern-equine-encephalitis/hcp/treatment-prevention/index.html>

**WDG Public Health Physicians Advisory  
Eastern Equine Encephalitis Virus (EEEV)  
July 31, 2025  
Page 3 of 3**

**For more information, please contact:**

Name/Title: Lilliana Marinko, Manager, Infectious Diseases  
Email: [lilliana.marinko@wdgpublichealth.ca](mailto:lilliana.marinko@wdgpublichealth.ca)  
Website: [www.wdgpublichealth.ca](http://www.wdgpublichealth.ca)