

## Case Definition

### Confirmed Case

Clinical illness<sup>1</sup> with laboratory confirmation of infection:

- Detection of eastern equine encephalitis virus (EEEV) nucleic acid in an appropriate clinical specimen<sup>2</sup>  
**OR**
- Seroconversion or fourfold or greater difference between acute and convalescent phase EEEV Hemagglutination Inhibition Assay (HAI) titers ideally taken at least two weeks apart and confirmed by Plaque Reduction Neutralization Assay (PRNT)

### Probable Case:

Clinical illness<sup>1</sup> and one of the following:

- Seroconversion or fourfold or greater difference between acute and convalescent phase EEEV HAI titres ideally taken at least two weeks apart but not confirmed by PRNT  
**OR**
- Stable elevated<sup>3</sup> serial HAI titres to EEEV that occur during a period when and in a place where arboviral transmission is likely<sup>4</sup>  
**OR**
- Single elevated<sup>3</sup> HAI titre to EEEV that occurs during a period when and in a place where arboviral transmission is likely<sup>4</sup>

## Clinical Evidence

Neuroinvasive disease is characterized by central nervous system (CNS) involvement, including meningitis or encephalitis, whereas non-neuroinvasive is characterized by fever, chills, body aches, and joint pain, with the absence of CNS involvement. Refer to Communicable Disease Chapter for more details.

## Laboratory Comments

A single elevated antibody titre of  $\geq 1:40$  by HAI suggests recent infection, though it is recommended that a second specimen be collected at least 2 weeks after the first. A second laboratory result with a stable (unchanged/static or  $\leq$  twofold rise) elevated antibody titre is suggestive of recent infection.

## Reinfection

Infection with EEEV is thought to confer lifelong immunity. A client should have only one investigation for EEEV entered in Panorama.

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<sup>1</sup> See Clinical Evidence section.

<sup>2</sup> Blood or cerebrospinal fluid.

<sup>3</sup> See Laboratory Comments section.

<sup>4</sup> EEE exposure is most likely to occur during the summer and early fall in eastern Canada, eastern and south-eastern United States, and throughout the year in the Caribbean and South America.

## Hospitalized Case

A confirmed or probable case who was admitted to hospital in which the disease under investigation caused or contributed to the hospitalization.

## Deceased Case

A death resulting from EEE in a confirmed, probable, or suspect case. This disease does not need to be the primary cause of death.<sup>5</sup>

## Outbreak Definition

In the context of a pathogen not known to be endemic in Nova Scotia, a single case is a signal, and two or more locally-acquired cases in a season may represent an outbreak.

The declaration of an outbreak would occur at the discretion of the Regional Medical Officer of Health.

## Reporting Requirements

Report confirmed and probable cases to DHW Public Health Surveillance via Panorama.

- Report first case of each season and/or first locally acquired case in NS (confirmed or probable) to DHW Surveillance **immediately** via the Surveillance Inbox.

Select appropriate staging option in the “staging” field in Panorama

- Update the staging field if/when new information becomes available.

## Data Entry

See Appendix I for required DHW Public Health Surveillance minimum dataset elements to be entered into Panorama.

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<sup>5</sup> This includes deaths identified through death certificates that list EEE as an immediate cause of death, an antecedent cause giving rise to the immediate cause, or another significant condition contributing to, but not causally related to, the immediate cause.

## Appendix I: DHW Public Health Surveillance Required Minimum Data Set for EEE

Panorama Variable	Description	Surveillance Rationale
<b>Client details</b>		
First Name	First name of case	
Last Name	Last name of case	
Date of Birth	Date case was born	Allows for demographic analysis.
Gender	Field is called gender in Panorama but may refer to sex or gender.	Allows for demographic analysis.
HCN	Health card number of case	Allows for linkage with administrative health data.
Address, including postal code	Address where case resides	Allows for geographic analysis.
<b>Investigation details</b>		
Disease	Disease under investigation	
Microorganism	Name of microorganism causing the specific disease	
Classification	Case classification. <b>Do not close case as a PUI.</b>	Used for counting of cases in surveillance reporting.
Staging	Choose neuroinvasive or non-neuroinvasive.	Allows for analysis by stage.
Disposition	Case disposition	Allows for exclusion of cases as applicable for surveillance reporting.
Responsible organization	Local public health unit	Allows for geographical analysis when address information is unknown.
Client address at time of investigation	Where client was residing at time of disease event, including postal code.	Allows for geographical analysis.
<b>Laboratory -- only if manually entering lab results</b>		
Laboratory ID/Accession Number	ID assigned by the PPHLN	Allows for data linkage.
Test Name	Type of test carried out	Used for analysis of laboratory data.
Specimen Type	Type of specimen collected, e.g., blood, CSF.	Allows for analysis by specimen type.
Specimen Site	Site of specimen collected	Allows for analysis by specimen site.
Specimen Collection Date	Date when the specimen was collected.	Used to place disease event in time, allows for accurate epidemiological analysis
Result Name	Test result description	Used for analysis of laboratory data.
Result Status	Status of test result (e.g. preliminary, final, etc.)	Used for analysis of laboratory data.
Interpreted Result	Laboratory interpretation of test performed	Used for analysis of laboratory data.
Disease	Disease for which testing carried out	Used for analysis of laboratory data.
Microorganism	Name of microorganism causing the specific disease	Used for analysis of laboratory data.
<b>Signs and symptoms (include onset dates)</b>		
Enter onset date for each symptom.		Used to place disease event in time, allows for accurate epidemiological analysis.
Encephalitis	Exhibited during illness.	Allows for analysis of manifestation of disease.

Panorama Variable	Description	Surveillance Rationale
Fever	Exhibited during illness.	Allows for analysis of manifestation of disease.
Meningitis	Exhibited during illness.	Allows for analysis of manifestation of disease.
<b>Outcomes</b>		
Enter all case outcomes related to disease under investigation.	Enter all outcomes investigator becomes aware of during the course of investigation.  All cases must have at least one outcome entered.	Allows for analysis of severity of illness.
<b>Risk Factors</b>		
Behaviour - Lack of personal protective measures	Case does not use mosquito repellent when spending time outdoors.	Allows for understanding of behaviour related to use of mosquito repellent.
Exposure - Any of the acquisition risks identified occurred while outside of Canada	Did any of the acquisition risks identified occur outside of Canada, including related to travel or recent immigration?	Used to evaluate whether disease was acquired outside the country.
Exposure - Any of the acquisition risks identified occurred while outside of NS, but within Canada	Did any of the acquisition risks identified occur outside of Nova Scotia, but within Canada, including related to travel or recent immigration?	Used to evaluate whether disease was acquired outside the province.
Exposure - Engaging outdoors	In the 10 days prior to symptom onset or diagnosis (use earlier date), did the case engage in outdoor activities including camping, gardening, hiking, hunting, mountain biking, golfing, watching/participating in outdoor recreational sports, or other activities in which a case may have been exposed to mosquitoes?	Allows for understanding of likelihood case received a possible mosquito bite during outdoor recreation.
Exposure - Occupational - occupationally acquired infection	Did the case have an occupational unprotected exposure to the blood or body fluids of humans, animals, or birds containing EEE (e.g., laboratory worker, outdoor worker, animal handler, health care worker)	Used to evaluate occupational risk.
Medical - Received a donation of blood, blood products	In the 10 days prior to symptom onset or diagnosis (use earlier date), did the case receive a transfusion?	EEE can potentially be transmitted via transfusion.
Medical - Received a donation of cells/tissues/organs/semen	In the 10 days prior to symptom onset or diagnosis (use earlier date), did the case receive a transplant?	Rarely, transplant-associated transmission of EEE has been documented.
Special population - Pregnant	Whether case was pregnant at time of diagnosis. Specify conception date (estimated) as the 'effective from' date, and delivery date (actual or anticipated) as the 'effective to' date.	Viral encephalitis during pregnancy can cause adverse fetal outcomes.
<b>Transmission Events – if donated blood or tissue in the 10 days prior to symptom onset or diagnosis (use earlier date)</b>		
Mode of transmission	Choose "All natures of transmission"	
Nature of transmission	Choose "Donation of tissues/organs/semen/blood products"	Allows for analysis of risk associated with donation of tissues/organs/semen/blood products

## Appendix II: Updates to EEE surveillance guidelines

Date	Updates
April 2026	First version of EEE surveillance guidelines.