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Health Professionals Update

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Key Messages:
- West Nile virus (WNV) is endemic in Peel region.
- Mosquitoes collected in Peel began testing positive for WNV in the first week of July.
- Clinicians should consider WNV neuroinvasive disease in patients with fever and acute onset of encephalitis, viral meningitis, acute flaccid paralysis, tremor, myoclonus, or Parkinsonian-like condition.
- Clinicians should consider WNV non-neurological syndrome for patients who have at least two symptoms with no apparent alternative cause and a recent exposure to mosquitoes.
- WNV is a reportable disease. Report all suspected or confirmed cases to Peel Public Health.
- Primary Listeriosis testing should be performed by patient's local community or hospital laboratory.

Update: West Nile virus risk in Peel

- West Nile virus (WNV) is a mosquito-borne disease, endemic in Peel region since 2001.
- The number of human WNV cases and positive mosquitoes varies year-to-year, with temperature and precipitation playing a significant role.
- Peel Public Health monitors WNV activity at 33 mosquito traps collected and tested weekly from mid-June to September.
- In 2024, mosquitoes collected in Peel began to test positive for WNV in the first week of July.
- As of July 15, 2024, no confirmed human cases of WNV have been reported in Peel or Ontario.
- Human cases of WNV typically occur from late July through to the end of September.
- For current WNV surveillance data and activity in Ontario, please visit: West Nile Virus Surveillance | Public Health Ontario

Reminders: West Nile virus transmission, clinical presentation, diagnostic testing, reporting, and preventive measures

West Nile virus transmission:
- WNV is transmitted to humans primarily through bites of infected *Culex* mosquitoes.
- Other sources of WNV infection include:
  - Person-to-person transmission through blood transfusion and solid organ transplantation.
  - Intrauterine transmission and probable transmission via human milk have been described but are uncommon.
  - Transmission through contact with infected animals, their blood, or other tissues. Laboratory, field, and clinical workers who handle tissues or fluids or who perform necropsies are at risk of WNV infection.

Clinical presentation:
- Most WNV infected persons are asymptomatic. Approximately 20% of persons infected with WNV develop a mild flu-like illness (WNV non-neurological syndrome). Symptoms include:
  - Fever, headache, and body aches
  - Fatigue
  - Skin rash on the stomach, chest or back
  - Swollen lymph nodes
  - Nausea and vomiting
  - Photophobia
- Less than 1% of WNV infected persons will develop neuro-invasive disease, including:
  - Meningitis
  - Encephalitis
  - Flaccid Paralysis
- Persons over 50 and immunocompromised individuals are at greatest risk of severe disease.
- The incubation period for WNV is typically 2 to 6 days but ranges from 2 to 15 days, and up to 21 days in immunocompromised people.

Diagnostic testing:

- As per Public Health Ontario's recommendations, CSF Serology is the preferred method of testing for **WNV neuroinvasive disease**. If submitting CSF for serology, a paired serum specimen must also be submitted. Consider WNV neuroinvasive disease for patients with fever and acute onset of encephalitis, viral meningitis, acute flaccid paralysis, tremor, myoclonus, or Parkinsonian-like condition.
- For **WNV non-neurological syndrome**, acute and convalescent clotted blood or serum specimens for serology should be collected 2-3 weeks apart. Consider ordering WNV serology for patients who have at least two symptoms with no apparent alternative cause and a recent exposure to mosquitoes.
- Use a Public Health Ontario Laboratory (PHOL) General Test Requisition form and indicate "West Nile Virus - Serology" as well as onset date, symptoms, date of any significant mosquito exposures and travel history, and whether the test is for acute or convalescent serology testing.
- Public Health Ontario Laboratory uses WNV IgG and IgM ELISA as a screening test for WNV. All specimens that are WNV IgM ELISA reactive (early in the season) will be further analyzed for the presence of neutralizing antibodies by PRNT which is highly specific for WNV. Once WNV activity is established in a health region, PRNT testing will no longer be performed for the remainder of the season.
- A reactive WNV IgM antibody response using ELISA is specific for WNV and is rarely due to cross-reaction with other Flaviviruses.
- A reactive WNV IgG antibody response using ELISA may be due to infection with WNV or other flaviviruses (e.g. Dengue, St. Louis encephalitis, Japanese encephalitis, Powassan, or Yellow fever virus) which may cross react.
- Consultation with PHOL or Peel Public Health may be necessary to interpret results of WNV serology or PCR. For more information refer to PHOL's test information index, at: West Nile Virus – Serology and PCR | Public Health Ontario

Reporting:

- WNV disease is a reportable disease. Report all suspect or confirmed cases by faxing Peel Public Health at 289-801-0257.

Preventive measures:

- Remind patients to take preventive measures, including:
  - Taking extra care during peak mosquito biting time (dusk and dawn) by using insect repellent and wearing protective clothing.
  - Applying a Health Canada approved insect repellent containing an ingredient effective against mosquitoes, such as DEET or icaridin, to exposed skin and clothing. Always follow the manufacturer's instructions. For additional information on choosing an insect repellent please refer to: Personal Insect repellents - Canada.ca
    NOTE: Infants younger than 6 months old, should not use an insect repellent containing DEET or icaridin. Instead, use a mosquito net when babies are outdoors in a crib or stroller.
  - Wearing light-coloured, tightly woven, loose-fitting clothing such as long pants, a long-sleeved shirt, shoes, and socks to protect exposed skin.
  - Removing standing water from your property, where mosquitoes can breed.
  - Ensuring your home has tight-fitting screens on windows and doors.

Listeriosis clinical testing

If considering Listeriosis clinical testing, please note that Public Health Ontario (PHO) does **NOT** provide primary testing of *Listeria* from clinical specimens, such as blood cultures or cerebrospinal fluid (CSF) cultures. Patients suspected of listeriosis should have primary testing performed by their local community or hospital laboratory. Additional guidance is available on PHO's new Listeriosis Clinical Testing Information webpage. PHO does provide testing for cultured isolates for identification, subtyping and antimicrobial susceptibility purposes, as well as food testing for public health unit investigations.