Date: Wednesday, May 1, 2024
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To: **Health Care Providers**
From: Dr. Karalyn Dueck, Medical Officer of Health
Re: **Tick-Borne Diseases of Public Health Significance; Oral Poliovirus Vaccine Update; Report All Animal Bites and Scratches; Prenatal Syphilis Screening**

Tick-Borne Diseases of Public Health Significance

Lyme Disease

Ontario continues to see a steady increase in blacklegged (deer) tick submissions, with spread into new areas of the province resulting in new Lyme disease risk areas. Locally, **Pinery Provincial Park** and the surrounding 20 km area, including **Port Franks,** has been identified as a **risk area for Lyme disease**. Lambton Public Health (LPH) surveillance has identified this area to have a **40%** infection rate in blacklegged ticks.

Not all blacklegged ticks carry the bacteria that causes Lyme disease and not everyone who is bitten by an infected tick will develop signs and symptoms of Lyme disease. To assist with decisions regarding antibiotic prophylaxis, please refer to Ontario Health's updated Lyme disease clinical guidance document. Post-exposure prophylaxis recommendations are based on best evidence as per Ontario Health's guidance document linked above. **Post-exposure prophylaxis** is considered if 4 criteria are met:

1. Tick was attached for greater than 24 hours;
2. Tick was removed within the past 72 hours;
3. Tick was acquired in an area with a prevalence of infected ticks more than 20%
    - (See list and map in the Ontario Health document linked above); and,
4. Doxycycline is not contraindicated.
    - (Doxycycline was previously contraindicated for pregnant and lactating people; however, as described in the Ontario Health document, recent evidence has demonstrated that a single dose of doxycycline is safe for this population).

Recommended treatment for post-exposure prophylaxis:

Adults: 1 dose of doxycycline 200 mg by mouth (once).

Children <18 years of age: 1 dose of doxycycline 200 mg by mouth, OR, 4 mg/kg (up to a maximum dose of 200 mg) by mouth (once).

When testing for suspected Lyme disease, document travel history on Public Health Ontario lab requisitions, as confirmatory testing for North American and European *Borrelia* strains differ. Individuals with more advanced Lyme disease should be managed in consultation with an Infectious Disease specialist.

There were 6 confirmed human cases of Lyme disease in Lambton County in 2023. Ontario had 1,771 confirmed and probable human cases of Lyme disease in 2023, an incidence rate of 11.5 per 100,000. This is an increase from the 2022 incidence rate of 9.5 per 100,000 people (Public Health Ontario, 2024).

Anaplasmosis, Babesiosis, and Powassan Virus

Other tick-borne diseases carried by blacklegged (deer) ticks include anaplasmosis, babesiosis, and Powassan virus, which as of July 1, 2023 are Diseases of Public Health Significance in Ontario.

Disease information, including clinical and laboratory criteria, can be found in the disease-specific appendices from the Ontario Ministry of Health:

- Anaplasmosis - "Clinically compatible signs and symptoms are characterized by fever and at least one of the following: headache, malaise/asthenia, arthralgia, myalgia, nonhemolytic anemia, thrombocytopenia, leukopenia, elevated hepatic transaminase levels, or elevated numbers of immature neutrophils" (p. 3).
- Babesiosis - "Clinically compatible signs and symptoms are characterized by fever, chills, intense sweats, headache, dark urine, jaundice, myalgia, arthralgia, hepatosplenomegaly, anemia, and/or thrombocytopenia. Most infections are asymptomatic" (p. 3).
- Powassan virus - "Clinically compatible signs and symptoms are characterized by fever, chills, headache, nausea, vomiting, myalgia, confusion, weakness, ataxia, paresis, nuchal rigidity, and/or lymphocytic pleocytosis" (p. 3).

Public Health Ontario (PHO) has laboratory testing direction on its vector-borne and zoonotic diseases webpage.

Tick testing is not used to diagnose anaplasmosis, babesiosis, Powassan virus, or Lyme disease in humans. LPH conducts surveillance through both passive (tick photos submitted for analysis or tick identification at LPH) and active (tick dragging) surveillance, to monitor blacklegged tick populations in Lambton County.

Prevent Tick Exposures

Exposure to tick-borne diseases typically occurs in wooded or high-brush areas during spring and summer seasons. Ticks live in wooded areas and fields and attach themselves to a person or animal that brushes against plants, bushes, or tall grass. Once attached, ticks feed on blood. Most people never feel the bite. Ticks are most active in spring and summer but can be found at any time of the year when the temperature is above freezing.

- When in endemic areas/hiking, wear closed shoes, light-coloured & long sleeve shirts, long pants, tuck pants into socks, and use diethyltoluamide (DEET) or icaridin (picaridin) insect repellents, or permethrin-treated clothing.
- Avoid tick-infested areas when possible.
- Avoid wooded, brushy, high grass, leaf litter areas, and walk in the center of trails.

Check For and Remove Ticks

- Always complete a tick check for self and dependents, as well as pets, upon return from outdoor activities, and shower if possible.
- Safely remove any tick. Video: Tick Prevention, Checks and Safe Removal.
- Submit a photo of ticks found for identification through the online LPH form or etick.ca. Tick submissions assist in tick surveillance in Lambton County.
- Monitor for signs and symptoms of Lyme disease. The most common symptom is an expanding skin rash (e.g., bull's-eye) that can appear between 3 to 30 days after a tick bite.

Oral Poliovirus Vaccine (OPV) Update

Children vaccinated internationally with dose(s) of **OPV** administered **on or after April 1, 2016 are assumed to have received bivalent OPV (bOPV)** rather than trivalent OPV (tOPV). In April 2016, the World Health Organization coordinated a global switch from tOPV to bOPV.

The Ministry of Health is recommending **children who received bOPV** to complete their polio vaccine series with an **inactivated polio vaccine (IPV) or an IPV-containing vaccine using an age-appropriate schedule, to ensure protection against all three poliovirus types.**

Since OPV has not been used in Canada since 1996, this recommendation only affects patients vaccinated internationally. For these patients, health care providers should:

- Review available immunization records;
- For any recorded doses of OPV administered April 1, 2016 or later, presume these doses are bivalent OPV (bOPV) (i.e., missing polio serotype 2) and consider these doses invalid;
- Immunize with an age-appropriate series of IPV or IPV-containing vaccine, which contains all three poliovirus types;
- For more information, please see attached Q&A for Immunizers from the Ministry of Health.

PHO's 'At A Glance' document provides additional information for health care providers.

Requirement to Report All Animal Bites and Scratches

LPH reminds health care providers of the importance and of the mandatory requirement to report ***all*** bites and scratches from mammals that occur within Lambton County, to LPH.

The *Health Protection and Promotion Act*, R.R.O. 1990, Regulation 557 2(1) Communicable Diseases - General, specifies that:

A physician, registered nurse in the extended class, veterinarian, police officer or any other person who has information concerning either or both of the following shall, as soon as possible, notify the medical officer of health and provide the medical officer of health with the information, including the name and contact information of the exposed person:

> *1. Any bite from a mammal.*
> *2. Any contact with a mammal that is conducive to the potential transmission of rabies to persons. O. Reg. 501/17, s. 1.*

Animal bites and scratches can be reported directly to Public Health Inspectors at Lambton Public Health using the digital Animal Bite Reporting Form.

Prenatal Syphilis Screening

Summary prepared by LPH

Source: Public Health Ontario (PHO) Infectious Disease Query, as of April. 18, 2024

Key Points:

- Provincially, an average of 1 early congenital syphilis case was reported per year in Ontario from 2013 to 2018 (Public Health Ontario). Starting in 2019, an increase in early congenital syphilis cases was observed, with up to 10 reported cases in Ontario per year. In 2022, this number increased to 27 cases.
- There is a risk of perinatal transmission of untreated syphilis in pregnant individuals, which can result in congenital syphilis in the newborn. 'The Canadian Guidelines on Sexually Transmitted Infections' (Public Health Agency of Canada), provides guidance for screening, diagnosis, treatment, and monitoring syphilis.
- Routine syphilis screening is recommended for people with risk factors for syphilis.
- Universal syphilis screening is recommended for pregnant people during the first trimester or at first prenatal visit. Repeat syphilis screening at 28 to 32 weeks, and again at delivery, is recommended for pregnant people at ongoing risk of infection or reinfection of syphilis. Consider prenatal syphilis screening more frequently for pregnant people at ongoing risk of infection. Screen all people who deliver a stillborn infant after 20 weeks gestation.
- Detailed information on syphilis serology testing and prenatal syphilis serology screening is available through Public Health Ontario.

For recommended serology testing and treatment for congenital syphilis or neonates exposed to syphilis, refer to the 'The Canadian Guidelines on Sexually Transmitted Infections' current guidance and the Canadian Paediatric Society article 'Diagnosis and management of congenital syphilis - Avoiding missed opportunities'. Assessment of neonates exposed to syphilis is recommended at delivery by an Infectious Disease Specialist.