MEDICAL ADVISORY
Increased Lyme Disease Activity in Hamilton

TO: Family Physicians
    Emergency Departments
    Infectious Disease Physicians
    Infection Control Professionals
    Rheumatologists

FOR YOUR INFORMATION:
Central West Medical Officers of Health
Academy of Medicine
Dr. Michael Stacey, VP Medical, Hamilton Health Sciences
Mr. Bruce Squires, President, McMaster Children’s Hospital
Dr. David Russell, Chief of Staff, St. Joseph’s Healthcare
LHIN, Dr. Jennifer Everson, Primary Care Lead and Dr. Bill Krizmanich, Emergency Department Lead.

FROM: Dr. Ninh Tran, Associate Medical Officer of Health

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Background
Hamilton Public Health Services (PHS) is notifying health care providers of increased Lyme disease activity in Hamilton. To date, there have been 20 confirmed cases of Lyme in 2021. Although infected ticks can be found almost anywhere in Ontario, Hamilton has been identified as a Lyme disease risk area since 2018. There is a higher risk of encountering a blacklegged tick in an identified risk area.

The purpose of this advisory is to review the signs and symptoms, diagnostic testing and current treatment recommendations for suspected Lyme disease.

Clinical Presentation and Testing of Lyme Disease
Lyme disease is caused by the spirochete bacteria *Borrelia burgdorferi*. It is transmitted to humans by infected *Ixodes scapularis* ticks, commonly known as deer ticks or blacklegged ticks. An infected tick must be attached for at least 24 hours before the spirochete is transmitted. The average incubation period ranges from 3 to 32 days after initial tick bite, with a mean of 7-10 days. A person may experience symptoms that are generally divided into 3 stages: early localized disease, early disseminated disease and late disease.

Clinical presentation of early localized disease may include the presence of an erythema migrans (EM) or bull’s-eye rash within 7 days of the initial tick bite. Variations of EM rash are common and include solid, crusted and blistered lesions. Visit the Government of Canada’s health professionals’ Lyme page via www.canada.ca/lymedisease for visual depictions of EM lesions. Other common symptoms include:

- Fever
- Myalgia
- Arthralgia
- Headache
• Neck stiffness
• Fatigue
• Lymphadenopathy

**Early disseminated disease** can include multiple EM in about 15% of people, cranial nerve palsies, lymphocytic meningitis or carditis. **Late disease** may develop in people with undetected or inadequately treated infection. Late disease can cause cardiac arrhythmias including heart block, recurrent arthritis of large joints or central nervous system manifestations such as behaviour changes, sleep disturbances and meningitis.

Patients tested during early infection may not have developed antibodies to the bacteria resulting in a false negative result. As serological testing has poor sensitivity in the acute phase, treatment should be based on symptomatology and degree of clinical suspicion. (See diagnosis section below.) For patients tested during early infection, consider repeat testing in 2 to 4 weeks.

**Diagnosis and Treatment of Lyme Disease**
Diagnosis of Lyme disease is based primarily on clinical symptoms and epidemiological risk factors such as known tick exposure and spending time outdoors where ticks are present.

For clinical guidance on the diagnosis and treatment of Lyme disease, consult
- The Center for Effective Practice Early Lyme Disease Management in Primary Care Tool at [https://cep.health/clinical-products/early-lyme-disease/](https://cep.health/clinical-products/early-lyme-disease/)

Post-exposure prophylaxis is recommended for asymptomatic patients if all the following criteria are met:
- The blacklegged tick was attached for at least 24 hours
- The blacklegged tick was removed within 72 hours
- The blacklegged tick was acquired in an area where the tick infectivity rate is greater than 20%
- Doxycycline is not contraindicated for the patient

Based upon currently available data, the infectivity rate of ticks in Hamilton does not exceed 20%. It is estimated to be approximately 4% in recent years, however surveillance has been limited in the past year.

To learn more about Lyme disease and ticks, visit [Hamilton.ca/LymeDisease](https://www.hamilton.ca/LymeDisease).

**Reporting Requirements**
Lyme disease is reportable to the Medical Officer of Health under the Health Protection and Promotion Act, R.S.O. 1990, c. H.7.

**Reporting to Hamilton Public Health Services:**
To report suspect Lyme cases, call PHS Monday to Friday, 8:30 a.m. to 4:30 p.m. at 905-546-2063 or fax 905-546-4078.