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Vectorborne Disease Update 2023: New Guidance for Lyme Disease New Vectorborne Diseases of Public Health Significance

Attention: Physicians, Emergency Departments, Infection Control Practitioners, Walk-In Clinics/Urgent Care Clinics, Nurse Practitioners, Ontario Health, EMS, Midwives, Community Health Centres, Family Health Teams, Pharmacies, Beausoleil First Nation, Moose Deer Point First Nation, Rama First Nation, Wahta First Nation

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Lyme Disease

Lyme disease is a growing health risk for residents and visitors of the Simcoe Muskoka region. Unfortunately, climate change continues to drive the rapid expansion of the blacklegged tick (*Ixodes scapularis*) habitat within our geographic area.

Public Health Ontario (PHO) has updated its [Lyme disease risk areas map](#) for 2023, however, it is generally assumed that all of Simcoe Muskoka is a risk area. The Ontario risk areas are determined by standard provincial tick surveillance methods such as tick dragging. In Simcoe Muskoka active surveillance in 2022 identified four ticks as blacklegged ticks; of which zero were positive for *Borrelia burgdorferi*, the pathogen responsible for Lyme disease. Passive surveillance, informed by tick submissions from healthcare providers and residents, has identified infected blacklegged ticks throughout Simcoe Muskoka. The prevalence of *Borrelia burgdorferi* carriage in blacklegged ticks in the local risk areas was estimated in 2022 to be below 20% but is expected to increase over time.

Clinical Supports

Further to the IDSA Guidance on the evaluation and management of Lyme disease being updated in 2020, the following revisions in other supporting resources have taken place.

- Ontario Health as of March 2023 has updated its clinical guidance document: [Management of Tick Bites and Investigation of Early Localized Lyme Disease](#). Please take note of the following:
 - Post-Exposure Prophylaxis (PEP): **doxycycline can now be used for all ages.**
 - Sensitivity of Serological Testing has changed: **slightly higher sensitivity but still only at 58%.**
 - Recommendations for Treatment of Early Localized Lyme Disease: **the range of duration is now from 10 to 21 days depending on the antibiotic.**



- The Center for Effective Practice (CEFP) now also has a guidance document [Tool for Early Lyme Disease Management in Primary Care](#).
- The Infectious Disease Society of America (IDSA) provides a summary of the updated guidance that can be found [here](#).
- [SMDHU recorded a webinar for clinicians](#) led by Dr. Colin Lee recorded in May 2021 which, among other topics discusses (starting at the 36 min 20 sec mark) the differences between the CEFP and the Ontario Health treatment guidelines.

Additional resources for the clinical management of Lyme disease are available on the [SMDHU Healthcare Provider Portal](#).

Laboratory Testing

As of April 1, 2023, a new method known as the **modified two-tier testing (MTTT)** approach replaced the previous standard two-tier testing (STTT). The MTTT is more sensitive without a loss in specificity, however, the sensitivity is still relatively low (**~58%**) for **early localized disease**. Please refer to the [PHOL Lyme Disease test information sheet](#) for details.

What is the clinical guidance for the new MTTT modified two-tier test?

- The first step involves testing using a Tier 1 ELISA test.
- If the initial ELISA test is non-reactive, health care providers should consider an alternative diagnosis or submit a follow-up specimen (2-4 weeks apart) if clinically indicated.
- If the initial ELISA result is reactive or indeterminate, the sample is tested further using Tier 2 ELISA assay.

Blood tests may be negative in patients with early-stage Lyme disease or in patients with early disease who were treated with antibiotics. The stage of the infection and the possible impact of treatment on the outcomes of blood testing should be taken into consideration during diagnosis. The sensitivity of blood tests increases as the infection progresses. The current specimen submission process will remain the same and there will be no impact on the test frequency, turnaround time, however, is expected to decrease.

Note: PHO does not routinely test for European Lyme disease. If European Lyme disease is suspected, please submit a request for European Lyme disease along with appropriate travel history.

Tick Submission Process

For Healthcare Providers: SMDHU encourages health care providers to submit ticks for identification and testing when they have been removed from a patient. PHO provides a [surveillance form](#) that is to be completed and submitted together with the tick. Before submitting the tick to PHO, health care providers may also wish to submit a tick image to [eTick.ca](#) to provide a more rapid identification of the tick species.

For the general public SMDHU encourages the use of [eTick.ca](#) for tick identification and to contact their health care provider if the tick has been identified as a blacklegged tick. [eTick.ca](#) is a public image-based tick identification platform that can quickly and accurately identify a tick species.

The identification and bacterial testing of ticks is generally unhelpful for the clinical management of Lyme disease as results are often received well beyond the time when clinical decisions need to be made. In addition, the presence or absence of *B. Burgdoferi* in a blacklegged tick does not reliably predict the likelihood of clinical infection.

Reporting Requirements

Lyme disease is designated as a disease of public health significance in Ontario. Suspected or confirmed cases of Lyme disease are reportable to local public health under the *Health Protection and Promotion Act, R.S.O. 1990, c.H.7* and must be communicated to SMDHU using the [Disease of Public Health Significance reporting form](#), formerly known as the *Communicable Disease Reporting Form*.

Pharmacist Prescribing for Lyme Disease Post-Exposure Prophylaxis

As of January 1, 2023, pharmacists in Ontario are authorized to prescribe medications for 13 minor ailments including post-exposure prophylaxis following tick bites to prevent Lyme disease. A new resource entitled "[Assessment and Prescribing Algorithm for Pharmacists: Antibiotic Prophylaxis to Prevent Lyme Disease following a Tick Bite](#)" has been developed.

Prevention & Patient Counselling

Direct your patients to the following resources that highlight key protective behaviors:

- smdhu.org/lyme
- [Ticks & Lyme Disease Fact Sheet](#) (Ontario Ministry of Health)

'New' Vectorborne Diseases of Public Health Significance

The Ministry of Health, in response to reports of emerging tick-borne diseases and an increase in blacklegged tick populations across Ontario, is proposing an amendment to the Minister's regulation under the HPPA (Ontario Regulation 135/18 "Designation of Diseases") to designate these diseases as diseases of public health significance (DoPHS). The Ministry is proposing a corresponding amendment to Ontario Regulation 569 "Reports" under the HPPA to specify the reporting requirements for these diseases to local medical officers of health.

The main vector for transmission for anaplasmosis, babesiosis, and Powassan virus is the blacklegged tick (*Ixodes scapularis*). Due to climate change and expanding ranges of blacklegged ticks in Ontario, the risk of contracting these tick-borne diseases is expected to increase. Since these diseases are not currently DoPHS, it is not possible to determine the burden or severity of illness in Ontario. Case reporting for these tick-borne diseases would support the detection of areas of emerging risk, enhance surveillance, and improve care, treatment, and support.

These proposed amendments are aligned with other DoPHS and reporting requirements in Ontario. As this proposal is likely to pass into legislation, SMDHU is providing advanced notification of these new DoPHS which are expected to become reportable on July 1, 2023. For more information on vector-borne diseases in Simcoe Muskoka please visit our [Health Professionals Portal](#) and our [Diseases of Public Health Significance](#) toolkit.