



INFORMATION REPORT

TO:	Mayor and Members Board of Health
COMMITTEE DATE:	March 19, 2018
SUBJECT/REPORT NO:	Lyme Disease Risk in Hamilton (BOH18013) (City Wide)
WARD(S) AFFECTED:	City Wide
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Information:

Based on 2017 tick surveillance, Hamilton is a newly identified 'estimated risk area' for Lyme disease. To become an estimated risk area, blacklegged ticks should be found during tick surveillance in the same location, both spring and fall, between May and October, of the same calendar year. As indicated in the Ticks and Lyme Disease Program Highlight in the September 18, 2017 Infectious Disease and Environmental Health Semi-Annual Report (BOH17029), tick dragging, or active surveillance for ticks, occurred in the fall of 2017. As a result, 10 blacklegged ticks were found, which, when combined with the spring dragging results where three (3) blacklegged ticks were found, meant that Hamilton now met the criteria for being an estimated risk area for Lyme disease. It is important to note that, as part of the dragging process, all blacklegged ticks are sent for Lyme disease testing. All ticks were negative from both the spring and fall results.

The methodology that is used by the Public Health Agency of Canada and Public Health Ontario to define risk areas for Lyme disease allows the identification of these so called "estimated risk areas". These include a 20 kilometre radius which, in Hamilton's case, covers three quarters of the city except eastern parts of Stoney Creek and Glanbrook. See Appendix A. While this is the estimated risk area, blacklegged ticks could also be found outside of this 20 km zone. A medical advisory will be sent to medical practitioners to assist them with human case investigation and testing related to this new estimated risk area.

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Up to March 6, 2018 results also indicate that four of 78 local blacklegged ticks submitted to Public Health Services by the public in 2017 were positive through Lyme disease testing; 19 tick results are pending. The positivity percentage of the local blacklegged ticks submitted for testing will be calculated once all results are received. Using Toronto Public Health's "Lyme Disease Prophylaxis and Diagnosis Algorithm for Clinicians" as a guide, the result may also aid with decisions around potential post exposure prophylaxis for some patients if a person were exposed in an area of ecologic information indicating the rate of infection of ticks to be greater or equal to 20%.

There are many reasons for the expansion of blacklegged ticks in Ontario, with one of the main factors being climate change, specifically the increase in the mean annual degree days above 0°C. Other factors include land use changes with the conversion of farmland to forest, encroaching human populations and forest fragmentation as well as changes in the range of the main hosts for ticks, the white-footed mouse and white-tailed deer. Provincial and national tick surveillance indicators suggest that blacklegged tick populations are expanding in southern Ontario and will likely continue to do so as available habitat permits.

Blacklegged tick populations can also occur over a wide geographic area in Canada because larvae and nymphs readily attach to migratory birds. Birds inadvertently then help transport blacklegged ticks from areas in the US and Canada to various locations across Canada. This makes infectious tick bites possible almost anywhere in Ontario, and so human cases of Lyme disease may occur outside of known Ontario risk areas. However, the risk of exposure is much higher in identified risk areas. The risk of Lyme disease itself is highest in areas with established blacklegged tick populations which are also found to be positive for the agent of Lyme disease, *B. burgdorferi*. Evidence suggests that once blacklegged tick populations are established they will, over years, become infected with *B. burgdorferi*. The extent to which these established endemic areas expand is a key objective of active tick surveillance at the local, provincial, and national levels.

The risk of human infection from Lyme disease in Hamilton remains low, however to prevent infection, people should continue to take precautions to avoid being bitten by ticks. Ticks remain active throughout the year even in colder temperatures.

Precautions include:

After spending time outdoors in wooded or bushy areas, carefully check your full body and head for attached ticks; check your children and pets for ticks (shower to remove ticks before they become attached);

- If you find a tick on your body, remove it as soon as possible by using proper techniques such as using tweezers to pull the tick gently but firmly straight up so that the full head is also removed;
- Wear light-coloured clothing outdoors. It makes ticks easier to spot;

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- Wear long pants and a long sleeved shirt;
- Wear socks and closed toe shoes. Tuck your pants into your socks; and
- Use an insect repellent containing DEET or Icaridin and follow the manufacturer's instructions.

Public Health Ontario is expected to produce an updated Lyme Disease Estimated Risk Areas map for Ontario by the spring, 2018. City of Hamilton, along with any other newly identified health units, will be added at that time. See the 2017 risk map in Appendix B.

The following actions are being completed to inform our community:

- Board of Health Information Report;
- Media release regarding 20 km risk area and precautions;
- Medical advisory to Hamilton medical practitioners;
- Updates to City of Hamilton Lyme disease and tick webpages;
- Outdoor tick signage being reviewed;
- Internal messaging reminder to City staff about health and safety precautions;
- Updates to external stakeholders including adjacent health units; and
- Updates to members of the City of Hamilton Tick Management Planning Group.

Appendices/Schedules Attached

Appendix A to Report BOH18013 - City of Hamilton Lyme Disease Risk Map

Appendix B to Report BOH18013 - Public Health Ontario Lyme Disease Estimated Risk Map 2017