

TO: Chair and Members of the Board of Health

FROM: Christopher Mackie, Medical Officer of Health/CEO

DATE: 2020 February 27

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## VECTOR-BORNE DISEASE PROGRAM: SUMMARY REPORT

### **Recommendation**

*It is recommended that Report No. 009-20 re: “Vector-Borne Disease Program: Summary Report” be received for information.*

### **Key Points**

- The increased prevalence of blacklegged ticks (Lyme disease vectors) in Middlesex-London, primarily caused by climate change, has led Public Health Ontario to identify a Lyme disease “risk area” within a 20-kilometre radius of Komoka.
- The elevated incidence of locally acquired blacklegged ticks may contribute to an increase in the number of Lyme disease infections in Middlesex and London residents.

### **Background**

In 2019, the Vector-Borne Disease (VBD) Team’s passive and active tick surveillance identified the presence of blacklegged ticks in the Komoka area. Blacklegged ticks are known vectors of Lyme disease (LD). While active surveillance did not identify LD-positive blacklegged ticks, one LD-positive tick was submitted from a human in this area. Because of the discovery of this tick species in the Komoka area during spring and fall surveillance activities, the region now meets Public Health Ontario criteria for the establishment of a Lyme disease “risk area.”

Since 2015, the term “risk area” has been used to describe locations in Ontario where there is an increased risk of encountering LD-infected ticks. For the past four years, the northern part of Middlesex County has been identified as a LD risk area, since it was within a 20-kilometre radius of Pinery Provincial Park, where blacklegged ticks are known to be present. Public Health Ontario uses the 20-kilometre radius measure as it accounts for the movement of animals upon which ticks travel. This movement of animals is attributable to the expansion of tick populations across the province.

As blacklegged ticks were identified in Komoka, applying the 20-kilometre radius measure from their point of identification will result in most of the City of London’s geographical area falling within the newly identified risk area, in addition to Middlesex Centre, Strathroy-Caradoc, the Munsee-Delaware Nation, the Oneida Nation of the Thames, and the Chippewas of the Thames First Nation (refer to [Appendix A](#)).

### **Activities**

The VBD team uses passive and active tick surveillance throughout the Middlesex-London region to monitor the risk of LD infection and to help identify establishing tick populations. Passive tick surveillance occurs when health care providers, veterinarians, and residents submit ticks to the Health Unit for identification. Active surveillance occurs when MLHU staff deploy in the field to search for ticks using a technique called tick dragging (see [Appendix B](#)). Location selection for this activity is guided by results from passive tick surveillance. Active surveillance helps to identify trends in the tick population across our region over multiple years. Finding multiple ticks in a single location may be indicative of an established tick population.

As climate change and animal movement can expand the range of tick habitat, active tick surveillance will be expanded to communities near the identified risk area to determine if the risk area is expanding. The risk of human cases of LD increases in areas where infected blacklegged tick populations are established.

### **Next Steps**

The combination of LD-positive ticks and the continued rise in the number of blacklegged ticks found in our region demonstrates the need for continued passive and active surveillance, testing, and public education. Although the number of locally acquired human cases of LD has been historically low, the number of local blacklegged ticks identified through active and passive surveillance is anticipated to continue to increase across Middlesex-London. The newly established risk area in Komoka has been added to Public Health Ontario's LD risk area map. This new designation will help local health care providers make more efficient and informed assessments of their patients and deliver more consistent treatment. Moving forward, the VBD Team will alert local health care providers and continue to support residents by promoting personal protection, enhancing public education campaigns, and working with community partners.

This report was prepared by the Safe Water, Rabies and Vector-Borne Disease Team in the Environmental Health and Infectious Diseases Division.



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