

For Information

DATE: January 25, 2012

REPORT TITLE: **LYME DISEASE IN PEEL**

FROM: Janette Smith, Commissioner of Health Services
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OBJECTIVE

To respond to City of Mississauga Council Resolution 0264-2011 regarding Lyme disease diagnosis, treatment and education.

REPORT HIGHLIGHTS

- City of Mississauga Council endorsed Resolution 0264-2011 in November, 2011 and asked that the Region of Peel support the endorsement and further educate citizens on the risk of Lyme disease.
- Lyme disease is caused by the bite of a black-legged tick, also known as a deer tick, infected with the bacterium *Borrelia burgdorferi*.
- To date, an established black-legged tick population has not been found in Peel and there have been no locally-acquired cases of Lyme disease.
- Lyme disease is a reportable illness.
- In 2011, there were two cases of Lyme disease in Peel Region, both of which were related to travel outside of Peel. From 2006 to 2010 there were 34 cases recorded. The incidence rate in Peel over the last five years is comparable to the provincial rate of Lyme disease.
- Peel Public Health is satisfied that all scientifically verified diagnostic tests and treatments for Lyme disease are currently available to Ontario residents through their health care providers. We will continue to conduct surveillance and educational activities as a component of our annual Vector-borne Disease program.

DISCUSSION

1. Background

On November 9, 2011 City of Mississauga Council received a petition and deputation on Lyme disease and passed the following resolution:

"That the Council of The Corporation of the City of Mississauga endorse the petition from Bob Bailey, MPP Sarnia-Lambton, requesting that the Ministry of Health direct the Ontario Public Health system and OHIP to include all currently available and scientifically verified tests for acute and chronic Lyme disease diagnosis, to do everything necessary to create public awareness of Lyme disease in Ontario, and to

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have internationally developed diagnostic and successful treatment protocols available to patients and physicians.

And that the Region of Peel Council be asked to support this endorsement and that Peel Health be requested to further educate our citizens on the risk of Lyme Disease.”

(City of Mississauga Resolution 0264-0211)

This report provides an overview of Lyme disease and outlines Peel Public Health's response to the City of Mississauga resolution.

2. Lyme Disease

a) Cause

Lyme disease is an illness caused by the bacterium, *Borrelia burgdorferi*, which is spread through the bite of an infected tick. This bacterium is transmitted to ticks when they feed on infected animals, such as deer. Infected ticks may then pass the infection on to humans. In Ontario, the disease is spread by the black-legged tick (*Ixodes scapularis*), also known as the deer tick. Lyme disease has been reported world-wide, with different ticks and bacteria predominating in different areas. In Europe, for example, most illness has been caused by *Borrelia afzelii* and *Borrelia garinii*.

b) Diagnosis and Treatment

A tick must be attached to the body for at least 24 hours to transmit Lyme disease to humans. The disease can be prevented by promptly and carefully removing any attached ticks. If an attached tick is removed promptly, antibiotic treatment is not necessary.

There are three stages of Lyme disease; early localized, early disseminated and late disease. In the early localized stage, about 80 per cent of those infected will develop a "bull's eye" rash at the site of the tick bite, along with fever, muscle aches, headaches and fatigue. If left untreated, the later stages of Lyme disease may involve multiple organs including the heart, joints and nervous system, arthritis and/or neurological problems.

In diagnosing Lyme disease, doctors evaluate symptoms, exposure to ticks, travel history and blood test results. In Ontario, a two-step blood testing method recommended by the Canadian Public Health Laboratory Network, Public Health Agency of Canada (PHAC), and the United States Centres for Disease Control and Prevention (CDC) is used.

A number of private laboratories in the United States offer testing for Lyme disease that do not follow the same testing protocols and recommendations used by accredited Canadian and American laboratories. Both PHAC and CDC advise against the use of these tests because their reliability and accuracy have not been scientifically validated.

People should see their doctor if symptoms of Lyme disease develop within 30 days of a tick bite. Early Lyme disease can usually be easily treated with two to three weeks of oral antibiotics. If treated early, patients usually recover rapidly and completely. If untreated, later stages may require intravenous antibiotic treatment. Most patients who are treated in later stages of the disease also respond well to antibiotics, although some

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may suffer long-term damage to their nervous system or joints. Approximately 10 to 20 per cent of patients experience fatigue, muscle aches, sleep disturbance or difficulty thinking even after completing a recommended course of antibiotic treatment. The symptoms cannot be cured by longer courses of antibiotics, but generally improve on their own over time.

c) Ontario Context

At present, black-legged ticks are most commonly found in areas along the north shores of Lake Erie, Lake Ontario, and the St. Lawrence River. Locations with established black-legged tick populations known to carry Lyme disease include:

- Long Point Provincial Park
- Turkey Point Provincial Park
- Rondeau Provincial Park
- Point Pelee National Park
- Prince Edward Point National Wildlife Area
- Wainfleet Bog Conservation Area, and
- the St. Lawrence Islands National Park area.

Ticks infected with Lyme disease can be carried on migratory birds so it is possible, albeit less likely, to acquire Lyme disease outside of these identified areas.

Ontario is seeing an increase in human cases of Lyme disease and there are concerns that global climate change could lead to conditions that are favourable for the establishment of black-legged tick populations in other parts of the province.

d) Human Cases of Lyme Disease in Peel

Lyme disease is a reportable disease in Ontario. Peel Public Health staff investigate suspect and confirmed cases of Lyme disease among Peel residents. This year, there has not been a confirmed case of Lyme disease that was acquired in Peel region. The number of cases reported fluctuates from year to year. In 2011, there were two cases of Lyme disease in Peel region, both of which were related to travel outside of Peel. From 2006 to 2010, there were 34 cases recorded. The incidence rate in Peel over the last five years has been comparable to the provincial rate of Lyme disease.

3. Peel Public Health Lyme Disease Educational and Tick Surveillance Activities

Peel Public Health's activities related to Lyme disease are undertaken as part of our annual Vector-Borne Disease plan. Physician education is a key component of the plan. In 2011, as in past years, communication was sent out to Peel physicians on Lyme disease (<http://www.peelregion.ca/health/professionals/pdfs/2011-updates/lyme-disease-vol4-no15.pdf>). A similar communication is planned for 2012. Also in 2011, presentations on Lyme and other vector-borne diseases were made to family physicians at all three hospitals in Peel.

Information for the public about Lyme disease on the Peel Health website was enhanced in 2010 (<http://www.peelregion.ca/health/vbd/lyme/index.htm>). In addition, pamphlets about Lyme disease were distributed at targeted community events.

Peel Public Health will identify the species of any tick submitted by the public. If the tick is a black-legged tick it will be sent for laboratory testing to determine if it is carrying *Borrelia*

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burgdorferi. If an establishing tick population is identified, or if there is evidence that a confirmed case of Lyme disease has been acquired locally, then active surveillance, including tick dragging, will be undertaken.

To date an established black-legged tick population has not been found in Peel region, although individual ticks have been identified on a few occasions. One black-legged tick was identified in 2000 as part of a study of migratory birds and was found to be positive for the bacterium, *Borrelia burgdorferi*. In 2011, a black-legged tick was found in the backyard of a residence in Bramalea. It is likely that a migrating bird brought the tick into the area as numerous bird baths and bird feeders were located on the property. This tick tested negative for *Borrelia burgdorferi*. Another black-legged tick was submitted by a Caledon resident who was bitten while hiking along the north shore of Lake Erie. This tick tested positive. In late 2011, a black-legged tick was found by a conservation officer at the Claireville Conservation Area in Brampton. Laboratory results for *Borrelia burgdorferi* are expected soon.

In 2009, active tick dragging at Rattray Marsh and Meadowvale Conservation Area, both in Mississauga, resulted in no black-legged ticks being captured.

4. Response to the Mississauga Council Resolution

Having reviewed the current process in Ontario for the diagnosis of Lyme disease, Peel Public Health is satisfied that all scientifically verified diagnostic tests are currently available to Ontario residents through their physicians. In addition, it has been confirmed with Public Health Ontario laboratory staff that processes are in place to review new methods and approaches in the laboratory diagnosis of various diseases, including Lyme disease.

We believe that our educational activities to promote awareness of Lyme disease amongst residents and physicians in Peel region are commensurate with need and that Peel residents are able to access appropriate diagnosis and treatment for Lyme disease.

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CONCLUSION

Peel Public Health supports continued public and physician education on Lyme disease prevention, diagnosis and management. Testing and prevention and activities for 2012 will be included in the 2012 Vector-borne Disease Plan. Peel Health also supports using only scientifically validated laboratory testing for Lyme disease as recommended by the Canadian Public Health Laboratory Network, Public Health Agency of Canada, and the United States Centres for Disease Control and Prevention.



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