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HEALTH UNIT

# Lyme Disease Overview

Community and Neighbourhoods Committee

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# Outline

- General overview and treatment
- Surveillance and tick distribution
- Number of human cases
- Educational messages
- Plans for 2012
- Board of Health endorsement

## Lyme Disease

- Lyme Disease (LD) is an infection caused by a bacteria, *Borrelia burgdorferi*
- Can be transmitted to humans through the bite of an infected tick:
  - *Ixodes scapularis*
  - deer tick
  - blacklegged tick

## Symptoms

- Erythema migrans / bull's eye rash
- Occurs 70-80%
- Non-specific tiredness, fever, headache, and joint and muscle pain
- Disseminated – heart, arthritis, neurologic
- Late – neurologic, arthritis



# Treatment

- Antibiotics for 14 days
- If detected late, longer course of therapy or intravenous treatment
- 10-20% will have “Post-Treatment Lyme Disease Syndrome” – muscle and joint pain, cognitive problems, sleeping problems, fatigue which gradually resolve
- Chronic Lyme Disease inappropriate term

## Lyme Disease Areas

- Must have the ticks - “established”
- Ticks or animals must have *Borrelia burgdorferi* – “endemic”
- Seven areas in Ontario
  - Not Middlesex-London
  - Can rarely acquire Lyme disease from non-endemic area from ticks dropped from migratory birds



## Endemic Areas

- 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
- St. Lawrence Island National Park.

# Tick Surveillance

- **Passive Surveillance:**
  - Ticks submitted to the health unit by physicians, veterinarians, and the public
- **Active Surveillance:**
  - Health unit staff go into the environment to look for ticks
  - May involve tick dragging and/or small mammal trapping

# Tick Surveillance



## Ticks in Middlesex-London

- 17 ticks submitted – 2009
- 46 ticks submitted – 2010
- 73 ticks were submitted to date in 2011
- *5 Ixodes scapularis*
  - 4 acquired outside of Middlesex-London;
  - 1 uncertain origin
  - 2 positive for *Borrelia burgdorferi*; 1 pending
- 6 drags in 2011 – no *Ixodes scapularis*

# Tick Surveillance

- The majority of ticks submitted have been identified as dog ticks, *Dermacentor variabilis* (non-vector)



*Ixodes scapularis*

Source: Wikipedia

[http://en.wikipedia.org/wiki/Ixodes\\_scapularis](http://en.wikipedia.org/wiki/Ixodes_scapularis)



Dog Tick

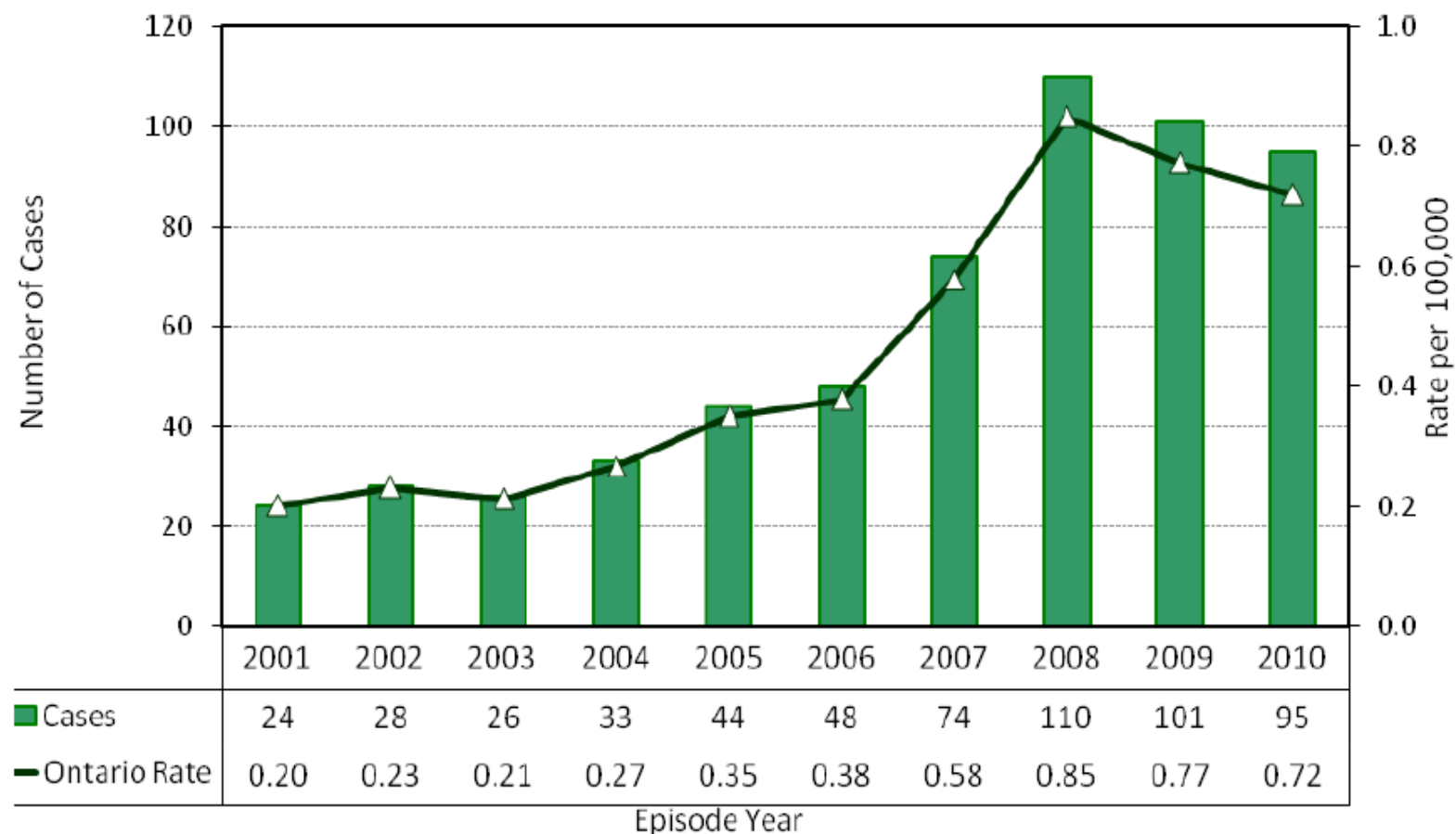
# Diagnosis of Human Lyme Disease

- Clinical symptoms
- Exposure history
- Laboratory tests – 2-tiered algorithm
  - ELISA
  - Western Blot
  - Must be done at a public laboratory using standardized methods

# Laboratory Test

- Not perfect
  - Not positive initially; may need to be repeated
  - May not become positive if treated early
  - May be falsely positive; Should not be taken for non-specific symptoms
- Number of tests done in Ontario increased from 4,000 in 2003 to 13,000 in 2010

# Ontario Lyme Disease Rates



Public Health Ontario, Draft Technical Report: Update on Lyme Disease Prevention and Control, October 2011



# Human Lyme Disease in Middlesex-London

- Since 2002
  - 1 case in 2009
  - 3 cases in 2010
  - 1 case in 2011
- All acquired outside of Middlesex-London

## Human Cases in the United States

- Higher rates in the United States ~ 30,000 confirmed and probable cases diagnosed in 2010
- Rate of 7.3 confirmed cases per 100,000 people.
- Twelve states (northeast / mid-Atlantic and upper mid-western states) account for approximately 94% of the cases.

## Educational Messages

- Be aware of Lyme disease and use protection when travelling to endemic areas
- Avoid tick bites
- Check for ticks after outdoor exposure
- How to remove ticks that are found on a person
- How to submit them to the Health Unit for testing.



## Public Education

- Educational campaign initiated in 2009
- Pamphlet and pens
- Fairs
- City of London garbage calendar
- Rogers TV
- Bus shelter ads
- Facebook ads
- Information to healthcare providers

# Public Education


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## Lyme Disease

**What is a tick?**

Ticks are similar to mites, about the size of a sesame seed, which feed on blood. They move about the ground slowly or they settle on tall grass and bushes until they attach themselves to a person or animal passing by. There are many different types of ticks but only a few are capable of carrying the bacteria which causes LD. In Ontario the tick that is known to transmit LD is *Ixodes scapularis*, also known as the black-legged tick or the deer tick.



**What is being done in the Province of Ontario to monitor and control Lyme Disease?**

The Ontario Ministry of Health and Long-Term Care gathers information about Lyme disease to try to determine where individuals may have come in contact with infected ticks. Encouraging the public to submit ticks that are found attached to themselves or to family members to their local health units is another form of tick surveillance.

[www.healthunit.com](http://www.healthunit.com)



Going outdoors?

## Get tick smart

Know the bug.  
Know the bite.  
Know what to do.



**Protect yourself against Lyme disease.**

Black-legged ticks are very small and hard to see. They are often found low to the ground in tall, grassy areas.

Take these steps to prevent tick bites:

- Use bug repellent containing DEET.
- Cover up! Wear long sleeve tops and pants.
- Check yourself and children for ticks.

Early diagnosis and treatment are important. If you have any questions or concerns, contact your health care provider or local health unit.

**Let's Target Lyme!**

[www.ontario.ca/lyme](http://www.ontario.ca/lyme)



## Plans for 2012

- Continued passive surveillance
- Active surveillance if indicated
- Continued public education
- Continued health care provider education

# Board of Health Endorsement

**On November 17, 2011, the Board of Health for the Middlesex-London Health Unit endorsed ongoing Lyme Disease surveillance and promotional activities as outlined in Board of Health Report No. 102-11.**

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