



Lyme Disease and Tick Talk

HKPR Health Unit



heald /hild
- ORIGIN OE
gin, from a
health • n.
> a person's
ORIGIN OE
ealth ead



Table of Contents

- Lyme Disease (LD)
- Vector- Black Legged or Deer Tick
- Present Scenario (Data Analysis)
- Why Worry About LD
- What Has Been Done
- What Next



Lyme Disease

Caused by a Bacterium:

Borelia burgdorferi

Natural Reservoir:

Mammals (Deer, Mice etc.) and birds

Transmitted to Human, Dog and Other Hosts by:

Vector- Black Legged Ticks (*Ixodes scapularis*)

Symptoms Ranging From:

Erythema (bull's eye rash) and flu like symptoms to severe neurological conditions



Vector

Black Legged Tick (*Ixodes scapularis*)

- Need blood meal from host for survival and multiplication
- Hosts - mammals, birds, reptiles and amphibians



heald /hild
ORIGIN OE
gin, from a
health • n.
a person's
ORIGIN OE
ealth ead

Vector

Black Legged Tick (*Ixodes scapularis*)

- Spreading to Canada from USA with migratory birds
- Preferred habitat- tall grass and bushy areas with abundant host populations (deer, mice, birds)
- Reported from several parts of Canada

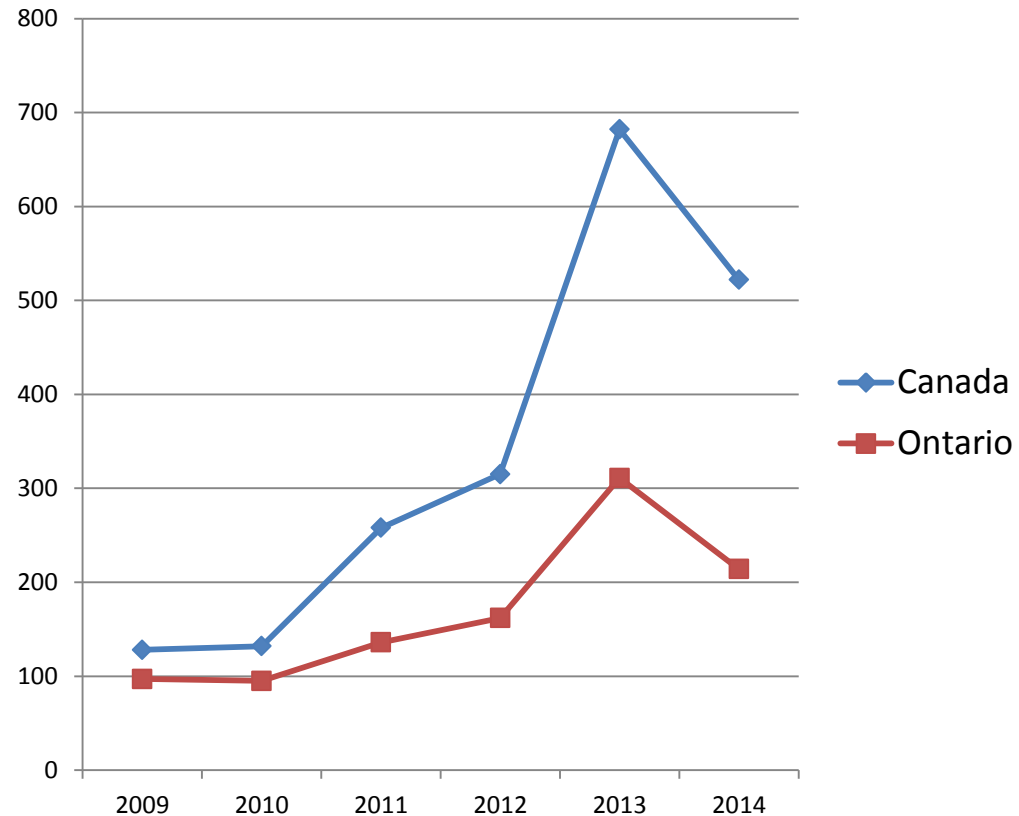




Present Scenario- Ontario and Canada

Reported Lyme Disease Cases- 2009 to 2014

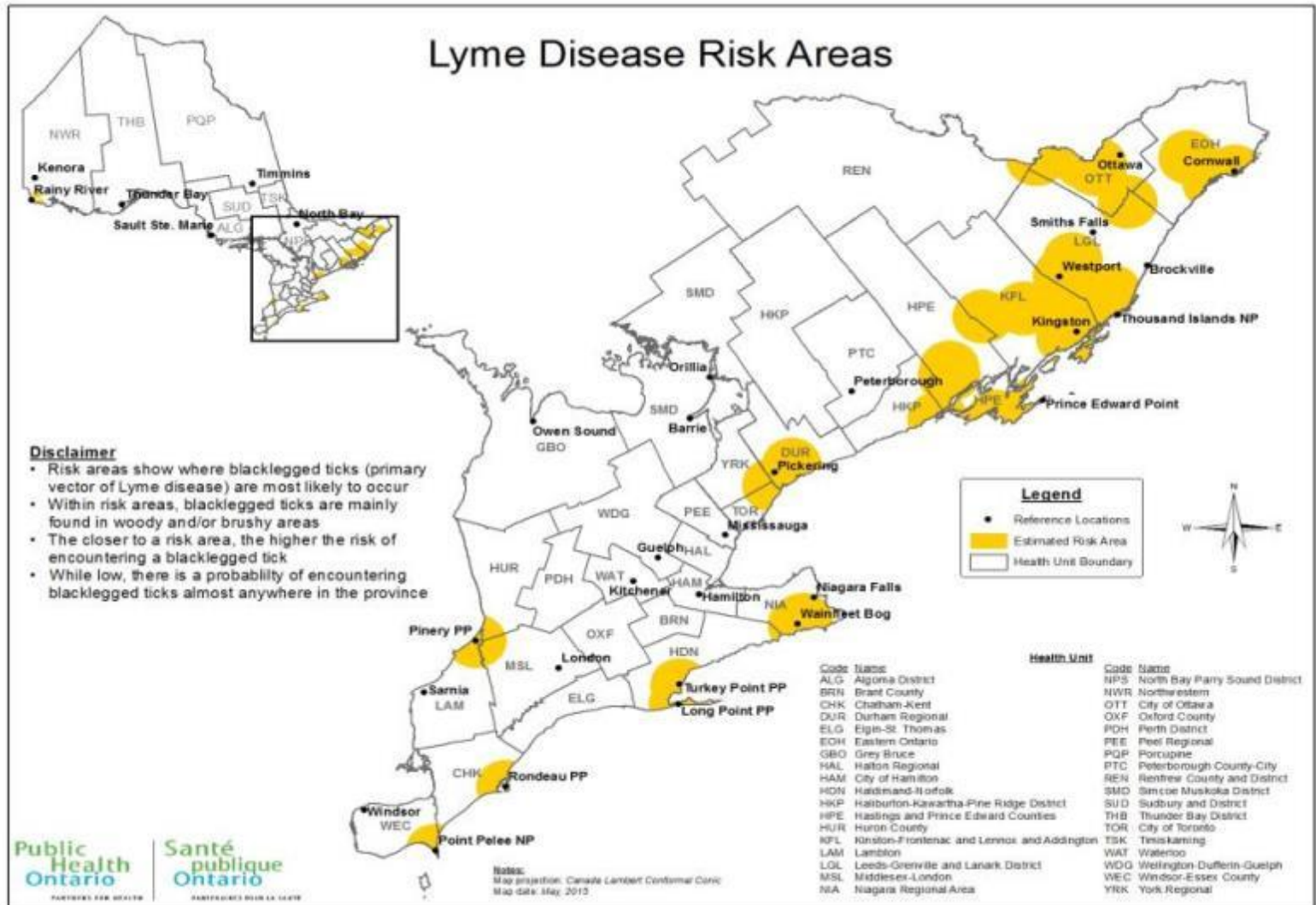
Year	Ontario	Canada
2009	97	128
2010	95	132
2011	136	258
2012	162	315
2013	311	682
2014	214	522



Present Scenario- Ontario



health / ill-
ORIGIN OE
gin, from a
health • n
> a person's
ORIGIN OE
ealth • n



Public Health Ontario
PARTNERS FOR HEALTH

Santé publique Ontario
PARTENAIRES POUR LA SANTÉ

HALIBURTON, KAWARTHA,
PINE RIDGE DISTRICT
HEALTH UNIT



Present Scenario –HKPR

Black Legged Ticks Positive for Lyme Disease Bacteria

Year	Total Black Legged Ticks Submitted	Number of Locations	Positive for <i>B. burgdorferi</i>	Percent Positive
2013	173	14	9	5.20 Percent
2014	208	32	22	10.57 Percent

In 2015- two cases of Lyme disease have been reported within the HKPR Health Unit



Present Scenario - HKPR and Surrounding Areas

Lyme Disease Cases in Dogs

Name of place	No. of Cases
Ajax	3
Apsley	4
Barrie	5
Bowmanville	1
Cobourg	7
Lindsay	2
Omeme	2
Orillia	1
Peterborough	5
Simcoe	42
Whitby	5



Why Worry About Lyme Disease?

- Poor reporting- Only ten percent
- Incidence of LD and vector population is increasing
- More positive ticks reported (Bobcaygeon and Omemee)



Why Worry About Lyme Disease?



- Low perception of risk by general population
 - Low personal protection behavior
 - Low knowledge of disease and symptoms
 - Travel to endemic areas
 - (As a result more infections but under reporting of the cases)
- Little emphasis on ticks control or host population treatments





What Has Been Done So Far?

- Multi departmental Vector Borne Disease Committee initiated at HKPR
 - Members from Environmental Health, CDIP, CDC & Epidemiology
- A situational assessment for Lyme disease was conducted
- Operational plan has been developed based on situational assessment



What's Next?

- Tick Surveillance
- Review policy and procedures
- Review the disease prevention efforts
- Collaboration with community partners



Passive Tick Surveillance

Done for Years

- Client brings the tick to the Health Unit (only attached to human received)
- Tick sent for identification
- Further testing for Lyme disease bacteria if black legged tick identified
- Results analyzed





Active Tick Surveillance

Initiated Last Year



Tick preferred sites/ locations selected



Tick dragging done to confirm Black legged ticks



heald / hilt
ORIGIN OE
gin, from a
health • n.
> a person's
ORIGIN OE
ealth ead



heald / m...
 ORIGIN OE
 gin, from a
 health • n.
 > a person's
 ORIGIN OE
 ealth ead

Active Tick Surveillance

Tick Dragging at Various Locations in HKPR

Year	Total Areas Dragged	Areas with Ticks	Name of Areas with ticks collected	No. of ticks collected	Ticks with Lyme Disease Bacteria
2014	1	1	(Presquille Park)	6	5
2015	17	4	Presquille Park	5	1/5 (at least one)
			Presquille Park	14	Results pending
			Colborne Soccer Field	3	Result Pending
			Colborne Dog Park	6	Result Pending

Review Current Policy and Procedures

Follow the West Nile Virus Program

- Training students to conduct active surveillance
- Introducing a procedure on when to do media release or tick control





Review Disease Prevention Efforts

- Increase public awareness
- Identify risk areas
- Integrated management of ticks
 - Treatment of host populations (Medicines given to Deer to control ticks)
 - Control of host populations (mice control)
 - Tick habitat alterations
 - Area wide acaricide/ pesticide applications



Collaboration with Community Partners

- Municipalities
- Schools
- Veterinarians
- Physicians and Hospitals
- Laboratories
- Other Health Units
- Public Health Ontario
- Public Health Agency of Canada
- Any other partner



Thank-You

Questions ?