Five stages of female blacklegged ticks as they feed
Climate Change and Ticks

• Direct effects
  • temperate regions expands into previously colder regions
  • Shifts in migration patterns of host mammals and birds, particularly thrushes (Ogden 2008, 2015)

• Indirect
  • changes in patterns of interface between animal hosts and humans
Number of tick regions in Canada is increasing in some areas
Number of Lyme cases in Canada increasing

Reported number of disease
2009: 144 cases
2010: 143 cases
2011: 266 cases
2012: 338 cases
2013: 682 cases
2014: 522 cases
2015: 917 cases
2016: 841 cases* - dataset not complete

Reference: National Lyme Disease Surveillance in Canada 2013

Variations by age and gender

Children and adults over 55
Clear seasonality
Major communication challenges

- Talking about ticks often intersects with the “outrage” over Lyme Disease
  - Negative cascade

Reference: Aenishaenslin et al. 2017 Tick and Tick Borne Diseases
Public concern and media coverage are strongly correlated
### Why does outrage vary?

<table>
<thead>
<tr>
<th>Less outrage</th>
<th>More outrage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary</td>
<td>Coerced/Involuntary</td>
</tr>
<tr>
<td>Natural</td>
<td>Industrial</td>
</tr>
<tr>
<td>Familiar</td>
<td>Exotic</td>
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<tr>
<td>Not dreaded</td>
<td>Dreaded</td>
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<tr>
<td>Chronic</td>
<td>Catastrophic</td>
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<tr>
<td>Knowable</td>
<td>Unknowable</td>
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<tr>
<td>Individually controlled</td>
<td>Controlled by others</td>
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<tr>
<td>Fair</td>
<td>Unfair</td>
</tr>
<tr>
<td>Trusted sources</td>
<td>Untrusted sources**</td>
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<tr>
<td>Responsive process</td>
<td>Unresponsive process</td>
</tr>
</tbody>
</table>

Ticks

Lyme Disease
What to do?

• Reframe and discuss to prevention and ticks
  – not just Lyme - anaplasmosis, etc

• Acknowledge “many sides”
  – Ignoring statistics detrimental
  – Use strategies to reduce outrage
    • Empathy
    • Listening/Mirroring

• ”Things are changing”- messaging okay
  – Acknowledge uncertainty
  – Be proactive rather than reactive
  – See what others are saying...

“By 2020, it’s estimated that 80% of the population in eastern Canada will live in an area with an established deer tick (also known as black legged tick) population.”
Some good news...

PHAC researchers suggest approximately 3-5 year gap between tick invasion in regions and the outbreaks of infected ticks (Ogden 2013)

Result- a window of opportunity during which public health could focus education before human cases can occur

Building connections between tick researchers and public health may be very useful
Targeting those at risk

• Education and video for children
  – Include video, school and camp activities
For Dog owners...

https://www.canadianveterinarians.net/documents/ntam-QandA
Conclusion

• Certain regions are seeing increasing tick populations in Canada

• Most people focused more on Lyme and less on ticks
  – Lyme news too late for prevention!

• Young children and adults over 55 appear more at risk

• Tick surveillance may be helpful for targeting risk communication efforts