

***Climate Change, Lyme Disease and School-aged Children***

**Presentation to the Pan-Canadian Joint Consortium for  
School Health (JCSH)**

**School Health Coordinators' Committee**

**MARCH 10, 2020**



# Presentation Outline

## **I. Context: Climate change and health impacts in Canada**

- Climate change impacts on health
- Health impacts on children
- Government of Canada action on climate change and health

## **II. Focus on Lyme disease:**

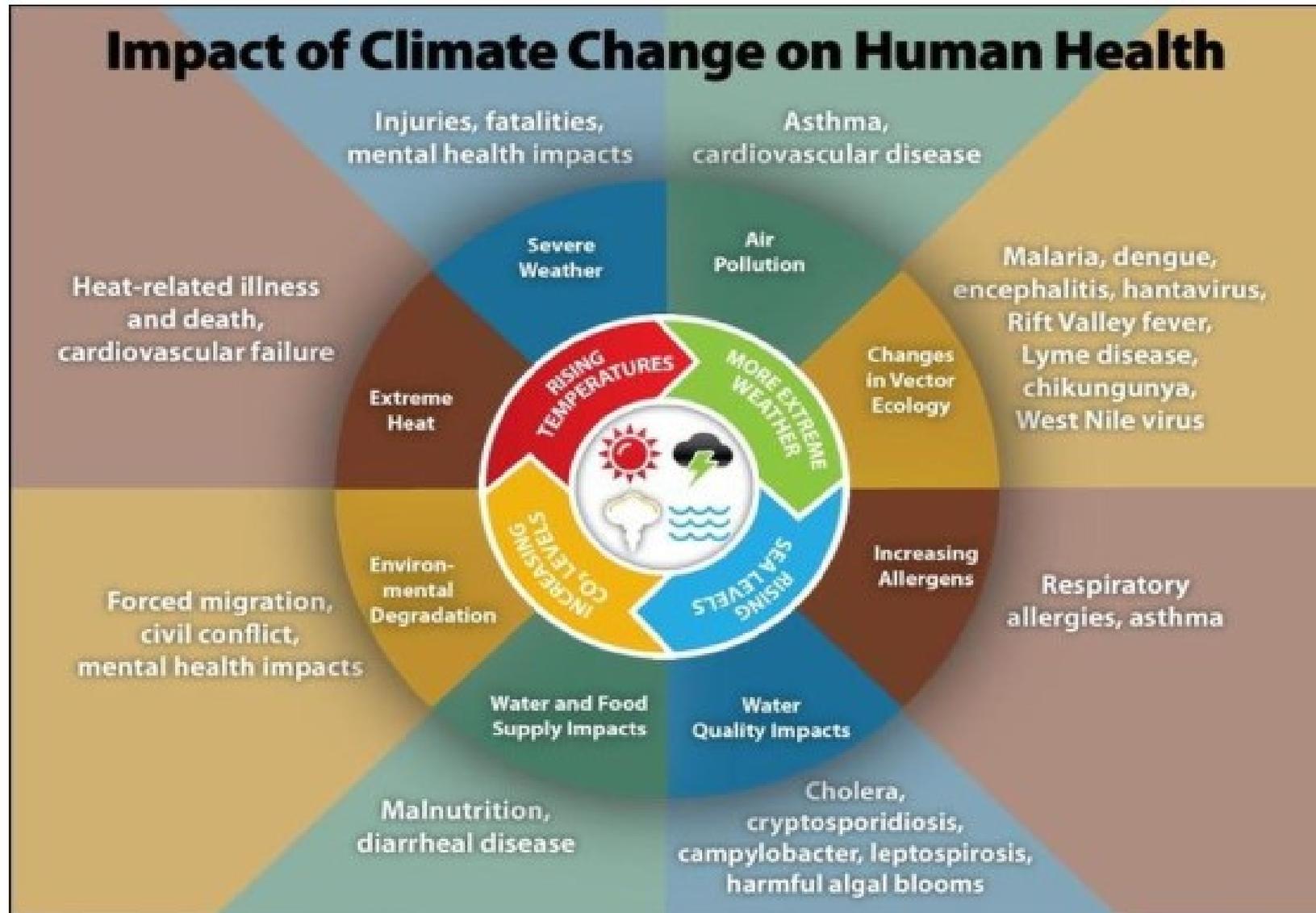
- Overview of Lyme disease
- PHAC areas of action on Lyme disease
  - Spotlight on education and awareness activities

## **III. Opportunities for collaboration**

- Lyme disease and school-aged children
- Other opportunities related to climate change and health

# I. Context

# Climate change has severe consequences for human health....



Luber et al., 2014

# In Canada, there is growing attention on impacts of climate change on the health and well-being of children and youth...

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**PRACTICE POINT**

## Global climate change and health in Canadian children

Posted: Aug 14 2019

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**Principal author(s)**  
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**Abstract**  
Climate change is a reality. Numerous expert authorities warn of the critical need to undertake and adapt environmental efforts to protect human health. Climate change is accelerating, and countries in high latitudes, such as Canada, are experiencing climate change more directly and, for some end points, more dramatically than mid- and low-latitude countries. Children are vulnerable to climate change health effects, and physicians and other health care providers need to be ready to identify, manage, and prevent climate change-related health hazards. This practice point highlights specific, climate change-related threats to the health of children and youth, and provides resources for health care providers. Climate challenges and their health impacts on children are described, based on key Canadian health care providers' information. Enhanced awareness of the immediate and longer term health impacts on children and youth can help health care providers to counsel families and practice in a climate-resilient way.

## Children to bear the burden of negative health effects from climate change

Written by: Wendi Hawthorne | Updated: January 27, 2020



Studies of women who experienced major flooding events while pregnant reported an association with outcomes such as preterm birth and low birth. (Photo by Getty Images).

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## CLIMATE CHANGE AND CHILDREN'S RIGHTS

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### HOW ARE CLIMATE CHANGE AND CHILDREN'S RIGHTS CONNECTED?

Children's ability to achieve and exercise their rights can be disrupted by changes in the natural environment caused by climate change. Their rights to clean water, access to school and good health can be affected by climate change. UNICEF Canada collaborated with secondary school educators in their efforts to raise public awareness about the links between climate change and children's health.

## Canadian children face serious risks as a result of climate change, pediatricians' group says

CAREY WEEKS | HEALTH REPORTER  
PUBLISHED AUGUST 14, 2019  
30 COMMENTS | SHARE

Canadian children face serious risks as a result of climate change and health-care providers must adopt new practices to mitigate the effects, says a guidance document from a national group of pediatricians.

Infants and children are particularly vulnerable to heat sickness, reduced air quality due to pollution and wildfires, infection from insects, ticks and rodents, and other hazards that are expected to pose greater risks as a result of climate change, according to the [Canadian Paediatric Society's document](#), published Wednesday.

"There is a change in children's health issues within Canada and pediatricians are going to be dealing with conditions that they didn't expect in their region or their area," said Irena Buka, lead author of the guidance and clinical professor of pediatrics at the University of Alberta in Edmonton.

The CPS is urging health-care professionals who care for children to be aware of the changing risks and be prepared to provide advice to caregivers about the reality of rising temperatures, extreme weather events and infection prevention.

"Health professionals, they really need to focus on broadening their training and broadening their education," Dr. Buka said. "It is a call to action on that."

The CPS document is also calling on health professionals to push governments to do more to mitigate the effects of climate change and to ensure children's unique health needs are taken into consideration during any disaster planning.

"It is a plea for doctors to get involved," Dr. Buka said.

## Climate change poses unprecedented health risks to children, major study warns

News & Health  
"Children are still developing, leaving them more susceptible to disease and environmental pollutants"

Phoebe Weston | Science Correspondent | @phoebew | Thursday 14 November 2019 00:38 | 19 comments



## Children's health at risk because of climate change warns new public health initiative

NEWS PROVIDED BY  
Ontario Public Health Association (OPHA) →  
Aug 07, 2019, 06:00 ET



Increasing risks of asthma, Lyme disease, and heat stroke are impacting kids' health, and the one thing they all have in common is climate change.

TORONTO, Aug. 7, 2019 /CNW/ - The Ontario Public Health Association (OPHA), in partnership with leading health organizations, launches *Make It Better*, an initiative to engage health workers and families on how they can help protect children from the harmful impacts of climate change. This is the first public health initiative in Ontario to raise public awareness about the links between climate change and children's health, as research reveals increasingly concerning evidence.

**#MakeItBetter**

Science has shown that our health, and our children's health, is being directly and seriously impacted by the changing climate. We need your help to protect children's health. [#MakeItBetter.ca](#)

# And growing mobilization and advocacy by children and youth calling for greater action

*“Children are taking to the streets to demand a livable world. It is the task of today’s political leaders and other adults to exert maximal effort within their spheres of influence in order to set a course for a healthy response to climate change.”*

- The Lancet Countdown on Health and Climate Change: Policy Brief for Canada



Canadian youths to sue Ottawa over government's role in climate change



15 children and teens claim federal officials are violating their rights to life, liberty and equality

CBC News - Posted: Oct 23, 2019 7:27 AM PT | Last Updated: October 23



Thousands of students participated in a strike in Vancouver to raise awareness about the threat climate change poses to the planet and the futures of young people on Sept. 16. On Friday, 15 youths from across Canada say they plan to sue the federal government over its environmental policies. (Evan Mitsui/CBC)

397 comments



# Canada's Plan includes action to advance adaptation and resilience, and to support health and well-being



- The implications of climate change are broad and involve multiple federal government departments and agencies.
- Adaptation and resilience is a key pillar of *Pan-Canadian Framework on Clean Growth and Climate Change* with health and well-being included as area for action.
- Infectious Disease and Climate Change Program is a key commitment under the PCF.

# PHAC's Current Action on Climate Change: Infectious Disease and Climate Change (IDCC) Program

**Infectious Disease and Climate Change Program** was established in 2016 to support implementation of the *Pan-Canadian Framework on Clean Growth and Climate Change*

- **Focus:** To prepare for and protect Canadians from climate-driven food-borne, water-borne and zoonotic (including vector-borne) infectious diseases. Key Action areas include:

## Prevention

*Monitoring, surveillance and risk intelligence*

## Promotion

*Education and awareness, knowledge translation and exchange, community/population support*

## Response

*Laboratory Diagnostics*

PHAC co-funded the Canadian Lyme Disease Research Network in collaboration with Canadian Institutes of Health Research

PHAC is providing dedicated funding to the Métis Nation for climate change and health activities (Budget 2017).



# PHAC's Current Action on Climate Change: Infectious Disease and Climate Change Fund (\$2M/year)

**Focus:** To address the impact of climate change on human health by building and increasing access to infectious disease based evidence.

## Fund Priorities:

### **Monitoring and Surveillance:**

- Building baseline data and enhancing knowledge and expertise to understand, predict, and monitor current and future risks through innovative approaches to surveillance, detection and analysis of climate driven infectious diseases.
- Collaborative and novel approaches for the collection, sharing and use of data to support evidence-based public health actions that equip and empower Canadians to adapt

### **Education and Awareness:**

- Promoting the development, uptake and distribution of education and awareness materials for health professionals
- Facilitating education, awareness and the dissemination of tools and best practices within or across Canadian communities and among vulnerable populations.

## **IDCC Fund Project Examples:**

- **Bishop's University:** *Citizen-based surveillance of Ixodes scapularis and other ticks using eTick.ca, a web platform dedicated to image-based tick identification.* <https://www.etick.ca/>
- **Prairie Climate Centre / Climate Atlas of Canada:** *Stories of Health and Hope: Climate Change, Infectious Disease, and Community based Adaptation will bring together science and storytelling regarding climate change, infectious disease, and how these issues combine to affect public health. Climate Atlas of Canada also includes a health module with maps, videos, reports and information on how the health of Canadians will be impacted by climate change, and what to do to manage risks.* <https://climateatlas.ca/topic/health>
- Full list of projects here: <https://www.canada.ca/en/public-health/services/funding-opportunities/infectious-diseases-climate-change-fund.html>

# Canada's Chief Public Health Officer 2020 Annual Report on Climate Change and Health

- Dr. Theresa Tam, Canada's Chief Public Health Officer, will release a report on climate change and health in October 2020.
- The goal of the report will be to increase awareness about climate change and health and catalyze action. A central focus will be on health equity and supporting populations who are disproportionately impacted, such as children.
- Dr. Tam would welcome the opportunity to learn about the perspectives and insights from the school health community and youth on climate change and health.



## **II. Focus on Lyme disease**

# Lyme Disease is a growing public health issue in Canada...

- Lyme disease is spread by the bite of an infected blacklegged tick, and is the most commonly reported vector-borne disease in North America, including Canada
- It causes a range of symptoms that can progress to serious, long-term health issues if untreated.
- Most cases can be effectively treated with antibiotics if diagnosed early.

## *School-aged children are an at-risk group...*

- In national surveillance in Canada and the US, children aged 5-14 have been identified as an at-risk age group for Lyme disease (Gasmi et al., 2017, Schwartz et al., 2017)
- Children are particularly likely to acquire tick bites, possibly due to behaviour during play and/or outdoor activities during tick season (Gasmi et al., 2016)

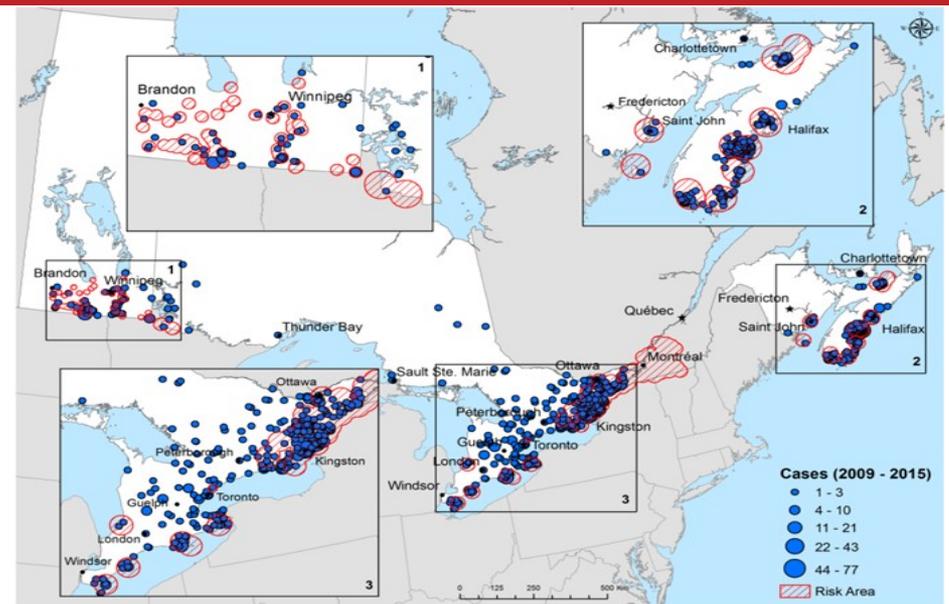
**6,029 cases of Lyme disease have been reported in Canada since 2009**

**14x increase of cases since 2009 (144 in 2009 to 2,025 in 2017)**

**20% of ticks submitted in Canada tested positive for the Lyme disease bacteria in 2017**

**95% of human Lyme disease cases are from Ontario, Quebec and Nova Scotia**

# The number of risk areas in Canada continues to expand

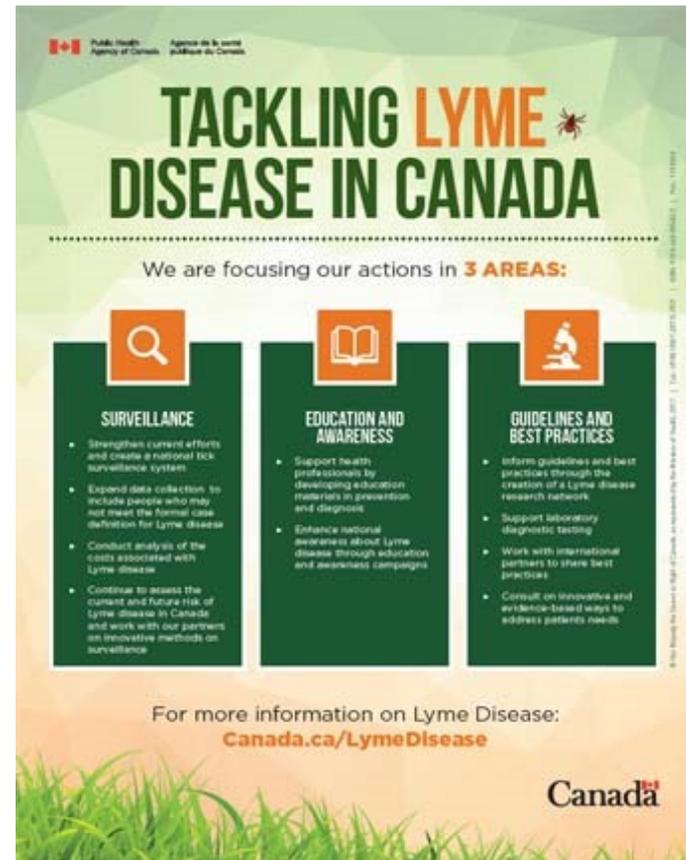


Gasmi et al. Surveillance for Lyme disease in Canada: 2009–2015. *Can Commun Dis Rep.* 2017;43(10):194-9.

- The number of regions with established blacklegged tick populations is increasing across Canada, corresponding to climate change predictions
- Currently, most cases are reported in Nova Scotia, south-eastern Ontario and Quebec where *Ixodes scapularis* (blacklegged) tick populations are emerging
- Blacklegged ticks are also emerging in central southern Canada (Manitoba and Northwest Ontario)
- *I. pacificus* ticks are widespread in southwest Canada (British Columbia); however, there is currently a low-level risk of Lyme disease

# PHAC is taking comprehensive action, guided by the Federal Framework on Lyme Disease

- Private Member's Bill - *An Act respecting a National Lyme Disease Strategy* (2014)
- Led to the development of a Federal Framework on Lyme Disease (2017-2022) and Action Plan built around three pillars:
  - **Surveillance**
  - **Education and Awareness**
  - **Guidelines and Best Practices**
- \$4 million (over 4 years) was announced to establish the Canadian Lyme Disease Research Network, with the aim of generating new knowledge to improve diagnosis and treatment
- FPT Collaboration and Action:
  - Public Health Network (PHN) Communications Sub-Working Group on Lyme disease
  - CIDSC Task Group on Tick-borne Diseases Surveillance



# PHAC's Activities on Lyme Disease Education and Awareness

- As part of the *Federal Framework on Lyme Disease*, PHAC has initiated a comprehensive public awareness strategy, targeting the general public and health care providers, to educate and raise awareness about Lyme disease and other tick-borne diseases.
- The following are some of the on-going public education and awareness activities:
  - A yearly advertising campaign targeted and tailored to specific audiences living in or visiting at-risk areas
  - Promotion and distribution of educational resources to partners, stakeholders and the public (videos, posters, pamphlets)
  - A national tour showcasing a travelling children's exhibit for children ages 5-14, which is available to schools, community centers and small museums across Canada
  - On-going social media messaging during the tick season in Canada (April to November)
  - Collaborative partnerships and outreach activities (Parks Canada, Scouts Canada, etc.)

PHAC provides evidence-based information and products on tick-borne diseases through the Government of Canada website ([Canada.ca/Lymedisease](https://Canada.ca/Lymedisease)).

# Our 2020-21 Public Awareness Approach



## Target Audience

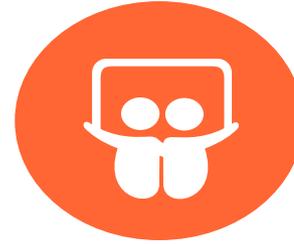
- Children 5-14 and caregivers
- **Teachers**
- Indigenous communities



## Key messages

- Emphasize preventative measures, including tick identification and proper removal, particularly for those in at-risk zones

**Prevent – Check –  
Take action**



## Learning and Orientation

- Continue with action-oriented messaging and create shareable resources (e.g., teaching material for teachers that could be reused for exhibits, travelling suitcases, etc).



## Tactics

- Experiential events
- Outreach and distribution
- Awareness resources
- Public opinion research
- Rebrand and repositioning
- Partnerships
- Advertising

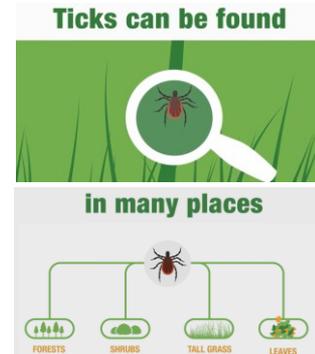
# Advertising, Web, Social Media and Video

## Advertising

- Timing: May to June
- Target audience: Parents of kids 5-14 living in or visiting at-risk areas
- Media buy: social media (Facebook) and web banners on contextual sites

## Web, organic social media and video

- Content updates on [Canada.ca/LymeDisease](http://Canada.ca/LymeDisease)
- Organic social media posts on Twitter, LinkedIn, Facebook
- Awareness videos at over 200 Service Canada/Passport Canada locations



Government of Canada / Gouvernement du Canada

Search Canada.ca

MENU

Home > Health > Diseases and conditions

### Lyme disease

Learn about Lyme disease, its causes, symptoms, risks, treatment and prevention. Also find information on surveillance and guidance for health professionals.



### Services and information

<b>Causes</b> Explore the causes of Lyme disease, how it is spread and where it is found.	<b>Symptoms</b> Learn about the symptoms, what to look for and what to do if you become ill.
<b>Risks</b> Find out what the risks are and who is most at risk.	<b>Treatment</b> Access information on how Lyme disease is diagnosed and treated.
<b>Prevention</b> Learn how Lyme disease can be prevented.	<b>Surveillance</b> Discover how Lyme disease is monitored.
<b>Lyme disease and pregnancy</b> Learn about Lyme disease during pregnancy.	<b>Remove and submit ticks for testing</b> Learn how to identify and remove a tick from

### Contributors

- Public Health Agency of Canada
- Health Canada



# Awareness Resources

- PHAC has developed a number of awareness resources to help Canadians protect themselves and enjoy the outdoors, without a tick
- Resources shared with partners, stakeholders and members of the public
- Bilingual resources can be can be ordered online, free of charge at [Canada.ca/lymedisease](https://Canada.ca/lymedisease)
- Resources for Indigenous population were also developed in collaboration with Indigenous Services Canada.

## New resources:

- Tick check poster and wallet card

## Currently under development:

- 'How to' video tutorial series :
  1. How to remove a tick
  2. Reduce ticks in your environment
  3. How to do a tick check



# Outreach: Interactive Children's Exhibit

## *Little bugs, big problems!*

- Content adapted to children (target ages 5-14) and their accompanying parents and caregivers
- Features information on ticks, risk areas and preventative measures
- Showcases real ticks in resin globes for kids to view actual size and an oversized 3D model
- Developed with input from stakeholders, and focus tested at the Museum of Science and Technology
- Available at no cost to small museums, community centres, schools, national parks, and other similar venues
- Four displays will be on rotation throughout the year as of May, showcased for periods of 1-2 weeks per location

## **New ideas for 2020-21**

- Development of interactive activities for kids to complete while exploring the exhibit
- Exploring the development of a smaller version for school teachers (e.g., travelling suitcase)



# Partnerships

## Current examples of partnerships:

### Parks Canada

- Raise visitor awareness of Lyme disease and other tick-borne diseases in national parks, national historic sites, and national marine conservation areas across Canada, including:
  - Tick messaging on **Park Canada's website and mobile application, the most popular GC app with over 245,000 downloads**, (e.g. How to do a tick check, why ticks are in Canada)
  - Interpreter's guide toolkit
  - Access to their network for exhibit and awareness resources distribution
  - Tick symbol has been developed for park in at-risk areas\*



Canada



### Scouts Canada

- Educating over 3000 Scouts and leaders about Lyme disease and other tick-borne diseases and tick bite prevention at the 2019 Scouts Pacific Jamboree in BC

### Indigenous Services Canada (ISC)

- Adapting awareness resources for Indigenous Communities and accessing their network of Indigenous Communities Centres for exhibit and awareness resources distribution

### Canadian Association of Fairs and Exhibits (CAFE)

- Information packages and article in Canadian Fair News Magazine



Indigenous Services  
Canada

Services aux  
Autochtones Canada



# **\*NEW\* Engagement Tool: Lyme Disease and Other Tick-Borne Diseases Subscription List**

- PHAC has newly launched a Lyme and Other Tick-borne Diseases e-mail subscription list, which is open to the public, partners, stakeholders and any interested parties
- Through this email service, PHAC will share updated information about its tick-borne disease work already in progress, new projects and programs, planned and upcoming activities, as well as opportunities for engagement, collaboration and involvement.
- Looking to share the subscription links as widely as possible:
  - English: <https://www.canada.ca/en/public-health/services/diseases/lyme-disease/subscribe.html>
  - French: <https://www.canada.ca/fr/sante-publique/services/maladies/maladie-lyme/abonnement.html>

# **III. OPPORTUNITIES FOR COLLABORATION**

# Considerations for Lyme Disease and School-Aged Children

- **Identified need for preventative measures to protect children in Canada from Lyme and other tick-borne diseases:** Build on existing efforts and networks to reach children, youth and their caregivers and educators across Canada
- **Students are mobilizing and seeking information and action on climate change:** Health adaptation to emerging infectious diseases is one piece of this
- **Alignment between PHAC's target audience for Lyme education and awareness resources and the work of the JCSH:** School-aged children ages 5-14 and caregivers of children ages 0-14
- **Opportunity to help students learn about climate-driven infectious diseases and how they can protect themselves,** for example by:
  - Providing resources and education materials to help school-aged children protect themselves from tick bites, Lyme disease and other emerging tick-borne diseases
  - Providing parents with resources to support prevention measures, daily tick checks and connection to appropriate care if their child receives a tick bite.
  - Considering tick bite prevention strategies in the school environment
    - E.g., landscaping around the school and playgrounds, encouraging preventative measures for field trips or play in risk areas, protocol if child receives tick bite at school
- **Opportunity to provide input into Dr. Theresa Tam's Climate Change and Health Report** through discussions with JCSH on questions such as:
  - Emerging opportunities, priorities and challenges to protect youth from the health impacts of climate change
  - Promising youth led and youth centred actions on climate change and health

# Potential Options for Collaboration on Lyme Disease...

Options could include, but are not limited to...

## **Resource and Information Sharing:**

- Sharing/promotion of existing PHAC education and awareness resources on Lyme disease and the Lyme and other tick-borne diseases email subscription list within the JCSH network
- Travelling tick exhibit can be booked by schools, community centres, other appropriate venues for free

## **Review and Input:**

- Seek expertise and input from the JCSH on the adaptation or creation of resources – e.g., interactive activities for children to accompany travelling tick exhibit

## **Partnership and Creation:**

- Development of shareable resources/teaching materials that could be used in classrooms and in tandem with the travelling tick exhibit – e.g., travelling suitcase for teachers
- Collaboration on a toolkit for tick bite/Lyme disease prevention in school-based settings from a comprehensive school health framework
  - Could include efforts to address the physical school environment (landscaping of school yard), school policies, partnerships, teaching materials
- Development of resources on the health impacts of climate change for school-aged children in Canada, including Lyme disease and other tick-borne diseases

## **Research:**

- Research project on tick prevention measures in school environments

## Questions and Discussion

- In your jurisdictions, are these issues on your radar?
- Do you have existing efforts underway related to health and climate change adaptation or Lyme disease and school-aged children?
- Are there other issues related to climate change and health that are important to you from a comprehensive school health perspective?
- What level of engagement, or possibility for collaboration do you see?
- What tools/resources do schools need to address these issues in the school environment?
- Is there a specific initiative that could be undertaken which would make an impact in the school environment?

# Thank-you!

## Tick-Borne Diseases Policy

Contact: [shanna.sunley@canada.ca](mailto:shanna.sunley@canada.ca)  
[www.canada.ca/lymedisease](http://www.canada.ca/lymedisease)

## Lyme and other tick-borne diseases email subscription list:

English: <https://www.canada.ca/en/public-health/services/diseases/lyme-disease/subscribe.html>

French: <https://www.canada.ca/fr/sante-publique/services/maladies/maladie-lyme/abonnement.html>

## Infectious Diseases and Climate Change

Contact: [Lesley-anne.dams@Canada.ca](mailto:Lesley-anne.dams@Canada.ca)

<https://www.canada.ca/en/public-health/services/funding-opportunities/infectious-diseases-climate-change-fund.html>

## Additional Resources of Interest

- Global Commission on Adaptation: <https://gca.org/global-commission-on-adaptation/report>
- Pan-Canadian Framework on Clean Growth and Climate Change: <https://www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework.html>
- Climate Change Infographics and Lesson Plans: [http://www.canadiangeographic.com/educational\\_products/products\\_climate\\_change.asp](http://www.canadiangeographic.com/educational_products/products_climate_change.asp)
- Climate Kids: <https://climatekids.ca/climate-impact-in-canada/>
- Canada's Top Climate Change Risks (2019) <https://www.cca-reports.ca/reports/prioritizing-climate-change-risks/>
- Canada in a Changing Climate Reports: <https://changingclimate.ca/>
  - <https://www.nrcan.gc.ca/maps-tools-publications/publications/climate-change-publications/10766>