



Public Health
Agency of Canada

Agence de la santé
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Canada

Federal Framework on Lyme Disease

Report to Parliament

MAY 2022

PROTECTING AND EMPOWERING CANADIANS
TO IMPROVE THEIR HEALTH



Dear Colleagues,

Pursuant to the *Federal Framework on Lyme Disease Act*, on behalf of the Government of Canada, I am pleased to provide a five-year report on the effectiveness of the Federal Framework on Lyme Disease (the Framework).

I want to begin by acknowledging that the accomplishments that have taken place over the past five years would not have been possible without the close collaboration and participation of federal, provincial, and territorial governments, health professionals, international public health professionals, persons with lived experience, organizations representing persons with lived experience, academia, industry, researchers, and community members. I thank them for their time, energy and commitment to advancing numerous activities, and the contribution they are making toward improving detection, prevention, and awareness in Canada.

The Framework was established to guide a way forward in areas where the federal government has a role to play in three pillars: Surveillance, Education and Awareness, and Guidelines and Best Practices. The Framework has focused efforts on tracking the incidence of Lyme disease nationally, increasing awareness among Canadians and front-line health professionals, monitoring the distribution and expansion of risk areas in Canada, and supporting provincial laboratories and numerous science, innovation and research initiatives.

Monitoring Lyme disease provides data to support prevention

Surveillance for Lyme disease includes monitoring the distribution and spread of ticks, and tracking human cases of the disease across the country. Surveillance data informs analyses of national and provincial trends, supports the development of education material and evidence-based prevention programs and increases regionally-based awareness and education messaging for Canadians. It is essential to understanding the risks posed to Canadians and serves as the foundation of the public health approach.

Since the establishment of the Framework, Public Health Agency of Canada (PHAC) has enhanced its surveillance activities, including developing new interactive risk maps, which allow Canadians to identify if they live in a risk area and guidance on steps they can take to protect themselves. Innovative surveillance projects aimed to improve data quality and sources, produced information for action, and new Lyme disease surveillance reports, including companion infographics. Work is also ongoing to expand the Canadian Tick-borne Disease Surveillance System to include three additional emerging tick-borne diseases (Babesiosis, Anaplasmosis, and Powassan virus diseases).

Raising awareness is key to prevention and early detection

It is important that Canadians have the information they need to make informed decisions about how to best protect themselves and their families from tick bites and Lyme disease. One of PHAC's key roles was helping Canadians protect themselves from tick bites and Lyme disease through an annual digital advertising campaign and developing educational tools and resources to increase awareness of ticks and Lyme disease.

PHAC promoted evidence-based information and products on Lyme disease through the Government of Canada website. A new suite of awareness resources was created in 2017-18 and was expanded over the past five years. Overall, 310,000 copies have been distributed free of charge to Canadians. The resources were also made available in three Indigenous languages (Mi'kmaq, Mohawk, and Ojibwe) and seven non-official languages. The Lyme disease marketing strategy also included an annual digital advertising campaign, a travelling tick exhibit for children ages 5-14 years for schools, libraries and small museums across Canada, and two new tutorial videos ('How to properly remove a tick' and 'How to reduce ticks around your home') available online.

Analyzing data helps determine level of risk to Canadians

Understanding the public health risks associated with Lyme disease improved our ability to develop preventative strategies and reduce the risks to Canadians. PHAC's National Microbiology Laboratory provided guidance and data analysis through risk assessment (risk mapping and modelling), knowledge synthesis (scoping reviews, systematic reviews and meta-analyses), reference laboratory and surveillance methods, and research (control of tick-borne disease risk in the field, genetic diversity of *Borrelia burgdorferi* by whole genome sequencing, ecological determinants of risk).

Investing in science fills knowledge gaps

Research was required to advance our understanding of Lyme disease and find solutions to the challenges facing patients and families. The Canadian Lyme Disease Research Network (CLyDRN), which was co-funded by the Canadian Institutes of Health Research and PHAC, was established to improve the diagnosis, treatment, and health outcomes for people with Lyme disease. CLyDRN has brought together experts from academia, hospitals, provincial and federal public health agencies, veterinary colleges, health care practitioners, and persons with lived experience to support national collaboration to generate new knowledge. CLyDRN will continue to address knowledge gaps and improve diagnosis, and treatment options, including the advancement of research and validation of novel diagnostic methods for Lyme disease.

PHAC's Infectious Disease and Climate Change Program also funded actions on surveillance, risk assessments, modelling, laboratory diagnostics, and the development of tools and resources for health professionals, communities and individuals to ensure that people understand the risks, and can take measures to prevent climate impacts, including vector-borne diseases. As part of the program, the Infectious Disease and Climate Change Fund provided \$2 million annually over 11 years (2017-2028). Since launching in 2017, the Fund has invested in 34 projects totaling \$9.3 million of which 15 projects (totaling over \$4.9 million) focus on Lyme disease. With the support of the Fund, the Centre for Effective Practice released the 'Early Lyme Disease Management in Primary Care Toolkit' to support diagnosis and treatment of early localized Lyme disease; the Society of Obstetricians and Gynaecologists of Canada released guidance for health care professionals about Lyme disease; and eTick.ca, a citizen science-based project, connected the Canadian public directly with scientific experts to provide image-based tick identification and support monitoring of ticks in Canada.

Partnerships, engagement, and outreach are essential

The Framework promoted the involvement of all stakeholders, including those with lived experience to work towards reducing the risk of Lyme disease in Canada. Engagement and working collaboratively

with all partners and stakeholders, including those with lived experience, was crucial to the success of the Framework.

New and existing partners helped PHAC to expand the reach and deliver new products, programs, and information for Canadians. PHAC reached new audiences by partnering with Mark's to distribute awareness resources in over 380 retail stores, and with Parks Canada to develop an interpreter's guide, web content, and distribute over 150,000 resources to parks across Canada. PHAC's Lyme and Other Tick-borne Diseases Email Subscription List improved our ability to communicate with stakeholders and provided monthly updates about PHAC activities and engagement opportunities. Stakeholder engagement activities ensured that interested stakeholders were provided with a variety of opportunities to receive information and share their expertise, input, and experience. Dialogue and collaboration among partners and stakeholders including those with lived experience, various levels of government, researchers, health professionals and associations, was encouraged at several in-person meetings. PHAC continues to create opportunities to hear from all stakeholders in order to identify priority areas where the federal government should focus its efforts in the future.

Review of the effectiveness of the Federal Framework

PHAC's Office of Audit and Evaluation (OAE) conducted an evaluation of PHAC's framework activities. In January 2021, the OAE began their review and analysis with key informant interviews and an online survey. OAE conducted 47 interviews with a range of key informants including representatives from organizations for people with lived experience, and researchers, government representatives, professional associations, and subject matter experts. The online survey was completed by 91 respondents, with 53% of them being persons with lived experience or groups representing people with lived experience.

The evaluation found that progress was made in implementing the Framework, most notably under the Education and Awareness pillar. Many activities under the Surveillance and Guidance and Best Practices pillars were also advanced. This work resulted in new and innovative tools and resources, which were seen as highly valuable by the scientific community and other federal, provincial, and territorial partners. Persons with lived experience identified continued unmet needs in the areas of surveillance, diagnosis, and treatment for Lyme disease, particularly for individuals who do not fit the case definition.

Over the next few months, PHAC will complete the remaining items in the Framework to achieve full implementation. Going forward, PHAC will work to implement more timely and dynamic surveillance tools; enhance efforts to promote and disseminate awareness and education materials and guidance to existing and new knowledge users including health professionals; and consider enhancements to engagement processes and partnerships with patient advocacy groups related to tick-borne disease activities.

The way forward

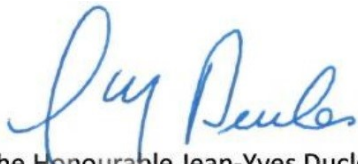
The recent release of the 'Health of Canadians in a Changing Climate: Advancing our Knowledge for Action' report underscores that climate change is increasing risks associated with vector-borne infectious diseases in Canada. There is increasing evidence that the emergence of Lyme disease in Canada was driven by changes to temperature and precipitation, making Canada more suitable for the

ticks that carry the disease. The emergence of other vector-borne diseases, such as Eastern Equine Encephalitis and West Nile virus will also continue to increase with climate change.

PHAC will continue to work to strengthen efforts on Lyme disease and other vector-borne diseases by building on the accomplishments of the Framework and applying the lessons learned. This includes continued public engagement and outreach to engage a wide range of stakeholders and provide opportunities for them to share their expertise, input, and experience. PHAC is committed to continuously improving our understanding of vector-borne diseases through ongoing research and innovative projects that address the impact of climate change on human health. PHAC is continually looking at the evidence as it is being produced and working with our partners and stakeholders across Canada to adapt our response to the evolving situation and provide additional guidance to health professionals as needed. Promoting the development, uptake and distribution of education and awareness materials for target audiences, including health professionals to support prevention and early diagnosis will also remain a priority.

The Government of Canada remains committed to responding to public health risks in Canada and will continue to address Lyme disease and other vector-borne diseases.

Sincerely,



The Honourable Jean-Yves Duclos, P.C., M.P.

ADDITIONAL RESOURCES

Lyme disease in Canada

www.canada.ca/Lymedisease

Federal Framework on Lyme Disease

www.canada.ca/en/public-health/services/publications/diseases-conditions/lyme-disease-canada-federal-framework.html

Federal Framework on Lyme Disease Act

<https://laws-lois.justice.gc.ca/eng/acts/F-7.35>

Evaluation of PHAC's activities for the Federal Framework on Lyme Disease and Action Plan

<https://www.canada.ca/en/public-health/corporate/transparency/corporate-management-reporting/evaluation/activities-federal-framework-lyme-disease-action-plan.html>

Lyme disease Awareness Resources

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

Lyme disease Monitoring

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

PHAC's Lyme and Other Tick-borne Diseases Email Subscription list

www.canada.ca/en/public-health/services/diseases/lyme-disease/subscribe.html

Infectious Disease and Climate Change Fund (list of projects)

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

'Health of Canadians in a Changing Climate: Advancing our Knowledge for Action'

<https://changingclimate.ca/health-in-a-changing-climate/chapter/6-0/>

Centre for Effective Practice – Early Lyme Disease

<https://cep.health/clinical-products/early-lyme-disease/>

The Society of Obstetricians and Gynaecologists of Canada – Lyme disease and Pregnancy

<https://www.pregnancyinfo.ca/lymedisease>

eTick – A public platform for image-based identification and population monitoring of ticks in Canada

<https://www.etick.ca/en>

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