



Opening Plenary

Hetxw'ms Gyetxw (Brett Huson), Prairie Climate Centre: "Land and health"

"Viewing every aspect of life as a living and breathing entity is not just to serve 'religion' as it has been described by western anthropologists, but rather to distinguish the importance of respect, rights and protection."

—Hetxw'ms Gyetxw (Brett Huson)

Key Takeaways

- **Gitxsan ways of knowing** emphasize the interconnectedness of health and well-being with the land.
- The current **colonial relationship to the land** is based on extraction and commodification. Indigenous knowledges offer a pathway forward in returning health to the land.
- Visual storytelling and **participatory filmmaking** help educate and bring communities into conversation.
- The **Climate Atlas of Canada** has a new section on **Indigenous ways of knowing and being**. There, you can access stories, films and teachings about climate change from First Nations, Inuit and Métis perspectives.

What We Heard

Gitxsan history, society and knowledges

- Hetxw'ms Gyetxw (Brett Huson) is **Gitxsan from Lax Xsin Tsithl**, in what settlers refer to as British Columbia.
- Before colonization, Gitxsan People had a reciprocal relationship with the land based on change and adaptation.
- To survive, the Gitxsan needed a deep understanding of the land. Giving back to the land ensured future returns.
- An example of this was the prosperity that emerged during the Oolichan trade. Through the Grease Trails, many Indigenous People traded Oolichan for its nutritional value across vast expanses of territories.

Indigenous ways of knowing: Connecting through stories of the land

- In Gitxsan society, relationships with the land were based in knowing one's place within the greater ecosystem and respecting the ethic of protecting all that sustains life.
- Indigenous ways of knowing include macro-level understandings of western ecological concepts.



What We Heard

Indigenous ways of knowing: Connecting through stories of the land

- In Gitxsan society, relationships with the land were based in knowing one's place within the greater ecosystem and respecting the ethic of protecting all that sustains life.
- For example, in Gitxsan culture, the spider is revered as the being that connects all life through its web. Through gardening and harvesting food, Gitxsan People saw spiderwebs in the soil. They told stories about plants communicating through the spider. Now western science understands these webs as mycelium.
- Much of Indigenous Peoples' interpretations of the world have been lost in translation. Indigenous People had complex governance systems and societies over tens of thousands of years before colonization.
- **Elder Albert Marshall's** principle of **Two-Eyed Seeing** offers a way forward. This means "learning to see from one eye with the strengths of Indigenous knowledges and ways of knowing, and from the other eye with the strengths of mainstream knowledges and ways of knowing, and to use both these eyes together, for the benefit of all."

Climate Atlas of Canada

- The Climate Atlas's **Indigenous Knowledges Topic** was developed in collaboration with Indigenous youth, academics and Elders. It features documentary filmmaking to tell the stories of climate change impacts.
- The Atlas's **Health Topic** shares information related to climate-related health concerns, including mental health, heat illness, air quality illness and climate-sensitive infectious diseases.
- The **Prairie Climate Centre** has published tips for how to communicate about **climate change and health**. You can access the guides below to learn about communications framing for your goals and audience.

Explore Further:

Resources mentioned in this talk

- [Connecting Climate Change and Health: A Guidebook of Health and Climate Change Content on the Climate Atlas of Canada](#)
- [Climate Change and Lyme Disease: Communications Guide](#)
- [Climate Change and Health: Communications Guide](#)



Plenary I

Dana Tizya-Tramm, Chair of the First Nation School Board and Director of Arctic Circle Strategies: “Blending lines into circles”

“I have decided to speak to you today out of a very deep place because I respect you, I respect your work and you as people.”

—Dana Tizya-Tramm

Key Takeaways

- Northern Indigenous communities are disproportionately impacted by both colonialism and climate change.
- To truly address climate change and infectious disease risks, we must be willing to hear **difficult truths** about the systems we live in, including capitalism and colonialism.
- The myths of growth and individualism promised by capitalism are harming the land. Indigenous principles of **respect, reciprocity and relationship** offer a different perspective.
- There is no single way of knowing or being. Western scientific knowledge is important, but it isn't the only way.
- We live in an age of misinformation. Our responses need to reach people with empathy and forgiveness.

What We Heard

Acknowledging many voices

- Dana Tizya-Tramm is Former Chief of the Vuntut Gwitchin Government. His accolades and titles belong to his mentors. He is conduit for his people and their stories and knowledge systems.
- Mr. Tizya-Tramm is enabled by his ancestors to speak; his voice is owed to his children and great-grandchildren.

Indigenous ways of knowing

- Western science backs up the knowledge of Elders and Indigenous stories and teachings.
- Indigenous stories are often romanticized. Yet metaphors and stories help us deepen into the beauty and complexity of the world around us. They help us “to be.”



What We Heard

“Colonialism is a disease of thought.”

— Dana Tizya-Tramm

COVID-19 and emerging infectious disease risks

- Conversations about the COVID-19 pandemic have been steeped in disinformation and conspiracies. People have chosen the hypotheses that fit their worldview.
- Infectious diseases often arise when something is out of balance within the greater system. Our interactions with animals can summon diseases into being.
- An example of this is chronic wasting disease, a prion disease in ungulates, including reindeer, which is an emerging infectious disease concern.

Capitalist and colonialist systems

- In Indigenous cultures, giving is a sign of wealth through the **abundance of the land**. According to Indigenous cultural teachings, hoarding, individualism and amassing of wealth aren't to be celebrated.
- There is a lot of good in our institutions as well. The work of healthcare providers is an example of why we made our society and the best of our intentions. Canadians carry much pride in the healthcare system.

Words for reflection: Dana Tizya-Tramm

- “It’s not the environment that’s unbalanced, it’s a group of people with an unbalanced worldview. The environment is trying to teach us patience.”
- “You and I have to work together to do better. And my people have teachings about this. We’ve lived in our lands for over 30,000 years and our presence strengthened the land.”
- “Science and knowledge will get you so far, but what makes you a healthier person? What makes you happier, what enables you to be a teacher and stronger in your communities?”
- “How do we as individuals doing this work have it reflected in institutions of government to benefit future generations?”



Oral Abstracts

Speakers

- **Quinn Stewart**, Epidemiologist, BC Centre for Disease Control
- **Dr. Ariane Adam-Poupart**, Scientific Advisor, Department of Biological Hazards and Occupational Health, Institut National de Santé Publique du Québec
- **Dr. Kaylee Byers**, Senior Scientist, Pacific Institute on Pathogens, Pandemics and Society, Simon Fraser University
- **Col. John Grabenstein**, President, Vaccine Dynamics
- **Dr. Steven Drews**, Associate Director of Microbiology, Canadian Blood Services

Key Takeaways

- During the oral abstracts, we heard about **exemplary surveillance** of tick-borne pathogens in British Columbia, zoonoses in Quebec, Babesia across Canada and Chikungunya worldwide.
- We also heard about the importance of **One Health** tools and approaches, including their integration with the social and environmental determinants of health.

What We Heard

Quick facts

- In British Columbia, the number of *Ixodes scapularis* ticks testing positive for the pathogen causing Lyme, *Borrelia burgdorferi*, jumped considerably last year, from an average of 0-5 ticks (2002-2021) to 10 ticks (2022).
- In 2018, a surveillance project conducted by Canadian Blood Services found very low, though not zero, seroprevalence of Babesia in blood donors (0.002%-0.007%).

Quinn Stewart, “Trends in tick and tick-borne disease surveillance in British Columbia”

- Through public and veterinary submissions and active sampling, the BC Centre for Disease Control is monitoring tick populations and their geographic spread. Ms. Stewart shared key findings of this work.
- Recent drag sampling highlighted the changing risk profile of tick-borne diseases in BC under a warming climate. For example, BC saw the first detections of *Babesia microti* and *Babesia odocoilei* in ticks in 2022.



What We Heard

Dr. Ariane Adam-Poupart, “Scientific program aiming at building Quebec’s capacity to adapt to the impacts of climate change on zoonoses”

- Dr. Adam-Poupart provided an overview of the [Institut National de Santé Publique du Québec \(INSPQ\) program](#) to assess and mitigate the risks of tick- and mosquito-borne diseases, rabies and enteric zoonoses.
- Risk maps, publications, webinars, pamphlets and other tools are available through the program’s website.

Dr. Kaylee Byers, “Connected yet disconnected: Exploring how social and environmental determinants of health are integrated within One Health”

- Dr. Byers discussed the many determinants underlying health risks to humans, animals and the environment: climate change, species interactions, community services, housing and infrastructure, greenspace, pest and waste management, public policy, governance, voting, systemic biases and more. All are interconnected.
- Dr. Byers highlighted two studies that merge One Health with social/ environmental determinants of health: a community-based approach to Chagas disease (Bolivia, Guatemala and Mexico) and an ethnographic study of helminth diseases (Lao PDR).

Col. John Grabenstein, “Global geotemporal distribution of Chikungunya disease, 2011-2022”

- Col. Grabenstein recently led a [study to improve the global risk characterization of Chikungunya](#). This disease is vector-borne (spread by Aedes mosquitoes) and causes explosive outbreaks in naïve populations.
- The study analyzed cases by year and country, using a visual map format. Detailed results are available online.
- India, Brazil, Sudan and Thailand are examples of countries with recent higher case rates of Chikungunya.

Dr. Steven Drews, “Understanding the epidemiology of Babesia in Canadian blood donors impacted by a changing climate environment”

- Dr. Drews shared how Canadian Blood Services and Héma-Québec are conducting surveillance related to climate change and the spread of vector-borne parasites, including Babesia, to ensure blood safety.
- Currently, the likelihood of Babesia infection from blood transfusion is low. However, ongoing monitoring of tick populations and donor seroprevalence is warranted to capture emerging risks.



Plenary II

Dr. Chris Buse, Simon Fraser University, “Pathogens and vectors and hosts, oh my! One Health approaches to reducing the risks of climate-driven infectious diseases”

“Integrating One Health into surveillance means being attentive to the realities of living systems. And this really starts by viewing climate-driven health harms as social/ecological phenomena.”

—Dr. Chris Buse

Key Takeaways

- Emerging and re-emerging infectious diseases in a warming climate reflect an unhealthy relationship with the natural environment. The risks are becoming more and more complex as the global climate continues to warm.
- Zoonotic viruses are a leading candidate for the next pandemic, raising concerns over the need for adequate prevention and preparedness, and requiring us to address “the causes of causes” (Dr. Buse).
- Canada has adaptive capacity in this area. One Health tools and approaches are a strength. One Health has a further opportunity to look upstream at ecological drivers of infectious disease spillover.
- The risks are not evenly distributed. We will need equity-focused approaches to surveillance and adaptation.

What We Heard

“Climate-driven ill health [will] be produced at the interface of social inequities and environmental degradation.”

—Chris Buse

Infectious disease under a changing climate: Tools, projections and risks

- Canada has interventions and surveillance for climate-sensitive vector-borne diseases, including Lyme and West Nile. Exemplars include [eTick.ca](#), [UPTick \(uOttawa\)](#), [GREZOSP \(Université de Montréal\)](#), [Lloyd Tick Lab \(Mount Allison\)](#), [Maritime Lyme Disease Research Network \(Mount Allison\)](#) and [Colautti Lab](#).
- However, climate change is amplifying the number of infective organisms and rates of contact among humans and vectors. The potential impacts are emergent, complex and occurring in a highly globalized context of trade and travel.
- Seniors, children, outdoor workers, Indigenous People and those experiencing marginalization will bear the greatest impacts. We must ask: what is right, moral and just in terms of detection, reporting and allocation of public health resources?



What We Heard

One Health tools and approaches

- One Health foregrounds humility and reconciling relationships with animals and the natural world. One Health also encourages work across sectors and silos.
- Yet many One Health frameworks remain human-centred. Interspecies and environmental equity are needed.
- One Health has an opportunity to experiment with less familiar territory, such as that of conservation and land-use management, to integrate the environmental health with human and animal health.

Emerging challenges and opportunities

- Public health needs **integrative surveillance** methods. Collecting, sharing and analyzing rich, intersectional data can help us understand the compounding risks of **social marginalization**.
- One Health surveillance must begin with strong public and clinical awareness of the risks.
- Surveillance should also be interfacing with emergency management. We're experiencing a multitude of cascading impacts; we must engage in concerted planning now to enhance resilience to climate-related shocks.
- Vulnerability and **adaptation assessments** can be undertaken through a One Health lens. This means evaluating and prioritizing options that attend to human, animal and ecosystem health.

Explore Further:

Resources mentioned in this talk

International work on One Health and climate-sensitive infectious diseases:

- [World Health Organization \(WHO\) One Health High-Level Expert Panel](#)
- [Quadripartite UNEP-WOAH-FAO-WHO One Health Plan of Action](#)

Report on integrative surveillance practices and disaggregated data:

- [Disaggregated data collection in British Columbia: The grandmother perspective](#)



Panel I

“Let’s talk about the infectious risks and public health benefits of urban green spaces in a warming climate”

Panelists

- **Dr. Camille Guillot**, PhD, Resident Physician in Public Health and Preventive Medicine, Montérégie Public Health Department, University of Sherbrooke
- **Dr. Maryline Vivion**, PhD, Assistant Professor, Department of Social and Preventive Medicine, Laval University
- **Moderator: Dr. Johanne Saint-Charles**, PhD, Full Professor, Department of Social and Public Communication, University of Quebec in Montreal and Director of the Health and Society Institute

Key Takeaways

- Public health messages about being in greenspaces can be contradictory. We hear that outdoor activities are good for health, but also to be careful about tick bites leading to Lyme disease.
- One Health approaches are important for protecting the environment while also reducing risks to humans and animals. We won’t always have consensus on which paths to take, however. We must weigh the available options.
- Working with municipalities, community organizations and other partners to **co-construct public health messages** helps ensure we address varied needs. Messages are more relevant and balanced when co-constructed.
- The process of co-construction is enabled by listening, trust, openness, respect and shared leadership.

What We Heard

Dr. Camille Guillot, “Co-constructing a plan of intervention for Lyme disease”

- Researchers from UOttawa, Université de Montréal and the University of Manitoba ([GREZOSP](#)) undertook a project to co-design interventions for Lyme prevention in four areas of Canada: Ste. Anne’s, Manitoba; Saint-Bruno-de-Montarville, Quebec; Ottawa, Ontario; and the Municipality of the District of Lunenburg, Nova Scotia.
- These areas were selected based on existing risk of tick bites, and to balance rural and non-rural geographies.
- The project conducted workshops and focus groups to discuss community-based interventions.



What We Heard

Dr. Camille Guillot, “Co-constructing a plan of intervention for Lyme disease”

- Participants weighed changes to the local environment with changes to human behaviour when outdoors.
- Everyone agreed that providing information about what to do when outdoors, such as wearing repellent and doing tick checks, was important.
- There was less consensus about making changes to the surrounding natural environment. Should the grass be cut to a certain length? Should insecticide be sprayed? What should be done in parks and public greenspaces? Some participants agreed to go ahead with environmental interventions, while others did not.

Dr. Maryline Vivion, “Using co-construction to create public health messaging”

- Canadians are receiving information about Lyme disease risks from multiple sources: public health, social media, municipal elected officials, schools and more. Misinformation and information overload are issues.
- The messaging we receive isn't always aligned. On the one hand, we're told to use greenspaces and go outside. On the other, we're told to be careful and avoid at-risk areas.
- We need to find a balance when communicating the risks. Some people may ignore the guidance due to messaging fatigue. For others, risk-based communication may create stress and anxiety.
- When we co-construct public health messages with community partners, people tend to listen more.
- A recent project created a co-construction communications tool for public health authorities and organizations through a participatory process. The tool is available in French and is linked below.
- Co-construction comes with challenges: shared responsibilities, balance between reflection and action, and the need to find a common language. But the rewards are greater trust and effectiveness of messages.

Explore Further: Resources mentioned in this talk

Co-construction tool for public health messaging (available in French only):

- [Co-construire les messages de santé publique](#)



Panel II

“Vector-borne diseases and climate change: What are the risks for Canadians?”

“Do I believe we may see dengue in Toronto? Yes. Should we be aware? Yes. Is this a particular concern in the panoply of things climate change can impact? No.” –Dr. Steve Schofield

Panelists

- **Dr. Nick Ogden**, Director of Public Health Risk Sciences Division, Public Health Agency of Canada
- **Dr. Steve Schofield**, Senior Scientific Advisor, Department of Defence
- **Tracey Philips**, Pharmacy Owner, West Port Village Pharmacy
- **Moderator: Ajit Johal**, Clinical Director Immunize.io and TravelRx Education Inc.

Key Takeaways

- Currently, the risk of tropical and subtropical diseases such as dengue, malaria and Chikungunya becoming endemic in Canada is very low. Further, we need to contextualize these risks against the many impacts of climate change.
- Still, we must prepare. Having clinical guidelines and public health procedures ready is important. Ongoing **monitoring and surveillance** are essential to ensure we understand the risks as fully as possible.
- Lyme is currently the most concerning climate-sensitive infectious disease risk in Canada. Tick checks, use of repellent and care of pets reduce the risks. If you experience a tick bite, **early assessment and treatment** are key.

What We Heard

Ajit Johal: Vectors, risks, and Visiting Family and Relatives (VFR) travellers

- Mr. Johal described how different species and sub-species of vectors carry different pathogens. With mosquitoes, *Aedes* transmits viruses as well as parasites, *Anopheles* transmits malaria and *Culex* transmits West Nile.
- Mr. Johal also highlighted elevated risks to VFR travellers, who often travel between their country of origin and Canada. These travellers are more likely to visit rural areas and less likely to seek pre-travel advice.



What We Heard

Dr. Nick Ogden: Planning, preparedness and response

- Dr. Ogden spoke about the uncertainty of attributing the emergence and re-emergence of vector-borne diseases such as Zika, yellow fever, malaria, dengue and Chikungunya to anthropocentric climate change. With several complex factors involved, we need long-term datasets to build evidence of causation.
- In Canada, data show that the spread of Lyme disease has been driven by climate change. Warming has permitted black-legged ticks to become established, move northward and grow in population.
- Exotic mosquito-borne diseases could emerge in Canada with a warming climate. However, we need to distinguish the risks of short-term local transmission versus endemicity (such as we're experiencing with Lyme).
- Canada's risk assessment process includes using importation models to identify emerging global threats.
- Dr. Ogden emphasized the need to plan and prepare. Canada uses modelling and surveillance tools to identify the risks. We also need to have clinical and public health guidelines in place, should diseases emerge or re-emerge.

Dr. Steve Schofield: Risk of dengue in Canada

- Dengue is a vector-borne disease mostly transmitted in tropical and subtropical areas by the *Aedes aegypti* mosquito. Currently, the risk of dengue to Canadians from a population health perspective is quite low.
- Dr. Schofield noted that the *Aedes albopictus* mosquito isn't as efficient at transmitting but can survive better in cooler climates. If any mosquito pushes northward, it would be a species less efficient at transmitting dengue.
- Dr. Schofield touched on the urgency of many health impacts Canadians face with a rapidly warming climate. In comparison, dengue is not the most pressing issue. We need to prioritize and use a balanced approach.

Tracey Philips: Treating tick bites in a rural Ontario pharmacy setting

- Ms. Philips is a pharmacy owner in a rural area with an active tick population and many outdoor recreators.
- Ontario has a new expanded pharmacy scope that includes preventative antibiotic treatment for Lyme following a tick bite. Since January 2023, Ms. Philips' pharmacy had completed nearly 300 tick assessments.
- People want and are seeking care for tick bites. The new scope has increased system capacity.
- Providing timely, accurate information to the public also helps with prevention.



Final Plenary

Dr. Don Sheppard, “Supporting communities with adaptation efforts on climate-sensitive infectious diseases”

“We need to recognize that... the burden of climate change on susceptibility to infectious diseases... is unbelievably unequal.” —Dr. Don Sheppard

Key Takeaways

- Climate-related **health impacts** are numerous and accelerating in Canada. During the past 18 months, communities have experienced flooding, hurricanes, tornadoes, heat, forest fires and wildfire smoke.
- Habitat destruction, extreme weather and community evacuation are highly disruptive. Disproportionately impacted communities include coastal and rural Northern areas.
- Public health needs to respond with local and equity-driven planning, preparedness and response measures.
- Foregrounding **community adaptation and resilience** will help us respond to the present and future risks.

What We Heard

Closing questions for reflection

To close the IDCC Forum 2023, Dr. Sheppard prompted us to reflect critically on these questions:

- “What are immediate collaboration or connection opportunities that you can advance for action on climate-sensitive infectious disease risks?”
- “What are your key takeaways from this forum on tackling climate-sensitive infectious diseases in practical ways?”

Climate change and health impacts in Canada

- The health impacts are many: wildfire-related asthma and evacuations, flood-related damage, allergies, lack of water access, tick-borne diseases, heat-related illness, relocation and displacement and more.
- As discussed throughout the forum, climate-sensitive infectious disease risks are also on the rise. With a warming climate, the distribution of vectors is shifting. The northward spread of ticks exemplifies this.
- The increased spread and transmission of fungi (for example, of *Candida auris* and *Coccidioidomycosis* or Valley Fever) is also an emerging infectious disease issue.



What We Heard

Community-based adaptation and resiliency

- Communities' **resources** influence resiliency and the capacity to withstand climate-related shocks.
- During a heat wave and wildfire smoke event, a family without air conditioning will be impacted differently, for example. Do we advise to open the windows for heat relief, or close the windows to protect from smoke?
- Overall, the coming climate-related health impacts will disproportionately affect children, older adults, people with disabilities, pregnant people, people in coastal, rural and Northern communities, people from racialized communities, temporary foreign workers and Indigenous People.
- A community-based recognition of the **unique risks and impacts** should guide how public health conceptualizes and responds to the issues at hand.

Infectious Disease and Climate Change (IDCC) Program and Fund

- This Public Health Agency of Canada (PHAC) program focuses on protecting Canadians from climate-sensitive infectious diseases. The program supports research, diagnostics, modelling, risk assessment, surveillance and monitoring, health professional education, public awareness, and partnerships and engagement.
- PHAC's IDCC Program has produced several knowledge mobilization tools, including for providers, equity-deserving and at-risk populations, and children and caregivers.
- The IDCC Fund is supporting many **community-based projects** across Canada. You can review a list of funded projects [here](#). Ongoing funding will be available.

Explore Further:

Resources mentioned in this talk

- [Health of Canadians in a Changing Climate](#)
- [Mobilizing Public Health Action on Climate Change in Canada: Chief Public Health Officer's Report on the State of Public Health in Canada 2022](#)



Perspectives on infectious disease and climate change:

Themes from the Infectious Disease and Climate Change (IDCC) Forum 2023

Key Takeaways

- During the [Infectious Disease and Climate Change Forum](#), presenters shared perspectives and research on infectious diseases and climate change, including findings, data, lessons learned and ways forward.
- Common themes from the forum sessions included the need to centre **Indigenous knowledges and ways of knowing**; the role of **clear communication** and **community-based adaptation and resiliency**; the importance of ongoing **monitoring and surveillance**; and the **complexity and urgency** of the risks among the many climate-related health impacts facing Canadians today.

What We Heard: Common Themes

Theme 1: Indigenous knowledges and ways of knowing

Throughout the forum, presenters highlighted Indigenous knowledges as a pathway toward greater well-being.

- **Hetxw'ms Gyetxw (Brett Huson)** shared how pre-colonial Gitxsan society was based on reciprocity with the land. Mr. Huson introduced Two-Eyed Seeing as a concept to bring together western and Indigenous knowledges.
- **Dana Tizya-Tramm** challenged us to reimagine harmful systems of colonialism and capitalism.
- **Chris Buse** and **Kaylee Byers** reminded us that One Health is not a new concept. Indigenous Peoples have recognized the interconnectedness of human, animal and ecological health for many thousands of years.

Theme 2: Clear communication of risks

Several presenters spoke to the role of public health in communicating clear, science-based information. Speakers saw this as even more important in the current landscape of misinformation and distrust post-COVID-19.

- **Maryline Vivion** discussed benefits of co-constructing public health messages with community organizations and partners, such as increased trust, impact and uptake.
- **Ariane Adam-Poupart** shared knowledge translation tools created by [Quebec's scientific program on climate-sensitive zoonoses](#), including risk maps, webinars, pamphlets, publications and more.
- **Hetxw'ms Gyetxw (Brett Huson)** ([Climate Atlas of Canada](#)) highlighted the role of participatory, Indigenous-led documentary filmmaking to tell stories of climate change and health.



What We Heard: Common Themes

Theme 3: Community-based adaptation and resiliency

The need for local, on-the-ground responses to climate-sensitive infectious disease risks emerged as a key theme.

- **Don Sheppard** put forth community-driven action and innovation as our best response, stressing how communities will experience the impacts unequally.
- **Camille Guillot** outlined complexities inherent in local community-based interventions for Lyme disease risk.
- **Tracey Philips** shared how her rural Ontario pharmacy is treating tick bites through a newly expanded scope for pharmacists. Ms. Philips emphasized access to treatment, collaboration and education.

Theme 4: Monitoring and surveillance

Monitoring and surveillance of vector-borne diseases continue to be crucial to Canada's adaptive capacity in this area.

- **Quinn Stewart** gave an overview of the British Columbia Centre for Disease Control (BCCDC)'s active and passive tick surveillance program. Their 2022 findings highlighted an increased risk profile under a warming climate.
- **Steven Drews** shared how Canadian Blood Services monitors vector-borne disease risk to ensure blood safety.
- **Jon Grabenstein** outlined findings from a recent study of worldwide Chikungunya outbreaks and prevalence.

Theme 5: Complexity and urgency

Speakers agreed: the risks are complex and can be difficult to assess and communicate. Several presenters said we will need to prioritize infectious disease risks alongside other climate-related health impacts.

- **Nick Ogden** emphasized the need for continued monitoring, preparation and vigilance.
- **Steve Schofield** called for prioritization of risks given the many pressing climate-related issues we face.
- **Chris Buse** stressed the complex, interconnected and compounding nature of the risks. In response, Dr. Buse called for upstream responses that address both social marginalization and environmental protection.