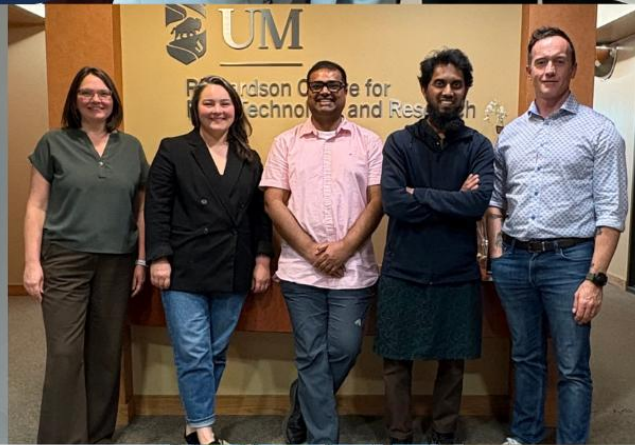


2025 Report

SUMMER INSTITUTE ON SUSTAINABLE HEALTH SYSTEMS



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Canadian Institutes of Health Research

Instituts de recherche en santé du Canada

Summer Institute partner organizations:



Summer Institute Trainee Participants:

“The summer institute was very well executed, it really could not have gone any better. The Institute did an incredible job of providing the foundational context behind climate change, sustainability their connection to health. This was built upon throughout the course with actionable ways being presented to everyone on how to create change in their respective fields, alongside research questions that need to be answered. I cannot express my gratitude enough for the opportunity to collaborate with so many passionate and intelligent individuals working within this intersection.”- Trainee. 2025 SI

“The most important thing I will remember and share with others from the Summer Institute is how deeply climate change is connected to all aspects of health, and how we, as health professionals and researchers, have a real opportunity to be part of the solution. The sessions, especially the informal panel discussions, opened my eyes to practical ways in which we could embed sustainability into healthcare without compromising quality. It was also inspiring to see passion and innovation from others in the room, which made me feel hopeful and motivated. I will carry forward the idea that small evidence-based changes, when shared and scaled, can have a meaningful impact.” - Trainee. 2025 SI

“One of the key takeaways from the Summer Institute was the need for coordination between different groups doing similar work in this field. There are so many organizations across cities and provinces doing incredible work on climate change and human health, but there seems to be a lack of coordination among them. I think that being sure to advertise other’s work, your own work, and supporting collaboration as much as possible is something that is incredibly important in this field and that I will make a conscious effort to do throughout my career.” - Trainee. 2025 SI

Report on the 2025 Summer Institute on Sustainable Health Systems

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Partner organizations:

- Memorial University of Newfoundland
- Dalhousie University
- Université de Montréal
- Centre de recherche en santé publique (CRéSP)
- McGill University
- University of Ottawa
- University of Toronto
- McMaster University
- University of Manitoba
- University of Saskatchewan
- University of Alberta
- University of British Columbia
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- CIHR – Institute of Population and Public Health
- CIHR – Institute of Infection and Immunity
- CIHR- Institute of Musculoskeletal Health and Arthritis

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Executive Summary

The fourth annual Summer Institute on Sustainable Health Systems was held from June 9th – 12th, 2025. This Institute brought together 129 trainees enrolled in eligible programs across 24 Canadian universities at 11 in-person hubs and one virtual hub.

Through guided learning activities, meetings with local sustainability leaders and nation-wide panel discussions, the Summer Institute aimed to develop trainee knowledge, leadership skills and capabilities, and build professional, interdisciplinary networks of trainees and professionals with interests in sustainable health systems.

The Summer Institute was hosted by [CASCADES](#) (Creating a Sustainable Canadian Health System in a Climate Crisis), in partnership with the Canadian Institutes of Health Research ([CIHR-IHSPR](#), [CIHR-IPPH](#), [CIHR-III](#), [CIHR-IMHA](#))

University partners across the country hosted the 11 in-person hubs:

- Memorial University, St. John's, Newfoundland
- Dalhousie University, Halifax, Nova Scotia
- Université de Montréal, Montréal, Quebec
- McGill University, Montréal, Quebec
- University of Ottawa, Ottawa, Ontario
- University of Toronto, Toronto, Ontario
- McMaster University, Hamilton, Ontario
- University of Manitoba, Winnipeg, Manitoba
- University of Saskatchewan, Saskatoon, Saskatchewan
- University of Alberta, Edmonton, Alberta
- University of British Columbia, Vancouver, British Columbia

Summer Institute Objectives

- Recognize the implications of climate change for population health and health equity
- Understand the environmental impact of health services and systems
- Understand the need for climate adaptation and the improved resilience of health services and systems
- Develop an awareness of the principles of sustainable care, identifying opportunities to improve the quality and appropriateness of care while reducing its environmental impact
- Build a professional interdisciplinary and inter-professional network of researchers, practitioners, clinicians, leaders, and trainees interested in, or working in, the area of sustainable health systems.

Format

Each of the four days of the Institute comprised:

- Two hub-specific sessions of facilitated learning. Hub specific activities included:
 - (i) Meet and greet with local sustainability leaders
 - (ii) Small group exercises to apply learning from national panels
- A nation-wide virtual panel, concurrent activity across all hubs:
 - Day 1: The implications of climate change for human health and health equity
 - Day 2: Mitigating the climate and environmental harms of healthcare
 - Day 3: Health system adaptation and resilience
 - Day 4: Leadership and making change

Trainees

Trainees currently enrolled in or 2025 graduates from Canadian Master's, PhD, professional, or post-doctoral fellowship programs were eligible to attend. Diverse disciplinary and professional backgrounds were invited to apply to the Summer Institute, including health services and policy research, public health, health management, medicine, nursing, pharmacy, dentistry and allied health.

There is a diverse range of opportunities to gain knowledge and expertise relevant to health and health systems beyond academic training. Therefore, we encouraged applications from graduate trainees who were not enrolled in a health-related program but had equivalent knowledge or expertise through participation in health or health systems activities, improvements, and research and development.

Of the eligible trainees that applied to the Summer Institute, **164** trainees were invited to attend the Summer Institute (**Figure 2**). The number of trainees per hub ranged from **3 to 21**. A total of **129** trainees attended at least one day of the Institute. Certificates of completion were provided to **119** trainees who attended the full four days of the Summer Institute.

Trainee Evaluations

Trainees were invited to provide daily feedback on the quality and relevance of the day's content. They were also invited to provide a final evaluation to elicit additional feedback on trainee satisfaction with their experiences during the Summer Institute. When asked about what the trainees knew before attending the Summer Institute, **65%** reported that their formal health profession or graduate training equipped them with knowledge about climate change and its impacts on health and health systems. In comparison, **83%** of trainees responded that the Summer Institute equipped them with knowledge about climate change and its impacts on health and health systems; **100%** were satisfied with their overall experience participating in the Summer Institute, and **96%** would recommend it to their peers.

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Background

Climate and environmental change pose an accelerating and complex threat to health and 21st-century health systems—and these modern health systems are a significant contributor to global carbon emissions. If the health sector were a country, it would be the 5th largest emitter globally.

There is an urgent need for transformative change to make our health systems less harmful to health, and to adapt to the health, health equity and health system impacts of climate change. Despite this need, few of the relevant graduate programs (e.g., health services and policy research, public health, health management), or health care professional programs (e.g., medicine, nursing, dentistry, allied health) equip students with the knowledge and skills required to lead, manage, analyze, inform, or deliver sustainable health systems.

The Summer Institute on Sustainable Health Systems was created to fill this gap and provide trainees with the opportunity to increase awareness of sustainable health systems and current action in Canada. The Summer Institute aimed to develop trainee knowledge, leadership skills and capabilities, and build professional, interdisciplinary networks of trainees and professionals with interests in sustainable health systems.

The Summer Institute was hosted by **CASCADES** (Creating a Sustainable Canadian Health System in a Climate Crisis), in partnership with the Canadian Institutes of Health Research (**CIHR-IHSPR**, **CIHR-IPPH**, **CIHR-III**, **CIHR-IMHA**).

CASCADES is a multi-year capacity-building initiative to address healthcare's contribution to the climate crisis led by the Collaborative Centre for Climate, Health and Sustainable Care at the University of Toronto, in partnership with the Healthy Populations Institute at Dalhousie University, the Planetary Healthcare Lab at the University of British Columbia, and the Canadian Coalition for Green Health Care. The project is funded for a five-year term by Environment and Climate Change Canada.

CIHR-IHSPR, CIHR-IPPH, CIHR-III, and CIHR-IMHA are four of the 13 institutes at CIHR, Canada's federal health research funding agency.

- The Institute of Health Services and Policy Research (IHSPR) plays a key role in helping CIHR to achieve its mandate to create new scientific knowledge and catalyze its translation into improved health, more effective health services and products, and a strengthened Canadian healthcare system. IHSPR is dedicated to supporting innovative research, capacity-building and knowledge translation initiatives designed to improve the way healthcare services are organized, regulated, managed, financed, paid for, used and delivered, in the interest of improving the health and quality of life of all Canadians.
- The Institute of Infection and Immunity (III) supports research and helps to build research capacity in the areas of infectious disease and the body's immune system. Through the Institute's programs, researchers address a wide range of health concerns related to infection and immunity including disease mechanisms, disease prevention and treatment, and health promotion through public policy.

- The Institute for Population and Public Health (IPPH) supports research into the complex biological, social, cultural and environmental interactions that determine the health of individuals, communities and global populations; and to apply knowledge to improve the health of individuals and populations through strategic partnerships with population and public health stakeholders and innovative research funding programs. IPPH's mission aims to improve the health of populations and promote health equity in Canada and globally through research and its application to policies, programs, and practice in public health and other sectors.
- The Institute of Musculoskeletal Health and Arthritis (IMHA) is mandated to provide research leadership related to: active living, mobility and the wide range of conditions related to bones, joints, muscles, connective tissue, skin as well as the mouth, teeth and craniofacial region. Musculoskeletal health is critical for mobility, productivity, and general well-being.

Summer Institute Objectives

The Summer Institute was designed to enable trainees to:

- Recognize the implications of climate change for population health and health equity
- Understand the environmental impact of health services and systems
- Understand the need for climate adaptation and the improved resilience of health services and systems
- Develop an awareness of the principles of sustainable care, identifying opportunities to improve the quality and appropriateness of care while reducing its environmental impact
- Build a professional interdisciplinary and inter-professional network of researchers, practitioners, clinicians, leaders, and trainees interested in, or working in, the area of sustainable health systems.

The Summer Institute was designed to benefit:

- Trainees who have familiarity, expertise and/or knowledge of the impacts of climate change and are interested in learning the implications for human health and health systems.
- Trainees who have familiarity, expertise and/or knowledge of health systems, governance, policies, and/or professional practices but do not have in depth knowledge of the implications of climate change for human health and health systems.
- Trainees who are knowledgeable about the implications of climate change for human health and health systems but are seeking further knowledge about how to make an impact in their field.
- Trainees who are knowledgeable about the implications of climate change for human health and health systems and would like to expand their professional network of individuals working in the area within their local community and nationally.

Programming

The Summer Institute's programming was consistent across the 12 virtual and in-person hubs to ensure successful learning outcomes for all participants. English was the language of instruction at all hubs except the in-person hubs at Université de Montréal, which was in French. The virtual national panels were in both languages, depending on the panelist, with simultaneous interpretation.

Summer Institute trainees accessed learning materials on the Public Health Training for Equitable Systems Change (PHESC) platform. Through this online learning platform, trainees could gain access to the instructions for the daily self-directed learning activities, slide decks from the national panelists, pre-work materials, additional resources, and connect with other trainees in the discussion forums.

Trainees were encouraged to complete CASCADES' self-directed e-learning module, *Introduction to Sustainable Health Systems*, prior to the Summer Institute. This online e-learning module was designed for healthcare professionals, but it was believed to be beneficial to trainees who would like an introduction to the relationship between climate change, health, and health systems and to familiarize themselves with the concept of sustainable health systems before attending the Summer Institute.

Learning Objectives

Day 1: The implications of climate change for human health and health equity

- Understand the significance of climate change for population health and health equity
- Consider how climate change creates disproportionate risks and inequities among individuals and communities
- Reflect on how these issues manifest in the places where you live and work

Day 2: Mitigating the climate harms of health care

- Understand the resource intensive and polluting nature of the healthcare industry
- Learn about existing frameworks and tools that can be applied to reducing pollution from health services and systems
- Consider how sustainability is relevant to different aspects of healthcare quality and safety

Day 3: Health system adaptation and resilience

- Understand the ways in which climate change influences the needs for, and the capacity to deliver, healthcare
- Recognize the need for health system adaptation
- Identify opportunities to promote the resilience of health services and systems

Day 4: Leadership and making change

- Recognize the core capabilities of leadership and their relevance to climate action and sustainability
- Identify considerations for communicating about climate change and sustainability issues
- Consider how your communication strategies can inform change efforts

Daily Agenda

- Two hub-specific sessions of facilitated learning (2–2.5 hours in total). Hub specific activities included:
 - (i) Meet and greet with local sustainability leaders
 - (ii) Small group exercises to apply learning from national panels
- A nation-wide virtual panel, concurrent activity across all hubs (1.5 hours):
 - Day 1: The implications of climate change for human health and health equity
 - Day 2: Mitigating the climate and environmental harms of health care
 - Day 3: Health system adaptation and resilience
 - Day 4: Leadership and making change

Daily Learning Activities

Following the national panel, trainees were split into small groups and followed the instructions of the self-directed learning activity to develop their knowledge on the day's topic (**Appendix A**).

Hub Locations

The Summer Institute was held in-person and virtually. In-person hubs were located in:

- Memorial University, St. John's, Newfoundland
- Dalhousie University, Halifax, Nova Scotia
- Université de Montréal, Montréal, Quebec
- McGill University, Montréal, Quebec
- University of Ottawa, Ottawa, Ontario
- University of Toronto, Toronto, Ontario
- McMaster University, Hamilton, Ontario
- University of Manitoba, Winnipeg, Manitoba
- University of Saskatchewan, Saskatoon, Saskatchewan
- University of Alberta, Edmonton, Alberta
- University of British Columbia, Vancouver, British Columbia

A virtual hub, hosted by CASCADES, was offered for those who preferred to attend virtually.

Hub Facilitators and Planners

Each hub was assigned one or more facilitators to support the trainees throughout the Summer Institute. These facilitators played a variety of roles to help ensure the program's success. Their responsibilities included organizing daily activities, leading meet-and-greet discussions, attending the national panel alongside trainees, and guiding trainees through the learning activity. Each hub also identified one or more individuals to organize the logistics involved in hosting the Summer Institute, including arranging catering, reserving appropriate meeting spaces, organizing guests and communicating with trainees (**Figure 1**). Both the facilitators and the planners were invited to attend a planning meeting every other month from November until July to provide input throughout the planning process and remain informed at each planning stage.

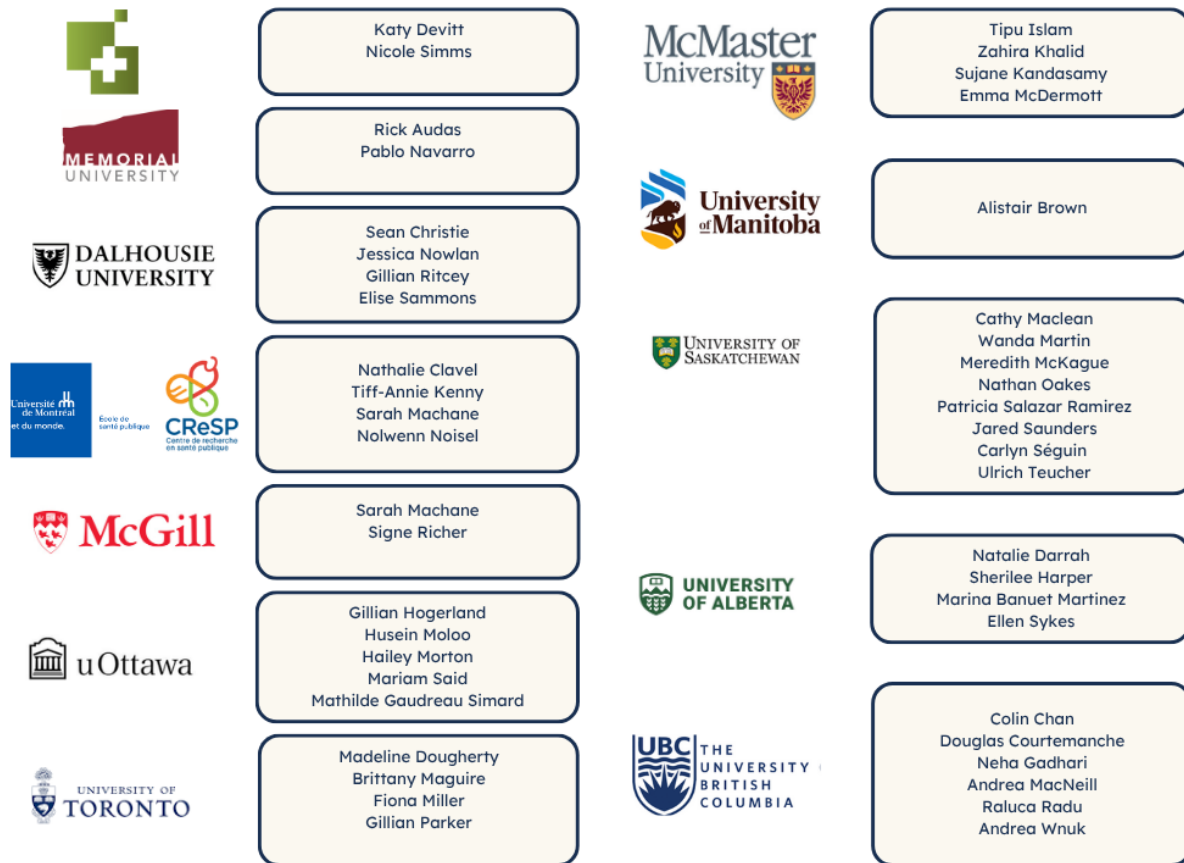


Figure 1. Hub facilitators and planners for the 2025 Summer Institute on Sustainable Health Systems

Trainees

Trainees from eligible university programs were invited to apply to attend the Summer Institute on Sustainable Health Systems. These trainees were either currently enrolled in or 2025 graduates from Canadian Master's, PhD, professional, or post-doctoral fellowship programs in disciplines including:

- Health services and policy research – MSc, PhD, post-doctoral fellows
- Public health– MPH, DrPH
- Health administration – MHSc, MPP, MBA
- Healthcare professions (if at a graduate level or the trainee has completed a prior undergrad degree)

There are a diverse range of opportunities to gain knowledge and expertise relevant to health and health systems beyond academic training. This year, we encouraged applications from graduate trainees who were not enrolled in a health-related program but had equivalent knowledge or expertise through participation in health or health systems activities, improvements, and research and development.

The distribution of the hubs at 11 university locations across 8 provinces, in addition to the virtual option, allowed for trainees attending 24 universities across Canada to participate in the Summer Institute.

Of the **164** trainees that were invited to participate in the Summer Institute, **150** accepted the invitation (**Figure 2**). The number of trainees per hub ranged from **3 to 21**. Of the **129** trainees who participated, **119** attended all four days.



Figure 2. Trainee engagement and Summer Institute participation

Sustainability Leaders

Each day included a one-hour meet and greet with the trainees and local sustainability leaders. This was an opportunity for the trainees to ask questions to experts on the topics discussed and make network connections that could provide learning or collaboration opportunities beyond the Summer Institute. The local leaders were identified and invited to participate by each hub's facilitators (**Figure 3**).



Figure 3. Sustainability leaders who participated in the Summer Institute meet and greet activity

Nation-wide Virtual Panel

The nation-wide virtual panels brought together all trainees from across all 12 hubs for a discussion between experts on each day's theme (**Figure 4**):

- Day 1: The implications of climate change for human health and health equity
- Day 2: Mitigating the climate and environmental harms of health care
- Day 3: Health system adaptation and resilience
- Day 4: Leadership and making change

Each panelist presented for 15 minutes, followed by a moderated question and answer session (see Appendix B for panelists' bios).

All trainees attended the national panel concurrently within their respective hub settings using the Zoom platform. Trainees were encouraged to submit questions for the panelists in the Zoom chat. The moderators reviewed the questions and asked them to the panelists on behalf of the trainees.

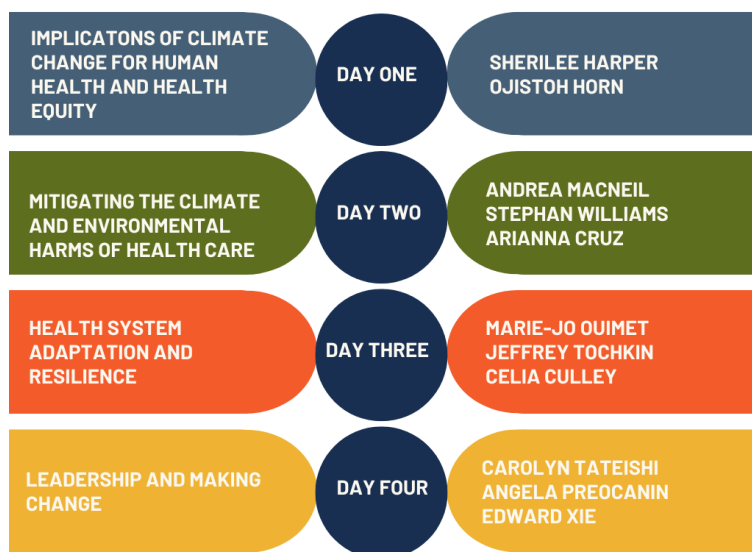


Figure 4. Sustainability leaders who participated in the Summer Institute virtual national panels

Trainee Evaluations

The Summer Institute trainees were asked to complete a daily anonymous evaluation to provide feedback on the quality and relevance of the daily content and the learning activities (**Figures 5 and 6**). The final day evaluation consisted of additional questions to elicit feedback on trainee satisfaction with their experiences during the Summer Institute and the extent to which the Summer Institute met the learning objectives. Of the **129** participating trainees, **51 (40%)** responded to the final evaluation. Responding trainees reported a **100%** overall satisfaction rate (**Figure 5**), **97%** were likely to recommend the Summer Institute to their peers (**Figure 6**), and **82%** believed the Summer Institute fostered development of leadership and professional skills to advance sustainable health systems.

Prior to the Summer Institute, formal health profession or health science training had equipped **65%** of responding trainees with knowledge about climate change and its impacts on health and health systems. Following the Summer Institute, **82%** of responding trainees felt equipped with knowledge about climate change and its impacts on health and health systems (**Figure 11**); **92%** felt that they significantly increased their understanding of how to advance sustainable health systems in Canada (**Figure 9**); and **90%** believed the extent to which they will be able to apply knowledge gained this week moving forward in their academic or future career was significant.

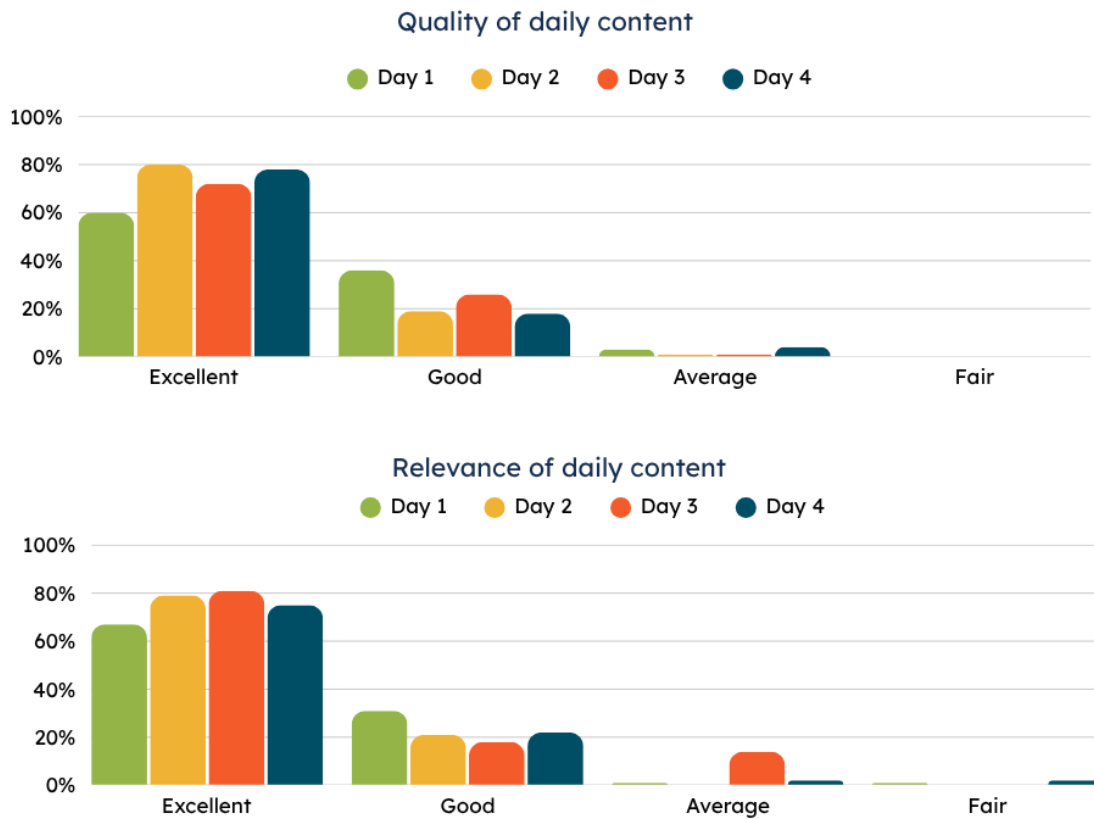


Figure 5. Responses to the evaluation of the quality and relevance of the day's content

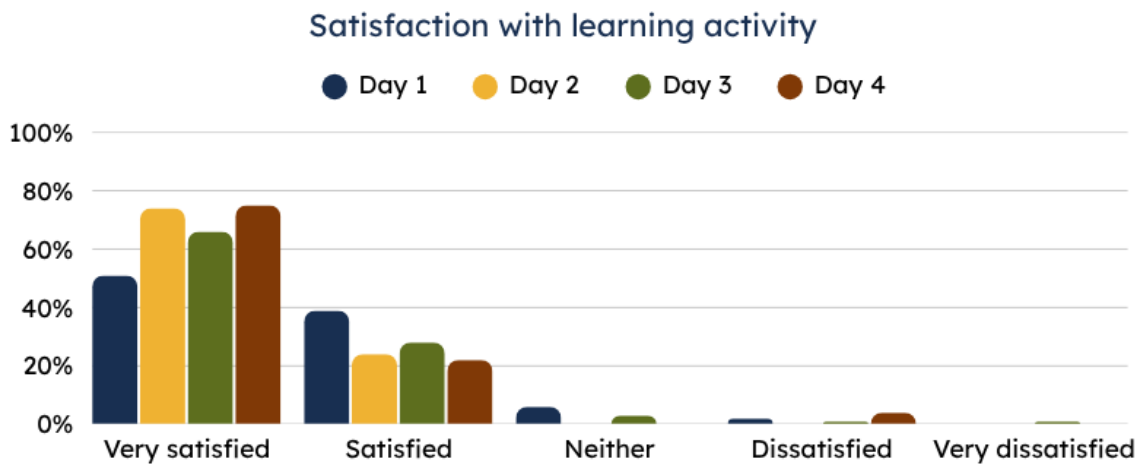


Figure 6. Responses to the evaluation of satisfaction with the daily learning activities

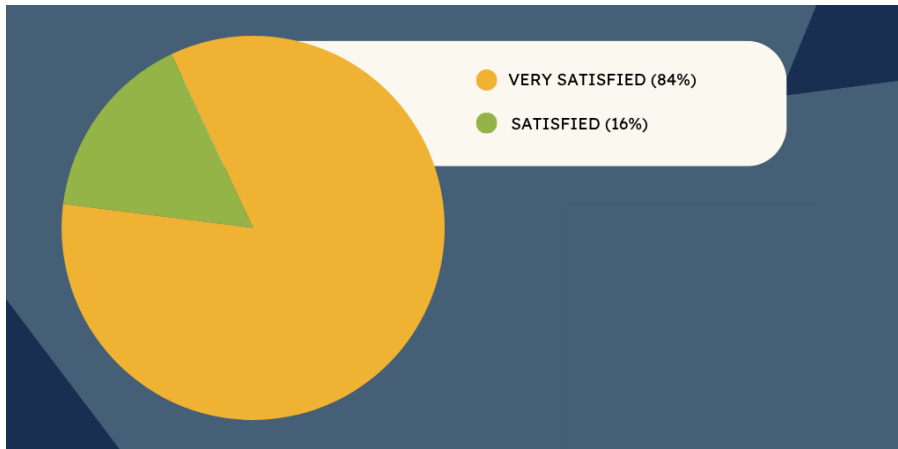


Figure 7. Overall satisfaction of participants with their experience participating in the Summer Institute (N = 51)

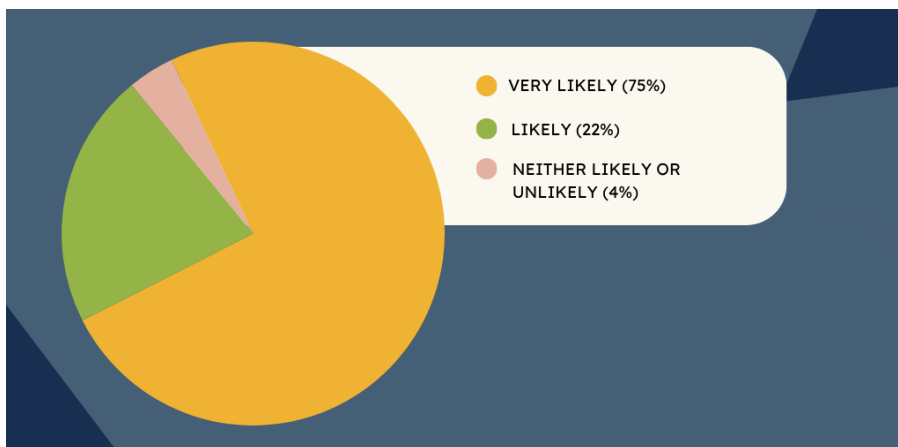


Figure 8. How likely participants are to recommend the Summer Institute to their peers (N = 51)

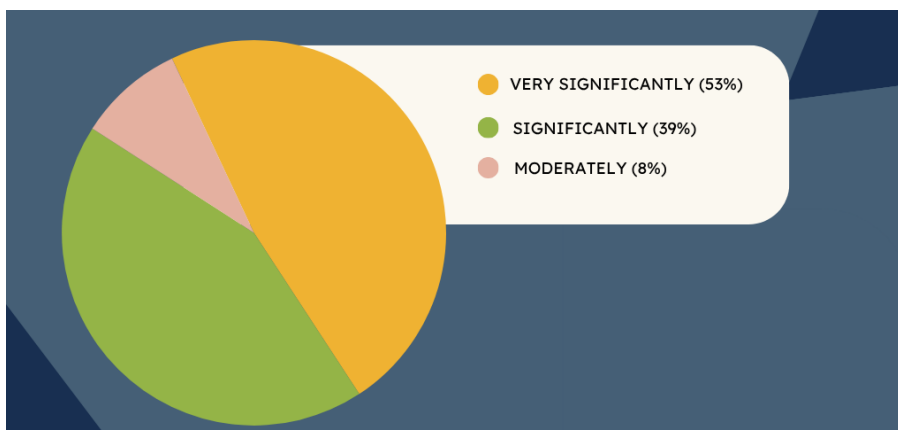


Figure 9. The extent to which you increased your understanding of how to advance sustainable health systems in Canada. (N = 51)

Past Summer Institutes

The inaugural Summer Institute was hosted in 2022 by CASCADES, ELES, and CIHR-IHSPR. The foundational structure—including trainee eligibility criteria, selection process, programming, and delivery format—has remained consistent across subsequent years, with incremental improvements informed by participant feedback and ongoing evaluation.

Since 2022, the Summer Institute has seen notable growth in both geographic reach and trainee participation. The number of participating hubs expanded from 6 in-person locations across 4 provinces in 2022 to 11 in-person locations across 8 provinces in 2025. Trainee enrollment has steadily increased year over year, growing from 65 participants in 2022 to 94 in 2023, 126 in 2024, and 129 in 2025. Over its first four years, the Summer Institute has trained more than 400 students in sustainable health systems.

Participant satisfaction has remained consistently high. In 2025, 100% of the 51 respondents reported overall satisfaction with their experience, aligning with trends observed in previous years. Similarly, there has been minimal variation over time in trainee responses to the questions about how well the Summer Institute has equipped them with knowledge about climate change and its impacts on health and health systems, their confidence in their ability to apply knowledge gained to their academic or future career, and how likely they would be to recommend the Summer Institute to their peers (see **Figure 10** for detailed results).

Trends over time suggest improvements in formal education on climate and health. In 2025, **65%** of respondents rated their formal health profession or graduate training programs as having equipped them “well” or “very well” with knowledge about climate change and its impacts on health and health systems, compared to **33%** in 2022 (see **Figure 11** for detailed results).

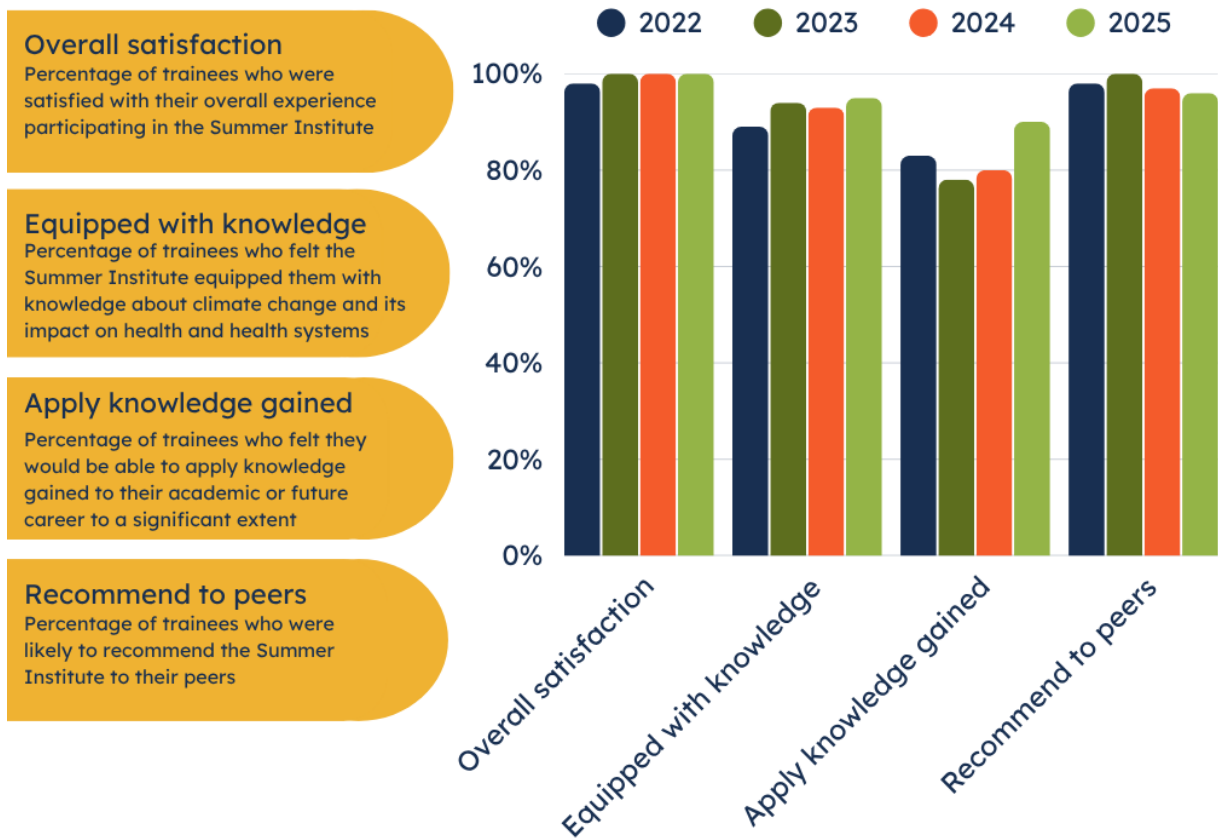


Figure 10. Comparison of Trainee Summer Institute evaluation responses

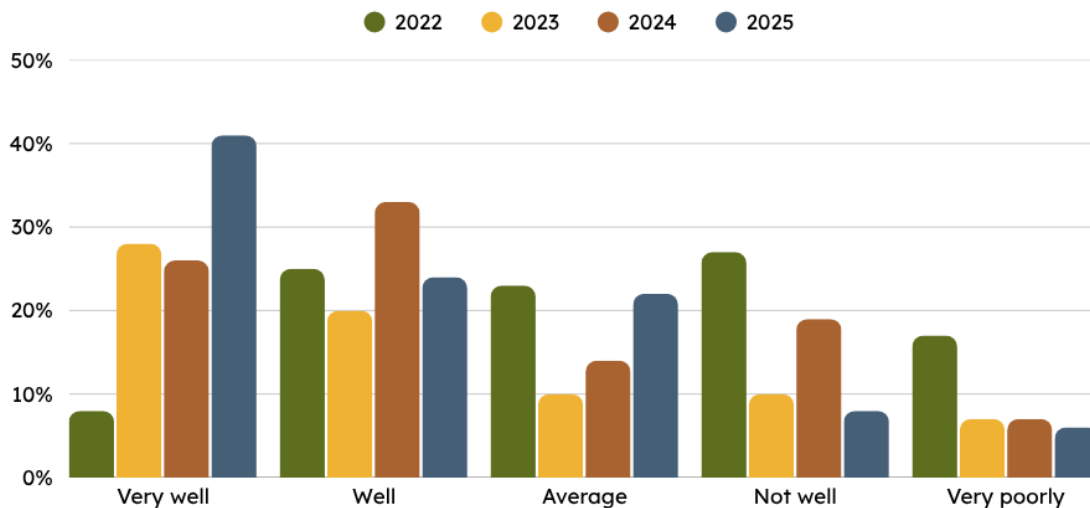


Figure 11. Considering what you knew before you attended the Summer Institute, how well had your formal health profession or graduate training equipped you with knowledge about climate change and its impacts on health and health systems?

Future Iterations

CASCADES is an initiative funded by Environment and Climate Change Canada through March 2026. At this time, CASCADES does not have the capacity to offer this pan-Canadian course again. However, Summer Institute partners and other academic institutions are encouraged to adapt and deliver the course independently within their own regions. If you are interested in accessing the existing course materials, please contact us at CASCADES@utoronto.ca. We will share any updates should future opportunities to offer the course in a pan-Canadian format arise.

Appendix A: Learning activities

Day 1 Learning Activity – Implications of Climate Change for Human Health and Health Equity

Learning objectives:

At the end of today's session, you will be able to:

- Understand the significance of climate change for population health and health equity
- Consider how climate change creates disproportionate risks and inequities among individuals and communities
- Reflect on how these issues manifest in the places where you live and work

Pre-work:

- Review [Climate Change and Indigenous Peoples' Health in Canada](#)
- Consider also these Climate Atlas of Canada resources for [First Nations](#), [Inuit](#), [Métis](#) peoples
- Explore the [Lancet Countdown information on Health Hazards, Exposures, and Impacts](#)

Exercise: (1–1.5 hrs)

- 5 min introduction of the activity
- Split trainees into equally sized groups
- 35–50 minutes group work
- 20–35 minutes report back

Activity resources:

- IPCC Sixth Assessment Report: [Interactions between hazard, exposure and vulnerability \(Figure 7.4\)](#)
- Climate Atlas of Canada's [Climate Maps for Health](#).
- [HealthyPlan.City's tool](#)

Day 2 Learning Activity – Mitigating the climate and environmental harms of healthcare

Learning objectives:

At the end of today's session, you should be able to:

- Understand the resource intensive and polluting nature of the healthcare industry
- Learn about existing frameworks and tools that can be applied to reducing pollution from health services and systems
- Consider how sustainability is relevant to different aspects of healthcare quality and safety

Pework:

- Review [Embedding Environmental Sustainability into Quality: A Framework for Canadian Health Systems](#)

Exercise: (1–1.5 hrs)

- Split into 3 groups (if required for group size, more than one group can be assigned a Scenario)
- Each group is assigned Scenario A, B or C
- 35–50 minutes group work
- 20–35 minutes report back

Activity resources:

- [Embedding Environmental Sustainability in Quality: A Framework for Canadian Health Systems](#)
- [Sustainable health system principles decision tree](#)

Day 3 Learning Activity – Health System Adaptation and Resilience

Learning objectives:

At the end of today's session, you should be able to:

- Understand the ways in which climate change influences the need for, and the capacity to deliver, healthcare
- Recognize the need for health system adaptation
- Identify opportunities to promote the resilience of health services and systems

Pework:

- Read the six components of a comprehensive vulnerability and adaptation (V&A) assessment of climate change and health on pages 16 – 18 (Figure 3) in the [Climate Change and Health: Vulnerability and Adaptation Assessment](#)
- Review the [Health of Canadians in a Changing Climate report's Figure 10.1: Framework for Assessment and adaptation to create climate-resilient health systems](#)
- Review [Climate Change and Health Vulnerability and Adaptation Assessments: A Knowledge to Action Resource Guide](#) by Health Canada

Additional suggested readings:

- [Acute Care During Extreme Heat: Recommendations and Information for Health Care Workers](#)
- [Community Care During Extreme Heat: Heat Illness: Prevention and Preliminary Care](#)
- [Extreme heat and human health: for pharmacists and pharmacist technicians](#)

Activity resources:

- The six steps in [the six steps in Climate Change and Health: Vulnerability and Adaptation Assessment \(GO TO PAGES 16 to 18\)](#)
- [Health in a Changing Climate report's Figure 10.1: Framework for Assessment and adaptation to create climate-resilient health systems](#)

Exercise: (1–1.5 hrs)

- 5 min introduction of the activity
- Split trainees into equally sized groups
- 35–50 minutes group work
- 20–35 minutes report back

Day 4 Learning Activity – Leadership and Making Change

Learning objectives:

At the end of today's session, you should be able to:

- Recognize the core capabilities of leadership and their relevance to climate action and sustainability
- Identify considerations for communicating about climate change and sustainability issues
- Consider how your communication strategies can inform change efforts

Pework:

- Read [The Seven Climate Visuals principles](#)
- Watch the video [Zoom](#) (4 mins) and reflect on your assumptions as you interpret the images. What does this video illustrate about taken-for-granted views of the world?
- Watch the video (11mins) [Who moved my cheese: The video](#) by Dr Spencer Johnson. Reflect on the different responses to change and how you have witnessed this in yourself and the people around you.

Activity resources:

- 11" x 14" poster boards (if 22" x 28", please cut into smaller size)
- Colored construction paper
- Scissors
- Markers
- Glue

*Virtual Hub work on Miro board.

Exercise: (1-1.5 hrs)

- 5 min introduction of the activity
- Split trainees into equally sized groups
- 35-50 minutes group work
- 20-35 minutes report back

Appendix B: Panelists' biographies

Fiona Miller (PhD) is a Professor of Health Policy and holds the Chair in Health Management Strategies in the Institute of Health Policy, Management and Evaluation (IHPME) at the University of Toronto. She is also the Founder and Director of the Centre for Sustainable Health Systems within the IHPME and of CASCADES. Her research interests range from health technology and innovation to health policy and sustainability in health systems. Through the Centre and CASCADES, Fiona leads and supports efforts to improve the environmental and social sustainability of health systems, through research, practice change and policy development.

Rick Glazier (MD) is the Scientific Director of the Institute of Health Services and Policy Research at the Canadian Institutes of Health Research and a Senior Core Scientist and Program Lead at ICES. He is also a physician at St. Michaels, a Senior Scientist in the MAP Centre for Urban Health Solutions and a Professor at the University of Toronto. He is interested in the delivery and utilization of primary care health services, public and population health, and the application of geographic methods for improving health equity. Rick has led numerous research projects including investigating how to best deliver primary care services, and improving cancer prevention among Ontario's urban immigrant population.

Sherilee Harper (PhD) is a Canada Research Chair in Climate Change and Health, Kule Scholar, and an Associate Professor in the School of Public Health at the University of Alberta. Her research investigates associations between weather, environment, and health equity in the context of climate change, and she collaborates with partners across sectors to prioritise climate-related health actions, planning, interventions, and research. She was a Lead Author on two Intergovernmental Panel on Climate Change (IPCC) reports; served on the Gender Task Group for the IPCC; Lead Author on Health Canada's 2022 Climate Change and Health Assessment; and Co-chaired the Government of Canada's Health and Wellbeing Advisory Table for the National Adaptation Strategy.

Ojistoh Kahnawahere Horn (MD) is a Mohawk/Haudenosaunee woman. Her mother is from Kahnawake and her father is from Akwesasne. She is Bear Clan, has many children, and is traditionally minded. Dr. Kahnawahere Horn works as a family physician in the Kahnawake and Akwesasne communities taking care of her people through all stages of the lifecycle, including prenatal, obstetric care, geriatric, and palliative care. Previously focusing on acute care in hospital wards and emergency rooms, she now focuses her time in outpatient clinics, homes, and long-term care facilities in her community. She teaches students and residents from the medical schools at the McGill University, the University of Ottawa, and Queen's University about the complexities of providing primary care to Indigenous peoples and their communities. Drawing on both Western and traditional paradigms and working with like-minded Indigenous and non-Indigenous physicians across the country, Dr. Kahnawahere Horn has a clear eye on the effects of the environment and pollution

on health. She promotes the inclusion and support of traditional knowledge and “ways of being” into a framework for providing holistic and primary care for her community.

Andrea MacNeill (MD) is a Surgical Oncologist at Vancouver General Hospital and BC Cancer, and a clinical associate professor at the University of British Columbia where she specializes in sarcoma and peritoneal malignancies. She is the founder and principal investigator of the UBC Planetary Healthcare Lab, an interdisciplinary research collaborative dedicated to creating health systems that promote both human and planetary health. She is the Medical Director of Planetary Health for Vancouver Coastal Health and an executive member of CASCADES. She is currently co-chairing a UBC/Yale-led Lancet Commission in sustainable healthcare.

Arianna Cruz (MA, MBA, BEng) is a Regional Strategy and Quality Manager in the Quality and Patient Safety Department at Vancouver Coastal Health. Over the past seven years, she has led strategic and transformational initiatives, including the implementation of Value-Based Health Care across surgical divisions and departments. Her work focuses on improving value for patients, providers, and the environment through the integration of engineering, sustainability, and culture in dynamic cycles of innovation and evaluation. She is currently on a two-year secondment with CASCADES Canada, where she supports two portfolios—Strategy and Performance and Quality Improvement—developing practical resources to advance action across the health system. Arianna is an executive coach, industrial engineer and holds an MA in Environment, Development, and Peace from the United Nations University for Peace, as well as an MBA from the University of British Columbia.

Stephan Williams (MD) is the medical co-administrator for carbon-neutrality/sustainability at the CHUM, and part of a team mandated by the hospital to aim for a net zero institution before 2040. The climate crisis represents the greatest threat to human health of the 21st century, and will be resolved by reaching net-zero greenhouse gas emissions. Healthcare being responsible for 5% of human greenhouse gas emissions, Dr Williams presents about net-zero healthcare to clinicians and non-clinicians. After a B.Sc. in Biology at the University of Ottawa, Stephan Williams completed his MD, his Ph.D. in Neuroscience, and his specialty training in anesthesiology at the Université de Montréal. Dr Williams is also chercheur-investigateur at the Centre de recherche du CHUM, professeur adjoint de clinique at the Université de Montréal, and presides the Carbon-neutrality committee of the Quebec Association of Anesthesiologists. He lives in Montreal and is the father of 3 almost-carbon-neutral children.

Marie-Jo Ouimet is a doctor specialising in public health and preventive medicine. Her work in environmental health at the Cree Board of Health and Social Services of James Bay opened her eyes to the reality of the climate crisis in the North. She has benefited greatly from the approach of the Cree, who form a whole with nature, and for whom ‘if the Earth is sick, so are we’. She has also developed links with the degrowth movement, in the belief that synergies between disciplines will enable us to create innovative solutions to the challenges posed by this global crisis. She now works

at the INSPQ on climate change, is an associate professor at the ESPUM, and is a member of the Quebec government's Advisory Committee on Climate Change.

Jeffrey Tochkin is currently working in the field of Health Emergency Management in the Province of British Columbia, Canada and has over 14 years of experience in this discipline. He holds a Certified Emergency Manager (CEM) designation and has published numerous articles in the healthcare leadership and risk reduction space. He has much experience in preparing health organizations for disasters and responding to large community events, such as extreme heat, flood and wildfires.

Jeffrey is currently completing PhD studies at the School of Health and Related Research at the University of Sheffield with a focus on health system resiliency.

Celia Culley (PharmD) is the Clinical Pharmacy Coordinator at Royal Jubilee Hospital in Victoria BC. As a researcher and clinical pharmacist, she is interested in exploring and advocating for evidence-informed, low-carbon pharmacotherapy and patient-centered care. Prior to her work at Royal Jubilee Hospital, Celia spent numerous years working as a hospital and community pharmacist in northern and rural communities in northern Saskatchewan and British Columbia. Her interests include sustainable health systems, the impact of climate change on the delivery of healthcare services, and shared decision-making with patients.

Carolyn Tateishi is a Director for Health Canada and has over 10 years of public health and policy experience with the Government of Canada. Through her role with Health Canada, she supports projects led by the Climate Change and Innovation Bureau which aim to help the health sector prepare for and respond to the impacts of climate change. Carolyn, in collaboration with Glen Kenny from the University of Ottawa, co-leads a research program, Operation Heat Shield Canada – Protecting Human Health on a Warming Planet, which brings together global experts who will assess the factors that affect an individual's physiological tolerance to heat.

Angela Preocanin, RN, is a 34-year nurse and 23-year executive member at Local 75, St. Joseph's Healthcare in Hamilton. She is the Past First Vice-President of the Ontario Nurses' Association. She has been a member of the Canadian Federation of Nurses Unions (CFNU) National Executive Board since 2022 and was acclaimed as Secretary-Treasurer for the CFNU at the Biennial Convention in June 2025.

Edward Xie works as an emergency physician and an assistant professor in the Department of Family and Community Medicine at the University of Toronto, on Treaty 13 territory. He is the President and Board Chair of Toronto Environmental Alliance, a community-based non-profit; a member of the Collaborative Centre for Climate, Health and Sustainable Care; and part of the Board of Directors of Canadian Doctors for Medicare. Edward previously served as a Faculty Co-Lead of Climate Change and Health and was a member of the Board of Directors of the Canadian Association of Physicians for the Environment. He is currently pursuing doctoral studies with interests in health policy, resource allocation, and structural determinants of health.

Suggested readings and additional resources

Suggested readings

[Implications of Climate Change for Human Health and Health Equity](#)

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[Mitigating the climate and environmental harms of healthcare](#)

Bajaj, K., Musser, L., Wei, E., Bailey, J., Jones, A., Vinoya-Chung Integrating, C. (2023). [Environmental Sustainability into the Quality and Safety Agenda: Early Lessons Learned](#)[Links to an external site.](#). Institute for Healthcare Improvement

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Implications of Climate Change for Human Health and Health Equity

[National Collaborating Centre for Indigenous HealthLinks to an external site.](#) (NCCIH).

[Indigenous voices at the intersection of health and the environment Links to an external site.](#) Dr. Ojistoh Horn, Indigenous Physicians Association of Canada President and CAPE board member, presented on the inequitable burden of industrial pollution and health outcomes in Indigenous communities.

[Climate Change and Health EquityLinks to an external site.](#)Public Health Ontario

[Folding health and health equity into climate action and adaptation plansLinks to an external site.](#) CANUE (The Canadian Urban Environmental Health Research Consortium)

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Mitigating the climate and environmental harms of healthcare

Videos:

Leading change: Mobilizing quality improvement for sustainable healthcare[Links to an external site.](#) Brian Wong, Ilona Hale, and Samantha Hamilton

Mobilizing health system sustainability through greenhouse gas estimation[Links to an external site.](#) Clémence Marty-Chastan and Stephan Williams

The role of quality in sustainable health systems[Links to an external site.](#) Gillian Ritcey

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Health System Adaptation and Resilience

Videos:

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Environmental Impact and Management of Pharmaceutical Waste in Canada[Links to an external site.](#)Gigi Wong and Allen Bridge

NMS 2023 –Session 3: Carbon footprint of medicines[Links to an external site.](#)(00:33:41[Links to an external site.](#)– Climate-conscious care of respiratory diseases with Celia Culley and Valeria Stoynova)

Websites:

HealthADAPT[Links to an external site.](#) is a multi-year capacity-building program managed by Health Canada. The program supports the human health and well-being objectives of the National Adaptation Strategy.

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Leadership and Making Change

Videos:

[Movement Building and Systems Change for Planetary Health](#)[Links to an external site.](#), BC Cancer Planetary Health Nursing Internship, with support from PHSA, CANE, Providence Health Care, CAPE and CASCADES

Atleo Centre for Compassionate Leadership presents [Ya'akstulth: Leading with Compassion in a Tumultuous Era](#)[Links to an external site.](#), Heather Atleo, "Ya'ak chumat axa" and Shawn 'Ah-up-wa-eeek' Atleo

[The Six Conditions of Systems Change](#)[Links to an external site.](#), Collective Impact Forum

[Adaptive Leadership in 12 minutes](#)[Links to an external site.](#), - Ron Heifetz

Organizational and change leadership frameworks:

[The Water of Systems Change](#)[Links to an external site.](#), by John Kania, Mark Kramer, and Peter Senge

[The 8 Steps for Leading Change](#)[Links to an external site.](#), by Kotter

[Radical Collaboration to Transform Social Systems: Moving Forward Together with Love, Power, and Justice](#)[Links to an external site.](#), by Adam Kahane

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