

Canadian Medical Education Journal
Revue canadienne de l'éducation médicale



Planetary Health in CanMEDS 2025
La santé planétaire dans CanMEDS 2025

Samantha Green, Nicole Labine, Owen Dan Luo, Joe Vipond, Husein Moloo,
Aimee Bouka et Brent Thoma

Volume 14, numéro 1, 2023

CanMEDS 2025 Special Issue
Numéro spécial CanMEDS 2025

URI : <https://id.erudit.org/iderudit/1099041ar>
DOI : <https://doi.org/10.36834/cmej.75438>

[Aller au sommaire du numéro](#)

Éditeur(s)

Canadian Medical Education Journal

ISSN

1923-1202 (numérique)

[Découvrir la revue](#)

Citer ce document

Green, S., Labine, N., Luo, O., Vipond, J., Moloo, H., Bouka, A. & Thoma, B.
(2023). Planetary Health in CanMEDS 2025. *Canadian Medical Education Journal*
/ *Revue canadienne de l'éducation médicale*, 14(1), 46–49.
<https://doi.org/10.36834/cmej.75438>

© Samantha Green, Nicole Labine, Owen Dan Luo, Joe Vipond, Husein Moloo,
Aimee Bouka et Brent Thoma, 2023



Ce document est protégé par la loi sur le droit d'auteur. L'utilisation des
services d'Érudit (y compris la reproduction) est assujettie à sa politique
d'utilisation que vous pouvez consulter en ligne.

<https://apropos.erudit.org/fr/usagers/politique-dutilisation/>

érudit

Cet article est diffusé et préservé par Érudit.

Érudit est un consortium interuniversitaire sans but lucratif composé de
l'Université de Montréal, l'Université Laval et l'Université du Québec à
Montréal. Il a pour mission la promotion et la valorisation de la recherche.

<https://www.erudit.org/fr/>

Planetary Health in CanMEDS 2025

La santé planétaire dans CanMEDS 2025

Samantha Green,¹ Nicole Labine,² Owen Dan Luo,³ Joe Vipond,⁴ Husein Moloo,⁵ Aimee Bouka, Brent Thoma²

¹University of Toronto, Ontario, Canada; ²University of Saskatchewan, Saskatchewan, Canada; ³McGill University, Quebec, Canada; ⁴University of Calgary, Alberta, Canada; ⁵University of Ottawa, Ontario, Canada

Correspondence to: Dr. Samantha Green; email: samantha.green@unityhealth.to; Twitter: @SamanthaGreenTO

Published ahead of issue: Oct 3, 2022; published Mar 21, 2023. CMEJ 2023, 14(1) Available at <https://doi.org/10.36834/cmej.75438>

© 2023 Green, Labine, Luo, Vipond, Moloo, Bouka, Thoma; licensee Synergies Partners. This is an Open Journal Systems article distributed under the terms of the Creative Commons Attribution License. (<https://creativecommons.org/licenses/by-nc-nd/4.0>) which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is cited.

Introduction

The worsening impact of the climate emergency on health is increasingly apparent. A recent literature review identified Planetary Health as an evolving concept that is relevant to the CanMEDS physician competency framework.¹ In the context of physician competencies, planetary health is concerned with minimizing the impact of healthcare on the climate emergency and the impact of the climate emergency on patient care. This manuscript aims to establish the critical importance of including planetary health links in CanMEDS and to propose opportunities for future iterations of CanMEDS to exemplify planetary health concepts.

What is planetary health and why is it important to physician competency?

The Planetary Health Alliance defines planetary health as “a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth’s natural systems on human health and all life on Earth.”² Planetary health addresses both the climate emergency and other ecological crises, including land destruction, biodiversity loss, and pollution.³ The climate emergency is considered the greatest health threat to human life this century, with predictions of 250,000 additional deaths per year from 2030 onward.⁴

The health of people in Canada is already affected by the climate emergency⁵: in 2021, at just 1.2 degrees Celsius of warming, over 700 people died in British Columbia’s (B.C.) heat dome event,⁶ crops failed in Manitoba and Saskatchewan droughts contributing to rising food prices,⁷ flooding took out entire communities in B.C. and Newfoundland,⁸ and wildfires engulfed large parts of western Canada⁹ and northern Ontario.¹⁰ Healthcare service delivery is also being increasingly disrupted as extreme weather damages critical infrastructure and interrupts supply chains.¹¹ The climate emergency has a disproportionate impact on the health of Indigenous populations across Canada,¹² as environmental destruction threatens traditional lifestyles and exacerbates ongoing processes of colonization and land dispossession.¹³

The health sector is a significant contributor to the problem. The Canadian health sector is the second most carbon-intensive health care system on the planet,⁴ contributing 4.6% of Canada’s greenhouse gas emissions—on par with the country’s aviation industry.¹⁴ Modelling from the National Health Service in the United Kingdom suggests that nearly 70% of emissions come from medicines, equipment, and other aspects of the supply chain; 10% comes from travel; 10% comes from building energy; 5% from water and waste; and a full 5% from anesthetic gases and Metered Dose Inhalers (MDIs). The federal government, together with other countries, has pledged to deliver a climate-resilient, low-carbon health care system, and significant advocacy from physicians will be required to ensure this transformation occurs.¹⁶ Models of sustainable healthcare have been developed and will

need to be implemented. One such framework for sustainable health systems proposes three categories of intervention: reduce demand for health services by addressing the Social Determinants of Health and engaging in health promotion and disease prevention; match the supply of health services to demand, ensuring appropriate care and avoiding unnecessary tests and treatment; and reduce emissions from the supply of health services.¹⁷

As respected voices, physicians have a unique role to play in planetary health and the climate emergency.¹⁸ They must be prepared to be advocates for planetary health. Physicians can act at the micro (patient) level, meso (clinic, hospital, community) level, and macro (policy) level.¹⁹ Physicians can advocate for climate action and mitigation and build climate resilience into healthcare.^{11,17} Improved training in planetary health and advocacy from medical school through Continuing Medical Education will be necessary to prepare physicians to practice in a climate emergency.

How is planetary health represented in the 2015 CanMEDS competency framework?

There are no explicit references to planetary health in the 2015 CanMEDS physician competency framework. The Health Advocate role does contain some enabling competencies that could be related to planetary health as it relates to the social determinants of health, disease prevention, health promotion, health surveillance, and improving community health (Table 1B). While climate scientists have been sounding the alarm on the climate emergency for decades, most health professionals have only recently begun to acknowledge the health system's role in causing the worsening planetary emergency as well as the need to reduce the climate emergency's associated morbidity and mortality by adopting adaptive measures.

How can planetary health be better represented within the 2025 CanMEDS competency framework?

In Table 1C, we propose the inclusion or modification of competencies that we believe would help to integrate our evolving understanding of planetary health within the CanMEDS physician competency framework. These suggestions incorporate four themes:

- Improving the sustainability of our health system. This theme recognizes the enormous environmental impact of healthcare delivery and the need for physicians to meet our professional obligation to “do no harm” by addressing this.¹⁷
- Improving the resilience of our health system to disruption from the climate emergency. Canadian healthcare systems are vulnerable to disruption by extreme weather events such as floods, wildfires, heatwaves, and storms that could be reduced by accelerating the implementation of climate-resilient healthcare systems to maintain critical care delivery.⁴ Physicians must recognize environmental vulnerabilities in healthcare and contribute to quality improvement processes to embed climate-resilience.²⁰
- Addressing the impact of the environment on patient health. Just as physicians consider a patient's social context, we must also consider their environmental context. Indigenous and racialized populations, those living in poverty, and others who are politically marginalized are disproportionately affected by environmental degradation. Physicians must understand the breadth and variety of environmental impacts on patients and their families.
- The importance of a planetary health lens in social accountability. Social accountability is defined as “the social contract that medicine has with society.”²¹ Socially accountable healthcare is responsive to patient, community, and population health needs.¹⁹ Socially accountable physicians must speak out about the social—and environmental—conditions that contribute to disease, suffering, and death.

Table 1. Planetary Health Competencies for the CanMEDS Physician Competency Framework.

A. CanMEDS 2015 Competencies directly applicable to Planetary Health

None	
B. CanMEDS 2015 Competencies partially related to Planetary Health	
Health Advocate 2.1: Work with a community or population to identify the determinants of health that affect them	
Health Advocate 2.2: Improve clinical practice by applying a process of continuous quality improvement to disease prevention, health promotion, and health surveillance activities	
Health Advocate 2.3: Contribute to a process to improve health in the community or population they serve	
C. Suggested additions or modifications for the CanMEDS 2025 Framework related to Planetary Health	
New or Modified Competency	Rationale for change
Medical Expert	
1.x (New): Recognize and respond to both social and environmental determinants of health in the presentation of patients.	There is growing recognition of the importance of incorporating social accountability into all aspects of medical practice. ²² Environmental sustainability is increasingly acknowledged as an important aspect of quality care. ²⁰
1.x (New): Consider environmental sustainability as an important dimension of the quality of care.	
5. (Modify): Actively contribute, as an individual and as a member of a team providing care, to the continuous improvement of healthcare quality, patient safety, <u>climate-resilient healthcare, and healthcare sustainability</u> .	
5.3 (New) Adopt strategies that ensure environmentally sustainable resource use, including low carbon and low environmental impact alternatives when appropriate.	
Communicator	
4.4 (New): Assist patients and their families to identify and address environmental factors contributing to the patient’s health.	Environmental determinants of health are increasingly recognized alongside the social and structural determinants of health. ²³
Collaborator	
4. (New): Collaborate with health system leaders to adapt health services to reduce the environmental harm of healthcare delivery.	The majority of healthcare carbon emissions result from the supply chain. ¹⁴ We must therefore both modify our use of products and collaborate with suppliers to reduce emissions.
Leader	
2.2 (Modify): Apply evidence and management processes to achieve cost-appropriate <u>and environmentally sustainable care</u> .	A shift from prioritizing cost alone to including sustainability as an equivalent value will only occur through leadership.
3.2 (Modify): Facilitate change in healthcare to enhance services and outcomes, <u>and increase their environmental sustainability</u> .	
Health Advocate	
2.1 (Modify): Work with a community or population to identify <u>the social and ecological</u> determinants of health that affect them.	It is increasingly recognized that health is largely a consequence of both social and ecological determinants, with health care services contributing to only a small proportion of health.
2.2 (Modify): Improve clinical practice by applying a process of continuous quality improvement to disease prevention, health promotion, health surveillance, <u>environmental sustainability, and climate-resilience</u> activities.	Environmental sustainability is increasingly acknowledged as an important aspect of quality care. ²⁰
2.3 (Modify): Contribute to a process to improve health <u>and environment</u> in the community or population they serve.	Health and the environment are closely linked and the latter can be improved locally through advocacy.
Scholar	
4.6 (New): Minimize the environmental impact of the creation and dissemination of knowledge and practice.	There is growing recognition of the importance of incorporating social accountability into all aspects of medical practice, including research. ²²
4.3 (Modify) Contribute to the work of a research program <u>that addresses questions important to the health of the population served, including the social and ecological determinants of health</u> .	
4.4 (Modify) Pose questions amenable to scholarly inquiry and of <u>importance to the health of the population served, and select appropriate methods to address them</u> .	
Professional	
2.3 (New): Demonstrate a commitment to environmental sustainability.	Modeling best sustainable practices will facilitate its propagation throughout the healthcare system.

Conflicts of Interest: Samantha Green is CAPE board member (volunteer) with salary support from University of Toronto DFCM. Owen Dan Luo is a past CFMS HEART Co-Chair. Joe Vipond is heavily invested in Green technologies. Aimee Bouka is a CAPE board member. Brent Thoma has received payments for teaching, research, and administrative work from the University of Saskatchewan College of Medicine, payments for teaching and administrative work from the Royal College of Physicians and Surgeons of Canada, honoraria for teaching or writing from Harvard Medical School, the New England Journal of Medicine, the University of Cincinnati Children's Hospital, and NYC Health + Hospitals, and research

grant funding from the Government of Ontario and the Canadian Association of Emergency Physicians.

Funding: This project was completed with logistical support from the Royal College of Physicians and Surgeons of Canada.

Acknowledgement: The authors would like to acknowledge Ms. Megan McComb for planning and logistical support.

References

- Thoma B, Karwowska A, Samson L, et al. Emerging concepts in the CanMEDS physician competency framework. *Can Med Ed J*. 2023. <https://doi.org/10.36834/cmej.75591>
- Planetary Health Alliance. *Planetary health*. Available from: <https://www.planetaryhealthalliance.org/planetary-health> [Accessed May 24, 2022].
- Prescott SL, Logan AC, Albrecht G, et al. The Canmore declaration: statement of principles for planetary health. *Challenges*. 2018 Dec;9(2):31. <https://doi.org/10.3390/challe9020031>
- Romanello M, McGushin A, Di Napoli C, et al. The 2021 report of the Lancet Countdown on health and climate change: code red for a healthy future. *The Lancet*. 2021 Oct;398(10311):1619–62.
- Howard C, Buse C, Rose C, MacNeill A, Parkes M. The Lancet countdown on health and climate change: policy brief for Canada. *The Lancet Countdown, CMA, and CPHA*; 2019 Nov Available from: https://storage.googleapis.com/lancet-countdown/2019/11/Lancet-Countdown_Policy-brief-for-Canada_FINAL.pdf [Accessed May 24, 2022].
- Henderson SB, McLean KE, Lee M, Kosatsky T. Extreme heat events are public health emergencies. *BC Med J*. 2021 Nov;63(9):366–7.
- Lawrynuik S. 'It was hard enough before': Manitoba's drought, worsened by climate crisis, is upending Prairie life. *The Narwhal*. 2021. Available from: <https://thenarwhal.ca/manitoba-drought-climate-change/> [Accessed on Jun 23, 2022].
- Cecco L. *Canada floods: 18,000 people still stranded in 'terrible, terrible disaster.'* *The Guardian* [Internet]. 2021 Nov 19 Available from: <https://www.theguardian.com/world/2021/nov/18/residents-brace-for-torrential-rains-in-already-flooded-western-canada>. [Accessed on Jun 23, 2022].
- Kulkarni A. *A look back at the 2021 B.C. wildfire season* | CBC News. CBC. 2021. Available from: <https://www.cbc.ca/news/canada/british-columbia/bc-wildfires-2021-timeline-1.6197751> [Accessed on Jun 23, 2022].
- Vis M. Ontario forest fires burned hectares of land larger than Greater Toronto Area in record-setting 2021 | CBC News [Internet]. CBC. 2021. Available from: <https://www.cbc.ca/news/canada/thunder-bay/record-breaking-ontario-forest-fire-season-1.6242422> [Accessed on Jun 23, 2022].
- Government of Canada. *Health of Canadians in a changing climate: advancing our knowledge for action*. Ottawa, ON:2022. Available from: <https://geoscan.nrcan.gc.ca/starweb/geoscan/servlet.starweb?path=geoscan/fulle.web&search1=R=329522> [Accessed May 24, 2022].
- Huseman J, Short D. 'A slow industrial genocide': tar sands and the indigenous peoples of northern Alberta. *Int J Hum Rights*. 2012 Jan 1;16(1):216–37. <https://doi.org/10.1080/13642987.2011.649593>
- Thomas-Muller C. *Tar Sands: environmental justice, treaty rights and Indigenous peoples*. Canadian Dimension. 2008. Available from: <https://canadiandimension.com/articles/view/tar-sands-environmental-justice-treaty-rights-and-indigenous-peoples> [Accessed May 24, 2022].
- Eckelman MJ, Sherman JD, MacNeill AJ. Life cycle environmental emissions and health damages from the Canadian healthcare system: An economic-environmental-epidemiological analysis. *PLOS Med*. 2018 Jul 31;15(7):e1002623. <https://doi.org/10.1371/journal.pmed.1002623>
- Tennison I, Roschnik S, Ashby B et al. Health care's response to climate change: a carbon footprint assessment of the NHS in England. *Lancet Planet Health*. 2021 Feb 1;5(2):e84–92. [https://doi.org/10.1016/S2542-5196\(20\)30271-0](https://doi.org/10.1016/S2542-5196(20)30271-0)
- World Health Organization. *Countries commit to develop climate-smart health care at COP26 UN climate conference* 2021. Available from: <https://www.who.int/news/item/09-11-2021-countries-commit-to-develop-climate-smart-health-care-at-cop26-un-climate-conference> [Accessed May 24, 2022].
- MacNeill AJ, McGain F, Sherman JD. Planetary health care: a framework for sustainable health systems. *Lancet Planet Health*. 2021 Feb 1;5(2):e66–8. [https://doi.org/10.1016/S2542-5196\(21\)00005-X](https://doi.org/10.1016/S2542-5196(21)00005-X)
- Maibach E, Frumkin H, Ahdoot S. Health professionals and the climate crisis: trusted voices, essential roles. *World Med Health Policy*. 2021;13(1):137–45. <https://doi.org/10.1002/wmh3.421>
- Buchman S, Woollard R, Meili R, Goel R. Practising social accountability: From theory to action. *Can Fam Physician*. 2016 Jan 1;62(1):15–8.
- Mortimer F, Isherwood J, Wilkinson A, Vaux E. Sustainability in quality improvement: redefining value. *Future Heal J*. 2018 Jun 1;5(2):88–93. <https://doi.org/10.7861/futurehosp.5-2-88>
- Dharamsi S, Ho A, Spadafora SM, Woollard R. The physician as health advocate: translating the quest for social responsibility into medical education and practice. *Acad Med*. 2011 Sep;86(9):1108–13. <https://doi.org/10.1097/ACM.0b013e318226b43b>
- Boelen C, Pearson D, Kaufman A, et al. Producing a socially accountable medical school: AMEE Guide No. 109. *Med Teach*. 2016 Nov 1;38(11):1078–91. <https://doi.org/10.1080/0142159X.2016.1219029>
- Canadian Public Health Association. *Global change and public health: addressing the ecological determinants of health* [Internet]. Ottawa, ON;2015 May; p. 1–36. (Discussion Paper). Available from: https://www.cpha.ca/sites/default/files/assets/policy/edh-discussion_e.pdf [Accessed May 24, 2022].