

The Lancet Countdown on Health and Climate Change

Policy brief for Canada

2022



Canadian
Nurses
Association



Association des
infirmières et infirmiers
du Canada

ASSOCIATION
MÉDICALE
CANADIENNE



CANADIAN
MEDICAL
ASSOCIATION



CANADIAN
PUBLIC HEALTH
ASSOCIATION

ASSOCIATION
CANADIENNE DE
SANTÉ PUBLIQUE

Introduction

Climate change is undermining the foundations of human health and health systems. Recent extreme climate events in Canada, such as the 2021 British Columbia (BC) Heat Dome which resulted in 619 deaths¹ and would have been “virtually impossible” without the influence of climate change,² show that climate change poses a huge challenge to health. This taxes a health system already strained from COVID-19 and its fallout. Even under the lowest-emission scenario modeled by the Intergovernmental Panel on Climate Change (IPCC), global heating due to climate change is forecast to accelerate and intensify until at least 2050.³ Fossil fuel-related air pollution has been implicated in almost one in five global deaths,⁴ and habitat loss is threatening biodiversity and more frequently placing humans, vectors and hosts in novel contact, increasing the threat of future pandemics.⁵

In order to protect health and health systems we must move to a framework that recognizes that human health and Earth’s natural processes are intertwined, interconnections long acknowledged within Indigenous perspectives.^{6,7} We must invest in a sustainable future and transition to an economy explicitly centered around health and well-being⁸ for current and future generations.

To achieve this, we need: (1) health systems that are designed to minimize climate impacts and adapt to the risk of extreme weather events; (2) broad incorporation of Indigenous worldviews that prioritize planetary well-being and future generations and improve policy coherence in energy systems, and (3) evidence-based approaches to diverse communications that tell the story of our path to a healthy future.

Recommendations

1

Establish a national secretariat to liaise with provinces and territories, and with international climate and health networks and resources (such as the WHO Alliance for Transformative Action on Climate and Health)⁹, to coordinate the transformation of Canada's health system into a climate-resilient system that operates within planetary limits.

2

Conduct province- and territory-led climate resilience analyses of Canada's health care systems, and use their findings to improve preparedness for climate-related extreme events and reduce structural and social health inequities.

3

Accelerate the incorporation of the United Nations Declaration on the Rights of Indigenous Peoples into Canadian law, to honour commitments, improve policy coherence, and enhance the well-being of current and future generations.

4

Support the implementation of Bill C-226, An Act respecting the development of a national strategy to assess, prevent and address environmental racism and to advance environmental justice.

5

Governments should focus climate programs and communications on the health co-benefits of climate solutions, including health benefits in cost analyses of adaptation and mitigation policies.

6

Media, academia, and non-profit stakeholders should implement climate communications approaches that share positive stories of concrete actions to adapt and mitigate in ways that improve health.

Climate-Resilient Health Systems

HEALTHCARE MUST LEAD BY EXAMPLE IN PREVENTING POLLUTION-RELATED DISEASES AND DEATHS.

Canada's health system has among the highest greenhouse gas (GHG) emissions per capita globally, representing up to 5% of the country's total annual emissions.¹⁰ Lancet Countdown data show that Canada's health systems' per capita GHG emissions increased by 1.3% from 2018 to 2019, totalling 1139 kg CO₂ equivalent per person, or the same as over 9 million passenger vehicles on the road annually.¹¹

The health sector has an ethical responsibility to improve health and prevent environmental damages that harm health.¹² To achieve this, we must support effective public health and primary care services that prevent illness and injury. This can reduce demand on acute care and emergency services and thus reduce unsustainable use of healthcare interventions. Furthermore, initiatives such as *Choosing Wisely* and other stewardship programs are essential, as up to 30% of tests, procedures and treatments are potentially unnecessary.¹³

Leading the way, locally-led initiatives are emerging across the country. The Centre intégré de santé et de services sociaux (CISSS) de Laval has recently conducted the first Canadian scope 1 (direct emissions), 2 (indirect emissions from purchased energy) and 3 (emissions from supply chain, other than energy) assessment of its GHG emissions, giving insight as to which actions should be prioritized.¹⁴ In British Columbia, health authorities have developed low carbon resilience guidelines for healthcare, and health sector emissions are now reported to the provincial government annually.¹⁵

However, local health system initiatives are inconsistent and under-resourced. An isolated response by local health authorities cannot drive the structural changes needed to decarbonize Canada's health sector, and would collectively be more costly than a coordinated national response. England's National Health Service provides an example of how such initiatives can be successful when properly funded, staffed, translated into law, and regionally delivered. Canada needs a cohesive national initiative to coordinate efforts across jurisdictions and support legislation and implementation of sustainable changes to health systems. This would support Canada's 2021 commitment to the WHO's Health Programme at COP 26, made alongside 50 other countries, to develop a climate-resilient and low-carbon sustainable health system by 2050.¹⁶

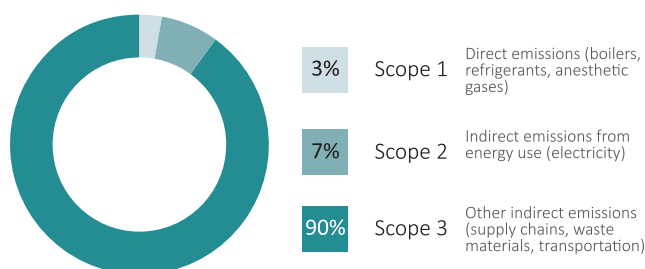


Fig 1: Results of the carbon footprint study per scope, extrapolated to the CISSS de Laval

¹“Scope 1 covers direct emissions from health-care facilities, Scope 2 covers emissions from purchased energy such as electricity and steam, and Scope 3 covers all other emissions” From: [https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(20\)30271-0/fulltext](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(20)30271-0/fulltext)

HEALTHCARE CAN SAVE LIVES BY INCREASING RESILIENCE TO CLIMATE-RELATED IMPACTS.¹

Recent extreme climate events in Canada show that emergency response systems must be improved to reduce deaths. For example, the BC Coroner's analysis of the 2021 heat dome found a lag between extreme heat warnings and public agencies' response.^{iii,17} Heat waves may increase the number of emergency room visits and ambulance transports by 10 to 15%,¹⁸ which can exceed healthcare system capacity and reduce quality of care. A recent economic analysis showed that by 2050, climate change-related health costs in Canada will be between \$59 billion (low emissions scenario) and \$110 billion (high emissions).¹⁹

To mitigate the rising costs and worsening impact on health, provincial and territorial health authorities should conduct climate-resilience analyses in line with Canada's upcoming National Adaptation Strategy.²⁰ These would assess adaptation needs and identify priority actions to reduce climate-related mortality and morbidity, improve preparedness, and reduce structural and social inequalities. Adaptation plans based on

these analyses could include increasing greenery to reduce the urban heat island effect, providing climate risk skills training for healthcare professionals, and creating extreme weather health care contingency plans and early warning systems.

"I believe our nursing role is to advocate for equity for all the populations we serve. I spent a decade of my career working on the streets with the most marginalized populations who were falling between the cracks of our healthcare system. In the aftermath of floods and wildfires, I see first-hand how their profound suffering is compounded by climate-change-induced extreme weather events. Now, I choose to dedicate all my energy to climate justice and planetary health with my nursing colleagues."

Helen Boyd RN, BScN, MA (Counselling)

Canadian Association of Nurses for the Environment-British Columbia Representative

Honour Equity and Indigenous Approaches

INTEGRATION OF THE UNITED NATIONS DECLARATION ON THE RIGHTS OF INDIGENOUS PEOPLES IS AN OPPORTUNITY TO SYSTEMATIZE INDIGENOUS SOLUTIONS.

Indigenous communities are highly impacted by environmental degradation, yet they possess much of the wisdom required to set Canada on a healthier path. Indigenous land stewardship practices maintain greater degrees of biodiversity as compared to currently dominant practices which are centred on over-exploitation of natural resources.²¹ Indigenous cultures view the relationship between people and the land as central, emphasizing reciprocity, interconnectedness, and the well-being of future generations.

This integration and clarity of intent contrasts starkly with Canada's disjointed current approach to environmental stewardship. Canada has continued to fund polluting industries while introducing a tax on emissions. Lancet Countdown data show that in 2019, Canada gave direct subsidies of \$2.3 billion (real 2021 US dollars) to the fossil fuel industry. That same year, the national carbon tax revenue was \$4.1 billion, with a net carbon revenue of \$1.8 billion. Thus, while there is a

price on pollution, it is heavily discounted. Since March 2020, Canada has committed at least \$44 billion to support fossil fuel energy through new or amended policies.²² Canada cancels a significant part of the gains from the carbon tax by funding the fossil fuel industry and in doing so reveals short-term thinking and a lack of a clear commitment to well-being.

Indigenous approaches consider the welfare of the next seven generations. Broad adoption of this frame can reduce contradictory efforts as seen above, and improve policy coherence. The evidence on climate change compels a policy transition away from fossil fuels because emissions harm health. The United Nations Declaration on the Rights of Indigenous Peoples Act recently came into force in Canada, and engagement processes are underway to develop a draft action plan to align federal laws with the Declaration. Policymakers should do all possible to accelerate its thorough integration into law. This is an opportunity to integrate intergenerationally oriented Indigenous wisdom through Canada's laws and improve policy coherence and the health of future generations.

¹ The World Health Organization (WHO) defines a climate-resilient system as a "system that has the ability to anticipate, respond to, cope with, recover from and adapt to climate-related shocks and stresses so as to bring sustained improvements in population health, despite an unstable climate" (WHO, 2015: <https://www.who.int/publications/i/item/operational-framework-for-building-climate-resilient-health-systems>)

IMPLEMENTING LEGISLATION FOR ENVIRONMENTAL JUSTICE WILL SUPPORT INDIGENOUS COMMUNITIES AND IMPROVE HEALTH FOR ALL.

Lack of equity and policy coherence is also seen at the local level, where environmental racism has resulted in resource extraction projects frequently being sited on Indigenous lands. The local toxic impacts of extraction are understudied, and research tends to focus on single discrete toxic exposures rather than a systemic assessment of the overall impacts of these activities on the environment upon which health depends. This neglects studies of cumulative impacts and the economic and social costs of disrupted ecosystems and compromised determinants of health.²³ For instance, less than 3% of the estimated clean-up cost for oil sands tailings ponds has been set aside by companies,²⁴ a fact seldom mentioned in economic analyses.

The recently tabled private member's Bill C-226, An Act Respecting the Development of a National Strategy to Assess, Prevent and Address Environmental Racism and to Advance Environmental Justice, is intended to assess the link between race, socio-economic status, and environmental risk. It also requires measures to advance environmental justice, such as studying health outcomes from environmental hazards, involving communities in policymaking, and providing compensation

for risks or harms when appropriate. It has completed second reading in the House of Commons and should be actively championed to enhance equity and improve the health of environments and communities.

Protecting Biocultural Heritage and Land Rights

The W8banaki Nation is addressing climate change through intergenerational and land-based activities that help people connect with and care for the natural world. Maintaining such connections is understood to have direct impacts on cultural continuity including the transmission of knowledge and practices that in turn impact overall community health and wellness. The W8banaki Nation has "prioritized access to the land and cultural continuity through three projects to prevent and mitigate the degradation of biological and cultural resources". One of the three W8banaki projects actively promotes intergenerational ties by directly connecting Elders with young people, leading younger participants to develop a strong interest in traditional medicine. This project also supports the W8banaki Nation's efforts to assert their rights in support of self-determination.

Source : Chhem et al. 2021. Protecting Biocultural Heritage and Land Rights- Canadian Climate Institute

Speaking Differently About Climate Change and Health

GOVERNMENTS ARE ENGAGING IN CLIMATE AND HEALTH, BUT A HEALTH-IN-ALL-SECTORS APPROACH IS YET TO BE FULLY IMPLEMENTED.

In February 2022, Health Canada released a national assessment with updated scientific guidance on the human health impacts of climate change.²⁵ Some examples from the provincial level include: British Columbia's 2022 "Baseline Assessment of Health Systems Resilience"; Ontario's climate change and health toolkit (2016); and Quebec's Observatory for Adaptation to Climate Change (Observatoire québécois de l'adaptation aux changements climatiques).

Despite some steps forward, there is still a high degree of variability among local and provincial health authorities' actions, and integrated linking of health to policies and programs is still lacking.

Canada's forthcoming first National Adaptation Strategy provides an opportunity to coordinate government efforts. While an important

step in developing a national climate adaptation plan, this strategy should include health as a cross-cutting topic. Understanding health benefits can provide support for sustainable policies in other areas, for example housing or transport. The strategy should be leveraged to focus resources on public education and concrete adaptation programs that integrate climate and health risks across all sectors, and share information on the effectiveness of adaptation measures to known local health impacts.

FROM MEDIA COVERAGE TO SCIENTIFIC RESEARCH, CLIMATE-MEDIATED RISKS TO HEALTH AND HEALTH SYSTEMS ARE INCREASINGLY RECOGNIZED, BUT MORE POSITIVE, SOLUTIONS-BASED MESSAGING IS NEEDED.

Understanding the health impacts of climate change can illustrate the scale of the challenge. However, awareness of available solutions must be built. This could be achieved by sharing positive, resilience-based stories that promote local and national adaptation efforts.

The Canadian media is increasingly building awareness of links between climate change and health. Lancet Countdown data show that in three major Canadian news outlets, the number of articles about climate change and health more than tripled between 2007 and 2021, now at over 2000 articles per year.ⁱⁱ Furthermore, these represent an increasing proportion of all coverage of climate change: about 20% of articles on climate change in 2021 included health, whereas only 13% mentioned health in 2007. The CBC has made a public commitment to *Greening our Story*²⁶, the Globe and Mail has made a commitment to cover the climate crisis²⁷, and 24heures has a section dedicated to the climate emergency.²⁸

However, traditional media often focus on negative health impacts of climate change, while few share examples of actions that communities and individuals can take to protect and improve their health. A more positive approach can highlight local projects and successes, inspiring people and helping them to take action. Elevating diverse perspectives, including Indigenous voices, and new forms of media (e.g. social media, podcasts, multimedia) can support new solutions-based communications.

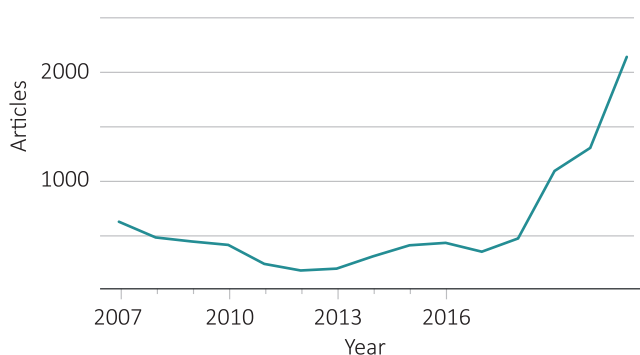


Fig 2: Canadian media coverage of climate change and health

In research, Lancet Countdown data show the number of Canadian-based first-authored publications on climate change and health increased steadily since 2007. A PubMed analysis of articles published on climate change and health topics relevant to Canada (regardless of author location) shows a similar increase. Notably, 84.8% of all climate and health publications with a Canadian focus since 2000 were published between 2016 and 2022, reflecting increased scientific interest in climate change and health research.

However, increasing evidence alone does not spur urgent behaviour change. There is an increasing need for knowledge translation and research on the effectiveness of local adaptations to protect health from climate change. Many institutions and academics, including several in Canada, have called for better education in planetary health for health practitioners and other professionals. This will lead to a more informed and appropriately skilled health workforce, that is better equipped to use evidence to foster change.^{29,30,31}

“The same phenomenon can be observed at different levels. Extreme heat twists railroads and decimates livestock, but also directly threatens human health. In 2022, I wrote a long report on heat victims in Quebec. As a journalist, this angle is powerful because it touches people very closely. Covering the climate crisis through the lens of health hopefully helps convince readers of the urgency to act. And in the end, the benefits will percolate down to all levels.”

Alexis Riopel, journalist, Le Devoir
Journaliste | Le Devoir

ⁱⁱ Lancet indicator data include articles from the National Post, Toronto Observer, and Globe and Mail. We note that no French-language publications were included.

References

1. Extreme Heat and Human Mortality: A Review of Heat-Related Deaths in BC in Summer 2021 LC: https://www2.gov.bc.ca/assets/gov/birth-adoption-death-marriage-and-divorce/deaths/coroners-service/death-review-panel/extreme_heat_death_review_panel_report.pdf
2. Western North American extreme heat virtually impossible without human-caused climate change - World Weather Attribution: <https://www.worldweatherattribution.org/western-north-american-extreme-heat-virtually-impossible-without-human-caused-climate-change/>
3. IPCC Working Group I Report 2021: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf
4. Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem - ScienceDirect; <https://www.hsph.harvard.edu/c-change/news/fossil-fuel-air-pollution-responsible-for-1-in-5-deaths-worldwide/>
5. Land use-induced spillover: a call to action to safeguard environmental, animal, and human health: [https://www.thelancet.com/journals/lanph/article/PIIS2542-5196\(21\)00031-0/fulltext](https://www.thelancet.com/journals/lanph/article/PIIS2542-5196(21)00031-0/fulltext)
6. Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation–Lancet Commission on planetary health: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(15\)60901-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)60901-1/fulltext)
7. Personal View The determinants of planetary health: an Indigenous consensus perspective: [https://www.thelancet.com/pdfs/journals/lanph/PIIS2542-5196\(21\)00354-5.pdf](https://www.thelancet.com/pdfs/journals/lanph/PIIS2542-5196(21)00354-5.pdf)
8. Canadian Health Professionals Call On the Prime Minister and Premiers to Transition to a Society Focused On Well-Being for World Health Day 2022– CAPE: https://cape.ca/press_release/canadian-health-professionals-call-on-the-prime-minister-and-premiers-to-transition-to-a-society-focused-on-well-being-for-world-health-day-2022/
9. See WHO Press release from June 27th 2022: Health-climate alliance launched to help countries turn commitments into action: <https://www.who.int/news/item/27-06-2022-health-climate-alliance-launched-to-help-countries-turn-commitments-into-action>
10. Policy Brief for Canada: https://www.cpha.ca/sites/default/files/uploads/advocacy/2021_lancet/2021_Lancet_Countdown_Canada_Policy_Brief_e.pdf
11. Using average passenger vehicle emissions of 4.6 metric tons annually, 2019 Canadian population of 37.6 million. <https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle>
12. Environnement et santé: <https://www.assm.ch/fr/Projets/Apercu-des-projets/Environnement-et-sante.html>
13. Unnecessary Care in Canada: <https://www.cihi.ca/sites/default/files/document/choosing-wisely-baseline-report-en-web.pdf>
14. Ribesse, J et B. Lalonde, Quelle est la réelle empreinte écologique de notre réseau de la santé, Présentation Colloque de Synergie Santé Environnement. June 17th, 2022 [https://synergiesanteenvironnement.org/colloque2022/What are the WHO Air Quality Guidelines? World Health Organisation, 22 September 2021; Available online: https://www.who.int/news-room/feature-stories/detail/what-are-the-who-air-quality-guidelines](https://synergiesanteenvironnement.org/colloque2022/What%20are%20the%20WHO%20Air%20Quality%20Guidelines%3F%20World%20Health%20Organisation%2C%2022%20September%202021%3F%20Available%20online%3A%20https%3A%2F%2Fwww.who.int/news-room/feature-stories/detail/what-are-the-who-air-quality-guidelines) [accessed 12 September 2022].
15. Ronald L, Buse C, Klein K. (2022). Health system climate resilience in British Columbia: Baseline assessment. Victoria, BC: BC Ministry of Health. LC 2022 appendix (awaiting full reference)
16. <https://www.who.int/news/item/09-11-2021-countries-commit-to-develop-climate-smart-health-care-at-cop26-un-climate-conference>
17. Extreme Heat and Human Mortality: A Review of Heat-Related Deaths in B.C. in Summer 2021 https://www2.gov.bc.ca/assets/gov/birth-adoption-death-marriage-and-divorce/deaths/coroners-service/death-review-panel/extreme_heat_death_review_panel_report.pdf
18. Les aléas affectés par les changements climatiques : effets sur la santé, vulnérabilités et mesures d'adaptation : <https://www.inspq.qc.ca/sites/default/files/publications/2771-aleas-changements-climatiques-effets-sante-vulnerabilite-adaptation.pdf>
19. The health costs of climate change: <https://climateinstitute.ca/reports/the-health-costs-of-climate-change/>
20. <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/national-adaptation-strategy.html>
21. Personal View The determinants of planetary health: an Indigenous consensus perspective (same as 3): [https://www.thelancet.com/pdfs/journals/lanph/PIIS2542-5196\(21\)00354-5.pdf](https://www.thelancet.com/pdfs/journals/lanph/PIIS2542-5196(21)00354-5.pdf)
22. <https://www.energypolicytracker.org/country/canada>
23. Brisbois, B.W., et al. (2019). Mapping research on resource extraction and health: A scoping review. The Extractive Industries and Society, 6(1), 250-279. doi:<https://doi.org/10.1016/j.exis.2018.10.017>
24. https://environmentaldefence.ca/wp-content/uploads/2022/05/50YearsSprawlingTailings_WEB_ForDistribution.pdf
25. <https://changingclimate.ca/health-in-a-changing-climate/>
26. *Greening our Story*: <https://cbc.radio-canada.ca/en/impact-and-accountability/environment/environment-reports/environmental-report-2020-2021>
27. Globe and Mail has made a commitment to cover the climate crisis : <https://www.theglobeandmail.com/canada/article-a-letter-to-readers-about-the-globes-climate-change-commitment/>
28. 24heures has a section dedicated to the climate emergency: <https://www.24heures.ca/urgence-climat>
29. <https://www.sciencedirect.com/science/article/pii/S2542519621001108>
30. Training Canadian doctors for the health challenges of climate change- The Lancet Planetary Health: [https://www.thelancet.com/journals/lanph/article/PIIS2542-5196\(19\)30242-6/fulltext](https://www.thelancet.com/journals/lanph/article/PIIS2542-5196(19)30242-6/fulltext)
31. The public health emergency of climate change: how/are Canadian post-secondary public health sciences programs responding? <https://link.springer.com/article/10.17269/s41997-020-00386-3>

Organisations and acknowledgements

This brief was written by: Claudel Pétrin-Desrosiers, MD, CCFP; Finola Hackett, MD, CCFP; Courtney Howard MD, CCFP-EM; Krista Halliday, PhD; Chris G. Buse, PhD; Maya R. Kalogirou PhD, RN; Aden Hamza, RN, MScN; Deborah McGregor, PhD.

Contributions and review on behalf of the Canadian Public Health Association were provided by Ian Culbert, Executive Director, CPHA. Contributions and review on behalf of the *Lancet* Countdown were provided by Marina Romanello, PhD, and Frances MacGuire, PhD.

THE LANCET COUNTDOWN

The Lancet Countdown: Tracking Progress on Health and Climate Change exists to monitor the links between public health and climate change, and the transition from health threat to opportunity. We are a global collaboration of over 300 leading experts from academic institutions and UN agencies across the globe, bringing together climate scientists, engineers, energy specialists, economists, political scientists, public health professionals and doctors.

Each year our findings are published annually in medical journal *The Lancet* ahead of the UN climate change negotiations. Our data makes clear how climate change is affecting our health, the consequences of delayed action and the health benefits of a robust response.

THE CANADIAN MEDICAL ASSOCIATION

The Canadian Medical Association (CMA), formed in Quebec City in 1867, has led some of Canada's most important health policy changes. As we look to the future, the CMA will focus on advocating for a healthy population and a vibrant profession.

THE CANADIAN PUBLIC HEALTH ASSOCIATION

Founded in 1910, the Canadian Public Health Association (CPHA) is the independent voice for public health in Canada with links to the international community. As the only Canadian non-governmental organization focused exclusively on public health, we are uniquely positioned to advise decision-makers about public health system reform and to guide initiatives to help safeguard the personal and community health of Canadians and people around the world. We are a national, independent, not-for-profit, voluntary association. Our members believe in universal and equitable access to the basic conditions that are necessary to achieve health for all.

THE CANADIAN NURSING ASSOCIATION

CNA is the national and global professional voice of Canadian nursing. Our mission is to advance the nursing profession to improve health outcomes in Canada's publicly funded, not-for-profit health system. CNA is the only national association that speaks for all types of nurses across all 13 provinces and territories. We represent nurses that are unionized and non-unionized, retired nurses, nursing students, and all categories of nurses (registered nurses, nurse practitioners, licensed and registered practical nurses, and registered psychiatric nurses).