Introduction

During the summer of 2023, Canada experienced the worst wildfire season in recorded history with over 18 million hectares burned, resulting in thousands of evacuations and toxic smoke that kept vulnerable people and children indoors. These extreme weather events, worsened by climate change, pose increasing risks to Canadian people’s health and health systems. Simultaneously, Canada’s health system is under extremely severe strain, while the soaring cost of living (e.g., food prices) makes climate-resilient and health-promoting practices progressively less accessible.

Current climate assessments put the world on track for a 3.2°C increase in average global heating by the end of the century. Climate change will continue to have devastating impacts on health and human lives, further straining health systems and nullifying any possibility for adaptation, unless ambitious climate action is urgently undertaken. Such impacts emphasize the importance of meeting Paris Agreement commitments to keep global heating to 1.5°C.

The need to reduce emissions has never been more urgent. This year, the Policy Brief for Canada will draw on the latest evidence from the 2023 Report of the Lancet Countdown to discuss the urgent need for a transition towards renewable energy and health-promoting, climate-smart strategies in the areas of wildfires and food systems. Together with an urgent shift away from fossil fuels towards renewable energy, wildfire emergency management and sustainable food systems are key opportunities to improve health for all, now, and into the future.
Recommendations

1. Divest from and phase out fossil fuels, and invest heavily in renewable energy by supporting infrastructure and making sustainable sources of energy readily accessible to all people in Canada.

2. Increase cross-sectoral and cross-jurisdictional coordination of extreme weather event emergency management. Allocate more resources to adaptation planning, develop climate-resilient health-care systems and ensure integration of Traditional Knowledge in disaster prevention and response.

3. Integrate a planetary health lens into education and health-system food provision, and societally into food production, consumption and waste. Support healthy, sustainable eating that is accessible, affordable and culturally appropriate.
Transitioning to renewable and zero-carbon energy

Although Canada’s government is committed to net-zero emissions by 2050, this is probably not possible without greater efforts to phase in renewable energy and phase out fossil fuel energy. Accelerating a just energy transition will simultaneously deliver health co-benefits through cleaner air, healthier transport systems, and improved energy access, with benefits to the health of all in Canada.

This recommendation is nothing new — the 2021 and 2020 Policy Briefs for Canada also outlined several areas where government and non-governmental actors could increase mitigation ambitions and deliver healthier futures for communities. These briefs focused on the need to phase out fossil fuel subsidies and implement renewable energy and energy efficiency, including in transport and housing. However, given Canada’s continuing delay in implementing ambitious mitigation action, this recommendation continues to be relevant and has become more urgent than ever before.

New data from the 2023 Report of the Lancet Countdown show there was only a 0.3% increase in renewable energy sources as part of total energy supply in 2020 when compared to 2015. As of 2020, renewable energy made up less than 2% of the total energy supply (indicator 3.1.1). Specifically in the transportation sector, as of 2020, fossil fuels still accounted for nearly 96% of all road transport energy, with a heavy impact in terms of exposure to air pollution, particularly in urban centres. Indeed, the transportation sector was responsible for more than 700 premature deaths in 2020 alone. Transitioning to electric and public transportation can prevent many of these deaths, while avoiding the greenhouse gas emissions associated with the transportation sector. However, between 2015 and 2020, the percentage of total transportation energy provided by electricity remained steady between 0.2% and 0.25%.

To stay at the forefront of the transition to a healthy, sustainable energy system and economy, in addition to accelerating the generation of energy from renewable sources, Canada must also promptly shift away from fossil fuel burning. To do this, it must restrict the harmful financial flows that continue to make capital available to the fossil fuel industry,
further enhancing fossil fuel production and use. Canadian banks must redirect finances away from fossil fuels towards clean renewables and energy efficiency as an essential part of a healthy, just transition to net-zero emissions. However, when lending to the fossil fuel sector in the six years before the Paris Agreement entered into force (2010-2016) is compared with lending to this sector in the following six years (2017-2021), four Canadian banks are amid the top 10 major banks with the highest increase in fossil fuel investments (National Bank Financial Inc., BMO Capital Markets, Scotiabank and TD Securities) (indicator 4.2.4). Robust governmental policies can discourage these investments, promoting instead lending to and investment in the renewable energy sector and energy efficiency.

The government must act by rapidly divesting from and phasing out fossil fuels, investing heavily in renewable energy and the supporting infrastructure, and making sustainable sources of energy readily accessible to all people in Canada.

Recommendation #1: Divest from and phase out fossil fuels, and invest heavily in renewable energy by supporting infrastructure and making sustainable sources of energy readily accessible to all people in Canada.

Policy measures that can achieve this recommendation:

- Eliminate all direct and indirect fossil fuels subsidies.
- Redirect that financial support to healthy, renewable energy infrastructure via a just transition that supports workers and communities and supports climate and health adaptation programs.
- Remove the influence of the fossil fuel industry from policy-making. Institute a 1:1 ratio of meetings of federal government representatives with non-profit and profit-based groups, with publicly available presentations and notes, and put an end to closed-door meetings on public policies with fossil fuel industry representatives.
- Increase support for sustainable housing, including providing subsidies for low-emissions design or retrofitting private homes and public buildings.
Health and extreme weather-related events: Wildfires

As the planet warms, the leading causes of forest fires intensify. There is an increased likelihood of lightning production,6 and forests are drier through precipitation variation5 while becoming less resilient to invasive species.6,7 Human forest management practices, including fire suppression causing homogeneity of forest fuel, and banning of traditional cultural fire practices, have increased fuel hazards and risks of severe fire.8

With record wildfire seasons hitting Canada in recent years and current projections pointing to increased frequency in the coming decades, addressing wildfire risks is of critical importance.

Data from the 2023 Report of the Lancet Countdown show that from 2018 to 2022, the average Canadian experienced over two days of exposure to very/extremely high wildfire danger, representing a 116% increase relative to a 2003-2007 historical baseline. Meanwhile, personal wildfire smoke exposure increased by 220% across the two reference periods (indicator 1.2.1).

Air pollution from wildfire smoke poses immediate health risks for local populations and can impact faraway communities, affecting cardiovascular, respiratory and metabolic health.9-13 Furthermore, the long-term effects of wildfire exposure are not yet fully understood.14,15 Displacements due to evacuation cause severe psychological distress and post-traumatic stress, the loss of livelihoods and related economic impacts, and damage to and strain on critical infrastructure and essential services, including health care.12,16-18

Racialized, rural, remote, Indigenous and socio-economically disadvantaged populations may also be at greater risk of adverse health outcomes.12 First Nations communities are more frequently evacuated and for longer durations than other communities, and they have a greater likelihood of becoming long-term evacuees (i.e., for three or more months).19

Reducing the health impacts of wildfires requires cohesive public health responses as well as clear and adapted communication from governmental
and health-systems actors. Air Quality Health Index information is publicly available, but it is not consistently translated into meaningful activity recommendations for people at risk. Public health and local community health authorities must provide uniform local advice on this when wildfire smoke risk occurs.

Canada adopted the Sendai Framework for Disaster Risk Reduction in 2015, which tracks global progress on disaster reduction and response. The framework’s implementation has been slow and regional variations exist in its deployment because of resource availability. The widespread provincial deployment of Sendai principles that move towards prevention while supporting robust and equitable responses to disasters like wildfires is essential for protecting population and public health. The Sendai framework also calls for the use of Traditional Knowledge* in disaster risk reduction, in which Indigenous heritage is regarded as an asset for resilience.21

Similarly, Canada’s newly minted National Adaptation Strategy outlines how disaster risk reduction requires multi-sector engagement and collaboration (e.g., across multiple federal ministries) and highlights the importance of doing so under the auspices of rights- and equity-informed policies (e.g., United Nations Declaration on the Rights of Indigenous Peoples) and practices (e.g., gender-based analysis). However, resources for local implementation and coordination of the National Adaptation Strategy are required. Within the health sector, Canada committed to the World Health Organization (WHO) resilient low-carbon health-systems initiative in 2021, but implementation is lacking. National and provincial/territorial secretariats, including engagement of Indigenous governments, are required to lead transformation for climate-resilient health systems.

It is crucial to note that adaptation alone is insufficient. Adapting to a wildfire-impacted world does not address the need to mitigate the root causes of climate change. Urgent phase-out of fossil fuel use and transition towards renewable energy is needed to prevent the rising temperatures that create the conditions for more severe and frequent extreme weather events. These can take place concurrently or in cascade, taking a heavy toll on emergency response teams and basic infrastructures such as electricity grids and supply chains, and worsening health inequities.

**Recommendation #2: Increase cross-sectoral and cross-jurisdictional coordination of extreme weather event emergency management. Allocate more resources to adaptation planning, develop climate-resilient health-care systems and ensure integration of Traditional Knowledge in disaster prevention and response.**

Policy measures that can achieve this recommendation:

- Improve emergency response systems for extreme weather events such as forest fires, flooding, hurricanes and other weather events by adopting an approach based on resilience, Traditional Knowledge and preparedness, and involving local populations in developing equitable response policies and evacuation plans.

- Move from a culture of fire suppression to instead support resilient forest ecosystems, and incorporate Indigenous stewardship in forest management (i.e., support prescribed burns, plant biodiverse forests, maintain old-growth trees that are more fire resistant, undertake forest management planning with climate change in mind).

- Create appropriately resourced national and provincial/territorial secretariats, engaged with Indigenous governments, to coordinate health-system responsibilities under the National Adaptation Strategy and implement the WHO resilient low-carbon health-system initiative.

- Develop better practices for communicating health risks associated with air quality indexes to better inform the public and para-governmental institutions (e.g., schools and daycare centres).

- Ensure adequate deployment of mental and physical health resources for affected populations and first responders based on community-specific needs.

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*Traditional Knowledge refers to the knowledge, practices and innovations of Indigenous peoples, formed over centuries and adapted to local environments.*21
Food systems, agriculture and health co-benefits

An opportunity for co-benefitting the environment and people’s health lies on our plates: through a transition to sustainable diets. Unhealthy diets are a leading risk factor for chronic diseases in Canada, including cardiovascular disease, type 2 diabetes, obesity and some cancers. Environment and diet must be considered together, because agriculture is responsible for 10% of Canada’s greenhouse gas emissions. A large proportion of these emissions are related to industrially produced red meat and processed foods, which when consumed in high quantities also negatively impact health. As such, transitioning to low-carbon, plant-rich diets reduces emissions and promotes health.

As a public health response, the 2015 Canadian food guide emphasizes plant-rich foods while de-emphasizing animal proteins and dairy. This correlates with the Planetary Health Diet (PHD), which was developed by leading global nutrition and environmental experts with the EAT-Lancet Commission. The next crucial step is implementation of the PHD and food guide recommendations. Simultaneously, access to affordable, nutritious and culturally appropriate foods (including traditional diets for Indigenous groups), particularly in a context of rising inflation, must be considered to avoid exacerbating health inequities.

Data from the 2023 Report of the Lancet Countdown show that in 2020, more than 30,000 deaths were associated with insufficient consumption of nutritious plant-based foods. The associated health burden of excess red meat and dairy consumption in Canada was associated with more than 17,000 premature deaths (indicator 3.3.2).

From an emissions perspective, red meat and dairy accounted for 60% of all emissions associated with the consumption of agricultural products in Canada and 48% of all emissions related to agricultural production in 2020. Overall agricultural production-related emissions increased 11% between 2000 and 2020 (indicator 3.3.1).

To keep within the safe operating space of the planet, the PHD recommends keeping consumption-related...
emissions just under 0.5 t CO\textsubscript{2}eq\(^*\) per capita. Currently, average food-related emissions are 1.25 t CO\textsubscript{2}eq per capita.\(^{25}\) In Canada, average consumption of red meat (~100 grams/day) and dairy (~500 grams/day) surpasses the PHD’s recommendations (0-28 grams/day of meat and 250 grams/day of dairy). Thus, there is a major gap between Canada’s PHD-compatible national food guidelines and their implementation.

Sustainable food policy must also address equity. The diets of Canadians with high socio-economic status are healthier than the diets of those with low socio-economic status, and dietary recommendations alone cannot change food habits among disadvantaged groups.\(^{28}\) In 2022, 18.4% of people in Canadian provinces were living with food insecurity.\(^{29}\) Children are particularly at risk of undernutrition, and as mentioned above, Canada remains one of the only industrialized countries without a national school food program.\(^{30}\) Fresh fruits and vegetables are prohibitively expensive for many, including low-income families and some rural, remote and northern communities.

For Indigenous peoples, climate change is affecting availability of traditional food sources (including food insecurity worsened by wildfire-burned lands, particularly in the north). Additionally, over-reliance on imported foods limits affordability and autonomy.\(^{31}\) Colonialism, racism, contamination from resource extraction, habitat change due to altered temperatures, and precipitation have altered traditional links to the land and food systems for many Indigenous peoples.\(^{32}\) Traditional food offers health and nutritional benefits and promotes physical activity and sovereignty.\(^{33}\)

Hospitals and schools should lead by example. Bulk buying for food provision at health and educational facilities can create markets for local, climate-resilient food production. Furthermore, these food programs can promote healthy, sustainable diets for those most in need of nutritional support: children and those with medical conditions.

Nourish Healthcare, which places an emphasis on local production, planetary health menus and Indigenous food ways, recently launched the World Resource Institute’s Cool Food Pledge in Canada. In this, hospitals commit to reduce greenhouse gas emissions associated with the food they serve by 25% by 2030, in line with the goals of the Paris Agreement. Five major health organizations (16 participating health facilities) in Canada have signed on to date, serving 13 million meals per year. There is scope for more local, regional and provincial/territorial health organizations to show leadership by signing on to the pledge.

Tragically, about 20% (11.2 million tonnes) of all edible food produced in Canada ends up as avoidable food waste, which occurs at multiple points of the food chain.\(^{33}\) In Canada, this accounts for annual greenhouse gas emissions losses of 56.5 Mt CO\textsubscript{2}eq, or 60% of the food industry’s CO\textsubscript{2}eq footprint.\(^{33}\) Canada has launched a Food Waste Reduction Challenge to support innovators in this area,\(^{34}\) but efforts must be scaled up and integrated industry-wide.

**Recommendation #3: Integrate a planetary health lens into education and health-system food provision, and societally into food production, consumption and waste. Support healthy, sustainable eating that is accessible, affordable and culturally appropriate.**

Policy measures that can achieve this recommendation:

- Integrate emissions data in nutrition labelling nationwide.
- Create policies, processes and programs that support organic, sustainable food production.
- Invest in a voluntary government–industry food loss and waste agreement to reduce emissions and financial losses from edible food waste.
- Encourage hospitals to sign onto the Cool Food Pledge. Integrate PHD recommendations in cafeteria and food programs at health care and educational facilities.
- Increase nutrition support programs for low-income households with a focus on plant-forward and minimally processed foods.
- Support Indigenous food sovereignty, and offset the costs of food collection, production and distribution in remote communities. Increase access to traditional foods.

\(^{*}\) t CO\textsubscript{2}eq = tonnes carbon dioxide equivalent, a measure of greenhouse gas emissions
Conclusion

Addressing climate change and action from a health perspective can provide dual benefits for Canada’s environment and people’s health — accelerating the momentum for action, while directly improving people’s lives and well-being. Importantly, rapidly phasing out fossil fuel use and transitioning towards renewable energy is of utmost importance to reduce the health impacts of climate change. Additionally, rethinking our food systems as well as the way we prepare and respond to climate-induced events, such as wildfires, are two key examples of opportunities to improve health of Canadians today and of future generations.
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Organisations and acknowledgements

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Reviews were made by Courtney Howard, MD, CCFP-EM, MPP, and Deborah McGregor, PhD. Contributions and review on behalf of the CMA were provided by Laura Myers, Taylor Hodgins Musgrave, Ashley Chisholm and Sarah Lowden. 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, Camile Oliveira, MPhil, and Elise Digga, MSc.

THE LANCET COUNTDOWN

The Lancet Countdown: Tracking Progress on Health and Climate Change is a multi-disciplinary collaboration monitoring the links between health and climate change. It brings together lead researchers from 52 academic institutions and UN agencies in every continent, publishing annual updates of its findings to provide decision-makers with high-quality evidence-based recommendations. For its 2023 assessment, visit https://www.lancetcountdown.org/.

CANADIAN MEDICAL ASSOCIATION

The Canadian Medical Association leads a national movement with physicians who believe in a better future of health. Our ambition is a sustainable, accessible health system where patients are partners, a culture of medicine that elevates equity, diversity and well-being, and supportive communities where everyone has the chance to be healthy. We drive change through advocacy, giving and knowledge sharing — guided by values of collaboration and inclusion.

CANADIAN PUBLIC HEALTH ASSOCIATION

Founded in 1910, the Canadian Public Health Association 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, CPHA is 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.

CANADIAN NURSES ASSOCIATION

The Canadian Nurses 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).