



Nursing and Climate Change: The Impacts on Human Health

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Background

Global warming has unequivocally led to an increase in average temperatures, atmospheric water vapour, ocean temperatures, the melting of land ice including permafrost land mass, and rising ocean levels.ⁱ In turn, each of these changes such as increasing temperatures and loss of ice mass leads to more serious consequences for all of the world's ecosystems as well as human life. While climate change is undeniably affecting global temperatures leading to a significant increase in catastrophic climate events around the world, many are still unaware of the effects that these events have on human health and how it will impact health in the years to come. Because nursing promotes health and wellness, nursing as a profession has a responsibility in educating the public about the harms of climate change, helping communities and individuals adapt to climate change effects, as well as continually assessing the health care system and implementing changes as necessary toward the goal of slowing climate change, and potentially a climate-resilient future.

According to the World Health Organization (WHO), climate change is currently 'the single biggest health threat facing humanity.'ⁱⁱ Between 2030 and 2050, climate change is expected to cause 250,000 additional deaths per year.ⁱⁱⁱ Currently, more than 90% of people around the world breathe unhealthy levels of air pollution resulting from industrial burning of fossil fuels, which release large quantities of greenhouse gases (GHGs) into the atmosphere, the most common being carbon dioxide.^{iv} These GHGs, produced as a result of human activities, are the single main contributor to atmospheric warming, and in turn the climate change crisis over the past century.^v Data show that the past four decades have continued to be the warmest on record,^{vi} meaning that human-initiated activities have been the determining factor of this climate crisis. Therefore, the effects of climate change can only be predicted to increase exponentially.

The effects of climate change on human health are innumerable, and climate change events adversely affect human health both directly and indirectly.^{vii} Climate change causes extreme weather events, increasing temperatures, droughts, floods, storms, rising ocean levels, poor and declining air quality, poor and declining water quality and quantity, as well as increasing vector-borne disease transmission (e.g., malaria, Dengue Fever, West Nile, Lyme Disease etc.), which further lead to issues such as food insecurity, displacement, forced migration, and conflict.^{viii} Directly, increased temperatures and heat events cause heat stress and heat stroke, aggravate heart, lung, and kidney conditions; wildfires cause physical burns, lead to cardiorespiratory problems, create long-term breathing issues, and increase risk of death; floods and other weather storms cause drownings, hypothermia, dismantle physical infrastructure which leads to various additional injuries, increase the spread of vector-borne diseases, and increase risk of death.^{ix} Additionally, climate change events contribute to poor mental health, as well as mental health conditions including post-traumatic stress disorder (PTSD), depression, anxiety, and others. Indirectly, climate change events lead to food insecurity resulting from poor and failed crops, forced displacement of communities from floods, wildfires and other catastrophic events, malnutrition and undernutrition, poverty, inequality, conflict, and more.^x

Climate change effects are felt disproportionately around the world. Globally, areas with weaker or no health infrastructure, particularly developing countries, as well as island, arctic, coastal, and other remote countries and territories predominantly inhabited by Indigenous and non-white peoples are among the most vulnerable when it comes to climate-induced impacts on health.^{xi} Within Canada, Indigenous peoples, the elderly, women, children, those who are socially isolated or live in rural or remote communities, and those with pre-existing medical conditions are at increased risk of developing health conditions as a result of climate change.^{xii} The climate change crisis is adversely contributing to the social and environmental determinants of health, further widening health inequities. This crisis undermines decades' worth of work toward universal health and poverty reduction by compounding climate change-related disease prevalence which in turn takes a toll on economies and resources, driving even more of a wedge between accessible health care and those who need it.^{xiii} Despite 'urgent action to combat climate change' being one of the [United Nations' Sustainable Development Goals \(goal #13\)](#),^{xiv} the delay in meaningful action at the systemic and international levels



continue to degrade any work toward other sustainable health goals, including clean water and sanitation, hunger, poverty, and reducing inequalities.

The negative effects of climate change will continue to impact human health over time. In the years to come, nurses can expect to see illness from climate change increase. As health experts, nurses and other health care professionals must advocate on behalf of patients and the environment for a more sustainable future. Nurses promote health and wellness, and as such have a professional responsibility to help educate and inform about the dangers and realities of climate change and its impacts on human health, and to investigate and advocate for sustainable policy and practice.^{xv} Such activities may include starting a 'green team' within your clinic or hospital, leading informative conversations with peers, focusing on how to reduce waste and recycle where possible, and starting discussions with leadership to determine how to implement greener practices. Green teams are a great way to lead by example not only among colleagues, but among the broader community as well, which could in turn lead to broader discussions around climate change and action plans for the local area.

As nurses are typically in close proximity to the communities and individuals they serve, sometimes being the only health care professional in the area, and as trusted health experts, the nursing profession in particular plays a large role in helping communities adapt to climate change, toward the goal of fostering a sustainable and even climate-resilient future. People must know about the impacts of climate change on human health, how their environment plays a major part in the situation, and how they can work to mitigate these effects moving forward.^{xvi} Nurses play a fundamental role in educating communities about climate-induced adverse health outcomes, how individuals could be susceptible to them, as well as how to better prepare for future extreme weather and climate events. As well, during times of extreme weather events, nurses are among those first deployed to provide aid directly to affected communities. In these cases, nurses may be responsible for assessing many individuals in an emergency disaster situation, triaging those who require care most urgently, and leading a team of other frontline workers from a variety of different backgrounds and professions. Furthermore, nurses are essential members of emergency operations centres, in many cases at the forefront of operations within these aid units.

Effective health care systems are fundamental toward protecting individuals and communities against new and emerging threats to human health,^{xvii} and this starts with nursing. As highly trusted health care providers and leaders in patient/client care, ensuring that nursing participates in policy discussions around climate change is integral. By nature of the profession, nurses combine highly skilled science-based knowledge within a nursing model of care, making nurses ideal change makers and leaders. The time for meaningful action is right now.

Key Messages

- Climate change has a significant effect on human health.
- According to the WHO, climate change is the 'single biggest health threat facing humanity.'
- Humans and human activities are the primary contributor toward climate change, as human activities create greenhouse gases (GHGs) which trap heat in the atmosphere and lead to global warming.
- The past four decades have been the warmest on record, and the effects of climate change on the earth, atmosphere, and in turn human health can be expected to increase exponentially.
- Climate change affects human health directly and indirectly through climate changes and extreme weather events.
- Climate change effects are felt disproportionately around the world, with areas with poor or no health infrastructure such as developing countries, Indigenous peoples, and the elderly being most vulnerable.
- The countries and regions of the world that are most impacted by climate change are also those that have contributed least to it and are least able of protecting themselves against it.



- Nurses play an important role in advocating for patients in developing a more sustainable health care system and future.
- Nurses can start 'green teams', lead discussions about climate change among peers and colleagues, start a recycling or waste management program, and/or speak with leadership teams about other ways to enact climate change action within the workplace.
- Nurses can help to educate patients and clients about how climate change affects human health and how to prepare for future climate change events.
- As trusted health experts, nurses can educate and inform about the harms of climate change and the impacts on health, and advocate for sustainable policy.

Further Reading/Resources

- [NNPBC Position Statement: Engaging BC Nurses with Climate Change Issues](#)
- ["Climate Emergency: The Time to Act is Now" – by Helen Boyd RN, MA & Raluca Radu RN, MSc](#)
- ["Nursing During a Climate Emergency" – by Sherri Kensall RN, CNS, NNPBC Board Chair](#)
- [Canadian Federation of Nurses Unions – Climate Change & Health Discussion Paper, 2019](#)
- [Canadian Association of Nurses for the Environment \(CANE\)](#)
- [Canadian Association of Physicians for the Environment \(CAPE\)](#)
- [Alliance of Nurses for Health Environments \(ANHE\)](#)
- [ICN Position Statement: Nurses, Climate Change and Health](#)
- [COP26 – UN Climate Change Conference UK 2021 in Partnership with Italy](#)

ⁱ E Bush and DS Lemmen, editors. 'Canada's Changing Climate Report, 2019.' Government of Canada. 2019. https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/Climate-change/pdf/CCCR_FULLREPORT-EN-FINAL.pdf

ⁱⁱ World Health Organization (WHO). 'Climate Change and Health.' Oct 30, 2021. <https://www.who.int/en/news-room/factsheets/detail/climate-change-and-health>

ⁱⁱⁱ World Health Organization (WHO). 'Climate Action: Fast Facts on climate and health.' N.d. https://cdn.who.int/media/docs/default-source/climate-change/fast-facts-on-climate-and-health.pdf?sfvrsn=157ecd81_5

^{iv} World Health Organization (WHO). 'Climate Action: Fast Facts on climate and health.' N.d.

^v E Bush and DS Lemmen, editors. 'Canada's Changing Climate Report, 2019.' 2019.

^{vi} Ibid

^{vii} Canadian Association of Physicians for the Environment (CAPE). 'Climate Change Toolkit for Health Professionals: Factsheet: Global Health Impacts of Climate Change.' Apr 2019. <https://cape.ca/wp-content/uploads/2019/05/Climate-Change-Toolkit-for-Health-Professionals-Updated-April-2019-2.pdf>;

International Council of Nurses (ICN). 'Nurses, climate change and health.' 2018. <https://www.icn.ch/sites/default/files/inline-files/ICN%20PS%20Nurses%252c%20climate%20change%20and%20health%20FINAL%20.pdf>



viii International Council of Nurses (ICN). *'Nurses, climate change and health.'* 2018.

Canadian Association of Physicians for the Environment (CAPE). *'Climate Change Toolkit for Health Professionals: Factsheet: Global Health Impacts of Climate Change.'* 2019.

ix Ibid

x Ibid

xi J Leffers, R McDermott Levy, P Nicholas, et al. 'Mandate for the Nursing Profession to Address Climate Change Through Nursing Education.' *Journal of Nursing Scholarship* 49(6). Nov 2017.
<https://sigmapubs.onlinelibrary.wiley.com/doi/10.1111/jnu.12331>

Canadian Association of Physicians for the Environment (CAPE). *'Climate Change Toolkit for Health Professionals: Factsheet: Global Health Impacts of Climate Change.'* 2019.

xii Canadian Association of Physicians for the Environment (CAPE). *'Climate Change Toolkit for Health Professionals: Factsheet: Global Health Impacts of Climate Change.'* 2019.

xiii World Health Organization (WHO). *'Climate Change and Health.'* 2019.

xiv United Nations (UN). *'The 17 Goals: Sustainable Development Goals.'* N.d. <https://sdgs.un.org/goals>

xv J Leffers, R McDermott Levy, P Nicholas, et al. *'Mandate for the Nursing Profession to Address Climate Change Through Nursing Education.'* 2017.

xvi Ibid

xvii World Health Organization (WHO). *'Climate Action: Fast Facts on climate and health.'* N.d.