

Hamilton Family Health Team

Green Initiative

Health and the Environment

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Why should healthcare professionals consider climate change in their work?

- 1. Climate change negatively impacts health.**
- 2. The carbon footprint of healthcare activity contributes to climate change.**
- 3. There are evidence-based initiatives which significantly and directly improve individual patients' health and also decrease greenhouse gas emissions.**
- 4. The pilot sites have found co-benefits in doing this work for staff health and happiness!**

1. Climate Change Negatively Impacts Health.

The Lancet Commission on Climate Change has identified climate change as both the greatest **global health threat** and **opportunity** of the 21st century. The life of every child born today will be profoundly affected by climate change. ¹

Global Effect

Health Effect



Extreme Heat

Increased heat stress, stroke, aggravation of lung, heart, renal conditions, increased pollen.



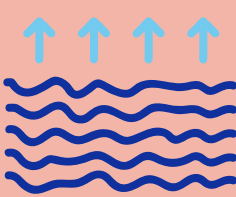
More Frequent and Widespread Wildfires

Burns, trauma, deaths, smoke exposure, PTSD.



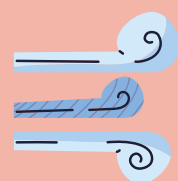
Extreme Weather Events

Drownings, hypothermia, infectious diseases, health care infrastructure damage.



Changing Natural Systems

Increased vector borne diseases (e.g. Lyme Disease) and food insecurity leading to malnutrition.



Decreasing Air Quality

Increased respiratory illnesses.



Increasingly Uninhabitable Land

Migration, displacement, geopolitical conflict, poverty.



Decreasing Water Quality

Increased algae, drought.

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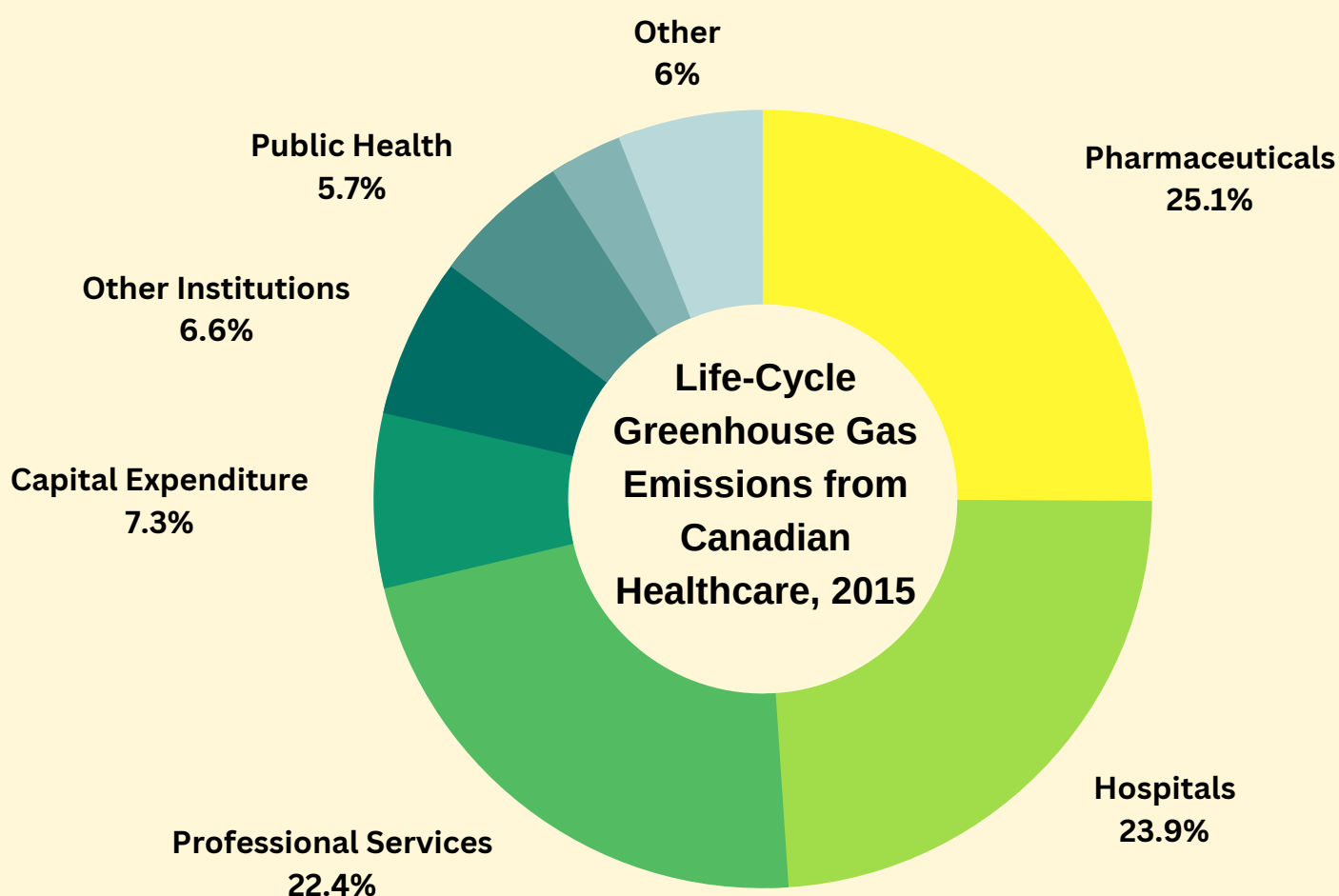
These climate impacts also disrupt health access, and all other social determinants of health. Therefore, **the environment is the most fundamental determinant of health.**



2. The Carbon Footprint of Healthcare Activity Contributes to Climate Change.

Health care contributes to **4.6-5.1% of Canada's carbon and carbon equivalent emissions.**²

Where do these emissions come from?

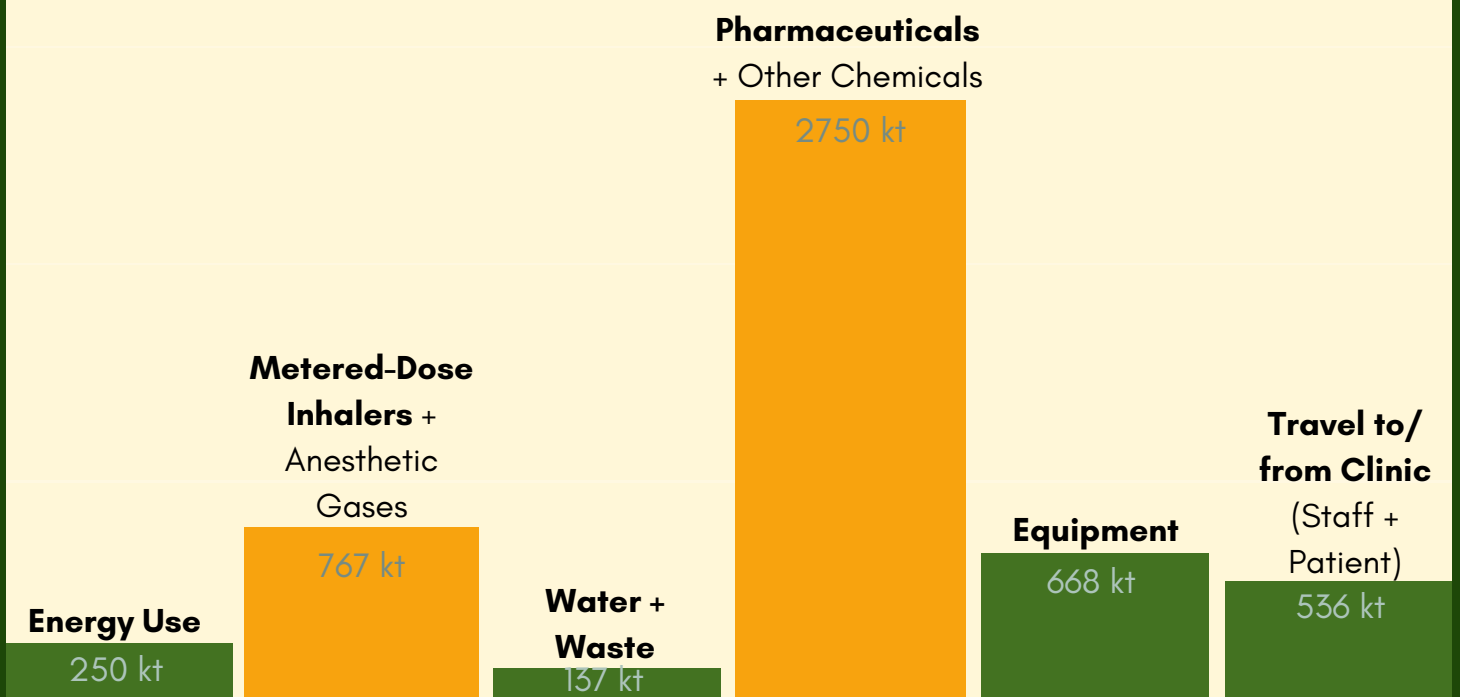


Data from the above Canadian healthcare emissions chart use [National Health Expenditure Trends categories](#). The pharmaceutical category includes both expenditures from prescription and non-prescription pharmaceuticals, and professional services includes dental and vision care, primary care, and services provided by allied health professionals.

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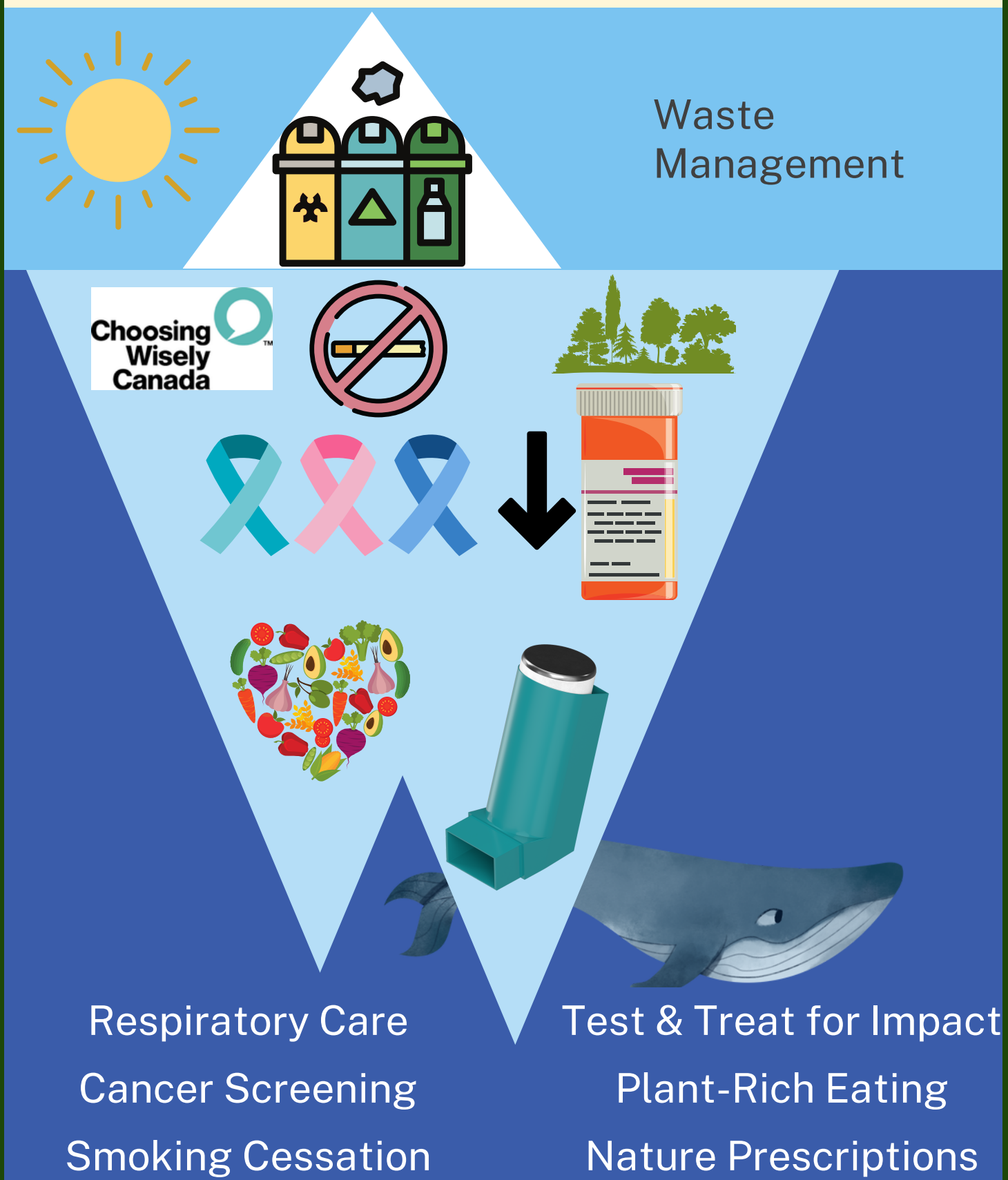
When focusing specifically on primary care, UK data confirms that our greatest impact can be made by improving patient health and modifying clinical activities.



Annual NHS Emissions ($\text{CO}_2(\text{eq})$) in Primary Care (UK, 2019)

3. Evidence-based Initiatives can Significantly and Directly Improve Individual Patients' Health and Decrease Greenhouse Gas Emissions.

When people start environmental work in healthcare, they tend to focus on what they can see (waste) instead of the endeavours that have more impact. Coincidentally, these more impactful goals overlap significantly with services already provided within primary care.



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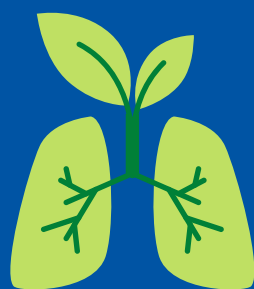
Health and the Environment

Canadian physician and environmental health advocate, Dr. Andrea MacNeill, has identified a healthcare supply and demand model* for mitigating the impact of healthcare on the environment:

- **Reducing Demand for Health Services** through health promotion
- **Matching Supply of Health Services to Demand** with appropriate care at the primary and community level, and
- **Reducing Emissions from Supply of Health Services** by making health infrastructure more efficient.³

Our care-based foci echo this framework by advising health promotion through:

Respiratory Care



Cancer Screening



Smoking Cessation



Test & Treat for Impact



Plant-Rich Eating



Nature Prescriptions



All of these topics have co-benefits for patients and the planet.



*This model is appended.

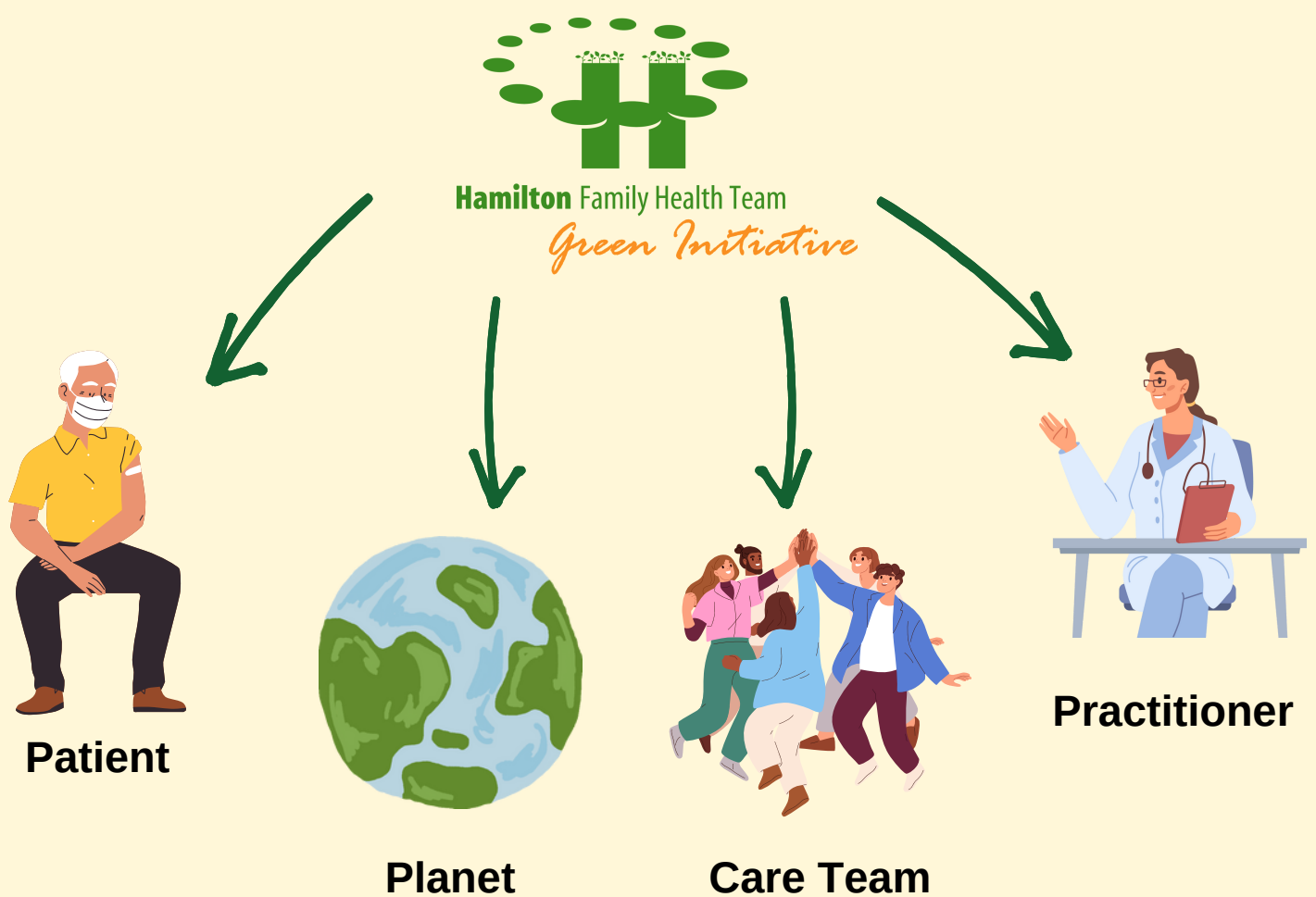
4. Other Co-Benefits

At the Dundas and Crown Point pilot sites, we have found this work rewarding, meaningful, and energizing.

“Our team is very excited to explore expanding this initiative in our office. We have been recycling for a long time. We are tackling the exam table paper, trying to reduce our printing, and have a one use water bottle free zone. Understanding the global effects of the environment on health just makes this feel right.”

Dr. Kate Prangley, HFHT Family Physician

Though the main priorities of the Green Initiative are patient and planetary health, many sites who have done this work have reported co-benefits, including improved team dynamics and personal work satisfaction.



Many of our participants have also reported feelings of eco-anxiety, but that this work helps assuage those feelings.

In support of this anecdotal evidence, one study has stated that engaging in collective action can significantly decrease the negative mental health sequelae of eco-anxiety.⁴

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HFHT's Green Initiative seeks to promote leaner, more effective care, and conscious choices around how our offices run to decrease the contribution of healthcare to climate change. Thereby, we will indirectly and directly serve the health of our patients and populations across the world, present and future. **Climate change, health, and healthcare are all interdependent; by improving one, we improve them all.**



References

1. P-Desrosiers C, Hackett F, McGregor D, Banasiak K. [The Lancet Countdown on Health and Climate Change](#) - Policy Brief for Canada, Dec 2020. Lancet Countdown: Tracking Progress on Health and Climate Change; Canadian Medical Association
2. Eckelman MJ, Sherman JD, MacNeill AJ. [Life cycle environmental emissions and health damages from the Canadian healthcare system: An economic-environmental-epidemiological analysis](#). PLOS Medicine. 2018;15(7):e1002623.
3. MacNeill AJ, McGain F, Sherman JD. [Planetary health care: a framework for sustainable health systems](#). The Lancet Planetary Health. 2021;5(2):e66-e68.
4. Schwartz, S. E. O., Benoit, L., Clayton, S., Parnes, M. F., Swenson, L., & Lowe, S. R. (2022). [Climate change anxiety and mental health: Environmental activism as buffer](#). Current Psychology.

Join the HFHT Green Initiative, and access all infographics, videos, and other resources at: [HFHT Green Initiative Webpage](#)

If you have any questions, please reach out to us: green.team@hamiltonfht.ca

CLIMATE CHANGES HEALTH IN CANADA

Climate change is the biggest global health threat of the 21st century.

— Lancet¹

IMPACTS ON MENTAL HEALTH⁸ AND AVAILABILITY OF TRADITIONAL FOODS IN THE NORTH⁷

Due to arctic warming (3x Global Rate)⁵.



DISPLACEMENT

Climate change-exacerbated drought and famine was one factor in Syrian refugee crisis.²⁷

RELOCATION & STRESS FROM COASTAL EROSION

P.E.I. homes at risk.²⁶

WILDFIRE-RELATED ASTHMA⁹ & EVACUATION

Healthcare facilities evacuated:

- Fort McMurray: 105 patients^{10,11}
- Interior BC 2017: 880 patients^{12,13}

Anxiety & PTSD following evacuation.¹⁴

FLOOD-RELATED DEATHS AND DAMAGE

2013 Alberta flood¹⁵:

- 5 deaths¹⁶
- Healthcare facilities closed due to flooding.¹⁷

DROUGHTS^{18,19}

Uneven impact on crops.²⁰
Socioeconomic stress.²¹

ALLERGIES

Increased severity & duration of pollen seasons.²²

TICK-BORNE DISEASE

2017: 3x higher rate Lyme Disease in Ontario than 2012-2016 average.²³

HEAT-RELATED ILLNESS²⁴

66 people died in Montreal during 2018 heat wave.²⁵



Reduce Demand for Health Services



Social
Determinants
of Health



Health
Promotion



Disease
Prevention



Chronic
Disease
Management



Match Supply of Health Services to Demand



Primary and
Community
Care Services



Ensure
Appropriateness
of Care



Stewardship
Programs



Reduce Emissions from Supply of Health Services



Green
Infrastructure



Decarbonised
Transport



Circular Economy
in Supply Chains



Coordinated
Care Delivery



Integrated
Technology
Systems



Virtual
Care