

# Advancing Climate Care in Health Care: Pharmacy's Green Light

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Climate change adversely affects human health; at the same time, the health sector is exacerbating the global climate crisis, thus creating a vicious cycle. In 2021, health care contributed to 4.6% of all global greenhouse gas (GHG) emissions, up by more than a third since 2016.<sup>1</sup> The impact on human health is extraordinary, with 4.6 million disability-adjusted life years (DALYs) attributed to these emissions.<sup>1</sup> Canada's health care system alone was responsible for emitting 33 million tonnes of carbon dioxide equivalents (CO<sub>2</sub> eq), enough to power more than 6.5 million homes annually.<sup>2</sup> This level of emissions resulted in the loss of 23 000 DALYs annually.<sup>2</sup> On a per capita basis, Canada ranks behind only the United States and Australia in terms of health care's contribution to the national climate footprint.<sup>3</sup>

In Canada, pharmaceuticals represent 25% of total health care GHG emissions, making it the largest expenditure category by emissions based on product life cycle, even ahead of hospitals and physician/clinical services.<sup>2</sup> Three recent articles published in *CJHP* are directly pertinent to how pharmacists may positively influence carbon emissions to benefit the climate.<sup>4-6</sup> In the first article, Roy and others<sup>4</sup> described the development of an environmental audit tool to identify and prioritize areas within pharmacy operations that could be enhanced when considering the climate footprint. This tool is an excellent metric for baseline assessments and performance benchmarking that can be scaled to application. In the second article, Rana and Newby<sup>5</sup> presented a collaborative initiative to reduce single-use plastics for drug delivery in a neonatal intensive care unit. This relatively simple modification was estimated to save 41 000 plastic bags from being used annually at almost no cost, thus eliminating unnecessary waste and the associated CO<sub>2</sub> eq emissions. In the third and most recent article, Tong and Tejani<sup>6</sup> reported their systematic review of recycling programs for metered-dose inhalers (MDIs), one of the primary pharmaceutical agents contributing to GHG emissions, and described their process for implementing a climate-friendly disposal initiative.

Many health care professional codes of ethics include “the welfare of humanity” as a consideration. Pharmacists and pharmacies should act now, given that the rate and extent of climate change are progressing rapidly. Factors that contribute to pharmaceutical carbon emissions, and that therefore should be assessed, include overprescription, pharmaceutical waste, antibiotic resistance, routine prescriptions, non-adherence, drug dependency, prescription of lifestyle drugs, and drugs given due to a lack of preventive health care.<sup>7</sup> As exemplified by the studies mentioned above, such programs need not be complex, and some already exist for other reasons. For example, counselling patients on the importance of medication adherence will serendipitously benefit the climate. Some initiatives may require education, practice changes, and institutional support. For example, when equivalent in all other aspects, medications with lower climate footprints should be chosen (e.g., powdered inhalers over MDIs, enteral administration over IV administration, or nonvolatile anesthetics over volatile anesthetics). Some strategies may require regulatory approval. For example, requiring that pharmaceutical manufacturers include CO<sub>2</sub> eq on medication labels would ensure that providers (and perhaps patients) can reliably compare medications within a class, with a view to considering the product that is most environmentally friendly.

As pharmacists, we understand the cumulative value that small therapeutic interventions can have on a patient's well-being. Now is the time to institute incremental steps that collectively will limit health care's impact on climate change and improve the “welfare of humanity.”

## References

1. Romanello M, Walawender M, Hsu SC, Moskeland A, Palmeiro-Silva Y, Scamman D, et al. The 2024 report of the *Lancet* Countdown on health and climate change: facing record-breaking threats from delayed action. *Lancet.* 2024;404(10465):1847-96.
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 Med.* 2018; 15(7):e1002623.

3. Karliner J, Slotterback S, Boyd R, Ashby B, Steele K. *Health care's climate footprint: how the health sector contributes to the global climate crisis and opportunities for action*. Health Care Without Harm and Arup; 2019 Sep [cited 2024 Nov 5]. Available from: [https://global.noharm.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint\\_092319.pdf](https://global.noharm.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf)
4. Roy C, Fox K, Tangedal K. Development of an environmental audit tool for hospital pharmacy. *Can J Hosp Pharm*. 2024;77(4):e3591. doi: 10.4212/cjhp.3591
5. Rana G, Newby B. A baby step toward planetary health: a collaborative quality improvement initiative to reduce single-use plastics in a pharmacy and neonatal intensive care unit. *Can J Hosp Pharm*. 2024;77(3):e3575. doi: 10.4212/cjhp.3575
6. Tong B, Tejani AM. Environmentally responsible inhaler disposal in hospitals: is there such a thing? *Can J Hosp Pharm*. 2025;78(1):e3662. doi: 10.4212/cjhp.3662
7. Richie C. Environmental sustainability and the carbon emissions of pharmaceuticals. *J Med Ethics*. 2022;48(5):334-7.

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