

# UBC Medical Students for Climate Action: The Time to Act is Now

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## Abstract

Climate change has been described as one of the greatest threats to global health of the 21<sup>st</sup> century, but also as one of the greatest opportunities to redefine the environmental and social determinants of health. Climate change interacts with biodiversity loss and other threats to the environment, creating a crisis of planetary health that is negatively impacting human health, and disproportionately affecting equity-seeking groups. As medical students, we see the significant health consequences of the planetary health crisis and understand the toll that this will take on the healthcare system. This article describes efforts made by UBC Medical Students for Climate Action to introduce such content into the UBC Undergraduate Medical Education (UGME) curriculum and provides information for learners and healthcare professionals alike on how to become involved in advocacy on the topic.

*I am on my Family Practice rotation in Penticton when a haze appears across the sky one day. The sun no longer shines brightly, and I notice a thin layer of ash covering my car. A public state of emergency is declared, and within days water bombers occupy the sky. I wonder what the impact will be of the wildfire smoke on my patients, especially those with pre-existing respiratory conditions such as asthma and COPD. The air quality index is over ten, indicating “very high-risk” and that I should avoid activity outdoors.\* Simultaneously, I am concerned about the impact on individuals’ mental health. Will we be put on evacuation alert? Where will I go? My heart is feeling heavy for the forests affected, folks who have been displaced, and for those whose houses have burnt to ashes. I wonder what it will be like next year when this happens again. When will the world respond to the crisis we are in?*

## Climate Change and Biodiversity Loss are Healthcare Problems

On October 25th, 2023, over 200 medical journals published an editorial stating that the climate crisis and biodiversity crisis are an “indivisible” singular crisis of planetary health and called upon the World Health Organization to declare it a global health emergency before the 77th World Health Assembly in Turkey in May 2024.<sup>1</sup>

Drawing on our knowledge of physiology and public health, as well as on our increasing exposure to clinical medicine, we agree that these issues are inseparable and have a significant impact on human health. The health impacts of climate change have been well documented across the literature and include significant negative consequences on food and water security, heat-related illness, and changes in patterns of vector-borne, food-borne, and noncommunicable diseases.<sup>2</sup> Equity-deserving populations, including women, children, Indigenous peoples and others who have historically contributed the least to anthropogenic climate change are disproportionately affected.<sup>2</sup>

Communities around the world have taken steps towards mitigation

and climate action through international climate agreements like the United Nations Framework Convention for Climate Change, the Kyoto Protocol and the Paris Agreement. At the 2023 United Nations Climate Change Conference, also known as COP28, global leaders inaugurated a declaration on climate and health, which is the first time health has been included as a key issue in the climate conference.<sup>3</sup> However, gaps remain between rhetoric and reality.<sup>2</sup> Recent research shows that at current levels of carbon emissions, a rise in global average surface temperature 1.5°C above pre-industrial levels will likely be reached by the year 2030 if no additional actions are taken.<sup>6</sup>

## What Can We as Medical Students Do?

As future physicians, we are already seeing the significant physical and mental health consequences of the planetary health crisis and understand the heavy toll this will take on the healthcare system in which we work. Since we started training, British Columbia’s healthcare systems have had to grapple with several seasons of severe wildfires, major flooding in the Fraser Valley and the Interior, and the heat dome of 2021, with recorded temperatures as high as 49.6°C resulting in hundreds of heat-related deaths.<sup>7</sup> However, we noticed there were several gaps in the UBC Undergraduate Medical Education (UGME) curriculum on the health impacts of climate change. It is for this reason that UBC Medical Students for Climate Action, a club composed of UBC medical students from various years, developed five online learning modules covering topics related to climate change, including infectious diseases, heat stroke, and mental health (Table 1). The objective of these modules is to provide current and future UBC medical students with foundational educational materials to supplement their learning regarding the climate crisis.

The initial stage of the literature review for the modules involved partnering with medical librarians at the UBC Library to design search strategies for each module. Papers included in the literature reviews were published in the preceding ten years and were selected based on their impact factor. Once complete, the modules were circulated to members of the faculty of Medicine, members of the Canadian Association of Physicians for the Environment (CAPE), and select individuals with academic backgrounds in social sciences and humanities for review. As research in planetary health is ever-changing and evolving, the modules are intended to be updated with new information from the literature every one to two years. Given its student-led nature, the modules are both a learning opportunity for students involved in its creation, as well as an opportunity for students to supplement their medical school

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\*An air quality index of this number usually indicates high concentrations of smoke particles (PM<sub>2.5</sub>). Exposure to these particles has been shown to cause increased respiratory complications such as asthma and COPD exacerbations.<sup>3</sup> Exposure is also associated with increased incidence of acute coronary events and strokes, as well as increased all-cause mortality.<sup>4</sup>

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**Table 1.** List of currently available modules and chapters on the website UBC Medical Students for Climate Action. Available at <https://www.ubc-medicalstudentsforclimateaction.com/>

| Module Title           | Chapters                            |
|------------------------|-------------------------------------|
| Populations Health     | 1. Introduction                     |
|                        | 2. Indigenous peoples               |
|                        | 3. Women                            |
|                        | 4. Environmentally displaced people |
| Health Threats         | 1. Zoonotic diseases                |
|                        | 2. Air pollution                    |
|                        | 3. Extreme weather                  |
| Impacts on Health      | 1. Cardiovascular diseases          |
|                        | 2. Mental health                    |
|                        | 3. Pediatric/Children's health      |
| Sustainable Healthcare | 1. Our obligation                   |
|                        | 2. Climate solutions in healthcare  |
|                        | 3. Advocating for solutions         |
| Connecting with Nature | 1. Current challenges               |
|                        | 2. Health benefits                  |
|                        | 3. Practical strategies             |
|                        | 4. Evidence to action               |

education with this resource on the health impacts of climate change.

In January 2023, UBC formally integrated planetary health learning competencies into the UBC UGME curriculum through student and community-based advocacy efforts. Since the approval of this integration, a climate change and health lecture was added to the Year 1 curriculum, as well as a new Transition into Practice Program lecture in Year 4 to provide medical students with tools to address patient climate change-related health concerns and to reduce their own impact on climate change. Learning objectives were added across Year 1 and Year 2 lectures to reflect the updated climate-responsive curriculum. Student leaders from our club continue to work closely with the UBC UGME to develop planetary health cases and new learning objectives within the case-based learning curricula. The aforementioned modules will officially be integrated within the UGME curriculum in the Year 3 Transition into Clinical Education curriculum in spring 2025. In the future, we will be working collaboratively as a team to transfer the modules from our website to UBC-hosted servers to act as a living resource for UBC medical students.

## Other Avenues for Advocacy

### Self-education

As medical students, reckoning with the scale of the problem of climate change as well as navigating the different avenues of climate change advocacy can feel overwhelming. Learning how to be an advocate starts small, and first involves developing knowledge and understanding about the health-related impacts of climate change. The learning modules developed by UBC Medical Students for Climate Action are a good resource to start with and are available at [ubcmedicalstudentsforclimateaction.com](https://ubcmedicalstudentsforclimateaction.com). UBC medical students are also welcome to join UBC Medical Students for Climate Action to

maintain and build upon the learning modules currently available on the site. Students can join other environmental groups at UBC including EnviroMED to organize climate workshops and share in their passion for sustainability over social events like cooking classes, nature walks, or beach cleanups. Other organizations students can join for advocacy opportunities include the Canadian Federation of Medical Students Health and Environment Adaptive Response Task Force and CAPE.

### Patient Interaction

Beyond self-education, we recommend talking about climate change with patients as well. Research shows that patients trust physicians as a source of information on environmental health issues but feel they could receive more information from them on the matter.<sup>8</sup> Communicating the health effects of climate change to patients may also help “depoliticize” the issue and gain traction in supporting adaptation and mitigation strategies.<sup>9</sup> In 2019, CAPE developed a climate change toolkit for healthcare professionals. Module 8 of this toolkit provides some practical insights as to how health professionals can engage in discussions about climate change mitigation and adaptation with patients such as encouraging climate-conscious behavioural changes, engaging in motivational interviewing, and connecting patients with community resources.<sup>10</sup>

### System-level Change

Healthcare providers also have a responsibility to advocate for system change in response to community health needs.<sup>11</sup> This can be done through supporting climate change mitigation, greenhouse gas reduction efforts and policy change from community to international levels.<sup>10</sup> Our recommendations are as follows:

1. Sign the Fossil Fuel Non-Proliferation Treaty to endorse a global transition away from fossil fuels to renewable energies. You can read more about the treaty at [fossilfuel treaty.org](https://fossilfuel treaty.org).
2. Amplify the UBC's Faculty of Medicine signing of the Planetary Health Declaration on Planetary Health created by the Association of Faculties of Medicine of Canada.<sup>12</sup> This includes holding faculty accountable for their responsibility to align UBC with the Planetary Health Education Framework which can be found at [planetaryhealthalliance.org/education-framework](https://planetaryhealthalliance.org/education-framework). Opportunities for feedback to faculty include end-of-semester course evaluations.

As the future physicians of patients affected by a changing climate, medical students should feel empowered to advocate for policies and training that protect the health of their communities. Every action counts.

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