

Climate change and health: a 2-week course for medical students to inspire change



The COVID-19 pandemic has shown not only how life on our planet is closely connected, enabling a zoonotic disease to spread rapidly across human societies worldwide, but also how public health concerns can make societies take unprecedented, fast, and decisive action. Climate change is the single biggest health threat facing humanity,¹ with each fraction of a degree of warming having additional costs for health and global development. Although a reduction of greenhouse gas emissions in line with current global ambitions will lessen these adverse consequences, this will require a large-scale collective response across all sectors. The educational sector plays a pivotal role in harnessing both intersectoral and integrated responses, and in providing a shared platform for understanding what needs to be done to address climate change and achieve the Sustainable Development Goals.²⁻⁷ In 2022, the key question is not, can we make progress?, but can we make progress fast enough? Still, there are few examples of integrative cross-disciplinary learning approaches to help foster both individual and collective agency for change in the health sector.

Here we describe a 2-week elective course on climate change and health in a planetary perspective, delivered to third-year medical students at the University of Oslo in 2022. Our overarching aim was to help students develop a nuanced understanding of how they can use health arguments⁸ to convey the urgency of climate action and raise awareness of the roles that health-care systems and health professionals can play to protect health and stay within sustainable planetary boundaries. A complete list of learning objectives (knowledge, competencies, and skills) for the course can be found in the appendix (p 1).

The course schedule includes three main modes of learning (table): lectures and discussions on major topics related to climate change and health; workshops with stakeholders who showcase real-life activities within the climate-health linkage; and student-led group work on a chosen topic in which the aim is to identify key messages and discuss how these messages can be delivered to an identified target audience and inspire change.

Lectures in week 1 focused on the knowledge base for action, covering “Introduction to climate change and health”; “Climate science”; “Managing healthcare’s climate footprint”; “Biodiversity and health”; and “Food systems”. Lectures in week 2 focused on action implementation, covering “Societal transformation”; “Change agency in the health sector”; “The 2030 Sustainable development agenda”; and “Effective public health communication”. Interdisciplinarity was a prominent feature, with about half of the lectures given by teachers with a medical background and the remainder representing the natural sciences, social sciences, and humanities.

Workshops showcased various examples of real-life activities by diverse stakeholders (medical students, activists, international organisations, indigenous communities, and hospitals at regional and local levels). Stakeholders presented their work for 15 min and this was followed by questions, comments, and dialogue. The format was intended to encourage open-mindedness towards integrating different types of knowledge and to illustrate varied ways of working within climate change and health.

Group work was student-led. One or two supervisors were available to clarify tasks, discuss options on how to proceed, offer insights on current debates and relevant literature, and facilitate contact with experts or policy makers within their chosen topic. Students identified key messages, a target audience, and a channel for communication; with different groups making diverse choices (appendix p 2). The groups presented their work in class on the last day of the course, followed by a brief discussion between students and teachers. The presentations formed the basis for the course examination (for assessment criteria, see appendix p 2). One of the groups had their work accepted as an op-ed in a newspaper before the course ended.⁹

A post-course evaluation showed that the course had provided students with knowledge and skills thus far not provided in the medical curriculum (appendix p 3). In qualitative written feedback, students reacted positively to the inclusion of a diverse group of lecturers with varying perspectives and backgrounds, and ample time allocated for discussions and group work. Some students signalled

See Online for appendix

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
09–11 h: Lecture on key theme	Course introduction, health consequences of climate change	Climate change	Managing health care's climate footprint	Climate change, biodiversity loss and health	Food and climate change	Transforming society	Change agency in the health sector	Social and economic sustainability	Communication for public health	Course exam: Groups present their work
Teacher	Medical doctor	Physicist	Medical doctor	Biologist	Dietitian	Human Geographer	Medical doctor	Political scientist	Medical doctor	..
12–14 h: Group work	Introduction and group assignment	Group work	Group work	Group work	Groups present chosen topic	Group work	Group work	Group work	Groups hand in presentations	Course evaluation
Supervisor	Medical doctor, political scientist	Medical doctor, political scientist	Medical doctor	Medical doctor, political scientist	Medical doctor	Medical doctor, political scientist	Medical doctor	Medical doctor	Medical doctor	Medical doctor, political scientist
15–1530 h: Workshop	National survey on climate change and health in medical curricula	Green choosing wisely	National survey of anaesthesiologists and anaesthetic nurses on sustainable anaesthetic practice	Norwegian Physicians Against Climate Change	Healthcare Without Harm Europe	Climate change and living conditions for Sami people in Norway	Doctors Without Borders	Work on climate and environment at the Regional health authority level	Work on climate and environment at the hospital level	..
Presenter-stakeholder	Medical student	Medical student	Medical student	Medical doctor	Nurse	Psychologist of Sami background	Medical doctor	Health, safety and environment advisor	Environmental lead, University hospital	..
17–19 h: Social event	..	..	..	..	..	..	..	Pizza night for students and teachers	..	..

Table: Schedule for a 2-week course on climate change and health for medical students

an interest for more lectures in the course. They expressed an interest in tools to estimate the carbon footprint of health care, sustainable quality improvement, and health service adaptation to climate change.

The course was developed in consultation with medical students with a special interest in climate change and sustainability issues, at a centre dedicated to help implement the Sustainable Development Goals.¹⁰ At the University of Oslo, third-year medical students can choose between different elective course modules. This, alongside the university's strategic focus on sustainable development and climate change, made it possible to develop a 2-week course from the ground up. Although the original plan was in-person teaching, the course was delivered online owing to pandemic restrictions. Given the online delivery, it was easier to record lectures and workshops as a resource for future online learning modules; we are also considering the establishment of alumni groups, coordination with student bursaries, and facilitation of events that showcase student work. Medical faculties in Norway have committed to increase teaching on climate change for all students.¹¹ An elective course can provide additional perspectives for students with a special interest in the interface between climate change and health.

On the basis of student examination performance and course evaluation, we conclude that the participants have developed a more nuanced understanding of the linkage between climate and health, in line with the aim of the course. In our experience, lectures encompassing diverse academic perspectives, dialogue with a mix of voices from across the health sector, and communication-oriented group work served as a useful platform for an undergraduate course in planetary health.

We declare no competing interests.

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