



Planetary Health Report Card: *Dalhousie University*



**DALHOUSIE
UNIVERSITY**

Land acknowledgement:

The authors of this report would like to acknowledge that Dalhousie University, and therefore where they live, work and study, is located in the traditional unceded territory of the Wolastoqiyik (Maliseet) and Mi'kmaq Peoples. This territory is covered by the “Treaties of Peace and Friendship” which Wolastoqiyik (Maliseet) and Mi'kmaq Peoples first signed with the British crown in 1725. The treaties did not deal with surrender of lands and resources but in fact recognized Mi'kmaq and Wolastoqiyik (Maliseet) title and established the rules for what was to be an ongoing relationship between nations.

2021-2022 Contributing Team

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Summary of Findings

Overall	D+
<u>Curriculum</u>	C-
<p>Recommendations: In addition to the integration of Planetary Health recommendations already provided to the Dalhousie Faculty of Medicine through the curriculum refresh, we propose that the Faculty create a leadership role in Planetary Health within the next year, similar to the University of Ottawa’s Faculty of Medicine’s Director of Planetary Health, as a clear signal to faculty and learners that the climate emergency is not only important, but urgent. This position can advocate for and oversee longitudinal integration of planetary health into medical school and resident curricula, work with learners on community outreach and facilitate an interprofessional approach.</p>	
<u>Interdisciplinary Research</u>	C-
<p>Recommendations: Dalhousie faculty, staff and students within and outside of the medical school are involved in leading interdisciplinary research and teaching programs, National and Provincial Planetary Health groups, and are members of the Global Consortium on Climate and Health Education and Planetary Health Alliance. To continue, we recommend that Dalhousie medical school take a clear stance on the promotion of interdisciplinary research related to Planetary Health to both current faculty and their students. In addition, the Research in Medicine (RIM) program should encourage students to consider the sustainability of all research projects.</p>	
<u>Community Outreach and Advocacy</u>	F-
<p>Recommendations: Continue to increase opportunities for outreach and advocacy related to medical school and healthcare sustainability to build on the foundation set by the Faculty of Medicine, Healthy Populations Institute, Dalhousie Planetary Health Community of Practice, and Dalhousie Green Team. We would recommend that Dalhousie medical school and affiliated hospitals establish a Continuing Professional Education program with a focus on Planetary Health to ensure members remain up to date with their knowledge throughout their career.</p>	
<u>Support for Student-Led Initiatives</u>	C
<p>Recommendations: Dalhousie Medical School offers continued support for student initiatives related to sustainability and medicine. To improve the score in this section, we would recommend the Faculty of Medicine regularly promote their support of such initiatives to all members of the faculty and student body either through communications or mentions on the website, and visibly outline the process for achieving support for future interested students.</p>	
<u>Campus Sustainability</u>	C+
<p>Recommendations: Dalhousie University, including the medical campuses, has made strides to increase the sustainability of the institution and has set carbon neutrality goals. We would like to see the Faculty of Medicine make a public commitment to the future sustainability goals of the school and recommend that they provide further opportunities for labs in the medical faculty to connect with Dalhousie’s Office of Sustainability’s Green Labs program, to increase the number of medical school and affiliated hospital labs pursuing sustainable operations.</p>	

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance describes Planetary Health as “a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth’s natural systems on human health and all life on Earth.” This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanisation, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. Climate change is an immense and imminent threat to planetary health and to the health and socioeconomic well-being of human populations. The World Health Organisation has called climate change “the greatest threat to global health in the 21st century.” Paradoxically, the healthcare sector, which is intended to maintain public health, is one of the most significant contributors to this issue. It has been estimated that 5-6% of Canada’s total carbon emissions are a direct result of health care sector services and delivery (Vogel L. Canada’s health system is among the least green. *CMAJ* **191**: E1342-3 (2019)). Canada signed onto the WHO’s #COP26 Health Programme, thus formally committing to climate resilient and low carbon, sustainable health systems.

To meet Canada’s mid-century net-zero ambition, the healthcare research and the clinical practice community must play a critical role. As future health professionals, physician trainees at Dalhousie Medical School must be prepared to address the impacts of human-caused environmental changes on our patients’ health and take an active role in the transition to a sustainable, net-zero, resilient, patient-centred healthcare system. It is imperative that we hold our institutions accountable for educating medical students about the health impacts of climate change and the impact that healthcare is having on climate changes, generating research to better understand health impacts and solutions, supporting related student initiatives, embracing sustainable practises as much as possible, and engaging with surrounding communities that are most affected by environmental threats. As climate change and environmental threats disproportionately affect vulnerable populations (for example, communities of colour, older adults sensitive to health threats, and individuals in low-resource settings), these issues are inherently ones of equity and justice.

With the purpose of increasing Planetary Health awareness and accountability among medical schools, we have created a Planetary Health Report Card that medical students internationally can use to grade and compare their home institutions on an annual basis. This

medical-student-driven initiative aims to compare medical schools nationally and internationally on the basis of discrete metrics in five main category areas: 1) Planetary Health curriculum, 2) interdisciplinary research in health and environment, 3) University support for student Planetary Health initiatives, and 4) community outreach centred on environmental health impacts 5) medical school campus sustainability.

Definitions & Other Considerations

Definitions:

- **Planetary Health:** is described by the *Planetary Health Alliance* as “a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth’s natural systems on human health and all life on Earth.” For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of Planetary Health. Both Planetary Health and traditional ‘environmental health’ examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of Planetary Health makes the field well-adapted for the context of medical school education. Throughout this report card, we use the term Planetary Health to refer to this broad swath of topics, but resources do not need to explicitly include the term “Planetary Health” to satisfy the metric.
- **Education for Sustainable Healthcare (ESH):** is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:
 1. Describe how the environment and human health interact at different levels.
 2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.
 3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.
- **medical school vs. Institution:** When “medical school” is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (for example, undergraduate departments (USA), other related departments eg Public Health, Population Health departments). In contrast, when “institution” is specified in the report card, we are referring to the university more broadly. Any resource reasonably accessible by medical students, no matter where in the institution the

resource comes from or if it is specifically targeted for medical students, can meet this metric.

- **Environmental history (Metric 19 in curriculum section):** This is a series of questions providers are taught to ask during medical encounters that elicits patients' exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mold after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution.
- **Elective:** The word "elective" refers to an optional course or lecture series that a medical student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.
- **Clerkship:** This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations or placements.

Other considerations:

- If there are more than one "tracks" at your medical school with two different curricula (for example, Harvard medical school has a Pathways and HST curriculum track), you can choose to fill out a report card for each track, or fill out just one report card and average the scores received by each track in cases where the scores are different (see the 2021 Harvard or Oxford report cards as example).

Literature Review by Metric

Added to our resources this year, the Planetary Health Report Card [Literature Review by Metric](#) collates the evidence behind each of the metrics in the Planetary Health Report Card. It serves as a collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.

Planetary Health Curriculum

Section Overview: This section evaluates the integration of relevant Planetary Health topics into the medical school curriculum. Today's medical students will be on the frontlines of tackling the health effects of climate and other environmental changes. Therefore, it is critical that medical students are trained to understand the health effects of these changes, as well as Planetary Health issues and principles more broadly. Topics like the changing geography of vector-borne diseases, the health consequences of air pollution, environmental health inequities, and disaster response principles must be part of every medical school's core curriculum.

Curriculum: General

1. Did your medical school offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/Planetary Health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/Planetary Health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/Planetary Health, but there are one or more electives that include a lecture on Planetary Health.
0	No, the medical school has not offered any electives on Planetary Health or electives that include ESH/Planetary Health topics in the past year.
<p><i>Score explanation: Dalhousie University previously offered health professional students one ESH/Planetary Health themed Interprofessional Education Mini-Course. The mini-course was developed and organised by students, with support from the Healthy Populations Institute, and was equivalent to 6 hours of instruction. It was offered in the fall of the 2020-2021 school year, but was not reaccepted for the 2021-2022 year. This IPE course was an option presented amongst numerous IPE courses available, from which students choose those that interest them.</i></p>	

Curriculum: Health Effects of Climate Change

2. Does your medical school curriculum address the relationship between extreme heat, health risks, and climate change?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.

1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: In the first year curriculum the Professional Competencies unit contains a didactic lecture titled “Understanding Environmental Determinants of Health and the Physician’s Role in Prevention, Diagnosis, Treatment and Management” with a corresponding self-directed study tutorial titled “Environmental Health and Advocacy”. While the lecture primarily focuses on other topics of environmental health (e.g. occupational and gestational toxin exposure), there is some specific content related to climate change impacts on health. Within the lecture there are points on three slides related to the relationship between climate change, extreme heat, and health risks.</i></p> <p><i>Tutorials are student-led and discussions within this tutorial may address the relationship between extreme heat, health risk and climate change, but as it is not linked to a specific objective in the curriculum, nor a required question to address in the tutorial, this experience will vary for every student.</i></p>	

3. Does your medical school curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: In the first year curriculum the Professional Competencies unit contains a didactic lecture titled “Understanding Environmental Determinants of Health and the Physician’s Role in Prevention, Diagnosis, Treatment and Management” with a corresponding self-directed study tutorial titled “Environmental Health and Advocacy”. While the lecture is primarily focused on other topics of environmental health (e.g. occupational and gestational toxin exposure), there is some specific content related to climate change impacts on health. Within the lecture there are two bullet points that address extreme weather events as they relate to health risks, with specific mention of psychological impacts. There is no reference to the burden on the healthcare system from these types of events.</i></p> <p><i>Tutorials are student-led and discussions within this tutorial may address the relationship between extreme weather events on individual health/healthcare systems, but as it is not linked to a specific objective in the curriculum, nor a required question to address in the tutorial, this experience will vary for every student.</i></p>	

4. Does your medical school curriculum address the impact of climate change on the changing patterns of infectious diseases?

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: In the first year curriculum the Professional Competencies unit contains a didactic lecture titled “Understanding Environmental Determinants of Health and the Physician’s Role in Prevention, Diagnosis, Treatment and Management” with a corresponding self-directed study tutorial titled “Environmental Health and Advocacy”. While the lecture is primarily focused on other topics of environmental health (e.g. occupational and gestational toxin exposure), there is some specific content related to climate change impacts on health. Within the lecture there is a bullet point on how climate change is affecting patterns of infectious diseases.

Tutorials are student-led and discussions within this tutorial may address the relationship between climate change and infectious diseases, but as it is not linked to a specific objective in the curriculum, nor a required question to address in the tutorial, this experience will vary for every student.

5. Does your medical school curriculum address the respiratory health effects of climate change and air pollution?

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: In the first year curriculum the Professional Competencies unit contains a didactic lecture titled “Understanding Environmental Determinants of Health and the Physician’s Role in Prevention, Diagnosis, Treatment and Management” with a corresponding self-directed study tutorial titled “Environmental Health and Advocacy”. While the lecture is primarily focused on other topics of environmental health (e.g. occupational and gestational toxin exposure), there is some specific content related to climate change impacts on health. Within the lecture there are a few bullets that discuss the relationship between climate change and respiratory health. The lecture addresses the impact of heat waves on preexisting respiratory conditions, and how decreased air quality (forest fires, other allergens) is related to climate change and lung health.

Tutorials are student-led and discussions within this tutorial may address the relationship between climate change and infectious diseases, but as it is not linked to a specific objective in the curriculum, nor a required question to address in the tutorial, this experience will vary for every student..

Throughout the curriculum in other areas (e.g. in the Metabolism units), the impact of the environmental hazards (e.g. asbestos) in the development of different respiratory diseases is addressed, but neither objectives nor content are explicitly related to Planetary Health or sustainability, or how a changing climate is related to respiratory health.

6. Does your medical school curriculum address the cardiovascular health effects of climate change, including increased heat?

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: In the first year curriculum the Professional Competencies unit contains a didactic lecture titled “Understanding Environmental Determinants of Health and the Physician’s Role in Prevention, Diagnosis, Treatment and Management” with a corresponding self-directed study tutorial titled “Environmental Health and Advocacy”. While the lecture is primarily focused on other topics of environmental health (e.g. occupational and gestational toxin exposure), there is some specific content related to climate change impacts on health. Within the lecture there is a single bullet addressing how poor air quality related to climate change is a cardiovascular risk factor:

Tutorials are student-led and discussions within this tutorial may address the relationship between climate change and infectious diseases, but as it is not linked to a specific objective in the curriculum, nor a required question to address in the tutorial, this experience will vary for every student.

7. Does your medical school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: In the first year curriculum the Professional Competencies unit contains a didactic lecture titled “Understanding Environmental Determinants of Health and the Physician’s Role in Prevention, Diagnosis, Treatment and Management” with a corresponding self-directed study tutorial titled “Environmental Health and Advocacy”. While the lecture is primarily focused on other topics of environmental health (e.g. occupational and gestational toxin exposure), there is some specific content related to climate change impacts on health. One of the lecture objectives is “Increase awareness of impact of climate change on health, especially mental health”, and there are two slides within the lecture dedicated to this subject.

Tutorials are student-led and discussions within this tutorial may address the relationship between climate change and infectious diseases, but as it is not linked to a specific objective in the curriculum, nor a required question to address in the tutorial, this experience will vary for every student..

In the Neurology and Psychology unit in the second year of the curriculum, the importance of green spaces in regards to mental health is noted, but there is no specific mention about how this relates to climate change, nor are there any climate change or sustainability-related objectives within this unit.

8. Does your medical school curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: In the first year curriculum the Professional Competencies unit contains a didactic lecture titled “Understanding Environmental Determinants of Health and the Physician’s Role in Prevention, Diagnosis, Treatment and Management” with a corresponding self-directed study tutorial titled “Environmental Health and Advocacy”. The lecture discusses the risks of environmental toxins that individual patients may be exposed to through their environment, including food. However, the relationship between environmental health, climate change, environmental toxins and individual exposures is not addressed, nor did it cover the impacts of environmental and degradation on food security and nutrition. Therefore, we assigned a score of 0 to this question.

9. Does your medical school curriculum address the outsized impact of climate change on marginalized populations such as those with low SES, women, communities of color, Indigenous communities, children, homeless populations, and older adults?

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.

1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: In the first year curriculum the Professional Competencies unit contains a didactic lecture titled “Understanding Environmental Determinants of Health and the Physician’s Role in Prevention, Diagnosis, Treatment and Management” with a corresponding self-directed study tutorial titled “Environmental Health and Advocacy”. While the lecture is primarily focused on other topics of environmental health (e.g. occupational and gestational toxin exposure), there is some specific content related to climate change impacts on health.</i></p> <p><i>One of the stated tutorial objectives is “Understand how cultural and socioeconomic factors are influenced by, impact on, and interact with the environment.” The tutorial sessions are student led, with students required to prepare with assigned readings and then group discussion. The lecture and tutorial also cover the outsized impact of climate change on some marginalised populations. Specifically, the difficulty of accessing safe spaces during climate-change related heat waves was discussed and the outsized impacts of this on people who are elderly or very young, and those who have physical disabilities</i></p>	

10. Does your medical school curriculum address the unequal regional health impacts of climate change globally?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: In the first year curriculum the Professional Competencies unit contains a didactic lecture titled “Understanding Environmental Determinants of Health and the Physician’s Role in Prevention, Diagnosis, Treatment and Management” with a corresponding self-directed study tutorial titled “Environmental Health and Advocacy”. While the lecture is primarily focused on other topics of environmental health (e.g. occupational and gestational toxin exposure), there is some specific content related to climate change impacts on health.</i></p> <p><i>The lecture does touch on how people in some geographic areas (e.g. areas that may become reservoirs for vector-borne disease with changes in mosquito and tick distributions, or areas at/close to sea level and in hot regions) are at a higher risk of climate-change related health impacts. The lecture and tutorial also cover the outsized impact of climate change on some marginalised populations. Specifically, the difficulty of accessing safe spaces during climate-change related heat waves was discussed and the outsized impacts of this on people who are elderly or very young, and those who have physical disabilities.</i></p>	

Curriculum: Environmental Health & the Effects of Anthropogenic Toxins on Human Health

11. Does your medical school curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: In the first year curriculum the Professional Competencies unit contains a didactic lecture titled “Understanding Environmental Determinants of Health and the Physician’s Role in Prevention, Diagnosis, Treatment and Management” with a corresponding self-directed study tutorial titled “Environmental Health and Advocacy”. The lecture is primarily focused on topics of environmental exposure and health risks and specifically on the outsized risk of environmental toxin exposure to children during all stages of development. Content on counselling prospective or new parents on prevention of toxin exposure is included in this lecture.</i></p>	

12. Does your medical school curriculum address important human-caused environmental threats that are relevant to the university’s surrounding community?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: Within the second year respiratory curriculum component an environmental hazards course discusses coal miners lung, pertinent to this region given the still-recent history of coal mining here. At Dalhousie University this topic may be covered within other tutorials of the core curriculum or elective coursework, but at the discretion of a preceptor. For instance, in a clinical skills session a preceptor may discuss how to effectively integrate teaching on environmental interview questions specific to local human-caused environmental threats. For example, some communities in Nova Scotia have and continue to deal with contaminated water (e.g. see film There is Something in the Water) and some preceptors may raise this with students in clinical skills or elective sessions.</i></p>	

13. To what extent does your medical school emphasize the importance of Indigenous knowledge and value systems as essential components of Planetary Health solutions?

3	Indigenous knowledge and value systems are integrated throughout the medical school's Planetary Health education
2	Indigenous knowledge and value systems as essential components of Planetary Health solutions are included briefly in the core curriculum.
1	Indigenous knowledge and value systems as essential components of Planetary Health solutions are included in elective coursework.
0	This topic was not covered.

Score explanation: Dalhousie Medical School requires all medical learners to take an Interprofessional Education Mini-Course titled "Introduction to Cultural Safety in Healthcare for Indigenous People". This course is meant to provide students with a holistic understanding of Indigenous peoples' health, including the historical context, the unique contemporary determinants of Indigenous well-being, practises to consider for therapeutic health care encounters integrated with domains from the Canadian Interprofessional Health Collaborative framework (CIHC). The course is equivalent to ~8 hours of instruction. Yet, throughout the course there is no mention of planetary health or environmental sustainability and how Indigenous knowledge and value systems can help us find solutions.

14. Does your medical school curriculum address the outsized impact of anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of colour, children, homeless populations, Indigenous populations, and older adults?

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: In the first year curriculum the Professional Competencies unit contains a didactic lecture titled "Understanding Environmental Determinants of Health and the Physician's Role in Prevention, Diagnosis, Treatment and Management" with a corresponding self-directed study tutorial titled "Environmental Health and Advocacy". The lecture is primarily focused on topics of environmental exposure and health risks. The lecture primarily focuses on the outsized risk of environmental toxin exposure to children and developmental impacts.

The corresponding tutorial investigates additional socioeconomic factors and how these relate to exposure risk. One of the stated tutorial objectives is "Understand how cultural and socioeconomic

factors are influenced by, impact on, and interact with the environment.” The tutorial sessions are student led, with students required to prepare with assigned readings and then group discussion.

Curriculum: Sustainability

15. Does your medical school curriculum address the environmental and health co-benefits of a plant-based diet?

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: This topic is not covered anywhere in the curriculum.

However, for this to be an improvement in the curriculum related to Planetary Health – and therefore merit points – we feel the question needs to be appropriately contextualised from a determinants of health perspective. As it stands, this is a perspective of environmental and health co-benefits that in some contexts would be culturally inappropriate. So theoretically, one could get a higher score, even if the approach to teaching this is incongruent with the questions around Indigenous knowledge systems, for example, which are crucial to Planetary Health as indicated in some of the other questions.

16. Does your medical school curriculum address the carbon footprint of healthcare systems?

3	This topic was explored in depth by the core curriculum
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: This topic is not covered anywhere in the curriculum. The Dalhousie Green Team has been advocating for inclusion of such topics within the curriculum, and these may be incorporated with the curriculum refresh scheduled for implementation in September 2022.

17. Does your medical school curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (1 point each)	
1	Waste production within the healthcare system and strategies for reducing waste in clinical activities, such as in the operating room
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anaesthesia environmental impacts, such as total intravenous anaesthesia or choosing less environmentally anaesthetic gas options with reduced greenhouse gas emissions
1	The environmental impact of pharmaceuticals and over-prescribing as a cause of climate health harm. Alternatively teaching on deprescribing where possible and its environmental and health co-benefits would fulfill this metric.
1	The health and environmental co-benefits of non-pharmaceutical management of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes for obesity. This is commonly known as social prescribing in the UK.
1	The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment
<p><i>Score explanation: At Dalhousie Medicine students receive a didactic lecture and participate in a self directed learning tutorial about sustainable resource use in the healthcare system. However, sustainability is only discussed in regards to conscientious resource use and cost, and there is no discussion on environmentally sustainable clinical practice in the core curriculum.</i></p>	

Curriculum: Clinical Applications

18. In training for patient encounters, does your medical school's curriculum introduce strategies to have conversations with patients about the health effects of climate change?	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the core curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.

0	No, there are not strategies introduced for having conversations with patients about climate change
<p><i>Score explanation: No, there is no component of the curriculum at Dalhousie Medical School that introduces strategies to have conversations with patients about the health effects of climate change. In the first year curriculum the Professional Competencies unit contains a didactic lecture titled “Understanding Environmental Determinants of Health and the Physician’s Role in Prevention, Diagnosis, Treatment and Management” with a corresponding self-directed study tutorial titled “Environmental Health and Advocacy”. In this lecture there is a slide prompting class discussion about counselling patients about climate change risk, yet this is an unstructured discussion piece, so there are no strategies integrated in the lecture or tutorial itself. This lecture also has some content that covers the importance of discussing the risk of environmental toxin exposure with patients, especially those preparing to be or currently pregnant. Again however, there are no firm strategies presented in this lecture.</i></p>	

19. In training for patient encounters, does your medical school’s curriculum introduce strategies for taking an environmental history or exposure history?	
2	Yes, the core curriculum includes strategies for taking an environmental history.
1	Only elective coursework includes strategies for taking an environmental history.
0	No, the curriculum does not include strategies for taking an environmental history.
<p><i>Score explanation: The core curriculum does include strategies for taking an environmental history or exposure history (e.g. Skilled Clinician respiratory exam class, Professional Competencies and Metabolism and Human Development units). Strategies are directed at discussing exposures to asbestos, lead, occupational hazards, pets and other traditional environmental health items. There is nothing in the curriculum at this time that discusses strategies for identifying exposures to wildfires and reduced air quality, migration, water pollution, or other human-caused environmental exposures indicative of a medical school lens.</i></p>	

Curriculum: Administrative Support for Planetary Health

20. Is your medical school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/Planetary Health education?	
4	Yes, the medical school is currently in the process of making major improvements to ESH/Planetary Health education.
2	Yes, the medical school is currently in the process of making minor improvements to ESH/Planetary Health education.
0	No, there are no improvements to Planetary Health education in progress.

Score explanation: Dalhousie Faculty of Medicine is currently undergoing a curriculum refresh in the context of a transition to competency-based medical education, from May 2020 to September 2022. As part of this process, a designated working group had specifically been tasked with improving the inclusion of Planetary Health throughout all years of the medical school curriculum. The Canadian Federation of Medical Students Health and Environment Adaptive Response Task Force (CFMS HEART) has developed 12 core competencies: all of which were proposed by Dalhousie’s Planetary Health Working Group to be integrated into the curriculum over the next year. So, while no change has been made to the current curriculum compared to the 2021-2022 year, there are changes in the works which will be in place throughout the curriculum by August 2022. Dalhousie Faculty/Staff in the Faculty of Medicine also received a presentation from a representative of the Dalhousie Medical Student Society Green Team in September 2020 during the Undergraduate Medical Education office Case Writing Retreat, and in November 2021 for the Clerkship Directors Retreat. The first presentation focused on HEART’s core curriculum recommendations and tips on how to include these topics throughout their case-based learning sessions, and the second focused on why these topics need to be further included into our clinical training. The administration has expressed interest in implementing more topics into the general longitudinal curriculum in the first two years.

21. How well are the aforementioned Planetary Health/Education for Sustainable Healthcare topics integrated longitudinally into the core curriculum?

6	Planetary health/ESH topics are well integrated into the core medical school curriculum.
4	Some Planetary Health/ESH topics are appropriately integrated into the core medical student curriculum.
2	Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s).
0	There is minimal/no education for sustainable healthcare.

Score explanation: In the first year curriculum the Professional Competencies unit contains a didactic lecture titled “Understanding Environmental Determinants of Health and the Physician’s Role in Prevention, Diagnosis, Treatment and Management” with a corresponding self-directed study tutorial titled “Environmental Health and Advocacy”. While the lecture is primarily focused on other topics of environmental health (e.g. occupational and gestational toxin exposure), there is some specific content related to climate change impacts on health.

Otherwise there is no longitudinal integration of Planetary Health/ESH in our curriculum.

22. Does your medical school employ a member of faculty to specifically oversee and take responsibility for the incorporation of Planetary Health and sustainable healthcare as a theme throughout the course?

1	Yes, the medical school has a specific faculty/staff member responsible for overseeing curricular integration of Planetary Health and sustainable healthcare
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0	No, the medical school does not have a specific faculty/staff member responsible for overseeing curricular integration of Planetary Health and sustainable healthcare.
<p><i>Score explanation: Dalhousie Curriculum Committee created a temporary Planetary Health Working Group, which was a volunteer project for students, faculty, and international experts, but there is no formal long-term position available.</i></p> <p><i>Planetary Health is a priority under the social accountability mandate of the Faculty of Medicine, as per the work that is happening through the Global Health Office. Of note, the Office is engaged with the Community of Practice, memberships in national and international Planetary Health networks, and medical curriculum refreshment. The Global Health Office reports to the Faculty of Medicine's social accountability committee on this work, has a program manager identified as the lead for Planetary Health within the office, and has identified a Faculty Lead for this purpose as well.</i></p> <p><i>However, no member of this office has a specific mandate to advocate for or oversee the integration of Planetary Health and sustainable healthcare within the curriculum.</i></p>	

Section Total (x out of 69)	30
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Are there additional curriculum resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

NA

Interdisciplinary Research

Section Overview: *This section evaluates the quality and quantity of interdisciplinary Planetary Health research at the medical school and broader institution. Interactions between health and the environment are complex and multifactorial. While climate change has been extensively studied from an environmental science perspective, Planetary Health is an emerging field. As leading health institutions with talented researchers and research resources, medical schools should fund research studying the health effects of climate change and anthropogenic environmental toxins. This obligation is particularly strong because the public and policymakers are more attentive to climate change when its implications for human health are emphasised.*

1. Are there researchers engaged in Planetary Health research and healthcare sustainability research at your medical school?	
3	Yes, there are faculty members at the School of Medicine who have a primary research focus in Planetary Health or healthcare sustainability.
2	Yes, there are individual faculty members at the School of Medicine who are conducting research related to Planetary Health or healthcare sustainability, but it is not their primary research focus.
1	There are Planetary Health and/or healthcare sustainability researchers at the institution, but none associated with the medical school.
0	No, there are no Planetary Health and/or healthcare sustainability researchers at the institution or medical school at this time.

*Score explanation: There are faculty members at the Faculty of Medicine conducting research related to medical school and healthcare sustainability. While we are not aware of any faculty members whose sole research focus is related to this topic, a number of faculty members are actively involved in medical school research and contribute to interdisciplinary research and national research consortiums on health care sustainability. For example, [The Healthy Population Institute \(HPI\)](#) is a multi-faculty research institute at Dalhousie University in Halifax, Nova Scotia that is jointly funded by the Faculties of Health, Medicine, and Dentistry. One of the institute's flagship projects is a [Sustainable Health Systems](#) research and knowledge translation project. There are research opportunities within the institute related to medical school for medical students. The HPI is also a partner in a National five year project to help Canada's health care community transition to a sustainable (net-zero) health system: *Creating a Sustainable Canadian Health System in a Climate Crisis (CASCADES)* aims to leverage, support and enhance the considerable existing capacity within the healthcare sector and intersecting research fields to achieve the transition. The Dalhousie Medical School Community of Practice is another avenue through which researchers and clinicians from different fields can communicate, collaborate and advocate for medical school Initiatives in Nova Scotia.*

2. Is there a dedicated department or institute for interdisciplinary Planetary Health research at your institution?

3	There is at least one dedicated department or institute for interdisciplinary Planetary Health research.
2	There is not currently a department or institute for interdisciplinary Planetary Health research, but there are plans to open one in the next 3 years.
1	There is an Occupational and Environmental Health department, but no interdisciplinary department or institute for Planetary Health research.
0	There is no dedicated department or institute.

Score explanation: <https://www.healthypopulationsinstitute.ca> : “The Healthy Populations Institute (HPI) is a multi-faculty research institute at Dalhousie University that aims to improve population health and health equity in Atlantic Canada and beyond by understanding and influencing the complex conditions that affect the health of communities.”

HPI's Sustainable Health System's Flagship Project Team created CASCADES (Creating a Sustainable Canadian Health System in a Climate Crisis) - a national project aiming to reduce greenhouse gas emissions linked to health care and create a low-carbon 'green' health system.

The HPI is in a cross provincial collaboration with the [Centre for Sustainable Health Systems](#) in Ontario and an international collaboration with the [Centre for Sustainable Healthcare](#) in the UK.

3. Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your medical school?

3	Yes, there is a process in which community members impacted by climate and environmental injustice have decision-making power in the climate + environmental research agenda.
2	Yes, there is a process in which community members impacted by climate and environmental injustice advise the climate + environmental research agenda.
1	No, but there are current efforts to establish a process for community members to advise or make decisions on the research agenda.
0	There is no process, and no efforts to create such a process.

Score explanation: There is no process for this at this time.

4. Does your institution have a Planetary Health website that centralises ongoing and past research related to health and the environment?

3	There is an easy-to-use, adequately comprehensive website that centralises various campus resources related to health and the environment including all of the following: upcoming events, leaders in Planetary Health at your institution, and relevant funding opportunities.
2	There is a website that attempts to centralise various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The institution has an Office of Sustainability website that includes some resources related to health and the environment.
0	There is no website.
<p><i>Score explanation: Dalhousie University Office of Sustainability has a website that centralises resources related to institutional sustainability initiatives such as ongoing research, guidelines, and some resources. There are no specific resources related to health and the environment, nor are there any specific ties to the Faculty of Medicine or Health Sciences. The Dalhousie Global Health Office has a Planetary Health page that does link to ongoing medical school initiatives, but is not a centralised resource for health and environment at Dalhousie as a whole institution.</i></p>	

5. Has your institution recently hosted a conference or symposium on topics related to Planetary Health?	
4	Yes, the medical school has hosted at least one conference or symposium on topics related to Planetary Health in the past year.
3	Yes, the institution has hosted at least one conference or symposium on topics related to Planetary Health in the past year.
2	Yes, the institution has hosted a conference on topics related to Planetary Health in the past three years.
1	The institution has not hosted any conferences directly, but they have provided financial support for a local Planetary Health event.
0	No, the institution has not hosted a conference on topics related to Planetary Health in the past three years.
<p><i>Score explanation: Dalhousie Medical School holds an annual Thomas and Alice Morgans Fear Memorial conference, focusing on an important theme in medical education each year. The conference is scheduled to take place in June 2022, and the theme will be Planetary Health and the Climate Crisis: Our Planet, Our Health, Our Responsibility.</i></p> <p><i>In 2020, the annual Medical Education Institute, entitled Preparing Physicians to Lead and Practice in an Era of Climate Change, was scheduled to be held in June, however due to COVID-19 the conference was cancelled and was not rescheduled. Thus there has been no Planetary Health focused conference</i></p>	

held by Dalhousie Medical School or the wider institution within the past three years, but unless there are further extenuating circumstances we expect to score 4 on this question in future years.

6. Is your medical school a member of a national or international Planetary Health or ESH organisation?

1	Yes, the medical school is a member of a national or international Planetary Health or ESH organisation
0	No, the medical school is not a member of such an organisation

*Score explanation: Dalhousie Medical School is a member of the [Global Consortium on Climate and Health Education](#) and [Planetary Health Alliance](#). The medical school, through the Dalhousie Medicine Green Team also has strong ties to the Canadian Federation of Medical Students Health and Environment Adaptive Task Force ([CFMS HEART](#)). Dalhousie medicine faculty and students are also part of the Canadian Association of Physicians for the Environment, Nova Scotia chapter ([CAPE NS](#)) and New Brunswick chapter ([CAPE NB](#)). [The Healthy Population Institute](#) (HPI) is also a partner in a National five year project to help Canada's health care community transition to a sustainable (net-zero) health system: *Creating a Sustainable Canadian Health System in a Climate Crisis* ([CASCADES](#)) aims to leverage, support and enhance the considerable existing capacity within the healthcare sector and intersecting research fields to achieve the transition.*

Section Total (x out of 17)	7
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Are there additional research resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Community Outreach and Advocacy

Section Overview: *This section evaluates medical school engagement in community outreach and advocacy efforts associated with Planetary Health. Researching and teaching Planetary Health is necessary but not sufficient. It is critical that institutions also directly engage with communities most affected by environmental health harms. Although climate change is a problem largely created by those with power and resources, its impacts fall disproportionately on under-resourced populations and communities of colour. Institutions should partner with local communities affected by climate change and pollution to share information about environmental health threats, advocate together for change, and provide opportunities for students to be a part of this work.*

1. Does your medical school partner with community organisations to promote planetary and environmental health?	
3	Yes, the medical school meaningfully partners with multiple community organisations to promote planetary and environmental health.
2	Yes, the medical school meaningfully partners with one community organisation to promote planetary and environmental health.
1	The institution partners with community organisations, but the medical school is not part of that partnership.
0	No, there is no such meaningful community partnership.
<p><i>Score explanation: Dalhousie Medical School incorporates service learning in its curriculum in years one and two. The Service Learning program encourages and supports undergraduate medical education students to participate in service learning activities with community organisations as an opportunity to gain knowledge of community and patient needs. The program has been working on making partnership agreements with several community organisations in the environmental sector over the past two years, but as of yet has not been successful. The intent of the program is to continue trying, with support of the Dalhousie Medicine Green Team.</i></p> <p><i>While the scope of this question is to address local partnerships, the Global Health Office has numerous partnerships that conduct community outreach and advocacy at local and global scales. Because many communities experience disproportionate impacts related to climate change, waste, and environmental health, the Global Health Office provides learners with opportunities in Global Health that inherently incorporate Planetary Health learning and advocacy experience with JEDI (Justice, Equity, Diversity, Inclusion) principles.</i></p>	

2. Does your medical school offer community-facing courses or events regarding Planetary Health?

3	The medical school offers community-facing courses or events at least once every year.
2	The medical school offers courses or events open to the community at least once per year, but they are not primarily created for a community audience.
1	The institution has offered community-facing courses or events, but the medical school was not involved in planning those courses or events.
0	The medical school has not offered such community-facing courses or events.

Score explanation: The Dalhousie School of Sustainability Environment, Sustainability and Society (ESS) program hosts a lecture series which has and continues to include topics on the intersection of climate change and health. This is an example of a community facing event provided by the institution as a whole, and not specifically the medical school. While the medical school does host community facing courses and events (e.g. Mini-medical school), we could not find any examples of Dalhousie Medical School offering Planetary Health or sustainability focused community facing courses or events.

Dalhousie Medical School holds an annual Thomas and Alice Morgans Fear [Memorial conference](#), focusing on an important theme in medical education each year. The conference is scheduled to take place in June 2022, and the theme will be Planetary Health and the Climate Crisis: Our Planet, Our Health, Our Responsibility. There is ongoing community engagement for the planning of this conference, however because it did not yet occur within the current cycle of this report we are unable to award points for this question. However, in 2023 this should be reflected.

3. Does your medical school have regular coverage of issues related to Planetary Health and/or sustainable healthcare in university update communications?	
2	Yes, all students regularly receive communication updates dedicated to Planetary Health and/or sustainable healthcare.
1	Yes, Planetary Health and/or sustainable healthcare topics are sometimes included in communication updates.
0	Students do not regularly receive communications about Planetary Health or sustainable healthcare.

Score explanation: Medical student members of the [CAPE Nova Scotia](#) chapter manage the social media for that group, and have published a [letter to the editor](#) in a regional paper. There is also a biweekly newsletter from the Global Health Office that students are able to electively sign up to receive. However, the medical school does not have regular coverage of Planetary Health or related issues in university update communications to medical students, staff, faculty, the wider institution community, or the public.

4. Does the institution or main affiliated hospital trust engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in Planetary Health and sustainable healthcare remain up to date during their professional career?

2	Yes, the institution or main affiliated hospital trust offers multiple in-person or online courses relating to Planetary Health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of Planetary Health.
1	Yes, the institution or main affiliated hospital trust offers one course relating to Planetary Health and/or sustainable healthcare for post-graduate providers
0	There are no such accessible courses for post-graduate providers

Score explanation: Planetary Health is identified as a priority in the Dalhousie [Continuing Professional Development and Medical Education](#). However, to our knowledge there is no Continuing Professional Development course provided by the institution or the main affiliated hospitals that aims to increase knowledge or skills in Planetary Health and sustainable healthcare as of yet. The upcoming Fear Memorial Conference in June 2022 will be an accredited CPD event.

5. Does your medical school or its primary affiliated hospital have accessible educational materials for patients about environmental health exposures?

2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated medical centres have accessible educational materials for patients.

Score explanation: External organisations like the Lung Association of Nova Scotia/New Brunswick provide educational materials to patients on exposure risk to environmental health exposures (e.g. Radon gas).

We searched the Nova Scotia Health pamphlets listing and could not find any accessible educational materials for patients about environmental health exposures. There were no patient resources related to environmental health exposures available through the Queen Elizabeth II (QEII) hospital websites, a main affiliated hospital of Dalhousie Medical School. We searched the resources page for the IWK hospital, a main affiliated hospital of Dalhousie Medical School and there was one resource titled “Poisoning, Toxins, Environmental Health”, however this led to an [empty web page](#); there may be printed material available but we are not aware of it. We searched Horizon Health Network representing hospitals in New Brunswick affiliated with Dalhousie Medical School and could not find any applicable resources.

6. Does your medical school or its primary affiliated hospital have accessible educational

materials for patients about climate change and health impacts?	
2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated hospitals have accessible educational materials for patients.
<p><i>Score explanation: We searched the Nova Scotia Health pamphlets listing and could not find any accessible educational materials for patients about climate change health impacts. There were no patient resources related to climate change and health impacts available through the QEII hospital websites, the IWK hospital Horizon Health Network (for the province of New Brunswick) representing hospitals affiliated with Dalhousie university and did not find any materials to satisfy this metric.</i></p>	

Section Total (x out of 14)	0
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Are there additional community engagement and advocacy resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

NA

Support for Student-Led Planetary Health Initiatives

Section Overview: *This section evaluates institutional support for student-led Planetary Health initiatives, such as funding, fellowships, programming, and student groups. Planetary health is a young field and, as young people facing a future deeply shaped by climate change, students are often some of the first at an institution to engage with it. Institutions should provide support for students to engage in sustainability quality improvement (QI) initiatives, discover mentors in their area of interest, and receive funding for Planetary Health projects.*

1. Does your institution offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum.
1	The medical school encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate.
0	No, the institution does not offer opportunities or support for sustainability initiatives or QI projects.

Score explanation: The Research in Medicine (RIM) component of the Medical curriculum at Dalhousie Medical School is a 3-year longitudinal program, beginning in September of first year with completion in September of students' fourth year. All Dalhousie medical students are required to complete a RIM project during medical school. The RIM program provides the scope for students to pursue research that fits their interests, and doesn't necessitate a clinical focus. Research is built around an intensive summer studentship, typically in the students' first year. To support students, Dalhousie Medical School provides \$5,000 in funding to offset the costs of research efforts. This is not a competitive process and no application is required. Students may pursue research in Planetary Health/sustainable healthcare if that is an area of interest. While RIM is a component of the core curriculum, the associated grant for RIM is not explicitly for sustainability initiatives/QI projects.

2. Does your institution offer opportunities for medical students to do research related to Planetary Health and/or sustainable healthcare?	
2	The institution has a specific research program or fellowship for students interested in doing Planetary Health/sustainable healthcare research.
1	There are research opportunities for students to perform research related to Planetary Health/sustainable healthcare but these require student initiative to seek these out and carry them out in their spare time.

0	There are no opportunities for students to engage in Planetary Health/sustainable healthcare research.
<p><i>Score explanation: The Research in Medicine (RIM) component of the Medical curriculum at Dalhousie Medical School is a 3-year longitudinal program, beginning in September of first year with completion in September of students' fourth year. All Dalhousie medical students are required to complete a RIM project during medical school. The RIM program provides the scope for students to pursue research that fits their interests, and doesn't necessitate a clinical focus. Students may pursue research in Planetary Health/sustainable healthcare if that is an area of interest. The Dalhousie Medical Green Team acts as a networking interface for medical students interested in conducting medical school research and researchers throughout the region involved in such research.</i></p> <p><i>Through the Global Health Office there are bursaries for students to participate in conferences, and those conferences can be planetary health focused, given that is one of the mandates of this office.</i></p>	

3. Does the medical school have a webpage where medical students can find specific information related to Planetary Health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.	
2	The medical school has a webpage with specific information related to Planetary Health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.
1	There is a medical school webpage that features some information on projects and mentors within Planetary Health and sustainable healthcare within the medical school, but it lacks key information.
0	There is no medical-school specific webpage for locating Planetary Health and/or sustainable healthcare projects or mentors.
<p><i>Score explanation: The Dalhousie Global Health Office has a Planetary Health page that links to ongoing medical school initiatives related to Planetary Health and sustainability. There is no specific information available on faculty mentors within the medical school involved in Planetary Health initiatives, however it does link to the Dalhousie Medical Student Society Green Team page which shares Planetary Health initiatives and information on how to get involved in research, and this content is specifically directed at the medical student body. However, this page is student run and not formally endorsed by the Faculty of Medicine.</i></p> <p><i>The Faculty of Medicine itself does not have a webpage with information on Planetary Health and/or sustainable healthcare activities.</i></p>	

4. Does your medical school have registered student groups dedicated towards fostering a culture of Planetary Health engagement, scholarship, and advocacy on campus, supported by faculty

advisors?	
2	Yes, there is a student organisation with faculty support at my medical school dedicated to Planetary Health or sustainability in healthcare.
1	Yes, there is a student organisation at my medical school dedicated to Planetary Health or sustainability in healthcare but it lacks faculty support.
0	No, there is not a student organisation at my institution dedicated to Planetary Health or sustainability in healthcare.
<p><i>Score explanation: The Dalhousie Medicine Green Team was founded by four Dalhousie University medical students with a shared interest in environmental health and sustainability. The network was designed with the intention of promoting green health care initiatives within our learning and working environments across our Maritime provinces. The Green Team hopes to bridge connections between students, healthcare providers, and other stakeholders who are eager to participate in healthcare sustainability projects. Through interprofessional collaboration the Green team hopes to inspire change at all levels of health care both locally and regionally. The Green Team has numerous current projects underway, including a formal curriculum refresh process, advocating for in-hospital Green Teams, and offering a mini-educational interprofessional course, among others. Team members are located at both Nova Scotia and New Brunswick Dalhousie Medical School campuses. Any interested student is able to join.</i></p> <p><i>In 2018, Dalhousie Medical School's Global Health Initiative created the position of a Local Officer of Environmental Health and Sustainability. This role serves to organise local awareness events and initiatives within our medical community and also becomes a member of the Dal Med Green Team.</i></p>	

5. Is there a student liaison representing sustainability interests who serves on a medical school or institutional decision-making council to advocate for curriculum reform and/or sustainability best practises?	
1	Yes, there is a student representative that serves on a medical school or institutional decision-making council/committee.
0	No, there is no such student representative.
<p><i>Score explanation: There is no formal position for a student liaison representing sustainability interests on a medical school or institutional decision-making council of this nature. Members of the Dalhousie Medicine Green Team are occasionally asked for input but have no formal representation on such councils/committees.</i></p>	

6. In the past year, has the institution had one or more co-curricular Planetary Health programs or initiatives in the following categories? (1 point each)

1	Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.
1	Panels, speaker series, or similar events related to Planetary Health that have students as an intended audience.
1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.
1	Cultural arts events, installations or performances related to Planetary Health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)

Score explanation: The Dalhousie agricultural campus (in Truro, Nova Scotia) [community garden](#) brings together students, staff, and community members with a range of experience growing food. The community garden brings people together from across campus and from the greater Truro area. The garden is made-up of approximately 40 plots, where each member pays a fee of \$20 for their plot. On the Dalhousie Halifax campus the The Dalhousie Urban Garden is a student-run, student-funded community garden situated on Dalhousie University's Studley Campus. The Dalhousie Urban Garden Society ([DUGS](#)) values skill sharing and collaborative learning. DUGS hosts workshops on food preservation, container gardening, herbal medicine and more, offered by our volunteers or community members. The Dalhousie Urban Garden functions as common pool garden space, with produce going to volunteers and back to students via the Loaded Ladle and/or Dalhousie Food Bank. The DUGS primary purpose is not large volume food production, but to maximise land and ensure no food is wasted. The [Loaded Ladle](#) provides accessible, sustainable, locally-sourced free food on the Dalhousie University campus. The collective of students and workers manages this alternative food service. They also offer events and activities which critically examine barriers to food sovereignty, food security, and food justice.

The Dalhousie [Global Health Office](#) has formed a community of practice to advance interdisciplinary research and education in Planetary Health at Dalhousie, bringing together faculty, staff and students to strengthen our collective capacity to meet complex Planetary Health challenges. The community of practice hosts a monthly journal club and students, faculty and administrators from the University and the Health Network are encouraged to join.

The Dalhousie Outdoors Society ([DOS](#)) administered by the Dalhousie Student Society aims to support students and the university community in getting outdoors by facilitating trips and providing resources (such as the gear library and grants). This group has no specific Planetary Health mandate.

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Are there additional student-led initiative resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

NA

Campus Sustainability

Section Overview: *This section evaluates the support and engagement in sustainability initiatives by the medical school and/or institution. The healthcare industry is a major contributor to greenhouse gas emissions as well as pollution that harms local, regional, and global ecosystems. While healthcare is, by nature, a resource-intensive endeavor, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinizing every aspect of how our systems operate, from where we source our energy, to how we build our infrastructure, to what companies we invest in. Our medical schools, clinics, and hospitals must set the standard for sustainable practices, and show other sectors what is possible when it comes to minimizing environmental impact.*

1. Does your medical school and/or institution have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff, but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p><i>Score explanation: The Office of Sustainability at Dalhousie University (https://www.dal.ca/dept/sustainability.html) works to improve the sustainability of campus activities and infrastructure as a whole, however there is no specific staff member in charge of medical school or hospital sustainability.</i></p> <p><i>Nova Scotia Health and Horizon Health have some staff members that are working independently to incorporate sustainability in the design and retrofitting of existing hospital infrastructure, but there is no formal position in either of these hospital networks or within Dalhousie Medical School.</i></p>	

2. How ambitious is your medical school/institution's plan to reduce its own carbon footprint?	
4	The institution has a stated goal of carbon neutrality by 2030 or earlier and the medical school / institution has a well-defined and adequate plan in place to achieve this goal.
3	Yes, there is a stated carbon neutrality goal by at least 2040 and the medical school/institution has a well-defined and adequate plan in place to achieve this goal.
2	Yes, there is a stated carbon neutrality goal by at least 2040, but the medical school/institution has not created a plan to reach that goal or the plan is inadequate.
1	There is a CO2 emission reduction goal, but it is not one of carbon neutrality.
0	There is no stated goal for reduction of CO2 emissions.
<p><i>Score explanation: Item 2 best represents the current state though the carbon neutrality goal is 2050 not 2040. The focus of early carbon reductions is not offsetting but hard reductions on campus. There are multiple targets throughout the plan including 50% reduction by 2030 and 80% reduction by 2040 of scope 1 and 2. The 2nd version of the University Operations Climate Change Plan outlines the strategies which include all campuses including the medical school. Each year a GHG report is published reporting on progress. Dalhousie University has a clear plan and reporting process, and while the carbon neutrality goal is 2050 not 2040, we feel that this comprehensive plan, which aligns</i></p>	

with Canada's national carbon reduction framework goals, is superior to an insufficient plan with a 2040 cutoff. As such, we have given this question a score of 2.

3. Do buildings/infrastructure used by the medical school for teaching (not including the hospital) utilize renewable energy?

3	Yes medical school buildings are 100% powered by renewable energy
2	medical school buildings source >80% of energy needs from off-site and/or on-site renewable energy.
1	medical school buildings source >20% of energy needs from off-site and/or on-site renewable energy.
0	medical school buildings source <20% of energy needs from off-site and/or on-site renewable energy.

Score explanation: Dalhousie uses solar PV, solar thermal, solar air, geexchange, and waste biomass residue on our campus representing about 10% of energy loads. Located in an older urban campus with a tall medical tower limits the renewable energy opportunity. We are currently working on a renewable electricity power purchase agreement to purchase 100% of Dalhousie's electricity from new local wind. If the agreement is finalised this year this may come to fruition in 2025. This would be a unique initiative in a regulated single provider market.

4. Are sustainable building practices utilized for new and old buildings on the medical school campus, with design and construction of new buildings and remodeling of old buildings conforming to a published sustainability rating system or building code/guideline?

3	Yes, sustainable building practices are utilized for new buildings on the medical school campus and the majority of old buildings have been retrofitted to be more sustainable.
2	Sustainable building practices are utilized for new buildings on the medical school campus, but most old buildings have not been retrofitted.
1	Sustainable building practices are inadequately or incompletely implemented for new buildings.
0	Sustainability is not considered in the construction of new buildings.

Score explanation: Dalhousie has passed a green building policy [\[PDF - 89KB\]](#) that recommends all new buildings should be built to LEED® Gold Certified standards or higher and existing building upgrades follow a green building standard [\[PDF - 177KB\]](#). Dalhousie is a member of the [Canada Green Building Council](#).

Our medical building, the Tupper building, had a recent twelve million dollar major deep retrofit and full building upgrade following a number of sustainable practises and designs. Significant reduction in energy and water have been achieved. There are [video and education materials](#) for all projects including the Tupper building on a green building site.

5. Has the medical school implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?

2	Yes, the medical school has implemented strategies to encourage and provide environmentally-friendly transportation options such as safe active transport, public transport, or carpooling and these options are well-utilised by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
1	The medical school has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.
0	The medical school has not implemented strategies to encourage and provide environmentally-friendly transportation options.

Score explanation: Dalhousie University offers a bus pass for employees and students with a subsidised rate included in students' annual fees. All students and enrolled employees are able to take public transit (bus, ferries) by showing their student or employee card. The campus also has good biking infrastructure, with protected bike lanes along the major campus roads and bike racks at all buildings, bike centre, and bike loan program. The University has an agreement for car sharing services on campus and offers discounts for ride sharing. Other active transportation and commuter education and supportive programs are provided: <https://www.dal.ca/dept/sustainability/smart-trip.html>

6. Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?

2	Yes, the medical school has both compost and recycling programs accessible to students and faculty.
1	The medical school has either recycling or compost programs accessible to students and faculty, but not both.
0	There is no compost or recycling program at the medical school.

Score explanation: Dalhousie's medical school buildings all have multiple waste bins located around campus for trash, recycling, and composting. These buildings are accessed by students and faculty employees, and the 3-in-1 waste bins are placed near dining tables, in hallways outside of labs, and near main entrances to the buildings(

https://www.dal.ca/dept/sustainability/resources/Reports_and_Policies.html) There are also waste standards, posters and guides for lab specific recycling, composting and solid waste management.

7. Does the medical school apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?

3	Yes, the medical school has adequate sustainability requirements for food and beverages, including meat-free days or no red-meat, and is engaged in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is engaged in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is not engaged in efforts to increase food and beverage sustainability.
0	There are no sustainability guidelines for food and beverages.

Score explanation: Dalhousie has a [Sustainable and Healthy Food Framework](#) developed in 2016. The framework sets the policy direction for sustainable food sourcing such as ethical considerations.

Dalhousie also reports to [STARS](#). Regarding supplies Dalhousie has [sustainability embedded in the purchasing policy including criteria](#) such as ethical considerations.

Menus change with the season to allow for increased local produce offerings year-round. Examples of strategies to incorporate local produce include hand cutting french fries from local potatoes in all four dining halls year-round and offering local apples only at all dining locations across campus. Food Services at Dalhousie sources food from many local farmers, growers and distributors. The list changes throughout the year depending on seasonality and availability. Aramark uses Keddy Brothers as a wholesale produce supplier because they are a Nova Scotian company that distributes local produce whenever possible. The Chef's Garden on Dalhousie's Agricultural Campus provides produce to the Agricultural Campus dining services and a portion of the produce used in Food Services on the Halifax Campus. It is a 1.1-acre plot that follows organic farming principles. In 2019 they produced 11,000 lbs of food total with approximately 20% to campus foodservice, 60% in direct sales to staff/students and 5% to Halifax campus foodservice, and balance (15%) to food bank, Maggie's Place and other local charities.

Aramark has committed to a sustainable seafood policy that incorporates ocean health, ethical labour, transparency, and a renewable seafood industry. In addition to a purchasing policy, they commit to education and tracking of sustainable seafood purchases. The policy can be found here:

<http://www.aramark.com/files/seafood-principles-policy>

Fair trade tea and coffee are served at all dining halls and in all cafes and retail locations. Fair trade chocolate is also placed in vending machines.

See here for more information about Aramark's Green Thread sustainability program:

<https://dal.campusdish.com/BeingGreen>

Aramark has a plant forward movement, which is a style of cooking and eating that emphasises vegetables, fruits, whole grains, legumes, nuts, and seeds. With plants as the star of the plate, animal products can appear in smaller portions, often as a flavouring or garnish.

<https://www.aramark.com/about-us/blog/unpacking-the-popularity-of-plant-forward#:~:text=Plant%2Dforward%20is%20a%20style,as%20a%20flavoring%20or%20garnish> .

A number of education and administrative programs are implemented such as vegan dining, trayless dining, lean path reducing food waste, local farm and fair trade education, full organics diversion.

8. Does the medical school or associated institution apply sustainability criteria when making decisions about supply procurement?

3	Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is engaged in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is not engaged in efforts to increase sustainability of procurement.
0	There are no sustainability guidelines for supply procurement.

Score explanation: Dalhousie purchases some items through a joint university and colleges purchasing cooperative [InterUniversity Services Inc \(ISI\)](#). ISI incorporates sustainability criteria in purchasing. This is guided by their Sustainability Policy. Dalhousie and other universities and colleges in Atlantic Canada participate in the ISI sustainability committee which discusses and educates each other on topics such as sustainable purchasing.

The University has the opportunity to purchase through Nova Scotia government tenders as part of the municipalities, academia, schools, and hospital sector (MASH). The Nova Scotia government has passed a [Sustainability Policy](#) and criteria in purchasing regulations.

In Dalhousie's Purchasing Policy sustainability criteria are outlined as guidance for university purchasers. Sustainability criteria is added and evaluated for individual Request for Proposals and Tender documents. A [Sustainability Purchasing Checklist \[PDF - 100KB\]](#) can be used by individual purchasers using purchasing cards to guide purchasing decisions. Sustainable purchasing lunch & learns, workshops, and lectures are provided as a part of the ongoing educational programming efforts.

More information about the sustainability aspects per commodity are found at: https://www.dal.ca/dept/sustainability/campus-initiatives/Procurement_and_Waste.html

9. Are there sustainability requirements or guidelines for events hosted at the medical school?

2	Every event hosted at the medical school must abide by sustainability criteria.
1	The medical school strongly recommends or incentivizes sustainability measures, but they are not required.

0	There are no sustainability guidelines for medical school events.
<p><i>Score explanation: While Dalhousie University as an entire institute has guidelines for events hosted on campus these are not specific to the Faculty of Medicine, nor has the medical school or medical students society formally endorsed them.</i></p>	

10. Does your medical school have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
2	Yes, the medical school has programs and initiatives to assist with making lab spaces more environmentally sustainable.
1	There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are no efforts at the medical school to make lab spaces more sustainable.
<p><i>Score explanation: There are institutional guidelines to make lab spaces more environmentally sustainable at Dalhousie University, though not specifically for the medical school and affiliated hospital labs: Dalhousie is a member of the U15 group of Canada's most research-intensive universities. Dalhousie has over 1350 laboratory spaces across four campuses. The Office of Sustainability has a Green Labs program that is tasked to develop standards, oversee their implementation, and inspire the many behavioural changes that are needed throughout the scientific community. https://www.dal.ca/dept/sustainability/get-involved/greenlabs.html. There is one lab within the affiliated academic hospital (pathology) that has signed up with this program, and we are aware of at least one other hospital lab (microbiology) that is also interested in the program. At this time there is no formal outreach to the medical school and hospital, and the medical school is not actively engaged in participating in or promoting the program.</i></p>	

11. Does your institution's endowment portfolio investments include fossil-fuel companies?	
4	The institution is entirely divested from fossil fuels and has made a commitment to reinvest divested funds into renewable energy companies or renewable energy campus initiatives.
3	No, the institution is entirely divested from fossil fuels.
2	The institution has partially divested from fossil fuel companies or has made a commitment to fully divest, but currently still has fossil fuel investments.
1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organized advocacy for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.

Score explanation: Dalhousie University became a signatory to the PRI (Principles of Responsible Investing) June 2019. Currently in our first reporting cycle with them.

Dalhousie University was one of 15 Universities to sign the [Climate Change Charter](#). A little info on what the Charter stands for:

Universities have a duty to manage their long-term investment portfolios in ways that acknowledge and account for these developments. With these considerations in mind, the signatories to this charter pledge to abide by the following principles and practices, and encourage other Canadian universities to do the same:

1. Adopt a responsible investing framework to guide investment decision-making, in line with recognized standards such as the UN-supported Principles of Responsible Investment (UN-PRI). Such a framework should:

a. Incorporate ESG factors into investment management practises

b. Encourage active engagement with companies to foster disclosure of ESG (including climate) related risks, and adoption of operational practises that reduce carbon emissions and foster ESG-positive behaviour more broadly

2. Regularly measure the carbon intensity of our investment portfolios, and set meaningful targets for their reduction over time

3. Evaluate progress towards these objectives on a regular basis, and share the results of such assessments publicly

4. Ensure that the performance evaluation of our investment managers takes into account their success in achieving such objectives, alongside the other criteria for assessing their performance

Dalhousie last had a review of fossil fuel investments in 2018. The Board had requested to have the Investment Committee to undertake such a review and report back. This culminated in the report that went to the Board of Governors in February 2019 and was approved unanimously.

https://cdn.dal.ca/content/dam/dalhousie/pdf/dept/university_secretariat/Board-of-Governors/Website%20Reports/Fossil%20Fuel%20Investment%20Report%20-%202019February12.pdf

Section Total (x out of 31)	18
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Back to summary page [here](#)

Are there additional sustainability resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

NA

Grading

Section Overview

This section focuses on the grading of the report card. The institution received a grade for each of the individual sections as well as an overall institutional grade. Section point totals were tallied, divided by the total points available for the section, and converted to a percentage. The overall institutional grade is a weighted average of the section grades, with curriculum receiving a higher weight owing to its larger number of metrics. Letter grades for each section and the institution overall were then assigned according to the table below.

Letter Grade*	Percentage
A	80% - 100%
B	60% - 79%
C	40% - 59%
D	20% - 39%
F	0% - 19%

**Within each grade bracket, a score in the top 5% (5 to 9%), receives a “+”, and a score in the bottom 5% (0-4%) receives a “--”. For example, a percentage score of 78% would be a B+.*

Planetary Health Grades for the Dalhousie Faculty of Medicine

The following table presents the individual section grades and overall institutional grade for the Dalhousie Faculty of Medicine on this medical-school-specific Planetary Health Report Card.

Section	Raw Score	Letter Grade
Planetary Health Curriculum (30%)	$(30 / 69) \times 100 = 44\%$	C-
Interdisciplinary Research (17.5%)	$(7 / 17) \times 100 = 41\%$	C-
Community Outreach and Advocacy (17.5%)	$(0 / 14) \times 100 = 0\%$	F-
Support for Student-led Planetary Health Initiatives (17.5%)	$(7 / 15) \times 100 = 47\%$	C
Campus Sustainability (17.5%)	$(18 / 31) \times 100 = 58\%$	C+
Institutional Grade	38%	D+

Report Card Trends

Section Overview

This graph demonstrates trends in overall and section grades for the years in which Dalhousie has participated in the Planetary Health Report Card initiative.

PHRC trends for Dalhousie School of Medicine

