



Planetary Health Report Card (Medicine): *University of Minnesota- Twin Cities*



2022-2023 Contributing Team:

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Summary of Findings

Overall	C
<u>Curriculum</u>	C
<ul style="list-style-type: none"> The University of Minnesota does include planetary health (PH) in the curriculum, but it lacks integration longitudinally. PH is not a learning objective in any core curriculum and is often covered at a surface level. Recommendations: Considering the curriculum updates in 2023, we recommend the medical school begins incorporating The Climate Change and Health curriculum that was created by climate champions at UMN. We also encourage them to use this report to assess the progress of their curriculum changes and involve students, such as MS4SF, to ensure the new curriculum is addressing the health impacts of climate change. 	
<u>Interdisciplinary Research</u>	C
<ul style="list-style-type: none"> Since our last report, the medical school has joined the GCCHE and increased institutional support for planetary health conferences. This is exciting progress. Recommendations: There is a lack of faculty within the medical school doing research at the intersection of climate, sustainability, and health despite the existence of such projects in the past. We recommend increased efforts to recruit faculty within this field and collaboration across disciplines. 	
<u>Community Outreach and Advocacy</u>	B -
<ul style="list-style-type: none"> The UMN incorporates community engagement into their climate health programming, particularly through the Institute on the Environment (IonE). The School of Nursing offers many climate learning opportunities for providers. The Medical School is increasing community engagement through educational opportunities for staff, students, and patients. Recommendations: Continue expanding opportunities for community engagement and interdisciplinary collaboration. Increase community-facing programs and educational materials using examples detailed throughout this document regarding the health impacts of climate change. Center community perspectives in the development of these programs and materials. 	
<u>Support for Student-Led Initiatives</u>	B
<ul style="list-style-type: none"> There is a lot of momentum among UMN students with student-led PH initiatives, which do have some support from the UMN. However, within the medical school, the students generally lack institutional assistance to propel these initiatives forward and often have to go to great lengths to seek out support. Recommendations: We recommend strengthening support and availability for student-led PH initiatives, which could include a centralized PH webpage/tab that students can access for information about activities and potential mentors. We encourage a greater focus on developing co-curricular or interdisciplinary PH programs and events to promote exposure to PH specifically within the medical school. 	
<u>Campus Sustainability</u>	C
<ul style="list-style-type: none"> The UMN has stated its commitment to sustainability in the MPact 2025 Systemwide Strategic Plan and is creating a new 2023 Climate Action Plan. However, there is a lack of medical school-specific policies and guidelines, which is a missed opportunity to support the University's overall sustainability goals. Recommendations: We recommend that the medical school align itself better with the broader University's sustainability goals in the pending Climate Action Plan. The medical school can work closely with the Office of Sustainability to provide specific implementation and education about these plans to medical students, staff, and faculty, as well as to oversee specific sustainability goals for the medical school. 	

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, urbanization, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment, and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change “the greatest threat to global health in the 21st century,” many medical schools’ institutional priorities do not reflect the urgency of this danger to human health.

As future health professionals, we must be prepared to address the impacts of human-caused environmental changes on our patients’ health. This preparation is in the hands of the institutions providing our medical training. It is imperative that we hold our institutions accountable for educating medical students about the health impacts of climate change and other anthropogenic environmental changes, generating research to better understand health impacts and solutions, supporting related student initiatives, embracing sustainable practices as much as possible, and engaging with surrounding communities that are most affected by environmental threats. Because climate change and environmental threats disproportionately affect vulnerable populations (for example, communities of color, 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 centered on environmental health impacts 5) medical school campus sustainability.

Definitions & Other Considerations

Definitions:

- **Planetary Health:** is described by the Planetary Health Alliance as “the health of human civilisation and the state of the natural systems on which it depends.” 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.
- **Sustainable Healthcare:** As defined by the Academy of Royal Colleges, sustainable healthcare involves ensuring the ability to provide good quality care for future generations by balancing the economic, environmental, and social constraints and demands within health care settings. A sustainable healthcare system maintains population health, reduces disease burden and minimizes use of healthcare services.
- **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 (e.g. undergraduate departments [USA]), other related departments (e.g. 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 elicit 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 examples).

Added to our resources last 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 <u>medical school</u> 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:</i> The medical school offers one elective course relating to human health and the environment: INMD 7523 Occupational & Environmental Medicine. This is a 4 credit course offered to MS3's and MS4's that focuses on training students to identify and manage diseases related to occupational and environmental exposures. While this course does discuss environmental health, it does not primarily focus on sustainable healthcare or planetary health. MED 7010 Public Health and Noncommunicable Diseases and Travel Medicine also discusses environmental health (although not as its primary focus).</p>	

Curriculum: Health Effects of Climate Change

2. Does your <u>medical school</u> 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.

Score explanation: The relationship between extreme temperature health risks and climate change was briefly covered in a required asynchronous online module for Essentials of Clinical Medicine 3A (INMD 6805) through an Annals of Global Health Paper: "[Climate Change, Human Rights, and Social Justice](#)."

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.

Score explanation: The relationship between extreme temperature health risks and individual health was briefly covered in a required asynchronous online module for Essentials of Clinical Medicine 3A (INMD 6805) through an Annals of Global Health Paper: "[Climate Change, Human Rights, and Social Justice](#)" and TEDx talk by Dr. Jonathan Patz: "[Climate Change is Affecting Our Health. Is There A Cure?](#)"

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: The impact of climate change on infectious disease patterns was briefly addressed during an "Intro to Microbiology" lecture in Microbiology and Immunology (INMD 6812), the concept of human activity favoring disease emergence was discussed. During a virus lecture series in the same course, it was also covered in the context of new emerging and re-emerging pathogenic viruses as a result of dramatic changes in the environment. Finally, there were a few slides devoted to expanding ecological niches for arthropod vectors, leading to increased distribution of mosquito-borne vectors.

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.
<p><i>Score explanation:</i> The impact of climate change and air pollution on respiratory health was briefly covered in a required asynchronous online module for Essentials of Clinical Medicine 3A (INMD 6805) through an Annals of Global Health Paper: Climate Change, Human Rights, and Social Justice” and TEDx talk by Dr. Jonathan Patz: “Climate Change is Affecting Our Health. Is There A Cure?” In addition, the effect of pollution on atopy was briefly mentioned in the “Hypersensitivity and Autoimmunity” lecture in Microbiology and Immunology (INMD 6812). Also, the “Intro to Respiratory Physiology” lecture in the Physiology (INMD 6814/PHSL 5101) course discussed the effect of pollution and environmental inequities on lung function. In a required session for all first-year students titled “Reimagining Clinical Skills and Structural Competency,” disparities in asthma burden and environmental exposure were addressed. Finally, in Human Health and Disease - Cardio & Resp (INMD 6808), pollution was discussed as a risk factor for developing asthma or exacerbating COPD. This was further elaborated with local examples, including the disruption of St. Paul’s Rondo neighborhood by I-94, increasing the risk of exposure to pollutants, and the corresponding risk for asthma. In the same course, environmental factors were also discussed in the context of predictive PFT results and discrimination during a workshop, and air pollutants as a risk factor for lung cancer was taught in a lecture titled “Pulmonary Pathology: Lung Cancer.”</p>	

6. Does your <u>medical school</u> 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.
<p><i>Score explanation:</i> Although the impact of reducing driving and utilizing other modes of transportation, which promotes exercise, heart health, and reduces greenhouse gases, was covered in a required asynchronous online module for Essentials of Clinical Medicine 3A (INMD 6805) through an Annals of Global Health Paper: “Climate Change, Human Rights, and Social Justice,” we did not feel that this was enough to consider covering the impacts of climate change on cardiovascular health.</p>	

7. Does your <u>medical school</u> 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.
<p><i>Score explanation:</i> The neuropsychological effects and mental health impacts due to climate change were briefly covered in a required asynchronous online module for Essentials of Clinical Medicine 3A (INMD 6805) through an Annals of Global Health Paper “Climate Change, Human Rights, and Social</p>	

[Justice](#).” In a presentation titled “Reimagining Clinical Skills,” the social determinants of health (including the built environment, access to green space, environmental exposures, and air and water quality) were discussed in relation to chronic stress and trauma. This was a required session for all first-year medical students.

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: Access to green space and air/water quality was discussed during a “Nutrients and Diets” lecture of Science of Medical Practice (INMD 6802) pertaining to meat consumption and food production.

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.

Score explanation: The outsized impacts of climate change on marginalized populations was briefly covered in a required asynchronous online module for Essentials of Clinical Medicine 3A (INMD 6805) through an Annals of Global Health Paper “[Climate Change, Human Rights, and Social Justice](#).” This was also discussed in a required lecture, Reimagining Clinical Skills and Structural Competency, focusing on structural racism and SDOH, specifically environmental exposures leading to health inequities.

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.

Score explanation: The disproportionate impact of climate change on vulnerable populations was briefly covered in a required asynchronous online module for Essentials of Clinical Medicine 3A (INMD 6805) through an Annals of Global Health Paper “Climate Change, Human Rights, and Social Justice,” and TEDx talk by Dr. Jonathan Patz: [“Climate Change is Affecting Our Health. Is There A Cure?”](#)

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.

Score explanation: INMD 7523 Occupational & Environmental Medicine is an elective course that covers the effect of environmental exposures on pregnancy. Reproductive health effects of industry-related toxins are not covered in any core curriculum courses. Note that EDC’s (endocrine disrupting chemicals) are covered in the University of Minnesota Duluth campus curriculum and would be worth exploring for additional ideas to incorporate into further courses.

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.

Score explanation: Human-caused contamination of the Boundary Waters was discussed briefly during a “Medical Parasitology” lecture in Microbiology and Immunology (INMD 6812). Lyme disease case increases were also covered as a result of changing seasonal patterns, travel, and land use. Additionally, in a required lecture, “Reimagining Clinical Skills and Structural Competency,” there was a focus on structural racism and SDOH, specifically environmental exposures exacerbating health inequities. The highway construction on I-94 through the Rondo neighborhood and its lasting impacts, as well as the plans for a more sustainable [ReConnect Rondo project](#) were addressed. The discriminatory practice of redlining in Minneapolis and St. Paul, leading to re-zoning that allowed for unequal environmental pollution in certain neighborhoods was also discussed.

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.
<i>Score explanation:</i> Indigenous knowledge and value systems as essential components of planetary health solutions is not covered in core or elective coursework.	

14. Does your <u>medical school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalized populations such as those with low SES, women, communities of color, 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.
<i>Score explanation:</i> The outsized impacts of anthropogenic environmental toxins on marginalized populations were briefly covered in a required asynchronous online module for Essentials of Clinical Medicine 3A (INMD 6805) through an Annals of Global Health Paper " Climate Change, Human Rights, and Social Justice ." This was also discussed in a required lecture, "Reimagining Clinical Skills and Structural Competency," focusing on structural racism and SDOH, specifically environmental exposures leading to health inequities. The highway construction on I-94 through the Rondo neighborhood, which disproportionately impacted black residents, was discussed, along with Flint Michigan lead exposure.	

Curriculum: Sustainability

15. Does your <u>medical school</u> 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.
<i>Score explanation:</i> The impact of meat production on global environmental change was briefly discussed in Science of Medical Practice (INMD 6802) during a "Nutrition and Diet" lecture.	

Accompanying this, plant-based food sources and patterns of eating were also discussed in a couple of PowerPoint slides in this course.

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: The carbon footprint of healthcare is not discussed in the core or elective curriculum. Excess healthcare spending is discussed in Essentials of Clinical Medicine Part 1 (INMD 6803), but not the carbon cost.

17. Does your medical school curriculum cover these components of sustainable clinical practice in the core curriculum? (points for each)

2	The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment
2	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. This is commonly known as social prescribing in the UK.
1	Environmental impact of surgical healthcare on planetary health and the climate crisis, and how can it be mitigated
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 harmful anaesthetic gas options with reduced greenhouse gas emissions
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	Waste production within healthcare clinics and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)

Score explanation: For many of these topics, only the health benefits were covered in our curriculum, neglecting to discuss the environmental benefits. For example, polypharmacy and over-treatment are discussed frequently, without mention of environmental cost. Although some of these topics may be covered during third and fourth-year clinical rotations, there is variability between hospital systems and

elective rotations, so they do not meet the requirements of the core curriculum. The impacts of inhalers or anesthetic gases on carbon footprint were not discussed during the core pharmacology classes.

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

Score explanation: In the past, MS1s received a lecture as part of Essentials of Clinical Medicine (ECM) which discussed the ethical imperative to discuss climate change and environmental issues with patients in a clinical setting. This did not occur this past year.

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.

Score explanation: Taking an environmental history is a focus of the elective INMD 7523 Occupational & Environmental Medicine. One to two Foundations of Clinical Thinking cases briefly emphasize the importance of taking an environmental history, but it is not substantial or the focus of the cases. During FCT 1B (INMD 6825), cases involving infant botulism and tetanus exposure were discussed in detail, requiring history taking and additional reading on exposures, but the focus did not expand beyond the specific topics.

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.
<p><i>Score explanation:</i> As a part of new curriculum development that will be implemented in Fall 2023, there are faculty members working on developing a Public Health Thread. One of the learning goals of this thread is the impact of climate change on human health. Students have the opportunity to give feedback on the goals of this thread as they develop into specific learning objectives and are eventually implemented into the new curriculum. We reached out to members of the curriculum team for additional details on progress, but they were unable to provide specifics by the time of this report, prompting a lower score.</p>	

21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> 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.
<p><i>Score explanation:</i> At the University of Minnesota, Planetary Health and Education for Sustainable Healthcare are covered in both Year 1 and Year 2 courses, including Essentials of Clinical Medicine 3A (INMD 6805), Science of Medical Practice (INMD 6802), Microbiology and Immunology (INMD 6812), Physiology (INMD 6814/PHSL 5101), FCT 1B (INMD 6825), and Human Health and Disease - Cardio & Resp (INMD 6808). Climate change and environmental exposures or risks are briefly mentioned in other courses and lectures but should be more well-integrated into the entire medical school curriculum. For example, the impacts of environmental toxins were not discussed during Human Health and Disease 4 - INMD 6810 in the context of reproductive or fetal health.</p>	

22. Does your <u>medical school</u> 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
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:</i> The University of Minnesota is transitioning into a new curriculum for 2023-2024, and there is a Public Health Thread Director who will be focusing on how to integrate public health topics into the curriculum. One of their learning goals is to recognize the impact of climate change on human health, and another is to appreciate the importance of environmental health on individual and public health. While the thread director will be focusing on other public health topics as well, these are two topics that they will focus on incorporating into the curriculum. It is important to note, however, that this is a temporary position. Of note, planetary health is not a focus of the current curriculum and we have received limited communication about how substantial updates will be to the new curriculum surrounding climate and sustainability.</p>	

Section Total (33 out of 72)	45.85%
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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.

Although not part of the medical school curriculum, the University of Minnesota helped create "[The Climate Change and Health: An Interprofessional Response Curriculum.](#)" with the aid of climate champions from various departments, including the medical school. This tool includes nine slide decks to help learners understand the connection between climate and health. Many of the points that were not received above are covered in these resources. It is worth noting that these slides are available for educational purposes, but have yet to be utilized for instruction by the medical school, nor have they suggested these as a resource for independent learning to students. These slide decks are [recommended resources](#) by the International Planetary Health Report Card and should be used by the University of Minnesota medical school curriculum.

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 emphasized.*

1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <u>medical school</u> ?	
3	Yes, there are faculty members at the medical school who have a primary research focus in planetary health or healthcare sustainability.
2	Yes, there are individual faculty members at the medical school 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.
<p><i>Score explanation:</i> Although planetary health and sustainability research has occurred within the UMN’s medical school in the past (as described in the 2022 report card), there is currently no active planetary health research <i>within the medical school</i> at this time. However, there are several faculty within the larger institution who conduct planetary health and sustainability research. Most of these faculty are appointed to either UMN’s Institute for the Environment or the School of Public Health.</p>	

2. Is there a dedicated department or institute for interdisciplinary planetary health research at your <u>institution</u> ?	
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.
<p><i>Score explanation:</i> The Institute on the Environment (IonE) at the University of Minnesota is a multidisciplinary research center aimed at supporting collaborative research and initiatives related to sustainability and planetary health. Recent, notable projects the IonE has been involved in related to human health specifically include:</p>	

- *Using Ecosystem Service Indicators in UN Sustainable Development Goals* which resulted in the development of a computational tool to visualize the relationship between ecosystem services and human well-being.
- *The Mental Health Benefits of Nature Experience: Translating Science to Urban Design* which investigated the link between urban nature and mental health.

More information about these projects can be found [here](#).

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 such process.

4. Does your institution have a planetary health website that centralizes ongoing and past research related to health and the environment?

3	There is an easy-to-use, adequately comprehensive website that centralizes 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 centralize 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.

Score explanation: There is no centralized, comprehensive website containing information on the numerous initiatives, research, events, and funding opportunities related to planetary health at UMN. Rather, this information is hosted on websites and webpages maintained by different UMN entities such as the [Institute on Environment website](#), the UMN [Minnesota Climate Adaptation Partnership website](#), and the [Global Health Center's Climate Change and Health Curriculum](#) webpage. While visiting multiple websites is an inconvenience, we acknowledge that it is technically possible to obtain an understanding of planetary health efforts at UMN.

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:</i> Within the past year, UMN has not hosted any conferences or symposiums related to planetary health. However, they have provided financial support for the following events:</p> <ul style="list-style-type: none"> • The Code Blue conference (April 22-23, 2022) was sponsored by the UMN School of Nursing. At this event, health professionals discussed the impact of climate change on health. • The Climate & Community Mental Health Symposium (April 1, 2022) was sponsored by UMN's Minnesota Climate Adaptation Partnership. At this event, a variety of experts within the fields of mental health and environmental health met to discuss the role impact of climate change on mental health. <p>Note that this is an improvement from the previous report card, where only a single conference (Code Blue) was counted.</p>	

6. Is your <u>medical school</u> a member of a national or international planetary health or ESH organization?	
1	Yes, the medical school is a member of a national or international planetary health or ESH organization
0	No, the medical school is not a member of such an organization
<p><i>Score explanation:</i> The medical school expects to be a member of the Global Consortium on Climate and Health Education by the time this report card is released.</p>	

Section Total (8 out of 17)	47.05%
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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 color. 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 organizations to promote planetary and environmental health?	
3	Yes, the medical school meaningfully partners with multiple community organizations to promote planetary and environmental health.
2	Yes, the medical school meaningfully partners with one community organization to promote planetary and environmental health.
1	The institution partners with community organizations, but the medical school is not part of that partnership.
0	No, there is no such meaningful community partnership.

The University of Minnesota’s Institute on the Environment (IonE) partners with and provides funding to projects that partner with community organizations through the [Mini Grant and DEIJ grant programs](#), however, these are not partnerships through the medical school. There are some medical student-led community partnerships that are covered in the “support for student-led initiatives” section of this report.

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 institution/medical school have not offered such community-facing courses or events.

Score explanation: The University of Minnesota offers community-facing events regarding planetary health, such as those hosted by the UMN [IonE](#). Medical students and community members are also invited to participate in the University’s [Climate Action Planning Workshop](#). The Mini Medical School series, hosted by the medical school, fall 2022 program was centered around [planetary health](#) and is targeted to a community audience.

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 receive communications about planetary health or sustainable healthcare.

Score explanation: Communications to medical students such as newsletters and community-wide emails occasionally include notices about events or updates related to planetary health.

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: In February 2023, MHealth Fairview hosted a system-wide grand rounds talk titled “Climate Change and Planetary Health: Aligning Care for Healthier Outcomes.” The University of Minnesota School of Nursing offers [many opportunities](#) for education about planetary health and sustainable healthcare, including the [Climate Action Guide for Nurses](#). Note that this training is targeted towards current nursing students, so we did not feel that it merited an increase in score.

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 centers have accessible educational materials for patients.

Score explanation: While none of the affiliated hospital systems provide comprehensive information on environmental health exposures, all provide at least some information about individual risks and/or diseases. In November 2022, Fairview published an online [article](#) about the environmental exposures associated with lung cancer. Hennepin Healthcare’s [website](#) includes a history of their community and discusses the environmental harms of racist housing policies in Minneapolis. The VA’s website includes information on environmental [exposures](#), and briefly mentions the impact of environmental exposures and pollution on [COPD](#), [asthma](#), [pulmonary fibrosis](#), [sinusitis](#), and [conjunctivitis](#). The VA also provides

information on the [PACT Act](#), which expands VA healthcare coverage for veterans with toxic exposures including air pollutants and occupational hazards. Allina health's website includes information on [air quality alerts](#).

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.

Score explanation: The VA website includes some information on [heat](#), but does not specifically discuss climate change. In 2022, an Allina physician participated in a [news story](#) on WCCO about the impact of climate change on allergies. No other affiliated health system provides information on the impact of climate change on health.

Section Total (9 out of 14)

64.29%

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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.

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 medical school or your institution offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the medical school or 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 or institution 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, neither the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.

Score explanation: The Institute on Environment (IonE) offers mini [grants](#) to support projects addressing environmental and sustainability issues. While these grants are not geared specifically towards medical students, they are available for students across the whole UMN system. Additionally, the medical school has [Climate Change Grants](#) available for student-led projects to be conducted with the goal of reducing medical waste. The Sustainable Development Goal Initiative Student Group Activity [Grant](#) is also available to students to apply for - it provides funding for UMN student groups engaging in activities related to the United Nations Sustainable Development Goals.

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.

Score explanation: There are opportunities for students to perform research in an area of their choosing, but none within the medical school are specifically geared towards planetary health or sustainable healthcare. Students would have to create the research opportunity for themselves - none are readily available - but they could feasibly get funding approved for a planetary health or sustainable healthcare project. Opportunities outside of the medical school exist regarding planetary health, though not specifically on the intersection of planetary health and human health.

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.

Score explanation: There is a medical school webpage for [Earth Day 2020](#), which lists some opportunities for engagement, a couple of faculty members engaged in planetary health advocacy, and an available Climate Change Grant with associated abstracts that have been previously awarded. However, this page is outdated, lacks key information, and is difficult to find on the medical school website.

The Center for Global Health and Social Responsibility has a page on their website titled “[Climate Change and Health](#).” This page lists the contact information for “Climate Champions” who are faculty within various health professional schools active in planetary health, which includes one faculty member from the medical school. The Office of Academic Clinical Affairs also has a website titled, “[Planetary Health and Sustainability](#),” with associated links relevant to planetary health and human health. However, there is no webpage specifically within the medical school website dedicated to planetary health.

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 organization with faculty support at my medical school dedicated to planetary health or sustainability in healthcare.
1	Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it lacks faculty support .
0	No, there is not a student organization at my institution dedicated to planetary health or sustainability in healthcare.

Score explanation: Medical Students for a Sustainable Future: University of Minnesota Medical School Chapter is a newly established (as of 2022) student group within the medical school composed of medical students advocating for climate justice to be implemented into the curriculum of the medical school, as well as engaging medical students with their community to better understand the health implications of climate change.

Additionally, [Health Students for a Healthy Climate](#) (HSHC) is an interdisciplinary student group aimed at advancing sustainability initiatives within the health professional schools at UMN. This involves both spreading awareness about the intersection between the environment and human health as well as the importance of reducing the environmental impact of healthcare institutions. The group receives annual seed money through the Center for Health Interprofessional Programs (CHIP), and is supported by a faculty mentor from the School of Nursing.

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 practices?

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.

Score explanation: Several students had the opportunity in Summer/Fall of 2022 to volunteer to give feedback on the new curriculum that is being developed for the medical school. Students who joined the Public Health Learning Objectives Feedback Group were able to give feedback in a Google Document on the learning goals for the public health threads of the curriculum, which includes the impact of climate change on human health. This was a temporary position, as it will only exist while the new curriculum is being developed.

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 organize hiking, backpacking, kayaking, or other outings for students)

Score explanation:

Garden: There is an [Interprofessional Student Garden Project](#), where health professional students can help plant and sustain a garden on campus, located adjacent to the medical school and associated hospital. The collective of students are responsible for planting, maintaining, and sustaining the garden.

There are weekly Plants and Chats available for students to be as involved as they want to be with the garden.

Conferences, speaker series, symposia, or similar events: The Humphrey School of Public Affairs, in partnership with the Institute on the Environment, launched “[Advancing Climate Solutions. Now.](#)” in October 2021 and continued in 2022. This Climate Policy Series was developed to engage UMN students in policy and advocacy related to climate change, and has speakers invested in advocating for climate change. Additionally, the UMN Mini Medical School series, [Healthy Planet, Healthy Lives](#), offers several free lectures that explore the impact of planetary health on human health. Also, the [2022 Planetary Health Annual Meeting: Building the Field, Growing the Movement](#) was a transdisciplinary, hybrid event focused on the complexities of planetary health sciences with speakers from many disciplines.

Learning directly from members of a local environmental justice community: The UMN Chapter of White Coats for Black Lives hosted an Environmental Justice Event as part of the Teach-In series where students learn from other students about health justice in a lecture and discussion format. The Environmental Justice teach-in shared videos of local community members advocating for environmental justice, as well as shared opportunities for getting involved with local environmental health initiatives. Of note, this was entirely student-initiated, student-developed, and student-driven. Additionally, a collection of medical students attended the Toxic Tour event hosted by community members in a local environmental justice committee, though UMN was not a formal partner nor a formal sponsor for this event in 2022.

Cultural arts events, installations or performances: To our knowledge, the University of Minnesota has not had any cultural arts events, installations, or performances specifically dedicated to planetary health this year.

Local volunteer opportunities: Opportunities for advocacy regarding the Phillips Neighborhood Urban Farm were shared with medical students by other medical students, through emails from MS4SF, a teach-in through White Coats for Black Lives, and the Get Out the Vote event hosted by medical students, but the institution itself has not coordinated or broadcasted any opportunities.

Wilderness or outdoor programs: CHIP and BeWell co-hosted a Fall Interprofessional Hike in October 2022 where health science students had the opportunity to hike and connect with other students. Additionally, the Wellbeing Committee in the medical school hosts an annual walk/run across campus to invite incoming students to connect with other students while learning how to navigate the campus outdoors.

Section Total (11 out of 15)	73.33%
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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.

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 <u>medical school</u> and/or <u>institution</u> 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:</i> There is an Office of Sustainability at UMN with multiple staff members, but no specific staff member is in charge of medical school sustainability. UMN's major hospital affiliation, M Health Fairview, does have a sustainability team with efforts focused in 7 areas (energy efficiency, environmental preferable purchasing, sustainable facility design, healthy food systems, waste reduction/recycling, water conservation, and employee engagement), but this does not include medical school campus facilities or operations. The University of Minnesota also hired the first systemwide chief sustainability officer in May of 2022 to help lead sustainability efforts across all five campuses as part of the MPact effort. Additionally, the University of Minnesota has a multidisciplinary team of Climate Champions, which includes staff from the medical school, which aims to “connect students with faculty and community members working in health care, sustainability, and climate change.”</p>	

2. How ambitious is your <u>institution/medical school</u> plan to reduce its own carbon footprint?	
5	The institution/medical school has a written and approved plan to achieve carbon neutrality by 2030
3	The institution/medical school has a written and approved plan to achieve carbon neutrality by 2040
1	The institution/medical school has a stated goal of carbon neutrality by 2040 but has not created a plan to reach that goal or the plan is inadequate
0	The institution/medical school does not meet any of the requirements listed above

Score explanation: The University of Minnesota Office of Sustainability states a goal of [becoming carbon neutral by 2050](#) and has specific programs in line with its efforts, such as the [Green Labs Program](#), achieving reducing GHG emission [50% by 2021](#) (one year ahead of schedule), achieving AASHE [gold Sustainability Tracking, Assessment & Rating System \(STARS\)](#) in Twin Cities by 2023 and hiring a systemwide chief [sustainability officer](#) to drive sustainability efforts. Carbon usage across the University is tracked on the [Carbon Dashboard](#). The Twin Cities Campus is currently in the planning and review phases of completing an update to the [2011 Climate Action Plan](#) as part of [MPact 2025](#). This new [Climate Action Plan](#) will be finalized in the summer of 2023 and will include a 10-year action plan, a roadmap identifying clear pathways for implementation, an assessment of risk and vulnerability to climate change, a transparent document detailing challenges, and strategies to eliminate GHG and CO2 from the largest campus sources. The plan utilizes an [interdisciplinary](#) committee of students, faculty, and staff.

Additionally, the Department of Medicine within the University of Minnesota Medical School has a [Climate Health Action Program](#) which clearly states a vision of achieving a carbon-neutral healthcare system by 2040 accompanied by a list of broad goals. However, it is not clear if there is a solidified plan to reach the goal of 2040 for the university's healthcare system.

Of note, the University's major hospital affiliation is with M Health Fairview. With the recommendations from James Hereford and Medical School Dean Jakub Tolar, M Health Fairview established 2021 Work Plans in order to advance efforts of healthy equity, anti-racism, and inclusion. Within this [HOPE](#) Commissions document, the Effect Environmental Justice and Health Equity area noted a commitment to "improve community health through environmental justice including green practices, food programs, transit/carpooling, and land use" by 2025.

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: According to the [Office of Sustainability](#), the University's campus electricity is 28% renewable. The [EPA](#) has ranked the University of Minnesota as #26 in the nation in regards to annual green power usage. The UMN self-reported STARS report indicates several on-site renewable electricity generating sources, including the most recent addition in 2020 of a solar carport on the [S104 lot](#). However, >50% [energy consumption](#) is supplied by purchased gas and steam.

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: New construction and major renovations follow interior design standards that incorporate the [University’s Sustainability Requirements](#) and follow [Minnesota’s B3 guidelines](#). Compliance with B3 requires meeting sustainability goals for site, water, energy, indoor environment, materials, and waste. The University tracks the energy consumption of most buildings on campus on a [public dashboard](#) and the integration of sustainable practices are tracked on the facilities management [strategic progress card](#). In the University of Minnesota Twin Cities [Campus Master Plan](#), they have Development and Re-Development as a goal under their sustainability framework. They note that “The Campus Plan envisions significant reinvestment in existing buildings in the campus cores. However, when campus needs cannot be accommodated through renovation, critical decisions about growth must consider resilience and mitigation, land use impacts, and the capacities of supporting utilities and infrastructure (energy, water, waste, vegetation, etc.)” The UMN highlights many of the updates they have made, including the addition of solar gardens, green roofs, LEED buildings, stormwater retention, and energy plant renovations on the [Sustainability Walking Tour](#). It is unclear what percentage of the campus has been retrofitted, but they have made a concerted effort to retrofit all buildings that have an established pattern of bird-glass collision through their [“Stop the Thud”](#) project.

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-utilized 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: The Medical School is located right next to the electrically powered light rail, which many students take advantage of. All students who pay the Transportation and Safety fee as part of their tuition have unlimited access to the regional transit system in the Twin Cities area through the [Universal Transit Pass](#). The university provides a free shuttle bus service between its three portions of campus (Mpls West Bank, Mpls East Bank, and St. Paul). University Services has a webpage dedicated to [transit](#), with information and links readily available regarding public transportation, bike routes with travel times, and walk routes with pedestrian safety/security resources. The UMN Twin Cities is recognized nationally for bicycle transportation. In addition, the UMN campus is not amenable to cars, as there is almost no free parking on campus. Campus-wide transit utilization, awards, and annual data can be found in this [report](#).

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: The medical school has both an organics and a conventional recycling program in its buildings. In many of the common areas of the medical school buildings, including the main lobbies, main hallways, elevators, and vending machine coves, there are 3-in-1 waste bins with associated images above each section to help guide students/faculty/visitors as to which bin is most appropriate. The UMN also offers a [ReUse Program](#) to collect surplus office supplies and equipment that can be resold or redistributed. This service is accessible to medical students and staff. The University tracks its waste recovery by material on a [dashboard](#). This information includes buildings utilized by the medical school. Facilities at the University also offer assistance in hosting "[Zero Waste Events](#)" through [planning](#), signage, or extra bins.

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: According to the Dean's office, the Medical School does not have any input on campus food and beverage selections or their sustainability. On the campus level, university food services, [M Food Co.](#) is provided through [Chartwells](#). The University has established food systems as one of their sustainability priorities and they work with Chartwells to establish sustainability requirements, goals, and initiatives. These include following the Monterey Bay Aquarium Seafood Watch program guidelines, the Waste Not program to measure the amount of food waste being generated, and Chartwells' [HowGood](#) Partnership which introduces climate labeling in dining halls. Chartwells has a [plant-forward dining initiative](#), but it does not appear to be in effect within the medical school. Note, that this is a challenging criterion given that the medical school does not have specific dining or food options, so they have limited control.

8. Does the medical school or 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: According to the Dean’s office, the Medical School does not have any input on supply procurement or its sustainability criteria. This is done at the campus level. On a campus level, according to the Office of Sustainability, the University applies sustainability criteria to some procurement activities depending on the type of product/service being procured (e.g. yes to construction materials, office supplies; no to specialized research materials). In the Board of Regents [Purchasing Policy](#), they state “purchasing activities shall be conducted in a manner that promotes integrity, stewardship, diversity, and sustainability,” but offers no additional guidelines. The University’s Office of Sustainability, in conjunction with its educational campaign [“It All Adds Up.”](#) assists with the implementation of environmental, social, and economic goals with respect to supplier diversity and sustainability, though the medical school itself does not appear to be involved in such efforts.

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.

Score explanation: According to the Dean’s office, there are no sustainability guidelines for events hosted at the Medical School. Any food, supplies and/or events are all planned at a department level by many different individuals. However, there is an updated Student Council policy in regards to funding events. These guidelines were provided by the Medical School Finance Office and aim to avoid over-ordering food as well as reduce paper plates/napkins/cutlery requests from vendors. The University Zero Waste Services provides a list of [Zero Waste Event Caterers](#) as well as [Zero Waste Purchasing Options](#), but this is not specifically endorsed or required by the medical school.

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.

Score explanation: The Office of Sustainability has been working with the Department of Biochemistry, Molecular Biology, and Biophysics (BMBB) to create a [Green Labs Program](#) that currently includes guidelines for energy efficiency and recycling in lab spaces. Labs can also request Green Labs stickers to encourage energy conservation. According to the Office of Sustainability, their ongoing partnership with the BMBB, specifically [The Bielinsky lab](#), has been productive, and all waste management, energy conservation practices and infrastructure changes are being piloted with the goal of expanding the program to many more labs in the future. However, the medical school has not been heavily involved nor are there any formalized programs or initiatives currently in place. Additionally, the University's recycling department works directly with labs on improving recycling and organics collection. All waste is tracked on the University's waste [dashboard](#).

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	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: According to local news sources, including the [Star Tribune](#) and [MN Daily](#), the University of Minnesota in September of 2021 announced its plans to fully divest from fossil companies in the next five to seven years. There has been no confirmation on this plan or further commitment details from the University of Minnesota since November 8, 2022.

Section Total (16 out of 32)

50.00%

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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.

Although not addressed above, the University of Minnesota, located along the Mississippi River, has been working to improve grounds and water stewardship. This has been achieved through [stormwater management](#), [rain gardens](#) at TCF Stadium, reclaimed water for use at cooling towers, and conversion of more than [40 acres to native prairies](#), wildflowers, or lower requirement turf (achieving [Bee Campus USA](#) in 2020), in addition to other efforts. All water usage is tracked on the [Water Dashboard](#).

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%

Planetary Health Grades for the University of Minnesota School of Medicine

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(33/72) \times 100 = 45.85\%$	C
Interdisciplinary Research (17.5%)	$(8/17) \times 100 = 47.05\%$	C
Community Outreach and Advocacy (17.5%)	$(9/14) \times 100 = 64.29\%$	B-
Support for Student-led Planetary Health Initiatives (17.5%)	$(11/15) \times 100 = 73.33\%$	B
Campus Sustainability (17.5%)	$(16/32) \times 100 = 50.00\%$	C
Institutional Grade	$(A \times 0.3 + B \times 0.175 + C \times 0.175 + D \times 0.175 + E \times 0.175) = 54.82\%$	C

Report Card Trends

Section Overview

This graph demonstrates trends in overall and section grades for the years in which The University of Minnesota has participated in the Planetary Health Report Card initiative. Please note that the University of Minnesota participated in the Planetary Health Report Card 2019-2020 cycle, but due to changing criteria the following year, felt that it did not accurately reflect the sustainability trends of the school. For reference, here are the previous reports: [2021-2022](#), [2020-2021](#), and [2019-2020](#)

