



Planetary Health Report Card (Medicine) 2026: *Northwestern University Feinberg School of Medicine*



2025-2026 Contributing Team:

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Northwestern is a community of learners situated within a network of historical and contemporary relationships with Native American tribes, communities, parents, students, and alumni. It is also in close proximity to an urban Native American community in Chicago and near several tribes in the Midwest. The Northwestern campus sits on the traditional homelands of the people of the Council of Three Fires, the Ojibwe, Potawatomi, and Odawa as well as the Menominee, Miami and Ho-Chunk nations. It was also a site of trade, travel, gathering and healing for more than a dozen other Native tribes and is still home to over 100,000 tribal members in the state of Illinois.

It is within Northwestern's responsibility as an academic institution to disseminate knowledge about Native peoples and the institution's history with them. Consistent with the University's commitment to diversity and inclusion, Northwestern works towards building relationships with Native American communities through academic pursuits, partnerships, historical recognitions, community service and enrollment efforts.

Summary of Findings

Overall Grade	B
Curriculum	A-
<ul style="list-style-type: none"> Strengths: Over the past few years, Northwestern University Feinberg School of Medicine has improved the curriculum significantly. Planetary health, climate change, and the social inequities therein are a significant theme across many lectures, including thorough lectures focused solely on those topics. Students are taught how environmental exposures put patients at-risk, and are taught how to advise them, although it could be more explicitly integrated into their clinical skills development and problem-based learning cases. These lectures are also primarily given according to the organ module, so while the pulmonary module was dense, renal hardly addresses these topics. Other modules may discuss these themes, but they are not explicit learning objectives, and so are included according to lecturer preference. Lastly, multiple lectures on AI have been included as well, but they fail to even briefly mention the climate impacts of AI, which is a serious blindspot. Recommendations: Feinberg should modify learning objectives to specifically include planetary health topics, so that a change in lecturer will not omit the content. This could be accomplished by having a faculty member whose role is designing a planetary health curriculum, a role currently missing. This would help catch important blindspots, such as the lack of information on the environmental impacts of AI or clinical skills sessions on how to implement sustainable medical practices. 	
Interdisciplinary Research	A-
<ul style="list-style-type: none"> Strengths: Northwestern University's Institute for Sustainability & Energy is an excellent hub for interdisciplinary research and education on environmental health with an accessible and open platform, conducive to collaboration. Recommendations: There are opportunities to promote interdisciplinary research collaboration between Paula M. Trienens Institute for Sustainability and Energy (formerly the Institute for Sustainability and Energy (ISEN)) and the Feinberg School of Medicine on planetary and environmental health topics. Many medical students are interested in climate health/sustainability research and it would be helpful for them to find mentors and available projects through a consolidated list of faculty engaged in this area of research. 	
Community Outreach and Advocacy	C
<ul style="list-style-type: none"> Strengths: Northwestern University in Evanston has a solid backbone of community outreach, with multiple civic partnerships and solid community outreach. However, the Feinberg School of Medicine is much less involved in outreach efforts, with only limited dissemination of information to students and few substantive collaborations with community groups. Northwestern Medicine has a thorough encyclopedia of common medical conditions for patients, including detailed information on how environmental exposures may affect their health. However, this resource is difficult to find and is not routinely advertised to patients. Recommendations: Feinberg should work to integrate the medical school into the partnerships that the greater University has forged, particularly those with the city of Chicago. Medical students should be regularly informed about these partnerships and opportunities for engagement. Lastly, Feinberg needs to implement CME courses on sustainable healthcare practices, which is currently a huge blind spot. 	
Support for Student-Led Initiatives	B-
<ul style="list-style-type: none"> Strengths: Feinberg does have a student-led Climate Action Group that aims to promote sustainability practices and education, which is funded by the student Senate. Research opportunities in global health and sustainability are available to students, including grant funding through the Trienens Institute for Sustainability and Energy. However, these are predominately concentrated outside of the medical school on 	

the Evanston campus, making it difficult for medical students to participate in.

- **Recommendations:** Feinberg could benefit from making medical students more aware of the funding opportunities provided by the Trienens Institute, as well as making students aware of mentors doing planetary health research on the medical campus. This could be accomplished relatively easily by creating a planetary health website under the Feinberg domain.

Campus Sustainability

C

- **Strengths:** Northwestern University is on track to complete its goal of achieving net zero emissions by 2050. Sustainable practice guidelines are in place for new construction projects on the medical school campus and many of the buildings have been retrofitted to be more sustainable. There are many environmentally-friendly transportation resources for students in the form of a U-Pass for public transit, bike racks and repair stations, and EV charging stations.
- **Recommendations:** While goals and plans are already in place, there is still much to improve on in terms of campus sustainability. We recommend focusing on 1) encouraging enrollment in the Green Lab Certification Program as there are over 600 labs at the university and only 14 labs have received the certification, 2) improve and require sustainable guidelines for events and procurement, 3) divest in fossil fuel companies and increase transparency about the university's endowment, 4) increase renewable energy utilization, and 5) add compost options on the medical school campus.

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 analysing 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. 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 health professional school’s 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 health professional training. It is imperative that we hold our institutions accountable for educating health professional 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 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 health professional schools, we have created a Planetary Health Report Card that students internationally can use to grade and compare their institutions on an annual basis. This student-driven initiative aims to compare health professional 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) 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 health professional 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 minimises 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/Department vs. Institution:** When “Medical school” is specified in the report card, this only refers to curriculum and resources offered by the School/department 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 including all of its campuses. 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 (Curriculum Section):** This is a series of questions students 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 mould 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. Please be as specific as possible when providing evidence for this metric.
- **Elective:** The word "elective" refers to an optional course or lecture series that a 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.
- **Core Curriculum:** This refers to the taught material that is delivered to the entire cohort of students in one year.
- **Clerkship / Outreach:** 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, outreach or placements. This is a relatively short (approximately 4-8 weeks) period of study and patient-centred clinical experience that takes place as part of the undergraduate programme.
- **Clinical rotation:** This is a term used to refer to placements that students go on (e.g., ophthalmology, surgery, cardiology).
- **Physiotherapy vs Physical Therapy:** For the purposes of this report card these terms are considered interchangeable. However, physiotherapy will be used primarily.
- **Community organisations:** For most institutions, there are existing groups that are not directly affiliated with the university and exist as a product of what the community the institution exists in cares about or needs. These specific community organisations relevant to this report include those that are focused around some aspect of climate and health preservation. These community organisations can include but are not limited to local mutual aid initiatives, underserved-resource distribution groups, clean-up and nature conservation groups, community gardeners, and other environmental-related organisations. If your institution does not have access to local volunteerships with community groups, please report any community organisations your institution or school has collaborated with.
- **Climate justice:** The idea that certain population groups and geographical locations which are disproportionately more impacted by climate change are already economically and socially disadvantaged. This double vulnerability sits alongside pre-existing social justice concerns and should therefore shift policy and practice to mitigate the inequitable effects of the climate crisis.
- **Extractivism:** The removal of natural resources typically in large quantities. Within anthropology this term is often used in the context of colonialism to refer to the

historic seizing of natural resources, a practice which has developed business models tied to ecological degradation and loss of biodiversity.

- **Global South:** Nations that often have less economic and industrial development and are typically in the southern hemisphere. These nations have been found to be disproportionately impacted by the climate crisis.
- **Low socioeconomic status (SES):** An individual or geographical area that across a variety of socioeconomic factors (e.g., income, education, race/ethnicity) is considered vulnerable. This vulnerability has been correlated to more adverse health outcomes often as a consequence of encountering more barriers in accessing and receiving healthcare.
- **Low and Middle-Income Countries (LMIC):** Countries that have lower degrees of economic affluence.
- **Anthropogenic:** Created through human activity
- **Marginalized communities:** Groups excluded from mainstream economic, educational, social, and/or cultural experiences due to race, gender identity, sexual orientation, age, physical ability, language, and/or immigration status (Sevelius et al., 2020).

Scoring Matrix

- Elective coursework (1 point): This score applies to material that is actively selected by the students such as a module choice, or additional lecture series. By implication, only a given proportion of the cohort will receive this taught material.
- Brief coverage in the core curriculum (2 points): This score applies where a topic is covered only briefly in a core curriculum session. This implies that the entire cohort receives the same material. At minimum brief inclusion would qualify as inclusion in a single lecture slide in a single year.
- In depth coverage in the core curriculum (3 points): This score applies where a topic is taught in significant detail or where a topic is repeatedly brought up in different years. This might look like several dedicated lecture slides, or inclusion of the same topic in different lectures and teaching formats.

Other considerations:

- If there are more than one “tracks” at your institution 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). Where possible please indicate the proportion of students that are on each track.

Updated in 2025, a complete literature review by metric is available for the 2024/25 Medicine Report Card Template. This largely translates across disciplines although we are hoping to expand this process across all of our covered disciplines. A link to the 2025 literature review by metric is available [here](#).

Planetary Health Curriculum

Section Overview: *This section evaluates the integration of relevant planetary health topics into the medical school curriculum. Today's health professional students will be on the frontlines of tackling the health effects of climate and other environmental changes. Therefore, it is critical that 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

1.1. 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?	
Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year. (3 points)	
Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year. (2 points)	
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. (1 point)	
No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year. (0 points)	
Score Assigned:	2
<p>Score explanation: <i>Feinberg students are required to take a Medical Arts and Humanities Seminar their M1 and M2 year. Of the options, there is a seminar called “Climate Change and Sustainability Healthcare” which “provides medical students with foundational knowledge of the complex interplay between climate change, health, and healthcare systems, emphasizing the critical role of environmental sustainability in medical practice.”</i></p> <p><i>Additionally, there is a 2 week elective course offered to M4s, “Intro to Disaster Preparedness, Response, and Management.” Within this course, there is a lecture entitled “Climate Related Disasters and Health Impacts.” This lecture was also streamed and available for all FSM students interested.</i></p>	

Curriculum: Health Effects of Climate Change

1.2. Does your <u>medical school</u> curriculum address the relationship between extreme heat, health risks, and climate change?	
This topic was explored in depth by the core curriculum. (3 points)	
This topic was briefly covered in the core curriculum. (2 points)	

This topic was covered in elective coursework. (1 point)	
This topic was not covered. (0 points)	
Score Assigned:	3
<p>Score explanation: <i>The lecture “Planetary Health” discusses environmental racism and how marginalized communities are disproportionately affected by climate change.</i></p> <p><i>In the lecture “Race, Climate Change and Lung Health,” climate change and warming temperatures are related to increased flooding and wildfires. Several slides describe how these extreme weather events are connected to individual health conditions such as asthma, allergies, respiratory infections, and respiratory disease exacerbations.</i></p> <p><i>In the lecture “Global Environmental Health Policy,” the health outcomes of climate change and the resulting exacerbation of health disparities in the US and globally are discussed.</i></p> <p><i>In a problem-based learning (PBL) case (Quackenbush), students are prompted to explore measures of urban greenness and their relationship to Hypertensive Disorders of Pregnancy.</i></p> <p><i>In the lecture on “Climate Change and Women’s Health,” the impact of environmental changes on pregnancy outcomes and neonatal health are discussed.</i></p>	

1.3. Does your <u>medical school</u> curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?	
This topic was explored in depth by the core curriculum. (3 points)	
This topic was briefly covered in the core curriculum. (2 points)	
This topic was covered in elective coursework. (1 point)	
This topic was not covered. (0 points)	
Score Assigned:	3
<p>Score explanation: <i>The lecture “Race, Climate Change, and Lung Health” focused on the effects of environmental pollutants and irritants on the exacerbation of lung disease. The lecture included detail on how global warming-induced increases in catastrophic weather and allergens are dangerous to those with lung disease, and how these events disproportionately affect minorities.</i></p> <p><i>“Global Environmental Health Policy”:</i> <i>This lecture addressed how severe weather events affect human health, as well as the epidemiology impacts of large-scale migration and displacement caused by climate change.</i></p>	

1.4. Does your <u>medical school</u> curriculum address the impact of climate change on the changing patterns of infectious diseases?	
This topic was explored in depth by the core curriculum. (3 points)	

This topic was briefly covered in the core curriculum. (2 points)	
This topic was covered in elective coursework. (1 point)	
This topic was not covered. (0 points)	
Score Assigned:	3
<p>Score explanation: <i>The lecture “Global Environmental Health Policy” discusses how climate change is expanding the tick habitat and thereby increasing the prevalence of tick-borne disease.</i></p> <p><i>The lecture “CNS Infections,” the following is mentioned in one slide: “CFP [Ciguatera Fish Poisoning] is increasing worldwide. Growth, distribution and abundance of CFP-associated dinoflagellates are largely temperature driven and are shifting in response to climate induced changes as ocean temperatures rise.”</i></p> <p><i>The lecture “Climate Change and Women’s Health,” has the following learning objective: “To understand how climate change leads to a variety of ‘exposure pathways’ which ultimately impact physical health.” The presentation goes over changes in the geographic distribution of different infectious disease vectors and connects this to women’s health and fetal health.</i></p> <p><i>The lecture “HIV and Emerging Viruses” cites a 3–fold increase in the burden of Ades-transmitted viral diseases (Dengue) over the past 50 years with the spread of the main mosquito vectors due to warming temperatures globally, as well as increased globalization and urbanization.</i></p> <p><i>The lecture “Intro to Global Health” discusses climate change and the changing patterns of mosquito-borne illnesses such as Chikungunya and Dengue.</i></p>	

1.5. Does your <u>medical school</u> curriculum address the respiratory health effects of climate change and air pollution?	
This topic was explored in depth by the core curriculum. (3 points)	
This topic was briefly covered in the core curriculum. (2 points)	
This topic was covered in elective coursework. (1 point)	
This topic was not covered. (0 points)	
Score Assigned:	3
<p>Score explanation: <i>The lecture “Race, Climate Change, and Lung Health” focused on the effects of environmental pollutants and irritants on the exacerbation of lung disease. The lecture went in-depth on the detrimental effects of increased P2.5 particles and ozone produced as a result of human activity. Attention was focused on less obvious impacts, such as the increased duration and intensity of pollen seasons. As mentioned in section 1.3, the lecture also focused on the effects of climate change-induced disasters. Importantly, the lecture connected these concepts to chronic lung disease by referencing multiple studies and placing them in clinical context, as well as providing suggestions for what practitioners and medical students can do to advocate for greener practices/policy.</i></p>	

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

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

2

Score explanation: *The lecture “Global Cardiovascular Health and Disease” briefly mentioned how the food supply chain puts a major burden on Earth’s resources and is a driver of climate change, biodiversity loss, pollution, and water depletion.*

As part of the lecture “Climate Change and Women’s Health,” the effects of extreme heat on women’s cardiovascular health and fetal cardiovascular health were presented in a few brief slides.

In a problem-based learning session, students were also prompted to investigate the following questions: “Are there associations between low urban greenness and hypertensive disorders in pregnancy?” and “What tools exist to assess urban greenness?”

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

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

2

Score explanation: *“Climate Change and Women’s Health”: This lecture featured a brief discussion of the impacts of climate change on mental health, specifically focusing on its impact on women and pregnant persons. Specifically there is a focus on how extreme weather and natural disasters related to climate change can lead to higher rates of sexual assault, traumatic experiences, and stress, which can have negative effects on mental health and neuropsychological outcomes. Hurricane Maria is used as an example.*

The lecture “Race, Climate Change, and Lung Health” briefly mentioned that natural disasters due to climate change negatively impact mental health. However, this was only as part of a graphic detailing the many effects of disasters. It was not a topic focus nor testable content.

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

This topic was explored in depth by the core curriculum. (3 points)	
This topic was briefly covered in the core curriculum. (2 points)	
This topic was covered in elective coursework. (1 point)	
This topic was not covered. (0 points)	
Score Assigned:	3
<p>Score explanation: <i>As part of the lecture “Global Environmental Health Policy” in the M1 Core Curriculum, climate change and ecosystem health are connected to food and water system quality and thereby to individual health outcomes. That said, this concept was not explicitly emphasized and only appeared in slides modelling the complex interplay of environment, social, and individual factors in environmental health. It is not integrated into testable learning objectives for this lecture.</i></p> <p><i>In the lecture “Climate Change and Women’s Health,” there is brief discussion of the impacts of climate change on both water scarcity and food insecurity and how that can lead to poor health outcomes that disproportionately impact women in many countries. This content is part of the testable learning objective: “To understand how climate change leads to a variety of “exposure pathways” which ultimately impact physical health.”</i></p> <p><i>The lecture “Global Cardiovascular Health and Disease” focused on factors influencing Cardiovascular Health, as encapsulated by the learning objective: “Recognize both fundamental and actionable causes of the global CVD burden”. A particular focus was placed on adverse diet. The lecture briefly mentioned how the food supply chain puts a major burden on Earth’s resources and is a driver of climate change, but attention was not paid to how climate change threatens the food supply and could worsen cardiovascular disease.</i></p>	

1.9. Does your <u>medical school</u> curriculum address the outsized impact of climate change on marginalised populations such as those with low SES, women, communities of colour, Indigenous communities, children, homeless populations, and older adults?	
This topic was explored in depth by the core curriculum. (3 points)	
This topic was briefly covered in the core curriculum. (2 points)	
This topic was covered in elective coursework. (1 point)	
This topic was not covered. (0 points)	
Score Assigned:	3
<p>Score explanation: <i>In the M2 Core Curriculum, there is a lecture, titled “Climate Change and Women’s Health” that includes the following testable learning objective: “To understand why women are more susceptible to the impact of climate change on their health.” It includes many examples of how women are disproportionately impacted by the health effects of climate change through a variety of mechanisms.</i></p> <p><i>Additionally, in the M1 Core Curriculum, the lectures “Race, Climate Change, and Lung Health,” “Place Matters: Built and Social Environment and CV Health,” and the Pulmonary Module</i></p>	

Plenary Session all briefly discuss how environmental changes can disproportionately affect marginalized communities such as communities of color.

In the M1 lecture “Global Environmental Health Policy” there are the following testable learning objectives: “Describe how climate change is exacerbating existing health disparities in the US and globally.” It includes a graphic that highlights the following populations as particularly vulnerable to the effects of climate change: communities of color, older adults, children, and low-income.

1.10. Does your medical school curriculum address the unequal regional health impacts of climate change globally?

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

3

Score explanation: The lecture “Global Environmental Health Policy”, which is a part of the M1 Core Curriculum, has the following testable learning objective: “Describe how climate change is exacerbating existing health disparities in the US and globally.” In the learning guide it is noted that : “These types of impacts [from climate change] are felt globally and are most severe in poor countries that cannot afford the costs of adaptation.” This is supported by graphs, maps, and data presented within the slides of this lecture.

Additionally, throughout the lecture “Core Concepts in Global Health,” it was stated that air pollution is a leading risk factor for early death and disability worldwide, but with an emphasis on unequal susceptibility regionally.

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

1.11. Does your medical school curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides, microplastics)?

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

3

Score explanation: In the M2 Core Curriculum, as part of the ReproGU module, there is lecture titled “Climate Change and Women’s Health,” that includes the following testable learning objective: “To understand how climate change leads to a variety of exposure pathways which ultimately impact physical health.” This was achieved with an overview on the increasing

incidence of extreme weather events, exposure pathways (e.g. vector ecology, heat, population displacement, air and water pollution), and negative health outcomes related to greenhouse gas emissions. Notably, the disproportionate impact these changes have on vulnerable groups, including women, was discussed as a function both of increased exposure and decreased ability to cope with and recover from damages. Several slides covered the unique impacts of heat, air quality, water quality, vector ecology, and food security on women's health and how climate change drives or influences them each.

In the M1 Core Curriculum, the learning guide for the lecture "Global Environmental Health Policy" includes the following statement: "coal externalities include health impacts on the lungs, brain, heart, and reproductive systems in humans."

Though the connection was not explicitly made, in the lecture "Core Concepts in Global Health," global variabilities in maternal mortality rates were discussed followed by an introduction to planetary health with a summary stating air pollution as a leading risk of early death and disability.

1.12. Does your medical school curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

3

Score explanation: *The local disparities in health outcomes across Chicago is frequently discussed throughout the curriculum. During the Intro to the Profession week prior to starting school, students received a tour of Bronzeville from Chicago Historian, Dilla, where lack of greenspace was discussed. Also, during several clinical skills lectures and small group sessions, the built environment and greenspace is emphasized as an important social determinant of health.*

During the Pulmonary Module Plenary, the lecture notes included: "Chicago is listed as one of the worst places for ozone and particle pollution, which disproportionately impacts low-income communities and communities of color" and "Chicago is home to many glaring examples of environmental racism, the most egregious of which is the probably the area around the Altgeld Gardens on the city's south side which is surrounded by the largest concentration of hazardous waste sites in the country, and not surprisingly afflicted with high rates of cancer and respiratory problems like asthma."

The lecture "Planetary Health" focuses on environmental racism and racial capitalism stating: "Marginalized communities are disproportionately affected by ecologically harmful infrastructures."

1.13. To what extent does your medical school emphasise the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

2

Score explanation: *Within the “Planetary Health” lecture it is stated that “The recognition and remediation of intersecting social inequalities” is required to address environmental injustices, including Native people. The talk emphasizes the restoration of power to marginalized groups as the solution to climate change preparedness, mitigation, and adaptations.*

As part of the medical humanities seminars, students have the option to take a class titled: “Native Health + Healthcare in a Settler Society.” In this seminar, students are taught how historical practices have polluted native land and have led to health disparities (for example, students watch the video “How the US poisoned Navajo Nation,” which explains how the mining industry caused radioactive pollution of native lands and the effect this had on the Navajo in Church Rock, NM). The elective explores how governmental practices like creating dams and diverting water uniquely disrupted native land in certain nations and how this led to tribal dependence on sugary, unhealthy government-supplied food, leading to high rates of diabetes.

1.14. 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?

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

3

Score explanation: *In the MI Curriculum, during the Pulmonary Module Plenary, there is a slide that specifically focuses on environmental racism and lung health. In the notes of this slide, it reads: “And Chicago is home to many glaring examples of environmental racism, the most egregious of which is probably the area around the Altgeld Gardens on the city’s south side which is surrounded by the largest concentration of hazardous waste sites in the country, and not surprisingly afflicted with high rates of cancer and respiratory problems like asthma.”*

Furthermore, in a problem-based learning session (Quackenbus), students were also prompted to investigate the following questions: “Are there associations between low urban greenness and hypertensive disorders in pregnancy? What tools exist to assess urban greenness?”. This is in the context of a patient presentation living in the Pilsen community of Chicago, a neighborhood in the Lower West Side of Chicago with little green space and a large immigrant population.

The lecture “Planetary Health” focuses on environmental racism and racial capitalism stating: “Marginalized communities are disproportionately affected by ecologically harmful

infrastructures.” The talk emphasises the lack of power held by marginalized groups as contributing to the progression of climate change and the development of environmental racism.

Curriculum: Sustainability

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

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 point)

Score Assigned:

2

Score explanation: *In the following MI Core Curriculum lectures: “Dietary Guidance to Prevent and Treat Cardiometabolic Disease Over the Life Course” and “Diet and Nutrition” it presents evidence supporting the cardiovascular health benefits of plant based diets. Furthermore, throughout the Lifestyle Medicine component of the curriculum, plant-based diets are frequently mentioned. However, these lectures do not explicitly address the environmental impact of a plant-based diet.*

In the MI Core Curriculum lecture: “Global Cardiovascular Health and Disease”, CVH was related to planetary health, citing that much of the world’s population fails to be provided nutritious food and current agricultural and farming practices are “a major driver of land use change, biodiversity loss, freshwater depletion, air & water pollution, and climate change”.

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

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

3

Score explanation: *In the MI Core Curriculum, the lecture “Global Environmental Health Policy” presents several detailed slides providing evidence of the contribution of healthcare systems to the global climate crisis.*

Also in the MI Core curriculum, the lecture “Race, Climate Change, and Lung Health” went into detail about the massive carbon footprint of the US healthcare system. Data was provided on the environmental impact of different types of inhalers, inhaled anesthetics used in the OR, and the positive impact as a result of the shift to virtual interviewing. Below are the recommendations given in the learning guide:

- a. Change from “HFA” to “dry powder inhaler”
- b. Decrease use of desflurane and other inhalational gases in operating rooms
- c. Decrease single-use items (e.g. speculums, isolation gowns, scissors, crutches)
- d. Use local food sources for hospital meals
- e. Utilize virtual interviews and lectures when feasible

In the M2 Core Curriculum, the lecture “Climate Change and Women’s Health” provides a brief discussion of the large contribution of the health care sector to the global climate footprint.

1.17. Does your <u>medical school</u> curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each)	Score
The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment (2 points)	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 fulfil this metric. (2 points) .	2
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 point)	1
Environmental impact of surgical healthcare on planetary health and the climate crisis, and how can it be mitigated. (1 point)	0
The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anaesthesia's environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions. (1 point)	1
The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers. (1 point)	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) (1 point)	1

Score explanation: *In the M1 Core Curriculum, the lecture “Global Environmental Health Policy ” identifies the healthcare sector as a major contributor to global waste production and greenhouse gas emissions. It further provides examples of how investing in energy-saving interventions in hospitals (such as installing high-efficiency electric motors and fume hoods or applying solar films on windows) can not only reduce waste, but also provide significant financial savings that are in health systems best interest. Finally it provides examples of medical professional associations’ (such as the AMA , WMA, and AAP’s) commitments and actions to reduce healthcare waste and address sustainability.*

The lecture “Race, Climate Change, and Lung Health” went into detail about the massive carbon footprint of the US healthcare system. Data was provided on the environmental impact of different types of inhalers, inhaled anesthetics used in the OR, and single use items. The associated learning guide made several recommendations for students to consider these impacts when making decisions as a physician.

Also, throughout the curriculum, quaternary prevention is emphasized wherever possible such as in the clinical medicine lectures, the lecture “Lung Cancer Screening,” and it is a learning point in many problem-based learning cases.

Curriculum: Clinical Applications

1.18. 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?

Yes, there are strategies introduced for having conversations with patients about climate change in the **core** curriculum. (2 points)

Yes, there are strategies introduced for having conversations with patients about climate change in **elective** coursework. (1 point)

No, there are **not** strategies introduced for having conversations with patients about climate change. (0 points)

Score Assigned:

0

Score explanation: *There are no known lectures within the Feinberg curriculum that explicitly address this topic/skill.*

1.19. In training for patient encounters, does your medical school’s curriculum introduce strategies for taking an environmental history or exposure history?

Yes, the **core** curriculum includes strategies for taking an environmental history. (2 points)

Only **elective** coursework includes strategies for taking an environmental history. (1 point)

No, the curriculum does **not** include strategies for taking an environmental history. (0 points)

Score Assigned:

2

Score explanation: *There is a heavy emphasis on the importance of obtaining a complete environmental and exposure history from a patient, including, travel history, occupational history, and housing. This is mentioned in many lectures, such as the Pulmonary Module’s Occupational Disorders, but it is also taught during the foundational clinical skills lectures and small group sessions.*

Curriculum: Administrative Support for Planetary Health

1.20. Is your medical school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?

Yes, the medical school is currently in the process of making **major** improvements to ESH/planetary health education. (4 points)

Yes, the medical school is currently in the process of making minor improvements to ESH/planetary health education. (2 points)	
No, there are no improvements to planetary health education in progress. (0 points)	
Score Assigned:	2
<i>Score explanation: There is a Curriculum Development team that meets regularly and has invited student groups engaged with environmental health to review the curriculum and make recommendations. The feedback given by students often translates into direct changes within the curriculum. For example, the “Planetary Health” lecture is a new addition to the curriculum based on the recommendation from students.</i>	

1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> curriculum?	
Planetary health/ESH topics are well integrated into the core medical school curriculum. (6 points)	
Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum. (4 points)	
Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s) . (2 points)	
There is minimal/no education for sustainable healthcare. (0 points)	
Score Assigned:	4
<i>Score explanation: The majority of the planetary/environmental health topics addressed in the curriculum at Feinberg are integrated into its organ-based modules. For example, the lecture on “Race, Climate Change, and Lung Health” is incorporated into the pulmonary unit and builds upon the other material within the “Health Equity and Advocacy” component of the curriculum. While there are some opportunities for elective learning in later years, full marks were not given as the majority of the planetary health lectures within the curriculum are very concentrated within the first year of the curriculum. There is a steep fall in known planetary health content in years 2, 3, and 4 during clinical rotations.</i>	

1.22. 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?	
Yes, the medical school has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (1 point)	
No, the medical school does not have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (0 points)	
Score Assigned:	0

Score explanation: *Feinberg does not employ a dedicated faculty member to oversee the curricular integration of planetary health and sustainable healthcare.*

1.23. Does your health professional curriculum include teaching on civic engagement/advocacy to address the environmental and structural determinants of health?

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

3

New metric for 2025/26 PHRC. This metric highlights the role of healthcare professionals as advocates for their patients beyond just clinical care. As trusted voices, health professionals have significant influence on policy and public perceptions of the environmental and social determinants of health. Public policy profoundly impacts our health across areas of housing, food, access to healthcare and indirectly through climate and environmental policies. In many healthcare systems internationally advocacy by healthcare professionals is increasingly viewed as an ethical imperative and professional duty.

To learn more about this topic and the importance for healthcare professionals please review the following resources:

- [Why and How Civic Health Should Be Incorporated Into Medical Education](#). Barrere-Cain et al., 2022. *Academic Medicine*.
- [Civic Engagement: A Vital Sign of Health and Democracy](#). Philip M. Alerbti. AAMC.

For practical guidance on incorporating this into your health professional curriculum:

- CRHE Module: [Interaction between health care systems, government policy, and environmental advocacy](#).
- Medical Schools Council (UK), [Education for Sustainable Healthcare. A curriculum for the UK](#). Page 21. *Professionalism, leadership and achieving structural change*.

Score explanation: *Students are required to complete a Community Health Advocacy Initiative (CHAI) project at their Education-Centered Medical Home (ECMH) during their M1 and M2 years. For a CHAI project, students identify a need in their ECMH's patient population and partner with a local community organization to service that need. Although the need addressed does not have to be an environmental or structural determinant of health, because many ECHMs are at federally qualified health centers and serve underprivileged populations, this is often the case.*

Section Total (62 out of 75)

82.67%

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Interdisciplinary Research

Section Overview: This section evaluates the quality and quantity of interdisciplinary planetary health research at the 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, institutions 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.

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <u>institution</u>?	
Yes, there are faculty members at the institution who have a primary research focus in planetary health or sustainable healthcare/vetcare. (3 points)	
Yes, there are individual faculty members at the institution who are conducting research related to planetary health or healthcare sustainability, OR are part of a national/international sustainability working group, but it is not their primary research focus. (2 points)	
There are sustainability researchers at the institution , but not specifically associated with healthcare/vetcare. (1 point)	
No, there are no planetary health and/or sustainability researchers at the institution at this time. (0 points)	
Score Assigned:	2
Score explanation: <i>There are a number of researchers associated with the medical school that do work on climate change and its effects on health. However, it does not seem to be their primary focus. For example, sustainability research in the field of pediatric surgery has focused on optimization of pediatric surgical kits as well as HVAC exchange rates in the OR.</i>	

2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at your <u>institution</u>?	
There is at least one dedicated department or institute for interdisciplinary planetary health research. (3 points)	
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. (2 points)	
There is an Occupational and Environmental Health department , but no interdisciplinary department or institute for planetary health research. (1 point)	
There is no dedicated department or institute. (0 points)	

Score Assigned:	3
<p>Score explanation: Northwestern University has the Paula M. Trienens Institute for Sustainability and Energy (formerly the Institute for Sustainability and Energy (ISEN)) that seeks to engage in interdisciplinary research on sustainability issues. They offer research programs, courses, fellowships, certifications, a masters program, and study abroad opportunities.</p>	

<p>2.3. 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 institution?</p>	
<p>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. (3 points)</p>	
<p>Yes, there is a process in which community members impacted by climate and environmental injustice advise the climate + environmental research agenda. (2 points)</p>	
<p>No, but there are current efforts to establish a process for community members to advise or make decisions on the research agenda. (1 point)</p>	
<p>There is no process, and no efforts to create such a process. (0 points)</p>	
Score Assigned:	3
<p>Score explanation: The Institute for Public Health and Medicine (IPHAM)'s ARCC (Alliance for Research In Chicagoland Communities) actively collaborates with communities impacted by climate change and environmental injustice.</p> <p><i>“Established in 2008, the Alliance for Research in Chicagoland Communities (ARCC) supports authentic community-academic research partnerships between Chicagoland communities and Northwestern University that benefit the people being researched and improve health and equity. ARCC advocates for a collaborative approach to research that honors, is driven by, and shares power with communities, as local, cultural, and lived experience experts...A primary focus of ARCC’s community engagement is Black, Indigenous, People of Color and other marginalized communities most experiencing health inequities in Chicagoland.”</i></p>	

<p>2.4. Does your institution have a planetary health website that centralises ongoing and past research related to health and the environment?</p>	
<p>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. (3 points)</p>	
<p>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. (2 points)</p>	
<p>The institution has an Office of Sustainability website that includes some resources related to health and the environment. (1 point)</p>	

There is no website. (0 points)	
Score Assigned:	3
<i>Score explanation: Northwestern University has a website for the Paula M. Trienens Institute for Sustainability and Energy which compiles sustainability-related news, research, and educational opportunities at the institution.</i>	

2.5. Has your <u>institution</u> recently hosted a conference or symposium on topics related to planetary health?	
Yes, the institution has hosted at least one conference or symposium on topics related to planetary health in the past year. (4 points)	
Yes, the institution has hosted at least one conference or symposium on topics related to sustainable healthcare/vetcare in the past year. (3 points)	
Yes, the institution has hosted a conference on topics related to planetary health / sustainable healthcare/vetcare in the past three years. (2 points)	
The institution has not hosted any conferences directly, but they have provided financial support for a local planetary health event. (1 point)	
No, the institution has not hosted a conference on topics related to planetary health in the past three years. (0 points)	
Score Assigned:	2
<i>Score explanation: In February of 2024, the Northwestern Northwestern University School of Professional Studies (SPS) Thought Leadership Series featured the webinar “Planetary Health: Environmental Challenges and Global Health Solutions.” Although not a full-fledged conference, the webinar focused on grand health and ecological challenges and how to contribute to improving our and our planet’s health.</i>	
<i>Additionally, although not directly healthcare related, the Kellogg School of Management has been hosting an annual Climate Conference since 2023, focusing primarily on sustainability, energy, and the climate economy.</i>	

2.6. Is your <u>institution</u> a member of a national or international planetary health or ESH/ESV organisation?	
Yes, the institution is a member of a national or international planetary health or ESH/ESV organisation. (1 point)	
No, the institution is not a member of such an organisation. (0 points)	
Score Assigned:	1

Score explanation: *The Feinberg School of Medicine is part of the Global Consortium on Climate and Health Education.*

Section Total (14 out of 17)

82.35%

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Community Outreach and Advocacy

Section Overview: This section evaluates a school's 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.

3.1. Does your <u>institution</u> partner with community organisations to promote planetary and environmental health?	
Yes, the institution meaningfully partners with multiple community organisations to promote planetary and environmental health. (3 points)	
Yes, the institution meaningfully partners with one community organisation to promote planetary and environmental health. (2 points)	
The institution does not partner with community organisations, but participates in community focused events relating to planetary health. (1 point)	
No, there is no such meaningful community partnership. (0 points)	
Score Assigned:	3
<p>Score explanation: The Feinberg School of Medicine has no planetary or environmental health partnerships with community organizations. However, Northwestern University as an institution does. SustainNU has partnerships with the US Department of Energy, Association for the Advancement of Sustainability in Higher Education, the City of Chicago, the City of Evanston, the Chicagoland Network for Sustainability in Higher Education, and the Active Transportation Alliance. Additionally, students can work with community organizations through student groups such as Wild Roots, a community garden, and the local branch of Engineers for a Sustainable World. The one tangentially related partnership the medical school has is with Culinary Medicine: Cooking Up Health where students and community members learn about nutrition and how to prepare healthy meals, often plant-based and locally sourced.</p>	

3.2. Does your <u>institution</u> offer community-facing courses or events regarding planetary health?	
The institution offers community-facing courses or events at least once every year. (3 points)	
The institution offers courses or events open to the community at least once per year, but they are not primarily created for a community audience. (2 points)	
The institution has promoted community-facing courses or events, but was not involved in planning those courses or events. (1 point)	

The institution has not offered such community-facing courses or events. (0 points)	
Score Assigned:	3
<p>Score explanation: <i>Annually the institution hosts an Earth Month open to the community with events such as “Practical Steps to Wasting Less, Recycling Right, and Living Sustainably” and museum tours teaching about the Indigenous peoples of what is now Chicago. While the medical school is not directly involved, many events are hosted on the medical school campus.</i></p> <p><i>Additionally, the business school hosts an annual Kellogg Climate Conference the most recent theme of which was “Accelerating present solutions and discovering future opportunities for a sustainable climate.”</i></p>	

3.3. Does your <u>institution</u> have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
Yes, all students regularly receive communication updates dedicated to planetary health and/or sustainable healthcare. (2 points)	
Yes, planetary health and/or sustainable healthcare topics are regularly included in communication updates to some courses . (1 point)	
Students do not receive communications about planetary health or sustainable healthcare. (0 points)	
Score Assigned:	1
<p>Score explanation: <i>Medical students do not receive any communications directly from sustainNU or communication dedicated specifically to planetary health or sustainable healthcare. However, planetary health and sustainable healthcare topics and updates as it relates to the institution are often included in the university newsletter, magazine, blog, and the student run newspaper.</i></p>	

3.4. Does the <u>institution</u> or <u>main affiliated hospital trust</u> 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?	
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. (2 points)	
Yes, the institution or main affiliated hospital trust offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers. (1 point)	
There are no such accessible courses for post-graduate providers. (0 points)	
Score Assigned:	0

Score explanation: No CME courses on planetary or sustainable healthcare topics are currently offered.

3.5. Does your institution or its affiliated teaching hospitals have accessible educational materials for patients about environmental health exposures?

Yes, the **institution** or **all affiliated hospitals** have accessible educational materials for patients. (2 points)

Some affiliated hospitals have accessible educational materials for patients. (1 point)

No affiliated medical centres have accessible educational materials for patients. (0 points)

Score Assigned:

2

Score explanation: Northwestern Medicine has many resources for patients about various environmental exposures. There are articles about [lawn fertilizers](#), [household chemical safety](#) and [poisonings](#), as well as a dedicated [program](#) to occupational exposures and Black Lung Disease with links to educational material. Lurie Children's Hospital has similar information as well as a [Lead Evaluation Program](#), which is a significant environmental exposure for children in the Chicago area.

3.6. Does your institution or its affiliated teaching hospitals have accessible educational materials for patients about the health impacts of climate change?

Yes, the **institution** or **all affiliated hospitals** have accessible educational materials for patients. (2 points)

Some affiliated hospitals have accessible educational materials for patients. (1 point)

No affiliated hospitals have accessible educational materials for patients. (0 points)

Score Assigned:

1

Score explanation: Northwestern Medicine has the Alberto Culver Health Learning Center which features a full-service library including podcasts, classes, and support groups for patients. Within this, there are [articles](#) about how climate change affects health, [physician podcasts](#) that discuss waste and sustainability practices specifically within the ophthalmology department, and [infographics](#) mentioning lung health and environmental pollutants. Additionally, Lurie Children's Hospital, which is affiliated with the medical school, has an [article](#) about the impacts of climate change on health, but there is only one and it was only found when specifically searching for it, thus, only one point is given.

Section Total (10 out of 14)

71.43%

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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.*

4.1. Does your <u>institution</u> offer support for students interested in enacting a sustainability initiative/QI project?	
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. (2 points)	
The institution encourages sustainability QI projects (to fulfil 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. (1 point)	
No, the institution does not offer opportunities or support for sustainability initiatives or QI projects. (0 points)	
Score Assigned:	1
<p>Score explanation: <i>While medical students are encouraged to engage in QI projects to satisfy longitudinal requirements (Area of Scholarly Concentration) at the Feinberg School of Medicine, no QI project assignment specifically emphasizes sustainability.</i></p> <p><i>However, the Trienens Institute and sustainNU oversee a project fellowship program, with funding support from Ameresco, a leading cleantech integrator and renewable asset developer, providing 10 fellowships annually (5 per quarter) for students to “real-world experience in energy management and sustainability</i></p>	

4.2. Does your <u>institution</u> offer opportunities for students to do research related to planetary health and/or sustainable healthcare/vetcare?	
The institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare/vetcare research. (2 points)	
There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these require student initiative to seek them out and carry them out in their spare time. (1 point)	
There are no opportunities for students to engage in planetary health/sustainable healthcare research. (0 points)	
Score Assigned:	2
<p>Score explanation: <i>Students at the Feinberg School of Medicine have the opportunity to apply for</i></p>	

funding through the Paula M. Trienens Institute for Sustainability and Energy (formerly the Institute for Sustainability and Energy (ISEN)) [Resnick Family Social Impact Program](#). The program “supports student projects that address significant local and global challenges in sustainability and energy.”

The Paula M. Trienens Institute for Sustainability and Energy is the University’s institute for sustainability and energy research, education, and engagement. It bridges disciplinary gaps and works across the Northwestern community to build new models for student entrepreneurship, recently receiving a [\\$25 million grant](#) from the Howard and Paula Trienens Fund to advance global sustainability and energy solutions. The Resnick Family Social Impact Program within the office supplies aid for student innovation and expands opportunities for interdisciplinary collaboration across the University. Students of all disciplines can apply for funding to launch research initiatives and projects that address local and global challenges in sustainability and energy. Past funding awards have ranged from \$5,000 to \$25,000.

Additionally, there are several faculty members at Northwestern University whose research falls at the intersection of climate health and public health, such as faculty at the McCormick School of Engineering, who students involved in research have the opportunity to work with.

4.3. Does the institution have a webpage where students can find specific information related to planetary health and/or sustainable healthcare/vetcare activities and mentors within the institution? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.

The institution has a webpage with specific information related to planetary health or sustainable healthcare/vetcare that includes up-to-date information on relevant initiatives and contact information of potential mentors. (2 points)

There is an institution webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the institution, but it lacks key information. (1 point)

There is **no institution** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors. (0 points)

Score Assigned:

0

Score explanation: *Feinberg does not have a sustainability website or a clear mechanism for locating planetary health or sustainable healthcare projects or mentors. There is a website that provides information to medical students about connecting to research mentors, which includes a faculty database, but it does provide information about planetary health or sustainability research.*

Paula M. Trienens Institute for Sustainability and Energy does have a [comprehensive website](#) providing information about sustainability potential funding and listing of faculty involved in sustainable research. However, the Institute is not formally a part of Feinberg and is not healthcare/vetcare specific.

4.4. Does your <u>institution</u> have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?	
Yes, there is a student organisation with faculty support at my institution dedicated to planetary health or sustainability in healthcare. (2 points)	
Yes, there is a student organisation at my institution dedicated to planetary health or sustainability in healthcare but it lacks faculty support . (1 point)	
No, there is not a student organisation at my institution dedicated to planetary health or sustainability in healthcare. (0 points)	
Score Assigned:	2
<i>Score explanation: Feinberg School of Medicine's Climate Action Group is an interdisciplinary student group which serves to promote sustainable practices at Feinberg, Northwestern Memorial Hospital, and the greater Chicago community. Their mission is to educate students, faculty, and staff about the health impacts of climate change and support initiatives to reduce waste and energy consumption. The Climate Action Group is funded by the school and has faculty support from the Augusta Webster, MD, Office of Medical Education (AWOME).</i>	

4.5. Is there a student liaison representing sustainability interests who serves on a <u>department or institutional</u> decision-making council to advocate for curriculum reform and/or sustainability best practices?	
Yes, there is a student representative who serves on a department or institutional decision-making council/committee. (1 point)	
No, there is no such student representative. (0 points)	
Score Assigned:	0
<i>Score explanation: There is no student liaison representing sustainability interests who serves on a medical school or institutional decision-making council to advocate for sustainability best practices. Climate Action Group and several interested students do engage in dialogue with the Office of Medical Education (AWOME) in efforts to identify areas of improvement for campus sustainability.</i>	

4.6. In the past year, has the <u>institution</u> had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)	Score
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.	0
Cultural arts events, installations or performances related to planetary health that have students as an intended audience.	0
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)	1
<p>Score explanation: <i>The Climate Action Group and “Destination Chicago” organize trips to volunteer at Our Block Garden, a community garden for low- and moderate-income people on the northwest side of Chicago.</i></p> <p><i>Climate Action Group also holds speaker events that emphasize the effects of climate change on human health, and volunteers with local organizations such as North Pond Gardeners and Gold Coast Neighbors Association to help with activities that keep local parks clean and accessible (weeding, cleaning litter, placing mulch, planting trees).</i></p> <p><i>Many events, talks, speaker series, arts events, performances, nature walks etc. take place at the undergraduate campus in Evanston and are not targeted to the medical students at the downtown Chicago Campus.</i></p>	

Section Total (9 out of 15)	60.00%
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Campus Sustainability

Section Overview: *This section evaluates the support and engagement in sustainability initiatives by the 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 endeavour, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinising 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 institutions, clinics, and hospitals must set the standard for sustainable practices, and show other sectors what is possible when it comes to minimising environmental impact.*

5.1. Does your <u>institution</u> have an Office of Sustainability?	
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. (3 points)	
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 hospital sustainability. (2 points)	
There are no salaried sustainability staff , but there is a sustainability task force or committee. (1 point)	
There are no staff members or task force responsible for overseeing campus sustainability. (0 points)	
Score Assigned:	3
<i>Score explanation: SustainNU's initiatives and program areas cover both the Evanston and Chicago campuses, including Feinberg, and there is consistent and regular communication with members of the office and students/staff at the medical school. There is not a dedicated full-time employee specifically assigned to Feinberg. At Northwestern Memorial Hospital, there is a Chief Sustainability Executive role dedicated to hospital sustainability specifically.</i>	

5.2. How ambitious is your <u>institution's</u> plan to reduce its own carbon footprint?	
The institution has a written and approved plan to achieve carbon neutrality by 2030 (5 points)	
The institution has a written and approved plan to achieve carbon neutrality by 2040 (3 points)	
The institution has a stated goal of carbon neutrality by 2040 but has not created a plan to reach that goal or the plan is inadequate (1 point)	
The institution does not meet any of the requirements listed above (0 points)	
Score Assigned:	0

Score explanation: *The Northwestern University Strategic Sustainability Plan (2017-2021) states a goal of reducing greenhouse gas emissions from baseline (2012) by 30% in 2030 and zero emissions by 2050, with a concrete plan to achieve this. As of the publication of this report, the school is on track to meet this goal. The next Strategic Sustainability Plan is currently in the process of being finalized for the upcoming 5 years.*

5.3. Do buildings/infrastructure used by the institution for teaching (not including the hospital) utilize renewable energy?

Yes, institution buildings are **100%** powered by renewable energy. (3 points)

Institution buildings source **>80%** of energy needs from off-site and/or on-site renewable energy. (2 points)

Institution buildings source **>20%** of energy needs from off-site and/or on-site renewable energy. (1 point)

Institution buildings source **<20%** of energy needs from off-site and/or on-site renewable energy. (0 points)

Score Assigned:

1

Score explanation: *Northwestern University purchases 100,000 MWh of green-e certified RECs to offset ~50% of the campus's energy usage. Notably, natural gas for the Chicago campus is provided through the utility company, People's Gas and in the fall of 2023, the central utility plant was decentralized, moving heating and humidification to building-level boilers. This significantly reduced the natural gas consumed on campus. In FY 2024, there was a 30% reduction in natural gas consumption compared to what was used prior to decentralization.*

5.4. Are sustainable building practices utilised for new and old buildings on the institution's campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?

Yes, sustainable building practices are utilised for new buildings on the institution's campus and the **majority** of old buildings **have been retrofitted** to be more sustainable. (3 points)

Sustainable building practices are utilised for new buildings on the institution's campus, but most old buildings have **not been retrofitted**. (2 points)

Sustainable building practices are **inadequately or incompletely** implemented for new buildings. (1 point)

Sustainability is **not considered** in the construction of new buildings. (0 points)

Score Assigned:

3

Score explanation: *There have been many improvements made to Feinberg buildings to improve energy efficiency including lighting/relamping, smart building automation systems, and Aircuity installation to reduce HVAC energy demand by 40-60%. SustainNU has sustainability guidelines requiring all construction projects to adhere to. For all new construction and major renovations there is a target of LEED gold certification. In 2021, Northwestern partnered with Ameresco, Inc. to inform the university on how to improve its energy efficiency without the need for upfront capital investment. The projects include further smart building technology implementation, building automation, lighting upgrades, heating and cooling system optimization, and alternative energy systems that are being funded over time through the savings as a result of the projects. Though currently, only one building on the Chicago campus that the medical school uses has this certification.*

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

Yes, the institution 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. (2 points)

The institution has implemented **some** strategies to provide environmentally-friendly transportation options, but the options are **unsatisfactorily** accessible or advertised. (1 point)

The institution has **not** implemented strategies to encourage and provide environmentally-friendly transportation options. (0 points)

Score Assigned:

2

Score explanation: *Feinberg School of Medicine is located in a city center where most students live within walking distance of campus. Students who live farther away are able to commute via public transportation using the U-Pass included in tuition. Northwestern also operates a free Intercampus Shuttle between the Evanston and Chicago campuses. The medical school also expanded electric vehicle charging infrastructure at the Chicago campus, adding four charging stations (accommodates 8 vehicles) with three hours of free charging available at each. There are 6 bike racks located on campus and one bike room where students can store their bike for a \$25 annual fee. Additionally, there are three bike repair stations where students can refill bike tires, reattach chains, etc. on campus. Near/on campus, there are three Divvy stations students can rent electric bikes from.*

5.6. Does your institution have an organics recycling program (compost) and a conventional recycling program (aluminium/paper/plastic/glass)?

Yes, the institution has **both** compost **and** recycling programs accessible to students and faculty. (2 points)

The institution has **either** recycling **or** compost programs accessible to students and faculty, but not both. (1 point)

There is no compost or recycling program at the institution. (0 points)	
Score Assigned:	1
<i>Score explanation: Northwestern students and faculty have access to recycling bins located all over campus and in university buildings but there are no compost receptacles at Feinberg. Though all food waste at Northwestern Dining locations on the Evanston campus participate in composting.</i>	

5.7. Does the <u>institution</u> apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?	
Yes, the institution 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. (3 points)	
There are sustainability guidelines for food and beverages, but they are insufficient or optional . The institution is engaged in efforts to increase food and beverage sustainability. (2 points)	
There are sustainability guidelines for food and beverages, but they are insufficient or optional . The institution is not engaged in efforts to increase food and beverage sustainability. (1 point)	
There are no sustainability guidelines for food and beverages. (0 points)	
Score Assigned:	0
<i>Score explanation: The medical school does not run its own cafeterias and makes only relatively limited food/beverage purchases compared to the Evanston campus. The medical school's main food/dining provider, Compass, does emphasize sustainability in their business and works to source local, plant-based foods along with working to reduce their waste and compost food waste. The next Strategic Sustainability Plan is currently in the process of being finalized for the upcoming 5 years and will address the purchasing of organic, sustainable, plant forward, local, and diverse suppliers in retail, dining, and catering across both campuses.</i>	

5.8. Does the <u>institution</u> apply sustainability criteria when making decisions about supply procurement?	
Yes, the institution has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement. (3 points)	
There are sustainability guidelines for supply procurement, but they are insufficient or optional . The institution is engaged in efforts to increase sustainability of procurement. (2 points)	
There are sustainability guidelines for supply procurement, but they are insufficient or optional . The institution is not engaged in efforts to increase sustainability of procurement. (1 point)	
There are no sustainability guidelines for supply procurement. (0 points)	

Score Assigned:	1
<p>Score explanation: Procurement & Payment Services Commitment to Sustainability can be found here. There is a list of approved vendors with a column identifying the vendor as sustainable on the internal website. Sustainability is included in every bid and contract. There is a clear emphasis to prioritize economic factors over sustainability factors when making purchasing decisions.</p>	

5.9. Are there sustainability requirements or guidelines for events hosted at the institution?	
Every event hosted at the institution must abide by sustainability criteria. (2 points)	
The institution strongly recommends or incentivizes sustainability measures, but they are not required . (1 point)	
There are no sustainability guidelines for institution events. (0 points)	
Score Assigned:	1
<p>Score explanation: SustainNU has a page with guidelines and resources on how to host a sustainable event. These are not specific to the medical school. Procurement & Payment Services provides a list of approved vendors for events with a column identifying the vendor as sustainable on the internal website.</p>	

5.10. Does your <u>institution</u> have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
Yes, the institution has programs and initiatives to assist with making lab spaces more environmentally sustainable. (2 points)	
There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives. (1 point)	
There are no efforts at the institution to make lab spaces more sustainable. (0 points)	
Score Assigned:	2
<p>Score explanation: A voluntary Green Lab Certification Program encourages the use of best sustainability practices in lab operations and culture. In an effort to reduce the environmental impact of labs, Northwestern is encouraging labs to get Green Lab certification: “Participating labs receive assistance with implementing sustainability initiatives to conserve resources, reduce costs, and improve lab member wellbeing. Certified labs receive University-wide recognition and certification materials, including a framed certificate, certification stickers and window clings, and a logo that can be used on websites and email signatures.” This certification is available at both the undergraduate campus in Evanston, as well as graduate and medical programs in the Chicago campus, and is currently being explored by anatomy lab faculty in further efforts to promote sustainable laboratory practices on campus. There are currently 14 labs certified.</p>	

5.11. Does your <u>institution's</u> endowment portfolio investments include fossil-fuel companies?	
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. (4 points)	
The institution is entirely divested from fossil fuels. (3 points)	
The institution has partially divested from fossil fuel companies or has made a commitment to fully divest , but currently still has fossil fuel investments. (2 points)	
The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organised advocacy for divestment. (1 point)	
Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that. (0 points)	
Score Assigned:	1
<i>Score explanation: Northwestern has not divested from fossil-fuel companies, but the student organization Fossil Free NU advocates for Northwestern to fully divest its endowment from fossil fuels and to reinvest it in the surrounding Evanston community. It is notable that Northwestern released investment guidelines in 2022, which include limiting investments in companies in the fossil fuel industry and supporting investments in cleaner energy technologies.</i>	

Section Total (15 out of 32)	46.88%
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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 Northwestern University Feinberg School of Medicine.

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(62/75) \times 100 = 82.67\%$	A-
Interdisciplinary Research (17.5%)	$(14/17) \times 100 = 82.35\%$	A-
Community Outreach and Advocacy (17.5%)	$(10/14) \times 100 = 71.43\%$	B
Support for Student-led Planetary Health Initiatives (17.5%)	$(9/15) \times 100 = 60.00\%$	B-
Campus Sustainability (17.5%)	$(15/32) \times 100 = 46.88\%$	C
Institutional Grade	$(82.67 \times 0.3 + 82.35 \times 0.175 + 71.43 \times 0.175 + 60.00 \times 0.175 + 46.88 \times 0.175) = 70.41\%$	B

Report Card Trends

Section Overview

This graph demonstrates trends in overall and section grades for the years in which **Northwestern University Feinberg School of Medicine** has participated in the Planetary Health Report Card initiative.

