



Planetary Health Report Card (Medicine): *Hackensack Meridian School of Medicine*



Hackensack Meridian
School of Medicine

2024-2025 Contributing Team:

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Land acknowledgment: The Hackensack Meridian School of Medicine acknowledges the Lenapehoking (Lenni-Lenape) and the sacrifices of the Lenape people, culture and ancestral homeland in New Jersey.

Summary of Findings

Overall Grade	B
Curriculum	A-
<ul style="list-style-type: none"> The Hackensack Meridian School of Medicine includes planetary health in the core curriculum through extensive discussion in the Human Dimension curriculum, but it lacks integration longitudinally throughout all four years of training and does not facilitate any integration within the vast majority of lectures. There is also a clear lack of clinical skills education as well regarding environmental and exposure history. Recommendations: Environmental health could be introduced in clinical skills curriculum. Similarly, HMSOM can implement fourth year environmental medicine rotations, electives, and/or community partnerships in Phase 3. HMSOM can also provide CME courses for faculty physicians to engage in. 	
Interdisciplinary Research	C+
<ul style="list-style-type: none"> The Hackensack Meridian Health Network has faculty and staff who conduct research in the field of Environmental Health and Medicine, however, these are individuals working on their own accord and are not in communication with a connected department or institute. Similarly, HMSOM has not hosted any events surrounding the presentation nor any discussion of research into this field. Recommendations: HMSOM could organize an institute or group directly related to Environmental Health research. Lastly, students are a valuable resource for research and can be better connected to faculty who are conducting work within this field for mentorship or research experience. 	
Community Outreach and Advocacy	A
<ul style="list-style-type: none"> The Hackensack Meridian School of Medicine has community outreach programs in place regarding connecting to individuals in the community and organizations which focus directly on environmental health. Both in Phase 3 and longitudinal curriculum there are ample opportunities to do so. Recommendations: HMSOM should continue to partner with environmental health organizations for Community Health Projects, Student Capstone Projects and improve Phase 3 connections. More efforts can be made to educate the public, medical students, and faculty on environmental health. 	
Support for Student-Led Initiatives	A-
<ul style="list-style-type: none"> HMSOM actively supports student groups dedicated to planetary health. There is one student special interest group in Environmental Health dedicated to this area. However, HMSOM offers few opportunities for students to participate in curricular planetary health programs, and research or volunteer opportunities Recommendations: We recommend the medical school offers volunteer opportunities to students interested in sustainable initiatives and environmental health. Furthermore, HSMOM can offer research or community partnerships in Phase 3 to help students with an interest in environmental health develop further. 	
Campus Sustainability	C
<ul style="list-style-type: none"> The Hackensack Meridian School of Medicine has made good progress to become a more sustainable campus, but there is more progress to be made including fossil fuel divestment and using more renewable energy on site. This is directly related to setting achievable goals for carbon neutrality in the future. Recommendations: Goals and plans need to be in place regarding improving sustainable transportation and building practices. We also recommend focusing on making lab spaces more sustainable and introduce sustainable guidelines for events; both at the medical school and institutions of the health network. 	

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 (Metric #19 in 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 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).

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.

Completed in 2022 a [Literature Review by Metric](#) is available for the 2022 medicine report card metrics. We are in the process of updating this review and making it more applicable to all the disciplines. However the review serves as a rough collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.

Planetary Health Curriculum

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

Curriculum: General

1.1. 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 points)	
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><i>Score explanation:</i> HMSOM has two specific electives in development that are dedicated to teaching environmental health. One elective is a 2-week elective that is an overview of the broad impacts of planetary health that covers health effects, social determinants, intersectionality, and healthcare's role in mitigation. There is also a longitudinal planetary health elective in place that expands on this content and includes a student project involved in either research, community development, or education. These electives will be offered to students in this current curricular year and can be enrolled in now. There are also opportunities for students to design their own community project elective in their 4th year that may be centered in environmental health. Currently, there are two lectures that address the entire medical school on planetary health in the Human Dimension curriculum with various aspects of planetary health covered in each lecture.</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><i>Score explanation:</i> HMSOM has a longitudinal competency that involves understanding the link between human health and extreme heat which involves several components such as curricular education, clinical screening, and patient interviewing. The Human Development component of HMSOM curriculum currently has two lectures as well as a written assignment for students to complete in regards to this topic. The two lectures address various environmental concerns such as extreme heat and their relationships to physical health, mental health, and geopolitical practices such as food insecurity and changing agricultural practices.</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><i>Score explanation:</i> The two Human Dimension lectures on environmental health in the HMSOM curriculum address the direct impact of climate change on physical and mental health breaking down climate change into various aspects, the impact of those various aspects on the environment, and the result of those environmental impacts on human health and also linking climate change to an increase in diagnoses of well known mental health conditions. These lectures specifically cite increasing rates of weather events and natural disasters to individual health both physically and mentally referencing disasters such as wildfires and flooding and through discussion of pertinent studies related to flooding and mental health. Furthermore, the lecture discusses the unique risks of vulnerable populations to natural disasters such as pediatric and geriatric populations.</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><i>Score explanation:</i> The HMSOM curriculum covers changing patterns of infectious disease as evidenced by changing distributions of vector borne diseases and other communicable diseases in several lectures. This is explicitly linked to climate change in the lector on vector borne diseases in the Infection, Immunity, and Cancer course for which all M1's are enrolled which discusses the changing patterns of vector borne illnesses in conjunction with the changing climate including the expansion of tropical climates and changing disease patterns. Furthermore, the Planetary Health lecture in the Human Dimension curriculum discusses how changing climate migration patterns also changes infectious disease rates due to mass transit, low immunization rates, and increased exposure.</p> <p>Recommendations: It could be helpful in the future for HMSOM to include more vector sources including disruption of wildlife habit and could use more graphics to demonstrate the changing surface area of infectious vectors. A problem-based learning case could also enhance learning.</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><i>Score explanation:</i> The environmental health lectures from the Human Dimension section of the HMSOM curriculum link climate change and air pollution to respiratory health by talking about symptoms and conditions such as asthma and COPD that are made more prevalent and severe by these phenomena during the two part Human Dimension sessions on climate change and the environment. This lecture also discussed a case-based learning session based on the Canadian wildfires that led to severe decreases in air quality in neighboring New York City and threatened the health of populations susceptible to worsening air quality. Furthermore, it discussed the connections between air pollution in New Jersey as well as historical factors such as redlining that lead to social differences in asthma among children.</p>	

1.6. Does your <u>medical school</u> 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
<i>Score explanation:</i> There are a few slides in one of the two environmental health lectures from the Human Dimension section of the HMSOM curriculum that talks about how air pollution and extreme heat are linked to cardiovascular disease and cardiovascular failure respectively. It discusses, in brief, the increased risk that extreme heat imbues among those with acute and chronic cardiovascular conditions.	

1.7. Does your <u>medical school</u> 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:	3
<i>Score explanation:</i> Within the environmental health lectures from the Human Dimension section of the HMSOM curriculum that talk about how climate change is linked to increases in diagnoses of well known mental health conditions and also mention the threat climate change poses on youth mental health specifically. Furthermore, one of the newly established learning outcomes for students throughout their medical education is as follows: “Establish plans to address excess burdens of psychiatric disease that arise from climate change influenced extreme weather events such as heat waves, wildfires, severe hurricanes, and flooding.”	

1.8. Does your <u>medical school</u> 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:	2
<i>Score explanation:</i> There are several slides in the environmental health lectures from the Human Dimension section of the HMSOM curriculum that link food and water concerns such as lead levels	

in the water supply, ecosystem and climate change concerns such as air pollution to various health diagnoses and effects on each body system.

1.9. Does your medical school 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

Score explanation: There are several slides in one of the environmental health lectures from the Human Dimension section of the HMSOM curriculum that talk about the disproportionate impact of climate change on marginalized populations and discusses practices that have perpetuated these differences such as redlining and the impact it has had on communities of color.

Furthermore, the lecture discusses the impact of climate change on smaller countries and the economic impact it has on them. Lastly, one of the established learning competencies for students in their planetary health education which includes:

1. Explain ways that climate change intersects with structural racism and health equity in the United States (e.g. redlining, heat islands, disproportionately impacted populations, intersecting health challenges, access to adaptive and protective measures)
2. Define environmental justice and recognize its importance to climate health solutions
3. Describe impacts of climate change on global health inequities (natural disasters/extreme weather, forced migration, political conflict, food security, water scarcity, and sea level rise), including inequitable resource allocation for adaptive responses

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: Within the environmental health lectures of the Human Dimension section of the HMSOM curriculum there are several slides that addresses migration responses and infectious disease risks. Furthermore, there are other sections that discuss the impacts of food scarcity, water

scarcity and sea-level rise. One of the learning objectives for students for planetary health is as follows: 3. Describe impacts of climate change on global health inequities (natural disasters/extreme weather, forced migration, political conflict, food security, water scarcity, and sea level rise), including inequitable resource allocation for adaptive responses.

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)?

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: There is one slide in one of the environmental health lectures of the Human Dimension section of the HMSOM curriculum that talks about the impact of lead exposure on male and female reproductive health. This topic is also briefly discussed in a lecture that HMSOM has on reproductive health disparities and social determinants of health.

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:

2

Score explanation: This topic was covered very well in select sessions but is not often addressed in sessions outside of the Human Dimension curriculum. In last year's environmental health lecture, Newark's lead crisis was mentioned (many students at HMSOM have community health partners in Newark) and also a map of air quality in New Jersey was shown to students. In this year's iteration of the environmental health lecture, lead contamination across Northern NJ was shown to students and air quality was discussed in more detail this time after the events of the Canadian wildfire smoke that swept the northeastern United States in 2023.

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: At HMSOM, Indigenous knowledge and value systems are acknowledged as part of our discussions on environmental health and planetary health solutions in the Human Dimension curriculum. In the HD curriculum, we emphasize the importance of balance between the Earth and people, incorporating Indigenous perspectives on sustainability, stewardship, and interconnected well-being. Additionally, students are introduced to key Indigenous symbols, such as the Navajo medicine wheel, which serves as a visual representation of holistic health and harmony, reinforcing the relationship between environmental and human health. There are also other sessions that cover alternative medicine and various other topics related to Indigenous knowledge.

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:

2

Score explanation: This topic was covered throughout multiple lectures in the Human Dimension “HD” course, which is a part of the longitudinal curriculum at HMSOM. Students were also tasked with developing environmental maps of the counties their group was assigned to in order to study how local water sources, lead, toxic emissions, and other environmental factors affect neighborhoods with lower SES. Although these topics are covered in the HD course, they have yet to be formally integrated into the curriculum throughout all years.

Curriculum: Sustainability

1.15. Does your <u>medical school</u> 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 points)	
Score Assigned:	2
<p><i>Score explanation:</i> This topic was covered in the Human Dimension session on Nutrition in which the health benefits of a plant-based diet is explained and emphasized by one of the faculty physicians at the School of Medicine. This concept is thoroughly emphasized throughout that session.</p>	

1.16. Does your <u>medical school</u> 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
<p><i>Score explanation:</i> This topic was covered by a session in the Human Dimension curriculum in which the Vice President of sustainability at the Hackensack Meridian Health Network speaks to the students about the carbon footprint of healthcare systems. Furthermore, there are discussions on how we as a health network are working to reduce our carbon footprint and are actively mitigating emissions on anesthetics, reducing surgical excess in sterile processing, and other initiatives.</p>	

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)	1
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)	0
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
<p><i>Score explanation:</i> HMSOM covers the benefits of avoiding over-medicalization in its lecture on healthcare system sustainability in the Human Dimension curriculum that is given to all students. This lecture includes discussions on avoiding over-medicalization, describing as necessary, surgical waste, and the carbon footprint of anesthetic gases. There is an emphasis on reducing the carbon footprint of the medical system and the role the Hackensack Meridian Health Network plays in contributing to both medical waste and sustainability. Furthermore, other lectures in the human dimension curriculum describe the benefits of alternative management of medical conditions other than pharmaceuticals and the co-benefits to both health and environment. There is no current discussions on the use of inhalers and the carbon footprint attributed to their use.</p>	

Curriculum: Clinical Applications

1.18. In training for patient encounters, does your <u>medical school's</u> 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 points)	
No, there are not strategies introduced for having conversations with patients about climate change. (0 points)	
Score Assigned:	1
<p><i>Score explanation:</i> In 2024, the Family Medicine Clerkship for clinical students introduced an optional online module on climate health that allows students to learn about how to communicate with patients on the health effects of climate change. This includes discussing air quality, heat waves, and other potential consequences that may affect health as caused by climate change. This is, at this time however, an optional module for students to complete.</p>	

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:

0

Score explanation: The HMSOM clinical skills curriculum does not provide instruction on how to take an environmental or exposure history.

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:

4

Score explanation: An Environmental Health Working Group (EHWG) has been established. The group consists of students, medical school leadership and faculty, and members of the Hackensack Meridian Health Network's leadership. The group is in its infancy but has promised to conduct a comprehensive assessment of the existing curriculum and identify longitudinal opportunities for sustainability education within the medical school and network. Several health electives have been established as well as longitudinal competencies every student is expected to learn by their graduation from the School of Medicine. This not only involves curricular learning, but learning in clinical education as well as justice and advocacy.

1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the core 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
<p><i>Score explanation:</i> HMSOM covers planetary health in some of the core curriculum by discussing environmental determinants of health in driving the pathogenesis of cancers, pulmonary conditions, and allergy, as examples. HMSOM also hosts standalone lectures on environmental health throughout the Human Dimension course, which is dedicated to teaching students about the Social Determinants of Health, in the curriculum. The Health Systems Science indirectly addresses planetary health by using the environment as an exposure in many examples. These topics are appropriately but not fully integrated into the curriculum and do not cover enough of ESH/Planetary Health to award the full 6 points.</p>	

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 <u>medical school</u> has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (1 point)	
No, the <u>medical school</u> does not have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (0 points)	
Score Assigned:	1
<p><i>Score explanation:</i> There are direct faculty who, as part of the Human Dimension curriculum, are responsible for overseeing curricular integration of planetary health and sustainable healthcare. The individual responsible for the integration of environmental health curriculum is Lawrence Rosen MD, contact information lawrence.rosen@hmhn.org.</p>	

Section Total (58 out of 72)	81%
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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
<i>Score explanation:</i> The Hackensack Meridian School of Medicine has direct faculty who are engaged with research related to planetary health, health effects of climate change, and sustainability. There are several faculty members who are engaged in research in topics such as effects of pollution on lung health and medical education research related to the integration of planetary health topics into longitudinal student curriculum. Recently, the Deirdre Imus Environmental Health Center, which was established as Hackensack Meridian Health’s program to both facilitate sustainability within the network and to research environmental health, lost its funding and closed.	

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 points)	
There is no dedicated department or institute. (0 points)	
Score Assigned:	1
<p><i>Score explanation:</i> Hackensack Meridian currently has an Occupational and Environmental Health department both on campus and at each major hospital in their health network. There is not currently a department for planetary health research nor plans in the next 3 years. The Hackensack Meridian School of Medicine recently established a Environmental Health Working Group focused on environmental and planetary health with the goal to further institutional progress in environmental health. One of the goals of this working group is to expand resources and funding to create an institute that focuses on research involving the climate and health. This will happen over the course of the next few years as plans are formalized. The Deirdre Imus Environmental Health Center, which had fulfilled this role since 2001, closed in 2023.</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?	
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)	
Yes, there is a process in which community members impacted by climate and environmental injustice advise the climate + environmental research agenda. (2 points)	
No , but there are current efforts to establish a process for community members to advise or make decisions on the research agenda. (1 points)	
There is no process, and no efforts to create such a process. (0 points)	
Score Assigned:	2
<p><i>Score explanation:</i> At the HMSOM, there is a Community Advisory Group to the School of Medicine that advises the climate and environmental health research agenda. These groups work directly in conjunction with the Human Dimension programs that allow for school, student, and community partnerships. These are organizations that are directly in the community and work to promote environmental health. Furthermore, there are roundtable events held with community partners that discuss both climate change as well as climate and community resiliency. All these events lead the HMSOM to advise and direct its resources and attention in the area of research towards environmental health and injustice.</p>	

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

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)

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)

The **institution** has an **Office of Sustainability website** that includes **some** resources related to health and the environment. (1 point)

There is **no** website. (0 points)

Score Assigned:

2

Score explanation: The Hackensack Meridian School of Medicine has an Office of Sustainability website that includes some resources related to health and the environment. There is also a library website that attempts to centralize resources, but it is not adequately comprehensive nor contain any information that may be used by students to join active efforts in environmental health research. Resources are limited broadly to the HMHN and do not include campus opportunities, which have to be actively sought out by students. This website can be found here: [Environmental Health and You - Home at Hackensack Meridian School of Medicine](#).

2.5. Has your **institution** 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

Score explanation: In the past, HMSOM has hosted a conference, organized by students, on the Flint Water Crisis in the past 3 years. The Office of Student Affairs also provides funding for the Environmental Health Interest Group to organize and host planetary health-centered events.

2.6. Is your **institution** 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 points)

No, the institution is **not** a member of such an organisation. (0 points)

Score Assigned:

1

Score explanation: The Hackensack Meridian School of Medicine is a member of the National Academy of Medicine Initiative for Climate and Health, the Global Consortium on Climate and Health Education, Planetary Health Alliance, and the Medical Society Consortium on Climate and Health.

Section Total (10 out of 17)

59%

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Community Outreach and Advocacy

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

3.1. Does your <u>institution</u> partner with community organisations to promote planetary and 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><i>Score explanation:</i> The Hackensack Meridian School of Medicine partners with multiple community organizations to promote planetary and environmental health. Such partnerships include Paterson Health Alliance for lead remediation and abatement aimed to address the health risks related to lead-based paint. In addition, the school partners with Greens Do Good, an organization that provides training to teens and adults with autism, teaching them environmentally sustainable practices and essential job skills. The partnership focuses on a food sustainability project directed towards environment-friendly farming methods with local distributions of products. Finally, the school also works with Greater Bergen Community Action and Hackensack Meridian staff on lung cancer prevention grants, including mitigating radon in affected homes.</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

Score explanation: The medical school offers a community-facing course throughout the year regarding planetary health. Through the Human Dimension course at the medical school, students are paired with community members in whom they meet regularly during the first three years of their education. As part of this curriculum, there are dedicated meetings to discuss planetary and environmental health. During these sessions, community members are educated about planetary health, environmental exposures, and their unique risks in their immediate environment as well as educated on global topics. They are also provided with written resources and information to help them learn more about these topics. In addition, community members are encouraged to make SMART goals and discuss techniques to help mitigate their risk, advocate for their goals, and secure a healthier future for themselves and their families.

3.3. Does your institution 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

Score explanation: Students receive Weekly Digest emails from Hackensack Meridian Health. These emails cover a variety of topics and **sometimes** include planetary health or sustainable healthcare topics, but not on a regular basis. Examples of topics that have been discussed include updates to environmental health exposures and health effects of extreme heat with titles such as, “Impacts of Climate Change” and “Eczema: How Climate Change Can Affect This Skin Condition.”

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

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 provider. (1 point)	
There are no such accessible courses for post-graduate providers. (0 points)	
Score Assigned:	2
<p><i>Score explanation:</i> The Hackensack institution provides an Human Dimension GME course for residents focused on several topics of which environmental and planetary health is covered in several sessions. Residency programs at Jersey Shore University Medical Center and Hackensack University Medical Center, two flagship hospitals of the health network, also include educational sessions and grand rounds on climate change and health effects. The curriculum of the Human Dimension program includes a 90 minute session titled “Environmental Determinants of Health with learning objectives focused on competencies, such as identifying populations at risk, analyzing historical factors leading to environmental injustice and health disparities, summarizing healthcare systems’ impact on the environment, and exploring the physician’s role in screening for environmental determinants of health and advocating for planetary health. The course is structured in a case-based learning environment surrounding topics, such as heat, air quality, extreme weather events, vector-borne diseases, and mental health related to climate.</p>	

3.5. Does your <u>institution</u> or its <u>affiliated teaching hospitals</u> 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 hospitals have accessible educational materials for patients. (0 points)	
Score Assigned:	2
<p><i>Score explanation:</i> The medical school has a website titled "Environmental Health and You" that is accessible to patients and provides information on environmental health exposures specific to different NJ counties. Patients can also search by specific county to find healthcare resources. The website also provides general information about what environmental health, justice, and injustice are. Examples of resources included Emergency Readiness and preparation strategies, exposures to workers in extreme temperatures, and education on how children are particularly susceptible to environmental hazards, such as lead, noise, and air pollution. This website can be found here: Environmental Health and You - Home at Hackensack Meridian School of Medicine</p>	

3.6. Does your <u>institution</u> or its <u>affiliated teaching hospitals</u> 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:

2

Score explanation: The medical school has a website titled "Environmental Health and You" that is accessible to patients and provides information on information related to climate change. Patients can learn more about the causes, effects, and health implications of climate change. They are also provided with several resources to educate themselves more and reduce their own health risks. The website also provides general information about what environmental health, justice, and injustice are. Examples of resources included Emergency Readiness and preparation strategies, and exposures to workers in extreme temperatures. This website can be found here:
https://library.hmsom.edu/EH_and_You/Home

Section Total (13 out of 14)

93%

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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:	2
<i>Score explanation:</i> In their 3rd year, students are required as part of the curriculum to pursue a capstone project that addresses a SDOH, including environmental health. Students can, in their 4th year, pursue a community project for credit, which would similarly address a social determinant of health. Funding for these projects is available on a case-by-case basis, as communicated with the Human Dimension course leads.	

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 these 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:	1
<i>Score explanation:</i> There are research opportunities for students to perform research related to planetary health/sustainable healthcare at HMSOM with several faculty dedicated to both research and medical education projects related to planetary health, but these require student initiative to seek these out and carry them out in their spare time.	

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:

2

Score explanation: There is a specific webpage for locating planetary health and/or sustainable healthcare projects or mentors on HMSOM's library website. This outlines the Environmental Health Working Group and initiatives and groups that our medical school hosts such as Medical Students for a Sustainable Future, our current Planetary Health Report Card, information for the Environmental Health Interest group, relevant literature, as well as the members of the working group. These members are all people who may be potential mentors for students whose contact information need not be listed as their names reflect their HMSOM email address. Furthermore, this website is frequently updated by our librarian Margaret Dreker who ensures the information is up to date and refreshed with current initiatives, projects, and research led by students. The link can be found here: [Environmental Health and You - Home at Hackensack Meridian School of Medicine](#)

4.4. Does your institution 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

Score explanation: The Hackensack Meridian School of Medicine has a student-led group with faculty support and leadership with dedicated funding from the medical school. The Environmental Health Interest Group is a student group that aims to further medical student knowledge about

opportunities and research regarding environmental health in medicine. The group also exists to assist the community and hold events as necessary throughout the year.

4.5. Is there a student liaison representing sustainability interests who serves on a department or institutional decision-making council to advocate for curriculum reform and/or sustainability best practices?

Yes, there is a student representative that serves on a department or institutional decision-making council/committee. (1 point)

No, there is no such student representative. (0 points)

Score Assigned: 1

Score explanation: There are several students present in the Environmental Health Working Group, which was recently established to further the implementation of environmental health curriculum into the longitudinal curriculum and fourth year curriculum at the Hackensack Meridian School of Medicine. These students are charged with representing the interests of the student body and gauging interest in different environmental health-related opportunities and electives that may be implemented in the future as well as overall institutional sustainability practices.

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.	0
Panels, speaker series, or similar events related to planetary health that have students as an intended audience.	1
Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.	1
Cultural arts events, installations or performances related to planetary health that have students as an intended audience.	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><i>Score explanation:</i> At HMSOM, there have been several speakers, lectures, or information sessions related to environmental health in the past year. These have included topics such as emissions from the healthcare system that we can mitigate, environmental factors affecting child development and current research, among others hosted by the school and student interest group.</p>	

There are also events hosted by the school that are Community Health Partners that partner with student groups in the Human Dimension curriculum in which students learn from the local community about the challenges, goals, and work they undertake to better understand planetary health. These community partners include: Paterson Health Alliance, Greens Do Good, and the Greater Bergen Community Action. Students are actively engaged in projects with these organizations.

Local volunteer opportunities exist that build community resilience such as volunteer opportunities hosted by the Student Affairs and Wellbeing (SAW) Organization at the School of Medicine. These opportunities include volunteering with a group called Clean Ocean Action among other environmental volunteering opportunities. The SAW Department at the HMSOM has also hosted outdoor programs that students can partake in including hiking, beach trips, and other excursions hosted by the School of Medicine.

Section Total (12 out of 15)	80%
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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 medical schools, 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:</i> There is an Office of Sustainability within the Hackensack Meridian Health Network campus that is dedicated to the sustainability of the medical school and the building within which it resides. This office is also directly related to hospital sustainability throughout the HMHN with full-time staff at each hospital improving the sustainability for all the hospitals in the system.	

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 medical school does not meet any of the requirements listed above (0 points)	
Score Assigned:	1

Score explanation: The institution has a written and approved plan to achieve carbon neutrality and net-zero emissions by 2050. There is a commitment to reduce emissions by 50% by 2030 and net-zero by 2050. This commitment and detailed action items can be found on the Office of Sustainability's website found [here](#).

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: HMSOM has a campus building that is privately owned and rented. This building is shared in conjunction with Seton Hall and as such has little ability to alter the built environment to use renewable energy. This medical school building uses greater than 20% of its energy needs from off or on-site renewable energy. The School of Medicine recently signed a new energy procurement deal with PRISM, an off-site energy provider.

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:

2

Score explanation: New additions to the HMSOM campus are utilising sustainable building practices that build to LEED Silver standards. This includes the parking garage being added behind

campus as well as plans involving further construction of the medical school campus. There are several buildings on campus and being built in the future that will conform to these standards.

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:

1

Score explanation: The School of Medicine is accessible by public bus transportation to all students and there are bike racks and bike paths available for students. Students are responsible for their own transportation. Over the course of their time at the HMSOM, students are required and expected to be able to provide their own transportation to clinical and educational sites throughout the state of NJ. As it is difficult to access these sites without a car, most students drive. Information about environmentally-friendly transportation is also not emphasized in orientation nor anytime following. There is, however, promotion of electric vehicle use on campus and at hospital sites with EV Charging Stations provided at the school campus and hospitals.

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 insstitution. (0 points)

Score Assigned:

1

Score explanation: The medical school has a recycling program with multiple bins on campus, but there are no compost bins that are accessible or established for students or faculty.

5.7. Does the institution 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:

3

Score explanation: There are guidelines in the hospital for sustainable food and beverage and a new contract with Sodexo which oversees the food and beverages provided to students at the School of Medicine campus. There are active efforts to increase the sustainability of food offered to students.

5.8. Does the institution 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:

3

Score explanation: HMSOM is actively engaged in sustainable supply procurement and is actively involved in efforts to increase sustainability. These efforts are led by the Vice President of Sustainability, Kyle Tafuri. The supply procurement guidelines can be found here: <https://drive.google.com/file/d/1QynqydL6swloe96Ww0uR5rpa-4bkQLOS/view?usp=sharing>

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:

0

Score explanation: There are currently no efforts, requirements, or guidelines for events hosted by the medical school.

5.10. Does your institution 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:

0

Score explanation: At the Hackensack Meridian Center for Discovery and Innovation, there are no current lab guidelines on how to make the lab spaces more environmentally sustainable. There are no initiatives, programs, or mandatory practices that are in place.

5.11. Does your institution's 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

Score explanation: There is active advocacy by members of the HMSOM community, including students, faculty, and the VP of Sustainability at Hackensack Meridian Health, but there is not currently any divestment from fossil fuel companies.

Section Total (16 out of 32)	50%
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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 Hackensack Meridian School of Medicine

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(58/72) \times 100 = 81\%$	A-
Interdisciplinary Research (17.5%)	$(10/17) \times 100 = 59\%$	C+
Community Outreach and Advocacy (17.5%)	$(13/14) \times 100 = 93\%$	A
Support for Student-led Planetary Health Initiatives (17.5%)	$(12/15) \times 100 = 80\%$	A-
Campus Sustainability (17.5%)	$(16/32) \times 100 = 50\%$	C
Institutional Grade	$(81 \times 0.3 + 59 \times 0.175 + 93 \times 0.175 + 80 \times 0.175 + 53 \times 0.175) = 74\%$	B