



Planetary Health Report Card (Medicine)

Baylor College of Medicine

Baylor
College of
Medicine®

2023-2024 Contributing Team:

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Summary of Findings

Overall	C-
<u>Curriculum</u>	C
<ul style="list-style-type: none"> • Baylor does incorporate some elements of planetary health but most of it is confined to electives or a single hour-long session, and there is no mention of sustainability in healthcare. • Recommendations: There is a lack of in-depth teaching about and assessment of planetary health in the curriculum as it stands. In the core curriculum, a new thread on climate change and health would bolster the current systems-based learning style. Any materials or class time, even in electives, on healthcare sustainability would be welcome. 	
<u>Interdisciplinary Research</u>	C-
<ul style="list-style-type: none"> • Many faculty at Baylor College of Medicine (BCM) are interested or actively researching various areas of planetary health or healthcare sustainability, but there is no structured way for students to get involved or the public to find out about recent findings. Furthermore, multiple strong (conventional) environmental health research groups exist within the medical school. • Recommendations: BCM can make any planetary health or healthcare sustainability research findings more widely available and help connect students who are interested in this field to potential research mentors. 	
<u>Community Outreach and Advocacy</u>	C
<ul style="list-style-type: none"> • BCM already does a good job working with local groups on (conventional) environmental health, but no information on planetary health or healthcare sustainability exists yet. • Recommendations: BCM can start off with even a single public-facing blog post on climate change and health and strengthen partnerships with environmental justice organizations and community members on new projects specifically relating to climate change. 	
<u>Support for Student-Led Initiatives</u>	C-
<ul style="list-style-type: none"> • Administration at BCM are very supportive of student-led initiatives overall, but so far, there is not enough structured support for student engagement with planetary health or ESH. • Recommendations: The school could incorporate sustainable QI into its already-existing Preclinical Dean's Distinction in the Foundations of High-Value Care and Quality Improvement program as an easy first step. More planetary health student-facing events can be initiated. 	
<u>Campus Sustainability</u>	D
<ul style="list-style-type: none"> • BCM has already taken great steps to improve its campus' sustainability through changes large and small (e.g., collection of reject water, schedule lights off during times of low usage), many of which are publicly accessible on its website. However, more work remains, especially within the clinical and laboratory settings. • Recommendations: Adding sustainability guidelines for events, food and medical supply procurement would be an easy first step. A net zero plan would provide overall guidance on how to proceed with large-scale sustainability actions and provide the necessary pressure to achieve such goals. Divestment from fossil fuels would be another high-impact action item to improve our standing with the planet. 	

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance describes planetary health as “a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth’s natural systems on human health and all life on Earth.” This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanization, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment, and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change “the greatest threat to global health in the 21st century,” many medical 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 medical training. It is imperative that we hold our institutions accountable for educating medical students about the health impacts of climate change and other anthropogenic environmental changes, generating research to better understand health impacts and solutions, supporting related student initiatives, embracing sustainable practices as much as possible, and engaging with surrounding communities that are most affected by environmental threats. Because climate change and environmental threats disproportionately affect vulnerable populations (for example, communities of color, older adults sensitive to health threats, and individuals in low-resource settings), these issues are inherently ones of equity and justice.

With the purpose of increasing planetary health awareness and accountability among medical schools, we have created a Planetary Health Report Card that medical students internationally can use to grade and compare their home institutions on an annual basis. This medical-student-driven initiative aims to compare medical schools nationally and internationally on the basis of discrete metrics in five main category areas: 1) planetary health curriculum, 2) interdisciplinary research in health and environment, 3) university support for student planetary health initiatives, and 4) community outreach centered on environmental health impacts 5) medical school campus sustainability.

Definitions & Other Considerations

Definitions:

- **Planetary Health:** is described by the Planetary Health Alliance as “the health of human civilization and the state of the natural systems on which it depends.” For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional ‘environmental health’ examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of medical school education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term “planetary health” to satisfy the metric.
- **Sustainable Healthcare:** As defined by the Academy of Royal Colleges, sustainable healthcare involves ensuring the ability to provide good quality care for future generations by balancing the economic, environmental, and social constraints and demands within health care settings. A sustainable healthcare system maintains population health, reduces disease burden and minimizes use of healthcare services.
- **Education for Sustainable Healthcare (ESH):** is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:
 1. Describe how the environment and human health interact at different levels.
 2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.
 3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.
- **Medical School vs. Institution:** When “medical school” is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (e.g. undergraduate departments (USA), other related departments (e.g. Public Health, Population Health departments)). In contrast, when “institution” is specified in the report card, we are referring to the university more

broadly. Any resource reasonably accessible by medical students, no matter where in the institution the resource comes from or if it is specifically targeted for medical students, can meet this metric.

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

Other considerations:

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

Added to our resources in 2022, the Planetary Health Report Card [Literature Review by Metric](#) collates the evidence behind each of the metrics in the Planetary Health Report Card. It serves as a collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.

Planetary Health Curriculum

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

Curriculum: General

1.1. Did your medical school offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>Score explanation:</i> New to this year, there is an elective titled "Humans & Planetary Health: An Ecosystem Approach to Medicine" in which students go to a community garden every week to "identify patterns and relationships that unite soil structure and biochemistry with human and planetary health." There is an elective on environmental health titled "Environmental Health: What Every Physician Should Know" that has two lectures on climate change titled "Climate Change: Historical Underpinnings and Health Connections" and "Co-conspirators in Adverse Health Outcomes –Toxicants & Climate Change."</p>	

Curriculum: Health Effects of Climate Change

1.2. Does your medical school curriculum address the relationship between extreme heat, health risks, and climate change?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: Extreme heat is covered in a 1-hour session called "Environmental Determinants of Health (EDH)" that heavily focuses on the various connections between climate change and human health through interactive, small-group case studies and featured in one lecture ("Co-conspirators in Adverse Health Outcomes –Toxicants & Climate Change") in environmental health elective (see above for title).

1.3. Does your medical school curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?

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

Score explanation: This was covered by a 3-hour lab session with objectives such as “1. Define disaster management and describe scenarios in which this would pertain // 2. Recognize the ethical implications in play during disaster management and how resource allocation decisions play into this // 3. Describe how physicians can be change agents” and featured in one lecture ("Co-conspirators in Adverse Health Outcomes –Toxicants & Climate Change") in an environmental health elective.

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

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

Score explanation: The impact of climate change on the changing patterns of infectious diseases was covered in a 1-hour session called "Environmental Determinants of Health (EDH)" through a single case study of malaria.

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

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

Score explanation: The respiratory health effects of climate change was covered in a 1-hour session called "Environmental Determinants of Health (EDH)" through a single case study.

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

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

Score explanation: Featured in slide deck of one lecture ("Co-conspirators in Adverse Health Outcomes –Toxicants & Climate Change") in an environmental health elective ("Environmental Health: What Every Physician Should Know").

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

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

Score explanation: Featured in slide deck of one lecture ("Co-conspirators in Adverse Health Outcomes –Toxicants & Climate Change") in an environmental health elective ("Environmental Health: What Every Physician Should Know").

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

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

Score explanation: Featured in slide deck of one lecture ("Co-conspirators in Adverse Health Outcomes –Toxicants & Climate Change") in an environmental health elective ("Environmental Health: What Every Physician Should Know").

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

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

Score explanation: Covered in a 1-hour session called "Environmental Determinants of Health (EDH)" as part of each case study and in a slide deck of a lecture in environmental health elective ("Climate Change: Historical Underpinnings and Health Connections") — for example, the slide deck mentions at-risk populations for extreme heat, flooding, and more and also incorporated discussion of inequities in summer temperatures between wealthy and poor neighborhoods.

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

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

Score explanation: Covered in a 1-hour session called "Environmental Determinants of Health (EDH)" as part of discussing inequalities of who gets affected by each condition highlighted by case studies (e.g., air pollution, extreme heat).

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)?

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

Score explanation: There is an entire elective class dedicated to endocrine and reproductive systems in relation to planetary health and the environment around us in the new elective "Humans & Planetary Health: An Ecosystem Approach to Medicine."

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

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

Score explanation: Featured in slide deck of one lecture ("Climate Change: Historical Underpinnings and Health Connections") in environmental health elective. Discusses specifically about climate change's impact on Texas.

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

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

Score explanation: No mention in any relevant electives or core coursework up to now.

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

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

Score explanation: The elective "Environmental Health: What Every Physician Should Know" has two lectures on climate change titled "Climate Change: Historical Underpinnings and Health Connections" and "Co-conspirators in Adverse Health Outcomes –Toxicants & Climate Change" that feature this important topic specifically.

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

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

Score explanation: Covered in a 1-hour session called "Environmental Determinants of Health (EDH)" in passing as part of prepared facilitator remarks.

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

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

Score explanation: No mention in any relevant electives or core coursework up to now.

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

2	The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment
2	The environmental impact of pharmaceuticals and over-prescribing as a cause of climate health harm. Alternatively teaching on deprescribing where possible and its environmental and health co-benefits would fulfill this metric.
1	The health and environmental co-benefits of non-pharmaceutical management of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes. This is commonly known as social prescribing in the UK.
1	Environmental impact of surgical healthcare on planetary health and the climate crisis, and how can it be mitigated
1	The impact of anesthetic gases on the healthcare carbon footprint and ways to reduce anesthesia environmental impacts, such as total intravenous anesthesia or choosing less environmentally harmful anesthetic gas options with reduced greenhouse gas emissions
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.

1	Waste production within healthcare clinics and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)
	<i>Score explanation:</i> No lecture has covered healthcare sustainability in the current iteration of core curriculum. However, there is an optional Dean's Distinction in the Foundations of High-Value Care and Quality Improvement in which students complete online modules (prepared by entities outside of our institution) that go over most of these topics.

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?	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the core curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.
0	No, there are not strategies introduced for having conversations with patients about climate change
<i>Score explanation:</i> Covered in a 1-hour session called "Environmental Determinants of Health (EDH)" through a small-group engagement activity. Sample answers are provided for the facilitator if they feel the group needs it.	

1.19. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies for taking an environmental history or exposure history?	
2	Yes, the core curriculum includes strategies for taking an environmental history.
1	Only elective coursework includes strategies for taking an environmental history.
0	No, the curriculum does not include strategies for taking an environmental history.
<i>Score explanation:</i> Yes. In core curriculum/required material that is tested at the end of the unit, objectives for a lecture on "bites/stings; burns, chemicals, temperature" in "Integrated Systems" unit include: Identify signs/symptoms of hypothermia and heat stroke and treatment for each. Identify potential complications of chemical/thermal burns and treatment for each. Identify appropriate treatment for animal bites/stings.	

Curriculum: Administrative Support for Planetary Health

1.20. Is your <u>medical school</u> currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?	
4	Yes, the medical school is currently in the process of making major improvements to ESH/planetary health education.

2	Yes, the medical school is currently in the process of making minor improvements to ESH/planetary health education.
0	No, there are no improvements to planetary health education in progress.
<i>Score explanation:</i> The co-creators of the 1-hour session “Environmental Determinants of Health (EDH)” are actively trying to improve it for upcoming years and the problem-based learning (PBL) creation team may incorporate planetary health concerns into a future tropical infectious diseases session.	

1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> curriculum?	
6	Planetary health/ESH topics are well integrated into the core medical school curriculum.
4	Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum.
2	Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s) .
0	There is minimal/no education for sustainable healthcare.
<i>Score explanation:</i> In addition to 3 lectures dedicated to environmental health near the end of preclinicals as part of “Integrated Systems,” a single 1-hour talk (outside of traditional lecture series) is incorporated into the curriculum.	

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?	
1	Yes , the medical school has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare
0	No , the medical school does not have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare.
<i>Score explanation:</i> No such faculty position exists.	

Section Total (34 out of 72)	47.2%
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Are there additional curriculum resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Interdisciplinary Research

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

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <u>medical school</u> ?	
3	Yes, there are faculty members at the medical school who have a primary research focus in planetary health or healthcare sustainability.
2	Yes, there are individual faculty members at the medical school who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.
1	There are planetary health and/or healthcare sustainability researchers at the institution , but none associated with the medical school.
0	No, there are no planetary health and/or healthcare sustainability researchers at the institution or medical school at this time.
<p><i>Score explanation:</i> There are multiple clinician-researchers who do some work in planetary or environmental health research relating to climate change, many in the realm of medical education (e.g., creating small-group activities for medical school students on planetary health, writing op-eds on what hospital systems and individual clinicians can do to become more environmentally-friendly), but not a single one solely focuses on climate change.</p>	

2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at your <u>institution</u> ?	
3	There is at least one dedicated department or institute for interdisciplinary planetary health research.
2	There is not currently a department or institute for interdisciplinary planetary health research, but there are plans to open one in the next 3 years.
1	There is an Occupational and Environmental Health department , but no interdisciplinary department or institute for planetary health research.
0	There is no dedicated department or institute.
<p><i>Score explanation:</i> There is a department for environmental health but without a specific focus on planetary health. Rather, Baylor College of Medicine's Center for Precision Environmental Health focuses on the intersection of genetics, environmental health, and data science. Furthermore, BCM's</p>	

Environmental Health Service does not seem to have a focus on climate change (at least what's on the website).

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 medical school?

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

Score explanation: Baylor-affiliated Gulf Coast Center for Precision Environmental Health (GC-CPEH) has a Core Community Advisory Board (CAB) that, among other roles, helps prioritize the action agenda for the entire research center.

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

3	There is an easy-to-use, adequately comprehensive website that centralizes various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.
2	There is a website that attempts to centralize various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The institution has an Office of Sustainability website that includes some resources related to health and the environment.
0	There is no website.

Score explanation: There is a sustainability web page, but with no mention of direct ties to human health. There are town hall meetings, however! There are many web pages relating to the myriad environmental health research done at Baylor; however, there is no attempt to centralize these various research activities, nor are they posted alongside events or open funding opportunities.

2.5. Has your institution recently hosted a conference or symposium on topics related to planetary health?

4	Yes, the medical school has hosted at least one conference or symposium on topics related to planetary health in the past year.
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3	Yes, the institution has hosted at least one conference or symposium on topics related to planetary health in the past year.
2	Yes, the institution has hosted a conference on topics related to planetary health in the past three years.
1	The institution has not hosted any conferences directly, but they have provided financial support for a local planetary health event.
0	No, the institution has not hosted a conference on topics related to planetary health in the past three years.
<p><i>Score explanation:</i> There was recently a grand rounds on One Health hosted by the medical school (but not an entire conference or symposium). There are many conferences on environmental health. There is an online module for BCM clinicians titled "<u>Climate Change, Climate Justice, and Environmental Health</u>"</p>	

2.6. Is your <u>medical school</u> a member of a national or international planetary health or ESH organization?	
1	Yes, the medical school is a member of a national or international planetary health or ESH organization
0	No, the medical school is not a member of such an organization
<p><i>Score explanation:</i> Yes, the Baylor College of Medicine National School of Tropical Medicine is part of Columbia Global Consortium on Climate and Health Education.</p>	

Section Total (7 out of 17)	41.2%
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Are there additional research resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Community Outreach and Advocacy

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

3.1. Does your medical school partner with community organizations to promote planetary and environmental health?	
3	Yes, the medical school meaningfully partners with multiple community organizations to promote planetary and environmental health.
2	Yes, the medical school meaningfully partners with one community organization to promote planetary and environmental health.
1	The institution partners with community organizations, but the medical school is not part of that partnership.
0	No, there is no such meaningful community partnership.
<p><i>Score explanation:</i> This website lists many different organizations that work with BCM to promote traditional environmental health with local communities, especially those disproportionately impacted by environmental racism.</p>	

3.2. Does your medical school offer community-facing courses or events regarding planetary health?	
3	The medical school offers community-facing courses or events at least once every year.
2	The medical school offers courses or events open to the community at least once per year, but they are not primarily created for a community audience.
1	The institution has offered community-facing courses or events, but the medical school was not involved in planning those courses or events.
0	The institution/medical school have not offered such community-facing courses or events.
<p><i>Score explanation:</i> BCM currently does not offer any public events with the main focus on planetary health.</p>	

3.3. Does your medical school have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
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2	Yes, all students regularly receive communication updates dedicated to planetary health and/or sustainable healthcare.
1	Yes, planetary health and/or sustainable healthcare topics are sometimes included in communication updates.
0	Students do not receive communications about planetary health or sustainable healthcare.
<i>Score explanation:</i> Institution-wide update communications do not regularly include any content on sustainability or planetary health.	

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?

2	Yes, the institution or main affiliated hospital trust offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health.
1	Yes, the institution or main affiliated hospital trust offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
0	There are no such accessible courses for post-graduate providers
<i>Score explanation:</i> There are many symposia on environmental health (see BCM page, this TCH symposium) but not necessarily planetary health, which offers a unique perspective that explicitly ties in climate change. TCH has also hosted Grand Rounds relating to planetary health in pediatrics and anesthesia . There is an online course available for CME that does focus on climate change and health.	

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

2	Yes, the medical school or all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated medical centers have accessible educational materials for patients.
<i>Score explanation:</i> BCM provides blog posts on effect of insecticides , meaning of Earth Day , importance of healthcare sustainability , impact of cold weather on health , EJ, and providing healthcare during extreme weather emergencies . TCH provided a blog post of chemical explosion's impact on pediatric health (esp. asthma) .	

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

2	Yes, the medical school or all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated hospitals have accessible educational materials for patients.
<i>Score explanation:</i> There is some material on traditional environmental health but no explicit connections to climate change.	

Section Total (7 out of 14)	50.0%
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Are there additional community engagement and advocacy resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

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>medical school</u> or your <u>institution</u> offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the medical school or institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum.
1	The medical school or institution encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate.
0	No, neither the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.
<i>Score explanation:</i> Students may identify and propose SusQI projects themselves, but there are no formal opportunities or support to do so.	

4.2. Does your <u>institution</u> offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
2	The institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these require student initiative to seek these out and carry them out in their spare time.
0	There are no opportunities for students to engage in planetary health/sustainable healthcare research.
<i>Score explanation:</i> No formal opportunities exist via the school; planetary health/sustainable research is identified, proposed, and carried out by the student independently on their own time. There are many faculty interested in this topic who are open to students interested in performing research in this field.	

4.3. Does the <u>medical school</u> have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.	
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2	The medical school has a web page with specific information related to planetary health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.
1	There is a medical school webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information.
0	There is no medical-school specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.
<i>Score explanation:</i> There is no medical school specific webpage.	

4.4. Does your <u>medical school</u> have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?	
2	Yes, there is a student organization with faculty support at my medical school dedicated to planetary health or sustainability in healthcare.
1	Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it lacks faculty support .
0	No, there is not a student organization at my institution dedicated to planetary health or sustainability in healthcare.
<i>Score explanation:</i> BCM's Student Physicians for Social Responsibility is a funded student organization with a faculty sponsor.	

4.5. Is there a student liaison representing sustainability interests who serves on a <u>medical school</u> or <u>institutional</u> decision-making council to advocate for curriculum reform and/or sustainability best practices?	
1	Yes, there is a student representative that serves on a medical school or institutional decision-making council/committee.
0	No, there is no such student representative.
<i>Score explanation:</i> No such position exists.	

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)	
1	Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.
1	Panels, speaker series, or similar events related to planetary health that have students as an intended audience.

1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.
1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students)
<p><i>Score explanation:</i> In 2023-24, BCM has had a student-organized volunteer site at a CSA (community-supported agriculture) farm, a service day volunteer opportunity at a local park, an environmentally-related speaker event organized by BCM Student Physicians for Social Responsibility, and movie screenings related to planetary health organized by BCM Student Physicians for Social Responsibility.</p>	

Section Total (6 out of 15)	40.0%
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Are there additional student-led initiative resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Campus Sustainability

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

5.1. Does your medical school and/or institution have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff , but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p><i>Score explanation:</i> BCM has an Office of Resource Stewardship and Sustainability, with at least one dedicated staff member for sustainability efforts. https://www.bcm.edu/about-us/our-campus/resource-stewardship-and-sustainability)</p>	

5.2. How ambitious is your institution/medical school plan to reduce its own carbon footprint?	
5	The institution/medical school has a written and approved plan to achieve carbon neutrality by 2030
3	The institution/medical school has a written and approved plan to achieve carbon neutrality by 2040
1	The institution/medical school has a stated goal of carbon neutrality by 2040 but has not created a plan to reach that goal or the plan is inadequate
0	The institution/medical school does not meet any of the requirements listed above
<p><i>Score explanation:</i> BCM does not have a stated goal to achieve carbon neutrality. However, the main affiliated teaching hospital, Baylor St. Luke's, <u>has agreed</u> to match federal targets that call for cutting greenhouse gas emissions by 50 percent by 2030 and achieving net-zero emissions by 2050. Specifically, St. Luke's plans to cut its energy use by 4 percent this year, another 4 percent in 2024, then 3 percent in each of the following three years.</p>	

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

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

Score explanation: It is possible that BCM sources energy from renewable sources, but it is not in its contract that there is a required percentage of renewable energy, nor does the sustainability office know the exact percentage of renewable energy.

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

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

Score explanation: Projects are not LEED certified but LEED best practice applications are applied discretionally. Projects are specified/developed/permitted under the International Building Code (IBC) for energy efficiencies. BCM uses variable speed controllers, has replaced inefficient chilling units, replaced old AC and lighting systems, and has implemented water sustainability programs all throughout campus.

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

2	Yes, the medical school or 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-utilized by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
1	The medical school or institution has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.

0	The medical school or institution has not implemented strategies to encourage and provide environmentally-friendly transportation options.
<p><i>Score explanation:</i> Many students elect to take the light rail to campus which is advertised at orientation, and is heavily discounted for students (1/2 off, so 60 cents per ride). Others take the bus or walk; very few actually drive into campus. The vast majority of clinical rotations are located centrally near campus, which encourages walking and discourages driving by implacing exorbitant parking rates. However, for certain outpatient rotations and other trainings, students must use a car to drive off-campus. A small number of students bike, and the school provides bike racks, but the city itself is not bike friendly and lacks biking infrastructure. The Texas Medical Center, in which Baylor resides, is actively trying to <u>improve biking and pedestrian safety</u>. (The new campus has separated bike lanes and wide sidewalks.)</p>	

5.6. Does your <u>medical school</u> have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?	
2	Yes, the medical school has both compost and recycling programs accessible to students and faculty.
1	The medical school has either recycling or compost programs accessible to students and faculty, but not both.
0	There is no compost or recycling program at the medical school.
<p><i>Score explanation:</i> BCM does conventional recycling prominently located throughout campus but not composting.</p>	

5.7. Does the <u>medical school</u> apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?	
3	Yes, the medical school has adequate sustainability requirements for food and beverages, including meat-free days or no red-meat, and is engaged in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are insufficient or optional . The medical school is engaged in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are insufficient or optional . The medical school is not engaged in efforts to increase food and beverage sustainability.
0	There are no sustainability guidelines for food and beverages.
<p><i>Score explanation:</i> There are no sustainability guidelines for food at BCM.</p>	

5.8. Does the <u>medical school</u> or <u>institution</u> apply sustainability criteria when making decisions about supply procurement?	
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3	Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are insufficient or optional . The medical school is engaged in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are insufficient or optional . The medical school is not engaged in efforts to increase sustainability of procurement.
0	There are no sustainability guidelines for supply procurement.
<i>Score explanation:</i> BCM Procurement uses sustainability as a criterion with “top tier suppliers,” but the institution does not yet have a supply chain wide sustainability effort for all buying decisions.	

5.9. Are there sustainability requirements or guidelines for events hosted at the <u>medical school</u>?	
2	Every event hosted at the medical school must abide by sustainability criteria.
1	The medical school strongly recommends or incentivizes sustainability measures, but they are not required .
0	There are no sustainability guidelines for medical school events.
<i>Score explanation:</i> None exist.	

5.10. Does your <u>medical school</u> have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
2	Yes, the medical school has programs and initiatives to assist with making lab spaces more environmentally sustainable.
1	There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are no efforts at the medical school to make lab spaces more sustainable.
<i>Score explanation:</i> No such efforts exist, but the school does advertise recycling stations in which lab members can drop off certain used lab materials (e.g., #5 plastics).	

5.11. Does your <u>institution's</u> endowment portfolio investments include fossil-fuel companies?	
4	The institution is entirely divested from fossil fuels and has made a commitment to reinvest divested funds into renewable energy companies or renewable energy campus initiatives.
3	The institution is entirely divested from fossil fuels.
2	The institution has partially divested from fossil fuel companies or has made a commitment to fully divest , but currently still has fossil fuel investments.

1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organized advocacy for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.
<i>Score explanation:</i> BCM has investments in fossil fuel companies, and there have been no efforts to divest or student advocacy on the topic.	

Section Total (10 out of 32)	31.3%
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Are there additional sustainability resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

TECO (the Thermal Energy Corporation) is the district energy system that cools and heats the Texas Medical Center, of which Baylor is a part. TECO's system reuses all waste heat produced from the plant, reducing emissions by 32,700 tons of carbon dioxide annually. In recognition of this efficiency, it was awarded the 2019 System of the Year Award from the International District Energy Association (IDEA) and the 2015 Energy Star CHP Award, and was a participant in the United Nations Environment Program (UNEP) Global District Energy in Cities Initiative.

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 Baylor School of Medicine

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(34/72) \times 100 = 47.2\%$	C
Interdisciplinary Research (17.5%)	$(7/17) \times 100 = 41.2\%$	C-
Community Outreach and Advocacy (17.5%)	$(7/14) \times 100 = 50\%$	C
Support for Student-led Planetary Health Initiatives (17.5%)	$(6/15) \times 100 = 40\%$	C-
Campus Sustainability (17.5%)	$(10/32) \times 100 = 34\%$	D
Institutional Grade	$(49\% \times 0.3 + 41\% \times 0.175 + 50\% \times 0.175 + 40\% \times 0.175 + 34\% \times 0.175) = 43.6\%$	C-