Planetary Health Report Card (Medicine):

Indiana University School of Medicine

2024-2025 Contributing Team:

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Land acknowledgment: IU Indianapolis acknowledges our location on the traditional and ancestral territory of the Miami, Potawatomi and Shawnee people. We honor the heritage of Native peoples, what they teach us about the stewardship of the earth and their continuing efforts today to protect the planet. Founded in 1969, IU Indianapolis stands on the historic homelands of Native peoples and, more recently, that of a vibrant Black community, also displaced. As the present stewards of the land, we honor them all as we live, work and study at IU Indianapolis.

Summary of Findings

Overall Grade	B

Curriculum	C+

- The Indiana School of Medicine (IUSM) integrates social determinants of health throughout the first two years of medical school. However, the majority of discussions relating to planetary health are brief, and those pertaining to the environmental impact of healthcare systems are nonexistent.
- **Recommendations:** IUSM should open the elective related to climate change and health to all students, not just 3rd/4th years, or create additional electives. Additionally, IUSM should add Planetary Health as a required objective for each course so that these topics are covered more in depth.

Interdisciplinary Research	B

- Indiana University hosts an annual planetary health conference, offers interdisciplinary planetary health research and educational opportunities, and participates in planetary health organizations. However, the medical school lacks its own individual department for planetary health research and relies on partnership with the Indiana University institute.
- **Recommendations**: IUSM should create its own department or provide funding to students pursuing planetary health research. IUSM could also partner with research faculty from co-located academic schools, such as collaborating with planetary health researchers through the Indiana University Medical Student Program for Research and Scholarship (IMPRS), an 8-week fellowship for first-year medical students.

Community Outreach and Advocacy	C+

- IUSM successfully provides events, programs, and opportunities for students to participate in planetary and environmental health. However, the majority of these opportunities are not specific to the School of Medicine. There is also a lack of regular coverage on issues pertaining to sustainable healthcare and planetary health.
- **Recommendations**: IUSM should delegate a committee or a student organization to send out regular communication pertaining to planetary health and sustainable healthcare practices and opportunities. They should also create partnerships with local communities for events and information.

Support for Student-Led Initiatives	A

- IUSM has a local chapter of Medical Students for a Sustainable Future (MS4SF) that is supported by the faculty. This organization is a network dedicated to addressing climate change as an important health and social justice issue in order to protect future patients and communities.
- **Recommendation**: IUSM should create a centralized web page for students or other persons to access information related to planetary health or sustainable healthcare.

Campus Sustainability	C

- IUSM encourages sustainability practices, such as environmentally friendly transportation, recycling, and reducing plastic water bottle use. However, IUSM only utilizes renewable resources for 10% of its energy, and has yet to divest from fossil-fuel companies.
- **Recommendations**: IUSM should expand their recycling and compost efforts and eco-friendly transportation methods for campuses across the state. Furthermore, IUSM should increase energy efficiency by utilizing smart room sensors, eliminating phantom draws from computers, or other practices to decrease energy consumption. Lastly, to further education on renewable resources, a demonstration site should be put into place to display solar panels, battery storage, charging stations, e-bikes, etc.

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.

- **Extractivisim:** 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 medical school 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
Score explanation: As of the 2024-2025 academic year, Indiana School of Medicine (IUSM) offers a 4-week elective titled "Climate Change and Health" (71ZI71) for third or fourth year medical students. This is the only elective or optional module pertaining to planetary health available to medical students. In this course, students hear from experts and community members, work with local organizations, and understand a greater scope of the intersections between the environment and medicine. Specifically, topics covered include environmental justice, climate impact on healthcare inequities, climate solutions, and clinical challenges posed by climate change.	

Curriculum: Health Effects of Climate Change

1.2. Does your medical school 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
Score explanation: IUSM has multiple core curricular components where the relationships between heat, health risks, and climate change are described. In the first year course Fundamentals of Health and Disease, there is a lecture and associated small group session titled, "Environmental Injury." These sessions ensure students understand the basic definition of environmental diseases, understand the connection between human environmental impact and environmental impact on health, types of air pollution and the health conditions they cause, the impacts of hypo/hyperthermia, and the role of ozone in prevention of UV-damage induced skin cancer. In the first year course, Health Systems Science 1, there is a session titled, "Social & Structural Determinants of Health -- Poverty, Neighborhood, and Environment." In this session, pre-work reading emphasizes the disproportionate impact of both lead poisoning and air pollution on certain communities. There are connections between climate change and high global temperatures made in this article.	

1.3. Does your medical school 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
Score explanation: IUSM has multiple core curricular components where the relationships between extreme weather events and health outcomes are described. In the first year course Fundamentals of Health and Disease, there is a lecture and associated small group session titled, "Environmental Injury." This session touches on the increased incidence of extreme weather events and their impact on individual health. For example, the course notes that extreme high and low temperatures impact individuals with impaired thermoregulatory capacity, such as elderly or intoxicated individuals. In the first year courseNeuroscience and Behavior, there is a lecture titled "Trauma and Dissociative Disorders" in which the link between climate change and increased rates of natural disasters—which can be classified as traumatic for individuals—increases societal turmoil and negative health outcomes.	

1.4. Does your medical school 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:	2
Score explanation: Indiana University School of Medicine briefly incorporates climate change and its impact on patterns of infectious diseases into its curriculum during pre-clinical years. In the first year, one lecture within the Fundamentals of Health and Disease course examines climate change's effects on human health and infectious diseases. During the second year, the Gastrointestinal and Nutrition course includes a learning objective that addresses how climate change creates more favorable conditions for certain gastrointestinal illnesses. Finally third-year students can take the four week long elective "Climate Change and Health" (71ZI71) that dives into the broader effects of climate change, including its influence on infectious and vector-borne diseases.	

1.5. Does your medical school 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 points)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: IUSM's first year course, Fundamentals of Health and Disease, includes a lecture and small group titled "Environmental Injury" that includes a discussion on the impact of air pollution on respiratory health. Additionally, during the four-week clerkship elective "Climate Change and Health" (71ZI71), students can choose to learn more about the impact of climate change on respiratory conditions like asthma. While other courses, including the second year Renal and Respiratory course, briefly mention the association between air pollution and respiratory disease, they do not explicitly make connections to climate change. **Recommendation**: Alter the learning objectives in pre-clinical courses such as Molecules to Cells and Tissue, Renal and Respiratory, and Endocrine, Reproductive, Musculoskeletal, and Dermatology to clarify the relationship to climate change for those objectives that already discuss environmental topics.	

1.6. Does your medical school curriculum address the cardiovascular health effects of climate change, including increased heat
This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 points)	
This topic was **not** covered. (0 points)	
Score Assigned:	3
Score explanation: This topic was introduced in the first year course Fundamentals of Health and Disease which included a lecture and small group titled “Environmental Injury” that explores the cardiovascular health effects of climate change. This topic is revisited in the second year course Cardiovascular and Hematology which includes a lecture titled “Environmental Impacts on Cardiovascular Disease” that details how environmental factors like climate change impact cardiovascular disease management. This material was discussed further in corresponding small groups and was the basis for exam questions.	

1.7. Does your medical school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 points)	
This topic was **not** covered. (0 points)	
Score Assigned:	3
Score Explanation: The first year course Fundamentals of Health and Disease features a lecture and small group on the topic of environmental injury. These sessions cover the interaction between human impact on the environment as well as environmental impact on human health. Specifically, there is a section of the slide deck that details how tertiary health effects of climate and climate change can have negative “diffuse” impacts on mental health due to displacement, tension, and conflict over resources. Additionally, in the first-year course Neuroscience and Behavior, there is a lecture titled "Trauma and Dissociative Disorders," which provides links between the impacts of climate change (including natural disasters) and mental health and societal unrest. IUSM also offered a third year elective, “Climate Change and Health” (71ZI71) for the 2024-25 school year that explores the health impacts of climate change, including heat-related illnesses, infectious diseases, and mental health issues, while examining the healthcare sector's role in both contributing to and addressing climate challenges.	

1.8. Does your medical school curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?
This topic was explored **in depth** by the **core** curriculum. (3 points)
This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 points)	
This topic was **not** covered. (0 points)	
Score Assigned:	1
Score explanation: The first year course Health Systems Science 1 has a module and accompanying small group session titled "Social and Structural Determinants of Health" that places emphasis on the impact of patient environment, food access, and race, though it does not emphasize climate change and ecosystem health; it is more geared toward addressing the unseen and unconscious impacts of implicit bias. The only coursework offered that touches on the relationships between health, individual patient food and water security, ecosystem health, and climate change is the MS3/MS4 elective called "Climate Change and Health" (71ZI71). This course offers lectures such as "Environmental Exposures: Environmental Risk in your Neighborhood" and "Disparate Impact of Climate Change on Tribal Communities." It also offers an individualized project in advocacy work on environmental justice and climate, which also allows students to explore topics relating to the above prompt.	

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 points)	
This topic was **not** covered. (0 points)	
Score Assigned:	3
Score explanation: The first-year course, Health Systems Science 1 (HSS1), includes a module and accompanying small group session titled "Social and Structural Determinants of Health." As part of the required reading for this session, students were introduced to various components of social determinants of health, such as polluted air and water, as well as food access. There was also discussion in the pre-work of how marginalized groups are often the most vulnerable to these environmental hazards. However, while the overarching influence of the environment on health was mentioned, there was no direct discussion of how climate change specifically impacts these factors. Additionally HSS1 had another module called "Disability and Health" where they briefly discussed the impact of environmental factors (climate and otherwise) impact how people with disability conduct their lives. **Recommendation**: While the pre-work and readings were technically "required," it is a reality that students may choose not to complete these modules, thus it is important to explicitly discuss these important topics in-person during small group sessions. Furthermore, during the"Social and Structural Determinants of Health" HSS1 module and small group session, discussions should include the impact of climate change on the environment and its direct and indirect effects on the various social determinants of health.	

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 points)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: The required Health Systems Science 1 (HSS1) session titled: "Social & Structural Determinants of Health - Poverty, Neighborhood, & Environment" has pre-work and discussion topics focused on addressing this topic in detail. The required pre-work reading, "Making the Case for Linking Community Development and Health," makes specific connections between lead poisoning and air particulate matter and how they disproportionately impact certain communities and neighborhoods. Furthermore, the "Environmental Injury" lecture in the required first-year Fundamentals of Health and Disease (FHD) course has multiple slides discussing health effects of climate and climate change and the connection to climate-related health effects. Finally, the required Transitions I course has a session titled "Introduction to Healthcare Disparities" that briefly touches on the evidence of environmental disparities using the example of lead poisoning. Finally, the "Climate Change and Health" (71ZI71) elective gives students the opportunity to seek a greater understanding of climate's impact on healthcare inequities and social injustice, serving to address the unequal regional health impacts of climate change globally. **Recommendations:** Once again, despite the HSS1 sessions' pre-work being "required," a reality is that students may not prepare for class beforehand and would thus not come into contact with this content unless it is explicitly restated during in-class discussion. The HSS1 faculty and coordinators should modify the session to include more formal discussions on the unequal regional health impacts of climate change globally, using the "Making the Case for Linking Community Development and Health" article as a framework.	

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 points)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: The "Environmental Injury" lecture in the required first-year Fundamentals of Health and Disease (FHD) course has one slide stating teratogenesis as a potential outcome of the pathogenesis of environmental exposures. Furthermore, the required second-year Endocrine,	

Reproductive, Musculoskeletal, and Dermatology (ERMD) course has a small group session titled "Abnormal Pubertal Development and Growth Cases" with a required pre-work article titled "Pubertal Development." In this article, one sentence states that early puberty can be caused by endocrine-disrupting chemicals. Furthermore, the "Climate Change and Health" (71ZI71) elective course description and teachings communicate the relationship between climate change and increased rates of maternal-fetal illnesses.

Recommendations: Although the core curriculum addresses the reproductive health effects of industry-related environmental toxins, more significant integration of this topic into core classes could be achieved. First, we suggest modifying the "Environmental Toxins" lecture in the FHD course to elaborate on the link between environmental exposures and teratogenesis. Additionally, there is great opportunity in the reproductive block of the ERMD course to integrate the effects of environmental toxins on reproductive health. Specifically, an additional mini lecture could be curated by faculty to highlight important relationships and outcomes related to this topic.

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 points)	
This topic was **not** covered. (0 points)	
Score Assigned:	3

Score explanation: The required Health Systems Science 1 (HSS1) session titled: "Social & Structural Determinants of Health - Poverty, Neighborhood, & Environment" has pre-work and an in class discussion focused on addressing this topic. The required pre-work reading, "Making the Case for Linking Community Development and Health," makes specific connections between the impact of human-caused environmental threats and the impact on neighborhoods and communities. While this module fails to make Indiana-specific connections, the information and pertinence of it can be extrapolated to local communities and neighborhoods. Furthermore, pertinent learning objectives of this module include: "Identify some chemical and physical hazards that originate in the environment and can impact human health," "Identify the prevalence of poverty in Indiana," and "Understand how where a person lives can influence their health." Additionally, the "Climate Change and Health" (71ZI71)" elective course description states that it covers the impact of climate on healthcare inequities and social injustice while also teaching students to recognize, describe, and manage the impacts of climate change on healthcare and its delivery.

Recommendation: More direct connections between human-caused environmental threats and their impact on the local community must be made in IUSM's curriculum. This could easily be done by integrating campus-specific examples of human-caused adverse environmental events into the aforementioned module in HSS1.

1.13. To what extent does your <u>medical school</u> 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 points)	
This topic was **not** covered. (0 points)	
Score Assigned:	0
Score Explanation: The values and knowledge of Indigenous individuals are not acknowledged in any organizational climate initiatives, electives, or curriculum.	

1.14. Does your <u>medical school</u> 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 points)	
This topic was **not** covered. (0 points)	
Score Assigned:	3
Score explanation: The longitudinal first year course Foundations of Clinical Practice addresses planetary health through the learning modules "Social Determinants of Health" and "Poverty, Neighborhood, and Environment." These topics are discussed further in the corresponding small group sessions. These modules and discussions address the unequal distribution of exposure to anthropogenic environmental pollutants, such that low SES, women, communities of color, children, unhoused populations, and older adults are more likely to experience higher exposure rates and adverse effects. Finally, these topics are briefly revisited in pre-clinical courses like Cardiovascular and Hematology, which includes a learning objective about the outsized impact of environmental factors in high-risk patient groups such as those with low SES.	

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 points)	
This topic was **not** covered. (0 points)	
Score Assigned:	0
Score explanation: Neither the core curriculum nor elective courses cover the environmental benefits of a plant-based diet. The first year course, Foundations in Clinical Practice, does provide a document titled "Whole Food, Plant Based Resources from the American College of Lifestyle Medicine" but this document is not covered extensively in class and does not mention the environmental impact of a plant-based diet. **Recommendations**: The second year course, Gastrointestinal System and Nutrition, should cover this topic either during small group activities or lectures that already cover different nutrition and dietary practices.	

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 points)	
This topic was **not** covered. (0 points)	
Score Assigned:	0
Score explanation: There is no discussion of the carbon footprint on healthcare systems in the IUSM curriculum.	

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)	0
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) .	0
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)	0

Environmental impact of **surgical** healthcare on planetary health and the climate crisis, and how can it be mitigated. (1 point)	0
The impact of **anaesthetic** gases on the healthcare carbon footprint and ways to reduce anaestheisa's environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions. (1 point)	0
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
Score explanation: The IUSM core curriculum addresses the health risks of over-medicalization, the benefits of yoga classes in the management of type 2 diabetes, and the waste production from single-use items. It also includes specific questions pertaining to these topics on exams, specifically during the MS2 course "Endocrine, Reproductive, Musculoskeletal, and Dermatologic Systems." However, only the health implications are covered, and the impact on the environment is not adequately explored.	

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:	2
Score explanation: The second-year course, Cardiovascular and Hematology, contains a case-based learning module called "Environmental Impacts on Cardiovascular Diseases" which extensively covers the impact of climate change and pollution on patient health. One course objective from this session is to "outline appropriate guidance for high-risk patients that would mitigate the impact of environmental factors on cardiovascular disease management." By the end of the module, students should have a basic understanding of how environmental factors, such as heat and air pollution, impact patients at high risk for cardiovascular disease, how to appropriately manage these patients, and how to engage in conversations about the effects of environmental factors on their health. For example, the module discusses the development of a "Heat Action Plan" to teach students how to conduct patient-centered conversations about the impact of heat waves for high-risk cardiovascular patients, and how to appropriately prepare patients to mitigate these risks.	

1.19. In training for patient encounters, does your medical school's curriculum introduce strategies for taking an environmental history or exposure history?	
Yes, the **core** curriculum includes strategies for taking an environmental history. (2 points)	
Only **elective** coursework includes strategies for taking an environmental history. (1 point)	
No, the curriculum does **not** include strategies for taking an environmental history. (0 points)	
Score Assigned:	2
Score explanation: Through the Foundations of Clinical Practice course during the first two years of medical school, students are taught to take a full extended social history as a part of the basic patient encounter. This social history includes environmental exposures and other health safety related questions. In addition, other courses highlight the importance of obtaining occupational and environmental exposures in order to best assess the patient.	

Curriculum: Administrative Support for Planetary Health

1.20. Is your medical school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?	
Yes, the medical school is currently in the process of making **major** improvements to ESH/planetary health education. (4 points)	
Yes, the medical school is currently in the process of making **minor** improvements to ESH/planetary health education. (2 points)	
No, there are **no** improvements to planetary health education in progress. (0 points)	
Score Assigned:	2
Score explanation: IUSM is offering a 4-week elective, "Climate Change and Health" (71ZI71), for third and fourth year medical students during the 2024-2025 academic year. The course examines the impact of climate change on global health and its influence on social and environmental determinants of health. There are no other electives or courses related to planetary health education. Medical Students for a Sustainable Future (MS4SF) leadership is currently working on a research survey to assess medical student understanding of planetary health and their desire for IUSM to contribute more curriculum dedicated to ESH. The goal is to utilize the findings from this survey to encourage IUSM to incorporate more planetary health topics into the curriculum and adopt more sustainable practices.	

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

Score explanation: At IUSM, planetary health is integrated into the first two years of medical school curriculum, with content being found in at least 9 of the courses, including Molecules to Cells to Tissues; Host Defense; Neuroscience and Behavior; Foundations of Clinical Practice; Health Systems Sciences; Endocrine, Reproductive, Musculoskeletal, and Dermatology; Cardiology and Hematology; Renal and Respiratory; and GI and Nutrition. Key topics, including the impact of extreme weather events on physical and mental health, and the health disparities that are driven by climate change and environmental factors, are addressed in lectures such as "Environmental Injury," "Trauma and Dissociative Disorders," and "Social and Structural Determinants of Health- Poverty, Neighborhood, and Environment."

1.22. Does your medical school employ a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course?
Yes, the **medical school** has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (1 point)
No, the **medical school** does **not** have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (0 points)

Score Assigned:	0

Score explanation: The Indiana University School of Medicine does not have a faculty member who explicitly oversees the incorporation of planetary health and sustainable healthcare into coursework.

Section Total (43 out of 72)	**59.72%**

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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 institution?	
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:	1
Score explanation: The Indiana University institution as a whole has researchers dedicated to environmental research and sustainability, but none directly affiliated with the School of Medicine. Indiana University is home to the Environmental Resilience Institute whose mission is "to co-create environmental resilience and climate solutions by integrating research, education, and community." There is a faculty mentor who serves as the executive director of the institute, but IUSM does not have any direct faculty members that engage in research involving planetary health.	

2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?
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:	3
Score explanation: Indiana University-Indianapolis is home to the Center for Earth and Environment Science (CEES). The mission of the CEES is to "provide solutions to pressing environmental issues through research, education, and stewardship." The center has current research projects focused on topics such as forest restoration and water quality monitoring. Indiana University is also home to the Center for Global Health Equity. This center is led by an IUSM faculty member, and its mission is to "to solve the world's most difficult health challenges and train the world's future leaders in global health research."	

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:	0
Score explanation: There is currently no process for communities disproportionately impacted by climate change and environmental injustice to give input or make decisions about the research agenda at IUSM. Furthermore, there are no agendas to provide these communities with a voice in the near future.	

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:	3
Score explanation: Indiana University has a landing page and website for the Office of Sustainability that compiles information about sustainability initiatives and specific campus initiatives, projects that the university is committed to completing, internships and research, resources on climate change, and outline of a climate action plan. Similar sites exist for all Indiana University affiliated campuses, but not the medical school specifically. The site contains information about relevant initiatives at each individual campus, the leaders of planetary health at the institutions, as well as opportunities for scholarships and internships like the Sustainability Scholars program. Underneath the "Internships + Research" tab, the website outlines research at IU through the Environmental Resilience Institute with links that will redirect to other sites to search for research opportunities. Information is lacking on how to fund new student-led research projects on any of the campus pages.	

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:	4
Score explanation: The Environmental Resilience Institute as a part of Indiana University will be hosting the Indiana Sustainability and Resilience Conference on February 28th, 2025. This is an annual conference that is held near the Bloomington, Indiana Campus that focuses on solutions to address climate change, as well as the implementation of these changes in Indiana.	

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: Indiana University School of Medicine is a member of the Global Consortium on Climate Health Education, which is an international planetary health committee that aims to aid in the education of health professionals on climate change. Indiana University as a whole is a member of the Consortium of Universities for Global Health,. Indiana University Bloomington, Southeast, and South Bend affiliates are also members of the Association for the Advancement of Sustainability in Higher Education, all of which house IUSM regional campuses.

Section Total (12 out of 17)	**70.59%**

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Community Outreach and Advocacy

Section Overview: ***This section evaluates institutional 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 institution 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

Score explanation: Indiana University (IU) partners with multiple community organizations that promote planetary and environmental health. The partnerships mentioned are significant and diverse in their scope, covering areas such as regenerative agriculture, climate resilience, local food systems, and sustainability workforce development. These collaborations not only benefit the university but also have a broader impact on the state and beyond. Examples include:

- The IU Campus Farm at Hinkle-Garton, which focuses on regenerative agriculture, food justice, and sustainability education.
- The McKinney Climate Fellows program, which connects students with real-world sustainability and climate resilience projects.
- FARMWISE Indiana, which strengthens regional food networks and connects buyers to local growers.
- The "Beat the Heat" program, launched with the Indiana Office of Community and Rural Affairs, addressing climate-related health issues.

These initiatives demonstrate that IU is meaningfully engaged with multiple community organizations to advance sustainability and planetary health.

3.2. Does your institution 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: Indiana University offers numerous public-facing courses and events each year related to planetary health. One example is the Indiana Sustainability and Resilience Conference, which aims to bring together students, academics, industry leaders, local governments and community groups to share best practices in planetary health and to strengthen Indiana's climate and resilience network. The institution has also held symposia on specific planetary health topics, such as the "Roads to Removal Indiana" event, which focused on carbon dioxide removal technologies and their potential applications in the state. Webinars have also been an avenue of sharing information with the general public, such as a "Preparing for Extreme Weather Events in Indiana" webinar that was free and open to all who registered.	

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:	0
Score explanation: There is not regular communication on planetary health and sustainable healthcare at the institutional level. For example, students received an email from the president's office on Earth Day outlining the institution's environmental stewardship efforts and research initiatives. However, there are no ongoing, regular updates on these topics. At the medical school level, communication about planetary health concerns is also irregular. While medical students receive weekly emails from IUSM MD Student News, this platform depends on submissions from students, faculty, and staff. In the past, this has been used to promote a callout meeting for Medical Students for a Sustainable Future (MS4SF). However, there are no consistent, regular communications about 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?	
Yes, the **institution** or **main affiliated hospital trust** offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health. (2 points)	
Yes, the **institution** or **main affiliated hospital trust** offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers. (1 point)	
There are **no** such accessible courses for post-graduate providers. (0 points)	
Score Assigned:	0
Score explanation: While IUSM has a variety of student-led initiatives surrounding planetary health and sustainable healthcare, there are currently no post-graduate level education opportunities in this topic. IUSM does offer a variety of continued education courses, Continuing Education in Healthcare Profession, but none of them pertain to teaching physicians and former students about planetary health or sustainable healthcare. **Recommendations**: Examples of what IUSM currently offers for continued education are courses on Cystic Fibrosis training, Atrial Fibrillation training, and educational programs focused on the opioid epidemic, COVID, and other worldwide issues. While planetary health and sustainable healthcare courses are not currently offered, any physician, doctor, or mentor is welcome and encouraged to visit the website and plan an activity related to these topics.	

3.5. Does your institution or its affiliated teaching hospitals have accessible educational materials for patients about environmental health exposures?	
Yes, the **institution** or **all affiliated hospitals** have accessible educational materials for patients. (2 points)	
Some affiliated hospitals have accessible educational materials for patients. (1 point)	
No affiliated hospitals have accessible educational materials for patients. (0 points)	
Score Assigned:	1
Score explanation: Educational materials on environmental health exposures are available for patients at several affiliated hospitals. For example, Richard L. Roudebush VA Medical Center provides a search bar on the va.gov website, which allows patients to find resources related to environmental health exposures primarily related to veterans. Similarly, Eskenazi Hospital offers a search feature through the MyChart patient portal, where patients can look up information on environmental health exposures.	

3.6. Does your institution or its affiliated teaching hospitals have accessible educational materials for patients about the health impacts of climate change?	
Yes, the **institution** or **all affiliated hospitals** have accessible educational materials for patients. (2 points)	
Some affiliated hospitals have accessible educational materials for patients. (1 point)	
No affiliated hospitals have accessible educational materials for patients. (0 points)	
Score Assigned:	1
Score explanation: In addition to providing educational materials on environmental health exposures, the IU affiliated hospitals also have educational materials pertaining to the health impacts of climate change. The Eskenazi Health' MyChart patient portal, provides patients with the ability to search for information relating to climate change and health impacts. Furthermore, Richard L. Roudebush VA Medical Center has a search bar on the va.gov website, enabling patients to find links to information about the health impacts of climate change, primarily focusing on how they pertain to veterans	

Section Total (8 out of 14)	**57.14%**

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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 institution offer support for students interested in enacting a sustainability initiative/QI project?	
Yes, the **institution** *either* offers grants for students to enact sustainability initiatives/QI projects *or* 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
Score explanation: IUSM offers an elective course to 3rd and 4th year students titled, "Climate Change and Health" (71ZI71). In this course, students are able to formulate a climate advocacy deliverable, which could include a sustainability initiative or QI project. Additionally, students at IUSM Indianapolis are able to apply for the "Greening IU Indy" grant, which is a $25,000 grant awarded once a year to projects that advance campus sustainability and align with the goals of the IU Climate Action Plan. However, there are no sustainability QI projects that are part of the core curriculum.	

4.2. Does your institution 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:	2

Score explanation: The IU institution as well as IUSM specifically both offer programs for students to engage in sustainable healthcare research. IUSM participates in the AMPATH program which is a partnership between IUSM and Moi University in Kenya that offers students the opportunity to engage in sustainable healthcare research in Eldoret, Kenya. The IU institution has the Office of Sustainability which offers students both the ability to engage in research as well as work as a paid intern. They also offer a Sustainability Scholars program to first-year undergraduate students.

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:	1
Score explanation: IUSM has a variety of web pages with information pertaining to planetary health and sustainable healthcare activities, however IUSM lacks a centralized web page that compiles all the information. Furthermore, the majority of web pages are from student interest groups such as the PHRC and Medical Students for a Sustainable Future (MS4SF). For example, there was a 2022 blog post describing what the PHRC is, the conclusions that were made with suggestions moving forward, and how faculty and students can get involved. It provides contact information to the MS4SF student interest group at Indiana University School of Medicine. The Medical Students for a Sustainable Future student interest group also has a webpage, which includes an explanation of the group's interests surrounding how health and the environment/climate are connected.	

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: IUSM has a student interest group called Medical Students for a Sustainable Future (MS4SF) which is supported by faculty. This group advocates for understanding the connection between health and climate. They are also in charge of completing the IUSM Planetary Health Report Card each 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 points)	
No, there is no such student representative. (0 points)	
Score Assigned:	1
Score explanation: As a statewide institution, Indiana University has a Climate Action Planning webpage with 7 out of the 9 campuses having an Implementation Committee. There is an undergraduate or graduate student on each of these committees along with several professors, directors of campus facilities, and campus planning involved. There is a general email to submit an idea about climate action planning, but no direct way to contact members of the Implementation Committees. Additionally, the Medical Students for a Sustainable Future (MS4SF) student interest group attempts to prepare future physicians to treat patients in an ever-changing world by understanding how climate and health collide.	

4.6. In the past year, has the institution had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)	**Score**
Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.	1
Panels, speaker series, or similar events related to planetary health that have students as an intended audience.	1
Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.	1
Cultural arts events, installations or performances related to planetary health that have students as an intended audience.	1
Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.	1

Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)	1

Score explanation:

- IU Indianapolis hosts an Urban Garden and IU Bloomington hosts an IU Campus Farm @ Hinkle Garton. Both offer the opportunities for sustainable farming and learning about the impact of food consumption.
- IU hosts a Global Health Researcher Speaker Series quarterly and IU Bloomington hosts Conversations with public health luminaries.
- The IU Energy Justice Labs hosts educational events for students and community members as well as conducts research on many areas regarding environmental justice.
- The IU Indianapolis Sustainability hosted Earth Month with sustainability and planetary health targeted events throughout the month of April.
- The ongoing IU Bloomington Planetary Futures Cultural Lecture Series features seminars, symposiums, and cinematic experiences covering different planetary health topics, free for students and for the public.
- The IUSM Fort Wayne Regional Campus first year medical students volunteered with the Little River Wetlands Project as a service-learning project. First- and second-year students have also volunteered with the organization's several events throughout the year. Additionally, the IUSM Service Learning Coalition organizes many events throughout the year with some including planetary health related topics, such as the 7 Elements group that organizes sustainability projects in 4 countries.
- IUSM has a Wilderness Medicine student interest group whose goal is "preparing a physician with applicable skills and knowledge about wilderness medicine." The group organizes many outdoor events including advanced wilderness life support classes and intro to SCUBA with a link for contact information and how to join.

Section Total (14 out of 15)	**93.33%**

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Campus Sustainability

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

5.1. Does your institution 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:	2
Score explanation: IU has an Office of Sustainability with a chief sustainability officer, directors of campus sustainability for the Indianapolis and Bloomington campuses, two sustainability managers, and a sustainability analyst. The IU Office of Sustainability does not have a staff member specifically for the medical school or hospital.	

5.2. How ambitious is your institution's plan to reduce its own carbon footprint?	
The institution has a **written and approved plan** to achieve carbon neutrality by **2030** (5 points)	
The institution has a **written and approved plan** to achieve carbon neutrality by **2040** (3 points)	
The institution has a stated goal of carbon neutrality by **2040** but has **not created a plan** to reach that goal or the **plan is inadequate** (1 point)	
The institution does **not** meet any of the requirements listed above (0 points)	
Score Assigned:	3
Score explanation: Indiana University has stated its commitment to achieving carbon neutrality by 2040 and has developed a written plan to achieve this. This plan encompasses all of the	

IU-associated campuses, including those that have a medical school program on the campus. The plan intends to look to national and federal regulations for guidance, but may not follow those goals specifically. More information on the Climate Action Plan and its specific goals can be 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:	0
Score explanation: In 2020, IU established a standard method for calculating the greenhouse gas (GHG) emissions across all campuses. The estimated total amount of GHG emissions by campus can be found here. It includes GHG emission data on the Bloomington, Indianapolis, East, Kokomo, Northwest, Southbend, and Southeast campuses. It includes both on-campus generated emission as well as indirect purchased electricity emissions. Specific data on utilities for IU-wide and campus-specific buildings can be found on this webpage. There are no specific numbers for the amount of renewable energy used by educational buildings on the IU campuses, but decarbonization progress can be tracked on the Implementation Tab of the IU Climate Action page. A portion of Indiana University's buildings' heating and cooling systems are gas powered, and according to the IU Indianapolis Office of Sustainability, IU Indianapolis purchases 10% of its electricity from renewable resources.	

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: IU has received LEED recognition for its efforts to construct new buildings that align with sustainable architecture and design practices. A full list of buildings that have been recognized can be found here. LEED recognition is awarded based on a points system where a project can earn a platinum, gold, silver, or certified rating depending on sustainable measures that were taken to construct and maintain the building. While not many old buildings have been retrofitted with new sustainable technologies, the 2023 IU Climate Action Plan outlines a goal stating that as old technologies need to be replaced, it would be a good opportunity to have new sustainable technologies implemented. Specific examples of changes that are planned to be implemented include lighting upgrades, building envelope improvements, HVAC system optimization, and energy management systems (Indiana University Climate Action Plan 2023, Page 30)

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: Environmentally-friendly transportation options vary between campuses at IUSM. On the Indianapolis campus, the IU Health Shuttle Service and IndyGo options provide extensive transportation options. Additionally, the Indianapolis campus has access to bike share programs and scooter rental options. On the Bloomington campus, students have access to any campus or city bus with their student ID. Additionally, the Hoosier Commuter Club incentivizes sustainable transportation and helps the university reduce peak-hour commute trips. Students on the Fort Wayne campus have access to multiple bus lines, but parking is completely free to all students, staff, and faculty, which incentivizes this form of commuting. Students on the Muncie campus have free access to public transit through the Muncie Indiana Transit System (MITS). On the West Lafayette campus, CityBus provides free public transit to any student, while bike share programs and scooter rentals are also available for students. On the Evansville, South Bend, and Northwest-Gary campus, students, staff, and faculty are strongly encouraged to have a car for transit. The Evansville and South Bend campuses have bus public transport options. While access and cost of public transit varies by campus, there are options for students; however, it is unclear if IUSM has made an effort to incentivize any of these or other forms of sustainable transportation. Biking and walking are reliable if in close proximity to campus, but the overwhelming mode of transportation at each campus is by car. Each year, IUSM students are required to attest that they have a reliable form of transportation to travel to and from education sites and clinical locations. Since there are present, yet limited, public transport options and alternatives, this most always means that the students must have a car to participate in IUSM activities and expectations. **Recommendations:** The school should work more extensively with community partners at each of the campuses to first ensure reliable, and free, public transit for all of its students. This is a first step	

that could be made to significantly incentivize sustainable and reliable transportation for all IUSM students.

5.6. Does your institution have an organics recycling program (compost) and a conventional recycling program (aluminium/paper/plastic/glass)?	
Yes, the institution has **both** compost **and** recycling programs accessible to students and faculty. (2 points)	
The institution has **either** recycling **or** compost programs accessible to students and faculty, but not both. (1 point)	
There is **no** compost or recycling program at the institution. (0 points)	
Score Assigned:	1
Score explanation: Currently, 97% of IU buildings are equipped with recycling receptacles. However, there are no dedicated composting programs available to all students. Prior to the COVID-19 pandemic, students living in IU dormitories had the opportunity to compost through IU dining facilities, though this program has ceased its operations. Though students are unable to compost, IU Dining has switched to using carry-out materials that are compostable. In addition, regional campuses have variable access to compost and/or conventional recycling programs. For example the IUSM-Terre Haute campus does not have a program for either.	

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 a**dequate s**ustainability 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:	2
Score explanation: The dining services contractor for IU offers low-impact catering services for events which include plant-forward options. IU has a vegan and vegetarian dining program that makes diverse, complete-protein options available to every member of the campus community at every meal. The Office of Sustainability tracks how much food is locally sourced, plant-based, or Fair Trade: 8% of food is sourced locally, 23% is plant-based, and 10% is Fair Trade (these numbers have not been updated since 2023). The IU Bloomington campus is also expanding the Reuse Pass at select Bloomington campus locations, which is a program aimed at eliminating	

single-use To-Go containers. Compostable containers are used in locations where Reuse Pass is not offered. IU has All-You-Care-to-Eat locations (buffet style) to help reduce food waste. IU has a Food and Agrarian Systems research and educational network that studies the social dimensions of food sustainability and helps guide IU policy. Although IU is engaging in efforts to improve food sustainability, it is still expanding and working toward a higher degree of sustainability. They cite using "sustainable food sources", but their specific sources are not readily available or transparent. The medical school collaborated with MS4SF to develop a policy against purchasing bottled water for medical student events.

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:	1
Score explanation: IU practices sustainable purchasing, which they define as purchasing of papers, cleaning products, furniture, carpets, some food items, among other products while meeting university needs with a minimal impact to the environment. Guidelines include a commitment to avoid purchasing paper products sourced from old growth forests and purchasing Greenseal products where possible. 50% of paper on the Bloomington campus is recycled and IU Printing Services utilizes soy ink where possible and otherwise engages in a toner recycling agreement with their suppliers. The University Procurement Services also offers guidelines for more sustainable purchases. These policies are extended to the School of Medicine and anywhere IU has a presence, as confirmed by the Office of Procurement Services. The policy was last updated in 2019, with no current plans for review by the Office of Sustainability as of 2024.	

5.9. Are there sustainability requirements or guidelines for events hosted at the institution?	
Every event hosted at the institution **must** abide by sustainability criteria. (2 points)	
The institution **strongly recommends or incentivizes** sustainability measures, but they are **not required.** (1 point)	
There are **no** sustainability guidelines for institution events. (0 points)	
Score Assigned:	1

Score explanation: IU recommends that hosted events apply for a Green Event Certification. A 'Green Event' is one that commits to 14 of these sustainability guidelines set by IU to reduce the waste and environmental footprint of an event. A Green Event Certification is not required by the institution or the medical school at this time; however, the medical school has enacted a policy to ban the purchase of single-use plastic water bottles for medical student events.

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:	2
Score explanation: The Indiana University School of Medicine has a dedicated sustainability working group who meets monthly to address and coordinate campus, laboratory, and hospital sustainability efforts. The working group is led by an IUSM faculty member who is the Director of Operational Performance at IUSM. Initiatives include energy efficiency according to My Green Lab guidelines, sustainable material purchasing and repurposing, and closure of fume hoods.	

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: Though Indiana University has laid out a Climate Action Plan, there are no explicit commitments to divest from fossil-fuels companies. The institution does not make available its investment portfolio, so the current state of its investments is unclear. Though no commitments have been made, the institution has an agenda to achieve carbon neutrality by 2040,	

and this includes measures such as collaborating with Indiana utilities to support grid decarbonization. There are multiple advocacy groups composed of both students and faculty calling for increased commitment and action toward sustainability efforts and fossil fuel divestment.

Section Total (16 out of 32)	**50.00%**

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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%

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	(43/72) x 100 = 59.72%	C+
Interdisciplinary Research (17.5%)	(12/17) x 100 = 70.59%	B
Community Outreach and Advocacy (17.5%)	(8/14) x 100 = 57.14%	C+
Support for Student-led Planetary Health Initiatives (17.5%)	(14/15) x 100= 93.33%	A
Campus Sustainability (17.5%)	(16/32) x 100 = 50.00%	C
Institutional Grade	**(Ax0.3 + Bx0.175 + Cx0.175 + Dx0.175 + Ex0.175) = 65.35%**	**B**

Report Card Trends

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