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Planetary Health Report Card (Medicine):

Indiana University School of Medicine

SCHOOL OF MEDICINE

INDIANA UNIVERSITY

2023-2024 Contributing Team:

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Summary of Findings

Overall	C+

Curriculum	C

- IUSM integrates social determinants of health into its core curriculum. Students gain an understanding that environmental exposures have a disproportionate impact on marginalized communities.
- IUSM has introduced a new planetary health elective available to MS3s and MS4s.
- Recommendations: The medical school should identify Planetary Health as a priority theme throughout the curriculum and include related learning objectives and test questions for each course. Connections between planetary health and medicine should be explicitly explored.

Interdisciplinary Research	C+

- IUSM is a member of the Global Consortium on Climate and Health Education and of the Association for the Advancement of Sustainability in Higher Education.
- IUSM lacks a department for interdisciplinary Planetary Health research that emphasizes the impacts of anthropogenic environmental changes on health and relies primarily on its connections through the IU institute, such as the IU Office of Sustainability, the IU School of Public Health, the Center for Urban Health, Sustainable Development Goals Working Group, the Environmental Resilience Institute, and its partnership with Moi University.
- Recommendations: The medical school should provide funded planetary health research opportunities for students and could start by introducing projects through their summer research program [Indiana University Medical Student Program for Research and Scholarship (IMPRS)].

Community Outreach and Advocacy	D+

- The IU institution collaborates with local governments and organizations, but the medical school is not directly involved in these interactions nor facilitates routine collaborations by itself.
- Recommendations: IUSM 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 medical students to be a part of this work.

Support for Student-Led Initiatives	A

- IUSM has a local chapter of Medical Students for a Sustainable Future supported by faculty.
- Recommendations: It would be beneficial for IUSM to have a student liaison representing sustainability interests who serves on a decision-making council specific to IUSM and not only the IU institution at large.

Campus Sustainability	C

- IU has implemented some strategies to encourage and provide environmentally-friendly transportation options for students and to reduce the environmental impact of commuting around campuses.
- IU has a dedicated Office of Sustainability and a Climate Action Plan Implementation Committee, but has yet to divest from fossil fuels. IU has released a formal plan for carbon neutrality by 2040 and has expanded its guidelines for “green” labs and events.
- Recommendations: IU has many opportunities to improve its sustainability practices: divest from fossil fuels, expand their composting programs, and invest in renewable energy for campus buildings, as well as involving the School of Medicine more robustly in its sustainability efforts.

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance describes planetary health as "a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth." This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanization, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment, and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change "the greatest threat to global health in the 21st century," many medical school's institutional priorities do not reflect the urgency of this danger to human health.

As future health professionals, we must be prepared to address the impacts of human-caused environmental changes on our patients' health. This preparation is in the hands of the institutions providing our medical training. It is imperative that we hold our institutions accountable for educating medical students about the health impacts of climate change and other anthropogenic environmental changes, generating research to better understand health impacts and solutions, supporting related student initiatives, embracing sustainable practices as much as possible, and engaging with surrounding communities that are most affected by environmental threats. Because climate change and environmental threats disproportionately affect vulnerable populations (for example, communities of color, older adults sensitive to health threats, and individuals in low-resource settings), these issues are inherently ones of equity and justice.

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

Definitions & Other Considerations

Definitions:

- **Planetary Health:** is described by the Planetary Health Alliance as "the health of human civilisation and the state of the natural systems on which it depends." For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional 'environmental health' examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of medical school education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term "planetary health" to satisfy the metric.

- **Sustainable Healthcare:** As defined by the Academy of Royal Colleges, sustainable healthcare involves ensuring the ability to provide good quality care for future generations by balancing the economic, environmental, and social constraints and demands within health care settings. A sustainable healthcare system maintains population health, reduces disease burden and 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 vs. Institution:** When "medical school" is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (e.g. undergraduate departments (USA), other related departments (e.g. Public Health, Population Health departments). In contrast, when "institution" is specified in the report card, we are referring to the university more

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

- **Environmental history (Metric #19 in Curriculum Section):** This is a series of questions providers are taught to ask during medical encounters that 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 mold after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution.

- **Elective:** The word "elective" refers to an optional course or lecture series that a medical student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.

- **Clerkship:** This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations or placements.

Other considerations:

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

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

Planetary Health Curriculum

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

Curriculum: General

1.1. Did your medical school offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered **more than one** elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered **one** elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does **not** have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a **lecture** on planetary health.
0	No, the medical school has **not** offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
Score Explanation: IUSM now offers the "Climate Change and Health" elective to third and fourth year medical students beginning in the 2023-2024 academic year. This is a 4-week long course which covers climate change and clinical challenges, climate solutions, and climate's impact on healthcare inequities and social injustice. The course was designed to help students better understand the role of physicians in addressing climate change and its consequential disease burden. The class also seeks to provide students with a field trip where they will have the opportunity to see a health system or hospital that exemplifies sustainable practices. **Recommendations:** Although one course is substantially better than no courses at all, there are several opportunities to introduce the subject of sustainability and planetary health to first and second year medical students, such as in a similar manner to the Mind-body elective.	

Curriculum: Health Effects of Climate Change

1.2. Does your medical school curriculum address the relationship between extreme heat, health risks, and climate change?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.

0	This topic was **not** covered.

Score explanation:

- The first-year medical student (MS1) course Foundations of Clinical Practices 1 (FCP1) includes a lecture titled, “Poverty, Neighborhood, and Environment”, which discusses systemic effects of climate change on healthcare.
- The MS1 course Fundamentals of Health and Disease (FHD) also includes an “Environmental Injury” lecture and small group, which examine the effects of and links between extreme heat exposure, climate change, and health in depth.
- The MS2 course Renal and Respiratory (R&R) has a lecture discussing how extreme heat can lead to heat stroke and heat exhaustion.
- The MS2 course Endocrine, Reproductive, Musculoskeletal, and Dermatology includes the learning objective to “Describe mechanisms by which increased temperatures and decreased ozone contribute to skin cancer rates” as well as to “Describe the mechanisms by which heat and particulate matter can exacerbate chronic rheumatologic conditions”.

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

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

Score explanation:

- IUSM’s MS1 course FHD includes a lecture titled, “Environmental Injury", that examines the effects of extreme weather events and climate change on individual health. Students then participate in an in depth discussion on the subject in a small group setting.
- In the MS2 course Neuroscience and Behavior (N&B), one of the learning objectives is to “Describe how extreme weather events impact mental health outcomes” with an associated psychiatry small group session.

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

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

Score explanation:

- IUSM's MS1 course FHD has a lecture titled, “Environmental Injury” that discusses the impact of climate change on human health and infectious disease.

- In the MS2 course Gastrointestinal and Nutrition (GI&N), there is a learning objective to "Recognize how climate change creates more favorable conditions for certain gastrointestinal illnesses and to incorporate the increasing incidence of these diarrheal illnesses into one's diagnostic workup".
- There is an elective titled "Climate Change and Health" available for 3rd year students that focuses on the effect of climate change on infectious, vector-borne illnesses, and other general health issues.

1.5. Does your <u>medical school</u> curriculum address the respiratory health effects of climate change and air pollution?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.

Score explanation:

- IUSM's MS1 course FHD has a lecture titled, "Environmental Injury" that discusses the impact of surface ozone and smog as well as particulate pollution on respiratory health with an explicit learning objectives to ""[u]nderstand the reciprocal connection between human impact on the environment and the environment's impact on human health" and to "[d]escribe the main types of air pollution and understand the different clinical disease consequences that may occur from exposure."
- There is a 4 week clerkship elective titled, "Climate Change and Health" offered that specifically mentions a focus on the effect of climate change on respiratory illnesses, such as allergies and asthma.

The following do not meet criteria for inclusion:

- In the MS1 course Molecules to Cells and Tissue (MCT), there is a learning objective to "List adverse impacts air pollution has on fetal development, and infant health and child health", but this is not explicitly connected to climate change.
- In the MS2 course R&R, there is a learning objective to "Understand how incidence rates of lung cancer are increased with increased exposure to PM [particulate matter]", but this is not explicitly connected to climate change.
- In the MS2 course ERMD, there is a learning objective to "Describe the mechanisms by which heat and particulate matter can exacerbate chronic rheumatologic conditions", but this is not explicitly connected to climate change.

Recommendations: It should be straightforward to adjust the content in MCT, R&R, and ERMD to make an explicit connection to climate change with the above listed learning objectives and corresponding slides/content.

1.6. Does your <u>medical school</u> curriculum address the cardiovascular health effects of climate change, including increased heat?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.

1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.

Score explanation: The MS1 course FHD includes an "Environmental Injury" lecture and corresponding small group, which explores the cardiovascular health effects of climate change, including responses to increased heat; the learning objectives for these sessions related to cardiovascular health effects are:

- "Understand the reciprocal connection between human impact on the environment and the environment's impact on human health"
- "Understand the different types of injuries induced by the physical environment including the basic definitions of trauma, thermal injuries, hyper and hypothermia and ionizing radiation."

Furthermore, there is a four week elective titled "Climate Change and Health Elective." In the course description it states, "This course is designed to help students better understand the role of physicians in addressing climate change and its consequential disease burden. Climate change leads to greater rates of heat-related illness…"

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

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

Score explanation:

- The MS1 course FHD includes an "Environmental Injury" lecture and corresponding small group. On one portion on a slide in this lecture, mental health effects are listed as tertiary or "diffuse" effects of climate change. The slide specifically mentions, "mental health related to failed farms, displacement, tension, and conflict over resources." On another slide "psychological trauma and other disorders" are mentioned as tertiary impacts of climate change. Using the example of forest fires, the lecturer mentions seeing interviews of people who have been displaced by them and the "incredible pain that inflicts psychologically." Mental health effects are listed as being part of the impact of Hurricane Katrina on another example slide.
- The MS2 course NS&B has a learning objective to "Describe how extreme weather events impact mental health outcomes" as well as a corresponding small group session.
- Furthermore, there is a four week elective titled "Climate Change and Health Elective." In the course description it states "This course is designed to help students better understand the role of physicians in addressing climate change and its consequential disease burden. Climate change leads to greater rates of … mental health concerns."

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

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

2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.

Score explanation: The relationships between health, individual food and water security, and environmental health is covered in didactic and small group sessions, "Structural & Social Determinants of Health - Poverty, Neighborhood, & Environment" in the MS1 course FCP1; however, "environmental health" refers more to socioeconomic status, the neighborhood patients grow up and live in, and air pollutants. The connection between these things and ecosystem health/climate change is not clearly defined or discussed.
Recommendations: It should be a relatively straightforward adaptation to explicitly make the connection between ecosystem health/climate change and above listed topics.

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

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

Score explanation: The MS1 course FCP1 includes both didactic and small group sessions titled, "Structural & Social Determinants of Health - Poverty, Neighborhood, & Environment" that discusses the items listed above in depth.

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

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

Score explanation: There is a new elective called, "Climate Change and Health." This elective covers climate change topics such as clinical challenges, solutions, and the climate's impact on health inequities and social injustice. This elective is thorough with its approach to analyzing the items listed above as it includes lectures from experts around the country, small group discussions, service learning, and visiting health care systems or hospitals with sustainable practices in place.

Recommendations: The impacts of climate change on health can be incorporated into core curriculum. For example, the session, "Structural & Social Determinants of Health - Poverty, Neighborhood, &

Environment", in the core MS1 course FCP1 could discuss in depth climate changes' impact on health inequalities.

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

1.11. Does your <u>medical school</u> curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.

Score explanation:

- The MS1 course MCT has a learning objective to "List adverse impacts air pollution has on fetal development, and infant health and child health".
- In the MS1 FHD lecture, "Environmental Injury," one slide states teratogenesis as a potential outcome of environmental exposures, but lacks any further discussion on reproductive impacts.
- The MS2 Endocrine, Reproductive, Musculoskeletal, and Dermatology (ERMD) course includes a required reading of a journal article associated with the "Abnormal Puberty Development" small group, which mentions environmental endocrine-disrupting chemicals that may contribute to the trend of earlier puberty.
- There are no lectures that discuss the impacts of environmental pollutants on infertility and the connection to industry-related environmental toxins is not explicitly made by IUSM-created curriculum.

IUSM also offers a professional development elective for 3rd and 4th year students, "Climate Change and Health". The course description states how climate change leads to maternal-fetal illnesses.

Recommendations: To expand on this topic, small group work specifically covering the reproductive health effects of environmental toxins should be included during the reproductive block of ERMD with an explicit connection made to the etiology of the environmental toxins (i.e. industry-related).

1.12. Does your <u>medical school</u> curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.

Score explanation: The MS1 course FCP1 includes modules (didactic and small-group discussion) addressing planetary health/ESH: "Social Determinants of Health" and "Poverty, Neighborhood, and Environment." Videos and data specific to Indiana were part of the assigned module material. Additionally, rising MS1s have a required service learning day during their orientation to medical

school, which often places students in underserved areas where they volunteer and learn about the gentrification of the land on which IUPUI stands and prevalence of homelessness of IUSM's neighbors. Medical students at IUSM can take electives to learn more about the environmental threats that are relevant to the local community and its health profile. The electives are called, "Climate Change and Health Elective" and "Community Immersion and Urban Health Education".

1.13. To what extent does your <u>medical school</u> emphasize the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?	
3	Indigenous knowledge and value systems are **integrated throughout** the medical school's planetary health education
2	Indigenous knowledge and value systems as essential components of planetary health solutions are included **briefly** in the core curriculum.
1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in **elective** coursework.
0	This topic was **not** covered.
Score explanation: This topic was not covered in any IUSM core curriculum or elective coursework.	

1.14. Does your <u>medical school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalized populations such as those with low SES, women, communities of color, children, homeless populations, Indigenous populations, and older adults?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.
Score explanation: The MS1 Course FCP1 addresses planetary health/ESH in the modules, "Social Determinants of Health" and "Poverty, Neighborhood, and Environment" in both didactic and small group sessions. These 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.	

Curriculum: Sustainability

1.15. Does your <u>medical school</u> curriculum address the environmental and health co-benefits of a plant-based diet?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.

1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.

Score explanation: This topic was not covered in IUSM core curriculum or elective coursework. Curriculum addresses the health benefits of a plant-based diet, but does not link these health benefits to environmental benefits.
Recommendations: The MS1 course FCP1 provides, "Whole Food, Plant Based Resources from ACLM [American College of Lifestyle Medicine]", which could be expanded to tie the link between health & environmental co-benefits. Additionally, the MS2 course Gastrointestinal System and Nutrition (GIN) has multiple lectures and small groups in which this link could be integrated, e.g. the small group session, "Nutrition and Dietary Practices".

1.16. Does your <u>medical school</u> curriculum address the carbon footprint of healthcare systems?	
3	This topic was explored **in depth** by the **core** curriculum
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.

Score explanation: This topic is not covered in IUSM core curriculum or electives

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

1	**Waste production** within healthcare **clinics** and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)
	Score explanation: The IUSM core curriculum does not discuss these topics specifically in the core curriculum. While there are lectures covering the health benefits of non-pharmacological treatment, there is no discussion including the environmental co-benefits of such treatments.

Curriculum: Clinical Applications

1.18. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies to have conversations with patients about the health effects of climate change?	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the **core** curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in **elective** coursework.
0	No, there are **not** strategies introduced for having conversations with patients about climate change
Score explanation: This topic was not covered in IUSM core curriculum or coursework. **Recommendations:** This topic could be integrated into the module and didactic session on "Poverty, Neighborhood, and Environment" in the MS1 course FCP1.	

1.19. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies for taking an environmental history or exposure history?	
2	Yes, the **core** curriculum includes strategies for taking an environmental history.
1	Only **elective** coursework includes strategies for taking an environmental history.
0	No, the curriculum does **not** include strategies for taking an environmental history.
Score explanation: Students are trained to ask patients about environmental exposures when taking a comprehensive history in FCP1 taken during first year. Coursework emphasizes inquiring about environmental safety, exposure to carbon monoxide, travel safety, occupational hazards, pets, and usage of preventative measures such as sunscreen.	

Curriculum: Administrative Support for Planetary Health

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

2	Yes, the medical school is currently in the process of making **minor** improvements to ESH/planetary health education.
0	No, there are **no** improvements to planetary health education in progress.

Score explanation: IUSM is working toward making minor improvements to better incorporate planetary health education into core curriculum and this last year offered a planetary health based elective, "Climate Change and Health Elective". Environmental change and human health risks due to environmental exposures are taught in two separate lectures in FCP I. Lecturers from Host Defense (HD) have incorporated a brief climate change discussion related to Lyme disease distribution.

IUSM Medical Students for a Sustainable Future (MS4SF) leadership is working with individual course directors to incorporate more planetary health topics into existing curriculum. MS4SF has identified areas where FCP1 and 2 can easily expand on environmental health and climate change in the future.

Curriculum Council Steering Committee has approved the development of a core ESH/planetary health curriculum with session objectives, which will be required for each pre-clinical course, and is currently working to incorporate the new content.

1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> curriculum?	
6	Planetary health/ESH topics are **well integrated** into the core medical school curriculum.
4	**Some** planetary health/ESH topics are appropriately integrated into the core medical student curriculum.
2	Planetary health/ESH is not integrated and is primarily addressed in **(a) standalone lecture(s).**
0	There is **minimal/no** education for sustainable healthcare.

Score explanation: IUSM has integrated planetary health topics into at least 7 of its preclinical courses, including MCT, FHD, N&B, R&R, GI&N, and ERMD as well as FCP1, though the content is still lacking in some aspects such as indigenous knowledge, healthcare sustainability and environmental impact, and environmental co-benefits of plant-based diets and avoiding overtreatment.

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

Score explanation: IUSM does not employ anyone to oversee integration of environmental sustainability into coursework.

Section Total (38 out of 72)	**52.78%**

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Are there additional curriculum resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Interdisciplinary Research

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

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your medical school?	
3	Yes, there are faculty members at the **medical school** who have a **primary r**esearch focus in planetary health **or** healthcare sustainability.
2	Yes, there are individual faculty members at the **medical school** who are conducting research **related** to planetary health or healthcare sustainability, but it is not their primary research focus.
1	There are planetary health and/or healthcare sustainability researchers at the **institution**, but none associated with the medical school.
0	No, there are **no** planetary health and/or healthcare sustainability researchers at the **institution** or **medical school** at this time.

Score explanation: There are planetary health and healthcare sustainability researchers at the institution [Indiana University Indianapolis (IUI), formerly IUPUI], but none directly associated with the medical school. IUPUI has both the Richard G. Lugar Center for Renewable Energy and the IUPUI Center for Urban Health. The mission of the Lugar Center is to "promote research excellence in renewable energy through collaborative efforts among faculty in the disciplines of engineering, chemistry, physics, biology, and environmental affairs and public policy". There are currently 42 research members from IUPUI or Indiana University working for the Lugar Center. The Center for Urban Health "works closely with community-based partners to promote environmental justice". The center works intimately with the community, and is led by Dr. Gabriel Filippelli, whose research includes work on pollutant distribution and human exposure, in addition to engaging communities to reduce their own exposure.

Additionally, IU partners with Purdue, the University of Notre Dame, and the Regenstrief Institute in the Indiana Clinical and Translational Sciences Institute (CTSI) to conduct research and address health challenges Hoosiers face. Some research includes topics such as Air Quality and Asthma, mosquito-spread illness, and disparities in cardiovascular disease.

2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?	
3	There is **at least one** dedicated department or institute for interdisciplinary planetary health research.
2	There is **not currently** a department or institute for interdisciplinary planetary health research, but there are **plans** to open one in the next 3 years.

1	There is an **Occupational and Environmental Health department**, but no interdisciplinary department or institute for planetary health research.
0	There is **no** dedicated department or institute.
Score explanation: The School of Science at IUPUI (IU Indianapolis) has both the Center for Earth and Environmental Science (CEES) and the Center for Urban Health. As mentioned above, the purpose of the Center for Urban Health is to build research collaborations that enhance health and sustainability for urban populations. The CEES focuses specifically on water resources and the CEES researches how pollution and climate change are affecting water systems, and the resulting impact on human health. The Richard M. Fairbanks School of Public Health has a Global Health research department that is affiliated with the Consortium of Universities for Global Health (CUGH). The mission of the CUGH is to"support academic institutions and partners to improve the wellbeing of people and the planet through education, research, service, and advocacy."	

2.3. Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your medical school?	
3	Yes, there is a process in which community members impacted by climate and environmental injustice have **decision-making power** in the climate + environmental research agenda.
2	Yes, there is a process in which community members impacted by climate and environmental injustice **advise** the climate + environmental research agenda.
1	**No**, but there are **current efforts** to establish a process for community members to advise or make decisions on the research agenda.
0	There is **no** process, and **no** efforts to create such a process.
Score explanation: There is no process at IUSM that allows communities that are disproportionately impacted by climate change and/or environmental injustice to contribute either their input or directly exercise decision making capability influencing research conducted at IUSM.	

2.4. Does your institution have a planetary health website that centralizes ongoing and past research related to health and the environment?	
3	There is an **easy-to-use, adequately comprehensive** website that **centralizes** various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.
2	There is a website that **attempts to centralize** various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The **institution** has an **Office of Sustainability website** that includes **some** resources related to health and the environment.
0	There is **no** website.
Score explanation: IU has an Office of Sustainability website that centralizes planetary health efforts and statistics from the different IU campuses, including an easy-to-find and navigate "Internships +	

Research" tab that links to ongoing projects and publications. There is some limited information on funding for sponsored students and internships, but no information on how to fund research projects.

2.5. Has your institution recently hosted a conference or symposium on topics related to planetary health?	
4	Yes, the **medical school** has hosted at least one conference or symposium on topics related to planetary health in the past year.
3	Yes, the **institution** has hosted at least one conference or symposium on topics related to planetary health in the past year.
2	Yes, the **institution** has hosted a conference on topics related to planetary health in the past three years.
1	The **institution** has not hosted any conferences directly, but they have provided financial support for a local planetary health event.
0	No, the **institution** has not hosted a conference on topics related to planetary health in the past three years.
Score explanation: Through the Environmental Resilience Institute, IU is hosting the *Indiana Sustainability and Resilience Conference* on Feb. 9, 2024. The conference "connects Hoosier climate leaders to the knowledge, tools, and resources that can accelerate climate action and resilience efforts in Indiana" and will include sessions on climate pollution reduction planning, agriculture as a climate solution, decarbonizing the built environment, and more. IU hosted its 8th annual *America's Role in the World (ARW)* conference on March 1, 2023, a conference regarded as "higher education's premier nonpartisan foreign policy conference." *ARW8* consisted of 9 sessions, 5 of which were directly related to the United Nations' SDG 13, Climate Action. John Kerry, Special Presidential Envoy for Climate, spoke at the conference, and multiple sessions focused on IU involvement with the Conference of the Parties (COP27, 28).	

2.6. Is your medical school a member of a national or international planetary health or ESH organization?	
1	Yes, the medical school is a member of a national or international planetary health **or** ESH organization
0	No, the medical school is **not** a member of such an organization
Score explanation: IUSM is a member of the Global Consortium on Climate and Health Education. IU is a member of the Association for the Advancement of Sustainability in Higher Education.	

Section Total (10 out of 17)	**58.82%**

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Are there additional research resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Community Outreach and Advocacy

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

3.1. Does your medical school partner with community organizations to promote planetary and environmental health?	
3	Yes, the **medical school** meaningfully partners with **multiple** community organizations to promote planetary and environmental health.
2	Yes, the **medical school** meaningfully partners with **one** community organization to promote planetary and environmental health.
1	The **institution** partners with community organizations, but the medical school is not part of that partnership.
0	No, there is **no** such meaningful community partnership.

Score explanation:

- IU's Environmental Resilience Institute brings together a coalition of government, business, nonprofit, and community leaders to directly engage with communities in Indiana and the Midwest that are most affected with environmental health harms.
- IU graduate and undergraduate students can work with Indiana businesses, local governments, and non-profit organizations on sustainability projects through the McKinney Climate Fellowship. Notably, students have worked with local governments, such as the City of Gary, to assess local climate vulnerabilities and to inform resilience planning.
- IU's Environmental Resilience Institute and the IU Center for Rural Engagement launched the Indiana Resilience Funding Hub in the spring of 2023 to assist communities compete for federal sustainability grants.

3.2. Does your medical school offer community-facing courses or events regarding planetary health?	
3	The **medical school** offers community-facing courses or events at least once every year.
2	The **medical school** offers courses or events open to the community at least once per year, but they are not primarily created for a community audience.
1	The **institution** has offered community-facing courses or events, but the **medical school** was not involved in planning those courses or events.
0	The **institution/medical school** have not offered such community-facing courses or events.

Score explanation: In 2023, the Indiana Sustainability and Resilience Conference returned to an in-person format, with more than 350 Hoosiers gathering to advance climate resilience and to cultivate a more environmentally just state. The conference is designed to bring together students, academics, industry leaders, local governments and community groups; for example, one afternoon breakout session this year was led by Earth Charter Indiana and the Central Indiana Community Foundation and addressed the racial, cultural, and societal impacts of climate change on underserved communities.

Indiana University's Environmental Resilience Institute hosts the Prepared for Environmental Change Webinar Series, which is designed for a Midwestern audience. The series supports local government leaders to address community climate vulnerabilities, with topics ranging from community solar projects to environmental change and social equity. The recently launched Indiana Resilience Funding Hub also hosted six webinars in 2023, to assist Hoosier communities interested in accessing funds made available through the Infrastructure Investment and Jobs Act and the Inflation Reduction Act.

3.3. Does your medical school have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
2	Yes, all students **regularly** receive communication updates dedicated to planetary health and/or sustainable healthcare.
1	Yes, planetary health and/or sustainable healthcare topics are **sometimes** included in communication updates.
0	Students **do not** receive communications about planetary health or sustainable healthcare.
Score explanation: Medical students receive weekly communication via email from IUSM MD Student News that may include planetary health and/or sustainable healthcare topics. For example, the Medical Students for a Sustainable Future (MS4SF) call out meeting was promoted in an email to all medical students that included various upcoming events. Additionally, any student, faculty, or staff member who wants to include a related topic in the next MD Student News newsletter can do so using the content submission form located at the bottom of each virtual newsletter.	

3.4. Does the institution or main affiliated hospital trust engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?	
2	Yes, the **institution** or **main affiliated hospital trust** offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health.
1	Yes, the **institution** or **main affiliated hospital trust** offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
0	There are **no** such accessible courses for post-graduate providers
Score explanation: Post-graduate providers do not have access to courses through the institution or main hospital trust that are aimed at increasing knowledge of planetary health or sustainable healthcare. IUSM reports that their current specialized educational programs are focused on Covid-19, cystic	

fibrosis, LGBTQ+ healthcare, and the opioid epidemic. These topics reflect the perceived current needs by IUSM learners and faculty. Any faculty member interested in influencing change in the current CME available can do so by applying through the Division of Continuing Education in Healthcare Professions and paying the associated fees.

3.5. Does your medical school or its affiliated teaching hospitals have accessible educational materials for patients about environmental health exposures?	
2	Yes, the **medical school** or **all affiliated hospitals** have accessible educational materials for patients.
1	**Some** affiliated hospitals have accessible educational materials for patients.
0	**No** affiliated medical centers have accessible educational materials for patients.
Score explanation: One of the affiliated hospitals, Eskenazi Hospital, has a panel in the MyChart patient portal ("Search Medical Library") where patients can search a phrase and it links them to medically relevant information in MedLine Plus, including information about environmental health exposures.	

3.6. Does your medical school or its affiliated teaching hospitals have accessible educational materials for patients about the health impacts of climate change?	
2	Yes, the **medical school** or **all affiliated hospitals** have accessible educational materials for patients.
1	**Some** affiliated hospitals have accessible educational materials for patients.
0	**No** affiliated hospitals have accessible educational materials for patients.
Score explanation: One of the affiliated hospitals, Eskenazi Hospital, has a panel in the MyChart patient portal ("Search Medical Library") where patients can search a phrase and it links them to medically relevant information in MedLine Plus, including information about climate change and health impacts.	

Section Total (5 out of 14)	**35.71%**

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Are there additional community engagement and advocacy resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Support for Student-Led Planetary Health Initiatives

Section Overview: ***This section evaluates institutional support for student-led planetary health initiatives, such as funding, fellowships, programming, and student groups.*** *Planetary health is a young field and, as young people facing a future deeply shaped by climate change, students are often some of the first at an institution to engage with it. Institutions should provide support for students to engage in sustainability quality improvement (QI) initiatives, discover mentors in their area of interest, and receive funding for planetary health projects.*

4.1. Does your medical school or your institution offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the **medical school** or **institution** *either* offers grants for students to enact sustainability initiatives/QI projects *or* sustainability QI projects are part of the core curriculum.
1	The **medical school** or **institution** encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, **but** there is no student funding available and there is no requirement to participate.
0	No, **neither** the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.
Score explanation: The medical school does not independently offer grants for sustainability or sustainability QI initiatives, but medical students on the Indianapolis campus have the opportunity to apply for the "Greening IUPUI" grant. This grant program awards $25,000 annually for projects that advance campus sustainability and promote the goals of the IU Climate Action Plan. Sustainability QI projects are not part of the core curriculum, but a Climate Change and Health elective is offered online to medical students, with the option to complete a QI project or sustainability initiative.	

4.2. Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
2	The **institution** has a **specific** research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these **require student initiative** to seek these out and carry them out in their spare time.
0	There are **no opportunities** for students to engage in planetary health/sustainable healthcare research.
Score explanation: IU offers internships, fellowships, and has "sustainability scholars", all of which are paid or funded positions as indicated on the IU Office of Sustainability website . Students may also independently seek research opportunities in planetary health and sustainable healthcare by reaching out to individual faculty mentors.	

4.3. Does the medical school have a webpage where medical students can find specific

information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.	
2	The **medical school** has a webpage with specific information related to planetary health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.
1	There is a **medical school** webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information.
0	There is **no medical-school** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.

Score explanation: IUSM has a few sparse and scattered webpages, but no cohesive webpage with easy-to-access or up-to-date information.

There is a webpage that focuses on the PHRC, but nothing else. Featured are what the PHRC is and why it is important as well as how to get involved and how to contact Medical Students For a Sustainable Future (MS4SF), a planetary health Student Interest Group (SIG) led by students.

There is another webpage dedicated to the MS4SF SIG, but it only gives a basic explanation of the group and highlights the PHRC. This webpage has no contact information for the MS4SF SIG or indication of how to join. It has a hyperlink on the "Medical Students for a Sustainable Future" name on the bottom of the page, but it self-links to the same page on which it exists.

MS4SF is also listed under the "Special Topics SIGs" tab on the IUSM Student Interest Groups (SIGs) webpage, with an email contact listed for the current president of the SIG.

4.4. Does your medical school have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?	
2	Yes, there is a student organization **with faculty support** at my medical school dedicated to planetary health or sustainability in healthcare.
1	Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it **lacks faculty support.**
0	No, there is **not** a student organization at my institution dedicated to planetary health or sustainability in healthcare.

Score explanation: IUSM is an affiliate chapter of Medical Students For A Sustainable Future (MS4SF). IUSM MS4SF has faculty support, and students are eligible to request funding from the medical school.

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

1	Yes, there is a student representative that serves on a medical school or institutional decision-making council/committee.
0	No, there is no such student representative.

Score explanation: IU has an institutional Climate Plan Action Implementation Committee on 7 out of 9 of its campuses, most of which have at least one undergraduate or graduate student member on the committee. There is a general email listed to be able to contact the committee, but no specific emails for each member or for the student liaison. IU does have an internal database in which students and faculty can find the email information for other students/faculty, but this information is not available to non-institutional members.

IUSM also has a chapter of Medical Students for a Sustainable Future (MS4SF), which is a student-led group with a faculty mentor, that has been working with IUSM Medical Education Committee to adopt greener student event policies and with IUSM deans to address progress each year.

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)	
1	Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.
1	Panels, speaker series, or similar events related to planetary health that have students as an intended audience.
1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.
1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students)

Score explanation: There are 2 urban gardens at IUPUI through the IUPUI Office of Sustainability where students can volunteer. The other IUSM campuses also have community gardens.

IUPUI hosts an Indiana Sustainability and Resilience Conference, which is an annual gathering for sustainability events. There is a 50% discount on ticket prices for students.

The Environmental Resilience Institute's McKinney Midwest Climate Project (MMCP) is "... helping to advance the transition to sustainable and climate-friendly practices in Indiana and the Midwest. Through partnerships with communities, businesses, and nonprofits, the project is engaging students in sustainability and environmental career training, and empowering the region to adopt high-impact solutions that address climate change."

At the IUPUI International Festival – IUPUI SDG Day, a film was shown titled “Saving our Oceans: Mr. Bubbles”. This film demonstrated the issue of pollution in the oceans.

IUSM has a Service Learning Coalition that organizes several different service projects throughout the year. They also hold a spring service day every year which includes projects in trash cleanup and often in gardening.

IUSM has a Wilderness Medicine SIG, which allows opportunities for wilderness and outdoors programs such as hiking, backpacking, kayaking, etc. The group also organizes several wilderness training sessions.

Section Total (13 out of 15)	**86.67%**

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Are there additional student-led initiative resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Campus Sustainability

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

5.1. Does your medical school and/or institution have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is **at least one designated staff member** for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but **no specific staff member** in charge of medical school and/or hospital sustainability.
1	There are **no salaried sustainability staff,** but there is a sustainability task force or committee
0	There are **no** staff members **or** task force responsible for overseeing campus sustainability
Score explanation: IUSM has an institutional Office of Sustainability with multiple staff and interns, but no staff is designated to sustainability at the hospitals or medical school.	

5.2. How ambitious is your institution/medical school plan to reduce its own carbon footprint?	
5	The institution/medical school has a **written and approved plan** to achieve carbon neutrality by **2030**
3	The institution/medical school has a **written and approved plan** to achieve carbon neutrality by **2040**
1	The institution/medical school has a stated goal of carbon neutrality by **2040** but has **not created a plan** to reach that goal or the **plan is inadequate**
0	The institution/medical school does **not** meet any of the requirements listed above
Score explanation: Indiana University released the institution-wide IU Climate Action Plan on September 11, 2023 pledging to reach institutional carbon neutrality by 2040. The plan outlines clear initiatives to attain carbon neutrality by 2040 through initiatives such as grid decarbonization, sustainable infrastructure, and renewable energy sources. A goals and progress page has been created to stay updated with efforts.	

5.3. Do buildings/infrastructure used by the medical school for teaching (not including the hospital) utilize renewable energy?	
3	Yes medical school buildings are **100%** powered by renewable energy
2	Medical school buildings source **>80%** of energy needs from off-site and/or on-site renewable energy.
1	Medical school buildings source **>20%** of energy needs from off-site and/or on-site renewable energy.
0	Medical school buildings source **<20%** of energy needs from off-site and/or on-site renewable energy.
Score explanation: While specific data for all 9 IUSM campuses is not available, it is possible to track energy usage and GHG production for the Bloomington, Indianapolis, Gary, and South Bend campuses via the Climate Action Plan Goals and Progress Page. All campuses combined produced an average of about 500,000 MMBtu (a measure of greenhouse gas production) monthly through a combination of purchased electricity, purchased steam and chilled water, and natural gas. No mention is made of renewable energy, and IUSM has not received any renewable energy certificates. Typically, STARS data is available on the Climate Action STARS page, but reporting has been paused since COVID.	

5.4. Are sustainable building practices utilized for new and old buildings on the medical school campus, with design and construction of new buildings and remodeling of old buildings conforming to a published sustainability rating system or building code/guideline?	
3	Yes, sustainable building practices are utilized for new buildings on the medical school campus and the **majority** of old buildings **have been retrofitted** to be more sustainable.
2	Sustainable building practices are utilized for new buildings on the medical school campus, but most old buildings have **not been retrofitted.**
1	Sustainable building practices are **inadequately or incompletely** implemented for new buildings.
0	Sustainability is **not considered** in the construction of new buildings.
Score explanation: IU has incorporated the LEED (Leadership in Energy and Environmental Design) system as a way of measuring sustainability of infrastructure. This system classifies buildings as platinum, gold, silver, and certified in descending order based on a numerical point system that ascribes points for water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, and innovation. IU has stated that 69% of eligible newly constructed renovated building spaces have been LEED certified. In the Bicentennial Strategic Plan document, IU formally pledged that all major new buildings would meet a minimum of LEED gold certification. Some examples of LEED gold buildings at IUPUI : Glick Eye Institute, Neuroscience Building, and University Hall. Examples of retrofitted IUPUI Buildings: Medical Research and Library Building	

5.5. Has the medical school or institution implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?	
2	Yes, the medical school or institution has implemented strategies to encourage and provide **environmentally-friendly transportation options** such as safe active transport, public transport, or carpooling and these options are well-utilized by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
1	The medical school or institution has implemented **some** strategies to provide environmentally-friendly transportation options, but the options are **unsatisfactorily** accessible or advertised.
0	The medical school or institution has **not** implemented strategies to encourage and provide environmentally-friendly transportation options.
Score explanation: Students on the Indianapolis, Bloomington, and Muncie campuses have access to free or discounted bus transportation around campus or the surrounding city; the 6 other campuses do not have similar access. Although biking and walking are reliable if in close proximity to campus, the overwhelming mode of transportation is by car at each campus. IUSM students are also required to sign a statement that they have access to a reliable form of transportation for traveling to/from clinical encounters each year, which typically means a car since there is limited public transportation/alternatives to many of the clinical sites.	

5.6. Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?	
2	Yes, the medical school has **both** compost **and** recycling programs accessible to students and faculty.
1	The medical school has **either** recycling **or** compost programs accessible to students and faculty, but not both.
0	There is **no** compost or recycling program at the medical school.
Score explanation: 97% of IU buildings offer recycling receptacles. However, composting is not offered in buildings. IU has a composting center for on campus residents at the Indianapolis campus, however this program is not accessible to students at other campuses nor within non-residential buildings. Before the COVID-19 pandemic, IU dining facilities composted the collected food waste; however, the compost processor that served IU has ceased operations and IU has yet to establish a new program.	

5.7. Does the medical school apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?	
3	Yes, the medical school has 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.

2	There are sustainability guidelines for food and beverages, but they are **insufficient or optional**. The medical school **is engaged** in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are **insufficient or optional.** The medical school is **not** engaged in efforts to increase food and beverage sustainability.
0	There are **no** sustainability guidelines for food and beverages.

Score explanation: IU engages in "sustainable procurement", wherein "green" purchasing of papers, cleaning products, furniture, carpets, some food items, among others, is encouraged. The dining services contractor for IU provides low-impact catering services for events which include plant-forward options. Furthermore, the dining contractor for IU has a vegan dining program that makes diverse, complete-protein vegan options available to every member of the campus community at every meal. IU is engaged in improving food sustainability. The Office of Sustainability tracks how much food is locally sourced, plant-based, or Fair Trade. As of 2023, 8% of food is sourced locally, 23% is plant-based, and 10% is Fair Trade.

The medical school is also working with MS4SF to develop a policy against purchasing bottled water for student events.

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

Score explanation: The University Procurement Services offers guidelines for more sustainable purchases with an incentive 10% increase in funding for products deemed to be more sustainable. 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.

5.9. Are there sustainability requirements or guidelines for events hosted at the medical school?	
2	Every event hosted at the medical school **must** abide by sustainability criteria.
1	The medical school **strongly recommends or incentivizes** sustainability measures, but they are **not required.**
0	There are **no** sustainability guidelines for medical school events.

Score explanation: IU strongly recommends that hosted events apply for a Green Event Certification. A 'Green Event' is one that follows many sustainability guidelines set by IU to reduce the waste and environmental footprint an event; however, these guidelines are not expressly extended to the medical school. The medical school recently enacted a policy to no longer purchase single-use plastic water bottles for student events, but has no other explicit guidelines for sustainable events.

5.10. Does your medical school have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
2	Yes, the medical school has **programs** and **initiatives** to assist with making lab spaces more environmentally sustainable.
1	There are **guidelines** on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are **no** efforts at the medical school to make lab spaces more sustainable.
Score explanation: IU launched a program in 2023 for campus labs to become certified with My Green Lab, an online program that educates labs on how to save energy, water, waste, and materials. Part of this program includes the Freezer challenge, which educates lab spaces on how to reduce energy used for freezing specimens and once implemented, helps track how much energy is saved with these practices. The IUSM Specimen Storage lab won in 2023 for the academic category. Of note, this is a voluntary program so only some labs are taking part in this initiative. IU office of sustainability has promoted the formation of Green Teams where, once formed, staff within a particular office unit work collectively to promote sustainable practices within their workplace and become green office certified if they meet certain criteria. IU has a developed procedure and infrastructure for lab equipment and material repurposing that redistributes viable equipment to other departments. According to correspondence with the IUPUI office of sustainability, the Cancer research institute and Stark Neurosciences research regularly use this.	

5.11. Does your institution's endowment portfolio investments include fossil-fuel companies?	
4	The institution is **entirely divested** from fossil fuels **and** has made a **commitment to reinvest divested funds** into renewable energy companies or renewable energy campus initiatives.
3	The institution is **entirely divested** from fossil fuels.
2	The institution has **partially divested** from fossil fuel companies **or** has made a **commitment to fully divest**, but **currently** still has fossil fuel investments.
1	The institution has **not divested** from fossil-fuel companies, but faculty and/or students are **conducting organized advocacy** for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been **no efforts** to change that.
Score explanation: In 2014, IU passed a Resolution regarding fossil fuel divestment of the IU Foundation Endowment, which stated that by the conclusion of Spring 2020, the University	

Administration, Board of Trustees, and the IU Foundation should immediately cease any new investments in fossil fuel companies or in commingled assets that include holdings in fossil fuel companies. IU currently has invested 71 million dollars in sustainable industries such as renewable energy or sustainable forestry, but this represents only 3% of their investment pool. Additionally, in 2023, IU approved a Climate Action Plan to achieve carbon neutrality by 2040 that includes financial recommendations to invest in energy conservation measures.

Section Total (15 out of 32)	**46.88%**

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Are there additional sustainability resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Grading

Section Overview
This section focuses on the grading of the report card. The institution received a grade for each of the individual sections as well as an overall institutional grade. Section point totals were tallied, divided by the total points available for the section, and converted to a percentage. The overall institutional grade is a weighted average of the section grades, with curriculum receiving a higher weight owing to its larger number of metrics. Letter grades for each section and the institution overall were then assigned according to the table below.

Letter Grade*	Percentage
A	80% - 100%
B	60% - 79%
C	40% - 59%
D	20% - 39%
F	0% - 19%

**Within each grade bracket, a score in the top 5% (_5 to_9%), receives a "+", and a score in the bottom 5% (_0-_4%) receives a "--". For example, a percentage score of 78% would be a B+.*

Planetary Health Grades for the 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%)	(38/72) x 100 = 52.78%	C
Interdisciplinary Research (17.5%)	(10/17) x 100 = 58.82%	C+
Community Outreach and Advocacy (17.5%)	(5/14) x 100 = 35.71%	D+
Support for Student-led Planetary Health Initiatives (17.5%)	(13/15) x 100= 86.67%	A
Campus Sustainability (17.5%)	(15/32) x 100 = 46.88%	C
Institutional Grade	**(Ax0.3 + Bx0.175 + Cx0.175 + Dx0.175 + Ex0.175) = 55.75%**	**C+**

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.