



Planetary Health Report Card (Medicine): *University of Colorado School of Medicine*



School of Medicine

UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS

2022-2023 Contributing Team:

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Summary of Findings

Overall	B
<u>Curriculum</u>	B-
<ul style="list-style-type: none"> In 2021 CUSOM officially launched the new Trek Curriculum which integrated planetary health throughout the core curriculum. Both planetary health effects and clinical skills are discussed in lectures, especially in the gastrointestinal and pulmonary block. Elective coursework and enrollment at the Fort Collins branch campus, which emphasizes the concept of One Health, offer deeper dives. In the new 2022-2023 clerkship curriculum, students learn how to collect environmental exposure histories and have a team-based learning case highlighting respiratory diseases related to environmental exposures. Recommendations: The main workshop wherein students engage directly with planetary health concepts was eliminated from the first year curriculum. This should be reimplemented in future years' curriculum. 	
<u>Interdisciplinary Research</u>	A
<ul style="list-style-type: none"> CUSOM has faculty dedicated to interdisciplinary research and hosts webinars regarding planetary health. The CU Consortium for Climate Change & Health organizes research happening in the field across the various campuses associated with CU but is not directly aimed at medical students. Recommendations: CUSOM could reach out to communities most affected by climate change to gather their input on how best to utilize our resources. 	
<u>Community Outreach and Advocacy</u>	B
<ul style="list-style-type: none"> CUSOM does not currently have many opportunities for community outreach related to planetary health, but curricular reform could change this. All students must now complete a Service Learning project with "Climate Change and Health Equity" being a possible focus area. Recommendations: Plan more community outreach opportunities for planetary health and centralize information we do have such that students can more easily find it. 	
<u>Support for Student-Led Initiatives</u>	B
<ul style="list-style-type: none"> CUSOM supports multiple student groups dedicated to planetary health and hosts yearly sustainability solutions challenges that reward innovative student projects. The branch campus in Fort Collins is built upon the One Health concept. After publication of last year's PHRC, starting this last year, each medical school class will have two elected sustainability representatives that sit on the Medical Student Council. Recommendations: A website for students on the topic of climate and health is in the process of being built which will help improve awareness and provide resources for students interested in the topic. CUSOM has a great opportunity to incorporate more speaker events or artistic displays that touch on the topic of climate health at the bioethics and humanities pavilion in the center of the medical campus. 	
<u>Campus Sustainability</u>	C-
<ul style="list-style-type: none"> CUSOM has some basic campus sustainability measures in place including public transportation, basic single stream recycling and initiatives for environmentally sustainable lab spaces. New buildings are built sustainably, but old buildings have not been retrofitted or upgraded. Campus emissions reduction goals align with state targets, but don't aim for carbon neutrality and there are no sustainability guidelines for events. Recommendations: Pursuing renewable energy on campus and moving the institution's endowment portfolio away from fossil fuels are larger, but necessary, moves towards campus sustainability. 	

Statement of Purpose

Planetary health is human health.

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

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

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

Definitions & Other Considerations

Definitions:

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

Added to our resources last year, 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. Did your medical school offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>Score explanation: EMED 8010 “Climate Change and Health” is a 2 week elective offered to fourth year medical students. Modules include 1. Foundations of Climate Science, 2. Air Quality, 3. Heat Related Illness, 4. Extreme Weather, 5. Mental Health, 6. Water Security, and 7. Food Security, as well as interdisciplinary sessions on environmental justice, mineral and energy trends, environmental and social governance. Curriculum includes didactics from local and guest speakers, CU Mines interdisciplinary faculty lectures, several case based learning sessions, a workshop on advocacy, a workshop on motivational interviewing for climate change and health education, an international governance simulation, and an assigned op-ed and personal improvement project. Additional curricular direction and content delivery at the Fort Collins branch of CUSOM is led by One Health faculty from the School of Veterinary Medicine, environmental and occupational hazard researchers, and other interdisciplinary faculty. There is also a “One Healthy City Practicum” elective course offered across all four years to students in the Fort Collins branch. This course includes a 12-session interprofessional didactic series where students work with other graduate departments at CSU and the city of Fort Collins to develop “healthy living” public planning initiatives.</i></p> <p><i>The University of Colorado School of Medicine (CUSOM) offers several educational track options that students can enroll in to supplement their education in an area they are interested in. The Global Health track focuses on issues that are affecting developing countries and ways in which future providers can help. There are several lectures that are required for this track, including: IDPT 5200 Introduction to Global Health, IDPT 5012 Introduction to Global Health Research, IDPT 6623 Refugee and Immigrant Health I, and IDPT 8056 Global Health and Underserved Populations. During these classes we learn about the impacts of Planetary Health and its effects on different populations throughout the world along with the applications of sustainable development on global healthcare initiatives. There is emphasis on the effects of planetary health on the most vulnerable of populations.</i></p>	

Curriculum: Health Effects of Climate Change

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.
<p><i>Score explanation: As part of EMED 8010 “Climate Change and Health,” a 4th year medical student elective, a 1 day module is dedicated to the topic of heat-related illness. The module includes didactics as well as an epidemiology workshop.</i></p> <p><i>In the new Trek curriculum (https://medschool.cuanschutz.edu/education/current-students/curriculum/trek-curriculum), newly implemented for the class of 2025, during the first year gastrointestinal block, students first are presented with a lecture on the impacts of climate change on human health in different communities and populations. Topics discussed included: climate drivers (such as increased temperatures, decreased rain and humidity with contrasting increased precipitation and humidity, increased severe weather events, extreme floods, increased drought, increased CO2), the exposure pathways (including corresponding environmental conditions and environmental hazards), health outcomes, vulnerable populations, and clinical implications. Later, during the pulmonary and cardiovascular block, there was a hosted ‘Vista’ session where the Endowed Chair in Climate Medicine lectured on the impact planetary health will likely have on the future of medicine and students were encouraged to ask questions during the talk. This is one example of an integration of climate change in the required coursework and specifically in the Health and Society pillar of the new Trek Curriculum at CUSOM.</i></p>	

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.
<p><i>Score explanation: As part of EMED 8010 Climate Change and Health, a 4th year medical student elective, a one day module is dedicated to the topic of extreme weather. The module consists of didactics and a case based learning activity.</i></p> <p><i>In the new Trek curriculum’s gastrointestinal block, there is an hour-long lecture covering a range of topics concerning climate change including increased severe weather events. Opportunities exist to integrate small group discussions about these topics, as well as including them across other organ</i></p>	

system blocks, and in preparing students to have conversations regarding the health effects of climate change during weekly clinical skills sessions.

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: This topic was covered in depth during the EMED 8010 Climate Change and Health elective. There were several lectures during the pre-clinical infectious disease block that have 1-2 slides discussing changing patterns of infectious diseases. This topic is also briefly covered in the Global Health Track Curriculum.

This topic was briefly covered during the gastrointestinal block of the new Trek Curriculum. There were a couple of slides that touched on the increased incidence of vector-borne illnesses and water-borne GI illnesses as a result of climate drivers and changing environmental conditions. Again, opportunities exist to integrate such topics across other organ system blocks, and in preparing students to have conversations regarding the health effects of climate change during weekly clinical skills sessions.

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

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

Score explanation: This topic was covered in depth during the EMED 8010 Climate Change and Health elective. Air pollution was identified as a risk factor for respiratory disease in several lectures during the Pulmonary unit, however there is no discussion of the role of climate change in respiratory health.

In the new Trek curriculum, during the first year gastrointestinal block students first are presented with a lecture on the impacts of climate change on human health in different communities and populations. This session discussed the detrimental changes in air quality that are occurring due to urbanization, inversion and increased wildfire smoke, and other climate change related environmental conditions. The effects of increased air pollutants and declining air quality were discussed in context to respiratory health and community health. Again, opportunities exist to integrate such topics across other organ system blocks, and in preparing students to have conversations regarding the health effects of climate change during weekly clinical skills sessions.

In the clinical year, there is a half day team based learning session focused on planetary health. The session includes a case of a child with dyspnea which is ultimately diagnosed as asthma with environmental triggers. The learning objective for the session was, “demonstrate taking an environmental health patient history.”

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

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

Score explanation: This topic was covered in depth during the EMED 8010 Climate Change and Health elective.

In the new Trek curriculum, during the first year gastrointestinal block students first are presented with a lecture on the impacts of climate change, including the effects of increased heat on cardiovascular health. Again, opportunities exist to integrate such topics in preparing students to have conversations regarding the health effects of climate change during weekly clinical skills sessions.

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

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

Score explanation: This topic was covered in depth during the EMED 8010 Climate Change and Health elective.

This topic was briefly discussed in the new Trek curriculum during the first year gastrointestinal block. Students were presented with a lecture on the impacts of climate change on human health in different communities and populations. During this specific session, groups briefly touched on the neuropsychological effects of climate change and environmental degradation. This included topics such as increased need of social work assistance, increased mental health concerns (such as anxiety, emotional stress, PTSD, grief, depression) that come with climate change related increases in illness and death or geographic displacement due to extreme weather events.

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

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: This topic was covered in depth during the EMED 8010 Climate Change and Health elective during the Food Security Module.</i></p> <p><i>In the Trek curriculum, during the first year gastrointestinal block students are presented with a lecture on the impacts of climate change on human health in different communities and populations. During this specific session, we briefly discussed the agricultural impacts on climate change including increased reliance on pesticides, increased drought and flooding, increased water contamination and growth of pathogens in water systems due to increasing temperatures, and decreased nutritional value of crops.</i></p>	

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.
<p><i>Score explanation: This topic was covered in depth during the EMED 8010 Climate Change and Health elective. This topic was also covered in the Global Health Track. It is not addressed in the core curriculum.</i></p> <p><i>This topic was briefly discussed in the new Trek curriculum, during the first year gastrointestinal block. Students are presented with a lecture on the impacts of climate change on human health in different communities and populations. During this session, it was mentioned how individuals without housing will be disproportionately affected by rising temperatures and other effects of climate change. However, the referenced topics were mentioned only briefly in the lecture.</i></p>	

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: This topic was covered in depth during the EMED 8010 Climate Change and Health elective. It is also discussed in the Global Health Track. While unequal regional health impacts in the United States were briefly mentioned during a lecture given to first years, this topic is not explored in much depth on a global scale.

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

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

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

Score explanation: This topic is covered in the lecture “Women’s Health and Climate Change” during the EMED 8010 Climate Change and Health elective. It is not addressed in the core curriculum.

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

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

Score explanation: This topic is discussed during several lectures in EMED 8010 “Climate Change and Health,” an elective course.

Human-caused environmental threats in the Denver/Aurora community were discussed during a lecture given to first year students, as well as being brought up in a “windshield” survey students conducted during their orientation week. This survey required groups of students to visit different communities surrounding the university and also research social determinants of health in their assigned area. These findings were then presented to the cohort.

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

3	Indigenous knowledge and value systems are integrated throughout the medical school’s planetary health education
2	Indigenous knowledge and value systems as essential components of planetary health solutions are included briefly in the core curriculum.

1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in elective coursework.
0	This topic was not covered.
<i>Score explanation: This topic is discussed during several lectures in EMED 8010 “Climate Change and Health,” including the lecture “Climate Change and Indigenous Health.”</i>	

14. Does your medical school curriculum address the outsized impact of anthropogenic environmental toxins on marginalized populations such as those with low SES, women, communities of color, children, homeless populations, Indigenous populations, and older adults?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<i>Score explanation: This topic was covered in depth during the EMED 8010 Climate Change and Health elective.</i>	
<i>In the new Trek curriculum, during the first year gastrointestinal block, students are presented with a lecture on the impacts of climate change on human health in different communities and populations. During this session, the professor briefly discussed populations that are disproportionately affected by climate change and how communities, individuals, ecosystems, and health systems are currently burdened and will be further burdened over time by extreme weather events.</i>	
<i>In Years 1 and 2, the core curriculum included a session where students complete a “windshield” survey of the surrounding metropolitan communities of the Greater Denver Area and in the locations of the clerkship sites. Students were tasked to look at health impacts related to geography: e.g. identifying communities that are closer in proximity to highways or areas where wildfire smoke burden presented a disproportionately greater health burden. Second year students complete an experiential learning project where they follow a patient with unmet health needs and seek to better understand the patient and their community. For this project, students complete another “windshield” survey and basic community and environmental health assessment. They collect data on the community and devise a plan to help address the patient’s unmet health needs.</i>	

Curriculum: Sustainability

15. Does your medical school curriculum address the environmental and health co-benefits of a plant-based diet?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: This topic was covered in depth during the EMED 8010 Climate Change and Health elective. This was not discussed in the core curriculum.

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

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

Score explanation: This topic was covered in one core lecture called “Climate Change and Health: Why do physicians care?” in the Health and Society pillar of the new Trek Curriculum at CUSOM. It is also covered in elective coursework, specifically during the EMED 8010 Climate Change and Health elective during a Dean’s Circle Webinar on Hospital Sustainability, and the lecture from Health Care Without Harm’s Sonia Roschnik on “International Climate Policy and Healthcare Sector Decarbonization.”

17. Does your medical school curriculum cover these components of sustainable clinical practice in the core curriculum? (1 point each)

1	Waste production within the healthcare system and strategies for reducing waste in clinical activities, such as in the operating room
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	The impact of anesthetic gasses on the healthcare carbon footprint and ways to reduce anesthesia environmental impacts, such as total intravenous anesthesia or choosing less environmentally anesthetic gas options with reduced greenhouse gas emissions
1	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 for obesity. This is commonly known as social prescribing in the UK.
1	The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment

*Score explanation: Throughout the first year, case based learning emphasizes optimizing medical interventions to prevent over medication, unnecessary health expenses, and minimizing adverse effects, however the **environmental co-benefit is not emphasized**. Waste production in the healthcare system is discussed in the core curriculum.*

Curriculum: Clinical Applications

18. In training for patient encounters, does your medical school’s curriculum introduce strategies to have conversations with patients about the health effects of climate change?	
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
<p><i>Score explanation: At CUSOM, during the first year gastrointestinal block, students first are presented with a lecture on the impacts of climate change on human health in different communities and populations. Later, during the pulmonary and cardiovascular block, there was a hosted ‘Vista’ session where the Endowed Chair in Climate Medicine lectured on the impact planetary health will likely have on the future of medicine and students were encouraged to ask questions during the talk. This is one example of an integration of climate change in the required coursework and specifically in the Health and Society pillar of the new Trek Curriculum at CUSOM. There are also electives or tracks available for students to engage with discussions on climate change (ie. global health track).</i></p>	

19. In training for patient encounters, does your medical school’s 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.
<p><i>Score explanation: The pulmonary block of the core Trek curriculum at CUSOM involves strategies for taking environmental exposure histories. We discussed several strategies with leaders of our curriculum reform for incorporating this more throughout the curriculum including the potential for incorporating the topics in the Health and Society pillar of the curriculum which already integrates discussions on planetary and community health.</i></p> <p><i>In the second year clerkship curriculum, students participate in a didactic learning session based on respiratory diseases pertaining to environmental exposures. During this interactive session, students are taught how to determine risk factors for developing asthma and making a pediatric asthma action plan, asking about pet/mold/allergen exposures, and identifying other environmental triggers for dyspnea.</i></p>	

Curriculum: Administrative Support for Planetary Health

20. Is your medical school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?
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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.
<p><i>Score explanation: The Class of 2025 is the first class with the new curriculum implemented at CUSOM named the Trek Curriculum. Our deans believe there are major improvements underway to incorporate more curriculum surrounding planetary health education and education for sustainable healthcare into the required coursework longitudinally, throughout the four years of curriculum. The incorporation of planetary health is integrated into the curriculum and applied to clinical and biological sciences as well as psychosocial and community health. There is a Global Health Track students can apply to that extensively covers health promotion, sustainable development goals and their impacts on healthcare delivery in different global contexts, and how local and global environments shape health.</i></p> <p><i>The Fort Collins branch of CUSOM is a four-year program founded on the CDC's principles of One Health: integrating human, animal, and environmental health to achieve optimal health outcomes. The curriculum and learning objectives of the Fort Collins branch match those of main campus 1:1 with the exception of the fact that the content is delivered by researchers in veterinary sciences, environmental toxicologists, and other interdisciplinary science faculty. In addition, some slides and presentations contain One Health specific content taught to the medical students across all years, e.g. environmental and animal health implications of climate-related stressors.</i></p>	

21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the core 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.
<p><i>Score explanation: At the University of Colorado School of Medicine, as discussed in previous sections, planetary health/ESH topics are integrated into the core medical student curriculum. This education is provided in the gastrointestinal and pulmonary blocks in Year 1 and touched on again in Year 3. During clerkship rotations in year 2, there are several didactic sessions designed around public health and epidemiology that reiterate concepts about addressing health disparities and disproportionately distributed effects of climate change on various communities around CO and globally. These sessions utilize planetary health case studies, including the spread of malaria as a result of environmental changes (e.g. increasing numbers of high rainfall days) in Nigeria.</i></p> <p><i>Students also have the opportunity to apply to the Fort Collins branch which integrates a One Health perspective throughout all 4 years of the curriculum with more continuity. This is encapsulated in the "Trail" initiative wherein 3rd and 4th year students may develop projects in health systems research, public health advocacy, and occupational/environmental health planning. This One Health curriculum consists of an interdisciplinary program for students from the school of medicine, veterinary sciences,</i></p>	

and graduate students in fields like public health and construction engineering to advance health for humans, animals, and the environment in collaboration with Colorado State University.

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?

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: Following the publication of last year's Planetary Health Report Card, Dr. Beth Gillespie was hired as the Director of Undergraduate Medical Education for the Climate and Health Program at CUSOM. In this position, she oversees the course content that delivers planetary health materials across the core curriculum and all four years of medical school. While there are a number of faculty overseeing the redesign of CU's curriculum, there is no designated faculty dedicated to specifically oversee the incorporation of planetary health and sustainable healthcare. This year, a group of medical students, led by Dr. Elizabeth Gillespie, have established a planetary health curriculum integration committee within CU-CHASE. CU-CHASE is a campus-wide, interprofessional organization focused on sustainability.

Section Total (45 out of 69)

65.22%

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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.*

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 School of Medicine who have a primary research focus in planetary health or healthcare sustainability.
2	Yes, there are individual faculty members at the School of Medicine 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: The University of Colorado School of Medicine has multiple faculty members whose primary research focus is in planetary and climate health including Rosemary Rockford, PhD and Richard Johnson, MD. Additionally there are many faculty members at CUSOM that are conducting research in planetary health and healthcare sustainability via many different avenues. The [CU Consortium for Climate Change & Health](#) is associated with the School of Medicine (though not directly included within it) and it has a list of faculty members at CUSOM conducting research related to climate, health and sustainability. Their research focuses on four aspects: 1. Heat Stress, 2. Respiratory Disease, 3. Worker Health, and 4. Infectious disease.

The faculty members at CUSOM involved with planetary health research are involved with institutions outside of the School of Medicine enacting climate change measures on a broader scale. Such institutions include the National Academy of Medicine Action Collaborative on Decarbonizing the Health Sector, EcoAmerica, and the U.S. Department of Defense Arctic Medical Operations team.

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.
<p><i>Score explanation: The University of Colorado as an institution has group called the CU Consortium for Climate Change & Health whose mission it is to “address current and future health issues affected by climate variability and change by bringing together a multidisciplinary team of clinicians, biomedical scientists, public health practitioners, epidemiologists, and anthropologists, along with atmospheric scientists and climatologists.” Their research focuses on four key areas: 1. Heat Stress, 2. Respiratory Disease, 3. Worker Health, and 4. Infectious disease. The Consortium also consists of faculty conducting climate research across multiple disciplines and institutions including CU Boulder, the CU School of Public Health, the University of Hawaii-Manoa Department of Geography, the National Center for Atmospheric Research, and the Rocky Mountain Center for Total Worker Health.</i></p> <p><i>Outside of the Consortium is the CUSOM Climate and Health Program, a program dedicated to medical student and graduate education and research in climate change and health. The site hosts projects across a variety of disciplines that are accessible to students, clinicians, and faculty across all levels of their training.</i></p> <p><i>Additionally, in 2017, CUSOM started the nation’s first graduate medical education fellowship in Climate & Health Science Policy with the goal “to train highly credible, knowledgeable health leaders in clinical, basic science, and policy settings.” There are 5 current fellows in the CHSP program.</i></p> <p><i>Finally, the University of Colorado School of Public Health has an Environmental & Occupational Health department. Their research includes agricultural health and safety, air pollution, chronic beryllium disease, environmental health law and policy, ergonomics, industrial hygiene, and oil and gas activities.</i></p>	

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.
<p><i>Score explanation: The Adult & Child Consortium for Health Outcomes Research & Delivery Science (ACCORDS) has a community advisory panel designed to help researchers gather patient feedback on research projects. The input from this community advisory panel, which includes some individuals disproportionately impacted by climate change, has been used for a community heat vulnerability research project. While this group is not specifically focused on communities disproportionately impacted by climate change and environmental justice, it could serve as a vector for gaining input on the medical school’s research agenda. Being more proactive about engaging in discourse with these</i></p>	

vulnerable communities about how best to use our resources could be a major source of improvement for CUSOM going forward.

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: The [CU Consortium for Climate Change & Health](#) website is easy to use and quite comprehensive. The site includes their mission, ongoing projects, members, publications, and partnerships. There is contact information for those in charge of various research fields, making the process for reaching out regarding getting involved and funding opportunities easier for students. One improvement that could be made is making potential funding opportunities more clear on this website.

Additionally there is the [Climate & Health Program](#) at CUSOM which has the mission to advance education and outreach. The website is not fully comprehensive but has information and opportunities for education for medical students and more that is very easy to use.

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: The University of Colorado School of Medicine hosts multiple “Climate Medicine Rounds” each year. Most recently, on February 15 and December 20, 2022, they hosted rounds on “[How Do We Create a Sustainable Health Care System?](#)” and a discussion with the City of Denver’s Office of Climate, Action, Sustainability, and Resiliency.

There is also a lecture series via CUSOM in conjunction with Rocky Mountain US Cochrane Affiliate. They occasionally give talks (virtual during the pandemic) regarding climate change and health. One example was a webinar called [Climate Change and Dermatology: A Review of the Complex Interactions and Considerations for Vulnerable Populations](#) on 10/26/2021.

Given the extensive list of faculty it hosts dedicated to planetary health, CUSOM could be more proactive in hosting and facilitating a full blown conference centered around planetary health in order to firmly establish the institution as a leader in this field.

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: The University of Colorado School of Medicine is affiliated with the [Global Consortium on Climate and Health Education](#).

Section Total (15 out of 17)

88.24%

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Community Outreach and Advocacy

Section Overview: *This section evaluates medical school engagement in community outreach and advocacy efforts associated with planetary health. Researching and teaching planetary health is necessary but not sufficient. It is critical that institutions also directly engage with communities most affected by environmental health harms. Although climate change is a problem largely created by those with power and resources, its impacts fall disproportionately on under-resourced populations and communities of 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.*

1. Does your medical school partner with community organizations to promote planetary and environmental health?	
3	Yes, the medical school meaningfully partners with multiple community organizations to promote planetary and environmental health.
2	Yes, the medical school meaningfully partners with one community organization to promote planetary and environmental health.
1	The institution partners with community organizations, but the medical school is not part of that partnership.
0	No, there is no such meaningful community partnership.
<p><i>Score explanation: CUSOM has several community partners that promote planetary and environmental health through the new service learning project component of the Trek curriculum. The goal of this project is to have students actively participate in a longitudinal service learning experience that addresses the mutually-agreed upon needs of a community partner. The “Climate Change and Health Equity” service learning group is associated with 2040 Partners in Health, whose mission is to create sustainable community partnerships and by identifying, measuring, and applying local community solutions. Another service learning group is partnered with 350, an organization focused on ending fossil fuel dependence and transitioning to green energy sources. In Fort Collins, there are several students engaged with community organizations on projects pertaining to climate and health or adjacent fields. These organizations include: the Street Dog Project (where medical students provide clinical care in the winter months to people experiencing homelessness alongside veterinary students who provide care to their animals), Harvest Farm (where medical students work with people who were recently incarcerated to work on food security and health projects), and the Northern Colorado Health Alliance (where medical students create multilingual educational materials about climate and health concerns in the Northern Colorado region).</i></p> <p><i>The University of Colorado’s interprofessional student group, CU-CHASE (Climate Health Advocacy, Sustainability, and Education), has worked with local organizations and advocacy groups to mobilize healthcare professionals in advocating for their patients on local and state-level platforms. Of these, Healthy Air and Water Colorado has led several advocacy trainings, including how to give testimonials, to students across the schools of Medicine, Dentistry, Nursing, and several medical residency programs including the Colorado chapter of the American Academy of Pediatrics. There is likely opportunity to continue building additional relationships with community advocacy groups through CU-CHASE.</i></p>	

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 medical school has not offered such community-facing courses or events.

Score explanation: In the last year, CUSOM has offered several community-facing courses or events concerning planetary and environmental health including Climate Medicine Rounds through the Climate and Health Program, which are offered on Zoom and are open to the public. On December 20, 2022, the most recent event included a discussion with the City of Denver’s Office of Climate, Action, Sustainability, and Resiliency about local initiatives promoting sustainability at the city-level. These events are open to the public to attend but they primarily draw from medical professionals or other industry leaders.

In previous years, the Climate and Health Program has offered more a robust series of public-facing events, including a Climate Science series; however, this series did not restart in the past year. In addition, the student group CU-CHASE has held a community lecture series on planetary health across multiple health disciplines in the past; however, it has not taken place in the past year though the group has aspirations to restart this in the near future.

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 regularly receive communications about planetary health or sustainable healthcare.

Score explanation: CUSOM has regularly scheduled school-wide communication with students from the Office of Student Affairs with updates about what is happening on campus. Over the past year there have been multiple emails that included information about planetary health and sustainability. Some examples of these updates include information on Grand Rounds focused on climate change, Earth Day events, as well as policy work that CUSOM is involved with. While these communications are frequent, they are not regular so a score of 1 was awarded.

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
<p><i>Score explanation: CUSOM and its affiliated hospital trust offer post-graduates an opportunity to engage with planetary health through the Climate and Health Program's Diploma in Climate Medicine. This program offers clinicians hands-on experiences with the science of climate change and its implications on the practice of medicine. The diploma covers the following courses (each course is 60 hours apiece with a total of 300 learning hours for the completed program): Foundations and Updates in Climate Medicine; Developing Sustainable Hospital Systems; Disaster Response and Recovery; Community Resilience: Energy Innovation & Healthy Infrastructure; and Global Challenges. The program is offered twice-yearly and enrolls approximately 20 clinicians at each offering.</i></p>	

5. Does your medical school or its primary affiliated hospital have accessible educational materials for patients about environmental health exposures?	
2	Yes, 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.
<p><i>Score explanation: Through the University of Colorado system websites there are articles detailing research about patient's health and environmental exposure. While there are articles available to read, they are not under a specific heading of environmental health for easy access. An example of an article of this is from UCHHealth about safety practices when wildfires generate dangerous air pollution, from June 22, 2022. Under CUSOM's own website, again, there are news articles about environmental health exposures for patients, but they are not as easily accessible as there is no specific area for environmental exposure. There is a heading of "News" available for reading, but you must click through to find individual articles.</i></p>	

6. Does your medical school or its primary affiliated hospital have accessible educational materials for patients about climate change and health impacts?	
2	Yes, 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.
<p><i>Score explanation: Through the University of Colorado Health system's website, there are educational materials about climate change and their health impacts. While there is no central page with this information, there are several articles throughout their Research tab that discuss climate change and its relation to patient health. CUSOM also offers material for patients about climate change and health impacts, but it is also found in the main new page and not under a specific climate health heading.</i></p>	

One example includes an article from the Department of Ophthalmology about climate change affecting eyes.

Section Total (10 out of 14)

71.43%

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Support for Student-Led Planetary Health Initiatives

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

1. Does your institution offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum.
1	The medical school 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, the institution does not offer opportunities or support for sustainability initiatives or QI projects.
<p><i>Score explanation: The University of Colorado offers the President's Sustainable Solutions Challenge. Students are asked to develop ideas for improving environmental quality, economic and resource efficiency, and/or social equity on campus. Students, individually or in teams, develop ideas and present them to a panel of judges for a \$1,500 cash prize.</i></p> <p><i>CUSOM also has a mentored scholarly activity (MSA) proponent of the medical school curriculum. Within this curriculum there are the following subsets: Laboratory Science Research; Bioethics, Humanities, Arts and Education; Clinical Science Research; Global Health; and Public Health and Epidemiology. Within the public health curricular structure there is no mention of sustainability or climate and health. There is no QI requirement for medical students to graduate from CUSOM, but some students have elected to engage in QI projects centered around climate health to satisfy the MSA requirement.</i></p>	

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.
<p><i>Score explanation: There are many opportunities for medical students to perform research related to planetary health topics through the CU-Consortium for Climate Change, CU-CHASE, and individual</i></p>	

mentors. However, there is not a specific research or fellowship program for medical students at this time. Students must seek these opportunities out and carry them out in their own time. CUSOM offers the Physician Fellowship in Climate Medicine for medical school graduates. Sadly, however, medical students are not eligible. This is a GME accredited fellowship in Climate and Health policy with the goals of, “[training] highly credible, knowledgeable health leaders in clinical, basic science, and policy settings.” The fellowship is a 12 month long course in which participants are expected to attend didactics, workshops, and complete a project with a federal or nonprofit organization.

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: CUSOM has separate climate and health pages on the medical school website (medschool.cuanschutz.edu/climateandhealth). This section of the website offers information on educational courses, news, and events at CUSOM. Potential project mentors could be found on this website as the core faculty and advisory committee members are listed, but there is no individual contact information nor information on current projects. Revamping this website such that information on how to get involved as a student in volunteering, obtaining research and grants, finding mentorship, and connecting with relevant organizations and events on campus is more easily accessible is a very actionable way to improve this score going forward.

Furthermore, with our new curriculum, first year medical students have the option to apply to the new Fort Collins branch for their four years of medical school education. This four-year branch campus in Fort Collins, in partnership with Colorado State University (CSU), has a focus on the concept of One Health. CSU’s One Health Institute’s goal is to advance health for humans, animals, and the environment in addition to solving problems at the intersection of these three entities. To learn more about this program, the CUSOM website transfers you to CSU’s webpage that includes more information on the program, community outreach, faculty, and research opportunities. Research opportunities include an award of up to \$75K in funding for 2-4 R&D proposals and up to \$10K for ideation and network development proposals including attending meetings and workshops.

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.
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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.
<p><i>Score explanation: The University of Colorado's Climate Health Advocacy, Sustainability, and Education (CU-CHASE) is an interdisciplinary student group focused on advancing student-led initiatives in the avenues of climate advocacy, campus sustainability projects, and education. The group receives annual funding through the Student Senate and Medical Student Council, and is supported by a faculty mentor. There is a PHRC committee within CU-CHASE and we also have a separate faculty advisor. The campus also has a chapter of Medical Students for a Sustainable Future that has a faculty advisor.</i></p>	

<p>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?</p>	
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.
<p><i>Score explanation: Starting in Spring of 2022, the University of Colorado School of Medicine has two medical student Sustainability representatives per medical school class that are elected by their peers to serve on the Medical Student Council. Their job is to advance sustainability initiatives on campus, advocate for sustainability during MSC event planning, serve as an intermediate between students, faculty, and student organizations to unite and improve planetary health efforts on campus.</i></p>	

<p>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)</p>	
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:

CUSOM's Fort Collins Branch integrates a One Health framework as part of its curriculum. Students can be matched with service learning opportunities in sustainable food systems and community supported agriculture.

CUSOM provides numerous lectures throughout the academic year via the CU Climate consortium lecture series, CU climate and health program, and from the student-led group CU-CHASE. The Climate and Health program held three lectures in 2022 on climate science, creating a sustainable health care system, and advocating for system level change.

First year medical students also attended a mandatory session, integrated into the new curriculum, in which they learned from CU faculty about the obstacles to addressing climate change in medicine, success stories for integrating more sustainable practices into the CU health system, and important focuses for making further progress in climate health at CU.

CU-CHASE has hosted several events this year in conjunction with Healthy Air and Water Colorado and Healthier Air Colorado that have helped students gain skills and knowledge on writing OpEds and getting involved in legislative advocacy. CU-CHASE has also spread awareness to students of community events related to the topic with opportunities to speak to legislators and policy makers in the Denver area.

Section Total (11 out of 15)	73.33%
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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.

1. Does your medical school and/or institution have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff, but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p><i>Score explanation: CUSOM is located on the Anschutz Medical Campus which is home to all of the University of Colorado's health profession schools. The Anschutz Medical Campus has one full-time paid staff that is focused on campus sustainability (Sustainability Manager). The members of the sustainability steering committee for all of CU's campuses can be found here. In an interview with the sustainability manager, it was noted that the two hospitals that share the Anschutz Campus with CUSOM have their own sustainability committees which operate separately from CUSOM.</i></p>	

2. How ambitious is your medical school/institution's plan to reduce its own carbon footprint?	
4	The institution has a stated goal of carbon neutrality by 2030 or earlier and the medical school / institution has a well-defined and adequate plan in place to achieve this goal.
3	Yes, there is a stated carbon neutrality goal by at least 2040 and the medical school/institution has a well-defined and adequate plan in place to achieve this goal.
2	Yes, there is a stated carbon neutrality goal by at least 2040, but the medical school/institution has not created a plan to reach that goal or the plan is inadequate.
1	There is a CO2 emission reduction goal, but it is not one of carbon neutrality.
0	There is no stated goal for reduction of CO2 emissions.
<p><i>Score explanation: The University of Colorado is required to adhere to the state of Colorado's climate action plan. Based on bill HB19-1261, the school must reduce greenhouse gas emissions by at least 26% by 2025, greenhouse gas emissions by at least 50% in 2030, and greenhouse gas emissions by at</i></p>	

least 90% by 2050. The baseline was obtained during the academic year of 2006/2007. Per the sustainability manager, new legislation is on the way that would tighten these requirements to be a 50% reduction by 2050, 90% by 2040 and 100% by 2050. The 2019 campus sustainability report can be found under the quick links tap on the sustainability [page](#). Two large hospitals on campus, Colorado Children's Hospital and University of Colorado Hospital share the same campus with CUSOM. The sustainability manager is unsure if these separate organizations have goals to reduce carbon emissions as they have never been communicated to the team at CUSOM.

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: The campus safety building is the first building on the medical school's campus to be 100% net zero in emissions, getting all of its energy via solar. However, it is currently the only building on campus of its kind. The office of sustainability recently completed a solar survey that found that if all available space, such as the tops of buildings and above parking lots, is used for solar panels, this would only provide 11% of the energy required to keep the campus running. The reason given for this was that the extensive lab spaces operated by the school are very power intensive.

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: New buildings on the CU Anschutz campus are built to LEED specifications. The campus typically aims for a LEED Gold certification. For example, the new 396,000-square-foot Health Sciences building, used for teaching, research and clinical purposes, has received the LEED Version 4.0 Gold Certification and is the most energy-efficient mixed-use facility on campus, with a 60% energy reduction versus existing buildings. Per Sustainability Manager, a form of LEED-lite method was adapted for older buildings that have been partially remodeled. An energy overhaul was conducted in Research 1 (building used for laboratory research) in which more efficient lighting was

installed. Windows have been replaced in Building 500 (CU Anschutz's oldest building) for energy efficiency, but the building has not been otherwise retrofitted. The campus safety building, which is used for IT work and campus security, is the first net zero building on campus.

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

2	Yes, the medical school 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 has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.
0	The medical school has not implemented strategies to encourage and provide environmentally-friendly transportation options.

Score explanation: CUSOM provides an RTD college pass to all students. This pass provides access to the local light rail trains and buses. The campus includes several bike racks, lockers, and repair stations as well as spaces for motorcycles and scooters. Furthermore, for students who prefer to drive, they are encouraged to use the park and ride bus system when commuting to campus. This information is accessible and easy to find.

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: CUSOM has single-stream recycling on campus. In an interview with the campus sustainability chair, it was noted that this recycling program has an 18-20% diversion rate. Recycling is readily accessible to students as bins are located throughout educational buildings and in common dining areas. More about CU Anschutz recycling can be found [here](#). A small amount of composting is done at the CU Anschutz Health and Wellness Center. Food scraps and leftovers from cooking courses taught by registered dietitians are composted after courses. Additionally, small composting operations have been launched at the cafe's in the Education 2 and Research 2 buildings. Both of these food service locations must now compost and use compostable items for to go items. Per the sustainability manager, the hope is to slowly expand these programs from only food service locations to the rest of the buildings/operations on campus. All composting is contracted out to a third party service. It was noted that a completely in house composting service is currently infeasible due to cost and space limitations. There have, however, been talks of purchasing a composting digester for small scale operation on campus.

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 adequate sustainability requirements for food and beverages, including meat-free days or no red-meat, and is engaged in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is engaged in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is not engaged in efforts to increase food and beverage sustainability.
0	There are no sustainability guidelines for food and beverages.
<p><i>Score explanation: CUSOM currently has no sustainability guidelines for food and beverages. Food on campus is currently served entirely by third party vendors and thus, there is no coordinated approach to food and beverage selection. However, the school has begun piloting composting programs with these vendors (as above). Jarrett Smith, sustainability manager, hopes to continue working with Sodexo (corporation that runs all restaurants on campus) to solve some of these problems as they already have a system wide composting program and could be negotiated with in terms of what types of food and beverage are offered on campus.</i></p>	

8. Does the medical school or associated 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.
<p><i>Score explanation: CUSOM coordinates procurement via the University of Colorado's Sustainable Purchasing Guidelines. These guidelines provide recommendations on a wide variety of products such as furniture, lighting, appliances, and janitorial products. The guidelines are based upon sustainability goals that encourage the consideration of environmental impact and social equity when purchasing products. More about CU's procurement can be found here. Furthermore, CU has developed a sustainable purchasing checklist for those interested in sustainable procurement. It appears as though these guidelines are optional, though, as nothing about sustainability appears in the CU procurement code of ethics or in the procurement rules. The sustainability manager notes that a lot of purchasing is done via procurement cards, which makes enforcement of these guidelines difficult.</i></p>	

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.
<p><i>Score explanation: Zero Waste at Your Event guidelines exist at the University of Colorado Boulder, and can be found here. No such guidelines can be found on the School of Medicine's website or within the published Sustainability guidelines. Per the sustainability manager, the school is actively working with Facilities and Events management offices to produce these guidelines.</i></p>	

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.
<p><i>Score explanation: CUSOM follows the Green Lab program of nearby CU Boulder, which can be found here. From these guidelines, CUSOM has worked to decrease its water usage in laboratories, become more energy efficient (with lighting and heating/cooling systems), and expanded the laboratory recycling program. The sustainability manager is actively working on hiring student staff to expand the Green Lab program on the Anschutz campus. The staff would provide guidance on sustainable supply procurement and work with lab staff to adjust experimental protocols to minimize waste.</i></p>	

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	No, 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.
<p><i>Score explanation: The University of Colorado cannot be found in the Global Divestment Database. There is mention of a group of students bringing up divestment at a board of regents meeting, but no action was taken. Outside of this single event, there appears to be no other student or faculty led advocacy.</i></p>	

Section Total (13 out of 31)	41.94%
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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 University of Colorado School of Medicine

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

Section	Raw Score	Letter Grade
Planetary Health Curriculum (30%)	$(45 / 69) \times 100 = 65.22\%$	B-
Interdisciplinary Research (17.5%)	$(15 / 17) \times 100 = 88.24\%$	A
Community Outreach and Advocacy (17.5%)	$(10 / 14) \times 100 = 71.43\%$	B
Support for Student-led Planetary Health Initiatives (17.5%)	$(11 / 15) \times 100 = 73.33\%$	B
Campus Sustainability (17.5%)	$(13 / 31) \times 100 = 41.94\%$	C-
Institutional Grade	67.24%	B