Planetary Health Report Card (Medicine):

University of Zurich

2022-2023 Contributing Team:

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Summary of Findings

Overall	D

Curriculum — D

- The University of Zurich (UZH) Medical School (MeF) partially covers aspects of Planetary Health (PH) in the curriculum in a stand-alone lecture in the third year during the thematic block (TB) Public and Global Health. However, it lacks the horizontal and longitudinal integration in the curriculum.
- **Recommendations:** PH could be taught from the theoretical basics (planetary boundaries, health co-benefits etc.) to possibilities for transformative actions in the core curriculum (longitudinal integration). It could be linked to existing learning content across TBs (horizontal integration). Apart from frontal lectures, seminar and group sessions/project work would be valuable. Introducing conversations about PH into conversations with patients could be introduced in clinical skills in 3rd-5th year. Interactive elective courses should be made available. The MeF could join existing initiatives such as the Planetary Health Academy and the Global Consortium on Climate and Health Education.

Interdisciplinary Research — D+

- The UZH launched in 2022 the Institute for One Health Research (IOHR), that focuses on zoonoses, drug resistance and integrated approaches to metabolic disease research in humans and animals. However, there is no research on other PH aspects, such as the impact of climate change and ecological destruction (e.g. loss of biodiversity) on human health.
- **Recommendations**: The MeF could launch interdisciplinary research projects on planetary health, offer master/doctoral thesis on the topic and join the Planetary Health Alliance.

Community Outreach and Advocacy — F

- Both UZH and MeF have little community outreach relating to PH. The University Hospital Zurich (USZ) doesn't provide any information material for patients.
- **Recommendations**: The MeF could contribute to educating the public around the health impacts of the climate crisis through the UZH's communication channels. They could organise a conference directly related to PH. More community partnerships relating to PH could be established.

Support for Student-Led Initiatives — D-

- There is one student group (Health For Future Zurich) dedicated to the topic who work with faculty members and the students' council. The UZH supports student groups dedicated to sustainability, however there is no financial support from the MeF for planetary health initiatives.
- **Recommendations**: The MeF could define an official contact person for PH education in the faculty with sufficient capacity to closely collaborate with students and faculty members on the topic. The MeF could create a webpage on the MeF-page dedicated to PH, highlighting possible mentors, grants and opportunities for related research for students.

Campus Sustainability — C

- The MeF has not developed a strategy for achieving carbon neutrality until 2030. There are no guidelines for sustainable healthcare or sustainable research at the MeF. The UZH has made progress towards becoming a more sustainable campus, such as increasing the portion of renewable energy on site.
- **Recommendations**: The MeF could create a sustainability commission with the aim of developing a strategy for climate neutrality of the faculty, including affiliated research (lab spaces etc.), in accordance with the UZH's goal by 2030. The MeF could advocate for sustainable healthcare towards its teaching hospitals and for healthy and sustainable diets in the cafeterias and catering of both UZH and USZ.

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 this 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.
Score explanation: The students' council proposed the introduction of an elective course to the curricular commission of the MeF in June and November 2021 and presented the elective course (Mantelstudium) "Planetary Health – how is the ecological crisis impacting our health?" to the Faculty in July 2022. The course has not been approved from the Faculty's side.	

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.
Score explanation: There are two lectures during the TB Public and Global Health in the 3rd BA study year that touch upon the topic:	

- *"Global Health in the international context – climate change & transmission of malaria in Europe" (45 min lecture, 3rd year, TB Public and Global Health): covering the transmission of malaria in relation to temperature rise*
- *"Global Health challenges: what happened - what's next and how can we prepare?" (45 min Mini-Symposium, 3rd year, TB Public and Global Health): covering CO2 emissions and the impacts of rising global temperature on health, direct and indirect health impacts of climate change, heat-related death, zoonotic diseases, allergies, nutrition, co-benefits and the role of doctors.*

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: There is one 45 min lecture during the TB Public and Global Health in the 3rd year that briefly touches upon the topic:

- *"Global Health challenges: what happened - what's next and how can we prepare?" (45 min Mini-Symposium, 3rd year, TB Public and Global Health): covering CO2 emissions and the impacts of rising global temperature on health, direct and indirect health impacts of climate change, heat-related death, zoonotic diseases, allergies, nutrition, co-benefits and the role of doctors.*

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: There are two lectures during the TB Public and Global Health in the 3rd BA study year plus one lecture in 1st BA study year about "One Health" in the TB Public Health:

- *"Global Health in the international context – climate change & transmission of malaria in Europe" (45 min lecture, 3rd year, TB Public and Global Health): covering the transmission of malaria in relation to temperature rise*
- *"Global Health challenges: what happened - what's next and how can we prepare?" (45 min Mini-Symposium, 3rd year, TB Public and Global Health): covering CO2 emissions and the impacts of rising global temperature on health, direct and indirect health impacts of climate change, heat-related death, zoonotic diseases, allergies, nutrition, co-benefits and the role of doctors.*

- *"One Health - with the example of antibiotic resistance" (45 min lecture, 1st year, TB Public Health): covering antimicrobial resistance and zoonotic disease.*

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: There is one 45 min lecture during the TB Public and Global Health in the 3rd year that briefly touches upon the topic: - *"Global Health challenges: what happened - what's next and how can we prepare?" (45 min Mini-Symposium, 3rd year, TB Public and Global Health): covering CO2 emissions and the impacts of rising global temperature on health, direct and indirect health impacts of climate change, heat-related death, zoonotic diseases, allergies, nutrition, co-benefits and the role of doctors.*	

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: There is one 45 min lecture during the TB Public and Global Health in the 3rd year that briefly touches upon the topic: - *"Global Health challenges: what happened - what's next and how can we prepare?" (45 min Mini-Symposium, 3rd year, TB Public and Global Health): covering CO2 emissions and the impacts of rising global temperature on health, direct and indirect health impacts of climate change, heat-related death, zoonotic diseases, allergies, nutrition, co-benefits and the role of doctors.*	

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: To our knowledge the curriculum does not cover this topic.	

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: To our knowledge the curriculum does not cover this topic.	

9. Does your <u>medical school</u> 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: There is one 45 min lecture during the TB Public and Global Health in the 3rd year that briefly touches upon the topic: - *"Global Health challenges: what happened - what's next and how can we prepare?" (45 min Mini-Symposium, 3rd year, TB Public and Global Health): covering CO2 emissions and the impacts of rising global temperature on health, direct and indirect health impacts of climate change, heat-related death, zoonotic diseases, allergies, nutrition, co-benefits and the role of doctors.*	

10. Does your <u>medical school</u> 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 one 45 min lecture during the TB Public and Global Health in the 3rd year that briefly touches upon the topic: - *"Global Health challenges: what happened - what's next and how can we prepare?" (45 min Mini-Symposium, 3rd year, TB Public and Global Health): covering CO2 emissions and the impacts of rising global temperature on health, direct and indirect health impacts of climate change, heat-related death, zoonotic diseases, allergies, nutrition, co-benefits and the role of doctors.*

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

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: To our knowledge the curriculum does not cover this topic.	

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: To our knowledge the curriculum does not cover this topic.	

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: To our knowledge the curriculum does not cover this topic.

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: To our knowledge the curriculum does not cover this topic.	

Curriculum: Sustainability

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: The opposite is the case: during the nutrition lectures in the 2nd year, the professor explicitly mentioned the health risks of vegan diets but didn't mention the health co-benefits.	

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: To our knowledge the curriculum does not cover this topic.	

17. Does your <u>medical school</u> curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each)

0	The health **and** environmental **co-benefits** of **avoiding** over-medicalisation, over-investigation and/or over-treatment
0	The environmental impact of **pharmaceuticals** and over-prescribing as a cause of climate health harm. Alternatively teaching on **deprescribing** where possible and its environmental and health co-benefits would fulfill this metric.
0	The health **and** environmental **co-benefits** of **non-pharmaceutical management** of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes. This is commonly known as social prescribing in the UK.
0	Environmental impact of **surgical** healthcare on planetary health and the climate crisis, and how can it be mitigated
0	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
0	The impact of **inhalers** on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
0	**Waste production** within healthcare **clinics** and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)
	Score explanation: To our knowledge the curriculum does not cover these topics.

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
Score explanation: To our knowledge the curriculum does not cover this topic. However this course could be introduced as part of the clinical skills in 3rd-5th year (e.g. general medicine practical course or psychosocial skills in 3rd year)	

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.
Score explanation: To ask about the travel history and exposure during work is mentioned several times during practical courses. However other environmental factors like exposure to pesticides in drinking water, mass industry meat consumption or air pollution due to gas stoves or living next to a busy road etc. are not covered.	

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?	
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: Since first having been presented with the Swiss Medical Students' Statement on Planetary Health in the Medical Curriculum in 2021, the Faculty of the University of Zurich has introduced a 90 minute lecture over the course of six years of Medical School.	

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.
Score explanation: There are 3 standalone lectures but no longitudinal curriculum concerning PH: - *1st year BA: "One Health - with the example of antibiotic resistance" (45 min lecture, TB Public Health): covering antimicrobial resistance and zoonotic disease.* - *3rd year BA: "Global Health in the international context – climate change & transmission of malaria in Europe" (45 min lecture, TB Public and Global Health): covering the transmission of malaria in relation to temperature rise* - *3rd year BA: "Global Health challenges: what happened - what's next and how can we prepare?" (45 min Mini-Symposium, TB Public and Global Health): covering CO2 emissions and the impacts of rising global temperature on health, direct and indirect health impacts of climate change, heat-related death, zoonotic diseases, allergies, nutrition, co-benefits and the role of doctors.*	

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: There currently is no such position in the MeF.	

Section Total (18 out of 72)	**25%**

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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

<u>Section Overview:</u> 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 <u>medical school</u>?	
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: At the Epidemiology, Biostatistics and Prevention Institute (EBPI) there is some research that covers some aspects of PH like salutogenesis, infectious diseases. However, there currently is no research with a focus on PH, ESH or climate change impacts on health.	

2. Is there a dedicated department or institute for interdisciplinary planetary health research at your <u>institution</u>?	
3	There is **at least one** dedicated department or institute for interdisciplinary planetary health research.
2	There is **not currently** a department or institute for interdisciplinary planetary health research, but there are **plans** to open one in the next 3 years.
1	There is an **Occupational and Environmental Health department**, but no interdisciplinary department or institute for planetary health research.
0	There is **no** dedicated department or institute.
Score explanation: The Division of Occupational and Environmental Medicine is jointly supported by the Epidemiology, Biostatistics, and Prevention Institute and the University Hospital Zurich outpatient clinic for internal medicine. It focuses on the effects of workplace and environmental conditions on people and their health. Head of Division: Prof. Dr. Holger Dressel	

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: As to our knowledge, there are no on-going efforts to create such a process.	

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 institution has a Sustainability Office website however there are **no** resources related to health.*	

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: There is a collaboration from UZH with Makerere University in Uganda. Since 2014 symposiums have been organised every few years called "Dialogue Days". The next will take place in 2024 in Bangalore under the name "Trialogue Days Symposium".	

6. Is your <u>medical school</u> a member of a national or international planetary health or ESH organization?	
1	Yes, the medical school is a member of a national or international planetary health **or** ESH organization
0	No, the medical school is **not** a member of such an organization
Score explanation: The MeF holds currently no membership of a PH-related organization.	

Section Total (6 out of 17)	**35.29%**

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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.

- UZH has the Department of Public and Global Health (Prof. Jan Fehr) where planetary health aspects are partly covered
- The UZH launched in 2022 the Institute for One Health Research (IOHR), that focuses on zoonoses, drug resistance and integrated approaches to metabolic disease research in humans and animals. However there is no research on other planetary health aspects, such as the impact of climate change and ecological destruction (like the loss of biodiversity) on human health.

Community Outreach and Advocacy

<u>Section Overview:</u> 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 <u>medical school</u> 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: The UZH Sustainability Centre has several partnerships with community organisations, however none of the projects have the goal of explicitly promoting planetary health.	

2. Does your <u>medical school</u> 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: As to our knowledge, the MeF does not offer such kind of events.	

3. Does your <u>medical school</u> 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: As to our knowledge, there is no regular coverage on PH in place.	

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: As to our knowledge, there are no courses for post-graduate medical education with a focus on PH.	

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.
Score explanation: As to our knowledge, there is no accessible materials for patients.	

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.
Score explanation: As to our knowledge, there is no accessible materials for patients.	

Section Total (1 out of 14)	**7.14%**

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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

***<u>Section Overview:</u>* 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 <u>medical school</u> or your <u>institution</u> offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the **medical school** or **institution** *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 UZH offers some financial support for student-led sustainability initiatives, however there is no link to planetary health.	

2. Does your <u>institution</u> offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
2	The **institution** has a **specific** research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these **require student initiative** to seek these out and carry them out in their spare time.
0	There are **no opportunities** for students to engage in planetary health/sustainable healthcare research.
Score explanation: As to our knowledge, there is currently no faculty member actively offering opportunities for students to engage in PH research.	

3. Does the <u>medical school</u> have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.

2	The **medical school** has a web page with specific information related to planetary health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.
1	There is a **medical school** webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information.
0	There is **no medical-school** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.
Score explanation: The MeF does not have a specific webpage for PH or sustainability.	

4. Does your <u>medical school</u> have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?	
2	Yes, there is a student organization **with faculty support** at my medical school dedicated to planetary health or sustainability in healthcare.
1	Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it **lacks faculty support.**
0	No, there is **not** a student organization at my institution dedicated to planetary health or sustainability in healthcare.
Score explanation: There is a student-led group called "Health For Future Zürich" which works together with the student councils of UZH and ETH. Currently, there are no regular meetings with faculty members in place, however this is in the planning.	

5. Is there a student liaison representing sustainability interests who serves on a <u>medical school</u> or <u>institutional</u> decision-making council to advocate for curriculum reform and/or sustainability best practices?	
1	Yes, there is a student representative that serves on a medical school or institutional decision-making council/committee.
0	No, there is no such student representative.
Score explanation: There is one student that is part of the commission of medical education of the medical students' council (fvmed), that represents the medical students in the planetary health discussions and works with Health For Future Zürich.	

6. In the past year, has the <u>institution</u> had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)

0	Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.
0	Panels, speaker series, or similar events related to planetary health that have students as an intended audience.
0	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.
0	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
0	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
0	Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students)
Score explanation: No such programs or initiatives were offered.	

Section Total (3 out of 15)	**20%**

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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.*

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: The USZ currently only has Sustainability webpage without an office or responsibles for sustainability, the UZH has the Office of Sustainability for the whole Campus, however there is no specific staff member in charge for MeF sustainability. One Vice-Dean is working on reducing the flight emissions of faculty members together with a working group.	

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: In 2020 the UZH approved the Implementation Strategy 2030 for the Sustainability Policy.

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: According to the information on the UZH webpage, around 10% of the energy is based on fossil fuels.	

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: As to our knowledge, there are no ongoing efforts to retrofit old buildings.	

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: The medical school is best amenable by public transport, cycling or walking. However the medical school does not support their students in choosing public transport over cars when travelling to clinical courses that are up to 1h30 away and often best amenable by car.	

6. Does your <u>medical school</u> have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?	
2	Yes, the medical school has **both** compost **and** recycling programs accessible to students and faculty.
1	The medical school has **either** recycling **or** compost programs accessible to students and faculty, but not both.
0	There is **no** compost or recycling program at the medical school.
Score explanation: Around the lecture halls of the MeF and in the rooms of the Careum and Luegisland, there are no compost or recycling programs that are easily accessible, just "one-fits-all" bins.	

7. Does the <u>medical school</u> apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?	
3	Yes, the medical school has 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:The UZH has <u>sustainability guidelines</u> but despite those guidelines, <u>meat menus</u> are still being offered every day. The medical school is currently not engaged in advocacy for healthier, sustainable diets at the UZH or towards the university hospitals, however it could collaborate with sustainability officers and ongoing initiatives to promote a planetary health diet for the campus food.	

8. Does the <u>medical school</u> or <u>institution</u> 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 UZH covers supply procurement in its [sustainability guidelines](), however the implementation strategy remains rather vague and there are no ongoing efforts to implement those ambitions for the procurement in the medical school.

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: Not to our knowledge. There are no such requirements/guidelines published on the MeF website.	

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: Not to our knowledge. There are no such programs/initiatives published on the MeF website.	

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: According to an analysis published on their website, the current investments of the [UZH Foundation]() in the Cantonal Bank of Zurich (ZKB) and the UBS bank have a warming potential of 3.4 Celsius.	

Section Total (16 out of 32)	**50%**

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	(18/72) x 100 = 25%	D
Interdisciplinary Research (17.5%)	(6/17) x 100 = 35.3%	D+
Community Outreach and Advocacy (17.5%)	(1/14) x 100 = 7.14%	F
Support for Student-led Planetary Health Initiatives (17.5%)	(3/15) x 100= 20%	D-
Campus Sustainability (17.5%)	(16/32) x 100 = 50%	C
Institutional Grade	**(0.25x0.3 + 0.353x0.175 + 0.0714x0.175 + 0.20x0.175 + 0.x0.175) = 27.18%**	**D**

†