Planetary Health Report Card (Medicine):

University of Manchester

2023-2024 Contributing Team:
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Summary of Findings

Overall	B -

Curriculum	C

- The University of Manchester's inclusion of planetary health in the curriculum is neither longitudinal nor comprehensive. While planetary health and the human health impacts of climate change are discussed in one-off lectures and student-selected components (a noted improvement from 2022-23), planetary health education is otherwise included sporadically, without the carefully constructed spiral approach applied to other parts of the curriculum.
- **Recommendations:** Build on current material to integrate planetary health concepts throughout all curriculum modules. Planetary health topics should be taught alongside corresponding health systems such as air pollution and respiratory medicine, heat waves and cardiovascular health.

Interdisciplinary Research	B +

- The University of Manchester has shown extensive efforts to further interdisciplinary research with respect to climate change and health including The Centre for Occupational and Environmental Health and the Manchester Environmental Research Institute, as well as institutional and school web resources detailing environmental sustainability goals.
- **Recommendations**: Manchester Medical School and associated NHS trusts should promote professional educational opportunities including e-learning and funded study days related to Planetary Health. Although an application is underway, membership of the Planetary Health Alliance should be completed.

Community Outreach and Advocacy	D +

- There is no consistent evidence of shared decision making with members of the community or community organisations regarding the University's planetary health research. Additionally few efforts to engage with local communities on issues of planetary health were identified.
- **Recommendations**: The University of Manchester could develop community partnerships relating to planetary health in SSCs, such as outreach projects. As an authority on healthcare education within Manchester, the UoM could collaborate with community organisations to engage with the public on issues of climate and health. This could include, free to attend public facing seminars and lectures.

Support for Student-Led Initiatives	B

- Manchester Medical School has pathways to support student initiatives through the Stellify Award, the Environmental Sustainability Department and the UoM Tyndall Centre. The Sustainable Futures Seminar Series serves to engage students in planetary health topics through webinars and talks. There is an active Students for Global Health Society and the PHRC team serves as student representatives for planetary education, working with faculty to contribute to curriculum development.
- **Recommendation:** Increase accessible planetary health research opportunities for students. Such as providing a dedicated webpage outlining available opportunities for student involvement.

Campus Sustainability	A -

- UoM has ambitious emission targets and good usage of sustainable energy. Sustainable building practices are utilised for any new developments via the Campus Master Plan and recycling is prevalent throughout.
- **Recommendation:** The medical school should consider its specific campus-related responsibilities such as plastic usage in simulation and use of resources.

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance describes planetary health as "a solutions-oriented, transdisciplinary field and social movement focused on analysing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth." This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanisation, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment, and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change "the greatest threat to global health in the 21st century," many 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 colour, older adults sensitive to health threats, and individuals in low-resource settings), these issues are inherently ones of equity and justice.

With the purpose of increasing planetary health awareness and accountability among 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 centred 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 mould after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution.

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

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

Other considerations:

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

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

Planetary Health Curriculum

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

Curriculum: General

1.1. Did your medical school offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered **more than one** elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered **one** elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does **not** have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a **lecture** on planetary health.
0	No, the medical school has **not** offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.

Score explanation:

The University of Manchester medical school does not offer any lecture-based electives as part of the MBChB program, and the program does not include the opportunity to cross-enroll with courses offered by other departments. Thus, lecture-based electives focussed on ESH or planetary health are not accessible for medical students through the program.
However, students do have opportunities to engage with ESH and planetary health via:

1. *Intercalation in Global Health BSc(Hons), a lecture based degree focussing on key global health challenges, global determinants of health and illness, and innovative solutions.*
2. *Personal Excellence Pathway (PEP) project, a student-selected component of the Manchester MBChB program, in years 1, 2, 3, and 5. PEP is not lecture-based, but rather emphasises development of skills related to research and quality improvement. Students may either select from a list of projects offered by faculty members or propose their own idea, related to any area of medicine. In recent years, titles offered for these projects have included options related to ESH and planetary health, such as:*
   - *'Green prescribing for wellbeing of Medical Students'*
   - *'Green prescription for mental health improvement'.*

Curriculum: Health Effects of Climate Change

1.2. Does your medical school curriculum address the relationship between extreme heat, health risks, and climate change?

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

Score explanation:
The Manchester MBChB curriculum includes a lecture in year 1 entitled 'Planetary Health and Sustainable Healthcare', delivered by Maya Whittaker and Anna Martin under the guidance of Dr. Stuart d'Arch Smith of the Centre for Sustainable Healthcare. This lecture briefly mentions that climate change contributes to rising temperatures and extreme heat and that these impact human health through heat-related illness and death and cardiovascular failure. Infographics are used.

1.3. Does your <u>medical school</u> 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:
The Manchester MBChB curriculum includes a lecture in year 1 entitled 'Planetary Health and Sustainable Healthcare'. This lecture briefly mentions that climate change drives incidence and frequency of extreme weather events and that these impact human health through injuries, fatalities, and mental health impacts. Infographics are used.

1.4. Does your <u>medical school</u> curriculum address the impact of climate change on the changing patterns of infectious diseases?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.

Score explanation:
The Manchester MBChB curriculum includes a lecture in year 1 entitled 'Planetary Health and Sustainable Healthcare'. This lecture briefly mentions that climate change contributes to incidence of infectious disease in non-endemic countries, resulting in increases in deaths. Infographics are used to discuss changes in vector ecology due to climate change, with specific mention of malaria, dengue, encephalitis, hantavirus, Rift Valley fever, Lyme disease, chikungunya, and West Nile virus.

The MBChB curriculum touches upon this metric briefly in years 3 and 4, although the associated Intended Learning Outcomes (ILOs) focus more on epidemiological patterns of infectious diseases and rather than the changing patterns of infectious diseases due to climate change. These ILOs include "Describe the infective agents that may cause chronic diarrhoea in a patient. This discussion should include national and international/global perspectives" (year 3) and "Apply knowledge of the epidemiology, presentation and treatment of parasitic infections and how to investigate these.".

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

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

Score explanation:
The MBChB curriculum touches on this metric in year 1 through the Intended Learning Objective (ILO) "To demonstrate knowledge of the pathophysiology of asthma, including: aetiology, triggers and epidemiology". Specifically, two lectures are dedicated to this topic:

1. *A lecture entitled 'Asthma – Where are we now?' discusses the link between childhood air pollution exposure in detail over several slides.*
2. *A lecture entitled 'Planetary Health and Sustainable Healthcare' briefly discusses the impact of air pollution on asthma.*

The curriculum also touches on this metric in year 3 in an online module on risk factors for COPD, where "indoor air pollution from biomass fuel (wood, animal dung, crop residue) or coal" is listed as a risk factor for development of COPD.

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

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

Score explanation:
The Manchester MBChB curriculum includes a lecture in year 1 entitled 'Planetary Health and Sustainable Healthcare'. This lecture briefly mentions in 1 slide that climate change contributes to extreme heat, which may result in cardiovascular failure (infographic).

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

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

Score explanation:
The Manchester MBChB curriculum includes a lecture in year 1 entitled 'Planetary Health and Sustainable Healthcare'. This lecture briefly mentions the rising prevalence of eco-anxiety and mental health impacts of severe weather events and environmental degradation resulting in forced migrations and civil conflict. Infographics are used.

1.8. Does your <u>medical school</u> curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.

Score explanation:
The Manchester MBChB curriculum includes a lecture in year 1 entitled 'Planetary Health and Sustainable Healthcare'. This lecture mentions over the course of 1 slide that climate change impacts water and food supply, causing malnutrition and diarrheal disease. Infographics are used.

1.9. Does your <u>medical school</u> curriculum address the outsized impact of climate change on marginalised populations such as those with low SES, women, communities of colour, Indigenous communities, children, homeless populations, and older adults?	
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 Manchester MBChB year 1 curriculum includes an online module that mentions the disproportionate impact of toxic air on children, women, and older adults, as well as those living with long-term medical conditions.
The Manchester MBChB year 5 curriculum includes lectures and several online resources on "Inclusion Health" within the "Population Health" module. Health in several marginalised communities is discussed, including ethnic minorities, homeless populations, and those with low SES. However, the impact of climate change in these populations is not discussed.

1.10. 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: *The Manchester MBChB curriculum includes a lecture in year 1 entitled 'Planetary Health and Sustainable Healthcare'. This lecture dedicates a slide to "Climate change and health inequalities" and briefly discusses that low and middle income countries which "contribute the least to man-made climate change have been disproportionately impacted". Infographics are used.*	

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

1.11. Does your <u>medical school</u> curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.
Score explanation: No evidence found.	

1.12. Does your <u>medical school</u> curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.
Score explanation: *The Manchester MBChB curriculum covers this frequently throughout years 1-5. For example, emphasis is placed on recognising that many patients, especially older adults, have worked in factories, construction, or in the docks, therefore increasing their risk of exposure to environmental hazards, including asbestos. Human-caused environmental threats and their link with respiratory diseases, including malignancy, are mentioned in the second case in year 3, entitled "Haemoptysis", supported by the ILO "Identify the environmental, social and psychological factors affecting the development of cardiovascular and respiratory diseases".*	

1.13. To what extent does your <u>medical school</u> emphasise the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?	
3	Indigenous knowledge and value systems are **integrated throughout** the medical school's planetary health education
2	Indigenous knowledge and value systems as essential components of planetary health solutions are included **briefly** in the core curriculum.
1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in **elective** coursework.
0	This topic was **not** covered.
Score explanation: No evidence found.	

1.14. Does your <u>medical school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of colour, children, homeless populations, Indigenous populations, and older adults?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.
Score explanation: No evidence found.	

Curriculum: Sustainability

1.15. Does your <u>medical school</u> curriculum address the environmental and health co-benefits of a plant-based diet?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.
Score explanation: *Although the MBChB curriculum discusses the health benefits of a high fibre plant-based diet throughout years 1-5, it does not explicitly link this to the environmental co-benefits. An example of this is the "Healthy lifestyles" lecture by Dr Pimlott in year 5.*	

An existing ILO that may support this area in the future is "Discuss health behaviours with patients in a patient-centred way, in conversations about nutrition, physical activity, medication adherence and any other aspects of self-management and self-care".

1.16. Does your <u>medical school</u> curriculum address the carbon footprint of healthcare systems?	
3	This topic was explored **in depth** by the **core** curriculum
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.
Score explanation: *The Manchester MBChB curriculum includes a lecture in year 1 entitled 'Planetary Health and Sustainable Healthcare'. This lecture has a slide dedicated to "Climate change and health systems" and specifically discusses the carbon footprint of NHS England. Infographics are used.*	

1.17. Does your <u>medical school</u> curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each)	
2	The health **and** environmental **co-benefits** of **avoiding** over-medicalisation, over-investigation and/or over-treatment
2	The environmental impact of **pharmaceuticals** and over-prescribing as a cause of climate health harm. Alternatively teaching on **deprescribing** where possible and its environmental and health co-benefits would fulfil this metric.
1	The health **and** environmental **co-benefits** of **non-pharmaceutical management** of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes. This is commonly known as social prescribing in the UK.
1	Environmental impact of **surgical** healthcare on planetary health and the climate crisis, and how can it be mitigated
1	The impact of **anaesthetic** gases on the healthcare carbon footprint and ways to reduce anaestheisa's environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions
1	The impact of **inhalers** on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	**Waste production** within healthcare **clinics** and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)
	Score explanation: *The Manchester curriculum discusses many of the risks associated with over-medicalisation, over-treatment and over-prescribing, as well as the benefits of lifestyle change and social*

	prescribing, but only describes these benefits in health and financial terms and does not clearly link these to the environmental co-benefits. *There is no reference to the environmental impact of surgical healthcare.* *There is no reference to the environmental impact of anaesthetic gases.* *A lecture in year 3 addresses the carbon footprint of metered dose inhalers.* *A lecture in year 1 briefly mentions pharmaceuticals and equipment as contributors to the carbon footprint of NHS England.* *There is no reference to the management of waste production and reducing waste in healthcare.*

Curriculum: Clinical Applications

1.18. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies to have conversations with patients about the health effects of climate change?	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the **core** curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in **elective** coursework.
0	No, there are **not** strategies introduced for having conversations with patients about climate change
Score explanation: *The MBChB curriculum includes teaching on behaviour change conversations and having difficult conversations with patients, but there is no learning material that specifically targets approaching a conversation about the health effects of climate change. If the student wishes, feels competent, and deems it relevant, they could choose to discuss the effects of climate change with the patient.* *An ILO that may support this area in the future is "Share information with patients, involving them fully in discussions and decisions about treatment, management, lifestyle and care".*	

1.19. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies for taking an environmental history or exposure history?	
2	Yes, the **core** curriculum includes strategies for taking an environmental history.
1	Only **elective** coursework includes strategies for taking an environmental history.
0	No, the curriculum does **not** include strategies for taking an environmental history.
Score explanation:	

At the University of Manchester, medical students are trained to take a full history, including environmental and occupational exposure. Students are provided with a framework for history taking which includes a social history section, detailing travel, exercise, work, previous occupations, home life, and potential exposures to pollutants/toxins in the home/workplace.

An ILO supporting this area is "Gather a clinically reasoned history for a patient presenting with [presentations], eliciting key associated symptoms, important risk factors and comorbidities".

Curriculum: Administrative Support for Planetary Health

1.20. Is your medical school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?	
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:

The University of Manchester's Climate in the Curriculum committee is a working group that focuses on implementation and improving ESH and planetary health education. This working group has staff members from across all years of the MBChB Programme, student representatives, and active involvement from the Director of Social Responsibility from the School of Medical Sciences, Faculty, and from the Head of Sustainability for the Faculty of Biology, Medicine and Health.

1.21. 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:
Manchester medical school integrates planetary health throughout the programme, in the form of online modules, face-to-face teaching on clinical history-taking, lectures, and project titles within the PEP pathway. However, this integration is very sporadic and does not appear in the same longitudinal nature that topics related to medical conditions do.
Education around harmful environmental exposure and associated history-taking skills are well inter-spaced throughout the 5 years, particularly the link with respiratory diseases. Despite this brief integration of Planetary Health/ESH into the curriculum, there is a lack of coordination, and most aspects are either only briefly mentioned in stand-alone lectures or not mentioned at all.

1.22. Does your medical school employ a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course?	
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: *Dr Silke Conen is Chair of the newly-established Planetary Health and Sustainability committee at the medical school, overseeing the incorporation of ESH and planetary health throughout the course. There is also a Head of Sustainability for the faculty.*	

Section Total (37 out of 72)	**51%**

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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 emphasised.*

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

Score explanation:
There are several researchers within the Faculty of Biology, Medicine and Health carrying out research with respect to climate change and health.

Holly Shiels works within the Division of Cardiovascular Sciences. Her primary research focus "explores molecular and cellular mechanisms that impact cardiac function in response to environmental change and links these with altered organismal metabolism, locomotion and behaviour to determine the intersection of the cardiovascular system and the environment on fitness".

Professor John McLaughlin, works within the Division of Diabetes, Endocrinology and Gastroenterology. Although not his primary research focus, he has been working alongside Sarah Bridle, a Professor of Food, Climate and Society at the University of York, examining the link between nutrition and climate change, including educating children about these matters in school. Their work is summarised in a talk by Sarah Brindle here.

Professor Edward Johnstone works within the Division of Developmental Biology & Medicine. Although not his primary research focus, his work includes examining the effects of pollution on pregnancy outcomes and post-natal development, although their primary research focus is on foetal growth restriction.

2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at

your institution?	
3	There is **at least one** dedicated department or institute for interdisciplinary planetary health research.
2	There is **not currently** a department or institute for interdisciplinary planetary health research, but there are **plans** to open one in the next 3 years.
1	There is an **Occupational and Environmental Health department**, but no interdisciplinary department or institute for planetary health research.
0	There is **no** dedicated department or institute.

Score explanation:
The Faculty of Science and Engineering includes the Manchester Environmental Research Institute, whose goal is to "deliver the evidence base and solutions to tackle the challenges of global change and its effect on health care, food security, water resources and energy production". In doing so, there are collaborations with researchers throughout the university, including the School of Medical Sciences.

The Faculty of Biology, Medicine and Health also includes a Centre for Occupational and Environmental Health. One of the research areas specified on the website is Environmental Epidemiology, which, according to the website, has included research into the effects of environmental exposures (namely, temperature and air pollution) on mortality.

Sustainable Futures is an institution-wide scheme aiming to "facilitate[s] interdisciplinary research by supporting the institutes, centres, and external partnerships working together to meet the challenge of delivering a healthy and sustainable future".

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

Score explanation:
The Faculty of Biology, Medicine and Health, which includes the School of Medical Sciences and the MBChB programme, involves members of the public in all aspects of their research, including decision-making processes as part of their Social Responsibility programme.

Throughout the institution, while some patient groups were involved in research areas that concerned them (e.g. older people & MIRCA), there was no evidence that people who are disproportionately

affected by climate change and environmental injustice are involved in the decision-making process regarding that research agenda.
The university has created a forum for Patient and Public Involvement and Engagement, where members discuss public research output, however it is unclear whether there is a specific research agenda with the medical school.

2.4. Does your institution have a planetary health website that centralises ongoing and past research related to health and the environment?	
3	There is an **easy-to-use, adequately comprehensive** website that **centralises** various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.
2	There is a website that **attempts to centralise** various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
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 University of Manchester as an institution has a Sustainable Futures website detailing its goals and activities related to environmental sustainability and developing a sustainable future. The university's sustainability commitments are detailed on a subpage. The Sustainable Futures homepage includes links to each of several "Challenge" areas (e.g. health, resilience, resourcefulness, net zero, inclusivity, and information), and each web page includes a description of the scope of that challenge, a short video recorded by a faculty member introducing that challenge, related case studies, a brief biography of the challenge lead, and any ongoing projects/events to engage with. The website includes a News section that is kept up to date with recent developments and also includes links to funding opportunities. Contact details are hyperlinked for each Challenge Lead and are also available under the "About Us" section.

The Manchester Faculty of Biology Medicine and Health has one webpage briefly explaining 4 goals to create a sustainable Faculty (see link below). There is a link to an information booklet 'Easy Everyday Eco Actions for Everyone'. The contact details of the sustainability lead for each School within the Faculty, including that of Medicine, are also included. The information is not orientated towards health but is more focused on environmental sustainability.

2.5. Has your institution recently hosted a conference or symposium on topics related to planetary health?	
4	Yes, the **medical school** has hosted at least one conference or symposium on topics related to planetary health in the past year.
3	Yes, the **institution** has hosted at least one conference or symposium on topics related to planetary health in the past year.

2	Yes, the **institution** has hosted a conference on topics related to planetary health in the past three years.
1	The **institution** has not hosted any conferences directly, but they have provided financial support for a local planetary health event.
0	No, the **institution** has not hosted a conference on topics related to planetary health in the past three years.

Score explanation:
Accelerating Just Climate Action Conference
- *A one-day conference that showcased the work of Early Career Researchers at the University of Manchester intersecting with topics discussed during COP28.*

Sustainability Teaching and Learning Community of Practice Launch Event
- *Launch of hands-on, three-dimensional learning tools to teach sustainability in libraries, museums, and cultural spaces, with translations into several other languages. The event included a demonstration RoundView, workshop session, and networking session.*

Water@Manchester Annual Forum 2023
- *An in-person workshop bringing together academics and students across the university to share current research related to water, identify overlapping research problems and new areas for collaboration, and inform planning and design of university water activities in 2024 (around World Water Week and with UoM's international strategic partners).*

The University of Manchester also hosted the Manchester Festival of Climate Action in 2021.

2.6. Is your medical school a member of a national or international planetary health or ESH organisation?	
1	Yes, the medical school is a member of a national or international planetary health **or** ESH organisation
0	No, the medical school is **not** a member of such an organisation

Score explanation: The medical school is not yet part of such an organisation, but is actively preparing an application to the Planetary Health Alliance.

Section Total (13 out of 17)	**76%**

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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 colour. Institutions should partner with local communities affected by climate change and pollution to share information about environmental health threats, advocate together for change, and provide opportunities for students to be a part of this work.*

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

Score explanation:
The institution supports and collaborates with several community organizations to promote planetary health:

- *Incredible Edible , a non-governmental organisation (NGO) promoting education in climate change and adaptations to enhance urban food resilience*
- *Enactus Manchester, a non-profit organisation involving a team of university students who lead a range of local projects which support young people at risk of homelessness, migrant parents, and refugee women. This group develops projects to help the community and the environment.*
- *Clean Growth Leadership Network, an independent, non-profit organisation which encourages thinking and action to decarbonise the economy*
- *The Manchester Climate Change Agency, a community interest company leading climate adaptation work in Manchester*
- *City of Trees, a local NGO supporting climate adaptation through afforestation.*

Students across the university are encouraged to participate in the Stellify Award . As part of this, students undertake "Ethical Grand Challenges", covering sustainability, social justice and workplace ethics. Students are also obliged to undertake a volunteering role in the community, which may include partnering with community organisations in such a way that promotes planetary and environmental health, however this is dependent on individual students' interests.

No evidence of meaningful partnerships between the medical school and community organisations were found.

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

Score explanation:
The institution provides several opportunities for local communities concerning planetary health:

- *The Take a Bite out of Climate Change programme, which engages with the local community to promote awareness of the climate impacts of food*
- *The Bluedot Festival, which encompasses a sustainability and climate theme, provides educational programmes and advice on campaigning around issues of climate change*
- *Mangoes, meat and motors: confronting the climate on Manchester's Curry Mile, a community-facing event on how to make the Curry Mile a place that serves people and the environment better. The project aims, among other things, to challenge the dominant Western conceptions of sustainability that inform socio-environmental policies and research, and to explore how Global South immigrant knowledge and practices contribute to socially just and sustainable urban environments in the UK*
- *Sustainable Futures Events, on the University of Manchester website advertises a plethora of events/talks focussing on climate change and sustainable living which students, staff and members of the public may attend https://www.sustainablefutures.manchester.ac.uk/events/*

No evidence of community-facing courses or events involving the medical school was found.

3.3. Does your medical school have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
2	Yes, all students **regularly** receive communication updates dedicated to planetary health and/or sustainable healthcare.
1	Yes, planetary health and/or sustainable healthcare topics are **sometimes** included in communication updates.
0	Students **do not** receive communications about planetary health or sustainable healthcare.

Score explanation:
Medical students receive regular communication from the Faculty of Biology, Medicine & Health and from OneMedBuzz, the medical school's newsletter. There is also a university-wide platform called 'Student News'.

The only planetary health or sustainable healthcare topics included in these emails is annual recruitment for the Planetary Health Report Card team, otherwise no other related topics are included.

The School of Health Sciences does have an Environmental Sustainability newsletter released every few months (latest in October 2023), but as far as our team can tell, this is not emailed out to medical students, and is fairly difficult to find.

3.4. Does the institution or main affiliated hospital trust engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?	
2	Yes, the **institution** or **main affiliated hospital trust** offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health.
1	Yes, the **institution** or **main affiliated hospital trust** offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
0	There are **no** such accessible courses for post-graduate providers

Score explanation:
No evidence found for Manchester Foundation Trust Hospitals (MFT), but Lancashire Teaching Hospitals (LTHT) offers an online course through its e-learning site title "For a Greener NHS - Delivering Net Zero at LTHT". All staff at LTHT may self-enrol and complete the 20-30 minute course to receive a certificate. The course is authored by Chris Carlsen, of the Pennine Care NHS Foundation Trust, and localised by Frances Balmer, SCF Emergency & Sustainability Medicine. Course contact: sustainabilityhub@lthtr.nhs.uk.

3.5. Does your medical school or its affiliated teaching hospitals have accessible educational materials for patients about environmental health exposures?	
2	Yes, the **medical school** or **all affiliated hospitals** have accessible educational materials for patients.
1	**Some** affiliated hospitals have accessible educational materials for patients.
0	**No** affiliated medical centres have accessible educational materials for patients.

Score explanation:
No evidence found for Manchester Foundation Trust Hospitals (MFT), but Lancashire Teaching Hospitals (LTHT) has posted information regarding smoke exposure in some paediatric clinics.

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

2	Yes, the **medical school** or **all affiliated hospitals** have accessible educational materials for patients.
1	**Some** affiliated hospitals have accessible educational materials for patients.
0	**No** affiliated hospitals have accessible educational materials for patients.

Score explanation:
There were no leaflets or information guides concerning climate change or health impacts. A brief article about safety around icy water outlined increased pollution having an impact on ice thickness.

The Healthier Lancashire and South Cumbria initiative is part of Sustainability and Transformation Plans that are being developed to deliver the NHS Five Year Forward View. This partnership claims to develop the Lancashire and South Cumbria economy, allowing them to respond locally to global impacts, e.g., environmental changes. Although this information is aimed at patients, the plans are not detailed on the website.

The Manchester Foundation Trust (MFT) website does not contain any information for patients regarding climate change and health impacts.

According to their website, MFT declared a climate emergency in 2019. This builds on the MFT Sustainable Management Plan, published in 2018, which focuses more on how MFT can provide sustainable healthcare and reduce its environmental footprint, rather than how improvements in these areas might improve population health. There is no evidence that patient education has been carried out as part of this management plan.

Section Total (5 out of 14)	**36%**

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Support for Student-Led Planetary Health Initiatives

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

4.1. Does your medical school or your institution offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the **medical school** or **institution** *either* offers grants for students to enact sustainability initiatives/QI projects *or* sustainability QI projects are part of the core curriculum.
1	The **medical school** or **institution** encourages sustainability QI projects (to fulfil clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, **but** there is no student funding available and there is no requirement to participate.
0	No, **neither** the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.
Score explanation: *The University of Manchester as an institution encourages all students to participate in the Stellify Award, which includes a sustainability challenge for all first year students (also open to later years). The challenge comprises a 2.5 hour simulation activity in which students collaborate to plan a new university campus, while working around 'game changing interventions' that replicate global responses to climate change.* *The Environmental Sustainability Department at the university details funding available for staff and students in different faculties to undertake projects in environmental sustainability.* *Within the medical school, all second and third year students are required to complete a literature review and research project, respectively, as part of the Personal Excellence Pathway component of the medical programme. Projects based on climate change and planetary health are increasingly featuring among available options for these projects.*	

4.2. Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
2	The **institution** has a **specific** research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these **require student initiative** to seek these out and carry them out in their spare time.
0	There are **no opportunities** for students to engage in planetary health/sustainable healthcare research.

Score explanation:
The institution has several opportunities for medical students to become involved in research related to planetary health and sustainable healthcare. While these do not include a specific fellowship that accepts medical students, they are varied and detailed below:

- *Options relating to these topics within the Personal Excellence Pathway research project for second and third year medical students*
- *Research opportunities through the UoM Tyndall Centre*

The university also provides opportunities for PhD graduates to undertake a 3-year funded fellowship as part of the Leverhulme Trust Early Career Fellowship. The fellowship is offered within the School of Environment, Education and Development and is open to projects covering architecture, education, geography, global development, and planning and environmental management.

4.3. Does the medical school have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.	
2	The **medical school** has a webpage with specific information related to planetary health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.
1	There is a **medical school** webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information.
0	There is **no medical-school** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.
Score explanation: *The Faculty of Biology, Medicine and Health hosts a website that briefly outlines faculty goals to improve sustainability and provides contact details for the Sustainability Leads at each School, including the School of Medical Sciences. However, this website is not specific to the medical school and does not provide information on related sustainability projects.*	

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

The University of Manchester Students for Global Health society is an interdisciplinary student group that addresses all global health issues, but has established an arm that is dedicated to planetary health initiatives on campus. This arm is well supported by faculty staff within the medical school, particularly Dr Silke Conen.

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

Score explanation:
The leads for the University of Manchester Planetary Health Report Card team simultaneously serve as student representatives on the Climate in the Curriculum Committee. This Committee aims to incorporate updated, accurate, and relevant climate topics within the medical curriculum and is currently working towards this goal by evaluating the current curriculum and suitable points for supplementation with planetary health education.

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

Score explanation:

Sustainable Futures Seminar Series. This is a seminar series organised by the Sustainable Futures team at the University of Manchester. The January edition featured research projects completed by UoM Biological Sciences undergraduate students (not medical students), as well as talks from 2 faculty

members at the University of Manchester. Upcoming events are open for registration. Other speaker series are run and publicised by the Climate Change Group.

The Engaging Stakeholders and Building Climate Resilience Performance and Panel held in October 2023 used arts to communicate the issues of environmental sustainability and propose collaboration between the arts and sciences. Students were invited. The performance, 'The Boxer's Guide to Climate Resilience' was followed by a panel discussion and Q&A with climate leaders at UoM.

Volunteering opportunities at the Jodrell Bank site with gardeners, fern and fungi experts, beekeepers, birdwatchers, wildlife experts and gooseberry growers protecting and supporting the biodiversity in 35 acres of gardens and arboretum in Manchester.

Manchester Wilderness Medics Society runs 2-3 events each year whereby students travel together to hike and backpack in different locations across the United Kingdom, such as the Lake District. The Preston Medics Hiking Society also organises accessible trips to local national parks and areas of outstanding natural beauty for hiking and walking.

Section Total (10 out of 15)	**67%**

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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 endeavour, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinising every aspect of how our systems operate, from where we source our energy, to how we build our infrastructure, to what companies we invest in. Our medical schools, clinics, and hospitals must set the standard for sustainable practices, and show other sectors what is possible when it comes to minimising environmental impact.*

5.1. Does your 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
The University of Manchester has an award-winning Environmental Sustainability Team with multiple staff members. Although several members of the committee are part of the Faculty of Biology, Medicine and Health, there are no dedicated staff members for the medical school.	

5.2. How ambitious is your institution/medical school plan to reduce its own carbon footprint?	
5	The institution/medical school has a **written and approved plan** to achieve carbon neutrality by **2030**
3	The institution/medical school has a **written and approved plan** to achieve carbon neutrality by **2040**
1	The institution/medical school has a stated goal of carbon neutrality by **2040** but has **not created a plan** to reach that goal or the **plan is inadequate**
0	The institution/medical school does **not** meet any of the requirements listed above
	The University of Manchester, including the medical school, is working to the goals set by the Greater Manchester 5-Year Environment Plan, which states a goal of carbon neutrality by 2038. The strategies and policies in place to help the University achieve this goal can be found here.

	As of 2021, the University is also a signatory of the UN Race to Zero for Universities and Colleges and publishes its progress yearly. Unfortunately, the year 2020/21 saw an increase in carbon emissions for the first time since 2014. Several reasons for this were identified and plans made to re-establish progress in the year 2022/23. The report can be found here.

5.3. Do buildings/infrastructure used by the medical school for teaching (not including the hospital) utilise 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.
Although data for individual buildings is not available, the university as a whole committed to using 100% renewable energy with a new energy contract beginning in 2021. As well as this, the university entered into a Renewable Energy Guarantees of Origin (REGO) scheme, where a volume of energy equivalent to the total energy use by the university is generated from renewable resources.	

5.4. Are sustainable building practices utilised for new and old buildings on the medical school campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?	
3	Yes, sustainable building practices are utilised 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 utilised 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.
The University of Manchester is implementing a Campus Master Plan, in which it commits to meeting specific targets to ensure environmental sustainability is considered in all new-build and refurbishment projects. The Campus Master Plan is being delivered in two phases, the first of which includes three buildings primarily used for the Faculty of Biology Medicine and Health. The second phase includes a dedicated Biomedical Campus, centred around a refurbished and remodelled Stopford Building, which is the main teaching building for the medical school. *The Campus Masterplan website also states that several buildings have been awarded an "excellent" Building Research Establishment Environmental Assessment Methodology (BREEAM) rating, including the National Graphene Institute and the Manchester Cancer Research Centre.*	

5.5. Has the medical school or institution implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?	
2	Yes, the medical school or institution has implemented strategies to encourage and provide **environmentally-friendly transportation options** such as safe active transport, public transport, or carpooling and these options are well-utilised by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
1	The medical school or institution has implemented **some** strategies to provide environmentally-friendly transportation options, but the options are **unsatisfactorily** accessible or advertised.
0	The medical school or institution has **not** implemented strategies to encourage and provide environmentally-friendly transportation options.

Most of the University of Manchester campus is based on Oxford Road, a large stretch of which is only authorised for use by buses, bicycles, black cabs, and emergency vehicles between 6am and 9pm. The Environmental Sustainability website details the locally available public transport, with links to associated student bus passes that are available to purchase. There is also a free bus service between the north and south campuses.

There are multiple bike shelters that are well-used throughout the campuses.

Overall, the university estimates that 52% of all student journeys are made by walking or cycling.

5.6. Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminium/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.

The University of Manchester has segregated recycling bins throughout campus, including in the medical school buildings, and an estimated 35% of waste is recycled in this way.

Food waste bins are available for staff and students to use at 2 locations on campus, and the university is in the process of rolling out food waste collections in all academic buildings on the main campus by the end of 2023.

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

3	Yes, the medical school has a**dequate s**ustainability requirements for food and beverages, including meat-free days or no red-meat, and **is engaged** in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are **insufficient or optional**. The medical school **is engaged** in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are **insufficient or optional.** The medical school is **not** engaged in efforts to increase food and beverage sustainability.
0	There are **no** sustainability guidelines for food and beverages.

While the medical school does not have any dedicated cafes, the university at large has committed to environmental sustainability in its food services, including on-campus restaurants, residence halls, and events. Specifically, the university has Fairtrade university status, sources free-range eggs and farm-assured chickens, ensures all fish appears on the Marine Conservation Society approved list, and provides free tap water from all catering outlets and at water fountains across campus. Although an increasing amount of vegetarian and vegan options are available, there is no evidence of campus food services providing meat-free/no red meat days.

The Sustainable Restaurant Association also assesses cafes and restaurants on campus according to Society, Sourcing, and Environment, and has awarded 3 stars to Food in Residence and Greenhouse Cafe, and 2 stars to Christies Bistro.

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

The university has a Central Procurement Office (CPO) that oversees purchasing throughout the university. The CPO website has a page dedicated to responsible procurement, which considers the social, environmental and economic impacts to support sustainable development.

The CPO also developed a NETpositive supplier engagement tool, helping suppliers develop sustainability action plans for free, which is now being used by over 40 universities and Purchasing Consortia.

The CPO also provides a list of contracted suppliers that have satisfied the university's health and safety regulations, as well as alignment with the university's environmental sustainability and social responsibility goals, which the CPO has pledged to continue to support, including reducing waste and single use plastic.

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

All events held at the university are required to abide by the Sustainability Policy of the university's Conference and Venue team. The policy itself is a part of the wider Environmental Sustainability plan.

Event sustainability at the university focuses on reducing food miles, increasing food sustainability, and using sustainable audiovisual support.

The Students Union also has a Sustainability Checklist for student-hosted events, including a Food & Drink checklist, Transport checklist, Energy Reduction checklist, Ethical Items for Events, Marketing Checklist, and Waste Checklist.

5.10. Does your medical school have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
2	Yes, the medical school has **programs** and **initiatives** to assist with making lab spaces more environmentally sustainable.
1	There are **guidelines** on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are **no** efforts at the medical school to make lab spaces more sustainable.

All lab spaces at the university are encouraged to participate in a variety of programs and initiatives to improve environmental sustainability. There is a Sustainable Lab Network specifically for labs in the Faculty of Biology Medicine and Health, which includes the medical school. Labs across the university are also encouraged to join the Laboratory Efficiency Assessment Framework (LEAF), and to work within the energy and water use guidance provided by the university. There is also a document detailing how to recycle lab-specific products provided by contracted suppliers.

5.11. Does your institution's endowment portfolio investments include fossil-fuel companies?	
4	The institution is **entirely divested** from fossil fuels **and** has made a **commitment to reinvest divested funds** into renewable energy companies or renewable energy campus initiatives.
3	The institution is **entirely divested** from fossil fuels.
2	The institution has **partially divested** from fossil fuel companies **or** has made a **commitment to fully divest**, but **currently** still has fossil fuel investments.
1	The institution has **not divested** from fossil-fuel companies, but faculty and/or students are **conducting organised advocacy** for divestment.

0	Yes, the institution has investments with fossil-fuel companies and there have been **no efforts** to change that.
The 2021 Responsible Investment Report confirmed that the university has entirely divested from fossil fuels and is continuing work to decarbonise the entire portfolio in line with the 2020 Policy for Socially Responsible Investment.	

Section Total (27 out of 32)	**84%**

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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%

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	(37/72) x 100 = 51.39%	C
Interdisciplinary Research (17.5%)	(13/17) x 100 = 76.47%	B+
Community Outreach and Advocacy (17.5%)	(5/14) x 100 = 35.71%	D+
Support for Student-led Planetary Health Initiatives (17.5%)	(10/15) x 100= 66.67%	B
Campus Sustainability (17.5%)	(27/32) x 100 = 84.38%	A-
Institutional Grade	**61.48%**	**B-**

Report Card Trends

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