



Planetary Health Report Card (Medicine): *Lancaster Medical School*



Lancaster University
Medical School

2023-2024 Contributing Team:

- Students: Nidhi Shah, Jade Jiang, Chezko Malachi Peligrino Castro*
- Faculty Mentors: Felicity Connolly
- *Primary Contact: Chezko Malachi Peligrino Castro, c.castro@lancaster.ac.uk

Summary of Findings

Overall	B+
<u>Curriculum</u>	A-
<ul style="list-style-type: none"> Lancaster Medical School has an integrated sustainability curriculum covering a broad range of topics, particularly focusing on the impact of healthcare on the environment and practical ways that medical students, as future doctors, can make clinical and non-clinical decisions that will have an impact on patients, practice, and the environment. Recommendations: There is a lack of guidance regarding the approach to doctor-patient conversations around planetary health. This may be included in Year 4 teaching. It may also be worthwhile to have a resource featuring a systems-based approach to the effects of climate on health. 	
<u>Interdisciplinary Research</u>	A
<ul style="list-style-type: none"> Lancaster Medical School has various interactions with its students and the wider community to develop ideas and highlight the importance of planetary health. Recommendations: The N8 research partnership is in the early developmental stages where it is limited to providing education and advice. This can be further developed into a project whereby continuous involvement and follow-up is required to see progression. In addition to the coastal community, other communities should also be involved to increase awareness and allow for more research opportunities in planetary health. 	
<u>Community Outreach and Advocacy</u>	C +
<ul style="list-style-type: none"> Lancaster University and its Medical School offer multiple events relating to planetary health and sustainability, with active involvement with community organisations and the wider Lancashire population. Recommendations: To spread more awareness of the effects of climate on health, creating accessible patient/public-tailored resources regarding environmental health would be beneficial. 	
<u>Support for Student-Led Initiatives</u>	B
<ul style="list-style-type: none"> Lancaster University and its medical school provide students with numerous opportunities both academically and recreationally to engage with sustainability and planetary health during their studies. Student contributions to initiatives are supported and encouraged by staff members. Recommendations: There are lots of recreational and cultural opportunities which students can consistently participate in throughout the academic year. However, there is a lack of continuous academic projects medical students can engage in outside of teaching. Ideally, a formalised student group should be formed, promoting and providing extracurricular planetary health content to their peers akin to other medical specialty societies. 	
<u>Campus Sustainability</u>	B+
<ul style="list-style-type: none"> Lancaster University and the medical school have an ongoing commitment to campus sustainability. There are plans in place and continuous reviews each year since the initial proposal to ensure that the institution's commitment to carbon neutrality by 2035 will be met. Sustainability is promoted holistically at Lancaster University as policies are designed with social, economic and environmental factors in mind. Recommendations: Institutionally, additional investments and the fulfilment of ongoing investments in renewable energy would yield a substantial improvement. For example, shift from gas powered combined heat and power engine to renewable solar energy. 	

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 <u>medical school</u> offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>Score explanation: There are multiple special study modules (SSMs) that students may select in first and second year, with topics such as sustainable practice in healthcare and global health ethics. An example title would be “The Ethics of Environmentally Sustainable Decision-Making”. In these SSMs, students undertake a guided course of study in a research topic (i.e. sustainable healthcare) to write a short dissertation.</i></p>	

Curriculum: Health Effects of Climate Change

1.2. Does your <u>medical school</u> curriculum address the relationship between extreme heat, health risks, and climate change?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: There are multiple learning objectives within Year 1, 2 and Year 3 that cover the risk to human health posed by climate change, but there is no explicit link towards extreme heat in particular – rather learning objectives specify exposure to extreme weather. However, there are</i></p>	

multiple slides that make reference to increased temperatures and effects on the ecosystem (e.g. desertification), and consequently human health, in the introductory lecture to sustainability in Year 3, as well as the disproportionate impact exposure to extreme heat/cold as evidenced by the Marmot Review. It is possible that there may be room for further detail in the learning resources.

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

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

Score explanation: The impact of extreme weather events are explicitly mentioned in Year 3 learning objectives – students are expected to describe the mechanisms by which extreme weather events affect human health. It is also referred to in core teaching in the Year 2 Health Inequalities course with reference to the Marmot Review and the impact of extreme weather events on those living in conditions of social deprivation. This is repeated once again in the Year 3 introductory lecture to sustainable healthcare and planetary health, with more focus on the disproportionate burden developing countries face directly from extreme weather events (e.g. flooding) as a result of climate change.

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

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

Score explanation: The Year 3 introductory lecture to sustainable healthcare addresses this topic over multiple slides – for example, how human activities can lead to eutrophication and stimulate the growth of pathogens, as well as new threats posed by infectious diseases. The Year 3 learning objectives also state that students must be able to describe how human health may be affected by changes in disease vectors.

1.5. 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.
<p><i>Score explanation: Whilst respiratory medicine is interwoven throughout the “spiral curriculum” of Lancaster Medical School, there is not a particular resource looking at air pollution at present. This is mentioned in the Health Inequalities course in Y2 where the Marmot Review is referred to in terms of quality of environment and air quality (repeated in Y3 sustainability lecture), and is covered again under the Y2 lecture Ethics, Medicine, and Sustainability, where the burden of air pollution on mortality and costs to the NHS are discussed briefly.</i></p>	

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.
<p><i>Score explanation: The cardiovascular effects of climate change (including heat) are briefly displayed on a couple of slides within the Year 3 introductory lecture to sustainability, by depicting heat-related illness, death, and cardiovascular failure as a consequence of extreme heat, but this is not covered in great detail. This is a possible point for exploration – tailoring future climate resources towards system-based approaches.</i></p>	

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.
<p><i>Score explanation: The psychiatric/neuropsychological impacts of climate change on health is briefly covered. The first mention is within the Y2 lecture Ethics, Medicine, and Sustainability by stating that contamination of the environment has a negative relationship on a person’s sense of place and the benefits derived from people’s relationships with that place (i.e. a green space or beach). The Y3 sustainability lecture also utilises a graphic* linking environmental degradation to forced migration, civil conflict, and mental health impacts. This is further mentioned in the Y3 sustainable healthcare module resources that extensively discuss the inverse - the benefits of the natural environment and green spaces on mental health.</i></p> <p><i>* The image has since been updated from the website.</i></p>	

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.
<p><i>Score explanation: The multifactorial link between ecosystem health and human health is extensively explored within the Year 3 introductory lecture to sustainability – for example, it covers marine life and overfishing, ocean microplastics, as well as highlighting the importance of biodiversity to human health. Furthermore, there is a specific learning objective in Year 3 requiring students to understand human dependence on the environment for essential resources.</i></p>	

<p>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?</p>	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: The disproportionate burden of climate change on marginalised populations is covered in Year 2 under a lecture entitled “Ethics, Medicine, and Sustainability”, which comprehensively explains the tensions between sustainability and socioeconomic inequality, as well as in Y2 GP and Health Inequalities course with students having the opportunity to give presentations on the unequal impacts of climate change on health. It is also explored in the Year 3 introductory lecture to sustainability through the mention of the 2010 Marmot Review and the disproportionate impact climate change would have on economically disadvantaged people.</i></p>	

<p>1.10. Does your <u>medical school</u> curriculum address the unequal regional health impacts of climate change globally?</p>	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: One learning objective from Year 3 requires students to understand the disparity between the most responsible for and most vulnerable to the effects of climate change. This is also touched on within Dr. Connolly’s Year 3 introductory lecture to sustainability and healthcare through world maps of the greatest emitters and the countries with the greatest health burden due to climate change. It is also covered in an introductory lecture in the Year 2 Health Inequalities course by Dr</i></p>	

Connolly, and students are given the opportunity to give presentations to their peers about the unequal effects of climate change on health.

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

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

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: At present, Lancaster Medical School's curriculum does not include the impact of environmental toxins on reproductive health explicitly. There is room for future improvement here, especially for linking to the obstetrics and gynaecology rotations in Years 3 and 4.

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

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

Score explanation: The Health Inequalities project undertaken in Year 2 gives students a chance to understand the health needs of the local population – environmental issues, such as pollution and quality of living spaces, may be considered as part of the analysis, as students have the opportunity to give a presentation to their peers, as well as offer health promotion activities to local school children in the Health Promotion course
This topic has also been discussed informally at multiple points within the curriculum – students may be aware through clinical experience or from problem-based learning of the increased incidence of mesothelioma in Barrow-in-Furness due to asbestos exposure from the dockyards.

1.13. To what extent does your medical school 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.
<i>Score explanation: This topic is not currently covered by the Lancaster curriculum.</i>	

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.
<i>Score explanation: As mentioned in 1.9, the Year 3 introductory lecture to sustainability summarises the fact that socioeconomically disadvantaged people are more likely to be susceptible to the effects of air pollution, as well as poorer quality housing and exposure to dampness. It is also covered in the Year 2 Health Inequalities course as part of an introductory lecture through the 2010 Marmot Review's findings. The impact of environmental quality may be discussed in student presentations on healthcare inequalities of local GP surgeries undertaken as part of the module, as well as mentioned in the Year 3 EDI (Equality, Diversity, and Inclusion) in Primary Care teaching as part of the social determinants of health (and discussion surrounding the inverse care law).</i>	

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.
<i>Score explanation: The environmental and patient-centred benefits of a low-carbon diet and lifestyle are explored in a Year 3 sustainability workshop during primary care teaching. The preparative reading list for the workshop includes reference to the EAT-Lancet Commission which presented the Planetary Health Diet. This topic is also covered in the Year 2 Health Promotion module where students have the opportunity to provide health promotion activities to local primary school children.</i>	

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.
<p><i>Score explanation: The carbon footprint of the NHS is extensively explored within the sustainability curriculum. This is explicitly mentioned in the introductory lecture to sustainability, as well as multiple websites within the sustainability workshop and pre-reading regarding the carbon costs of different specialties and waste management. There is also a specific learning objective in Year 3 expecting students to understand the diverse range of environmental impacts of healthcare provision.</i></p>	

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 anaesthesia'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)
<p><i>Score explanation:</i> <i>In Year 3, students undertake a single-day workshop around sustainable modifications to current practice as part of primary care teaching. Drawing from a problem-based learning scenario, students are taught about and discuss the following topics:</i> <i>Over-treatment and over-medicalisation is discussed and supplemented with digital resources (example here); the patient burden of increasing polypharmacy and comorbidity (and hence increased environmental costs through unused medication) is discussed at length within the scenario.</i> <i>Unnecessary surgical waste and improper disposal of recyclable material within healthcare is depicted explicitly within the scenario, prompting students to discuss possible improvements.</i></p>	

	<p>The environmental impact of pharmaceuticals is expanded on in detail in the teaching – with relevant case studies, such as diclofenac residues within vulture populations and feminised fish. The same scenario also mentions the current change in practice to inhaler prescribing for asthma, as well as signposting to the Green Inhaler website for further reading.</p> <p>This workshop also expands on the mental and physical benefits of encouraging both patients and staff to lead low carbon lifestyles (meeting the non-pharmaceutical management criteria). There is further signposting within the pre-reading to the Planetary Health Diet produced by the EAT-Lancet Commission.</p> <p>Wider waste production is covered in depth within the workshop, looking at current methods of waste management in both hospitals and GP surgeries, with case studies such as greener pre-filled syringes mentioned as an example of good practice.</p> <p>Outside of the workshop, the remaining criteria is met in the following way: The Year 3 introductory lecture to sustainability provides sustainable anaesthetics as an example of a specialty where goals have been made to reduce environmental impact – with direct reference to discontinuation of routine use of nitrous oxide, preferential use of sevoflurane over other gases, and preference of IV anaesthesia as opposed to inhaled.</p>
--	--

Curriculum: Clinical Applications

1.18. In training for patient encounters, does your medical school's curriculum introduce strategies to have conversations with patients about the health effects of climate change?	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the core curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.
0	No, there are not strategies introduced for having conversations with patients about climate change
<p><i>Score explanation: Current focus within the curriculum centres around climate advocacy, greener organisational practice, and health improvement. As a result, there are no specific strategies or resources included at present, and this is something that should be considered for further improvement.</i></p>	

1.19. In training for patient encounters, does your medical school's curriculum introduce strategies for taking an environmental history or exposure history?	
2	Yes, the core curriculum includes strategies for taking an environmental history.
1	Only elective coursework includes strategies for taking an environmental history.
0	No, the curriculum does not include strategies for taking an environmental history.
<p><i>Score explanation: Thorough and comprehensive history-taking is essential to the Clinical Skills curriculum as part of medical training. This is actively assessed as part of OSCEs, and occupational/domestic environmental exposures are expected to be assessed as part of normal history-taking. Furthermore, practice history-taking scenarios within GP-led primary care teaching in Years 3-4 may have themes of environmental exposures precluding a diagnosis, i.e. asbestosis.</i></p>	

Curriculum: Administrative Support for Planetary Health

1.20. Is your <u>medical school</u> currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?	
4	Yes, the medical school is currently in the process of making major improvements to ESH/planetary health education.
2	Yes, the medical school is currently in the process of making minor improvements to ESH/planetary health education.
0	No, there are no improvements to planetary health education in progress.
<p><i>Score explanation: The Medical School is currently undergoing a review of its curriculum, which will reinforce planetary health topics more longitudinally throughout the course. So far, it has added ILOs to Y1 and 2 PBL scenarios, with lectures to support those ILOs, resources and teaching in Y2 GP and Health Inequalities course, Y2 Health promotion course, and the Year 3 sustainable healthcare module, which includes lecture, online learning, student pre-reading, and small group workshop; small group learning in Y5 Primary Care Teaching focussed on sustainable and greener primary care. This is part of a review cycle, and so further changes will be made in time, including the possibility for future sustainability quality improvement projects in the long run.</i></p>	

1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> curriculum?	
6	Planetary health/ESH topics are well integrated into the core medical school curriculum.
4	Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum.
2	Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s) .
0	There is minimal/no education for sustainable healthcare.
<p><i>Score explanation: Lancaster Medical School features a “spiral curriculum”, which focuses on the repetition of key clinical themes within medicine – sustainability is a topic that students continuously build knowledge in as their clinical knowledge grows as part of their progression through training. In Year 1, there is a learning objective requiring students to understand the effects of environmental quality on human health. In Year 2, learning objectives cover sustainability in healthcare practice, management, and design, as well as the environmental costs of providing care in different specialties. There is a lecture titled “Ethics, Medicine, and Sustainability” which discusses the ethical tensions between providing healthcare for current and future generations, as well as climate justice. The Health Promotion and Health Inequalities modules include sustainability learning outcomes and teaching as well. In Year 3, a rotation/module called “Managing Long-Term Conditions” explores planetary health as a workshop, including such topics as climate change advocacy, principles of sustainable clinical practice, impacts of clinical waste, and the health impact of low carbon lifestyles. It also provides further reading material linking to current medical groups focused on sustainability. The module’s introductory lecture additionally describes the effects of climate change on health. Furthermore, there are extensive learning objectives covering sustainable healthcare and planetary health.</i></p>	

In Year 4, there is less emphasis on planetary health, but there is a learning objective asking students to be able to examine occupational exposures and determine health risk, particularly for cancer. In Year 5 - the previous topics are repeated under primary care teaching. Sustainable practice is covered in a workshop, focusing particularly on the Greener Practice model of primary care. In conclusion, ESH is covered longitudinally, with topics covered in appropriate depth and careful consideration has been taken to do so.

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. Felicity Connolly is appointed as the Clinical Lead for Sustainability, and is responsible for integration of sustainability/planetary health topics into the primary care curriculum.

Section Total (60 out of 72)

83%

Back to Summary Page [here](#)

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.

The role of doctors within the setting of climate change does not only extend towards improvements in clinical practice – as part of the sustainability workshop in Year 3, there is a session on climate change advocacy, which describes in detail the fact that advocacy for environmental and sustainability is part of a doctor’s advocacy for human health generally. There are resources detailing not only formal medical organisations’ statements of climate policy, but also doctors involved in environmental activism. We recommend that this is something that should be included in future curriculum metrics, as a wider understanding of the sociopolitical environment would allow students to consider areas for change and activism.

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 <u>medical school</u>?	
3	Yes, there are faculty members at the medical school who have a primary research 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.
<p><i>Score explanation: Lancaster Medical school encompasses numerous researchers whose primary focus is centred around healthcare sustainability. For example, the Director of Simulation and Clinical Skills, Dr Cliff Shelton, has been involved in research regarding waste output in anaesthetics. Dr Shelton has recently published research with other collaborators in the Netherlands about the carbon footprint in Casarean sections in comparison to vaginal births. The link to the article can be found here. Other researchers involved in planetary health include Dr Felicity Connolly (sustainable healthcare within education) and Dr John Appleby (currently involved in a project relating to ethical issues in decarbonising respiratory care).</i></p>	

2.2. 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.
<p><i>Score explanation: At Lancaster University there is a dedicated department for education and research</i></p>	

for sustainable practice known as the LEC (Lancaster Environmental Centre). The LEC provides a huge range of courses which highlight how to address environmental challenges. This is evidenced from their website under “research challenges” (<https://www.lancaster.ac.uk/lec/>). They clearly demonstrate their vision to address environmental challenges.

In collaboration with the LEC department, the Centre for Global Eco-Innovation (<https://www.lancaster.ac.uk/global-eco-innovation/>) is another outlet of Lancaster University which focuses on development of new practices, processes and products that support planetary health. Additionally they have been involved in assisting PhD and MRes students in facilitating dissertation projects surrounding environmental sustainability, allowing experts from various fields to collaborate.

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: Lancaster University has recently teamed up with N8 Research Partnership’s UP North public series events to host a [discussion on coastal communities](#) which helps to tackle issues regarding environmental sustainability. Members of the community and the general public were openly invited to attend the event, which allowed questions to the panel to allow for the community to voice their opinions. The Dean of the Lancaster Medical School, Professor Jo Rycroft-Malone, has been involved in this initiative to spark conversations in order to foster a solutions which are centred around the views of the coastal community.

In its initial stage this idea holds an enormous amount of potential for collaboration and decision-making.

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.
<p><i>Score explanation: Lancaster University has a dedicated website (https://www.lancaster.ac.uk/sustainability/) which is user-friendly and includes strategies, policies and people responsible for achieving sustainability. They also include an action plan on how they are willing to achieve their goals and measures that have been put in place and their effectiveness. This ranges from energy/carbon consumption to recycling and waste strategies. Furthermore, the Green Lancaster initiative has allowed the student community to get involved in sustainable practices, with multiple events that students can attend.</i></p>	

2.5. Has your <u>institution</u> 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.
<p><i>Score explanation: Lancaster University has had the privilege of hosting a number of conferences on topics related to planetary health. Earlier in 2023, two conferences were held regarding sustainability - Transforming Coastal Communities and the annual Green Lancaster sustainability conference. Both of these events have increased awareness within the local community and campus. The medical school building itself has been used to host regular Collaboration Cafe sessions, inviting staff and external stakeholders to discuss issues within healthcare - some with themes of sustainability and planetary health - example here.</i></p>	

2.6. Is your <u>medical school</u> 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.
<p><i>Score explanation: Lancaster Medical School is a member of the Alliance for Sustainability Leadership in Education, which is a national organisation designed to place sustainability as a priority in education and research in post-16 institutions.</i></p>	

Section Total (16 out of 17)	94%
-------------------------------------	------------

Back to Summary Page [here](#)

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

Community Outreach and Advocacy

Section Overview: *This section evaluates medical school engagement in community outreach and advocacy efforts associated with planetary health. Researching and teaching planetary health is necessary but not sufficient. It is critical that institutions also directly engage with communities most affected by environmental health harms. Although climate change is a problem largely created by those with power and resources, its impacts fall disproportionately on under-resourced populations and communities of 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.
<p><i>Score explanation: As part of the curriculum, Year 2 students are expected to undertake a Health Promotion workshop with local primary schools, teaching school-age children about healthy and low-carbon lifestyles and cardiovascular health, as well as environmental exposures, i.e. smoking. Furthermore, the medical school has recently partnered with a local film festival group to host a health documentary film festival, open to the community. Some of the films screened here touched on issues relating to planetary health/sustainability, such as “Ocean Greens” from Northern Heart Films, which looked at the potential for seaweed as a sustainable food source.</i></p> <p><i>Lancaster University, and specifically the medical school health faculty has a research and outreach partnership with Eden Project Morecambe with plans to influence health and sustainability education across Morecambe Bay. Lancaster University has also demonstrated high impact of its research and engagement via its knowledge and exchange framework.</i></p>	

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 medical school has recently collaborated with a local film festival group to host a health documentary film festival, open to the community, which featured short films which had themes surrounding sustainability and the role of the environment in wellbeing (see 3.1), and the current consensus is that this will be running annually for the foreseeable future. Within the last year, medical school staff, alongside wider researchers within the university, have been involved within the institution-run [Health and Wellbeing Festival](#) – one example from this festival would have been the Mapping Wellbeing activity, which looked at environmental factors affecting health and an interactive session entitled Animals, Health and Wellbeing.

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: There are no regular communications regarding planetary health within the medical school. At this point in time the central university is responsible for regular updates regarding sustainability.

3.4. Does the institution or main affiliated hospital trust engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?

2	Yes, the institution or main affiliated hospital trust offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health.
1	Yes, the institution or main affiliated hospital trust offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
0	There are no such accessible courses for post-graduate providers

Score explanation: Post-graduate courses relating to planetary health are available to health professionals and are run by the medical school, such as the [Clinical Research MSc](#) (which has an optional module on Infectious Diseases Modelling), or the [Health Data Science MSc](#) (optional model – Model-Based Geostatistics for Public Health). However, as these courses are not solely focused on planetary health/sustainable healthcare, we have awarded 1 point. The medical school's affiliated hospital trusts do not have specific courses relating to planetary health, and no CPD programmes exist for this.

As part of Lancaster Medical School Annual Education Day Conference, Planetary Health and Education for Sustainable Healthcare plenary session was run for all delegates. This topic is offered at each Education day as either a workshop or plenary. Delegates attend from across clinical hospital trusts, GPs, academic partner organisations.

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: Lancashire Care NHS Foundation Trust has released educational pamphlets about the risks of antenatal smoking exposure as part of a health promotion of the harms of second-hand exposure to smoke domestically. These pamphlets (and other such from other organisations, but centred around perinatal care) were found within the Women's & Children's Unit within the Royal Lancaster Infirmary. Similarly, GP surgeries and primary care centres offer digital health promotion information via their waiting room systems and via their websites.

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: The medical school's affiliated hospitals do not have accessible information online or physically regarding the effects of climate change on patient health. This is not, however, something that is easily amended as most resources geared toward patients are centrally distributed from the NHS.

Section Total (8 out of 14)

57%

Back to Summary Page [here](#)

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

Support for Student-Led Planetary Health Initiatives

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

4.1. Does your medical school or your institution offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the medical school or institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum.
1	The medical school 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: Currently, there is some support in place within the medical school for susQI projects. Year 5 students undergo a quality improvement project during their primary care placement – with scope for susQI, but including sustainability is optional. On a broader university scale the Management School has ongoing sustainability projects conducted by staff and graduate students. This is a point of further improvement – to have more support and opportunities for students to get involved with susQI projects is ideal.

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:
Within the medical school curriculum, the special study modules (SSM) undertaken in year one and two encompass a wide range of topics for the students to choose from. Within an SSM, students are guided by a convenor with expertise in a chosen field throughout the research process. Examples of planetary health/sustainable healthcare topics offered in the topic list include:

- *Ethical issues in the environmental impact of medicines*
- *The ethics of environmentally sustainable clinical decision making.*

- *Planetary Health and Climate Change: what is the doctor's role?*
 However, there is a lack of specific research programmes for students which is an area for improvement.

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: Presently, the medical school website lacks a dedicated section on planetary health. However, there are members of staff with an interest and ongoing research in this field which are highlighted in their individual [‘Meet the team’](#) profile. Unfortunately, this information is not easily visible without the navigation of individual staff profiles.

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: Historically, there was a dedicated student group which served as the Lancaster branch of the Students for Global Health. However, this group has been inactive since 2021 which may have contributed to the ongoing lack of planetary health engagement on campus. However, there is an informal student organisation, with evident student engagement in planetary health through annual PHRC groups which receive faculty support from the medical school sustainability lead. For future improvement, this team hopes to translate the propositions in this report into content which we could promote to the cohort, and the formation of a formal organisation.

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.
<p><i>Score explanation:</i> <i>Regarding student representation, although the medical school participates in curriculum discussions with student representatives there is a lack of an explicit student role for representing sustainability interests. However, institutionally the Student's Union Vice President of Union Development is a member of the Sustainability Team providing student representation for the 2023/2024 academic year Green Lancaster Team.</i></p>	

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)
<p><i>Score explanation:</i></p> <p>1: Edible Campus student-led society under the Lancaster Student Union which promotes sustainable food production and consumption. This is achieved through Weekly Action Days at the university's dedicated ECOHub where volunteers are involved in site maintenance and growing produce. The resulting product is given back to the volunteers or harvested and sold at the Eco Hub based on seasonality with minimal plastic involved to further promote sustainability.</p> <p>2: The Green Lancaster Sustainability Conference is an annual event targeted at all Lancaster Students and Staff. It provides the opportunity for Green Lancaster to report on ongoing sustainability projects as well as highlight new initiatives suggested by students.</p> <p>3: In August 2023, Lancaster University collaborated with Sunway University to host an International Festival of Art, Film, Music and Theatre. The theme of this festival included planetary health where submissions were encouraged from a variety of mediums.</p>	

4: Presently, the medical school lacks volunteering opportunities for students. However, the student's union partnered with Lancaster University to establish [Green Lancaster](#) in 2005 which allows both students and staff members to engage in developing practical responses to the local adverse effects on climate and ecology.

5: The Students Union offers a wide range of societies involved in wilderness activities. Furthermore, students at the medical school have formed a [Wilderness and Emergency Medicine Society](#) with outings throughout the year.

Section Total (10 out of 15)

66.67%

Back to Summary Page [here](#)

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 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 <u>medical school</u> and/or <u>institution</u> have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff , but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p><i>Score explanation:</i></p> <p><i>On an institutional level, the Sustainability Team at Lancaster University is diverse and multifaceted, featuring staff members and internal groups with a shared interest in sustainability. Professor Simon Guy is the current Pro Vice-Chancellor for sustainability and Dr Georgiana Allison is the Head of Sustainability. The ten members of the team feature members of the Green Lancaster Team, Sustainable Facilities, and the Students' Union Vice President.</i></p> <p><i>On the level of the medical school, there exists a faculty sustainability engagement group as part of the Faculty of Health and Medicine, whose remit extends from faculty operations to education and teaching.</i></p> <p><i>With regard to hospital trusts there are some variations. The University Hospitals of Morecambe Bay launched the Green Plan with Aaron Cummins serving as Chief executive. Blackpool Teaching Hospital also has a Green Plan in place detailing strategies spanning from 2022-2025. Likewise, the East Lancashire Hospital Trust also has a Green Plan for the period of 2022-2025.</i></p>	

5.2. How ambitious is your <u>institution/medical school</u> 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
	<i>Score explanation: In 2022 the Climate Emergency Carbon Reduction Plan was proposed and implemented by the university. The goals for net zero include a target for energy by 2030 and carbon by 2035. These plans would include the Health Innovation Campus where the medical school is based.</i>

5.3. Do buildings/infrastructure used by the medical school for teaching (not including the hospital) utilize renewable energy?

3	Yes medical school buildings are 100% powered by renewable energy
2	Medical school buildings source >80% of energy needs from off-site and/or on-site renewable energy.
1	Medical school buildings source >20% of energy needs from off-site and/or on-site renewable energy.
0	Medical school buildings source <20% of energy needs from off-site and/or on-site renewable energy.

Score explanation:

The team is unable to isolate and identify the specific energy composition for the Health Innovation Campus in our research. However, Lancaster University as an institution is supplied by an on campus [Wind Turbine](#) which produces roughly 14% of the university's electricity each year renewably. In addition, the [Combined Heat and Power Engine \(CHP\)](#) utilises gas to produce around 25-40% of the University's electricity each year and is stated to produce only half of the carbon emissions relative to direct provision from the grid despite not being a purely renewable source. Lastly, a [Biomass Boiler](#) supplies approximately 2-3% of heating on campus utilising locally sourced wood chips as fuel making it a renewable source. In conclusion, approximately 17% of the energy supplying the campus is from a sustainable source.

Furthermore, the [Forrest Hills Solar Farm](#) is an ongoing plan to establish a Solar Farm capable of reducing energy related emissions by up to 40%. The latest update on the project in March 2022 stated that the project has obtained formal approval from the council.

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.
<p><i>Score explanation: The Health Innovation One campus adheres to the BREEAM standard which has been employed by Lancaster University from 2005 onwards. New buildings such as the medical school campus must be of an 'Excellent' standard whereas refurbishments should be of 'Very Good' standard.</i></p>	

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.

Score explanation:
The Medical School provides a free bus pass known as the HICrider for students irrespective of the year of study which allows for free campus travel between the Health Innovation Campus and other Lancaster University bus stops.

Second and Third year students are able to travel to and from placement by bus services arranged by the medical school to trusts outside of Lancaster such as Westmorland General Hospital, Blackpool Victoria Hospital, Furness General Hospital as well as East Lancashire NHS Trust. Students at the local Royal Lancaster Infirmary (RLI) are expected to arrange their own travel, due to the central location of RLI there are many buses which students can take. Financial assistance in the form of travel bursaries are also provided by the University to fourth and fifth year students.

The institution as a whole provides [cycle paths](#) around the perimeter of the campus including to and from the Health Innovation Campus. There are also storage facilities for cycling gear within buildings as well as external bike sheds for students who cycle.

Although both the main university and the Health Innovation campus provide parking spaces, the use of private vehicles is disincentive through [regulations on student permits](#) as they are limited to students who meet a certain set of criteria. Students without a permit can still use the parking spaces, but they must pay a fee every time.

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.
<p><i>Score explanation:</i> The Health Innovation Campus follows Lancaster University's Waste & Recycling strategy which has been in place since 2011. There are recycling bins widely distributed and easily accessible throughout the building. The effectiveness of this strategy is evident through an institutional 70% recycling rate, which is commendable.</p>	

5.7. 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 adequate sustainability requirements for food and beverages, including meat-free days or no red-meat, and is engaged in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are insufficient or optional . The medical school is engaged in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are insufficient or optional . The medical school is not engaged in efforts to increase food and beverage sustainability.
0	There are no sustainability guidelines for food and beverages.
<p><i>Score explanation:</i> Since 2008, the university has been Fairtrade-accredited. On campus food-outlets including HIVE situated in the Health Innovation Campus incorporate a range of fair use products in their menu. Furthermore, HIVE offers a range of vegan and low sugar options on their menu. When hosting conferences and courses the medical school has a sustainability checklist to inform decisions about catering, offers vegetarian food by default, uses no plastic catering equipment and does not offer disposable free gifts.</p>	

5.8. 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.
<p><i>Score explanation:</i></p>	

The Medical School abides by the institutional [Sustainable Procurement guidance](#) featured in Lancaster University's Sustainability plan. The Medical School, when hosting conferences and courses, has a sustainability checklist informed by [UQ Unwrapped](#) to inform decisions about catering, offers vegetarian food by default, uses no plastic catering equipment and does not offer disposable free gifts. The framework in place is comprehensive, focusing on both the social and environmental impacts of procurement in line with guidance from HEPA (Higher Education Procurement Association), CIPS (Rge Chartered Institute of Procurement and Supply) and CCS (Crown Commercial Services).

5.9. Are there sustainability requirements or guidelines for events hosted at the medical school?

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

Score explanation: The Medical School lacks explicit and bespoke requirements for events hosted within its venue. However, institutional policies such as the ['Fairtrade Policy'](#) for event catering and the ['Waste & Recycling Policy'](#) are applicable to any events hosted by the University. The new sustainability policy for event hosting is now mandatory, and is explicit to delegates in course programs.

Additionally, the Medical School and Health Innovation One have recently implemented mandatory sustainability policies for any events held on the premises. The policies are based on the [Sustainable Events Guide](#) published by the University of Queensland.

5.10. Does your medical school have programs and initiatives to assist with making lab spaces more environmentally sustainable?

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

Score explanation:

The Health Innovation Campus lacks lab spaces. However, there are ongoing initiatives in other departments to improve the sustainability of lab spaces through achieving [LEAF](#) (Laboratory Efficiency Assessment Framework) accreditation which is a prominent global lab sustainability scheme. As of December 2023 volunteer teams have achieved accreditation for 12 laboratories within LEC (Lancaster Environment Centre), Chemistry, Physics and Engineering departments. There are ongoing efforts to progress the accreditations from Bronze to Silver as well as more applications for non-accredited labs. Although the Medical School lacks its own independent lab space, students undertaking SSMS requiring lab work may utilise the lab spaces in departments under supervision by their convenor. On a broader faculty level, the LEAF framework is one of the themes taken on by the Faculty Health and Medicine Sustainability Group for application to medical labs.

5.11. Does your <u>institution's</u> 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.
<p><i>Score explanation:</i> As of 2021, the university holds two major funds for its investments. Firstly the 'Responsible Multi-Asset Fund' designed towards charities and minimising any environmental consequences caused by investments through using the Environmental Social and Governance (ESG) criteria. Secondly, the 'Advance Strategy Fund' aids the University in increasing investments into businesses which strive to tackle sustainability challenges. The University screens potential investments using a standard of having zero exposure to any company which derives 10% of revenues from fossil fuel activities. A lower threshold of 5% exists for the 'Advance Strategy Fund' where the University has a 2.4% exposure to fossil fuel related companies. Overall, the vast majority of the institution's investments are divested from fossil fuels.</p>	

Section Total (24 out of 32)	75.00%
-------------------------------------	---------------

Back to Summary Page [here](#)

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%

Planetary Health Grades for Lancaster University Medical School

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(60/72) \times 100 = 83.3\%$	A-
Interdisciplinary Research (17.5%)	$(16/17) \times 100 = 94.1\%$	A
Community Outreach and Advocacy (17.5%)	$(8/14) \times 100 = 57.1\%$	C+
Support for Student-led Planetary Health Initiatives (17.5%)	$(10/15) \times 100 = 66.7\%$	B
Campus Sustainability (17.5%)	$(24/32) \times 100 = 75\%$	B+
Institutional Grade	$(Ax0.3 + Bx0.175 + Cx0.175 + Dx0.175 + Ex0.175) = 76.26\%$	B+

Report Card Trends

Section Overview

This graph demonstrates trends in overall and section grades for the years in which Lancaster University Medical School has participated in the Planetary Health Report Card initiative.

PHRC Trends for Lancaster University Medical School

