

Planetary Health Report Card (Medicine):

The University of Edinburgh Medical School



THE UNIVERSITY of EDINBURGH Edinburgh Medical School

2023-2024 Contributing Team:

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Summary of Findings

Overall	В
<u>Curriculum</u>	В-

- Intercalating medical students can explore planetary health through BMedSci degrees such as "Global Health". Sustainability courses and research projects are available as elective coursework in the MBChB. The core curriculum explores links between environment and health e.g. air pollution, extreme weather events and plant-based diets. Planetary health teaching is primarily delivered in: "SEAM Unit 2: Health, Medicine, and Environment" module; the GP module; and tutorials in clinical years.
- **Recommendations:** There is a lack of teaching on how to discuss planetary health with patients. This could be introduced in clinical skills teaching. There is a lack of teaching on the importance of indigenous knowledge. This could be introduced in early year placements or community outreach projects. There is no teaching on the impact of environmental toxins on marginalised populations or the disparity of action in relation to social deprivation.

Research A

- Edinburgh University is a member of the Planetary Health Alliance and Global Consortium on Climate and Health Education. The Global Health Academy aims to advance Sustainable development goals of the University. They organised the 2023 Edinburgh one Health Symposium. The Edinburgh Earth Initiative website aims to increase engagement with climate, involving research opportunities.
- **Recommendations**: The Global Health Academy could be provided with more decision-making power towards the climate research agenda. Also, events could be marketed towards medical students.

Community Outreach and Advocacy

B -

- Edinburgh Medical School partners with community organisations to promote planetary health, particularly in year 1. They also offer community-facing planetary health courses and events through various initiatives. Newsletters from the Medical School (e.g. "In Vivo") have included planetary health articles.
- **Recommendations**: Edinburgh Medical School could work alongside associated health boards to provide accessible patient information on climate change and health. Despite some teaching on planetary health in foundation training, sustainability courses could be made available in the universitie's associated health boards

Support for Student-Led Initiatives

A-

- Edinburgh University provides many opportunities for students to get involved in climate action, e.g. the 'Sustainability Champions' initiative. Meanwhile, Edinburgh Medical School lacks support for sustainable student-led initiatives on both their webpage and social media.
- **Recommendation:** Edinburgh Medical School could implement a "Sustainable Healthcare" section on their website with information about institutional resources, student societies and relevant contact details.

Campus Sustainability

B-

- The University uses 100% renewable energy. New buildings are built with sustainability as a core principle. Sustainable food and beverage options are encouraged, fostering a culture of environmental responsibility
- **Recommendation:** The university could promote sustainable transport for travelling to placements, e.g. by providing free or discounted bus travel for medical students or setting up a car-pull system.

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 <u>Literature Review</u> by <u>Metric</u> 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? Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year. Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year. 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. No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.

At the University of Edinburgh, students intercalate between their third and their fourth year of medical studies. This means that for one year they go and study a different degree program. One of the programs that students could choose to study is 'Global Health'. Within this program, there is substantial teaching on planetary health. The courses: 'Drug policy and the public good', 'health systems analysis' and 'contagion' all explore different aspects of planetary health.

Within the medical school's curriculum, students are required in years one, two and five to undertake a student selected component (SSC). This involves elective study or research within a field of their choosing. Several sustainability courses/research projects are available as part of these.

There is also a talk for fourth year medical students during their GP placement on sustainability in general practice.

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.	

First year medical students receive teaching on the impact of extreme heat and health risks on a public health level however this is not tied in with climate change at all. A good opportunity to bring up the Intergovernmental Panel on Climate Change (IPCC) reports and their predictions of increased frequency of extreme heat with climate change is missed here.

Intercalating medical students on the Global Health program are exposed to substantial teaching on the relationship between climate change and episodes of extreme heat and to a lesser degree, the risk to health in extreme heat. This is not a core course though and is only undertaken by students on the program.

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. O This topic was not covered.

The Global Health intercalation course mentioned the impact of extreme weather on health but it is otherwise not visited in the MBChB curriculum.

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.

The Infection module in Year 4 considers the epidemiology of infectious disease and discusses sociopolitical factors impacting the global burden of disease, for example the "TB' lecture mentions TB is infecting animal species such as cattle, badgers and possums at higher rates which has ecological undertones however no direct link to climate change.

In the Year 2 module "SEAM Unit 2: Health, Medicine and Environment" a paper "Global Warming and healthcare connecting the dots' (Griggs, C et al, 2022) is uploaded as a core reading. It discusses topics such as 'Flooding and vector-borne disease' which directly explains the increase in dengue fever due to flooding and subsequent stagnant water. Youtube video "Health Impacts of other extreme weather events" (Heidelberg Institute of Global Health, 2016) is also linked under core content and explores how natural disasters impact the epidemiology of infectious disease, especially in Asia (due to the large proportion of natural disasters in this continent).

1.5. Does your medical school curriculum address the respiratory health effects of climate change and air pollution? This topic was explored in depth by the core curriculum. This topic was briefly covered in the core curriculum. This topic was covered in elective coursework. This topic was not covered.

The majority of Respiratory teaching happens in the Year 4 Respiratory Module. In review of the lectures in this module the "Asthma" lecture mentions "Risk factors - environmental" but does not directly mention effects of climate change and air pollution in this category, instead focusing on the hygiene hypothesis, allergens and occupation. The "COPD" lecture directly states 'air pollution' as a risk factor of COPD and recognises that the risk factor of air pollution is most prevalent in developing countries, however does not discuss this in depth.

In the Year 2 module "SEAM Unit 2: Health, Medicine and the Environment" paper "Impact of Extreme Weather Events and Climate Change for health and social care systems" (Curtis, S et al, 2017) is uploaded as a core reading. When talking about the impact of cold waves it is said 'increased rates of consultation and treatment for respiratory conditions' is a consequence of cold wave weather events in the UK, however this is not explored in depth here.

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

- 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.

The majority of cardiovascular teaching happens in the Year 4 Cardiovascular Medicine module, which, on review of its content, was not found to address the cardiovascular health effects of climate change.

The Year 2 module "SEAM Unit 2: Health, Medicine and Environment" does, however, discuss the health impacts of climate change through a paper from Chloe Griggs titled "The impact of healthcare on global warming and human health: connecting the dots" and a lecture from Dr Cristina Richie titled "Green Bioethics: Environmental Sustainability and Health Care".

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

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.	

This is discussed in year 4 GP teaching but could be explored in greater depth in lectures. It is not covered in Social and Ethical Aspects of Medicine (SEAM) Unit 2; Health, Medicine and Environment, a three-week unit that introduces students to environmental sustainability and the impact it has on the healthcare system as was done previously.

1.8. Does your medical school curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change? 3

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

Teaching in 2nd year Social and Ethical Aspects of Medicine (SEAM) Unit 2; Health, Medicine and Environment references that food and water supply are becoming and will become a problem with climate change following natural disasters but did not explore the impacts of this on health.

1.9. Does your medical school 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.
- This topic was **not** covered.

Teaching in 2nd year Social and Ethical Aspects of Medicine (SEAM) Unit 2; Health, Medicine and Environment discusses that lower income countries were affected disproportionately by climate change but did not discuss the outsized impacts of climate change on the marginalised populations stated above.

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

- 3 This topic was explored in **depth** by the **core** curriculum.
- 2 This topic was **briefly** covered in the **core** curriculum.

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

The Year 2 module "SEAM Unit 2: Health, Medicine and Environment" addresses this. This is demonstrated particularly by one of the learning outcomes for the year, which is, "Students should be able to show that they can demonstrate awareness of the inequitable distribution of the environmental determinants of health".

Additionally, there is an opportunity to study this topic electively in Student Selected Components (SSCs) or by intercalating in the Global Health Policy honours degree in third year.

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.

The reproductive health effects of industry-related environmental toxins is briefly touched upon in lectures regarding both male and female subfertility in year 5 and the impact of environmental toxins on the developing foetus is briefly mentioned in a genetics lecture in year 1, however these topics are not covered in sufficient depth to be scored a 3 or a 2. Elective coursework offers the opportunity to study this area through Student Selected Components (SSCs) and through the Reproductive Biology intercalated degree in third year.

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.

The University of Edinburgh does not directly address local human-caused environmental threats and how they affect the university's surroundings, although there are certain aspects within the curriculum that allow for a greater focus on the topic of health and the environment. In Year 2 Module "SEAM Unit 2: Health, Medicine and Environment" is a three-week unit that introduces students to environmental sustainability and the impact it has on the healthcare system. Even though it takes on a more global outlook of sustainable healthcare and global warming, there is a group activity focused on UK Heatwaves that is more pertinent to the country where the students reside. Additionally, opportunities can be found to engage with this topic electively in the Student Selected Component

(SSC) projects. Similarly, aspects are addressed in the <u>Global Health Policy</u>, <u>Anthropology and Sociology of Medicine</u> and <u>Bioethics Law and Society</u> intercalation degrees in Year 3.

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.

There is no discussion of indigenous knowledge and its impact on planetary health solutions at Edinburgh Medical School. This is a topic of critical significance within the discussion of global health solutions and engaging with local communities whilst developing innovative and modern solutions, and we hope the medical school would include this topic in the curriculum going forth.

1.14. Does your medical school 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. O This topic was not covered.

While the course talks extensively about health inequalities, there is no direct relationship ever taught between environmental toxins and health of marginalised populations. As the increasing inequality divide in healthcare is exposed, we hope the university inculcates this topic in its core curriculum.

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.

The health benefits of a plant based diet have been touted several times in the course, and there have been several problem based learning cases trying to work out how a plant based diet might affect health. Indeed, some groups even went on to discuss the environmental benefits of a plant based diet, but it was never explicitly taught in the course. Therefore, we have awarded this section a score of 2.

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.	

2nd Year: KCP Session 1B – Asthma and Sustainable Inhalers, SEAM Environmental Sustainability and Healthcare Week 5, SEAM Human Health and Health Care; A man made problem Week 6, SEAM Healthcare and the Planet; Sustainable healthcare Week 7

4th Introduction Week Talk: Environmental Sustainability and the NHS 5th year: Doctor as an Educator: Planetary Health Bringing an environmentally sustainable lens to your teaching lecture.

This topic is covered mostly in year 2, but is built on during years 4-5

1.17. Does your medical school curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each) The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment 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. 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. Environmental impact of surgical healthcare on planetary health and the climate crisis, and how 1 can it be mitigated 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 The impact of **inhalers** on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.

- Waste production within healthcare clinics and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)
- 2nd Year: KCP Session 1B Asthma and Sustainable Inhalers, SEAM Environmental Sustainability and Healthcare Week 5 covers inhalers and dry powder treatments. Additionally clinical placements in GP covers the topics of social prescriptions such as wellbeing courses, mental health courses, friendship groups, discounted gym memberships as a prescription.
- 4th Introduction Week Talk: Environmental Sustainability and the NHS covers waste streams and impact on climate change. Includes pharma prescriptions and impact of patients being kept on unnecessary prescriptions for decades.
- 5th year: Doctor as an Educator: Planetary Health Bringing an environmentally sustainable lens to your teaching lecture. Covers pharma impact on climate change, the waste stream impact on climate change and management of patient medications. Additionally in clinical placements in surgical rotations there is some discussion on the changes in practice around anaesthetics relating to climate change.
- SCC Projects Year 5: Opportunities for research and teaching on non-pharma base treatments wellbeing and alternative therapies.

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. O No, there are not strategies introduced for having conversations with patients about climate change

In preparation for history taking, examination and consultation of patients, there is no education on the impact of climate change on an individual's health.

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?

Yes, the core curriculum includes strategies for taking an environmental history.
 Only elective coursework includes strategies for taking an environmental history.
 No, the curriculum does not include strategies for taking a2 environmental history.

The curriculum systematically incorporates the practice of taking environmental and exposure histories across various modules and classes. This is a recurring theme throughout the educational program where a patient is asked about their occupation and living situation in the social aspect of a full history. When discussing specific specialities such as Respiratory, Infectious Diseases or General Practise, more detail is placed upon some of these aspects. This includes obtaining environmental risk factors

such as asbestos, pesticides or occupation related hazards that may affect the lungs. Additionally, recent travel can impact food and water sources or contribute to ill health.

Students are given ample opportunities to apply these strategies in real-world scenarios such as clinical rotations, simulations and patient interactions. This hands-on approach ensures that students are well-prepared to include environmental and exposure considerations in their routine patient assessments. The curriculum also covers a wide range of environmental and exposure topics. This includes traditional factors like pesticide, asbestos and lead exposure as well as modern concerns relating to climate change such as wildfire, smoke exposure, air pollution and the impact of flooding on living conditions. The curriculum would also address how these factors vary across different stages of a patient's life and in diverse occupational and geographical settings.

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?

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

The University of Edinburgh Medical School has made changes since the Planetary Health Report Card in 2022 regarding EHS/planetary health education. This consists of the further development of the 3-week "SEAM Unit 2: Health, Medicine and the Environment" module in Year 2. A module outline has been provided alongside supplementary reading materials to enhance students' learning. The main learning objectives of this module are:

- 1. Describe key aspects of how climate change impacts healthcare services
- 2. Define environmental sustainability
- 3. Discuss the health impacts of environmental change and how they are unequally distributed between populations
- 4. Discuss the trends in demographics, climate, and the future of healthcare

Another change that has been implemented is the integration of EHS/planetary health education in the Year 4 General Practice module. This is evident through "Sustainability Tutorials." These tutorials provide insight into the NHS Scotland Climate Emergency and Sustainability Strategy 2022-2026. A tutorial on "Planetary health and sustainable healthcare" is delivered through this module covering topics such as:

- 1. The impact of planetary harm on human health
- 2. Planetary boundaries
- 3. Healthcare inputs and outputs
- 4. Action that can be taken on a national policy/local health board and student level
- 5. Prescribing practice and its impact on the environment

Therefore, a score of 4 has been earned as these changes demonstrate the implementation of planetary health education into both the preclinical and clinical medicine curriculum.

1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> curriculum?

Planetary health/ESH topics are well integrated into the core medical school curriculum.

Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum.

Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s).

There is minimal/no education for sustainable healthcare.

At the University of Edinburgh Medical School in Scotland, the curriculum thoughtfully integrates themes of sustainability into the first-year and second-year programs, encompassing courses in biochemistry (addressing the impact of pollution on the lung parenchyma and interactions with conditions such as COPD), genetics (exploring the impact of pollutants and their roles as carcinogens on DNA methylation and free radicals generation), epidemiology, biostatistics and healthcare finances. In first-year sustainability is focused on through one of the problem-based learning weeks which involves researching how other countries and organisations address sustainable clinical practice and how this can be done in the NHS. Additional content is introduced in the first semester of the second-year curriculum, covering topics such as pulmonary pathophysiology and the ethical aspects of making healthcare more sustainable. There was also teaching on the impact of overpopulation and weather changes concerning population health, and social care. This was also touched upon in the management of natural disasters and the interplay between climate change and humanitarian medicine. In pre-clinical years sustainability in medicine is directly assessed in the core knowledge examinations. In third-year students have the option to fully explore sustainability in their chosen intercalated degree. In clinical years, topics of healthcare organisation in the GP blocks address sustainability and green healthcare, through tutorial sessions on making healthcare more eco-friendly. Students also have the option to undertake a project on sustainability as a part of their student-selected component in year 5. The majority of information on planetary health and climate change is presently concentrated in the first-year and second-year curricula.

1.22. Does your <u>medical school</u> employ a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course?

- Yes, the medical school has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare
- No, the **medical school** does **not** have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare.

The University of Edinburgh Medical School currently has a faculty of member who oversees the integration of planetary health and sustainable healthcare. They are responsible for the curriculum revision and change taking place in 2023-24 which will focus on the expansion of climate change, glocal health and sustainable healthcare teaching in the MBChB curriculum.

Section Total (46 out of 72) 63.9%

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? Yes, there are faculty members at the medical school who have a primary research focus in planetary health or healthcare sustainability. 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. There are planetary health and/or healthcare sustainability researchers at the institution, but none associated with the medical school. No, there are no planetary health and/or healthcare sustainability researchers at the institution or medical school at this time.

Edinburgh Medical School is home to <u>The Usher Institute</u>, which consists of 400 academic and professional faculty members who contribute to four main areas of research; Biomedicine, Self and Society, Global Health, Medical Informatics and Population Health Sciences. Additionally, they aid the development of the undergraduate medical degree curriculum which is outlined on the <u>Undergraduate MBChB</u> section of their webpage.

Within the Usher Institute, there are several faculty members who have primary research focus in planetary health or healthcare sustainability. Contacts for these faculty persons can be found on the Global Health Staff List section of their webpage.

2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution? There is at least one dedicated department or institute for interdisciplinary planetary health research. 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. There is an Occupational and Environmental Health department, but no interdisciplinary department or institute for planetary health research. There is no dedicated department or institute.

The <u>Global Health Academy</u> at the University of Edinburgh is a cross-disciplinary, academic community which aims to support and empower global health research. It promotes academic collaboration to enable better and more equitable healthcare and advance the University's global ambitions and the Sustainable Development Goals (SDGs). Its collaborative and interdisciplinary approach with partnerships and local communities aims to develop global health educational resources and study programmes, advance global health research and to foster relationships with global and local networks.

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 <u>medical school</u>?

- 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.
- Yes, there is a process in which community members impacted by climate and environmental injustice **advise** the climate + environmental research agenda.
- No, but there are **current efforts** to establish a process for community members to advise or make decisions on the research agenda.
- There is **no** process, and **no** efforts to create such a process.

The Global Health Academy, as mentioned above, aims to advance health for all with a focus on planetary health. A major branch of their programme is their Research to Advance Global and Planetary Health. They state that a key approach in this is a "research agenda initiated by LMIC partners", who are most likely to be affected by climate change and environmental injustice. While the research agenda is advised by LMIC partners, there is no evidence that they have the ultimate decision-making power in determining the final research agenda. The Global Health Academy does, however, "mentor researchers working in LMIC contexts", which may in the future mean they are given a more leading role in deciding the research agenda.

2.4. Does your <u>institution</u> have a planetary health website that centralises ongoing and past research related to health and the environment?

- 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.
- 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.
- The **institution** has an **Office of Sustainability website** that includes **some** resources related to health and the environment.
- 0 There is **no** website.

The University of Edinburgh's <u>Edinburgh Earth Initiative</u> is a comprehensive and easy-to-use website. The initiative seeks to increase the university's "engagement with climate and ecological emergency", and their website serves as a directory for researchers and members of the public alike. Their <u>Events</u>

page currently has one upcoming event showing for the next month, while their <u>Get Involved</u> page shows a variety of opportunities for people to engage with, including advocacy groups and educational resources for members of the public. The <u>People</u> page provides a directory for people involved with the team, described as "academics from across the natural, physical, and social sciences, professional services staff, and students with a range of expertise essential in delivering on the vision of the Earth Initiative." Contact details are provided for some of these, and there is additionally a <u>contact</u> form on the page. Paid opportunities to work with the Edinburgh Earth Initiative can be found on the <u>Earth Fellows</u> page, where "paid opportunities for undergraduate, postgraduate, and PhD students at the University of Edinburgh to work on projects of strategic importance related to climate, environment, and sustainability" are advertised.

2.5. Has your institution recently hosted a conference or symposium on topics related to planetary health? Yes, the **medical school** has hosted at least one conference or symposium on topics related to 4 planetary health in the past year. Yes, the **institution** has hosted at least one conference or symposium on topics related to 3 planetary health in the past year. Yes, the **institution** has hosted a conference on topics related to planetary health in the past three 2 vears. The **institution** has not hosted any conferences directly, but they have provided financial support 1 for a local planetary health event. No, the **institution** has not hosted a conference on topics related to planetary health in the past 0 three years.

In March of 2023 the Edinburgh Infectious Diseases and the One Health Models of Disease PhD programmes hosted the Edinburgh One Health Symposium for discussion of subjects including how local production of medicines can be affected by the environment, health security, and preventing deaths from pesticide poisoning.

2.6. Is your <u>medical school</u> a member of a national or international planetary health or ESH organisation?

- Yes, the medical school is a member of a national or international planetary health **or** ESH organisation
- No, the medical school is **not** a member of such an organisation

The Global Health Academy, which is affiliated with the medical school, is a member of the Planetary Health Alliance and the University of Edinburgh is a member of the Global Consortium on Climate and Health Education. The U7+ Alliance is a group of international universities looking at ways to address the most pressing global challenges. Edinburgh is a founding member of the network, which is made up of more than 30 universities from G7 countries.

Back to Summary Page <u>here</u>

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? Yes, the medical school meaningfully partners with multiple community organisations to promote planetary and environmental health. Yes, the medical school meaningfully partners with one community organisation to promote planetary and environmental health. The institution partners with community organisations, but the medical school is not part of that partnership. No, there is no such meaningful community partnership.

The medical school at Edinburgh University partners with community organisations to promote planetary and environmental health through initiatives such as the Year 1 'Society, Ethics and Medicine' module. This module includes practical sessions connecting students with local third-sector organisations like the Royal Society for the Protection of Birds (RSPB) and Edinburgh & Lothian Green Space. Additionally, the Society MedAid initiative aimed to increase healthcare accessibility and sustainability by redistributing medical supplies to under-resourced healthcare institutions. While not currently active, its potential reopening reflects ongoing interest in promoting healthcare sustainability. These initiatives demonstrate the medical school's commitment to addressing environmental and planetary health concerns through community engagement.

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

Yes, the medical school at the University of Edinburgh offers community-facing courses and events regarding planetary health through various initiatives:

- 1. Global Health Academy's Planetary Health Alliance Meeting: In May 2018, the Global Health Academy in the College of Medicine at the University of Edinburgh hosted the second annual meeting of the Planetary Health Alliance. This event likely provided a platform for experts and community members to engage in discussions and activities related to planetary health.
- 2. Biomedical Sciences Department's "Our Changing World" Lecture Series: Since 2010, the Medical School's biomedical sciences department has been running the public lecture series "Our Changing World." Some of these lectures address global challenges facing society, including topics related to planetary health. Although primarily academic, these lectures likely attract members of the public interested in health and environmental issues.
- 3.Global Health Governance Programme's 'Healthy and Sustainable Futures' Event: This event aims to engage the public with health, sustainability, and planetary health ideas. While details about its frequency or scope are not provided, it suggests efforts to involve the community in discussions about planetary health and sustainability.
- 4. Edinburgh Earth Initiative's Medical Waste and Sustainability Project: Since October 2022, the Edinburgh Earth Initiative has been collaborating with Dr. Alice Street on the Medical Waste and Sustainability project. This project focuses on mapping interest in medical waste across the University of Edinburgh, organising stakeholder meetings, summarising research activities, aiding in grant proposal development, and researching the plastic footprint of WHO-approved Covid-19 lateral flow devices.

While these projects may primarily target academic audiences, it contributes to community awareness and engagement with issues of medical waste and sustainability.

3.3. Does your <u>medical school</u> have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?

- Yes, all students **regularly** receive communication updates dedicated to planetary health and/or sustainable healthcare.
- Yes, planetary health and/or sustainable healthcare topics are **sometimes** included in communication updates.
- O Students **do not** receive communications about planetary health or sustainable healthcare.

The University of Edinburgh Office of Sustainability provides an opt-in email service for sustainability updates, and broader university communications – for example, from the Edinburgh Careers Service and the University of Edinburgh Student Newsletter – sometimes encourage attendance at various events related to sustainability. However, these are not specific to medical education, and often consider wider planetary health rather than aspects relevant to healthcare practices. Some newsletters from the Medical School, "In Vivo", this academic year have included information and discussion regarding planetary health – for example, promoting the Global Health Society as an opportunity to further explore issues of sustainability and climate change, and linking blog articles on these topics. Thus, this has been awarded 1 point.

3.4. Does the <u>institution</u> or <u>main affiliated hospital trust</u> 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?

- 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.
- Yes, the **institution** or **main affiliated hospital trust** offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
- There are **no** such accessible courses for post-graduate providers

The Usher Institute, in collaboration with the Global Academy of Agriculture and Food Systems, the Global Health Academy, the School of Health in Social Science, and the Edinburgh Futures Institute, assists in delivering a Planetary Health MSc course aimed at postgraduates. This course takes an interdisciplinary approach to the interconnectedness of global health and planetary health crises, with consideration of socioeconomic, geopolitical, and environmental determinants of health.

Regarding the Medical School's three major associated health boards – NHS Lothian, NHS Fife, and NHS Borders - there are currently no courses dedicated to planetary health or sustainability. Although some understanding of "sustainable healthcare" is included as part of FY2 learning objectives in NHS Fife, and NHS Borders state that they provide a foundation-level teaching session on sustainability, there is a lack of clear sustainability- or planetary health-focused courses for post-graduates across the relevant health boards. Also of note, e-learning resources on climate change and sustainability in healthcare are available on Turas for NHS Scotland, but these are not board-specific.

Due to the Usher Institute's role in delivering the Planetary Health MSc, this section has been awarded 1 point.

3.5. Does your <u>medical school</u> or its <u>affiliated teaching hospitals</u> have accessible educational materials for patients about environmental health exposures?

- Yes, the **medical school** or <u>all</u> **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.

There were no search results for the terms 'exposure', 'environment', 'planet', 'pesticides', 'pollutants', or 'toxins' on the NHS Lothian patient information website. Returns for 'lifestyle' were limited to leaflets regarding weight loss, staying active, and management specific to IBS. Furthermore, the website was relatively challenging to navigate and required a certain knowledge of searching terms in order to find results, which not all patients may have. There was no patient information specific to environmental health exposures from NHS Fife found. NHS Borders did have information for patients regarding environmental exposures which was relatively easy to find on their website, however this included very little information on the harms to health, and were more informative of the environmental hazards themselves. There was also no obvious section for environmental exposures on the 'Healthy Living' page of NHS Scotland's Inform website. Overall, this research supports a score of 1 for this question.

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

- Yes, the **medical school** or <u>all</u> **affiliated hospitals** have accessible educational materials for patients.
- 1 **Some** affiliated hospitals have accessible educational materials for patients.
- **No** affiliated hospitals have accessible educational materials for patients.

NHS Lothian provides regular updates related to their climate policies, but these discuss the board's commitment to reducing their own carbon footprint, as opposed to providing information to patients on the health impacts of climate change. There were no returns for the searches 'climate' or 'climate change' on the NHS Borders website, suggesting little-to-no accessible information on this topic. On NHS Fife's website, a 'sustainability' section highlighted the need to understand 'the impacts of climate change on health and illness'. Furthermore, the NHS Fife Greenspace Strategy (May 2023) details some of the impacts of climate change on health, and the board's strategies for tackling these. This includes increasing greenspace for staff and patients around their hospital sites. The document is clear and accessible, awarding this section a score of 1.

Section Total (9 out of 14) 64.3%

Back to Summary Page here

Support for Student-Led Planetary Health Initiatives

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

$\textbf{4.1. Does your } \underline{\textbf{medical school}} \text{ or your } \underline{\textbf{institution}} \text{ offer support for medical students interested in enacting a sustainability initiative/QI project?}$

- 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.
- 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.
- No, **neither** the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.

On the <u>'Club and Societies'</u> section of the Edinburgh Medical School webpage there is no advertisement of societies that promote sustainability. There is no evidence of support for sustainability-based QI projects within the Medical School.

Beyond the medical school The University of Edinburgh has a web-page 'STUDENTS; CLIMATE. SUSTAINABILITY AND YOU' which advertises a range of student-led initiatives. In particular if you click on the hyper-links 'Volunteering, Student Societies and Cooperatives' there is a long list of societies to sign-up to. Examples include 'People and Planet' and 'Conscious Change'. Furthermore, The University of Edinburgh offers all students the opportunity to complete the 'Climate and Sustainability Leadership Edinburgh Award' which includes training-sessions, self-directed learning and reflection taking place over 5 sessions in the academic year.

Furthermore, the university offer funding opportunities such as the <u>Sustainable Campus Fund</u> to fund student proposed projects with an aim of 'implementing energy efficiency, renewable energy, and other sustainability projects that generate cost savings.' This funding is open to all students (including medical students) and so could be utilised by medical students.

4.2. Does your <u>institution</u> offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?

- The **institution** has a **specific** research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
- 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.

There are **no opportunities** for students to engage in planetary health/sustainable healthcare research.

Foremost, The Edinburgh Futures Institute within The University of Edinburgh offers MSc, PgDip or PgCert in <u>Planetary Health</u>. The availability of this degree at The University of Edinburgh constitutes a score of 2.

Also, Edinburgh Medical School requires medical students to complete a BMedSci which includes a research project. Whilst there is no specific intercalated degree relating to Planetary Health and/or sustainable healthcare, various degrees offer modules that cover aspects of these topics. For example the course Zoology offers the elective 'Conversation and Management of Natural Populations'. Also, Global Health Policy offers the elective 'Global Health Epidemiology' which covers the topic of climate change and health. Additionally, Anthropology and Sociology offers 'Anthropology and Environment' which covers perceptions of sustainability and climate change. All three of the courses above state that the research component is based on the students topic of interest. Therefore, any medical student wishing to complete research into planetary health and/or sustainability could utilise the mandatory intercalated BMedSci to do so.

Furthermore, under the "Our Research" link on the Edinburgh Medical School homepage there is a subpage on <u>'Global Health'</u> which explores the current research into Infection. It says: 'This research theme explores the challenges of infectious diseases and the profound effects that the collapse of geographical space and increasing population growth have had on their disease epidemiology' it is said. There is a 'contact us' button on this page which includes a long list of contacts for students to reach out to and get involved.

- 4.3. Does the <u>medical school</u> have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.
- 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.
 - 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.
- There is **no medical-school** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.

From the <u>Edinburgh Medical School Homepage</u> there is no obvious hyperlink to access information about sustainability and/or planetary health. On deeper exploration there was no evidence of a specific webpage. When 'edinburgh medical school planetary health' was typed into google search there was still no evidence of webpages available. There was no contact information for potential mentors in this field.

There is a webpage called 'Our commitment to Sustainability' by the College of Medicine & Veterinary Medicine at The University of Edinburgh. It hyperlinks broader institutional sustainability initiatives and also contains information about sustainability relating to medicine and veterinary medicine such as; 'Wrap it' an initiative which allows staff and PhD students reuse and claim second-hand items; sustainability awards for labs and office teams; sustainable travel choices. Since, this information is

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targeted towards post-graduate and staff members rather than medical students I feel it does not improve the score. However, if the medical school could easily replicate a similar page within their homepage.

4.4. Does your <u>medical school</u> have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?

- Yes, there is a student organisation **with faculty support** at my medical school dedicated to planetary health or sustainability in healthcare.
- Yes, there is a student organisation at my medical school dedicated to planetary health or sustainability in healthcare but it **lacks faculty support.**
- No, there is **not** a student organisation at my institution dedicated to planetary health or sustainability in healthcare.

<u>Student MedAID Edinburgh</u> aims to improve sustainability in healthcare. They collect unused, non-expired medical equipment and redistribute this equipment to under-resourced healthcare institutions around the world. Unfortunately this society is not active at the moment (it is up for adoption on the EUSA webpage). There is no evidence of any action undertaken by the medical school to reestablish Student MedAID Edinburgh.

Edinburgh University has a <u>One Health Society</u> which is open to all students, but is very relevant to medical, veterinary and biomedical students according to their EUSA webpage. They look at various public and global health issues such as 'Global Food Safety' and 'Climate Change and Vector-Borne Disease' which have clear planetary health themes. I cannot find evidence of Edinburgh Medical School supporting One Health Soc. For example, the official instagram account <u>@edonehealthsoc</u> follows instagram account <u>@edinburghmedicalschool</u> but they do not follow them back.

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

- 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.

Within Edinburgh Medical School there is no student sustainability representative. However, there are 2 Medical Student Council representatives in each year which voice student concerns. They could voice opinions on sustainability if asked to.

Within The University of Edinburgh offer all students the opportunity to become <u>Sustainability</u> <u>Champions</u>. Amongst other things this allows students to 'Be an honest and critical friend to the Department for Social Responsibility & Sustainability, giving [them] feedback on how the support [they] offer is working for you in your are of the University'. This means Sustainability Champions can liaise with the University to bring about change.

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) 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. Panels, speaker series, or similar events related to planetary health that have students as an 1 intended audience. 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. Cultural arts events, installations or performances related to planetary health that have students as an intended audience. Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts. Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other 1 outings for students)

The University has had co-curricular opportunities in all of the above categories as evidenced below.

- 1. The <u>Easter Bush vegetable allotments</u> offer opportunities for students to get involved with gardening through a plot buddy system, individual input is also encouraged.
- 2. The <u>Global Academy of Agriculture and Food Systems</u> runs One Health Day Events, which are run by staff and students on Easter Bush Campus. For example, on 1 November 2023 there was the event 'Decolonising Planetary Health: Perspectives from the Philippines and Southeast Asia.'.
- 3. The University of Edinburgh ran a 'Careers for a Sustainable Future' event 6-17th November 2023. This a series of talks for students to find out more about a career in sustainability. One of these talks is 'Getting Sustainability Work Experience in Scotland with Bright Green Business' which is hosted by members of local environmental justice community in Scotland.
- 4. <u>Talbot Rice Gallery</u> (a public art gallery ran by the University of Edinburgh) has an exhibition running from 28 October 2023 17 February 2024 called 'The Recent'. One of the themes of this exhibition is 'human and environmental time'. This is free and accessible to all university students.
- 5. The Edinburgh Forests and Landscapes Network (EFLN) brings together academics, researchers and postgraduates with an interest in sustainable forests and landscapes based in and around Edinburgh. Informal meetings are held every first Wednesday of the month at Edinburgh Climate Change Institute (ECCI). It is an opportunity for local scholars to share their research and network.
- 6. The University of Edinburgh hosted an event for Lost Species Day on 30 November 2023 called 'Restoring Peace with Nature'.
- 7. The <u>Hedgehog friendly Campus scheme</u> has been run by students and staff at the university since 2019, they achieved Gold Accreditation as a Hedgehog Friendly Campus in 2021. The project aims to improve biodiversity on campus as well as improving human well-being and connection with nature.
- 8. The University of Edinburgh have a variety of wilderness expeditions such as <u>Cairngorm Summer Hill-Walking</u> which 'incorporates elements of innovative learning and teaching, navigation, lowland walking, and hillwalking'.

Back to Summary Page <u>here</u>.

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 <u>Social Responsibility and Sustainability Committee</u> consists of multiple full-time staff that oversee the integration of sustainability across the entire campus of the University of Edinburgh. However, there is no specific staff member that is responsible for sustainability of the medical school and/or hospital. This awards a score of 2.

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	
	The University of Edinburgh appointed a <u>written and approved climate strategy</u> to achieve carbon neutrality by 2040. As the College of Medicine and Veterinary Medicine (CMVM) is encompassed within the University of Edinburgh, this plan is awarded a score of 3.	

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. O Medical school buildings source <20% of energy needs from off-site and/or on-site renewable energy.

The medical school buildings are not distinct from the wider university campus, so our findings are campus wide. The Climate Strategy Policy (2016-2026) lays out that The University of Edinburgh aims to be carbon neutral by 2040. They claim to have invested £30m in low carbon technology on campus. They are using a mixture of low carbon and renewable technology on campus, which includes combined heat and power (CHP) and solar photovoltaics (PV).

Dean Drobot, Head of Energy and Utilities Management at the university, informed us on email on 17/01/2024, that all of the grid electricity for the university is REGO certified (Renewable Energy Guarantees of Origin). This is not on-site renewable generation but it means that the renewable element of EDFs supply mix to their contracted demand. 15% of the electricity consumption at Easter Bush is generated by a solar farm on the campus, which was built in 2020. There is also a 26kWe solar energy installation at the King's Buildings campus and another 26kWe installation on Appleton Tower at the main campus. This building is used by the medical school for whole year-group teaching.

In terms of heating, it is unclear how the campus is heated, but it does have significant gas emissions, as explained in the 'University of Edinburgh Climate Strategy 2016-2026' policy.

Given this information, I have scored this question a 1. All of the electricity used is supposedly sustainable due to the REGO requirements, however as this is not produced on site and we are unsure of how strict the REGO requirements are we cannot be sure that all of the energy used is sustainable. This question metric refers to total energy, including heating, and it it difficult to distinguish the proportions of energy:electricity, therefore a score of 1 would be appropriate. The scope of the score is however limited, as there are ways in which this could still be improved.

5.4. Are sustainable building practices utilised for new and old buildings on the <u>medical school</u> campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?

- 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.
- 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.
- O Sustainability is **not considered** in the construction of new buildings.

Previously, the University used a sustainable building guideline (BREEAM) for new-build and refurbishment of campus buildings, however it was recognised that this was not delivering sustainable buildings once the buildings were in use. A new set of criteria were devised, known as the Estates Sustainability Monitoring Evaluator (ESME) tool. This aimed to provide guidance on best practice in terms of energy use and other aspects of sustainable building design.

However, it seems that this project was paused in 2020 whilst an alternative approach (Passivhaus) was pursued. The Passivhaus standard is a building methodology that aims to build environment comfort with minimum energy consumption. They employ strategies and technologies of sustainable design. We have found evidence of the Passivhaus strategies being employed by The University of Edinburgh. For example, The Energy Conscious Design Architects was commissioned by the university to investigate decarbonisation of existing estate and establish sustainability strategies for new buildings. However, it became apparent during the study that existing buildings did not have the capacity to be retrofitted. They targeted lower sustainability standards on these older buildings, such as the AECB Low Energy Standard.

In terms of new buildings, the University of Edinburgh claims to incorporate several sustainability initiatives. For example, the 'Nucleus Building', at the King's Campus, achieves an A rating (the highest environmental certification) of Energy Performance Certificate (EPC). For these reasons, this question is awarded 2 points.

5.5. Has the <u>medical school</u> or <u>institution</u> implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental <u>impact of commuting?</u>

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

During the first three non-clinical years of medical school, the majority of lectures are delivered on the main university campus or at the RIE; as many students live relatively close to these locations and/or have access to the Edinburgh Council free bus pass under 22 scheme, these locations are predominantly accessed via foot, bike or public transport. As students' progress into the final three clinical years, during which placements are often further afield, cycling, public transport and/or driving become the more common methods of transport.

Public Transport: Edinburgh Council provides free bus travel to everyone under the age of 22; as most students begin their studies at 17/18 years old, this covers public transport up until 4th/5th year. For the remainder of medical studies, the University of Edinburgh does not currently provide a bus pass or shuttle bus to the main placement and lecture locations, leaving students to potentially rely on cars more. In addition, whilst many of the out-of-city placements in 4th/5th/6th year can be accessed using public transport, the total time spent commuting is often significantly increased in comparison to using a car.

Cycling: Edinburgh medical school encourages cycling to placement locations, advertising cycle paths between the main university campus and the Royal Infirmary of Edinburgh, and implementing a free 'Dr Bike' scheme at the RIE to reduce bicycle upkeep costs for students. However, the advertised cycle paths are of inconsistent quality (e.g. often flooding in poor weather), and cycle paths to other placement locations around the city are of intermittent quality and availability. In addition, the Edinburgh Council 'Just Eat Cycle' hire scheme, which encouraged cycling by allowing students to temporarily hire bikes between stations across University campuses and the wider city, has since been discontinued.

5.6. Does your <u>medical school</u> have an organics recycling program (compost) and a conventional recycling program (aluminium/paper/plastic/glass)?

- Yes, the medical school has **both** compost **and** recycling programs accessible to students and faculty.
- The medical school has **either** recycling **or** compost programs accessible to students and faculty, but not both.
- There is **no** compost or recycling program at the medical school.

The University of Edinburgh provides shared recycling points across different campuses. The bins at each of these recycling points are divided into dry mixed recycling, general waste, paper and cardboard, and glass. The provision of these recycling points, and the separation of waste as stated above, likely increases the quality and quantity of recycling across the medical school. The medical school used to provide access to an internal reuse and upcycle platform for old equipment – 'Warp it' – for staff and PhD students, however, this programme was discontinued in 2023.

The University of Edinburgh Medical School does not currently provide a compost program to students and faculty.

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)?

- 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.
- 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.
- 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.
- There are **no** sustainability guidelines for food and beverages.

The University of Edinburgh has a Good Food Policy which is set to ensure that campus food and beverage selection is environmentally, socially and economically sustainable. There are 5 domains in

which they have taken action in: sourcing, provision, practice, learning and teaching and leadership and culture. This implementation is due to be under review this year. An example of an initiative undertaken would be the Too Good To Go app partnership, which aims to combat food waste. That being said, it is not specified if the Medical School Cafe is included in this. The University has signed up to a Peas Please pledge to encourage vegetarian lifestyles. They have ensured that 50% of meal options in outlets are vegetarian or plant based. Meals and products will have a greater proportion of vegetables (90g to 150g) and vegan hot meals options will remain a permanent addition. Carbon Emissions have also been calculated for menu items in order to allow others to make more informed choices though this hasn't been introduced to the Medical School Cafe. Drinking water points are widely available and a disposable cup tax introduced in 2018 has increased from 25p to 30p in 2019. This has resulted in a 37% decrease in usage of disposable cups. All cafes also accept any res-usable cups.

5.8. Does the medical school or institution apply sustainability criteria when making decisions about supply procurement? Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement. 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. 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. There are no sustainability guidelines for supply procurement.

The University of Edinburgh has a 2021 Procurement Policy where it outlines its aim to make sustainable and socially responsive contributions. The university has outlined contract terms and conditions which state that suppliers must adhere to sustainable practice and provide evidence of this. Research has also been carried out to understand supplier chain carbon footprint, community benefit schemes, waste management of these companies and modern day slavery/human trafficking risk.

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

The Department for Social Responsibility and Sustainability of the University of Edinburgh supports promoting sustainability across the University. They provide a <u>guide</u> on how to be sustainable and a 'top tips for running a sustainable event'. These documents include suggestions such as ordering the correct amount of food, offering plant-based catering, minimising single-use plastics, and choosing a venue with good public transport links. However, there is no clear and obvious enforceable sustainability policy for running events across the University, with events precluded from specific mention in the 'Zero by 2040 - Climate Strategy' policy document. Furthermore, these documents are not specific to the medical school, they are not strongly recommended for medical school events, and

following their advice is not incentivised. Therefore, whilst guidance is provided, it does not meet the criteria to be scored a point.

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

- There are **guidelines** on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
- There are **no** efforts at the medical school to make lab spaces more sustainable.

The Department of Social Responsibility and Sustainability provides clearly structured <u>information</u> on best practise for making labs more sustainable. This information is <u>promoted by the medical school</u>, and researchers can apply for funding through the <u>sustainable campus fund</u> to make lab space more sustainable. The Department of Social Responsibility and Sustainability also has a <u>Sustainable Laboratories Steering Group</u>, which provides expert guidance to the Laboratories Steering Committee on sustainability, links together sustainable labs with University-wide agenda setting and identifies further funding for sustainable labs. Additionally, labs can apply for the <u>Lab Sustainability Awards</u>, which provide guidance on how labs can be more sustainable, and recognise those that carry this out.

5.11. Does your institution's endowment portfolio investments include fossil-fuel companies? 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. The institution is entirely divested from fossil fuels. The institution has partially divested from fossil fuel companies or has made a commitment to fully divest, but currently still has fossil fuel investments. The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organised advocacy for divestment. Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.

The University of Edinburgh launched its Climate Change strategy in 2016 which encompassed the aim of becoming carbon neutral by 2040. This is due to be reviewed in 2026. The preceding Climate action plan (2010-2020) led to the investment of over £30m in low carbon technology and raised over £50m for climate research. Since the 2010 Climate action plan, the university has not invested over £170m in low carbon technology which demonstrates progress from 2010 and towards the goal of being carbon neutral by 2040. The University of Edinburgh was the first University in Europe to become a member of the Principles for Responsible Investment and the institution has been awarded excellence by the UN for its responsible investment in the past 2 years. Additionally, in 2020, the University became a founder member of a new Responsible Investment Network which contributes to researching and exploring new ways for universities to invest funds more ethically.

Back to Summary Page <u>here</u>

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%
В	60% - 79%
С	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 Edinburgh School of Medicine

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(46/72) \times 100 = 63.9\%$	В-
Interdisciplinary Research (17.5%)	(16/17) x 100 = 94.1%	A
Community Outreach and Advocacy (17.5%)	(9/14) x 100 = 64.3%	В-
Support for Student-led Planetary Health Initiatives (17.5%)	(12/15) x 100= 80%	A-
Campus Sustainability (17.5%)	$(20/32) \times 100 = 62.50\%\%$	В-
Institutional Grade	71.82%	В

Report Card Trends

Section Overview

This graph demonstrates trends in overall and section grades for the years in which Edinburgh Medical School has participated in the Planetary Health Report Card initiative. Please note there was no Ediburgh PHRC published in 2023.

Planetary Health Report Card Trends for Edinburgh Medical School

