Planetary Health Report Card (Medicine):

University of Southampton

2023-2024 Contributing Team:
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Summary of Findings

Overall	B

Curriculum	A

- The University of Southampton Medical School has integrated planetary health into their core curriculum across all years well. It extensively covers the impact of climate change on human health and the challenges faced by health systems as a result.
- **Recommendations:** There is a lack of opportunities for interested students to engage in optional electives and student selected units relating to planetary health. The university may also want to include more information in lectures relating to the impact of climate change on local health systems, as the current focus tends to be on the global impact.

Interdisciplinary Research	A -

- The University of Southampton Medical School has faculty members who have a primary research focus on planetary health.
- The University of Southampton has a dedicated institute that centralises collaborative research into planetary health topics
- **Recommendations:** The University of Southampton could develop a process by which communities disproportionately impacted by climate change and environmental injustice could give input on the research agenda

Community Outreach and Advocacy	C

- The University of Southampton Medical School has some community outreach projects related to planetary health, such as the LifeLab project aimed at local adolescents
- The University of Southampton Medical School occasionally includes planetary health topics in communication updates to students
- **Recommendations:** The University of Southampton Medical School and its affiliated teaching hospital (University Hospital Southampton) could develop educational materials for patients about environmental health exposures and the health impacts of climate change

Support for Student-Led Initiatives	B-

- The University of Southampton Medical School have an active student-led society called Students for Planetary Health who have several active project, including evaluating the planetary health curriculum and providing feedback to the Faculty of Medicine. Members of the faculty actively recruit students throughout the year to this society.
- **Recommendations:** We recommend the medical school hosts events relating to local planetary health issues to engage students.

Campus Sustainability	B+

- The University of Southampton Medical School has made significant efforts to implement strategies to encourage environmentally-friendly transportation. It also has a waste management system that prioritises reducing unnecessary waste.
- **Recommendations**: Despite efforts to recapture heat to generate electricity, the university remains reliant on natural gas for energy. We recommend that the university continues to reduce their reliance on non-renewable energy sources.

Statement of Purpose

Planetary health is human health.

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

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

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

Definitions & Other Considerations

Definitions:

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

- **Sustainable Healthcare:** As defined by the Academy of Royal Colleges, sustainable healthcare involves ensuring the ability to provide good quality care for future generations by balancing the economic, environmental, and social constraints and demands within health care settings. A sustainable healthcare system maintains population health, reduces disease burden and minimises use of healthcare services.

- **Education for Sustainable Healthcare (ESH):** is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:

    1. Describe how the environment and human health interact at different levels.

    2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.

    3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.

- **Medical School vs. Institution:** When "medical school" is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (e.g. undergraduate departments (USA), other related departments (e.g. Public Health, Population Health departments). In contrast, when "institution" is specified in the report card, we are referring to the university more

broadly. Any resource reasonably accessible by medical students, no matter where in the institution the resource comes from or if it is specifically targeted for medical students, can meet this metric.

- **Environmental history (Metric #19 in Curriculum Section):** This is a series of questions providers are taught to ask during medical encounters that elicits patients' exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mould after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution.

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

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

Other considerations:

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

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

Planetary Health Curriculum

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

Curriculum: General

1.1. Did your medical school offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered **more than one** elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered **one** elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does **not** have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a **lecture** on planetary health.
0	No, the medical school has **not** offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
Score explanation: *The University of Southampton does not offer an elective with a primary focus on ESH/planetary health, but does offer a Global Health student selected unit in Year 1. This unit has a 2 hour lecture titled 'Health on a Fragile Planet' that discusses the relationship between human health, and climate change, pollution and biodiversity loss.* *https://blackboard.soton.ac.uk/ultra/courses/_152423_1/cl/outline*	

Curriculum: Health Effects of Climate Change

1.2. Does your medical school curriculum address the relationship between extreme heat, health risks, and climate change?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.

Score explanation:

Year 1:
Topic discussed in temperature Regulation lecture which specifically the role of climate change. It discusses the effect of extreme heat on mortality and human caused climate change. It also discusses the effect of both extremes of heat on health and which groups are most vulnerable.
Extreme heat discussed in lecture on global health and chronic disease in relation to cardiovascular and renal disease
Currently is scheduled to be discussed in the context of cardiovascular disease in Ischaemic heart disease lecture

Year 2:
Lecture in chronic kidney disease mentions the link between climate change and extreme heat and kidney disease.
Lecture in acute kidney disease discusses link between extreme heat and AKI
Lecture in pregnancy discusses the impact of extreme heat and its association with preterm birth, longer labours, PROM, low birthweight and still-birth

Year 5:
Lecture discusses the impact extreme heat has on the provision of healthcare and its effect on healthcare systems.

Resource:

https://blackboard.soton.ac.uk/bbcswebdav/pid-6003889-dt-content-rid-23055788_1/xid-23055788_1

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

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

Score explanation:

Year 1:
A lecture on temperature regulation which explores the topic of extreme heat on human health.

Year 3:

GP seminar leaders have been given guidance on discussing the impact of environmental degradation on the provision of healthcare and the importance of healthcare resilience in the context of a changing climate

Year 5:
This is covered in depth in'(Health) System Change - Not Climate Change'. The lecture focuses on how healthcare systems are affected by environmental change and the need to build climate resilience in global health systems. Includes examples of flooding, wildfires and resource depletion reducing the ability to provide effective healthcare.

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

Score explanation:

A Year 1 lecture titled 'Health on a Fragile Planet' taught by Dr James Bevan, discusses the impact of climate change on infectious disease, looking particularly at vector borne disease. It is a lecture taught in an elective Global Health module.

A year 1 lecture on tropical disease discusses in depth the impact of climate change on malaria, dengue and emerging disease. Including how these diseases may become more prevalent in Europe within the next few decades.

A year three student selected module has a 30 minute lecture entitled the Perfect Storm: Climate Change biodiversity loss and infectious disease.

A fifth year population and planetary health lecture "Health system Change" has a single slide that addresses this topic. The lecturer explains the impact of climate change on human health based on the diagram published by CDC and this includes explanation about the linkage between various climate changes and infectious disease.

1.5. Does your <u>medical school</u> curriculum address the respiratory health effects of climate change and air pollution?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.

0	This topic was **not** covered.

Score explanation:

Year 1:
There is a respiratory disease symposium that discusses the influence of air pollution and climate change on human health. It also explores ways to make usage of inhalers more eco-friendly. This topic is also mentioned in the COPD symposium in yr1. Discussed in depth in Global health lecture on tobacco and air pollution - explores the global toll of COPD as a result of air pollution. Discussed in Global Health lecture on chronic disease discusses impact of indoor and outdoor air pollution.

Year 3
There is an ethics and law lecture that discusses the tragic cases of Ella Adoo-Kissi-Debrah and Awaab Ishak, looking at the impact of air pollution and poor indoor air quality on their respiratory health.

GP seminar leaders are given cases to discuss with students regarding environmental history with a specific focus on air quality and pollution.

Year 4
There are provided learning materials 'Respiratory - Child Health' in the Year 4 Child Health modules that discusses the role of pollution in asthma exacerbations, looking in particular at the case of Ella Adoo-Kissi-Deborah. The lecture also explores the impact of climate change and allergens on respiratory health.

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

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

Score explanation:

Year 1
A lecture on temperature regulation taught in Year 1 discusses extreme heat and mortality. It also teaches about interventions for extreme heat at an individual, local and policy level.

A lecture on Global Health Chronic disease discusses the importance of climate change and its impacts on cardiovascular health. In particular ischaemic heart disease & atherosclerosis.

Ischaemic heart disease lecture slides include discussion on the impact of climate change on ischaemic heart disease & heart failure.

Year 2
Lectures on Stroke, explores the role of pollution on the cardiovascular disease burden in comparison to respiratory disease.

Year 3
GP seminar leads are given materials to discuss the impact of climate change on diabetes.

Year 5

A lecture titled '(Health) System Change - Not Climate Change', discusses co-benefits of planetary health interventions which are beneficial to cardiovascular health and the planet. Examples include increasing active transport or eliminating coal. Reducing emissions = reduced cardiovascular disease.

1.7. Does your <u>medical school</u> curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.

Score explanation:

A year 1 BM4 lecture "Health on a Fragile Planet" discusses the effects of extreme heat and flooding on long and short term mental health outcomes.

A year two dementia symposium includes slides which cover how pollution is linked with dementia. There is no dedicated lecture or information included in the core curriculum. There is however, an optional lecture titled 'Mental Health on a Fragile Planet ' that is available in the Y4 Psychiatry resources folder, for those students who are interested. It discusses the link between climate change and its effect on suicide rates, congitive function and anxiety. It also discusses the relationship between nature and increased mood.

In the Medical Ethics and Law module within Psychiatry Year 4 there are also links to some journals discussing Sustainability and Climate

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

Score explanation:

Year 1
This topic was discussed as part of the "Nutrition, health and the planet" lecture in year 1, but there is not an entire lecture dedicated on this topic. The following is excerpt -"The lancet commission of food, planet and health has developed a dietary guide which is evidenced to be good for human and planetary health. In general, a healthy, whole food, plant-based diet would be classed as co-beneficial for health and the environment."
Global health introduction lecture discusses planetary health and extreme weather in depth including the unequal distribution of extreme weather events as a result of climate change - it discusses how this impacts food security, infectious disease, child health and direct mortality arising from extreme weather events.
Global Health Chronic disease lecture discusses the importance of partnering with nature in managing chronic disease and the challenges of global food and water security

Year 5
Water security and quality is also discussed in the yr5 lecture "health system change - not climate change".

An SSU in Year 2 (Elective Module) discusses biodiversity loss and its impact on the human microbiome. It also discusses impacts on global food supply and crop yields.

1.9. Does your <u>medical school</u> curriculum address the outsized impact of climate change on marginalised populations such as those with low SES, women, communities of color, Indigenous communities, children, homeless populations, and older adults?

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

Score explanation:

Year 1
This topic is covered in "introduction to global health" in year 1, which discusses health inequalities, introduces the topic of planetary health including reference to the uneven distribution of health effects of climate change and pollution to the world's most vulnerable populations.

Global Health Chronic disease lecture discusses how climate events will have a greater effect on the health systems of poorer countries, further exacerbating existing inequalities. Also discusses how the past colonial destruction of nature has created major issues of chronic health. Lecture includes a case study of colonialism in pacific islands and destruction of natural resources.

Year 3
Resources are provided regarding the impact of climate change on worsening social inequalities. A

lecture titled 'Ethics' taught in Year 3 teaches students to reflect on social and environmental inequality exacerbating health inequality in lower socioeconomic groups.

The elective module "health on a fragile planet" explicitly discusses that the impacts of climate change and environmental degradation will exacerbate already existing inequalities.

Resources: https://blackboard.soton.ac.uk/ultra/courses/_213251_1/cl/outline
https://blackboard.soton.ac.uk/ultra/courses/_152423_1/cl/outline

1.10. Does your <u>medical school</u> curriculum address the unequal regional health impacts of climate change globally?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.

Score explanation:

Year 1
The Global Health introduction lecture discusses the disparity that exists between the countries with the most extreme weather and those historically responsible for emissions. The lecturer explains that the most affected regions or countries are mainly the low income countries and that they tend to have worse health outcomes compared to the other countries.

The Global Health of chronic disease lecture includes reference to the unequal consequences of climate change to LMICs and how this impacts their health. This includes case studies on Mozambique and Pacific Islands, and references environmental change.

Year 2
There is a lecture titled 'Stroke' that includes the geographic distribution of pollution.
Lectures on chronic kidney disease and acute kidney disease discuss the geographic distribution of climate related kidney disease epidemics in central america, India and Sri Lanka

A lecture titled "Developmental Origins of Health and Disease" discusses how children are unequally affected by climate change

Year 1 Elective Module
Planetary Health lecture discusses in depth the geographic disparity in the impacts of climate change

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

1.11. Does your <u>medical school</u> curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.

Score explanation:

Year 2
There is a lecture entitled "Climate change and pregnancy" in the Year 2 section of the "Population and Planetary Health" (PPH) module on blackboard. The lecture discusses the impact of breastfeeding vs formula feeding on sustainability, as well as the effects of climate change (e.g. extreme weather events), as well as air pollution on pregnancy and the impact on the unborn foetus as well. This appears to have improved in scope from last year.

There is a lecture entitled "Developmental Origins of Health and Disease which discusses in depth impact of the environment, toxins (lead, mercury and endocrine disrupting chemicals) and climate change on reproductive health and foetal development.

Further recommendation:
Within the PPH module there is content for each of the year groups. The 4th year at the University of Southampton covers specialties - including child health, ENT, psychiatry, and obstetrics and gynaecology. However, there is no PPH lecture for O&G as part of the 4th year content - a suggestion for future curriculum.

1.12. Does your <u>medical school</u> curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?	
3	This topic was explored **in depth** by the **core** curriculum.
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.

Score explanation:
Not covered in the curriculum

1.13. To what extent does your <u>medical school</u> emphasise the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?	
3	Indigenous knowledge and value systems are **integrated throughout** the medical school's planetary health education

2	Indigenous knowledge and value systems as essential components of planetary health solutions are included **briefly** in the core curriculum.
1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in **elective** coursework.
0	This topic was **not** covered.

Score explanation:
A lecture titled Global Health 2 discusses the importance of indigenous wisdom and partnering with local healers when the context is appropriate.

1.14. Does your <u>medical school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of colour, children, homeless populations, Indigenous populations, and older adults?

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

Score explanation:
Year 1
The 'Health on a fragile planet' lecture extensively covers the effects of various planetary health factors on marginalised groups - including CO2 emissions, vector ecology and infectious disease, respiratory disease and allergens, mental health, conflict and migration and food and water supply.
The data seem to suggest these anthropogenic factors affect those from lower SE countries and regions.
'Air pollution' lecture also reports disproportionate impacts on lower-income countries.

Year 2
Stroke and CVD lectures discuss air pollution and increased risk of stroke and CVD, and report air pollution levels are greater in low-income countries.
Renal lecture reports higher levels of AKI secondary to dehydration as a result of extreme heat events - again also affecting more rural and poorer areas including manual labourers and farm workers.
Climate change and pregnancy lecture discusses negative effects of climate change on reproductive health and the reduced use of contraception in poorer / LMICs
Developmental origins of health discusses how children are unequally affected.

Year 3
Cases discuss air pollution and poor living conditions (including mould) affecting those from lower SE backgrounds, including refugees and children in particular.

Year 4 / specialties:
Ophthalmology lecture links air pollution with ARMD and glaucoma and draws parallels with higher levels of pollutants affecting lower SE levels
ENT lecture again highlights higher levels of pollutants with hayfever, allergic rhinitis and asthma, especially affecting children.

Curriculum: Sustainability

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

Score explanation:
Year 1
Lecture "Nutrition, health and the planet" covers the impact of food production and dietary styles on the planet, and covers the 'planetary health diet', which promotes a primarily plant-based diet. Further, the 'Health on a fragile planet' lecture covers food and water supply across different regions, and how these are affected by climate change. It also discusses how this disproportionately affects lower income countries, exacerbating existing inequalities in food security.

Year 5
'Health system change' lecture also covers the planetary health diet, including a video from The Lancet Commission providing further detail of the planetary health diet.

1.16. Does your <u>medical school</u> curriculum address the carbon footprint of healthcare systems?	
3	This topic was explored **in depth** by the **core** curriculum
2	This topic was **briefly** covered in the **core** curriculum.
1	This topic was covered in **elective** coursework.
0	This topic was **not** covered.

Score explanation:
Year 1
The 'Asthma' lecture discusses and recognises the harmful carbon footprint of asthma inhalers and proposes strategies for greener prescribing.
Year 5
Lecture on sustainability in surgery, outlining the environmental impacts of many aspects of surgery and anaesthetics (including equipment, PPE, theatre environment etc). Covers strategies for improvement.
Lecture on 'Health system change - not climate change' discusses in detail the environmental impact of the NHS and how this is a paradoxical phenomenon. Discusses strategies for change and developing resilience.

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

2	The health **and** environmental **co-benefits** of **avoiding** over-medicalisation, over-investigation and/or over-treatment
2	The environmental impact of **pharmaceuticals** and over-prescribing as a cause of climate health harm. Alternatively teaching on **deprescribing** where possible and its environmental and health co-benefits would fulfil this metric.
1	The health **and** environmental **co-benefits** of **non-pharmaceutical management** of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes. This is commonly known as social prescribing in the UK.
1	Environmental impact of **surgical** healthcare on planetary health and the climate crisis, and how can it be mitigated
1	The impact of **anaesthetic** gases on the healthcare carbon footprint and ways to reduce anaestheisa's environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions
1	The impact of **inhalers** on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	**Waste production** within healthcare **clinics** and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)
	Score explanation: 1. *Avoiding over medicalisation - lecture on "primary care sustainability" discusses social prescribing and the importance of this for sustainability. Asthma lecture discusses greener strategies for prescribing inhalers (given their significant contribution to the carbon footprint). Year 5 lecture "health system change" discusses over-prescribing and the detriment of unused prescriptions.* 2. *Pharmaceuticals and over-prescribing - As above - Year 5 lecture "health system change" discusses over-prescribing and the detriment of unused prescriptions.* 3. *Prescribing non-pharmaceutical managements - As above, lecture on "primary care sustainability" discusses social prescribing, and how this benefits both the patients and the climate.* 4. *Surgical impact - whole lecture in year 5 "sustainability in surgery", highlights the environmental impacts of many aspects of surgery and strategies for improvement.* 5. *Anaesthetic impact - As above - covered within the 5th year 'sustainability in surgery' lecture.* 6. *Inhalers impact - "asthma" lecture from year 1 and "health systems change" lecture in year 5 - details the impact of inhalers on the carbon footprint, and strategies for greener prescribing (eg environmental benefits of DPI vs MDIs)* 7. *Waste production within clinics - Strategies highlighted within the "health systems change" lecture from year 5, as well as the "time to cut emissions" lecture also from year 5.*

Curriculum: Clinical Applications

1.18. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies to have conversations with patients about the health effects of climate change?

2	Yes, there are strategies introduced for having conversations with patients about climate change in the **core** curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in **elective** coursework.
0	No, there are **not** strategies introduced for having conversations with patients about climate change

Score explanation:
In year 3, there is a dedicated lecture relating to 'Environmental history taking' within primary care. This lecture again highlights how environmental and climate factors can influence patients' health, and guides students through ways of discussing this with patients. Provides a case history for students to work through - which turned out to be Ella Kissi-Debrah's case (death due to air pollution).
In the "Asthma" lecture (year 1) and the "health systems change" from year 5, there is teaching on how to provide information to patients in regards to selecting more environmentally friendly inhalers (DPI vs MDI).

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

Score explanation:
In year 3, there is seminar teaching relating to "Environmental history taking" within primary care. This seminar again highlights how environmental and climate factors can influence patients' health, and guides students through ways of discussing this with patients. Provides a case history for students to work through - which turned out to be Ella Kissi-Debrah's case (death due to air pollution).

Curriculum: Administrative Support for Planetary Health

1.20. Is your <u>medical school</u> currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?	
4	Yes, the medical school is currently in the process of making **major** improvements to ESH/planetary health education.
2	Yes, the medical school is currently in the process of making **minor** improvements to ESH/planetary health education.
0	No, there are **no** improvements to planetary health education in progress.

Score explanation:
In recent years the University of Southampton has taken significant steps to improve ESH / planetary health education. This includes the employment of the Planetary Health Teaching Fellow and the creation of a planetary health faculty team. Together, they have revolutionised the curriculum and

created an integrated planetary health curriculum based on relevant publications, learning outcomes and GMC guidance that is constantly evolving.
In 2023 a formal 'Students for Planetary Health' group was started, with encouragement from the Planetary Health Teaching Fellow. This is a student-led group which aims to raise awareness and promote and facilitate planetary health research and audits.
The University of Southampton has also created the Sustainability and Resilience Institute (SRI), which is a university wide, inter-disciplinary research institute, which focuses on the following areas of research, education and enterprise work: renewable energy, decarbonisation and waste management, and climate change and health.

1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> curriculum?	
6	Planetary health/ESH topics are **well integrated** into the core medical school curriculum.
4	**Some** planetary health/ESH topics are appropriately integrated into the core medical student curriculum.
2	Planetary health/ESH is not integrated and is primarily addressed in **(a) standalone lecture(s).**
0	There is **minimal/no** education for sustainable healthcare.

Score explanation:

- *The faculty has outlined its curriculum here: https://blogs.bmj.com/bmj/2021/06/07/infusing-climate-change-and-sustainability-into-the-medical-school-curriculum/*
- *The Population and Planetary Health module is integrated throughout the medical curriculum.*
- *The first 2 years serve as an introduction to environmental and planetary health, and focus on public health including epidemiology, pathophysiology and prevention. This content is included within the various specialties and systems covered - including respiratory, cardiovascular and infectious disease etc.*
- *Years 3 and 4 encompass the transition into clinical practice.*
- *A research module is undertaken in the third year, and the PPH team plans to introduce a planetary health research option for students who are interested.*
- *The 4th year focuses on planetary health related to the specialties covered within the curriculum - including Ophthalmology, ENT, Obstetrics, Psychiatry and Child Health.*
- *The final year presents a further shift in teaching, designed to encourage graduating doctors to think sustainably as they enter practice. The surgical and primary care modules of final year both include planetary health specific-content (referenced prior).*

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

Score explanation: *The University of Southampton was one of the first in the country to employ a Planetary Health Teaching Fellow, who has significantly transformed the Population and Planetary Health module and integrating planetary and population health across the curriculum. He was also involved in the creation of a student-led Planetary Health group which aims to not only promote planetary health within the student body, but contribute towards the growing body of research in this field.*

Section Total (65 out of 72)	**90.28%**

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

Interdisciplinary Research

Section Overview: ***This section evaluates the quality and quantity of interdisciplinary planetary health research at the medical school and broader institution.*** *Interactions between health and the environment are complex and multifactorial. While climate change has been extensively studied from an environmental science perspective, planetary health is an emerging field. As leading health institutions with talented researchers and research resources, medical schools should fund research studying the health effects of climate change and anthropogenic environmental toxins. This obligation is particularly strong because the public and policymakers are more attentive to climate change when its implications for human health are emphasised.*

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

Score explanation:
Professor Stephen Holgate and Dr Matthew Loxham have a primary interest in the impact of air pollution on human health. Professor Holgate has led world-leading research on asthma and air pollution, and is a Clear Air Champion. Dr Loxham is currently leading a research project titled 'The Impact of Rising Temperatures on Lung Health in the Face of Particulate Matter Air Pollution'.

Additionally, the university founded the Sustainability and Resilience Institute (SRI) in 2023. Refer to Section 2.2 below for further details.

Links to the University of Southampton:
Professor Stephen Holgate | University of Southampton
Doctor Matthew Loxham | University of Southampton
Sustainability and Resilience Institute (SRI) | University of Southampton

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

Score explanation:

The University of Southampton founded the Sustainability and Resilience Institute (SRI) in 2023. The primary aim of the SRI is to tackle critical challenges facing society and the environment through evidence-based solutions and collaborative work. Collaborative research is focused on the following key topics:

- *Renewable energy*
- *Decarbonisation and waste management*
- ***Climate change and health***
- *Nature-based solutions*
- *Sustainability methods and tools*
- *UN Sustainable Development Goals*

Links to the University of Southampton:
Sustainability and Resilience Institute (SRI) | University of Southampton

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

Score explanation:

There are currently no processes in place for communities impacted by climate change and environmental injustice to give their input on research at the University of Southampton.

2.4. Does your institution have a planetary health website that centralises ongoing and past research related to health and the environment?	
3	There is an **easy-to-use, adequately comprehensive** website that **centralises** various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.
2	There is a website that **attempts to centralise** various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The **institution** has an **Office of Sustainability website** that includes **some** resources related to health and the environment.
0	There is **no** website.

The University of Southampton founded the Sustainability and Resilience Institute (SRI) in 2023. The SRI's website includes details of the institute's leadership team, news and events, current and past projects and research funding opportunities.

Links to the University of Southampton:
Sustainability and Resilience Institute (SRI) | University of Southampton

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

The University of Southampton hosted the International Conference on Evolving Cities and Towns (ICEC) in September 2024. The ICEC addresses energy and cities with a special emphasis on renewable energy and low carbon approaches.

The University of Southampton will host The Partnership for Research in Marine Renewable Energy (PRIMaRE) Conference in June 2024.

Links to the University of Southampton:
https://energy.soton.ac.uk/4th-international-conference-on-evolving-cities/
https://energy.soton.ac.uk/11th-primare-conference-2024/

2.6. Is your medical school a member of a national or international planetary health or ESH organisation?	
1	Yes, the medical school is a member of a national or international planetary health **or** ESH organisation
0	No, the medical school is **not** a member of such an organisation
The University of Southampton is a founding member of the International Medical Education Collaboration on Climate and Sustainability (IMECCS). IMECCS is an organisation which provides educational materials on climate change and sustainability to medical institutions to incorporate into their curriculum. *Link to IMECCS:* *https://www.imeccs.org/*	

Section Total (14 out of 17)	**82.35 %**

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

Community Outreach and Advocacy

Section Overview: ***This section evaluates medical school engagement in community outreach and advocacy efforts associated with planetary health.*** *Researching and teaching planetary health is necessary but not sufficient. It is critical that institutions also directly engage with communities most affected by environmental health harms. Although climate change is a problem largely created by those with power and resources, its impacts fall disproportionately on under-resourced populations and communities of colour. Institutions should partner with local communities affected by climate change and pollution to share information about environmental health threats, advocate together for change, and provide opportunities for students to be a part of this work.*

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

LifeLab is a teaching laboratory dedicated to improving adolescent health by giving school students an opportunity to learn the science behind health messages. It was founded by the University of Southampton in 2008. LifeLab also leads research on the developmental origins of health and disease (DOHaD).

Links to the University of Southampton:
Lifelab | University of Southampton

Other Links:
LifeLab | Southampton

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

In February 2024, LifeLab partnered with a local youth theatre group to run the Climate Change Theatre Project (Generation Anthropocene). The aim of the project was to explore the impact of climate change on local communities in Southampton. The youth group spent time at the beach, in the forest and in the city to find out about the impact of climate change on these areas. The group then put on a theatre production at venues across Hampshire to raise awareness and educate local communities about climate change.

3.3. Does your medical school have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
2	Yes, all students **regularly** receive communication updates dedicated to planetary health and/or sustainable healthcare.
1	Yes, planetary health and/or sustainable healthcare topics are **sometimes** included in communication updates.
0	Students **do not** receive communications about planetary health or sustainable healthcare.
Students at the University of Southampton receive occasional emails regarding Sustainability in Healthcare, including opportunities to join the Planetary Health and Sustainability Student Group. Additionally, the Faculty of Medicine sends a weekly newsletter to Medical Students, which includes findings of medical research conducted at the university.	

3.4. Does the institution or main affiliated hospital trust engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?	
2	Yes, the **institution** or **main affiliated hospital trust** offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health.
1	Yes, the **institution** or **main affiliated hospital trust** offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
0	There are **no** such accessible courses for post-graduate providers
The University Hospital Southampton NHS Trust provides two hours of teaching on planetary health and sustainability to Foundation Year 1 Doctors on the Foundation Programme. Additionally, there is an e-learning module titled Environmentally Sustainable Healthcare on the eLearning for Healthcare website. Medical students at the University of Southampton have access to this online material.	

3.5. Does your medical school or its affiliated teaching hospitals have accessible educational materials for patients about environmental health exposures?	
2	Yes, the **medical school** or **all affiliated hospitals** have accessible educational materials for patients.

1	**Some** affiliated hospitals have accessible educational materials for patients.
0	**No** affiliated medical centres have accessible educational materials for patients.
We reviewed the patient information leaflets provided by the University Hospital Southampton NHS Trust, and we did not identify any educational materials for patients about environmental health exposures. Additionally, we did not identify any educational materials for patients about this topic created by the University of Southampton Medical School.	

3.6. Does your medical school or its affiliated teaching hospitals have accessible educational materials for patients about the health impacts of climate change?	
2	Yes, the **medical school** or **all affiliated hospitals** have accessible educational materials for patients.
1	**Some** affiliated hospitals have accessible educational materials for patients.
0	**No** affiliated hospitals have accessible educational materials for patients.
We reviewed the patient information leaflets provided by the University Hospital Southampton NHS Trust, and we did not identify any educational materials for patients about the health impacts of climate change. Additionally, we did not identify any educational materials for patients about this topic created by the University of Southampton Medical School.	

Section Total (7 out of 14)	**50.00%**

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

Support for Student-Led Planetary Health Initiatives

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

4.1. Does your medical school or your institution offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the **medical school** or **institution** *either* offers grants for students to enact sustainability initiatives/QI projects *or* sustainability QI projects are part of the core curriculum.
1	The **medical school** or **institution** encourages sustainability QI projects (to fulfil clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, **but** there is no student funding available and there is no requirement to participate.
0	No, **neither** the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.
Score explanation: *The university is currently developing opportunities and funding for students to undertake sustainable QI projects as part of their year 3 research block. This is coming into effect in 2024.* *The medical school also provides a list of sustainability or planetary health related electives they may wish to undertake in their final year of medical school.*	

4.2. Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
2	The **institution** has a **specific** research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these **require student initiative** to seek these out and carry them out in their spare time.
0	There are **no opportunities** for students to engage in planetary health/sustainable healthcare research.
Score explanation: Sustainability and Resilience Institute (SRI) has been established and Student Sustainability Academy Associate, Member and Fellowships will be available upon launch of the Sustainability Academy in February 2024. Our people | Sustainability and Resilience Institute (SRI) | University of Southampton. *There are many additional research opportunities to engage with pollution research or sustainability QI work, however, these require student initiative. The medical school has published a review of planetary health and sustainability teaching in UK medical schools which had a very large student involvement. Full article: Planetary health and sustainability teaching in UK medical education: A review of medical school curricula*	

4.3. Does the medical school have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.	
2	The **medical school** has a webpage with specific information related to planetary health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.
1	There is a **medical school** webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information.
0	There is **no medical-school** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.
Score explanation: There is a dedicated population and planetary health blackboard site that summarises educational resources for planetary health and sustainability used throughout the undergraduate medical curriculum. It contains contact information on the faculty and some other basic information. Blackboard Planetary Health Course	

4.4. Does your medical school have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?	
2	Yes, there is a student organisation **with faculty support** at my medical school dedicated to planetary health or sustainability in healthcare.
1	Yes, there is a student organisation at my medical school dedicated to planetary health or sustainability in healthcare but it **lacks faculty support.**
0	No, there is **not** a student organisation at my institution dedicated to planetary health or sustainability in healthcare.
Score explanation: There is a planetary health student steering group supported by the faculty, that students can be involved in to evaluate and develop planetary health curriculum. There is also a recently created sustainable healthcare society run by students called Students for Planetary Health, who have evaluated the planetary health curriculum at UoS, presented at conferences and are currently submitting material for publishing.	

4.5. Is there a student liaison representing sustainability interests who serves on a medical school or institutional decision-making council to advocate for curriculum reform and/or sustainability best practices?	
1	Yes, there is a student representative that serves on a medical school or institutional decision-making council/committee.

0	No, there is no such student representative.
Score explanation: Southampton university has partnered with students to develop its sustainability strategy which includes more teaching across all subjects on climate change and sustainability. Southampton MedSoc has a Sustainability Lead who sits on the MedSoc council [Sustainability | University of Southampton]	

4.6. In the past year, has the institution had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)	
1	Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.
1	Panels, speaker series, or similar events related to planetary health that have students as an intended audience.
1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.
1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)
Score explanation: *Conservation Volunteers, Beekeeping Society and Hedgehog Friendly Campus programmes offer opportunities to volunteer in the local community and help minimise harmful anthropogenic environmental impacts on local wildlife. [Social Awareness, Campaigns & Fundraising - Southampton]* *Southampton Wilderness Medicine Society runs regular hikes throughout the year, including overnight camping trips around the UK. [Wilderness Medicine - Southampton].*	

Section Total (9 out of 15)	**60.00%**

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

Campus Sustainability

Section Overview: ***This section evaluates the support and engagement in sustainability initiatives by the medical school and/or institution.*** *The healthcare industry is a major contributor to greenhouse gas emissions as well as pollution that harms local, regional, and global ecosystems. While healthcare is, by nature, a resource-intensive 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
Score explanation: *Established sustainability strategy and delivery team, with nominated individuals.* *Dedicated Environment and Sustainability Manager for the University - Sarah Puckett* *Contact us | Sustainability | University of Southampton* *Dedicated Clinical Lead on Sustainability at UHS - Dr. Thomas Daniels.*	

5.2. How ambitious is your institution/medical school plan to reduce its own carbon footprint?	
5	The institution/medical school has a **written and approved plan** to achieve carbon neutrality by **2030**
3	The institution/medical school has a **written and approved plan** to achieve carbon neutrality by **2040**
1	The institution/medical school has a stated goal of carbon neutrality by **2040** but has **not created a plan** to reach that goal or the **plan is inadequate**
0	The institution/medical school does **not** meet any of the requirements listed above
	Score explanation: *University of Southampton target net zero by 2030 for scope 1 & 2 emissions. Scope 1 are direct emissions that the university controls, primarily from fuel combustion on the university site. Scope 2 are indirect emissions from electricity that the university buys and uses.*

	Sustainability Strategy

5.3. Do buildings/infrastructure used by the medical school for teaching (not including the hospital) utilize renewable energy?	
3	Yes medical school buildings are **100%** powered by renewable energy
2	Medical school buildings source **>80%** of energy needs from off-site and/or on-site renewable energy.
1	Medical school buildings source **>20%** of energy needs from off-site and/or on-site renewable energy.
0	Medical school buildings source **<20%** of energy needs from off-site and/or on-site renewable energy.
Score explanation: Most recent report is the 2022 Annual Management Review of University's Environmental Management System report which indicates the University is on a 100% renewable electricity tariff . The university's energy centre contains a gas fired combined heat and power plant (CHP) that generates electricity and heat, the heat produced from generating electricity is recaptured and is utilised to meet over half of the demand of heating campus. The centre now also has new more efficient boilers that use less CO2. However given the large usage of natural gas for energy (primarily heating), we have scored this metric 1 out 3. We suggest that the University publish more accessible energy usage figures on their public facing web pages. *All currently published material is available here:* *Managing carbon | Sustainability | University of Southampton* *2022 Annual Report*	

5.4. Are sustainable building practices utilised for new and old buildings on the medical school campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?	
3	Yes, sustainable building practices are utilised for new buildings on the medical school campus and the **majority** of old buildings **have been retrofitted** to be more sustainable.
2	Sustainable building practices are utilised for new buildings on the medical school campus, but most old buildings have **not been retrofitted.**
1	Sustainable building practices are **inadequately or incompletely** implemented for new buildings.
0	Sustainability is **not considered** in the construction of new buildings.
Score explanation: There is a clear policy regarding new build, refurbishment and management projects, however we were unable to find information in regards to retrofitting of old buildings. *Sustainable Buildings Policy* *Sustainable Buildings – Interim Guidance*	

5.5. Has the medical school or institution implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental

impact of commuting?	
2	Yes, the medical school or institution has implemented strategies to encourage and provide **environmentally-friendly transportation options** such as safe active transport, public transport, or carpooling and these options are well-utilised by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
1	The medical school or institution has implemented **some** strategies to provide environmentally-friendly transportation options, but the options are **unsatisfactorily** accessible or advertised.
0	The medical school or institution has **not** implemented strategies to encourage and provide environmentally-friendly transportation options.
Score explanation: *The University of Southampton provides multiple locations for secure bike storage and runs regular sessions with the Bike Doctor to support cyclists. There is also a scheme to purchase second hand bikes for a significantly reduced price. Award winning bus service UniLink reduces the need for staff and students to drive to campus. Students in University accommodation are given a free bus pass. Staff who do need to drive are incentivised to car share and use low emission vehicles through a parking permit scheme. New charging points allow people to charge their eclectic vehicles on campus. Travel | Sustainability | University of Southampton*	

5.6. Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminium/paper/plastic/glass)?	
2	Yes, the medical school has **both** compost **and** recycling programs accessible to students and faculty.
1	The medical school has **either** recycling **or** compost programs accessible to students and faculty, but not both.
0	There is **no** compost or recycling program at the medical school.
Score explanation: *Mixed waste is sorted at a recycling facility. Anything that can't be recycled is sent to an 'energy from waste' facility to recover electricity and heat. Food waste is sent for anaerobic digestion producing gases that are used to generate electricity and heat. Leftover material can be used as a soil conditioner and fertiliser. Food waste bins and 3 in 1 recycling bins are in convenient locations around campus and in halls of residence. Waste & Recycling | Sustainability | University of Southampton*	

5.7. Does the medical school apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?	
3	Yes, the medical school has a**dequate s**ustainability requirements for food and beverages, including meat-free days or no red-meat, and **is engaged** in efforts to increase food and beverage sustainability.

2	There are sustainability guidelines for food and beverages, but they are **insufficient or optional**. The medical school **is engaged** in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are **insufficient or optional.** The medical school is **not** engaged in efforts to increase food and beverage sustainability.
0	There are **no** sustainability guidelines for food and beverages.
Score explanation: The Campus Kitchen has a clear environmental policy outlining all the measures they are taking to reduce their environmental impact. Examples include reducing the amount of beef items in the menu, with some outlets having no beef products at all with the aim to reduce impact of land degradation. Some other examples include purchasing local and seasonal produce, the reusable cup scheme and thinking sustainably in regards to waste. Our most recent achievement is that we have reduced single use disposable take away items by over 70% across our department and 95% in Halls. Environmental Policy - Catering Department	

5.8. Does the medical school or institution apply sustainability criteria when making decisions about supply procurement?	
3	Yes, the medical school has **adequate** sustainability requirements for supply procurement **and** is **engaged** in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are **insufficient or optional.** The medical school is **engaged** in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are **insufficient or optional.** The medical school is **not engaged** in efforts to increase sustainability of procurement.
0	There are **no** sustainability guidelines for supply procurement.
Score explanation: : The procurement team uses a Flexible Framework tool Sustainable Purchasing | Sustainability | University of Southampton	

5.9. Are there sustainability requirements or guidelines for events hosted at the medical school?	
2	Every event hosted at the medical school **must** abide by sustainability criteria.
1	The medical school **strongly recommends or incentivizes** sustainability measures, but they are **not required.**
0	There are **no** sustainability guidelines for medical school events.
Score explanation: Sustainability measures are strongly encouraged and will not be signed off unless a more sustainable option has been explored, however there is no strict criteria at the moment.	

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

2	Yes, the medical school has **programs** and **initiatives** to assist with making lab spaces more environmentally sustainable.
1	There are **guidelines** on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are **no** efforts at the medical school to make lab spaces more sustainable.
Score explanation: The University of Southampton's sustainable building policy includes designing all laboratories to minimise energy and water use and waste production. We cannot however find any information regarding programs or initiatives. Sustainable Buildings Policy	

5.11. Does your institution's endowment portfolio investments include fossil-fuel companies?	
4	The institution is **entirely divested** from fossil fuels **and** has made a **commitment to reinvest divested funds** into renewable energy companies or renewable energy campus initiatives.
3	The institution is **entirely divested** from fossil fuels.
2	The institution has **partially divested** from fossil fuel companies **or** has made a **commitment to fully divest**, but **currently** still has fossil fuel investments.
1	The institution has **not divested** from fossil-fuel companies, but faculty and/or students are **conducting organised advocacy** for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been **no efforts** to change that.
Score explanation: *The University of Southampton has reduced fossil fuel exposure, making changes in policy to disinvest from 'dirty' fuels – such as coal, tar and sand. They are also working with fund managers on an engagement process – to vote to support moves to renewables. Over time this will reduce fossil fuel investment to zero, as the underlying companies themselves make good on their commitments to deliver renewable solutions. Taken from the Fossil Fuel Statement 2023 'As of 31/12/22, 0.5% of the investment portfolio was held within direct fossil fuel companies (0.9% as at 31/12/21), and a further 0.6% within indirect fossil fuel companies (0.7% as at 31/12/21)'.* *Fossil Fuel Statement 2023*	

Section Total (25 out of 32)	**78.13%**

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

Grading

Section Overview
This section focuses on the grading of the report card. The institution received a grade for each of the individual sections as well as an overall institutional grade. Section point totals were tallied, divided by the total points available for the section, and converted to a percentage. The overall institutional grade is a weighted average of the section grades, with curriculum receiving a higher weight owing to its larger number of metrics. Letter grades for each section and the institution overall were then assigned according to the table below.

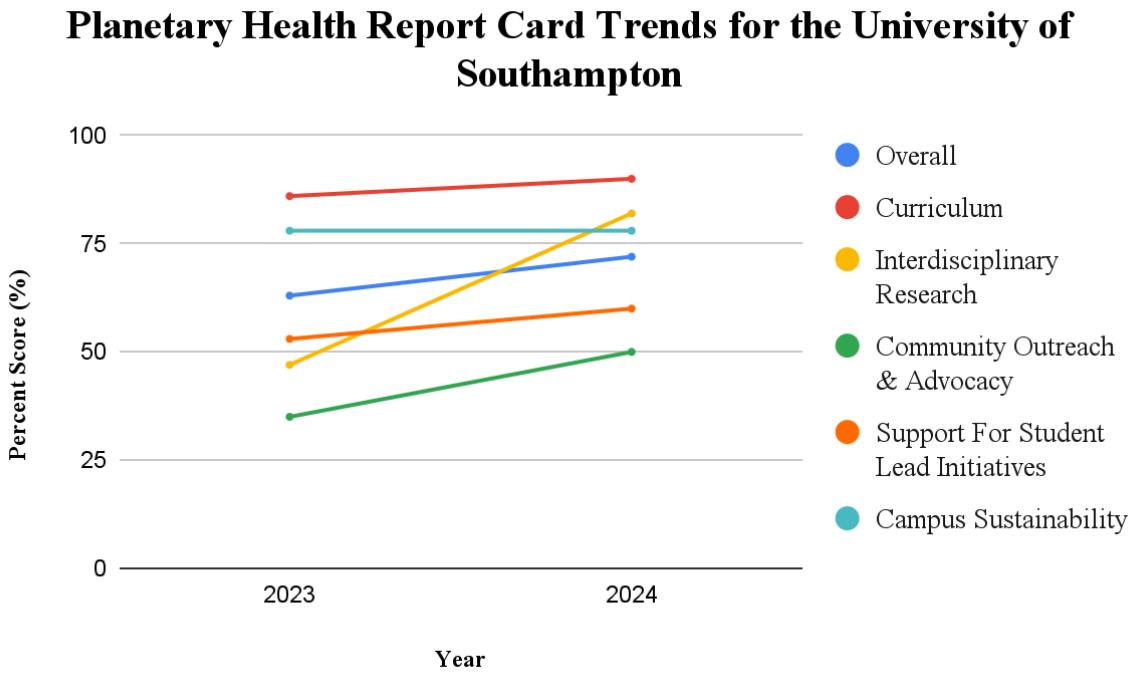
Letter Grade*	Percentage
A	80% - 100%
B	60% - 79%
C	40% - 59%
D	20% - 39%
F	0% - 19%

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	(65/72) x 100 = 90.27%	A
Interdisciplinary Research (17.5%)	(14/17) x 100 = 82.35%	A-
Community Outreach and Advocacy (17.5%)	(7/14) x 100 = 50%	C
Support for Student-led Planetary Health Initiatives (17.5%)	(9/15) x 100 = 60%	B-
Campus Sustainability (17.5%)	(25/32) x 100 = 78.13%	B+
Institutional Grade	**74.42%**	**B**

Report Card Trends

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



Questions to the Faculty

Please include the department you would like to contact and the question you would like to ask.