



Planetary Health Report Card (Medicine): *Swansea University Medical School*



Swansea
University
Prifysgol
Abertawe

2023-2024 Contributing Team:

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Summary of Findings

Overall	C +
<u>Curriculum</u>	B +
<ul style="list-style-type: none"> • There has been a lot of progress over the last year to integrate planetary health/ESH into the curriculum over all four years of the course. • The Future of the Medics fortnight has allowed the medical school to deliver more teaching in planetary health as well as provide lectures on topics that they have struggled to fit into the condensed 4 year course. • Recommendations: There is a lack of teaching about introducing conversations about planetary health into conversations with patients. This could be introduced in Integrated Clinical Method sessions and/or during GP placements. 	
<u>Interdisciplinary Research</u>	C -
<ul style="list-style-type: none"> • We now have dedicated research projects in the planetary health and sustainable healthcare sphere, with plans to expand in the coming years. • Recommendations: Swansea University Medical School could organise a conference directly related to Planetary Health. They could also join the Planetary Health Alliance and the Global Consortium on Climate and Health Education. 	
<u>Community Outreach and Advocacy</u>	D -
<ul style="list-style-type: none"> • There is minimal outreach or advocacy within the institution. • There is little to no information on the planetary health effects provided by hospitals for patients in the community. • Recommendations: There is opportunity to form community partnerships by hosting events that are accessible to the public and perhaps publishing a newsletter highlighting how students and faculty could get involved in this area. 	
<u>Support for Student-Led Initiatives</u>	C
<ul style="list-style-type: none"> • A full-time employed sustainability lead in the medical school has significantly affected the progress of sustainable teaching and practices on the course. • Recommendations: The medical school could offer increased support to students interested in sustainable initiatives for example via creating a website that advertises mentors or opportunities for students relating to PH or ESH and prioritises grants for related research. They could also allow a student representative to liaise with faculty, in addition to providing financial support to encourage student interest. 	
<u>Campus Sustainability</u>	A
<ul style="list-style-type: none"> • Overall, campus sustainability is excellent both within the school of medicine and as a whole. The university is very keen on making this even better with new guidance coming out regularly. The university is entirely divested from fossil fuels and tries hard to create their own renewable energy where possible. 	

Statement of Purpose

Planetary health is human health.

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

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

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

Definitions & Other Considerations

Definitions:

- **Planetary Health:** is described by the Planetary Health Alliance as “the health of human civilisation and the state of the natural systems on which it depends.” For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional ‘environmental health’ examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of medical school education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term “planetary health” to satisfy the metric.
- **Sustainable Healthcare:** As defined by the Academy of Royal Colleges, sustainable healthcare involves ensuring the ability to provide good quality care for future generations by balancing the economic, environmental, and social constraints and demands within health care settings. A sustainable healthcare system maintains population health, reduces disease burden and minimises use of healthcare services.
- **Education for Sustainable Healthcare (ESH):** is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:
 1. Describe how the environment and human health interact at different levels.
 2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.
 3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.
- **Medical School vs. Institution:** When “medical school” is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (e.g. undergraduate departments (USA), other related departments (e.g. Public Health, Population Health departments). In contrast, when “institution” is specified in the report card, we are referring to the university more

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

- **Environmental history (Metric #19 in Curriculum Section):** This is a series of questions providers are taught to ask during medical encounters that elicits patients' exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mould after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution.
- **Elective:** The word "elective" refers to an optional course or lecture series that a medical student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.
- **Clerkship:** This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations or placements.

Other considerations:

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

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

Planetary Health Curriculum

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

Curriculum: General

1.1. Did your <u>medical school</u> offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>Score explanation:</i> Electives are offered to final year medical students, where they are able to choose their own location and specialty, including in sustainable/planetary healthcare. There are also talks/lectures held focusing on ESH that the medical school does encourage students to attend, that are not part of the core curriculum.</p>	

Curriculum: Health Effects of Climate Change

1.2. Does your <u>medical school</u> curriculum address the relationship between extreme heat, health risks, and climate change?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i> In first year, there is a session held for students that explores this titled 'Intro to sustainable healthcare' and the content specifically focuses on the connectedness of the healthy planet and people (both globally and nationally) and Welsh targets such as becoming carbon neutral by 2030 in order to try and mitigate the health risks that are associated with climate change and extreme heat.</p>	

In third year, there is an ICM session called ‘climate change and me’ run by two doctors that covers this in-depth., especially in regards to impact on cardiorespiratory systems
 In fourth year, there is a whole lecture dedicated to Greener healthcare that addresses this issue during future of the medic week.

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: In first year, there is a collaborative session led by Dr Richard Thomas that explores this titled ‘An Introduction to Environmentally Sustainable Healthcare’, guided by the [Education for Sustainable Healthcare](#) document, covering topics such as effects on mental health, fatalities, displacement, and healthcare provision.
 In third year, there is an ICM session called ‘climate change and me’ run by two doctors that covers this in-depth and further explores the potential strategies we as medical students can encourage and employ throughout our career.
 In fourth year, there is a whole lecture dedicated to Greener healthcare that addresses this issue during future of the medic week.
 The topic is also briefly covered in the emergency medicine public health series in year two.

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

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

Score explanation: This is addressed several times throughout the course. Briefly covered in a global health week at the beginning of year 2 in relation to the spread of malaria, under the learning objective of ‘Describe the major diseases and risk factors for ill health at the global level and how they are measured’.. Also covered within public health lectures looking at pandemics (on the increase due to COVID-19). It is mentioned in the public health series regarding communicable diseases, looking at the impact of climate change.

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

3	This topic was explored in depth by the core curriculum.
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2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i> It is covered in depth within the future medics fortnight by a range of speakers, from public health consultants to respiratory research physiologists. They emphasise the impact of the industrial factories in the area and the mining background of a significant portion of the Swansea population and how prevalent the air pollution's negative impact is on individuals, with many developing malignancies and life-long respiratory conditions as a result. This topic is also briefly covered in COPD week in one slide on air pollution causing COPD.</p>	

1.6. Does your <u>medical school</u> curriculum address the cardiovascular health effects of climate change, including increased heat?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i> This is covered in the third year ICM teaching session, as well briefly during the International Health week at the beginning of second year, taking into consideration the impact on thermoregulation and cardiovascular strain due to extreme heat events, such as during bushfires.</p>	

1.7. Does your <u>medical school</u> curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i> This topic was covered in a lecture for first-years, Intro to Sustainable Healthcare, as well as in one of the ICM sessions in third year, with the main take-away points being the rise in anxiety related symptoms, feelings of helplessness/hopelessness and feelings of dissociation among the younger population especially. It is also addressed under the learning outcome 'To aid students developing strategies to cope with Climate Anxiety (solastalgia)' for the Greener Healthcare lecture in fourth year future medics weeks.</p>	

1.8. Does your <u>medical school</u> curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?	
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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: This was covered extensively during the International Health week in second year as well as in a lecture on public health in first year. Comparisons were drawn between Swansea (an area with relatively secure access to food and water) and other countries globally, especially those conflict ridden, and how lack of secure access to food and water due to political and ecosystem changes causes varying health conditions and have to be dealt with in creative and innovative ways due to lack of resources.

In third year this topic falls under the ICM learning outcome of ‘To identify how global warming and climate change can affect patients and healthcare and vice versa using case studies’.

It is also covered in the Future Medics fortnight conducted in 4th year, looking at the effects of food security and ecosystem health, exploring the One Health model.

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: This topic was covered in detail during the future medic weeks in fourth year, specifically in the lectures ‘health inequalities’ and ‘one health’, which talked about access to care, quality and experience of care and wider determinants of health and how these are significantly worse for those living in rural areas vs urban, those with specific characteristics (eg. sex, ethnicity, disability) and socially excluded groups. This falls under the learning outcomes ‘To evaluate the determinants of health and disease and variations in healthcare delivery and medical practice from a global perspective and explain the impact that global changes may have on local health and wellbeing’ and ‘To evaluate the environmental, social, behavioural and cultural factors which influence health and disease in different populations.’

It was also briefly covered during the international health week.

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.
<p><i>Score explanation:</i> This topic was covered in detail during the future medic weeks in fourth year, specifically in the lectures ‘health inequalities’ and ‘one health’, informing on the differences in physical environment and their impact on health and the potential benefits of pursuing environmental sustainability and health equity together. It was also briefly covered during the international health week.</p>	

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.
<p><i>Score explanation:</i> This topic is covered within the future medics fortnight and addresses topics such as links between air pollution and lower birth weight and lower fertility, specifically under the learning outcome of ‘To understand that outside influences can damage both the environment and health , using the example of air pollution’ There was also a talk (‘Greener practice’) during the women’s health block in third year that briefly touched on this, however this is not part of the core curriculum.</p>	

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.
<p><i>Score explanation:</i> Within the future medics weeks, the lecture on One Health looks at the effects of mining and slag heaps on health and other topical issues within Wales.</p>	

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.
<i>Score explanation:</i> There are lecture series on the population of Wales and health inequalities faced within the local population but not on indigenous people and their cultures and customs.	

1.14. Does your <u>medical school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of colour, children, homeless populations, Indigenous populations, and older adults?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<i>Score explanation:</i> While not covered in detail, this topic was briefly covered in lectures on Health Inequalities and Greener health during Future of the Medics weeks while talking about access to care, quality and experience of care and wider determinants of health and how these are significantly worse for those living in rural areas vs urban, those with specific characteristics (eg. sex, ethnicity, disability) and socially excluded groups, under the learning outcome of ‘To evaluate the role of ecological, environmental and occupational hazards in ill-health and discuss ways to mitigate their effects.’ It was also covered under the learning objective of ‘Describe factors affecting maternal health in the developing world’ during International Health week in second year.	

Curriculum: Sustainability

1.15. Does your <u>medical school</u> curriculum address the environmental and health co-benefits of a plant-based diet?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<i>Score explanation:</i> This is addressed comprehensively in a first year public health lecture falling under the following learning objectives: To recognise sociological factors that contribute to illness, the course of disease, and the success of treatment and apply these to patients including issues relating to health inequalities and social determinants of health; To recognise environmental, social, psychological, behavioural, and cultural factors influencing a patients presentation and identify options to address these including advocacy for those who are disempowered.	

ICM sessions in second and third year also cover this, as well as multiple lectures during the future medics weeks in fourth year- One Health, Nutrition, and Lifestyle Medicine under the learning outcomes of ‘Understand that lifestyle medicine is likely to be one of the solutions to some of the major challenges facing healthcare, including our need to reach carbon net zero’ and ‘Understand how our own diet is likely to impact on health.’

1.16. Does your medical school 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: This is covered in conversations during ICM, placements and Learning Opportunities in a Clinical Setting (LOCS). It is also covered in the public health lecture in first year, going into detail covered in the Education for Sustainable Healthcare [document](#), and the various ways different healthcare specialties can minimise their impact on the carbon footprint. It is also mentioned in the Greener Healthcare lecture in future medics weeks falling under the learning outcomes ‘To understand that Healthcare has adverse environmental effects, most pressingly on Global Warming’ and ‘To understand actions which can reduce the impact of Healthcare on the environment.’

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

2	The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment
2	The environmental impact of pharmaceuticals and over-prescribing as a cause of climate health harm. Alternatively teaching on deprescribing where possible and its environmental and health co-benefits would fulfil this metric.
1	The health and environmental co-benefits of non-pharmaceutical management of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes. This is commonly known as social prescribing in the UK.
1	Environmental impact of surgical healthcare on planetary health and the climate crisis, and how can it be mitigated
1	The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anaesthesia’s environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.

1	Waste production within healthcare clinics and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)
	<i>Score explanation:</i> Many of these topics are covered within the future medics weeks in 4th year, in lectures such as Pharmacogenomics, Health Inequalities, Big Pharma, One Health and Greener Healthcare. They are also covered within ICM lectures in first, second and third year. There is a huge emphasis on the importance of avoiding polypharmacy due to its health and environmental impacts, and is addressed repeatedly throughout the course. Swansea University Medical School aims to include teaching about the environmental impact of how we deliver healthcare. The above metrics fall under the following themes specifically: General health benefit of acting differently in regards to climate change, Global Warming caused by healthcare, and Cutting the carbon footprint of healthcare. The topic of different inhalers and their varying impacts on the environment is also extensively covered across all four years.

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
<i>Score explanation:</i> Although students are taught how to take various types of histories and explain health related concepts, there are no specific strategies introduces in regards to the health effects of climate change.	

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.
<i>Score explanation:</i> This is covered with regards to asking about exposure during certain history taking stations. Due to the area having a big steel mining and mining population, questions are asked about sound exposure, chemicals etc and for how long. This is covered both in lectures and in ICM.	

Curriculum: Administrative Support for Planetary Health

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

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

Score explanation: Due to the intensive nature of the four year GEM curriculum and significant improvements made in the last year in regards to ESH, there are only minor improvements being considered this year. An example of this is that all week leads have been contacted by the medical school to incorporate ESH/planetary health into their lectures for first and second years.

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

6	Planetary health/ESH topics are well integrated into the core medical school curriculum.
4	Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum.
2	Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s) .
0	There is minimal/no education for sustainable healthcare.

Score explanation: The medical school has made a lot of progress in the last couple of years and ensured better integration of ESH/planetary health topics throughout the four years of the GEM curriculum. These are now covered to a significant extent in all years.

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

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

Score explanation: Dr Rachel Brown is the appointed sustainability lead for the medical school and actively liaises with staff and students on implementing better sustainable strategies regarding healthcare into the curriculum.

Section Total (54 out of 72)	75.00%
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Back to Summary Page [here](#)

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

Interdisciplinary Research

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

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <u>medical school</u>?	
3	Yes, there are faculty members at the medical school who have a primary research focus in planetary health or healthcare sustainability.
2	Yes, there are individual faculty members at the medical school who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.
1	There are planetary health and/or healthcare sustainability researchers at the institution , but none associated with the medical school.
0	No, there are no planetary health and/or healthcare sustainability researchers at the institution or medical school at this time.
<p><i>Score explanation:</i> Swansea Medical school have a National Environmental Research Council (NERC)/Met Office grant on air pollution and health and lead a UK wide consortium on this in relation to pregnancy as part of the UK wide Clean Air programme.</p> <p>The medical school has also just started a Wellcome Trust-supported project looking at the intersection of heat and deprivation on health – again the focus is pregnancy.</p> <p>There are other also pockets of activity mostly related to air pollution and nano/microplastics and health.</p>	

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

Score explanation: The medical school is part of a consortium that has been invited to the second stage of a UKRI call on the health co-benefits of transition to net zero but that will only start if we get the funding.

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: While there is no process at present, the medical school is keen to work on building a more open method of communication for community members give input/participate in relevant research.

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

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

Score explanation: The university website contains a comprehensive [sustainability page](#) that has information on many university ambitions and projects that are underway to reduce the University's carbon footprint and increase biodiversity. However, there is no explicit information explaining how environmental degradation and climate change are linked to health and it would be good if this could be added. A score of 1 has still been awarded given the website is so comprehensive in other ways and there is a website (unlike the score 0 answer).

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.
<i>Score explanation:</i> There have been discussions regarding potentially collaborating with other universities but no such conference has been hosted as of yet.	

2.6. Is your <u>medical school</u> a member of a national or international planetary health or ESH organisation?	
1	Yes, the medical school is a member of a national or international planetary health or ESH organisation
0	No, the medical school is not a member of such an organisation
<i>Score explanation:</i> Currently the medical school is not a member of such an organisation.	

Section Total (7 out of 17)	41.18%
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Back to Summary Page [here](#)

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

Community Outreach and Advocacy

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

3.1. Does your medical school partner with community organisations to promote planetary and environmental health?	
3	Yes, the medical school meaningfully partners with multiple community organisations to promote planetary and environmental health.
2	Yes, the medical school meaningfully partners with one community organisation to promote planetary and environmental health.
1	The institution partners with community organisations, but the medical school is not part of that partnership.
0	No, there is no such meaningful community partnership.
<i>Score explanation:</i> There is no meaningful partnership as of yet, however there are a couple of individuals who are part of community organisations that promote planetary and environmental health.	

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.
<i>Score explanation:</i> No such courses or events have been offered.	

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.
<i>Score explanation:</i> Students occasionally get notified of events/research updates related to planetary health and sustainable healthcare via email communication.	

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?	
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
<i>Score explanation:</i> There was a lecture specifically targeted towards doctors in the trust that are involved in student teaching, led by a fellow physician. There was also an educational day for doctors organised by a doctor in the obstetrics and gynaecology department, focussing on planetary health and sustainable healthcare.	

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?	
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.
<i>Score explanation:</i> No there are no such educational materials for patients.	

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?	
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.
<i>Score explanation:</i> Certain specialities in some hospitals have relevant pamphlets that explore the effect of climate change on specific health conditions eg. asthma.	

Section Total (3 out of 14)	21.43%
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Back to Summary Page [here](#)

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

Support for Student-Led Planetary Health Initiatives

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

4.1. Does your <u>medical school</u> or your <u>institution</u> offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the medical school or institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum.
1	The medical school or institution encourages sustainability QI projects (to fulfil clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate.
0	No, neither the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.
<p><i>Score explanation:</i> The medical school encourages students to research/be involved in projects in areas they are interested in (such as sustainability), with faculty and Swansea Action for Sustainable Healthcare offering support and research opportunities. However, these are entirely optional and there is no funding available.</p>	

4.2. Does your <u>institution</u> offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
2	The institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these require student initiative to seek these out and carry them out in their spare time.
0	There are no opportunities for students to engage in planetary health/sustainable healthcare research.
<p><i>Score explanation:</i> Medical students can arrange to do research within planetary health in their own time or as part of elective clinical or research opportunities offered throughout the course, but there is no specific program/fellowship.</p>	

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.	
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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.
<i>Score explanation:</i> There is no medical-school specific webpage for this criteria.	

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?	
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.
<i>Score explanation:</i> Swansea Action for Sustainable Healthcare aims to reduce the environmental impact of healthcare practice and education, and is supported by faculty members Dr Thomas and Dr Brown.	

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?	
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.
<i>Score explanation:</i> There is no student representative with this specific role.	

4.6. In the past year, has the <u>institution</u> had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)	
1	Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.

1	Panels, speaker series, or similar events related to planetary health that have students as an intended audience.
1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.
1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)
<p><i>Score explanation:</i> The university hosted a Go Green week for students that included 21 various sustainable events, including two Green Fairs, workshops, and exhibitions. This was thanks to a collaboration between the university's sustainability team, community experts and local businesses. There was also a talk on climate change and Wales' part in tackling it by a local MP.</p>	

Section Total (7 out of 15)	46.67%
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Back to Summary Page [here](#)

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

Campus Sustainability

Section Overview: This section evaluates the support and engagement in sustainability initiatives by the medical school and/or institution. The healthcare industry is a major contributor to greenhouse gas emissions as well as pollution that harms local, regional, and global ecosystems. While healthcare is, by nature, a resource-intensive endeavour, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinising every aspect of how our systems operate, from where we source our energy, to how we build our infrastructure, to what companies we invest in. Our medical schools, clinics, and hospitals must set the standard for sustainable practices, and show other sectors what is possible when it comes to minimising environmental impact.

5.1. Does your <u>medical school</u> and/or <u>institution</u> have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff , but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p><i>Score explanation:</i> Yes, within the corporate responsibility team there are full time sustainability roles university wide. Dr Rachel Brown is also a full time sustainability lead who liaises with students and staff to ensure continuous involvement and progression of planetary health into the curriculum and clinical activities.</p>	

5.2. How ambitious is your <u>institution/medical school</u> plan to reduce its own carbon footprint?	
5	The institution/medical school has a written and approved plan to achieve carbon neutrality by 2030
3	The institution/medical school has a written and approved plan to achieve carbon neutrality by 2040
1	The institution/medical school has a stated goal of carbon neutrality by 2040 but has not created a plan to reach that goal or the plan is inadequate
0	The institution/medical school does not meet any of the requirements listed above
<p><i>Score explanation:</i> The university has a plan called ‘Sustainability and Climate Emergency Strategy’ and is committed to achieving zero scope 1 and 2 carbon emissions and reducing scope 3 by 50% by 2035.</p>	

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

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

Score explanation: The university pays a renewable tariff, in addition to having an onsite solar generator and a ground source heat pump.

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: ILS1, 2 and data science are all BREEAM Excellent or above and other buildings retrofitted with lower carbon [technologies](#).

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

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

Score explanation: The medical school strongly encourages carpooling. They also recommend using buses with easy transport links to the hospitals. More information can be found here:

<https://www.swansea.ac.uk/sustainability/travel/>

The university is also gold 'Cycle Friendly Employer' and has set-up the Santander bike scheme for Swansea.

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: There are recycling centres across campus and food bins in some food prep areas and common rooms. The university carries out anaerobic digestion for all food waste generated on campus.

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 adequate sustainability requirements for food and beverages, including meat-free days or no red-meat, and is engaged in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are insufficient or optional . The medical school is engaged in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are insufficient or optional . The medical school is not engaged in efforts to increase food and beverage sustainability.
0	There are no sustainability guidelines for food and beverages.

Score explanation: Whilst working closely with catering to provide more sustainable alternatives, it isn't well publicised and needs to be requested.

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.
<i>Score explanation:</i> Sustainability requirements in major tenders is not optional and also already integrated through main procurement frameworks, LEAF, Sustainable Procurement policy and guidance like the top tips for Lab and Office procurement.	

5.9. Are there sustainability requirements or guidelines for events hosted at the <u>medical school</u>?	
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.
<i>Score explanation:</i> We have guidance and support available for hosting a sustainable event, but this is down to the medical school to implement case by case.	

5.10. Does your <u>medical school</u> 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.
<i>Score explanation:</i> The CR Plus team inspect labs for sustainability (waste, decommissioning old equipment etc.) Sustainable labs website, LEAF (used by ILS1 accelerate lab, 2nd floor, 5th floor, NMSF and diabetes, 4th floor, CNH and teaching labs joining in 2021) and SWell (staff engagement app), SUMS Safety and Sustainability Network.	

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

0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.
<i>Score explanation:</i> The University entirely divested fossil fuels in 2019 and 100% of energy is backed by renewable energy. More information about the university's ethical investment policy and procurement can be found here .	

Section Total (28 out of 32)	87.50%
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Back to Summary Page [here](#)

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

Grading

Section Overview

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

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

Planetary Health Grades for the Swansea School of Medicine

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(54/72) \times 100 = 75.00\%$	B+
Interdisciplinary Research (17.5%)	$(7/17) \times 100 = 41.18\%$	C-

Community Outreach and Advocacy (17.5%)	$(3/14) \times 100 = 21.43\%$	D-
Support for Student-led Planetary Health Initiatives (17.5%)	$(7/15) \times 100 = 46.67\%$	C
Campus Sustainability (17.5%)	$(28/32) \times 100 = 87.5\%$	A
Institutional Grade	56.94%	C+

Report Card Trends

Section Overview

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

Planetary Health Report Card Trends for Swansea University

