



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



2023-2024 Contributing Team:

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Summary of Findings

Overall	C-
<u>Curriculum</u>	D +
<ul style="list-style-type: none"> • While Cardiff University has begun to incorporate Education for Sustainable Healthcare (ESH) and planetary health into the curriculum, this is relatively limited and often confined to solitary lectures or elective work. Cardiff Medical School is in the process of improving its ESH curriculum, but this is broadly restricted to including more planetary health opportunities during Student Selected Components (SSCs). • Recommendations: There should be dedicated staff members to incorporate ESH/planetary health longitudinally into the curriculum. Students during case-based learning should be prompted to discuss the health effects of the climate emergency, as they already do for psychosocial issues. 	
<u>Interdisciplinary Research</u>	B-
<ul style="list-style-type: none"> • While there is a variety of ongoing research around sustainable healthcare, there is still limited collaboration between Cardiff Medical School and interdisciplinary fields. Many points scored in this section were from work done outside of the Medical School, demonstrating that the Medical School must work to foster stronger collaboration with allied disciplines. • Recommendations: We propose a centralised database of opportunities for students to participate in planetary health research. There should be better collaborations between the Planetary Health University Research Network and Medical School for events, conferences and interdisciplinary elective opportunities. 	
<u>Community Outreach and Advocacy</u>	D -
<ul style="list-style-type: none"> • Despite a wide range of student-led volunteer programmes, these generally have poor student engagement, likely due to lack of publicity. Across the wider institution of Cardiff University, there are some promising community outreach programmes, but Cardiff Medical School does not generally have an active role in these. The University Health Board (UHB) offers various programmes promoting sustainable healthcare. • Recommendations: We recommend the Medical School work with the wider Cardiff University institution to promote the various sustainability volunteer programmes. The Medical School should look to establish its own specific sustainable healthcare specific outreach programme. During SSCs the Medical School should partner with the UHB to develop educational resources for patients. 	
<u>Support for Student-Led Initiatives</u>	C
<ul style="list-style-type: none"> • The majority of planetary health teaching is integrated as part of the SSCs across Year 1, 2 and 3. The importance of Sustainable Quality Improvement (SusQI) is covered in Years 3 and 5, but there is no functioning sustainable healthcare society or website on how to get involved with planetary health activities. • Recommendations: We recommend a compulsory sustainability section within the Year 5 QI project and a dedicated faculty member to promote planetary health opportunities across the course. 	
<u>Campus Sustainability</u>	C+
<ul style="list-style-type: none"> • Cardiff University has a dedicated Carbon Net Zero team and has been supposedly divested from fossil fuels since 2019. Environmentally-friendly transportation options are available but underutilised. Guidelines for improving the sustainability of supply procurement appear unclear. • Recommendations: We suggest sustainable travel initiatives should be better promoted, especially for those students on clinical placements. Every university laboratory should engage with the Laboratory Efficiency Assessment Framework. 	

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></p> <ul style="list-style-type: none"> Year 1 medical students must undertake a compulsory literature review project. There are multiple projects offered on the topic of planetary health and/or sustainable healthcare. Indeed, the project titled 'Sustainable Healthcare' invites students to 'explore the interaction between climate and health' with the objective to increase their 'understanding of the sustainability aspects of healthcare.' The project titled 'Air pollution and health: Clean air for all?' encourages students to learn about air pollution as a public health emergency. In Year 2 the SSC project 'Introduction to Sustainable Healthcare' takes place over two separate one-week periods, available to be undertaken by 24 students per week, culminating in a presentation and reflection piece. In Year 3 and 4, there is scope to undertake a 6-week project for 2 students per year group, based on Sustainable Healthcare such as 'student attitudes to transport' or 'the incorporation of Sustainable Development Goals into MBChB'. There is also the possibility for students to pursue their own personal interests within sustainable healthcare. For the Year 5 elective, students can organise a sustainable based project on their own initiative. There is also a compulsory quality improvement (QI) project that must be undertaken, with a small section of the introductory plenary encouraging and giving examples of sustainable QI projects. 	

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></p> <ul style="list-style-type: none"> ● In a Year 1 lecture on 'Introduction to Sustainable Healthcare', mention is made of excess deaths as a result of heatwaves as well as subsequent environmental consequences which impact health, e.g. wildfires and drought. ● In Year 2, the lecture titled 'A Brief Introduction to Climate Change and Sustainable Healthcare' extensively covers links between rising of Earth's temperature, the temperature targets, the consequences of rising temperatures and the varying effects on the health of populations worldwide. ● Also in Year 2, rising global temperatures and the risk to health are discussed during their case based learning (CBL) in the case surrounding Diabetes management. However it is within the facilitator guidance only and is not a compulsory discussion point, meaning it could easily be missed as part of already content-heavy teaching sessions. Moreover, there is no related teaching in the plenaries as part of this case. 	

1.3. Does your <u>medical school</u> curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> ● In a Year 1 lecture on 'Introduction to Sustainable Healthcare', students learn about the impact of extreme weather events on health, e.g. in relation to heatwaves, wildfires, drought and floods. ● In Year 2, extreme weather events such as droughts, floods and wildfires and their link to health is covered across 4-5 slides in the lecture titled 'A Brief Introduction to Climate Change and Sustainable Healthcare'. ● The increased incidence of climate change-associated extreme weather events and its effects on health are present very briefly in the Year 2 diabetes case based learning teaching session, however it is not a compulsory discussion point. 	

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:

There are two main lectures based upon infectious disease: 'Global Perspectives of Viral Liver Disease' in Year 1, and 'Epidemiology of Infectious Diseases' in Year 2 alongside Case 9 which is based upon vaccinations in Woman and Child health. Both go in depth surrounding various diseases globally and the populations they most affect. However, there is no exploration into the effect 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.
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 Year 1, as part of their CBL, students learn briefly about how climate change can lead to respiratory manifestations. In Case 2, focusing on Respiratory medicine, students learn to 'relate respiratory function to environmental exposures'. This is done through a combination of lectures, practicals and self-directed learning. Students are also able to undertake a literature review relating to air pollution as a public health emergency ('Air Pollution and Health: Clean Air for All?').
- In Year 3 during a lecture entitled 'Therapeutics of Asthma and COPD', one slide mentions that while the most significant risk factor for COPD is smoking, other environmental exposures (e.g. biomass fuel exposure and air pollution) may also contribute.
- 'A Brief Introduction to Climate Change and Sustainable Health' covers air quality globally and in England specifically over two slides. It explores excess deaths linked to fossil fuel combustion, the case study of the death of Ella Adoo-Kissi-Debrah, and how air quality affects different groups such as children, adults, pregnant people, and the elderly.

1.6. Does your medical school 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></p> <ul style="list-style-type: none"> • In ‘A Brief Introduction to Climate Change and Sustainable Health’ there is a singular bullet point linking air pollution to health - the excess deaths from respiratory and ‘CV’ (cardiovascular) disease. On the same slide is an infographic which depicts how air pollution can lead to increased health risks throughout life, included in the list are mentions of stroke, heart failure and coronary heart failure. • While students are taught about the direct impact of climate change on health and the dangers of increased heat in their 'Introduction to Sustainable Healthcare' lecture in Year 1, they are not taught about the cardiovascular health effects of climate change. • On reflection, we do not feel a singular mention of cardiovascular disease linked to air pollution as part of a wider list can be categorised as covering the topic, there is also no link to increased heat. Moreover, there is no learning objective or mention of the topic in the case based learning specifically dedicated to cardiovascular disease in Year 2. 	

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></p> <ul style="list-style-type: none"> • In Year 1, students are given a lecture on Stress and Disease as part of their Platform for Clinical Sciences module. One slide in this lecture touches upon climate anxiety and its prevalence, especially in younger people. • In another session also in Year 1, students are asked to volunteer for an extracurricular assignment to apply their knowledge on health beliefs and climate change to create an informative leaflet. This academic year, although only two students volunteered, they are hoping to present their work at the upcoming RCPsych conference later this year. • In Year 2, the lecture ‘Communicating Climate Change’ explores how climate change is often a difficult topic to discuss due to the associated anxiety and climate denial. It highlights how feeling overwhelmed about a difficult topic can often lead to defensiveness. However, although this topic is linked, it is not fully explored or related back to mental health or neurophysical effects. • There is no other reference to this topic later in the course. • Although there is one lecture that touches upon this topic, it is mentioned very briefly and the only other opportunity to cover this topic is voluntary. As such, to be scored as ‘briefly covered’ in the curriculum, we feel there is a requirement for it to be discussed in later years, especially considering the relevance to the medical cohort as young adults. 	

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

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

Score explanation:

- In a Year 1 lecture on 'Introduction to Sustainable Healthcare', multiple slides focus on the unequal impacts of climate change across the globe as compared to historical emissions, current emissions and vulnerability to extreme weather events.
- In Year 2 the plenary 'A Brief Introduction to Climate Change and Sustainable Healthcare' discusses the effect of climate change globally, including places of increased rainfall and the Intergovernmental Panel on Climate Change (IPCC)'s summary on the effect of climate change related extreme events on health and premature deaths being mainly projected towards Africa. There are also multiple slides dedicated to demonstrating comparisons of a world map proportional in area to factors such as population, historical emissions, current emissions and finally vulnerability to extreme climate-related events.
- The unequal effect of climate change on global health is also present very briefly in the Year 2 diabetes case based learning teaching session, however it is not a compulsory discussion point.
- This topic is also very briefly touched upon on one slide in the plenary 'Continual Improvement - Sustainable Quality Improvement' in Year 3.

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

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

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

Score explanation:

No evidence was found relating to this metric in any of the earlier clinical sciences modules or later on during clinical placements.

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

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

1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> • There is one slide in the Year 2 lecture ‘Wellness Improvement Service’ which looks at public opinion of climate change in Wales by stating that 68% of people in Wales have experienced either flooding in the home or local area, travel disruption or ill health from extreme weather, and that 82% of people are concerned by this. This is not explored in detail however, and is not a learning objective or main topic of the lecture. • Within the talk ‘A Brief Introduction to Climate Change and Sustainable Healthcare’ there are some slides dedicated to discussing rising sea levels. Previously, Cardiff’s vulnerability to flooding was discussed, but this has since been removed as this did not take into account protection from coastal defences. • Although human-caused environmental threats are covered throughout the curriculum, there is no evidence that they are linked back to the University’s surrounding community. 	

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.
<p><i>Score explanation:</i> No evidence was found relating to this metric.</p>	

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.
<p><i>Score explanation:</i> No evidence was found relating to this metric.</p>	

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> <ul style="list-style-type: none">• During an internal Year 2/Year 5 conference held this year, sustainability was a key focus. One lecture focused on the environmental benefits of following a plant-based diet, titled 'Personal and Environmental Benefits of Plant Based Diets'. It addresses the positive benefit of plant based diets through the following lenses: health crisis, climate breakdown & biodiversity loss, antibiotic resistance and pandemic risk, deforestation and social justice. The lecture discusses how a plant-based diet can result not only in significantly less emissions compared to diets that include red meat and dairy, but offer numerous health benefits, including reduced caloric intake, reducing incidence of cardiovascular disease, cancer and type 2 diabetes.• During Year 2 case-based learning, in a case about diabetes, students are encouraged to discuss the social and physiological impact of chronic disease. As part of this, one point in the facilitator handbook discusses the social and environmental cost of diabetes and how switching to a plant-based diet and reducing red meat consumption will lead to not only health benefits but also the reduction of methane emissions. However this is not a compulsory learning objective or talking point, so it cannot be guaranteed that it is being discussed.	

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:

At various points throughout the course the extensive carbon footprint of healthcare is discussed.

- In Year 1, students are introduced to sustainable healthcare and the carbon footprint of healthcare. They also have the opportunity to undertake a literature review relating to sustainable healthcare, e.g. analysing the evidence for the adoption of dry powder inhalers compared to metered dose inhalers.
- Two lectures in Year 3 cover the impact of healthcare and the NHS on the environment and comparing the carbon emissions of different healthcare interventions. Multiple Student Selected Components give the opportunity to learn about the environmental impact of healthcare, e.g. as it relates to Stroke Early Supported Discharge teams or the use of single-use plastics in blood donor clinics etc. Reference is also made to 'Greener Healthcare' in Year 3 GP placements.
- In Year 3, the plenary 'Continual Improvement - Sustainable Quality Improvement' there are four slides detailing the NHS's carbon footprint, the proportion which different systems contribute within the NHS and what the organisation is doing in response.
- Across the different years, students are introduced to the concept of Sustainable Quality Improvement (SusQI). In Year 5, whilst students are required to undertake a QI project, it is not compulsory for them to make it sustainability-based or to incorporate any principles of sustainability.
- We have scored this metric under the terminology 'briefly', although there are multiple contact points where Carbon Footprint is discussed. We feel that despite this, for such a significant topic, the times it is touched upon are mostly brief mentions in wider plenaries, which are not compulsory to attend by students. Or as optional SSCs, and therefore not necessarily engaged with by the whole student cohort.

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)

	<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> • In a Year 1 lecture on 'Introduction to Sustainable Healthcare', students learn about the environmental priorities for the NHS, including reducing the use of strongly potent greenhouse gases for anaesthesia and switching inhalers from metered dose inhalers to dry powder inhalers. They also discuss the benefits of active transport as a means to reduce the risk of diabetes and cardiovascular disease. • In Year 3 there is a 21 slide plenary from a member of staff from the Wellness Improvement service which explores the effect of climate change on health and outlines the importance of holistic approaches when it comes to health. There is emphasis on how lifestyle medicine can be seen as low carbon medicine, and that we should focus on non-pharmacological approaches including sleep, healthy eating, mental wellness etc. • At various points in the course where the carbon footprint in healthcare is covered (e.g. Year 1 and Year 3), reference is made to the fact that the largest proportion of carbon emissions for the NHS is from procurement, the vast majority of which is driven by drugs and pharmaceuticals. In these sessions, it is highlighted that deprescribing will allow for drastic reductions in drug wastage and resultant carbon emissions. • In Year 3, students receive a lecture on Sustainable Quality Improvement which is part of a week exploring Evidence-Based Medicine. The plenary focuses on the environmental impact of healthcare and the principles of sustainable healthcare. They are also introduced to the concept of 'value' in health and the 'triple bottom line' and how these relate to reducing unnecessary and potentially harmful healthcare interventions, e.g. limiting cannulation where it is not clinically necessary. The same lecture compares the carbon emissions of different interventions, especially in relation to anaesthetic gases like desflurane, operating theatres and inhalers. • In Year 3 the lecture 'Asthma, COPD and Therapeutics' has a slide dedicated to explaining 'The British Thoracic Society: The Environment and Lung Health 2020' recommendations regarding inhaler use, plus a slide which highlights Dry Powder inhalers as having the lowest carbon footprint.
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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
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> • During the Year 2/Year 5 internal conference, one session was titled 'Communicating Climate Change'. While it did not offer strategies for engaging in conversations with patients around climate change, it offered different strategies for discussing climate change. Topics included why climate change is often difficult to discuss, using direct language and empowering people to take action. • No evidence was found during communication skills sessions regarding climate change. 	

1.19. In training for patient encounters, does your medical school's curriculum introduce strategies for taking an environmental history or exposure history?

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

Score explanation:

Although students are given teaching on navigating sensitive consultations and developing communication skills (e.g. regarding abuse, LGBTQIA+ healthcare or handling complaints), this does not yet extend to environmental/exposure histories.

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:

- While the Medical School is making concerted efforts to incorporate ESH and planetary health into the curriculum, these changes have only been on a smaller scale as of yet. When speaking to staff responsible for incorporating ESH into the curriculum they discussed how the curriculum is already very full, with little scope to increase the content delivered to students.
- As a result, many of the recent changes to the planetary health curriculum have been in elective parts of the curriculum, most commonly during the Student Selected Components.
- ESH is driven primarily by passionate faculty members and students. Staff members responsible for improving the ESH curriculum have done so voluntarily and in addition to their usual workload.
- As such, although the Medical School has been gradually improving the planetary health curriculum, sustained changes are still needed over the coming years to embed it within the curriculum and to ensure the importance of ESH is appreciated by medical students and future doctors.
- Changes to the curriculum are generally slow to be implemented due to numerous approval and assessment steps. Efforts to improve the planetary health curriculum should be increased urgently and the implementation process streamlined to ensure that ESH is present at each stage of the undergraduate medical curriculum.
- Cardiff Medical School has recently begun a significant whole curriculum review. They are planning to use this as an opportunity to properly integrate and embed ESH into the curriculum. During the review process, they will appoint review groups to assess the current teaching on various topics as well review current medical education literature and incorporate input from stakeholder engagement.

- Promising efforts have been made by the Medical School to improve the ESH curriculum. While the ongoing curriculum review process offers an exciting opportunity to cement planetary health into the curriculum, significant changes are unlikely to be apparent for some time.

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

- Planetary health and sustainable healthcare teaching is mostly condensed to the first three years of the course only. Sustainable healthcare is present in the final two years as part of optional SSCs and electives, but requires students' own initiative.
- In the early years of the curriculum, sustainable healthcare is the main topic of focus in some lectures, however this is only in a select few standalone instances, the majority of which take place on the same sustainability-themed conference day.
- It is also important to note that none of these plenaries, although part of the core curriculum, are not registered and therefore are not viewed as compulsory by students.
- Other mentions of climate change and its relevance to health are in occasional slides in a few standalone lectures.
- There is great scope to integrate ESH in more depth and more widely across the Cardiff Medical School curriculum, especially in the later years. It seems crucial to focus on ensuring planetary health and the effect of climate change on health is at the forefront of students' minds when they are on the cusp of becoming qualified clinicians, not only in their early years of Medical School.

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:

- While there are a number of staff working within the Medical School who are passionate about sustainable healthcare and incorporating ESH into the core curriculum, there is no dedicated member of staff for whom this is part of their formal job description.

- Similarly, although the University Health Board (UHB) employs dedicated Sustainability Fellows who regularly give lectures to medical students, these individuals are not formally employed by the Medical School or University.

Section Total (27 out of 72)

37.50%

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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 <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></p> <ul style="list-style-type: none"> • While there are a number of faculty members who work within the School of Medicine who are undertaking research relating to planetary health or sustainable healthcare, no researchers were identified for whom this is their primary research topic. • Previous related topics relate to the adoption of sustainable operating theatres, improving recycling in the clinical environment and the impact of access to green spaces on mental health. 	

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

- The [Planetary Health Research Network](#) was launched in January 2022 and is an interdisciplinary research network that is focused on furthering the understanding of planetary health.

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 the School of Medicine promotes [Patient and Public Involvement \(PPI\)](#) in research, this generally only applies to individual research studies and funding applications. There is no opportunity for these affected communities to influence the wider research agenda and there do not appear to be any plans for such a process to be developed.

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:

- While the [Planetary Health Research Network](#) does not appear to have a website centralising all its activities, it does offer a regular mailing list.
- The [Green Health Wales](#) website offers a network for connecting individuals and institutions working in sustainable health and care in Wales but is not specific for Cardiff University or the Medical School.

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.
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> • The Planetary Health Research Network holds multiple events each year bringing together individuals from various backgrounds to discuss topics in planetary health. This information was provided by one of the two directors for the Planetary Health Research Network, although no information about the events could be found listed on their website or elsewhere online. • No such events were found that were hosted by Cardiff Medical School itself. 	

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
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> • Cardiff Medical School is a member of the Centre for Sustainable Healthcare Quality Improvement (SusQI) network and is a recognised SusQI Beacon Site. This gives recognition to those institutions who are 'integrating sustainability into quality improvement teaching and training'. • This membership relates only to SusQI and not in the broader sense of ESH. The Medical School is currently in the process of joining the Medical Schools Council ESH organisation. The Medical Schools Council recently published a proposed curriculum for incorporating ESH into medical school curricula across the country. 	

Section Total (11 out of 17)	64.71%
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Are there additional resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Community Outreach and Advocacy

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

3.1. Does your medical school partner with community organisations to promote planetary and environmental health?	
3	Yes, the medical school meaningfully partners with multiple community organisations to promote planetary and environmental health.
2	Yes, the medical school meaningfully partners with one community organisation to promote planetary and environmental health.
1	The institution partners with community organisations, but the medical school is not part of that partnership.
0	No, there is no such meaningful community partnership.
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> Cardiff Medical School is linked to the outreach programme Pharmabees in collaboration with the National Botanic Garden of Wales. This program involves the setting up of bee hives around multiple places on the Cardiff campus including the Medical School. They are further involved in community gardens, creating green spaces in the student area and a wellbeing pollinator garden at Ystrad Mynach Hospital, with plans to expand this to other Health Boards within Wales Pharmabees - Community - Cardiff University . Green Social Prescribing is a project which is sponsored and managed by the Clinical Innovation Accelerator which is linked to Cardiff Medical School. The project aims to build on existing links between local GPs, wellbeing coordinators and Cynon Valley Organic Adventures, creating new opportunities to engage with nature. https://www.cardiff.ac.uk/community/our-local-community-projects/green-social-prescribing-in-the-cynon-valley https://lshubwales.com/support/accelerate-wales/clinical-innovation-accelerator-cia The institution of Cardiff University has various sustainability projects linked with the community (see below) featured on the Students Union website. However from our student experience none of these are well publicised, and many students will not be aware of their existence. This is demonstrated by multiple of the projects searching for lead volunteers. Although there is a lack of publicity and engagement, Cardiff University as an institution does have numerous community partnerships for students to become involved with Waste Not Want Not (cardiffstudents.com) Benthyg (cardiffstudents.com) Re:Make Newport (cardiffstudents.com) Open S.P.A.C.E (cardiffstudents.com) Environmental Champions (cardiffstudents.com) 	

Although Pharmabees and Green Social Prescribing are both excellent programs which the Cardiff Medical School is linked with, they are mainly spearheaded and led by staff members from the School of Pharmacy. We don't believe two projects are sufficient to fulfil the criteria of multiple partnerships with community organisations. Moreover, although these projects aim to encourage health with green spaces, more community outreach focused specifically on sustainability and planetary health are needed.

3.2. Does your medical school offer community-facing courses or events regarding planetary health?

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

Score explanation:

- There is a public lecture series from the School of Earth and Environmental Sciences called 'Sustainability - what next?' on the institution's webpage. However there are currently no future events planned, and no evidence of any past events. [Series - Community - Cardiff University](#)
- [Science in Health - School of Medicine - Cardiff University](#) is a page on the Cardiff Medical School's website which includes a public lecture series. These are publicly available to watch live and a recording thereafter. One of the talks was titled 'Let's talk cultured meat: reflections on the socio-politics of growing meat in vats'. However there is no particular focus on sustainability, and there are no talks focused on planetary or environmental health available. Therefore this is not viewed as a meaningful planetary health event.
- There is no clear evidence of Cardiff Medical School offering any community-facing courses regarding planetary health.

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

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

Score explanation:

Except an expert introducing Sustainability in Healthcare as a new society in the C21 student newsletter in 2021. There are no regular communications regarding planetary health or sustainable healthcare within Cardiff Medical School.

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

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

Score explanation:

- There are three e-learning modules relating to a net zero NHS, SusQI, and climate change on the training platform for staff in Cardiff and Vale University Health Board (CAVUHB), however these courses are not mandatory, and it is unclear how much they are promoted to individuals.
- Although not mandated, the UHB's Sustainability Improvement Manager facilitates a talk on promoting sustainability at new staff induction sessions.
- The sustainability manager for the health board organises monthly one hour meetings for the CAVUHB Green Group to discuss projects and have talks on the topic of sustainability. There is also a virtual Green Health Wales Conference which takes place annually.
- Previously there was an opportunity from Health and Improvement Wales to undertake a course to become a Climate Smart Champion. [We're recruiting NHS staff to be Climate Smart Champions - HEIW](#). It was open to all Wales NHS staff members to apply to and includes, self study, workshops and the opportunity to take part in projects and 'sustainable health cafes'. Cardiff University was also affiliated with this scheme.
- Its successor is yet to be announced, instead a 'climate smart community' is about to launch, which is a network managed by HEIW.
- There is a HEIW Sustainable Healthcare day which is run as part of the general curriculum for ST1-ST8, there is an aim to have this also included in foundation training teaching. [Generic Curriculum - HEIW \(nhs.wales\)](#)
- Embedding teaching regarding SusQI is also ongoing: a QI e-learning resource is currently being developed by a trainee for HEIW and should launch on HEIW online e-learning platform, Y Ty Dysgu, later this year all being well.

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.
<p><i>Score explanation:</i> There are currently no online resources of this type for patients, and relevant staff members are not aware of any widely distributed resources existing for patients within the University Hospital of Wales.</p>	

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.
<p><i>Score explanation:</i> There are currently no online resources of this type for patients, and relevant staff members are not aware of any widely distributed resources existing for patients within the University Hospital of Wales.</p>	

Section Total (3 out of 14)	21.43%
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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 <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></p> <ul style="list-style-type: none"> SusQI methodology is promoted in Year 3 as part of an evidence based medicine week. There is a lecture titled ‘Sustainable Healthcare and Sustainable Quality Improvement (SusQI)’ which teaches in depth the format and purpose of a sustainable QI project, including an example project from a past student. However there is no expectation to complete a QI project within Year 3. In the Year 5 of the course, as part of the core curriculum, there is a summative requirement to complete a QI project. During the workshop to prepare students for this there is teaching about how to complete a sustainable QI project, and some examples are given. However doing a sustainable type QI project is not compulsory, there is also no available funding. 	

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></p> <ul style="list-style-type: none"> There are opportunities for medical students to perform research related to planetary health topics throughout Medical School in the form of a compulsory SSCs, and an elective in final year. 	

- Year 1 medical students must undertake a compulsory literature review project, there are multiple projects offered on the topic planetary health and/or sustainable healthcare.
- Indeed, the project titled ‘Sustainable Healthcare’ invites students to ‘explore the interaction between climate and health’ with the objective to increase their ‘understanding of the sustainability aspects of healthcare.’ The project titled ‘Air pollution and health: Clean air for all?’ encourages students to learn about air pollution as a public health emergency.
- In Year 2 the SSC project ‘Introduction to Sustainable Healthcare’ takes place over two separate one week periods, available to be undertaken by 24 students per week, culminating in a presentation and reflection piece.
- In Year 3 and 4 there is scope to undertake a 6 week project for 2 students per year group, based on Sustainable Healthcare such as ‘student attitudes to transport’ or ‘the incorporation of Sustainable Development Goals into MBBCh’, there is also the possibility for students to pursue their own personal interests within sustainable healthcare.
- For the Year 5 elective students can organise a sustainable based project on their own initiative.

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:

- [Impact at the School of Medicine - School of Medicine - Cardiff University](#)
- On the Cardiff Medical School website there is a page dedicated to research that has been or is being undertaken, and the impact this is having on the wider world and communities. If you browse this research there are two projects dedicated to sustainability ‘Smarter recycling to cut hospital waste’ and ‘Experts design and build sustainable operating theatres’. However both projects took place in 2021 and there are no mentors or staff contacts readily available, only an email address for the program (accelerate@cardiff.ac.uk) who ran the projects, which is a collaboration of ‘clinicians, industry, academia and third sector’.
- There is no separate section for sustainability on the Cardiff Medical Website or any current projects listed for students to become involved with.
 - [Smarter recycling to cut hospital waste - School of Medicine - Cardiff University](#)
 - [Experts design and build sustainable operating theatres - School of Medicine - Cardiff University](#)
- There is however a webpage for Cardiff University as an institution and its sustainability research and initiatives. [Sustainability - About - Cardiff University](#)

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.
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> • The Sustainability in Healthcare society ‘is a newly formed society looking to raise awareness around everyday environmental issues we encounter in the field of healthcare, and promote ways in which we could develop more sustainable practice.’ • However it has not been active in 2023, and does not have any significant faculty member support. • Sustainability in Healthcare Society (cardiffstudents.com) • Facebook 	

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.
<p><i>Score explanation:</i> Not seen within Cardiff Medical School.</p>	

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)

Score explanation:

- Cardiff University has a student run volunteering programme ‘Global Gardens’ where they ‘cultivate an organic garden’ [Global Gardens Project \(cardiffstudents.com\)](https://cardiffstudents.com/global-gardens-tyfu-i-ddsygu/) [Global Gardens | Tyfu i Ddsygu | Growing to learn \(cardiff.ac.uk\)](https://cardiff.ac.uk/global-gardens-tyfu-i-ddsygu/)
There is also a part time course run by the university focusing on teaching how to plan, grow and maintain a fruit garden. However it is unclear when this was last active and if it will be run in the future. [The Fruit Garden - Part-time courses for adults - Cardiff University](https://cardiff.ac.uk/the-fruit-garden-part-time-courses-for-adults/)
- There are six volunteering programmes in the environment section of the Cardiff Students Union website [Projects List \(cardiffstudents.com\)](https://cardiffstudents.com/projects-list/). These include programmes like ‘Clean up Cardiff’ and ‘The Cardiff Mobile project’ which is ‘sponsored by the Welsh Government and Cardiff Council to help create a Circular Economy and reduce waste.’
- There is a [Wilderness and Expedition Medical society](https://cardiff.ac.uk/wilderness-and-expedition-medical-society/), who run multiple events and residential throughout the year which give students the opportunity to visit and stay in mountainous areas of rural Wales.
- As part of the wider university, there are outings as part of the Give it a Go program such as a three day residential to Eryri/Snowdonia to hike. [North Wales & Eryri/Snowdonia \(cardiffstudents.com\)](https://cardiffstudents.com/north-wales-eryri-snowdonia/)
- In June 2023 there was a Plastics For Future Generations: Panel Discussion & Research Talk. It is unclear whether students were encouraged to attend, but through their website students are able to request access to the event recording and watch the event. [Environment and Plastics Research Network - Research - Cardiff University](https://cardiff.ac.uk/environment-and-plastics-research-network-research/)
- The Planetary Health University Research Network also ran four events last year <https://www.cardiff.ac.uk/research/explore/research-networks/planetary-health-research-network/>

Section Total (7 out of 15)

46.67%

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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 <u>medical school</u> and/or <u>institution</u> have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff , but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> • Cardiff University has a dedicated Carbon Net Zero team with three full-time staff members, as well as numerous other individuals who contribute to sustainability work as part of their other responsibilities. • The CAVUHB (to which Cardiff Medical School is attached) has a dedicated Environmental Sustainability team who are outlined in this sustainability action plan. • However, within Cardiff Medical School itself, there is no dedicated Office of Sustainability. 	

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></p>	

- Cardiff University has a stated goal of net carbon neutrality by 2030. It has a published [Environmental Sustainability Action Plan](#) which outlines its plan to decarbonise, in line with Welsh Government proposals for other public sector bodies.
- In addition, Cardiff School of Medicine published its own Environmental Sustainability Objectives Action Plan in 2021. It outlines plans to integrate sustainability goals into the operations of the School of Medicine, including regular Environmental Audits, recruitment of a network of Environmental Representatives, refurbishment projects and enhancing biodiversity. This does not appear to be publicly available.
- However, the University is only aiming to be carbon net zero for Scope 1 and 2 emissions by 2030, not Scope 3 emissions which is often the largest category and most difficult to address. To achieve net neutrality by 2030 will likely require drastic reductions in Scope 3 emissions, plans for which are only outlined briefly.

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

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

Score explanation:

While numerous buildings on the general Cardiff University campus are powered by renewable solar electricity, currently no sources were identified about whether Cardiff Medical School buildings utilise renewable energy.

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:

- The [Environmental Sustainability Enabling Strategy](#) was published in 2022.
- It states that all future buildings should be zero carbon as well as plans for retrofitting, including metering and monitoring infrastructure, energy-efficient lighting using LEDs and automatic lights and envelope thermal insulation across campus.

- No further evidence was found for the proportion of buildings already successfully retrofitted and what goals had been agreed upon.

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:

There are numerous initiatives promoted by the university to encourage sustainable travel:

- The [Cardiff University Travel Plan](#) details how the institution runs a Liftshare Scheme which encourages not only car-sharing but also share cycle and walking routes.
- The university also pays staff cyclists an allowance for business mileage and also provides a [salary sacrifice scheme](#) for staff to purchase new bicycles.
- Cardiff University is part of the [Better Points](#) scheme to earn points for engaging in active travel which can be redeemed for rewards or donated to charity.
- There is a [free shuttle bus](#) running from the two Health Board sites (from University Hospital Wales to University Hospital Llandough)
- However, uptake is generally poor across these schemes and the majority of these initiatives are spearheaded by the University or the UHB, not Cardiff Medical School. Travel provision to clinical placements does not incorporate sustainability principles. In particular, the Liftshare scheme would be a valuable programme for medical students on starting their clinical placements but this is not adequately signposted to students to make full use of it.

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:

Recycling bins are common inside and out of Cardiff Medical School's buildings. Compost bins are available at some university-run cafes but are not present in most areas.

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:

- While Cardiff School of Medicine does not have its own sustainable food policies, it is required to adhere to the policies published by the Cardiff University Catering Services.
- Cardiff University published a [Sustainable Food Policy](#) which outlines efforts to reduce the volume of beef procured, reflect seasonality and local procurement as well as encouraging suppliers to use minimal packaging and offer 90% recyclable, compostable and biodegradable disposables. There were no figures identified that allowed assessment of performance. A more recent policy has been drawn up but is not yet publicly available.
- The university has also published a Sustainable Food Action Plan which states different environmental, procurement and societal objectives to improve the sustainability of nutrition provided by university catering services. These include sourcing British (and ideally Welsh) produce, reducing food waste and limiting the use of single-use packaging. They are also aiming to reduce meat and dairy options by 55% by December 2024.
- While these policies and guidelines set out promising steps to improve the sustainability of food and drink provision by university catering services, we believe the university could be more ambitious. Initiatives such as introducing meat-free days, reflecting seasonality of produce, removing red meat options from its menus and 'bring your own reusable container/cup' schemes could all further improve the university's commitment to sustainability.

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:

- For all procurement decisions over £25,000, Cardiff University stipulates that companies wishing to supply goods and services must demonstrate '[commitment to environmental, social and economic issues](#)'.
- Their [Sustainable Procurement Policy Statement](#) outlines how more environmentally conscious procurement decisions can be made, e.g. by using the Welsh Assembly's [Sustainable Procurement Assessment Framework \(SPAF\)](#).
- No further guidelines were identified, nor was there evidence that Cardiff Medical School is attempting to promote more sustainable procurement decisions.

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:

Aside from anecdotal experiences of events using reusable crockery and limiting the use of disposable items (e.g. bottled water), no guidelines were found that applied to Cardiff Medical School or wider institution events.

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:

- Laboratories can take part in [LEAF \(Laboratory Efficiency Assessment Framework\)](#) which requires participants to complete a workbook to achieve Bronze, Silver and Gold accreditation sequentially which is run university-wide. Each level has a number of actions for lab users to carry out in order to save various resources including plastics, water and energy.
- These are not specific to Cardiff Medical School and no evidence was found relating to specific laboratories used by the medical school. .

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.
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3	The institution is entirely divested from fossil fuels.
2	The institution has partially divested from fossil fuel companies or has made a commitment to fully divest , but currently still has fossil fuel investments.
1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organised advocacy for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.
<p><i>Score explanation:</i> Cardiff University announced that it had divested from fossil fuels in 2019 but no information was found that suggested whether these divested funds would be diverted to sustainable alternatives.</p>	

Section Total (18 out of 32)	56.25%
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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 Cardiff School of Medicine

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(27/72) \times 100 = 37.50\%$	D+
Interdisciplinary Research (17.5%)	$(11/17) \times 100 = 64.71\%$	B-
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%)	$(18/32) \times 100 = 56.25\%$	C+
Institutional Grade	$(37.5 \times 0.3 + 64.71 \times 0.175 + 21.43 \times 0.175 + 46.67 \times 0.175 + 56.25 \times 0.175) = 44.34\%$	C-

Report Card Trends

Section Overview

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

Planetary Health Report Card Trends for the Cardiff School of Medicine

