



Planetary Health Report Card (Medicine): *University of Wollongong*



2023-2024 Contributing Team:

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Summary of Findings

Overall	C-
<u>Curriculum</u>	C-
<ul style="list-style-type: none"> The University of Wollongong (UOW) Graduate Medicine program briefly touches on topics related to planetary health and sustainable healthcare, particularly in its discussions on the impacts of climate change, environmental determinants of health, and Indigenous knowledge systems. However, these topics are not comprehensively integrated into the curriculum, and there is a notable lack of explicit discussion on the links between climate change and health disparities, the role of environmental toxins, and the broader implications of planetary health in clinical practice. Recommendations: UOW should enhance its curriculum by explicitly integrating planetary health and sustainable healthcare principles across all years of study. This could include more detailed exploration of the health impacts of climate change, the inclusion of environmental health discussions with patients in clinical skills training, and a stronger emphasis on the co-benefits of sustainable healthcare practices. 	
<u>Interdisciplinary Research</u>	C+
<ul style="list-style-type: none"> The University of Wollongong boasts a strong interdisciplinary research environment with contributions from leading climate experts, particularly through initiatives like the Australian Centre for Health Engagement, Evidence and Values (ACHEEV), and focuses on the nexus of human, animal, and environmental health. Despite this, the medical school's direct involvement in planetary health and healthcare sustainability research appears limited. UOW showcases its commitment through various platforms, including a dedicated environmental governance website and annual sustainability reports, alongside hosting significant symposiums on sustainability and climate change in education. Recommendations: To further strengthen its position in planetary health education, UOW could consider establishing more direct linkages between its medical school and ongoing interdisciplinary research efforts. Additionally, joining networks such as the Planetary Health Alliance and the Global Consortium on Climate and Health Education could enhance its visibility and involvement in global planetary health initiatives. 	
<u>Community Outreach and Advocacy</u>	F-
<ul style="list-style-type: none"> Information was unable to be sourced to adequately assess this metric. 	
<u>Support for Student-Led Initiatives</u>	C
<ul style="list-style-type: none"> The University of Wollongong medical school offers students the opportunity to engage in sustainability efforts and planetary initiatives on a voluntary basis. However, these remain voluntary and lack specific funding and a streamlined method for participation. Recommendation: Expanding access to unique experiences like bush medicine walks and environmental events to all medical students, regardless of their campus or regional hub location. 	
<u>Campus Sustainability</u>	C
<ul style="list-style-type: none"> UOW is actively working toward campus sustainability through its environmental unit and comprehensive plan to achieve carbon neutrality by 2030. Recommendations: While UOW has set a solid foundation for campus-wide sustainability, particularly in transport and energy, there's room for targeted improvements within the medical school, such as implementing recycling programs and increasing the use of renewable energy in medical school buildings. 	

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.
The University of Wollongong (UOW) Graduate Medicine program does not currently include elective courses to engage students in Education for Sustainable Healthcare or Planetary Health. Elective courses in sustainable healthcare or planetary health are entirely student-directed and separate from the medical schools.	

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.
The University of Wollongong's first year content touches upon the impact of extreme heat on health in the lecture 'Introduction to Sustainable Development Goals' and the physiological risks of dehydration from heat exposure in the lecture 'Homeostasis'. In third year, the relationship between health and	

climate change was addressed in the lecture ‘Climate Change and Health’ as well as in a clinical module titled ‘Public Health and Travel’.

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.

The impact of extreme weather events on respiratory health was included as a voluntarily selected learning object for Year 1 students in their ‘Introduction to Medicine’ block (weeks 1 and 2). Additionally, the impact of extreme weather was mentioned in two lectures (Year 1: ‘Introduction to Sustainable Development Goals’, Year 3: ‘Climate Change and Health’) and one clinical module (Year 3: ‘Public Health and Travel Medicine’). One regional hub offered an additional lecture about navigating healthcare in rural areas in the face of climate change that was available to the subset of the cohort on placement in that area.

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.

Patterns of infectious disease were discussed in Year 1 content in regards to regional and socioeconomic variations during the ‘Introduction to Medicine’ block (weeks 7 and 8), but the impact of climate change was not discussed. In Year 3, the lecture ‘Climate Change and Health’ explored how climate change may alter infectious disease patterns. This was again mentioned in the Year 3 clinical module ‘Public Health and Travel Medicine’.

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

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

0	This topic was not covered.
<p>The University of Wollongong Year 1 curriculum includes several lectures that reference the impact of air pollution on respiratory health ('Occupation Influences', 'Epidemiology of Lung Disease', 'Social Determinants of Health - Respiratory Disease'). Though mentioned, these lectures do not explore the connection between climate change and respiratory health in detail. In Year 3, the impact of climate change on respiratory health is addressed in the lecture 'Climate Change and Health' and the clinical module 'Public Health and Travel Medicine'.</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>The cardiovascular impacts of extreme heat were touched upon in the lecture 'Introduction to Sustainable Development Goals' during Year 1. The lecture 'The Stress Response' also discussed how stress can impact cardiovascular health and mentioned natural disasters and temperature extremes as potential causes of stress. These lectures did not explicitly discuss climate change. However, the Year 3 'Climate Change and Health' lecture, as well as clinical module on 'Public Health and Travel Medicine', covers the cardiovascular health effects of climate change, with specific reference to heat waves and rising temperatures.</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>The Year 1 lecture 'The Stress Response' briefly explored how stress can impact mental and neuropsychological health and noted both natural disasters and temperature extremes as potential stressors. Similarly, the lecture 'Incidence and Prevalence' touched on the gastrointestinal-neuropsychological effects of natural disasters, specifically with regards to Vanuatu. In Year 3, both the 'Climate Change and Health' lecture and the clinical module on 'Public Health and Travel Medicine' cover mental health conditions in the context of environmental degradation and climate change, with specific reference to the mental health impact of droughts in rural Australia and the concept of "eco-anxiety".</p>	

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

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

At the University of Wollongong, there was a strong focus on the impact of food security and patient health. It was the subject of several lectures ('Malnutrition', 'Food security in Indigenous Communities') as well as the topic for a mandatory literature review completed by all first year students. The impact between ecosystem health and human health was also explored in Year 1 core content in the lectures 'Burden of Disease' and 'Incidence and Prevalence'.

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

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

The University of Wollongong core curriculum has a large focus on exploring how health outcomes differ in marginalised communities. Many Year 1 lectures described how environmental determinants of health such as food insecurity and air pollution are more pronounced in marginalised communities ('Introduction to Sustainable Development Goals', 'Food security in Indigenous Communities', 'Burden of Disease', 'Epidemiology of Lung Disease', etc.). However, these disparities were not linked to climate change, and making this link explicitly in these lectures would improve the university's planetary health teaching on this topic. The Year 3 lecture 'Climate Change and Health' as well as the clinical module 'Public Health and Travel Medicine' both discuss the impact of climate change on children and remote communities.

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

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

The University of Wollongong Year 1 curriculum devotes lectures in each systems block to discussing health disparities within regional and remote communities, largely focusing on domestic inequities but with reference to global differences as well. However, the unequal regional health impacts of climate change have not been explored. The Year 3 lecture ‘Climate Change and Health’ and clinical module ‘Public Health and Travel Medicine’ briefly touch on the unequal impact of deforestation and land clearing in Australia and New Zealand.

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.

During Year 1, there were two externally delivered lectures (i.e. by a clinician) that touched on the effects of environmental toxins such as pesticides on male fertility. These lectures also had a substantial focus on the effects of smoking and smoke exposure on female fertility and offspring fertility. While there were numerous lectures on chromosomal abnormalities and genetic defects, there was no discussion around the potential impacts of environmental toxins on the pathogenesis/incidence of these conditions. There was a Year 1 module on teratogens which had information regarding the effects of medications on developing foetuses, but had little information as to the impact of environmental toxins.

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.

There appear to be no lectures or resources that we have been able to access that indicate the impacts of environmental threats to the local community, around either the Wollongong or the Shoalhaven campuses of our University.

1.13. To what extent does your medical school emphasise the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?

3	Indigenous knowledge and value systems are integrated throughout the medical school's planetary health education
2	Indigenous knowledge and value systems as essential components of planetary health solutions are included briefly in the core curriculum.
1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in elective coursework.
0	This topic was not covered.
<p>The UOW Graduate Medicine curriculum covers the importance of Indigenous knowledge and value systems during the 'Introduction to Medicine' block in Year 1. There is extensive information provided about the importance of connection to land and Country, as a key domain of the social and emotional wellbeing paradigm, within an Indigenous health context. There are several lectures and clinical modules that emphasise the Indigenous holistic model of health, which highlights that the land and the environment needs to be healthy, in order for people to be healthy too. The content also implied the invaluable knowledge of the Indigenous population regarding the preservation and protection of the natural environment. The university also provides numerous placements during Year 1 with many different Indigenous health services, in which students are able to have exposure to Indigenous knowledge and value systems as critical components of planetary health solutions.</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>As described in section 1.13, there is extensive content provided on the impact of environmental toxins on the health and wellbeing of Indigenous populations. There is some detail referring to factors such as hazardous environments, temperature/climate, overcrowding and food security, and how they contribute to the health inequity between non-Indigenous and Indigenous populations in Australia. However, the curriculum focuses on one marginalised population only.</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.
<p>There were some lectures delivered about the importance of diets to cardiovascular health, during the ‘Cardiovascular’ block in Year 1. While the importance of fibre, and the inclusion of a wide variety of fruit and vegetables in diets was emphasised as being essential at lowering the risk of developing cardiovascular disease, a complete plant-based diet was not endorsed. Rather, the Mediterranean diet was promoted as having the optimal outcomes for cardiovascular health.</p>	

1.16. Does your <u>medical school</u> curriculum address the carbon footprint of healthcare systems?	
3	This topic was explored in depth by the core curriculum
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p>We were unable to find any resources or lecture content which referred to the carbon footprint of healthcare systems specifically.</p>	

1.17. Does your <u>medical school</u> curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each)	
2	The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment
2	The environmental impact of pharmaceuticals and over-prescribing as a cause of climate health harm. Alternatively teaching on deprescribing where possible and its environmental and health co-benefits would fulfil this metric.
1	The health and environmental co-benefits of non-pharmaceutical management of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes. This is commonly known as social prescribing in the UK.
1	Environmental impact of surgical healthcare on planetary health and the climate crisis, and how can it be mitigated
1	The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anaesthesia’s environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	Waste production within healthcare clinics and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)

The dangers of over-prescription and over-investigation as well as the importance of non-pharmacological management was emphasised generally throughout the course content. For example, there were many lectures and clinical modules on the benefits of exercise, a healthy diet and the use of other non-pharmaceutical strategies such as cognitive behavioural therapy for various disorders. However, an explicit link to environmental health and co-benefits was not made.

Curriculum: Clinical Applications

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

2	Yes, there are strategies introduced for having conversations with patients about climate change in the core curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.
0	No, there are not strategies introduced for having conversations with patients about climate change
The university did not provide any content on how to address the health effects of climate change with patients.	

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.
Clinical skills tutorials during Year 1 provide detailed instructions on obtaining a complete environmental and exposure history (specifically, the 'Respiratory History Taking' student guide provided during the 'Cardiovascular' block, which emphasises the importance of ascertaining patient exposure to harmful toxins such as asbestos as it can significantly increase their risk of particular respiratory conditions). Students are encouraged to consider risk factors when taking patient 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.
Our understanding at the time of writing is that the university is in the process of appointing a lead for the theme 'Health and Society'. However, it is uncertain if this will result in any improvements to ESH/planetary health education.	

1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> curriculum?	
6	Planetary health/ESH topics are well integrated into the core medical school curriculum.
4	Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum.
2	Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s) .
0	There is minimal/no education for sustainable healthcare.
There are some planetary health and education for sustainable healthcare topics integrated into the core curriculum across years. The university may benefit from making more explicit links between the topics covered and planetary health.	

1.22. Does your <u>medical school</u> employ a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course?	
1	Yes , the medical school has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare
0	No , the medical school does not have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare.
This metric was unable to be assessed as it is uncertain if the incoming lead for Health and Society within the medical school will be responsible for integrating planetary health and sustainable healthcare into the core curriculum.	

Section Total (32 out of 72)	44.44%
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Interdisciplinary Research

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

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your medical school ?	
3	Yes, there are faculty members at the medical school who have a primary 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>There are a number of leading climate experts that have made and continue to make contributions to research on planetary health at the University of Wollongong, but not within the medical school. While individual faculty members within the school of medicine are conducting research, planetary health and healthcare sustainability is not their primary focus.</p> <p>Health Impacts Research Centre - University of Wollongong – UOW UOW climate change research - University of Wollongong Resilient and Sustainable Food Systems Research Group - University of Wollongong</p>	

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

The University of Wollongong has the Australian Centre for Health Engagement, Evidence and Values (ACHEEV) which undertakes interdisciplinary research that focuses on the health of people, other animals, society and the planet.

[Australian Centre for Health Engagement, Evidence & Values - News & Events](#)

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.

We were unable to source information to adequately assess this metric.

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.

UOW has a website that centralises various campus resources related to health and the environment.

[Our progress - University of Wollongong – UOW](#)

The institution also releases a sustainability report each year that maps ongoing and past research related to health and the environment. This report can be found here:

[UOW Sustainability Report 2022: a journey towards change - University of Wollongong](#)

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.
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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.
UOW has recently hosted a symposium on sustainability and climate change curriculum symposium. 2023: Sustainability and Climate Change in the Curriculum Symposium - University of Wollongong – UOW	

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
We could not find evidence that UOW is a member of a national or international planetary health or ESH organisation.	

Section Total (10 out of 17)	58.83%
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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 <u>medical school</u> 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.
We were unable to source information to adequately assess this metric.	

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

3.3. Does your <u>medical school</u> have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
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.
We were unable to source information to adequately assess this metric.	

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
We were unable to source information to adequately assess this metric.	

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.
We were unable to source information to adequately assess this metric.	

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.
We were unable to source information to adequately assess this metric.	

Section Total (0 out of 14)	0.00%
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Support for Student-Led Planetary Health Initiatives

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

4.1. Does your medical school or your institution offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the medical school or institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum.
1	The medical school or institution encourages sustainability QI projects (to fulfil clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate.
0	No, neither the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.

Students have the opportunity to undertake sustainability QI projects in their Year 3 and 4 research projects. However, this is not compulsory and student funding is not currently available for these projects.

UOW has a sustainable futures committee which students can be involved with, and this has the potential to provide opportunity for students to undertake projects, but these would again have to be sought out by the students independently.

[Sustainable Futures Committee - University of Wollongong – UOW](#)

4.2. Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
2	The institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these require student initiative to seek these out and carry them out in their spare time.
0	There are no opportunities for students to engage in planetary health/sustainable healthcare research.

There is one scholarship currently offered at UOW which would provide opportunities for students to perform research into planetary health and sustainable healthcare, however the student would have to actively seek out this scholarship and compete with students from different degrees. It is also only available to rural and regional students.

[World Transformation Scholarship](#)

There is a research team looking into resilient and sustainable food systems, but this group is not targeted at medical students.

[Resilient and Sustainable Food Systems Research Group - University of Wollongong](#)

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 web page 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.
There is no medical school specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.	

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.
There are students who represent planetary health and sustainability as part of broader community groups, but the medical school does not facilitate a dedicated student organisation.	

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

1	Yes, there is a student representative that serves on a medical school or institutional decision-making council/committee.
0	No, there is no such student representative.

UOW offers a Sustainable Futures Committee which includes an undergraduate and a postgraduate student on the committee. The medical school also has an environmental and sustainability student representative in the official medical student society group.

[Sustainable Futures Committee - University of Wollongong – UOW](#)

4.6. In the past year, has the institution had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)

1	Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.
1	Panels, speaker series, or similar events related to planetary health that have students as an intended audience.
1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.
1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)

Some medical students are able to attend bush medicine walks with local Aboriginal elders, which involves additional education on sustainable agriculture. These opportunities were not provided to all students, and involvement was based on whether the university coordinators at different locations organised these events. Certain regional hubs during Year 3 and 4 offer co-curricular outdoor activities such as kayaking and hiking for medical students.

UOW also has a community garden where students are able to engage in sustainable food production, [Pulse Community Garden](#). There are a number of cultural art events and performances related to planetary health such the ‘connecting over fair food’ evening which provided workshops on food growing and displayed documentaries on sustainable food practices. [Connecting minds for a sustainable climate future - University of Wollongong – UOW](#)

There are multiple other events offered to students where they can learn from environmental experts and members of local environmental justice communities.

[2023: Impact of microplastics on human and planetary health - University of Wollongong](#)
[Global Climate Change Week - University of Wollongong](#)

Section Total (8 out of 15)

53.33%

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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
UOW has an environmental unit with multiple full-time staff dedicated to improving campus sustainability. Environment - University of Wollongong – UOW	

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
UOW has a written and approved plan to achieve carbon neutrality by 2030. https://documents.uow.edu.au/content/groups/public/@web/@pmcd/@smc/documents/doc/uow275680.pdf	

5.3. Do buildings/infrastructure used by the <u>medical school</u> 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.
We were unable to assess what percentage of medical school buildings are powered by renewable energy.	

5.4. Are sustainable building practices utilised for new and old buildings on the <u>medical school</u> campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?	
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.
Sustainable building practices are used for new buildings at UOW, however we were unable to assess whether the majority of old buildings have been retrofitted to be more sustainable. Sustainable Buildings Research Centre - University of Wollongong – UOW	

5.5. Has the <u>medical school</u> or <u>institution</u> implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental 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.
UOW provides a free shuttle bus service for students, staff and visitors. Free parking is also available for people carpooling and end of trip facilities for those using active transport to travel to campus, by cycling, walking and train.	

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.

While UOW offers a number of recycling programs to students, there are none available at the medical school. [Recycling options - University of Wollongong – UOW](#)

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.

We were unable to source information to assess this metric.

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.

There is a university-wide centre for supply chain research and projects that are aimed at strengthening the sustainability of procurement.

[Centre for Supply Chain Research - University of Wollongong – UOW](#)

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.

We were unable to source information to adequately assess this metric.

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.

We were unable to source information to adequately assess this metric.

5.11. Does your institution's endowment portfolio investments include fossil-fuel companies?

4	The institution is entirely divested from fossil fuels and has made a commitment to reinvest divested funds into renewable energy companies or renewable energy campus initiatives.
3	The institution is entirely divested from fossil fuels.
2	The institution has partially divested from fossil fuel companies or has made a commitment to fully divest , but currently still has fossil fuel investments.
1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organised advocacy for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.

We were unable to source information to adequately assess this metric.

Section Total (15 out of 32)

46.88%

Grading

Section Overview

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

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

Planetary Health Grades for the University of Wollongong School of Medicine

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(32/72) \times 100 = 44.44\%$	C-
Interdisciplinary Research (17.5%)	$(10/17) \times 100 = 58.82\%$	C+
Community Outreach and Advocacy (17.5%)	$(0/14) \times 100 = 0\%$	F-
Support for Student-led Planetary Health Initiatives (17.5%)	$(8/15) \times 100 = 53.33\%$	C
Campus Sustainability (17.5%)	$(15/32) \times 100 = 46.88\%$	C
Institutional Grade	$(A \times 0.3 + B \times 0.175 + C \times 0.175 + D \times 0.175 + E \times 0.175) = 41.16\%$	C-