



Planetary Health Report Card (Medicine)

The University of Melbourne



THE UNIVERSITY OF
MELBOURNE

2023-2024 Contributing Team:

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Summary of Findings

Overall	B-
<u>Curriculum</u>	C+
<ul style="list-style-type: none"> Planetary health concepts are incorporated at numerous points throughout the degree but are only briefly covered and not coherently connected. Although it is taught extensively in quality electives, there is minimal dedicated planetary health teaching in the core curriculum. Recommendations: We recommend the establishment of a Doctor of Medicine (MD) planetary health curriculum working group with student input. It would enable collaboration between students and the Medical School to design planetary health learning outcomes, and oversee the integration of content across all year levels; ensuring the curriculum is in line with the new Australian Medical Council’s medical school standards; and position the MMS as a leader within planetary health and healthcare sustainability education. 	
<u>Interdisciplinary Research</u>	B+
<ul style="list-style-type: none"> At the University of Melbourne (UoM), there are strong climate-oriented interdisciplinary research teams. Within the Faculty of Medicine, Dentistry and Health Sciences (MDHS), The Melbourne School of Population and Global Health and Department of Critical Care lead planetary health research. During the MD program students may also undertake research in this area. Recommendations: We recommend developing a stronger website to centralise all of the current, future and past research projects available to students of the medical school. Additionally, the MMS could more actively advertise and promote planetary health-related workshops and seminars for students to attend. 	
<u>Community Outreach and Advocacy</u>	C
<ul style="list-style-type: none"> The MMS has ongoing, collaborative relationships with Doctors for the Environment, Climate and Health Alliance, and the Melbourne Academic Centre for Health. MMS also partners in the Climate Collaborative Action for Transformative Change in Health and Healthcare (CATCH) lab. Recommendations: We encourage more community facing events to individuals beyond healthcare workers and academics; and stronger community and student communication about planetary health and sustainable healthcare. 	
<u>Support for Student-Led Initiatives</u>	B
<ul style="list-style-type: none"> The UoM, MDHS and the MMS are supportive of students and student groups interested in healthcare sustainability and planetary health. Currently there is support for the development of a student-led sustainability action group (“Sustainability Squad”) from various disciplines. Recommendations: MMS can consider a sustainability QI project for every medical student, or offer this opportunity to interested students. Medical student representation in an advisory or decision-making capacity can be achieved through the MD specific curriculum working group. The broader MDHS “Sustainability Squad” may complement curriculum change by delivering educational activities or events. 	
<u>Campus Sustainability</u>	B
<ul style="list-style-type: none"> The UoM has made significant progress towards campus sustainability, including the publication of the Sustainability Plan 2030. Furthermore, interdisciplinary groups such as Melbourne Climate Futures and Climate CATCH lab also pursue coordinated efforts in sustainability. Recommendations: The establishment of a designated staff role to coordinate sustainability policy and activities at the medical school or faculty level. 	

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.

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.

Glossary of terms/abbreviations specific to this report:

MMS - Melbourne Medical School (which sits within the Faculty of Medicine, Dentistry & Health Science)

ESH - Environmentally Sustainable Healthcare

MD - Doctor of Medicine

MD1/2/3/4 - numbers indicate the year level across the Doctor of Medicine course

MDHS - [The Faculty of Medicine, Dentistry and Health Sciences](#)

MSPGH - [Melbourne School of Population and Global Health](#) sits within MDHS

MCF - [Melbourne Climate Futures](#) is an interdisciplinary research group at the university

UMMSS - [University of Melbourne Medical Students' Society](#)

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>The Melbourne Medical School (MMS) MD program (redesigned as of 2022) offers MD1 and MD2 students the ability to undertake optional selective courses in environmental sustainability and planetary health, as part of the MD Discovery program. None of these elective subjects are exclusive to MMS students, rather, they are developed by other schools in the Faculty of Medicine, Dentistry and Health Sciences (MDHS) and available for students in the MD program.</p> <p>Taken directly from the Melbourne Medical School Discovery subject website: these “<i>Faculty Selectives are governed outside the Doctor of Medicine and as such the department, School or Faculty that are responsible for these subjects have full oversight of the curriculum, teaching, learning and assessment.</i>”</p> <p>The elective subjects offered in the Discovery program for MD1 & MD2 students as of 2023 are:</p> <ul style="list-style-type: none"> ● Climate Change and Health - from: Graduate certificate of Climate Change and Health ● Planetary and Global health - from: Melbourne School of Population and Global Health ● Sustainability and Healthcare - from: Melbourne School of Population and Global Health 	

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>The MMS MD program did not cover this topic in the core curriculum.</p> <p>However, the MD offers MD1 and MD2 students the ability to undertake elective (selective) courses in environmental sustainability and planetary health, known as the MD Discovery program. However, none of these elective subjects are exclusive to Melbourne MD students – rather, they are developed by other schools in the Faculty of Medicine, Dentistry and Health Sciences (MDHS) (e.g., the MSPGH) and available for students in the MD program who are interested in this topic area to optionally undertake.</p> <p>This topic was covered in the following electives:</p> <ul style="list-style-type: none"> • Climate Change and Health - from: Graduate certificate of Climate Change and Health (subject coordinator Professor Kathryn Bowen) • Planetary and Global health - from: Melbourne School of Population and Global Health (subject coordinator Associate Professor Grant Blashki) • Sustainability and Healthcare - from: Melbourne School of Population and Global Health (subject coordinator Associate Professor Kenneth Winkel) 	

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>The MMS MD program provided one related public health lecture in MD1, titled “Introduction to Population, Global and Public Health”, presented by Professor Rob Moodie. The risks associated with recent extreme weather events including floods and fires are mentioned, but there is no detail nor explanation of the nature of these risks or their impacts on individuals or healthcare systems. Additionally, in the MD3 obstetrics/gynaecology rotation, there is a single lecture, titled “Lactation and Breastfeeding”, which contains several slides discussing breastfeeding in the context of disruptive events like natural disasters, including climate associated disasters.</p>	

1.4. Does your <u>medical school</u> curriculum address the impact of climate change on the changing patterns of infectious diseases?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.

0	This topic was not covered.
<p>The MMS MD program did not cover this topic in the core curriculum.</p> <p>However, as previously mentioned, the MD offers MD1 and MD2 students the ability to undertake optional/customisable elective (selective) courses in environmental sustainability and planetary health, known as the MD Discovery program. However, none of these elective subjects are exclusive to Melbourne MD students, rather, they are developed by other schools in the Faculty of Medicine, Dentistry and Health Sciences (MDHS) and available for students in the MD program who are interested in this topic area to undertake optionally.</p> <p>This topic was covered in the following electives:</p> <ul style="list-style-type: none"> • Climate Change and Health - from: Graduate certificate of Climate Change and Health, confirmed by subject coordinator Professor Kathryn Bowen • Planetary and Global health - from: Melbourne School of Population and Global Health, confirmed by subject coordinator Associate Professor Grant Blashki • Sustainability and Healthcare - from: Melbourne School of Population and Global Health, confirmed by subject coordinator Associate Professor Kenneth Winkel 	

1.5. Does your <u>medical school</u> curriculum address the respiratory health effects of climate change and air pollution?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p>The MMS MD program has several brief mentions scattered across lectures throughout MD1-3 on environmental factors such as pollen, weather and thunderstorm asthma, as potential contributors to respiratory conditions such as COPD, asthma and lung cancer. Notable lectures briefly mentioning this topic include:</p> <ul style="list-style-type: none"> • MD1 - “Lung and Pleural Tumours”, presented by Dr. Tarini Fernando • MD1 - “Drugs Affecting Airway Structures”, presented by Professor Alastair Stewart • MD2 - “Asthma for the clinician”, presented by A/Prof David Smallwood • MD2 - “Diagnosing COPD”, presented by Dr Gary Hammerschlag <p>There is no significant further exploration of respiratory health in the context of planetary health, including bushfire smoke, despite its local significance in Melbourne/Victoria.</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>To the best of our knowledge, the MMS MD program did not cover this topic in the core curriculum.</p> <p>However, the MD offers students the ability to undertake optional/customisable elective (selective) courses in environmental sustainability and planetary health, known as the MD Discovery program. However, none of these elective subjects are exclusive to Melbourne MD students, rather, they are developed by other schools in the Faculty of Medicine, Dentistry and Health Sciences (MDHS) and available for students in the MD program who are interested in this topic area to undertake optionally.</p> <p>This topic was covered in the following electives:</p> <ul style="list-style-type: none"> • Climate Change and Health - from: Graduate certificate of Climate Change and Health, confirmed by subject coordinator Professor Kathryn Bowen • Planetary and Global health - from: Melbourne School of Population and Global Health, confirmed by subject coordinator Associate Professor Grant Blashki • Sustainability and Healthcare - from: Melbourne School of Population and Global Health, confirmed by subject coordinator Associate Professor Kenneth Winkel 	

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 MMS MD program explores the broader impacts of climate change and the health of Country on social and emotional wellbeing for First Nations communities. This is covered as a part of the First Nations Health content run by the Wurru Wurru Health Unit, in the context of social determinants of health. However, this content addresses these issues within a specific cultural context, and is not necessarily generalisable to understanding mental health and neuropsychological effects within the general population. There is no detailed discussion on the effect of local environmental degradation, such as desertification of the Murray-Darling Basin, or of climate change related natural disasters, such as the 2019-2020 bushfires, on the mental health of the general Australian population.</p>	

1.8. Does your <u>medical school</u> curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?	
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 MMS MD program included one relevant public health lecture in MD1, titled “Introduction to Population, Global and Public Health”, presented by Professor Rob Moodie. The concept of the</p>	

relationship between health, ecosystem health and climate change was briefly introduced, however this did not involve significant detail or examples of this relationship. In the MD1 public health tutorial, “Challenges for Global Health”, the impacts of seasonal water supply was listed as a potential impact on food security and human health. Students also complete a causal pathway ePortfolio assignment which covers social and environmental, including climate, determinants of health.

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

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

The MMS MD program explores the broader impacts of climate change and the health of Country on social and emotional wellbeing for First Nations communities. This is covered in MD1 and MD2 as a part of the First Nations Health content run by the Wurru Wurru Health Unit, in the context of social determinants of health. However, there is no significant mention of the disproportionate impact on other marginalised groups, such as rural 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.

To the best of our knowledge, the MMS MD program (2022) did not cover this topic in the core curriculum.

However, the MD offers students the ability to undertake optional/customisable elective (selective) courses in environmental sustainability and planetary health, known as the MD Discovery program. However, none of these elective subjects are exclusive to Melbourne MD students, rather, they are developed by other schools in the Faculty of Medicine, Dentistry and Health Sciences (MDHS) and available for students in the MD program who are interested in this topic area to undertake optionally.

This topic was covered in the following electives:

- [Climate Change and Health](#) - from: Graduate certificate of Climate Change and Health, confirmed by subject coordinator Professor Kathryn Bowen
- [Planetary and Global health](#) - from: Melbourne School of Population and Global Health, confirmed by subject coordinator Associate Professor Grant Blashki

- [Sustainability and Healthcare](#) - from: Melbourne School of Population and Global Health, confirmed by subject coordinator Associate Professor Kenneth Winkel

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.
To the best of our knowledge, the MMS MD program and elective options did not cover this topic.	

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.
As recognised in 1.5, there are brief explorations of thunderstorm asthma as a locally relevant condition, but limited exploration of the environmental mechanisms contributing to it. In the fourth year lecture "Junior doctors practising high quality, low carbon medicine", there are brief references to local examples of healthcare related environmental impacts.	

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.

The Wurru Wurru Health Unit's teaching across all year levels provides particular recognition of the health of Country as a determinant of health for First Nations Peoples. It is noted as a key determinant of health in the [Wurru Wurru Health Model](#). Cultural immersion activities such as [Bunjilaka and Bilibellary's Walk](#) provide discussion on the importance of the health of Country to overall well-being.

However, there is not a coherent integration of indigenous knowledge in planetary health education or in planetary health solutions. Rather, a large proportion of the existing planetary health content, both core and elective, is a consequence of being an essential component of First Nations Health.

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

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

As part of the MD1 core curriculum, there is a series of introductory lectures to the concepts of planetary health and one health, making reference to how inequality and social determinants of health place populations at greater risk of pollution and environmental related diseases. In MD2, in a lecture titled 'COPD' there is reference to increased risk of respiratory disease in low-socioeconomic settings where indoor biomass fuel burning exposure is more common.

Curriculum: Sustainability

1.15. Does your medical school 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.

In MD1, the 'Food and Nutrition 101' lecture had two slides on environmental and health effects of plant based diets, and referenced the Lancet Planetary Health Diet. Additionally, the First Nations Health lecture 'Traditional Bush medicines and Nutrition' discussed the health and impacts of traditional oriented lifestyles compared to a modern agricultural/processed diet, and their impact on sustainable land management, however this was not specifically about plant-based diets, rather 'balanced omnivorous diets'.

1.16. Does your medical school curriculum address the carbon footprint of healthcare systems?

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

The carbon footprint of healthcare systems is partly addressed in the MD4 lecture ‘Junior Doctors practising high quality, low carbon medicine’ by Associate Professor Forbes McGain. This lecture is delivered as part of teaching about evidence-based practice, and mentions issues associated with carbon impacts of healthcare including laboratory testing and anaesthetics. However, the scope of this is only brief and would be deserving of greater integration across the four year levels.

This topic is explored in greater depth in the *elective* subject [‘Sustainability and Healthcare’](#).

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)

As in 1.16, the MD4 lecture ‘Junior Doctors practising high quality, low carbon medicine’ by Associate Professor Forbes McGain covers anaesthetic sustainability and the environmental costs of over-investigation. Accompanying this was a lecture by Professor Adam Elshaugh’s on "Value-based medicine - Choosing wisely" which discussed the [Choosing Wisely program](#) and approaches to understanding and addressing low value care.

There are no explicit mentions of the other topics in the MD core curriculum, however, some clinical placement sites (particularly Austin Health and Western Health) do cover a variety of these topics in intern-teaching and grand-round teaching (which medical students are welcome to optionally attend).

As noted, these topics are covered in greater depth in the elective subject '[Sustainability and Healthcare](#)'.

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

In the elective subject 'Sustainability and Healthcare', there is a lecture by Dianna McDonald which outlines common Climate Change-related health conditions impacting the community and the importance of informing the public of these. This lecture conveyed that healthcare professionals want to inform their patients of climate-related health risks, particularly heat-related and mental health conditions. However, this lecture does not introduce strategies to have conversations with patients about these health effects.

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.

In MD1, Foundations to Clinical Practice, there is a clinical skills tutorial in week 6 on interviewing a patient on the cardinal features of dyspnoea. This includes environmental factors that may predispose to or worsen dyspnoea such as chemicals, paint, asbestos and tobacco smoke. Additionally, there is a clinical skills tutorial in week 9 on interviewing a patient on the cardinal features of asthma and particularly taking an occupational and social history. These include pollen, dust, smoke and pet, however, there is limited discussion on Climate-related exposures such as bushfire smoke and mould from flooding. Whilst environmental history taking is featured in the core curriculum, we believe that it should be taught as a separate topic on its own merit, as taking environmental history is relevant to many presentations, not just when considering pulmonary diseases.

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.
<p>There are current, ongoing discussions with faculty – primarily student-led and endorsed by several faculty members – to implement robust ESH/planetary health education across the year levels, such that it features as a key theme of the MD course. Currently, there is an acknowledgement by Melbourne Medical School (MMS) that ESH/planetary health should be part of the core-curriculum rather than just offered as elective subjects – particularly in light of the new changes to the accreditation standards of Australian Medical Schools developed by the Australian Medical Council (AMC), which will take effect in 2024. Whilst there are current efforts to expand the climate health curriculum, changes are expected to be gradual across several years of the education accreditation period. Some initial work has included discussions on creating a review taskforce with students and faculty members, to evaluate and appraise the current curriculum and make recommendations on the future direction of ESH/planetary health education implementation. This inaugural report card constitutes part of that process and hence we anticipate the score for this section may change in future PHRC reports.</p>	

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.
<p>The intermittent integration of planetary health content throughout the course is up to the discretion of individual lecturers, and does not constitute longitudinal integration. As noted, First Nations health content provides some reference to planetary health across all year levels. After a brief mention in introductions to public health principles in first year, the theme does not recur until a standalone lecture in fourth year. There is poor integration of planetary health and ESH into course learning outcomes overall.</p>	

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.

To the best of our knowledge, there is no specific staff member e assigned to this role. There are several [planetary health champions](#) within the faculty of the MMS, however they are not formally tasked with overseeing the implementation of planetary health for the medical-student curriculum.

Section Total (40 out of 72)

55.56%

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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 <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.

The [Department of Critical Care](#) is part of the University of Melbourne Medical School. Within the department, there are faculty members who engage in research, education, policy and advocacy in Sustainable healthcare “*focussing on research, teaching and engagement directed towards avoiding low value therapy, reducing the use of unnecessary medical equipment/medications, reusing equipment and recycling.*”

The Department of Critical Care appointed [Dr Eugenie Kayak](#) (consultant anaesthetist) to the position of Enterprise Professor in Sustainable Healthcare. Professor Kayak holds several positions, including in [Doctors for the Environment](#) (DEA) and the [Australian Medical Association](#) (AMA), as well as being member of the Chief Medical Officer Advisory Group for development of the [National Health and Climate Strategy](#). Additionally, there are several other physicians employed by the Department of Critical Care conducting research within topics of Climate Change and mitigation strategies in the healthcare space. Research topics of these members of the Department of Critical Care include:

1. Leadership in Healthcare Environmental Sustainability
2. Carbon Footprint of Healthcare and Life-cycle Assessment Studies
3. Media articles on: healthcare sustainability and appraisal of Australia’s environmental sustainability and emissions landscape

The Department of Critical Care (and faculty staff of the MMS) also has a “[Sustainability and Planetary Health Action Network](#)” (SPHAN), with over 30 clinician members who meet regularly to promote research, learning and teaching, and engagement in sustainable healthcare across the areas of anaesthesia, perioperative and pain medicine, intensive care medicine and emergency medicine. In 2023 SPHAN developed 'A practical guide to detect healthcare facility nitrous oxide leaks'.

Additionally, the medical school is engaged actively with the broader [MACH \(Melbourne Academic Centre for Health\) Sustainability working party](#) across affiliated hospitals and medical research organisations.

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.

[Melbourne Climate Futures \(MCF\)](#) is a multidisciplinary research group part of the University of Melbourne's [Environmental Research Hub network](#). MCF “connects and amplifies the depth and breadth of University of Melbourne research, creates a portal to share ideas and collaborate on real action, and empowers the next generation of Climate activists”. This research team coordinates with interdisciplinary groups from various University faculties and external organisations to work on research and advocacy projects addressing national and global environmental challenges, including [collaborating with medical and science researchers](#) on the impacts of Climate Change to human health and biodiversity.

Under the umbrella of the MCF is also the [Health, Environment, Research & Action \(HERA\) collaborative](#) - consisting of “a group of researchers committed to accelerating health-focused action by co-designing, generating, synthesising, and applying evidence on health and wellbeing in relation to environmental change and disasters. The group acts as a platform for research and policy recommendations, and as a portal for external stakeholders to engage with evidence”. In 2023, a [Climate CATCH Lab project](#) was developed as a collaborative project between MCF, MMS and MSPG to improve and research transformative change in health and healthcare. Given the infancy of this project, there is certainly room for increased capacity to establish more formal involvement and collaboration with the Melbourne Medical School faculty (MMS) and into the future.

Other research institutes part of the [Environmental Research Hub](#) include: Melbourne Energy Institute, Melbourne Biodiversity Institute, Indigenous Knowledge Institute, Centre for Sustainability and Business, Peter Cook Centre (Carbon Capture), Melbourne Centre for Cities, and Melbourne Centre for Law and the Environment. Whilst many of these institutes collaborate and work to create Sustainable research and pathways, there is less emphasis on the intersection of Climate Change and 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.
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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.

To the best of our knowledge, the Melbourne Medical School has no formal processes to involve communities disproportionately impacted by Climate injustice to input into research. In discussion with faculty staff, there is however discussions and early work underway to improve research methodologies for co-design projects within the MMS.

There are several research projects from other University of Melbourne faculties that consult with local communities, including a cross-collaborative project in 2021 between [Melbourne Climate Futures & the Melbourne School of Population and Global Health](#) on a “[Climate and Health Mapping Project](#)” and in 2023 with a new PhD project aimed at [co-designing a community urban resilience program](#) to reduce heat risk from the Melbourne School of Design.

2.4. Does your <u>institution</u> 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.

Given the different groups and interdisciplinary networks that engage with Planetary health research at the University of Melbourne, we acknowledge the difficulty but importance of centralising research, announcements and opportunities. To date, there are two web pages (which would benefit from being merged) to summarise campus resources. The first is a “[Sustainability at Melbourne](#)” website that provides hyperlinks to education opportunities, research groups, campus Sustainability and governance. While it has a simplistic layout to navigate, it would benefit from providing a more comprehensive overview of the upcoming events, leaders in Planetary health at the University and opportunities for research or involvement. It also lacks an “about” page, which would improve the user's understanding of the page and the efforts of the institution at tackling Climate-related challenges. The second is a “[Sustainable Campus](#)” page, which is a primarily student-run page, which has a general noticeboard and hyperlinks to Sustainable Campus team, Sustainable events and student opportunities. Given the multiple webpages attempting to summarise and centralise resources, we recommend creating a more comprehensive website encompassing information from both.

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.

In 2023, Melbourne Climate Futures (MCF) hosted the [Climate Futures Summit](#) (10 October 2023) (online and in-person), showcasing many topics pertaining to Sustainability and Climate Change. In particular, sessions such as “the human cost of the warming world” highlight the interconnectedness of Planetary health and impacts of Climate Change on human health.

Additionally, at an MMS level, in 2023 (April), the Department of Critical Care (part of the MMS) ran one Planetary health related day-conference/workshop focussed on [carbon literacy and lifecycle assessments in healthcare](#) with speakers including many of the faculty’s Climate champions - Assoc Prof Forbes McGain, Prof Eugenie Kayak and Dr Scott McAlister. However, to the best of our knowledge, there was limited advertisement or student-visibility of this workshop across central medical school channels, thus many students across all year levels were not aware of it. The \$100 registration fee for students constituted an additional barrier to access.

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
To the best of our knowledge, the MMS or the faculty is not a formal member of any national or international planetary health organisations.	

Section Total (13 out of 17)	76.47%
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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 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>The medical school is involved in the joint initiative Climate CATCH Lab, alongside the University of Melbourne School of Population and Global Health (MSPGH) and Melbourne Climate Futures (MCF) which ‘seeks to accelerate the University of Melbourne’s climate change and human health research, engagement and education for enhanced impact.’ It has numerous governmental and community partnerships, including Climate and Health Alliance (CAHA) and Doctors for the Environment Australia (DEA).</p> <p>A secondary example of relevant collaboration within the institution is Health, Environment, Research & Action (HERA) Collaborative, which operates under MCF to ‘work in a collaborative way with communities (including children and young people), climate scientists (interdisciplinary), industry, and government actors’, although further details or evidence of these partnerships and their meaningfulness were not readily available.</p>	

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.
<p>In 2023, Melbourne Climate Futures (MCF) hosted the Climate Futures Summit (10 October 2023) (online and in-person), showcasing many topics pertaining to sustainability and climate change. Additionally, the Faculty of Medicine, Dentistry and Health Sciences held the 2023 Learning and Teaching Conference, involving topics on education for sustainability, however, this event was not created for a community audience. Whilst these events are run by the institution, they are not offered by the Melbourne Medical School itself.</p> <p>To the best of our knowledge, there were no specific community facing events held by the Melbourne Medical School dedicated to or discussing topics related to planetary health in the past 12 months.</p>	

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.
<p>To the best of our knowledge, there are no known relevant communications directed to MD students. Students do not receive regular communications about sustainability. Previous faculty (MDHS) newsletters have included mentions of this topic, however not all medical students are signed up to the newsletter and is not directed to the MD students. Limited relevant content is provided in other staff facing newsletter and communications.</p>	

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
<p>Two such examples include:</p> <ul style="list-style-type: none"> • Carbon Healthcare Literacy Workshop (27/03/2023): ‘Both the workshop and masterclass are designed for all healthcare professionals, academics, researchers, managers and policy makers seeking a comprehensive understanding of healthcare carbon hotspots and life-cycle assessment methodologies and interpretation.’ • Graduate Certificate in Climate Change and Health: ‘The primary target market is health professionals who have an interest in climate change and health and who may be considering a 	

career pathway in leadership of policy and practice change and sustainability within the health sector.’

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

2	Yes, the medical school or all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated medical centres have accessible educational materials for patients.

We extensively searched online for each hospital via search engines and hospital websites. We mostly failed to find any patient resources related to environmental exposures, except for one blog on bush fire smoke from the [Epworth](#) and some resources on thunderstorm asthma, heat health, mosquitos and sun, water and fire safety via [Bendigo Health](#), [Goulburn Valley Health](#) and [Western Health](#). Additionally, one student reported the presence of brochures in the Wangaratta Hospital discussing environmental exposures such as from bushfire smoke.

It is of interest that these resources mainly came from hospitals associated with smaller, predominantly rural, Clinical Schools: these have a smaller number of students, and rural areas experience a high burden of climate health impacts.

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

2	Yes, the medical school or all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated hospitals have accessible educational materials for patients.

We extensively searched online for each hospital via search engines and hospital websites. We failed to find any patient resources related to the health impacts of climate change. Several hospitals had several online resources on climate-related health topics including thunderstorm asthma, Japanese encephalitis, bushfire smoke and heat Stroke, as per 3.5, however, none of these resources made any explicit link between the incidence of the health condition and climate change. Some similar examples of resources were found that were directed at hospital staff as part of internally focused occupational health and safety/staff wellbeing communications, but were not accessible educational resources for patients. Nor were there any generalised resources related to educating about planetary health more broadly, i.e. beyond individual conditions and presentations.

Section Total (7 out of 14)

50.00%

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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.

The University of Melbourne offers support for students interested in sustainability via the [Wattle Fellowship](#). This program provides funding and support to around 20 students at the university annually. Whilst not exclusively for medical students, since its conception in 2022, the Wattle Fellowship has supported one medical student per year. The funding can be used for student-led sustainability action projects or for leadership development programs.

There is also the [Student Engagement Grant program](#) offered by the university that supports engagement activities led by students, and can be used for sustainability initiatives. Some University of Melbourne hospital networks such as The Royal Melbourne Hospital have also organised competitions for sustainability projects internally in which students can participate. However, the medical school (MMS) does not offer sustainability grants nor is it compulsory to do a sustainability QI project as part of the course.

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.

The University of Melbourne offers scholarships to high-achieving graduate students undertaking climate research. This is part of the [Melbourne Climate Futures Australian Government Research Training Program Scholarships](#).

Students can also choose to undertake a research project as their project of choice using the funding from the [Wattle Fellowship program](#) (described in section 4.1). The Wattle Fellowship is an extra-curricular program offered by the institution that allows selected students to complete a sustainable healthcare/planetary health project if they choose to, and these are completed in their own time outside of medical school commitments.

Every medical student must complete a research project (known as the MD Research Project, or MDRP) and some students may seek out sustainability based projects. There is no specific planetary health or sustainability research program on offer to medical students. However, medical students have undertaken many voluntary research projects with University of Melbourne researchers in the areas of planetary health and sustainable healthcare.

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.

To the best of our knowledge there is no specific medical school webpage displaying opportunities for sustainable healthcare projects or ability to connect with mentors. The Department of Critical Care has a [sustainable healthcare page](#) highlighting some climate-health champions that have or are currently undertaking research, however there is little encouragement on this webpage to contact these researchers as mentors or any acknowledgement of future research opportunities. Certainly, students at the Melbourne Medical School are able to personally contact specific members of the faculty or their affiliated hospital to find opportunities to be involved in research and advocacy, and staff are generally welcoming of such requests.

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.
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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>Below are a list of sustainability roles/groups with medical-student involvement:</p> <ol style="list-style-type: none"> DEA Student group: Doctors for the Environment Australia student group at the University of Melbourne is an independent medical student club. This group does not have direct support from faculty, but can typically contact and communicate with faculty members if required for a particular event or project. UMMSS Sustainability Officer: UMMSS (University of Melbourne Medical Students' Society) is the representative body of the medical students at University of Melbourne. UMMSS representatives meet with the medical school regularly and can advocate on students' behalf. While there is a sustainability officer on the UMMSS committee, the main operations of UMMSS are not focused on planetary health or sustainable healthcare, so they cannot fulfil this criteria. Sustainability Action Group: A new sustainability action group ("Sustainability Squad") with faculty support is in the very early stages of being established. Its structure and goals are currently being decided. It will ideally be a student-led group (including medicine, nursing, and allied health students) with faculty support, and will aim to support and enhance sustainability practices within the MDHS (Medicine, Dentistry and Health Sciences) school. Since this group has not yet been formally established or commenced, it cannot fulfil the criteria at this stage. 	

<p>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?</p>	
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>To the best of our knowledge, at the medical school level there is currently no student representation in decision-making councils. There is a student "Sustainability Squad" (mentioned above in 4.4) that is being created in 2024 but this group has not formally been established and launched as of early 2024. Additionally its specific structure (i.e. whether it involves student representation on a decision-making council) is unconfirmed.</p> <p>Furthermore, at an institutional level, while there is evidence of student involvement in sustainability initiatives there is no student representation at a decision-making level to influence sustainability practices at the university. For example there are opportunities for students to become involved in sustainability practices (e.g. students part of a club or society who want to make their activities and events more sustainable). Additionally, the University's sustainability plan mentions a sustainability advisory group (that includes student representation) to "guide implementation of the..sustainability plan" (p. 59) but this does not suggest that there is student representation at a decision-making level.</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)
<ol style="list-style-type: none"> 1. The university has a community garden that students help run and is a place where students can explore their environmental interests and skills. 2. The university runs public lectures on a range of topics. One example of a recent and relevant planetary health lecture is 'The Future of Food'. 3. The Wattle Fellowship offers such events for its selected students to participate in. These include multiple lectures on sustainability related issues as well as workshops to further students' sustainability advocacy skills. Students also will develop their own sustainability QI project as part of this program. 4. The Faculty of Arts hosted a public symposium about the climate emergency and involved multidisciplinary perspectives from academics, artists, activists and theatre makers. 5. The Wattle Fellowship offers numerous such opportunities for its selected students to participate in. 6. The Wilderness Medicine Students' Society offers a range of outdoor activities and experiences for students. 	

Section Total (11 out of 15)	73.33%
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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
<p>The University of Melbourne has 2 teams dedicated to sustainability. These are the Sustainability - Campus Management and Sustainability, and Sustainability Strategy, Corporate Finance Property and Sustainability. Both of these teams have multiple full-time staff members dedicated to campus sustainability and advocacy.</p> <p>The Faculty of Medicine, Dentistry, and Health Sciences (MDHS) and the Melbourne Medical School (MMS - through the Department of Critical Care) have part-time honorary staff who hold formal roles to advocate in this space. Specifically, they aim to work with MMS and affiliated hospitals on sustainable healthcare activities. A MDHS Sustainability Plan is under development at the moment to focus on operations within the MDHS. Further to this, see comments in 2.1 regarding work of MACH group and SPHAN.</p> <p>There is also the Melbourne Climate Futures (MCF), a research/academia collective integrating multiple disciplines within the university for research collaboration and sustainability initiatives.</p>	

5.2. How ambitious is your <u>institution/medical school</u> plan to reduce its own carbon footprint?	
5	The institution/medical school has a written and approved plan to achieve carbon neutrality by 2030
3	The institution/medical school has a written and approved plan to achieve carbon neutrality by 2040
1	The institution/medical school has a stated goal of carbon neutrality by 2040 but has not created a plan to reach that goal or the plan is inadequate

0	The institution/medical school does not meet any of the requirements listed above
<p>The Melbourne Medical School (MMS) falls under the umbrella of the University of Melbourne’s plan, titled “Sustainability Plan 2030” which details the university’s commitment to achieving carbon neutrality by 2025 and climate positive status by 2030.</p>	

5.3. Do buildings/infrastructure used by the <u>medical school</u> for teaching (not including the hospital) utilize renewable energy?	
3	Yes medical school buildings are 100% powered by renewable energy
2	Medical school buildings source >80% of energy needs from off-site and/or on-site renewable energy.
1	Medical school buildings source >20% of energy needs from off-site and/or on-site renewable energy.
0	Medical school buildings source <20% of energy needs from off-site and/or on-site renewable energy.
<p>To the best of our knowledge, the most recent update on this is based on a report published by the University of Melbourne’s Sustainable Campus Design Manager, Gerard Healy, in 2022, which estimated that approximately 64% of MMS buildings/infrastructure energy are sourced renewably.</p>	

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.
<p>The main medical building for the MMS is currently planned for demolition as part of the University of Melbourne’s Sustainability Plan 2030. In accordance with this strategic plan, all old buildings are being retrofitted. New buildings on campus are rated with Green Star Design and As Built ratings.</p>	

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.
<p>The University of Melbourne strongly encourages environmentally friendly transport options. There are bike facilities across all campuses. They offer transport for students, particularly between campuses, and all campuses are accessible via public transport. All these options are accessible and frequently used by students.</p>	

5.6. Does your <u>medical school</u> 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.
<p>The MMS main campus is on the Parkville campus of the University of Melbourne and both compost and recycling programs are available to students and staff.</p>	

5.7. Does the <u>medical school</u> apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?	
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.
<p>The MMS has some sustainability guidelines for food and beverages, however they are optional. It is not evident that the MMS is currently working towards increasing food and beverage sustainability.</p>	

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.
<p>The MMS does not have sustainable procurement guidelines, however the University of Melbourne has a detailed policy for procurement which states that “ensure procurement processes fulfil the University’s broad social and environmental obligations set out under the Sustainability Charter and Plan”. This policy is titled Procurement Policy (MPF1087). Sustainable supply and local suppliers are prioritised.</p>	

5.9. Are there sustainability requirements or guidelines for events hosted at the <u>medical school</u> ?	
2	Every event hosted at the medical school must abide by sustainability criteria.
1	The medical school strongly recommends or incentivizes sustainability measures, but they are not required .
0	There are no sustainability guidelines for medical school events.
<p>The MMS does not have sustainability guidelines for events.</p>	

5.10. Does your <u>medical school</u> have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
2	Yes, the medical school has programs and initiatives to assist with making lab spaces more environmentally sustainable.
1	There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are no efforts at the medical school to make lab spaces more sustainable.
<p>The MMS has three laboratories signed up to the Green Labs program, which is a program aimed at making lab spaces more environmentally sustainable.</p>	

5.11. Does your <u>institution’s</u> endowment portfolio investments include fossil-fuel companies?	
4	The institution is entirely divested from fossil fuels and has made a commitment to reinvest divested funds into renewable energy companies or renewable energy campus initiatives.

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

The University of Melbourne does invest in some ethical and sustainable industries, however, the university does still invest in fossil fuels, as detailed in the [Sustainability Plan](#). While the University of Melbourne has a Sustainability Plan 2030 which outlines plans for achieving carbon neutrality by 2025, the plan does not specifically define a pathway to achieving complete divestment from fossil fuels.

Section Total (23 out of 32)	71.88%
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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 Melbourne School of Medicine (MMS)

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(40/72) \times 100 = 55.56\%$	C+
Interdisciplinary Research (17.5%)	$(13/17) \times 100 = 76.47\%$	B+
Community Outreach and Advocacy (17.5%)	$(7/14) \times 100 = 50.00\%$	C
Support for Student-led Planetary Health Initiatives (17.5%)	$(11/15) \times 100 = 73.33\%$	B
Campus Sustainability (17.5%)	$(23/32) \times 100 = 71.88\%$	B
Institutional Grade	$(A \times 0.3 + B \times 0.175 + C \times 0.175 + D \times 0.175 + E \times 0.175) = 64.21\%$	B-