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# Planetary Health Report Card (Medicine): *University of Otago - Christchurch*

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2022-2023 Contributing Team:

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## Summary of Findings

<b>Overall</b>	<b>C-</b>
<b><u>Curriculum</u></b>	<b>C</b>
<ul style="list-style-type: none"> <li>The University of Otago – Christchurch school of medicine (UOC) delivers most of its planetary health content in 4 sessions across 3<sup>rd</sup> and 4<sup>th</sup> year. While the breadth of teaching is thorough, the longitudinal integration of its delivery could be improved. Given the lack of elective teaching intrinsic to the degree structure, all students are exposed to a foundational level of planetary health teaching, however there is little scope for those with a particular interest in the field to pursue further structured content.</li> <li><b>Recommendations:</b> Longitudinal integration of planetary health teaching would likely improve the preparedness of graduates for the challenges they will experience in health due to climate change. Brief discussion of planetary health topics could be added to existing modules without major restructuring (e.g. describing the effects of extreme heat on cardiovascular disease in the general medicine modules).</li> </ul>	
<b><u>Interdisciplinary Research</u></b>	<b>D+</b>
<ul style="list-style-type: none"> <li>The UOC is engaged with planetary health interdisciplinary research on an institutional level, however there is little local focus within the UOC itself.</li> <li><b>Recommendations:</b> A website which pools the planetary health research of the UOC and institution more broadly would be a good way to engage students, staff, and the broader community in how planetary health is evolving. Long-term hiring a member of staff within the UOC to perform such research would be ideal.</li> </ul>	
<b><u>Community Outreach and Advocacy</u></b>	<b>F-</b>
<ul style="list-style-type: none"> <li>There appears to be minimal community action by the UOC.</li> <li><b>Recommendations:</b> It would be a good starting point for UOC to directly engage with community partners in order to help promote local buy-in addressing the local health implications of climate change. Additionally, due to the small size of the UOC, coordination with larger local institutions such as the University of Canterbury could be an effective approach.</li> </ul>	
<b><u>Support for Student-Led Initiatives</u></b>	<b>B-</b>
<ul style="list-style-type: none"> <li>The UOC provides good coverage of planetary health issues, and opportunities for students to engage in planetary health projects, however coordinated student engagement (including at the institutional level) is lacking.</li> <li><b>Recommendations:</b> A centralised website for students to find planetary health projects would be beneficial for helping students to easily connect with supervisors who are engaged in this research. Additionally, including students within institutional bodies that are responsible for sustainability could help guide organisational processes so that any initiatives are better utilised by students.</li> </ul>	
<b><u>Campus Sustainability</u></b>	<b>B</b>
<ul style="list-style-type: none"> <li>The office of sustainability is engaged in designing sustainability standards for the campus, such as carbon neutrality by 2030, and energy efficient/low waste buildings. Full divestment away from fossil fuels has been implemented on an institutional level. Student options for sustainable transport, however, are limited.</li> <li><b>Recommendations:</b> Focusing on enabling sustainable transport options for students would be an achievable goal to help improve the sustainability of the campus. This could be done through discounts for student bus transport and partnerships with community organisations to help students acquire, and learn to do basic maintenance on, bikes.</li> </ul>	

# 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 analyzing 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, urbanization, 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 color, 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 centered 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 mold 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 last year, 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. 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 <b>more than one</b> elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered <b>one</b> elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does <b>not</b> have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a <b>lecture</b> on planetary health.
0	No, the medical school has <b>not</b> offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>Score explanation:</i>  <i>Electives are not a core part of the medical school curriculum at the University of Otago. There is a mandatory 6-week "selective", where different humanities courses are offered and selected by the students, however none of these are related to planetary health and there are no other such opportunities throughout the years.</i></p>	

## Curriculum: Health Effects of Climate Change

2. Does your <u>medical school</u> curriculum address the relationship between extreme heat, health risks, and climate change?	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation:</i>  <i>There is a lecture as part of session 15 of the 4<sup>th</sup> year public health module titled "Climate Change &amp; Health" which briefly discusses many of the metrics within this report card. As part of this lecture,</i></p>	

there is an infographic (slide 13) which was discussed, an element of which directly addresses how extreme heat caused by anthropogenic climate change will lead to increases in heat related illnesses, including cardiovascular failure, and death. The Lancet paper "[The Global Syndemic of Obesity, Undernutrition, and Climate Change: The Lancet Commission report](#)" is a mandatory reading in this same session. This briefly discusses a possible link between extreme heat and obesity through reduced physical activity.

As part of a session within the public health module "Refugee Health and Climate Change", "Climate change, health and general practice in Aotearoa New Zealand and the Pacific" is a [document](#) published by the Royal New Zealand College of General Practitioners (RNZCGP) which is considered preparation for a mandatory assignment on refugee health that requires includes a small section on the relationship of medical practitioners and climate change. This document outlines increasing global temperatures as direct causes of death and illness, especially in persons aged over 65 years.

**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 <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.

*Score explanation:*

*UOC addresses this metric in the same 2 sessions as the last metric: "Climate Change & Health" (session 15); and "Refugee Health and Climate Change (session 16).*

*The lecture "Climate Change & Health" mentions on the same infographic as discussed in metric 2 that extreme weather events will lead to injuries, fatalities, and mental health impacts. There is another infographic that also mentions the effects of climate change on individual health through extreme weather threatening shelter, causing heat waves, and limiting access to clean water and quality food. These are all then linked to health.*

*The RNZCGP document describes how extreme weather has both direct and indirect effects on health through both physical illness and trauma/mental health effects.*

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

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

*Score explanation:*

*UOC has several lectures addressing the effects of climate change on changing patterns of infectious disease.*

*In the lecture “Emerging Infectious Diseases of Pandemic Potential” it is mentioned that climate change may increase the risk of there being outbreaks of Japanese encephalopathy in New Zealand. Another lecture (“One Health”) has several slides addressing several factors of planetary health and their effects on infectious disease, such as human population dynamics/animal habitat encroachment, climate change in and of itself, travel, poverty, globalisation, and animal habitat destruction. A lecture “Fungal Disease” has an infographic describing how the combination of avian habitat change and the effects of heat on fungal selection will lead to both more virulent and transmissible strains of *C. auris*, and how that this will lead to increased rates of hospital-acquired infection.*

*The lecture mentioned in previous metrics, Climate Change & Health; and the RNZCGP document, also describe climate change as a driver of vector borne disease. They also mention the increased risk of tropical disease in New Zealand. A lecture within 1<sup>st</sup> year/Health Sciences First Year (known as “HSFY”) titled “Outbreaks, epidemics, and clusters” briefly discusses how with urbanisation, economic development, and climate change, the distribution of disease, including infectious, is changing. It links these ideas to the “One Health” principle.*

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

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

*Score explanation:*

*The climate change session and the RNZCGP document discuss the cardiorespiratory effects of climate change briefly. These focus on the effects of heat impacting pollution, and also leading to wildfire which in turn also reduces air quality. The link is then made to directly impaired respiratory function, and exacerbation of respiratory illnesses such as asthma.*

*The “Global Environmental Changes & Health” lecture also mentions that air pollution (and allergens) tied to climate change will lead to increasing rates of respiratory diseases, such as asthma.*

*The 4<sup>th</sup> year lecture “Chronic Obstructive Lung Disease” states that COPD onset and progression is influenced by occupational dusts and chemicals, in addition to general air pollution.*

**6. Does your medical school curriculum address the cardiovascular health effects of climate change, including increased heat?**

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



0	This topic was <b>not</b> covered.
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*Score explanation:*

*The RNZCGP document mentions that climate change will have deleterious health effects on persons with cardiorespiratory disease and uses smoke inhalation secondary to bush/forest fires as an example of a climate change related effect. Due to this, this metric is awarded 2 points.*

**7. Does your medical school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?**

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

*Score explanation:*

*The effects of climate change on mental health is discussed in both the climate change lecture and additionally in the RNZCGP document.*

*In addition, there is a mandatory reading "[Te Pae Māhutonga: A Model for Māori Health Promotion](#)" (Durie 1999) as part of a public health session on Māori public health that discusses the spiritual connection between people and the environment. It then develops this idea to state that health promotion must include protecting the environment, including air and water cleanliness, noise pollution, and experience of natural environments. While this is not directly linked to anthropogenic climate change within the material, it is within the domain of planetary health.*

**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 <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.

*Score explanation:*

*The Climate change session, RNZCGP document, and Durie paper all briefly describe the importance of food and water security for physical and spiritual health.*

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

3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
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2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation:</i>  The climate change session describes the disproportionate effects of climate change on underprivileged populations directly and indirectly, and the importance of addressing this for health equity to be achieved (a significant goal of the NZ health system).</p> <p>The RNZCGP document has approximately 1 page of text discussing the disproportionate effects climate change will have on Māori and Pacific peoples, addressing factors such as existing inequities in mental illness, burden of disease, lower SES, and damaged connection to the environment.</p>	

<b>10. Does your <u>medical school</u> curriculum address the unequal regional health impacts of climate change globally?</b>	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation:</i>  It is mentioned during a lecture discussing Pacific Health that the Pacific will be “ground zero” for climate change and that it will be disproportionately affected by climate change (HSFY).</p> <p>Additionally there is a lecture “Global Environmental Change and Health” which shows an infographic from the WHO demonstrating that the excess deaths caused by climate change are going to be concentrated in under-developed and developing countries, which are also not responsible for most of the current GHG emissions.</p> <p>The New Zealand Medical Association (NZMA) position statement (N.B. document no longer publicly accessible due to the dissolution of the NZMA), a mandatory reading, also discusses the importance of global justice for climate change for the sake of equity.</p> <p>The RNZCGP document mentions that there will be global asymmetries in climate change effects, and that given New Zealand’s unique position with respect to Pacific countries, it is vital for us to consider global equity.</p>	

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

<b>11. Does your <u>medical school</u> curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?</b>	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.

1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation:</i>  Topic was not covered in the curriculum.</p>	

<b>12. Does your <u>medical school</u> curriculum address important human-caused environmental threats that are relevant to the university’s surrounding community?</b>	
3	This topic was explored in <b>depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation:</i>  It is discussed briefly in a lecture “Global Environmental Changes and Health” in 3<sup>rd</sup> year that South Dunedin, an area proximal to the main university campus, is at particular risk to climate change due to a high flooding risk. Given that this is a low SES area, this will have amplified knock-on effects for the people of South Dunedin.</p>	

<b>13. To what extent does your <u>medical school</u> emphasize the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?</b>	
3	Indigenous knowledge and value systems are <b>integrated throughout</b> the medical school’s planetary health education
2	Indigenous knowledge and value systems as essential components of planetary health solutions are included <b>briefly</b> in the core curriculum.
1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation:</i>  There is no specific discussion about the use of indigenous knowledge as an element of climate change prevention. It should be noted however that the UOW has significant portions of its curriculum devoted to Te Ao Māori (simplistically, the Māori worldview) and our obligations as citizens of Aotearoa New Zealand under the Treaty of Waitangi (much of which involves principles of environmental/land guardianship and sovereignty). However, this is not directly applied to the issue of climate change so this metric scores a 0.</p>	

<b>14. Does your <u>medical school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalized populations such as those with low SES, women, communities of color, children, homeless populations, Indigenous populations, and older adults?</b>	
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3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation:</i>  The RNZCGP document discussing climate change and health mentions that rates of food borne illnesses due to bacterial, viral, and toxin contamination are likely to increase due to climate change, especially in areas where refrigeration and secure food storage are limited (such as Kiribati – a nation with strong ties to New Zealand).</p> <p>In addition, the Bhopal disaster, an incident where hundreds of thousands of persons were killed or injured in India due to an industrial accident, is covered in the HSFY public health lecture “Health and Identity.” It briefly analyses the effects of this disaster through an intersectional lens and concludes that it is the result of “systemic violence” due to the difference in perceived value of different people and the civically disadvantaged.</p>	

**Curriculum: Sustainability**

<b>15. Does your <u>medical school</u> curriculum address the environmental and health co-benefits of a plant-based diet?</b>	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation:</i>  This topic was briefly discussed in the required reading “The Global Syndemic of Obesity, Undernutrition, and Climate Change: The Lancet Commission report.” It states that the reduced rates of obesity, heart disease, and diet-related cancers that come from a plant-based diet, in addition to the associated reduction in GHG emissions.</p> <p>The lecture Global Environmental changes and Health also briefly addresses the climate and health co-benefits of plant-based diets.</p>	

<b>16. Does your <u>medical school</u> curriculum address the carbon footprint of healthcare systems?</b>	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.

*Score explanation:*

*This topic was briefly discussed in the lecture “Global Environmental Changes and Health,” where the climate impacts of hospitals, and the climate considerations being made for the new Dunedin hospital were discussed.*

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

2	The health <b>and</b> environmental <b>co-benefits</b> of <b>avoiding</b> over-medicalisation, over-investigation and/or over-treatment
2	The environmental impact of <b>pharmaceuticals</b> and over-prescribing as a cause of climate health harm. Alternatively teaching on <b>deprescribing</b> where possible and its environmental and health co-benefits would fulfill this metric.
1	The health <b>and</b> environmental <b>co-benefits</b> of <b>non-pharmaceutical management</b> 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 <b>surgical</b> healthcare on planetary health and the climate crisis, and how can it be mitigated
1	The impact of <b>anaesthetic</b> gases on the healthcare carbon footprint and ways to reduce anaesthesia environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions.
1	The impact of <b>inhalers</b> on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	<b>Waste production</b> within healthcare <b>clinics</b> and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)

*Score explanation:*

*3. It is stated within the “Climate Change and Health” lecture that active transport has the co-benefit of reducing carbon emissions and improving health outcomes through increased physical activity. The NZMA position statement states that active transport will both reduce GHG emissions and in turn reduce the health effects of air pollution. The RNZCGP document mentions the benefits of non-pharmaceutical disease management, but do not state what these benefits are.*

*5. A description of the effects of anaesthetic agents as GHGs and relative impacts of different agents is described in the “Global Environmental Changes and Health” lecture.*

**Curriculum: Clinical Applications**

**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 <b>core</b> curriculum.
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1	Yes, there are strategies introduced for having conversations with patients about climate change in <b>elective</b> coursework.
0	No, there are <b>not</b> strategies introduced for having conversations with patients about climate change
<i>Score explanation: This metric is not addressed in the curriculum.</i>	

<b>19. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies for taking an environmental history or exposure history?</b>	
2	Yes, the <b>core</b> curriculum includes strategies for taking an environmental history.
1	Only <b>elective</b> coursework includes strategies for taking an environmental history.
0	No, the curriculum does <b>not</b> include strategies for taking an environmental history.
<i>Score explanation: There is a lecture in pre-clinical years, "Introduction to Occupational Medicine", which discusses the Bill-Glass triangle, a holistic model of measuring environmental exposures/in both work and personal environments and discusses how to use this model clinically.</i>	

***Curriculum: Administrative Support for Planetary Health***

<b>20. Is your <u>medical school</u> currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?</b>	
4	Yes, the medical school is currently in the process of making <b>major</b> improvements to ESH/planetary health education.
2	Yes, the medical school is currently in the process of making <b>minor</b> improvements to ESH/planetary health education.
0	No, there are <b>no</b> improvements to planetary health education in progress.
<i>Score explanation: There appears to be no current strategy to improve the ESH curriculum at Otago Medical School.</i>	

<b>21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> curriculum?</b>	
6	Planetary health/ESH topics are <b>well integrated</b> into the core medical school curriculum.
4	<b>Some</b> 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 <b>(a) standalone lecture(s)</b> .

0	There is <b>minimal/no</b> education for sustainable healthcare.
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*Score explanation:*

*The ESH teaching at UOC is almost exclusively concentrated in 2 sessions in the 4<sup>th</sup> year curriculum, with several other sessions containing relevant content. Most of this content sits in isolation within the curriculum.*

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

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

*There appear to be no specific staff for overseeing the incorporation of ESH throughout the course.*

<b>Section Total (34 out of 72)</b>	<b>C</b>
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*Are there additional curriculum resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.*

## Interdisciplinary Research

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

1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <b>medical school</b> ?	
3	Yes, there are faculty members at the <b>medical school</b> who have a <b>primary</b> research focus in planetary health <b>or</b> healthcare sustainability.
2	Yes, there are individual faculty members at the <b>medical school</b> who are conducting research <b>related</b> 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 <b>institution</b> , but none associated with the medical school.
0	No, there are <b>no</b> planetary health and/or healthcare sustainability researchers at the <b>institution</b> or <b>medical school</b> at this time.
<p><i>Score explanation:</i>  <i>There are researchers at the University of Otago who focus on planetary health, however none specifically based at the UOC.</i></p>	

2. Is there a dedicated department or institute for interdisciplinary planetary health research at your <b>institution</b> ?	
3	There is <b>at least one</b> dedicated department or institute for interdisciplinary planetary health research.
2	There is <b>not currently</b> a department or institute for interdisciplinary planetary health research, but there are <b>plans</b> to open one in the next 3 years.
1	There is an <b>Occupational and Environmental Health department</b> , but no interdisciplinary department or institute for planetary health research.
0	There is <b>no</b> dedicated department or institute.
<p><i>Score explanation:</i>  <a href="#"><u>Coastal People: Southern Skies</u></a> is an interdisciplinary multi-institutional Centre of Research Excellence (CoRE) based at and led by the University of Otago.            It focuses changes resulting from ocean warming and acidification, sea-level rise, and climate change. Research includes responding to the decline in culture, local economy, and well-being of coastal people in New Zealand and across the Pacific.</p>	



Associate Professor Anne-Marie Jackson and Associate Professor Chris Hepburn lead the Coastal People: Southern Skies collaboration.

Additionally, there is [He Kaupapa Hononga](#), a collaborative interdisciplinary research body that carries out research focusing broadly on climate change although without a specific health focus and the Department of Preventive and Social Medicine has members working on planetary health under its umbrella.

**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 <b>decision-making power</b> in the climate + environmental research agenda.
2	Yes, there is a process in which community members impacted by climate and environmental injustice <b>advise</b> the climate + environmental research agenda.
1	<b>No</b> , but there are <b>current efforts</b> to establish a process for community members to advise or make decisions on the research agenda.
0	There is <b>no</b> process, and <b>no</b> efforts to create such a process.

*Score explanation:*

*There is no formal process by which communities who will be disproportionately affected by climate change influence the research agenda within the medical school. There are however Māori and Pacific members of faculty, many of which are at the divisional and dean level, who in turn have influence over the research agenda.*

*The University of Otago is the lead institution of an interdisciplinary Centre of Research Excellence (CoRE), Coastal People: Southern Skies. This acts to connect the coastal peoples of the South Pacific to influence research and implement strategies to help these peoples strengthen their response to climate change. This involves institutional and community groups (including iwi) working collaboratively, which would likely score a 3. However, as this is not part of the medical school, this metric is scored a 0.*

**4. Does your institution have a planetary health website that centralizes ongoing and past research related to health and the environment?**

3	There is an <b>easy-to-use, adequately comprehensive</b> website that <b>centralizes</b> 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 <b>attempts to centralize</b> various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The <b>institution</b> has an <b>Office of Sustainability website</b> that includes <b>some</b> resources related to health and the environment.
0	There is <b>no</b> website.

*Score explanation:  
There is no such website.*

**5. Has your institution recently hosted a conference or symposium on topics related to planetary health?**

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

*Score explanation:  
There was the “Sustainable Healthcare and Climate Health Aotearoa Conference 2021” in June 2021, over 1 year ago.*

*The 15th OERC Symposium 2021 – The Challenge of Net Zero by 2050 – was hosted in late 2021, however it was energy focused.*

**6. Is your medical school a member of a national or international planetary health or ESH organization?**

1	Yes, the medical school is a member of a national or international planetary health or ESH organization
0	No, the medical school is <b>not</b> a member of such an organization

*Score explanation:  
It is not a member of such an organisation.*

**Section Total (6 out of 17)**

**D+**

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

## Community Outreach and Advocacy

***Section Overview:*** *This section evaluates medical school engagement in community outreach and advocacy efforts associated with planetary health. Researching and teaching planetary health is necessary but not sufficient. It is critical that institutions also directly engage with communities most affected by environmental health harms. Although climate change is a problem largely created by those with power and resources, its impacts fall disproportionately on under-resourced populations and communities of color. 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.*

1. Does your <b>medical school</b> partner with community organizations to promote planetary and environmental health?	
3	Yes, the <b>medical school</b> meaningfully partners with <b>multiple</b> community organizations to promote planetary and environmental health.
2	Yes, the <b>medical school</b> meaningfully partners with <b>one</b> community organization to promote planetary and environmental health.
1	The <b>institution</b> partners with community organizations, but the medical school is not part of that partnership.
0	No, there is <b>no</b> such meaningful community partnership.
<p><i>Score explanation:</i>  <i>There are no such partnerships.</i></p>	

2. Does your <b>medical school</b> offer community-facing courses or events regarding planetary health?	
3	The <b>medical school</b> offers community-facing courses or events at least once every year.
2	The <b>medical school</b> 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 <b>institution</b> has offered community-facing courses or events, but the <b>medical school</b> was not involved in planning those courses or events.
0	The <b>institution/medical school</b> have not offered such community-facing courses or events.
<p><i>Score explanation:</i>  <i>The medical school does not offer community facing courses or events on planetary health.</i></p>	

3. Does your <b>medical school</b> have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
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2	Yes, all students <b>regularly</b> receive communication updates dedicated to planetary health and/or sustainable healthcare.
1	Yes, planetary health and/or sustainable healthcare topics are <b>sometimes</b> included in communication updates.
0	Students <b>do not</b> receive communications about planetary health or sustainable healthcare.
<p><i>Score explanation:</i>  There is a monthly newsletter, <i>Te Aka Tauira</i>, sent to students showcasing individual students, projects, and tips for students. As of writing this in December 2022, there have been no articles referencing planetary health or sustainable healthcare, with some articles discussing general sustainability such as “Sustainable Flattening” in the August edition. No other relevant communications were found.</p>	

<p><b>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?</b></p>	
2	Yes, the <b>institution</b> or <b>main affiliated hospital trust</b> 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 <b>institution</b> or <b>main affiliated hospital trust</b> offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
0	There are <b>no</b> such accessible courses for post-graduate providers
<p><i>Score explanation:</i>  No evidence was found online and none was provided by the department responsible for continuing medical education (CME).</p>	

<p><b>5. Does your <u>medical school</u> or its primary <u>affiliated hospital</u> have accessible educational materials for patients about environmental health exposures?</b></p>	
2	Yes, <b>all</b> affiliated hospitals have accessible educational materials for patients.
1	<b>Some</b> affiliated hospitals have accessible educational materials for patients.
0	<b>No</b> affiliated medical centers have accessible educational materials for patients.
<p><i>Score explanation:</i>  The hospital’s parent organisation (Canterbury District Health Board) did not provide such information on request, and none could be found on further enquiry or searching.</p>	

<p><b>6. Does your <u>medical school</u> or its <u>primary affiliated hospital</u> have accessible educational materials for patients about climate change and health impacts?</b></p>	
2	Yes, <b>all</b> affiliated hospitals have accessible educational materials for patients.

1	<b>Some</b> affiliated hospitals have accessible educational materials for patients.
0	<b>No</b> affiliated hospitals have accessible educational materials for patients.

*Score explanation: The DHB could not provide evidence of such material within the hospital, and staff familiar with both the medical school and hospital suggested that it did not exist for either.*

<b>Section Total (0 out of 14)</b>	<b>F</b>
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*Are there additional community engagement and advocacy resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.*

## Support for Student-Led Planetary Health Initiatives

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

1. Does your <b>medical school</b> or your <b>institution</b> offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the <b>medical school</b> or <b>institution</b> <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 <b>medical school</b> or <b>institution</b> encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, <b>but</b> there is no student funding available and there is no requirement to participate.
0	No, <b>neither</b> the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.
<p><i>Score explanation:</i>            There are university-wide sustainability grants from a \$20,000NZD pool with a maximum per project value of \$5,000NZD available to students. Successful grants typically support the sustainability goals our University has set in its Sustainability Strategic Framework 2017 – 2021 or the United Nation’s Sustainable Development Goals, include an element of educational or cultural change among students and/or staff, or are highly visible to staff and students, and involve strong engagement.</p> <p>There is also a pool of \$10,000NZD with a maximum per project value of \$1,000NZD available for “grass roots grants”. To receive this award, a project must meet one of the following criteria: Align with one or more of the University’s sustainability targets of reducing energy use, waste to landfill, or greenhouse gas emissions through sustainable travel; foster change on campus by motivating staff and students to live, study and work sustainably; help staff and students connect with our natural environment; and meaningfully promote the United Nation’s Sustainable Development Goals – including social responsibility and well-being.</p> <p>Source: <a href="https://www.otago.ac.nz/sustainability/lets-work-together/index.html">https://www.otago.ac.nz/sustainability/lets-work-together/index.html</a></p>	

2. Does your <b>institution</b> offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
2	The <b>institution</b> has a <b>specific</b> 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 <b>require student initiative</b> to seek these out and carry them out in their spare time.

0	There are <b>no opportunities</b> for students to engage in planetary health/sustainable healthcare research.
<p><i>Score explanation:</i>  <i>Specific pre-approved 10-week summer studentship programmes focusing on planetary health are available for medical students to undertake research during the summer holiday and are valued at \$6,000NZD, the exact number available varying annually. In addition, planetary health projects can be completed in the 12-week elective period available to 6<sup>th</sup> year students if privately arranged directly with an appropriate supervisor.</i></p>	

<p><b>3. Does the <u>medical school</u> have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.</b></p>	
2	The <b>medical school</b> 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 <b>medical school</b> 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 <b>no medical-school</b> specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.
<p><i>Score explanation:</i>  <i>No such page exists.</i></p>	

<p><b>4. Does your <u>medical school</u> have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?</b></p>	
2	Yes, there is a student organization <b>with faculty support</b> at my medical school dedicated to planetary health or sustainability in healthcare.
1	Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it <b>lacks faculty support</b> .
0	No, there is <b>not</b> a student organization at my institution dedicated to planetary health or sustainability in healthcare.
<p><i>Score explanation:</i>  <i>Medical Students for Global Awareness (MSGA) is “an organisation of medical students dedicated to achieving positive social change. [They] educate about Global Health, and help medical students to give back to the community in a meaningful, positive way.” They do not however have a specific focus on planetary health, and it is primarily focused on social and medical aid to developing nations.</i></p>	

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

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

*Score explanation:*  
 There are student representatives on several committees and subcommittees, some of which are focused on curriculum, however none of these groups have a focus on sustainability.

**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 organize hiking, backpacking, kayaking, or other outings for students)

*Score explanation:*

1. *Students for Environmental Action runs a community garden for students and non-students.*
2. *Unpacked: Don't Look Up was hosted earlier this year. This involved a screening of the film followed by a panel discussion focusing on the themes of the film "Global Warming, Global Warning: The Politics of Climate Change."*
4. *Displays set up for International Day of Awareness of Food Loss and Waste highlighting environmental effects of food waste.*
5. *Otago Student Volunteer Army runs weekly tree planting on the Otago Peninsula to help restore native bush for the purpose of carbon capture and erosion protection.*
6. *Otago University Tramping Club and Otago University Snow Sports Club are both examples of outdoor programmes run by the university.*

<b>Section Total (9 out of 15)</b>	<b>B-</b>
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*Are there additional student-led initiative resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.*

# Campus Sustainability

***Section Overview:*** *This section evaluates the support and engagement in sustainability initiatives by the medical school and/or institution. The healthcare industry is a major contributor to greenhouse gas emissions as well as pollution that harms local, regional, and global ecosystems. While healthcare is, by nature, a resource-intensive endeavor, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinizing 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 minimizing environmental impact.*

1. Does your <b>medical school</b> and/or <b>institution</b> 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 <b>at least one designated staff member</b> 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 <b>no specific staff member</b> in charge of medical school and/or hospital sustainability.
1	There are <b>no salaried sustainability staff</b> , but there is a sustainability task force or committee
0	There are <b>no</b> staff members <b>or</b> task force responsible for overseeing campus sustainability
<p><i>Score explanation:</i>  <i>There is a sustainability office which employs 3 full-time staff members to oversee broad institutional sustainability. As there is no staff member dedicated to the medical school, this metric is scored a 2.</i></p>	

2. How ambitious is your <b>institution/medical school</b> plan to reduce its own carbon footprint?	
5	The institution/medical school has a <b>written and approved plan</b> to achieve carbon neutrality by <b>2030</b>
3	The institution/medical school has a <b>written and approved plan</b> to achieve carbon neutrality by <b>2040</b>
1	The institution/medical school has a stated goal of carbon neutrality by <b>2040</b> but has <b>not created a plan</b> to reach that goal or the <b>plan is inadequate</b>
0	The institution/medical school does <b>not</b> meet any of the requirements listed above
<p><i>Score explanation:</i>  <i>The University of Otago has a commitment to reducing true emission by 50% from 2019 levels and achieving carbon neutrality by 2030. There is a full-time staff member at the Sustainability Office who manages the Net Zero programme and has created a tangible roadmap to achieve this target.</i></p>	

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

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

*Score explanation:*

[Over 80% of the national energy production is from renewable energy](#), which the university is directly supplied by for all electrical needs. In addition, the university contracts electricity from Meridian, which generates all its electricity from hydroelectric and wind stations.

The boilers on campus providing heat have been converted to biomass generation, which reduces carbon emissions by 97% when compared to coal. Invercargill uses coal still but is minimal and is likely being converted this summer.

**4. Are sustainable building practices utilized for new and old buildings on the medical school campus, with design and construction of new buildings and remodeling of old buildings conforming to a published sustainability rating system or building code/guideline?**

3	Yes, sustainable building practices are utilized for new buildings on the medical school campus and the <b>majority</b> of old buildings <b>have been retrofitted</b> to be more sustainable.
2	Sustainable building practices are utilized for new buildings on the medical school campus, but most old buildings have <b>not been retrofitted</b> .
1	Sustainable building practices are <b>inadequately or incompletely</b> implemented for new buildings.
0	Sustainability is <b>not considered</b> in the construction of new buildings.

*Score explanation:*

New buildings must meet the 5 green-star standard ("[New Zealand Excellence](#)") set by the New Zealand Green Building Council. This includes factors such as reduced GHG emissions and the building not being in areas of high ecological value.

Old buildings which are retrofitted must meet a sustainability standard significantly above the building code, with an equivalent rating of approximately 4.5 green stars. Many are still in the process of being updated and will be retrofitted when renovation is specifically required for the building's function.

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

2	Yes, the medical school has implemented strategies to encourage and provide <b>environmentally-friendly transportation options</b> such as safe active transport, public transport, or carpooling and these options are well-utilized by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
1	The medical school has implemented <b>some</b> strategies to provide environmentally-friendly transportation options, but the options are <b>unsatisfactorily</b> accessible or advertised.
0	The medical school has <b>not</b> implemented strategies to encourage and provide environmentally-friendly transportation options.
<p><i>Score explanation:</i>  There are buses linking to the medical school operated by the city, however University of Otago Christchurch currently has no active initiatives to encourage environmentally friendly transportation. There is a preliminary project aiming to provide significantly reduced bus fares for students, however the outcome of this is yet to be known.</p> <p><i>This metric is difficult for the UOC as there is only a small cohort of students based out of this campus</i></p>	

<b>6. Does your <u>medical school</u> have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?</b>	
2	Yes, the medical school has <b>both</b> compost <b>and</b> recycling programs accessible to students and faculty.
1	The medical school has <b>either</b> recycling <b>or</b> compost programs accessible to students and faculty, but not both.
0	There is <b>no</b> compost or recycling program at the medical school.
<p><i>Score explanation:</i>  Staff have recycling facilities available, and composting is organised so that members of staff collectively collect their green waste. Recycling is also available to students in new buildings as part of the 5 green-star rating, however old buildings have no such facility yet. There is no student composting programme. There is a goal to increase waste diversion from 25% to 50% by 2030 as part of the net-zero project.</p>	

<b>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)?</b>	
3	Yes, the medical school has <b>adequate</b> sustainability requirements for food and beverages, including meat-free days or no red-meat, and <b>is engaged</b> in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are <b>insufficient or optional</b> . The medical school <b>is engaged</b> in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are <b>insufficient or optional</b> . The medical school is <b>not</b> engaged in efforts to increase food and beverage sustainability.

0	There are <b>no</b> sustainability guidelines for food and beverages.
<p><i>Score explanation:</i>  The medical school contracts its food services to a third-party with minimal guidance regarding sustainability. There have been efforts to reduce disposable cups, however not in other areas such as addressing food waste, local sourcing, and reducing plastic packaging.  Additionally, there are guidelines regarding staff food and beverage sustainability (e.g. recommending fairtrade certifications), however this is difficult to operationalize due to funding constraints.</p>	

<b>8. Does the <u>medical school</u> or <u>institution</u> apply sustainability criteria when making decisions about supply procurement?</b>	
3	Yes, the medical school has <b>adequate</b> sustainability requirements for supply procurement <b>and</b> is <b>engaged</b> in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are <b>insufficient or optional</b> . The medical school is <b>engaged</b> in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are <b>insufficient or optional</b> . The medical school is <b>not engaged</b> in efforts to increase sustainability of procurement.
0	There are <b>no</b> sustainability guidelines for supply procurement.
<p><i>Score explanation:</i>  Procurement sustainability must be considered, however specific targets are not used. The focus of these efforts is directed mainly towards contracts with a large, over-reaching effect e.g. electricity. Given the university has government contacts, they must consider certain sustainability criteria to use them (e.g. consideration for fair trade, broader social/global outcomes). Procurement sustainability must be considered but is not mandatory. Standards are not going to be changed imminently, however there is a progressive movement within the institution to more heavily be focused on this process.</p>	

<b>9. Are there sustainability requirements or guidelines for events hosted at the <u>medical school</u>?</b>	
2	Every event hosted at the medical school <b>must</b> abide by sustainability criteria.
1	The medical school <b>strongly recommends or incentivizes</b> sustainability measures, but they are <b>not required</b> .
0	There are <b>no</b> sustainability guidelines for medical school events.
<p><i>Score explanation:</i>  Events regulations at the medical school are guided institutionally and abide by university-wide requirements. Several sustainability guidelines have been started by the institutional Office of Sustainability, however with disruption from COVID19 and the prolonged cessation of in-person events halted their progress. Currently there are guidelines around sustainable food options (e.g. plant-based alternatives and a moratorium on single use cups at the Dunedin campus), with work due to start on more thorough sustainability guidelines in the near-future.</p>	

<b>10. Does your <u>medical school</u> have programs and initiatives to assist with making lab spaces more</b>	
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environmentally sustainable?	
2	Yes, the medical school has <b>programs</b> and <b>initiatives</b> to assist with making lab spaces more environmentally sustainable.
1	There are <b>guidelines</b> on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are <b>no</b> efforts at the medical school to make lab spaces more sustainable.
<p><i>Score explanation:</i>  There have been initiatives within the labs to improve sustainability practices. These involve increased use of reusable equipment and recycling of glass, plastics (including soft), and cardboard. Much of this has been led by the lab managers and is also guided by the campus Sustainability Committee.</p>	

11. Does your <u>institution's</u> endowment portfolio investments include fossil-fuel companies?	
4	The institution is <b>entirely divested</b> from fossil fuels <b>and</b> has made a <b>commitment to reinvest divested funds</b> into renewable energy companies or renewable energy campus initiatives.
3	The institution is <b>entirely divested</b> from fossil fuels.
2	The institution has <b>partially divested</b> from fossil fuel companies <b>or</b> has made a <b>commitment to fully divest</b> , but <b>currently</b> still has fossil fuel investments.
1	The institution has <b>not divested</b> from fossil-fuel companies, but faculty and/or students are <b>conducting organized advocacy</b> for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been <b>no efforts</b> to change that.
<p><i>Score explanation:</i>  The University of Otago Foundation Trust, the institutional educational endowment, is <a href="#">fully divested</a> from fossil fuels and partially reinvested in renewables when this occurred. However, the exact value of the reinvestment is not disclosed.</p>	

<b>Section Total (22 out of 32)</b>	<b>B</b>
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*Are there additional sustainability resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.*

# Grading

## Section Overview

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

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

*\*Within each grade bracket, a score in the top 5% (\_5 to \_9%), receives a “+”, and a score in the bottom 5% (\_0- \_4%) receives a “-”. For example, a percentage score of 78% would be a B+.*

## Planetary Health Grades for the University of Otago – Christchurch School of Medicine

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

Section	Raw Score %	Letter Grade
<b>Planetary Health Curriculum (30%)</b>	47.2%	C
<b>Interdisciplinary Research (17.5%)</b>	35.3%	D+
<b>Community Outreach and Advocacy (17.5%)</b>	0.0%	F-
<b>Support for Student-led Planetary Health Initiatives (17.5%)</b>	60.0%	B-
<b>Campus Sustainability (17.5%)</b>	68.8%	B
<b>Institutional Grade</b>	<b>42.9%</b>	<b>C-</b>