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# Planetary Health Report Card (Medicine): *Newcastle University Medicine Malaysia (NUMed)*

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2022-2023 Contributing Team:

- Students: \*Chieng Shin Ying, Palihawadana Arachchige Lavanya Senari Wijegunathileke, Lan Yuen Qi, Nadia Natasha, Insha Shameem Thellachery
- Faculty Mentors: Dr Paul Hubbard, Dr Maria Lee
- \*Primary Contact: [s.y.chieng2@newcastle.edu.my](mailto:s.y.chieng2@newcastle.edu.my)

## Summary of Findings

Overall	C
<u>Curriculum</u>	B
<ul style="list-style-type: none"> <li>NUMed does include planetary health in the curriculum, but it lacks integration longitudinally. In second and fifth year, various aspects of planetary health are discussed in lectures and in seminar work (ILAs).</li> <li><b>Recommendations:</b> There is a lack of teaching about introducing the effects of anthropogenic toxins on human health. This could be explored in lectures and seminars.</li> </ul>	
<u>Interdisciplinary Research</u>	C -
<ul style="list-style-type: none"> <li>NUMed has a dedicated team focused on planetary health and sustainable healthcare who are involved in organising events regarding planetary health. Research opportunities are also made available to the students, however, these opportunities are largely dependent on the students' individual initiatives.</li> <li><b>Recommendations:</b> It will be highly beneficial for NUMed to dedicate grants and specified support and/or facilities for researches in planetary health on campus. Such support should be promoted to the students at the beginning, or earlier, of the academic year, to increase participation.</li> </ul>	
<u>Community Outreach and Advocacy</u>	C -
<ul style="list-style-type: none"> <li>NUMed has made major efforts in improving their community outreach and advocacy initiatives by establishing partnership with local communities towards promoting planetary health, hosting the NUMed Sustainability Series, and establishing a webpage that centralises information regarding planetary health.</li> <li><b>Recommendations:</b> The continuation of posting updates regarding sustainability healthcare and planetary health is crucial to reap the longitudinal benefits of such efforts. It is also beneficial to make it compulsory for staff to undergo the Greener NHS e-learning module on Environmentally Sustainable Healthcare.</li> </ul>	
<u>Support for Student-Led Initiatives</u>	C
<ul style="list-style-type: none"> <li>NUMed supports student groups dedicated towards planetary health, namely through encouraging student participation in research, supporting events dedicated towards planetary health, or through funding the Planetary Health Society. The students in the Planetary Health Society also work closely with faculty mentors to raise awareness on the topic within the university.</li> <li><b>Recommendations:</b> Encouragement and support from NUMed in annual co-curricular activities where students can gain experience towards sustainable agriculture, wilderness or outdoor programs, local volunteer opportunities to build community resilience to the effects of climate change, and many more, will greatly increase its reach and impact in the university community, while also ensuring the continuity of such experiences in the future.</li> </ul>	
<u>Campus Sustainability</u>	D
<ul style="list-style-type: none"> <li>NUMed has made progress in becoming a more sustainable campus. A student-staff team called the Environment and Sustainability Campus Committee (ESCC) has been set up to advocate for sustainable policies and implement green practices. They've made good progress by opening an Eco Lounge, organising waste recycling workshops, and by implementing campaigns to reduce single-use packaging waste.</li> <li><b>Recommendations:</b> We recommend sourcing a part of our campus' energy from renewable energy sources. It is best to establish a plan for a stated goal in reducing the institution's CO2 emissions, and to have a designated staff member whose primary role is to oversee future sustainability interventions.</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>NUMed offers 1 elective whose primary focus is ESH/planetary health to the Year 3 medical students with the following learning objectives:</i></p> <ol style="list-style-type: none"> <li><i>1. To describe the impact of climate change on planet health and public health</i></li> <li><i>2. To describe how the healthcare contribute to climate change</i></li> <li><i>3. To understand how climate mitigation actions and health co benefit</i></li> <li><i>4. To explore the opportunities and roles that healthcare professionals can play in tackling climate change.</i></li> </ol>	

## *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.

At NUMed, a Year 5 lecture from the Good Medical Practice module entitled “Climate, Health & Sustainable Healthcare”, has explored of how deforestation, fossil fuel and coal burning, gasoline usage, methane emissions from animals and agriculture, and the chemical fertilisers contribute to the anthropogenic disruption of the carbon cycle, which leads to global warming. An extensive list of subsequent effects of global warming have also been explored. For example, global warming increases coal plant emissions due to increased energy usage, which contributes to increased air pollution and its subsequent health effects.

**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.

NUMed has a Year 5 lecture from the Good Medical Practice module entitled “Climate, Health and Sustainable Healthcare” that covers this topic in depth. It explored how extreme weather events lead to sudden influx of casualties which increases the hospital burden and affects the quality of patient care and healthcare worker stress. It also explored how these events increase the burden of disease of the local population, increasing the risks of sicknesses, injuries and deaths from extreme events, infectious diseases, mental health illnesses, and etc.

**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.

NUMed have explored this topic in depth in the second-year lecture entitled “Interactions between environment and health”, and in the Year 4 Advanced Clinical Experience (ACE) module entitled “Ecological, environmental and occupational hazards in ill health”.

1. This topic was briefly covered in the Year 2 lecture. Examples such as the cholera outbreak in London of 1854, COVID-19 pandemic and the rise in incidence of tuberculosis were discussed to highlight climate change and its negative impact on the spread of vector-borne diseases, and water availability and quality.
2. In the Year 4 module, there are videos regarding the ecological hazards, such as deforestation, and its relation to ill health and zoonotic diseases. The module also includes discussion questions surrounding the topic to highlight key points from the module.

**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.

*This topic was covered in depth in the Year 2 Case 18 lecture titled “Global Health” and in the Year 4 Clinical Decision Making (CDM) and ACE modules of NUMed.*

- 1. In the Global Health lecture, the sources of air pollution were briefly covered regarding the mechanism behind how air pollution eventually contributes to climate change, and its impact on health.*
- 2. In the Year 4 CDM and ACE modules, the hazards of air pollution and occupational hazards have been explored in depth in regards to their impact on the number of respiratory illnesses.*

**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.

*In the Year 5 lecture of the Good Medical Practice module entitled “Climate, Health & Sustainable Healthcare”, one slide briefly explored how climate change contributes to increased sedentary lifestyle of individuals, contributing to obesity and increased risk of cardiovascular diseases.*

**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.

*NUMed has a second-year lecture entitled “Interactions between environment and health” that includes a number of slides that address this topic. The slides include case discussion about a situation whereby a local gentleman who was affected by the recent floods, was frustrated at an international elective medical student for contributing to the climate crisis and its associated effects. The case discussion focused on how the medical student can approach this situation.*



**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.

*A Year 5 lecture in the Good Medical Practice module entitled “Climate, Health and Sustainable Healthcare” that explores this topic briefly. The students were also tasked to carry out self-directed learning (SDL) and present/teach their colleagues on said topic, as a ‘flipped classroom’ activity. Both the lecture and flipped classroom activity covers the the following learning objectives:*

1. *Climate injustices including how the health impacts of environmental change are distributed unequally within and between population*
2. *Climate change and health (at a global, local, and individual level)*
3. *Climate change and healthcare - Understanding Carbon footprint of healthcare & Greener NHS (organisational sustainability policies and the legal frameworks for reducing carbon emissions)*
4. *Co-benefits of climate actions with food and health as example*
5. *Role as future doctors in addressing environmental issues and achieving sustainable healthcare.*

**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.
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.

*A Year 5 lecture in the Good Medical Practice module entitled “Good Medical Practice” that explores this topic briefly. This topic was also briefly covered in the ‘flipped classroom’ activity where the students were tasked to carry out self-directed learning (SDL) and present/teach their colleagues on said topic. Both the lecture and flipped classroom activity covers the the following learning objectives:*

1. *Climate injustices including how the health impacts of environmental change are distributed unequally within and between population*
2. *Climate change and health (at a global, local, and individual level)*
3. *Climate change and healthcare - Understanding Carbon footprint of healthcare & Greener NHS (organisational sustainability policies and the legal frameworks for reducing carbon emissions)*
4. *Co-benefits of climate actions with food and health as example*
5. *Role as future doctors in addressing environmental issues and achieving sustainable healthcare.*

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

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.

*At NUMed, this topic was briefly explored in both the third-year and fifth-year lectures with the learning outcome:*

- 1. Climate injustices including how the health impacts of environmental change are distributed unequally within and between populations.*

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

11. Does your <u>medical school</u> curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
3	This topic was explored <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.
<i>This topic was not covered.</i>	

12. Does your <u>medical school</u> curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?	
3	This topic was explored <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.
<i>This topic was not covered.</i>	

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?	
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.
<i>This topic was not covered.</i>	

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?	
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>This topic was explore in Year 5 GMP module under the Climate injustice student led lecture, as well a lecture in Year 2 about Global Health talking about the unequal impact of Environmental Change to marginalised communities, going into detail on the mechanism of communicable and non-communicable disease spread highlighting the inequality of the burden of disease.</i></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>As part of the Good Medical Practice module in Year 5, students were required to learn and present about the 'co-benefits of climate actions with food and health' as an example. As part of this module, the Environmental Health Awareness week also discusses topics including the environmental and health co-benefits of a plant based diet was discussed during a one hour lecture on how to integrate plant based diet into our regular diet, and it has also highlighted the effects of animal farming on the environment at a global scale. The lecture also provided students with plant-based protein alternatives such as beans, soy-based proteins etc.</i></p> <p><i>Year 2 learning outcomes include "Describe the nutritional risks and benefits associated with different forms of diet" which includes plant based diets. The impact on health of different foods, including meat, are included in many areas of the curriculum regarding nutrients. The environmental benefits of plant based diets are covered in less detail than the health benefits. There could have been more detail about specifically plant based diets.</i></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.
<p><i>At NUMed, during our Good Medical Practice Module in Year 5, students were tasked to present on the topic of "Climate change and healthcare - Understanding Carbon footprint of healthcare and Greener NHS (organisational sustainability policies and the legal frameworks for reducing carbon emissions)".</i></p>	

*In Year 4, there is a learning outcome entitled ‘ demonstrate how to apply the following concepts in clinical management: shared decision making, personalised care, reducing harm/waste/unwarranted variation, managing risks, improvement and innovation’ taught via a self directed e-module under the ACE rotation entitled ‘ecological, environmental, and occupational health hazards in ill health applying the concepts of ‘realistic medicine’ (shared decision making, personalised care, reducing harm/waste/unwarranted variation, managing risks, improvement and innovation) alongside protocols and guidelines.*

**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 fulfil 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)

*In year 5 of the MBBS programme, The Good Medical Practice module has covered extensively in the student-led presentations which were from a set list of allocated topics covered yearly. The topics that were discussed includes:*

- 1. Climate change and healthcare- understanding the carbon footprint of healthcare and Greener NHS*
- 2. Role as future doctors in addressing environmental issues and achieving sustainable healthcare*

*In addition to the student presentations, there was also a lecture on Climate, Health and sustainable healthcare tackling the waste production in healthcare among other things and alternative solutions.*

***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.
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>This was not done.</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>We are trained in our preclinical and clinical years to include environmental exposure in our history taking which includes, exposure to certain substances, type/location/nature of work, location of home, home environment, and other forms of exposure</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>There is considerable engagement and interest from the medical school to implement and improve Education for Sustainable Healthcare. The aim is to integrate sustainable healthcare within every course and case, it will have three outcomes, the first of which will be taught, the second integrated in the clinical setting e.g. quality improvement projects and the third focusing on the responsibilities of a doctor. This is very well supported by a strong team including Deans, students and external advisors.</i>	
<i>At NUMed, the Global Health submodule was introduced to the Good Medical Practice module in Year 5, focusing on engaging students in discussions about global health through lectures, presentations as well as small group discussions. Lectures such as "COVID-19 and Global Health", "Climate and Health", "the Role of Medical Professionals in Climate Crisis" have been integrated into the module.</i>	

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 <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.
<p><i>A number of lectures and seminars in Year 2 teach about the relationship between biochemistry (related to smoking and air pollutants), genetics (related to the effect of free radicals generated by pollutants have on our DNA), relating back to the pathophysiology of pulmonary conditions such as COPD and emphysema. In Year 4, this was revisited in the module 'Clinical Decision Making', mainly on the relationship between environmental exposures and lung diseases. However, the pathophysiology wasn't explored in depth. Furthermore, this integration of planetary health/ESH topics does not apply to most health conditions, including the effects of climate change on mental health.</i></p>	

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	<b>Yes</b> , the <b>medical school</b> has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare
0	<b>No</b> , the <b>medical school</b> does <b>not</b> have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare.
<p><i>At NUMed, the dean of academic affairs, Dr Paul Hubbard, is responsible to oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course. He works with a team of academic staff to curate the best way in integrating this into the syllabus. However, there is no specific staff that has the expertise in ESH/planetary health topics in NUMed to aid in this decision. However, there is expert guidance in the Newcastle UK campus. Both NUMed and Newcastle UK share the same curriculum.</i></p>	

<b>Section Total (52 out of 72)</b>	<b>B</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 <u>medical school</u> ?	
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>The Newcastle University Medicine Malaysia has a research team of 10 members from the UK and Malaysia who's primary research focus is in planetary health and healthcare sustainability. The work they undertake is aimed at tackling the United Nations Sustainable Development Goals.</i></p>	

2. Is there a dedicated department or institute for interdisciplinary planetary health research at your <u>institution</u> ?	
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>There is no dedicated department or institute.</i></p>	

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 <u>medical school</u> ?	
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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.
<i>There is currently no such process at NUMed.</i>	

<b>4. Does your <u>institution</u> have a planetary health website that centralizes ongoing and past research related to health and the environment?</b>	
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.
<i>Newcastle University Medicine Malaysia had made efforts in creating a webpage on the student website that offers some resources related to health and environment. This webpage offers information regarding the ongoing and future planetary health events, research opportunities and information relating to PHRC. Further development of the webpage is underway.</i>	

<b>5. Has your <u>institution</u> recently hosted a conference or symposium on topics related to planetary health?</b>	
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.

*A virtual event, opened to the staff and students of NUMed, entitled “Environmental Health Awareness Week: Road to Zero Carbon and Zero Waste” was held in 2021 that included a series of webinars that focused on ways to reduce our carbon footprint. NUMed is also hosting an upcoming event in conjunction with World Bee Day on 20th May 2023. This event is part of NUMed’s initiative in the NUMed Sustainability Series. However, as this event falls after the publication of this report, we would like to acknowledge the efforts made to host this event.*

**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

*NUMed has members in the British Malaysian Chamber of Commerce which works toward sustainability. However, this is not specifically targeting planetary health.*

<b>Section Total (7 out of 17)</b>	<b>C-</b>
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*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>NUMed had partnered with the Malaysian Nature Society, by supporting the <a href="#">NUMed Voltage Society</a>, which is a volunteering society, to raise funds and volunteer in tree planting activities to promote planetary and environmental health.</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>There have been no community-facing courses or events. However, there will be an event in May 2023 aimed to raise awareness on the importance of bees for the environment. The event will be open to the students and staff of other universities.</i></p>	

3. Does your <b>medical school</b> have regular coverage of issues related to planetary health and/or
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sustainable healthcare in university update communications?	
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>Newcastle University Medicine Malaysia had made efforts in creating a webpage on the student website that offers some resources related to health and environment. This webpage offers information regarding the ongoing and future planetary health events, research opportunities, information relating to PHRC and the events held by the Global Cortisum on Climate and Health Education. As this webpage has just been established, longitudinal evaluation is required to establish the frequency of communication updates to fulfil this metric.</i></p>	

4. Does the <u>institution</u> or <u>main affiliated hospital trust</u> engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?	
2	Yes, the <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>The Greener NHS has developed an e-learning website that is suitable for all NHS healthcare workforce as part of its efforts to tackle the climate crisis and promote environmentally sustainable healthcare. Although this e-module is readily accessible to all, it is optional.</i></p>	

5. Does your <u>medical school</u> or its <u>primary affiliated hospital</u> have accessible educational materials for patients about environmental health exposures?	
2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated medical centers have accessible educational materials for patients.
<p><i>Most of the medical centres have patient-facing resources such as brochures and posters about toxic exposures such as the relationship between our health and smoking cigarettes, eating a non-balanced meal, having a sedentary lifestyle, etc.</i></p>	

6. Does your <u>medical school</u> or its <u>primary affiliated hospital</u> have accessible educational	
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materials for patients about climate change and health impacts?	
2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated hospitals have accessible educational materials for patients.
<i>There is a dedicated online article on the Ministry of Health Malaysia's website that advises people to stop smoking during haze season, with ample explanation of the reasoning behind it.</i>	

<b>Section Total (6 out of 14)</b>	<b>C -</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.

*NUMed encourages its students to partake in the Research Scholarship Scheme which includes a scholarship provided by Newcastle University to all students across the 3 campuses. However, NUMed does not have an allocated grant or offer opportunities for sustainability initiatives or QI projects.*

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.

*There is a Research Scholarship Scheme that students can apply for which allows students to carry out research about planetary health and sustainable healthcare. However, this scholarship is provided by Newcastle University and not NUMed.*

3. Does the <b>medical school</b> have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.	
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2	The <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>Newcastle University Medicine Malaysia had made efforts in creating a webpage on the student website that offers some resources related to health and environment. This webpage offers information regarding the ongoing and future planetary health events in and out of NUMed, research opportunities offered by the Global Curriculum on Climate and Health Education (GCCHE), and information relating to PHRC and events held by the GCCHE. Further development of the webpage is underway.</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 with faculty support 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 lacks faculty support.
0	No, there is not a student organization at my institution dedicated to planetary health or sustainability in healthcare.
<p><i>There is a Planetary Health Society in NUMed that strives to bring awareness towards the topic of environmental sustainability and the delicate relationship between healthcare and the environment. The society is funded by the Student Association and has a faculty mentor.</i></p>	

<p><b>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?</b></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><i>There is a staff led environment and sustainability focused committee with the involvement of three student representatives named 'Environment and Sustainable Campus Committee (ESCC)' that hosts events every year.</i></p>	

**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)
<p><i>The Environment and Sustainable Campus Committee organised the opening of the Eco Lounge. During the event, there was a talk related to sustainability and the environment which was attended by both students and staff of the university. More information can be found <a href="#">here</a>.</i></p> <p><i>The Foundation in Science students of NUMed also organised a beach clean-up in conjunction with their Study Skills Module. A mix of students and staff (both academic and non-academic) volunteered to clean Pantai Batu Layar in Kota Tinggi, Johor. This event helped to raise awareness about the environment, especially on the ocean and the beach. More information can be found <a href="#">here</a>.</i></p> <p><i>The Voltage Society, which is a volunteering society in NUMed, has hosted a fundraising and tree planting event to promote planetary and environmental health. This event also helps to build community resilience to anthropogenic environmental impacts. More information can be found <a href="#">here</a>.</i></p>	

<b>Section Total (8 out of 15)</b>	<b>C</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 at least one designated staff member for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff, but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p><i>There is an Environment and Sustainability Committee which is made up of 10 paid staff, including academics, heads of service, senior management and 3 student representatives who are responsible for the environmental management across the University. However, there is no specific member of staff for sustainability at the medical school.</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>There is no stated goal for reduction of CO2 emissions. However, NUMED Environment and Sustainability Committee has encouraged NUMED staff and students to reduce their CO2 emission by several measures, such as by reducing car travel, reducing electricity usage and eating meatless meals.</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.

*The buildings at NUMed source <20% of energy needs from off-site and/or on-site renewable energy. NUMed is currently working with IIB (EduCity/NUMed's campus Owner) to install solar system panels at NUMed to establish the use of on-site renewable energy.*

**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.

*Sustainability is not considered in the construction of new buildings in NUMed.*

**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.

*NUMed, being one of the universities in the EduCity Complex, students are provided with a free shuttle system that transports students to and from NUMed and the EcoNest Apartment, where a large majority of NUMed students reside. And the students also have an option of choosing the student accommodation located within the EduCity Complex, which is only a 10-minute walk from the campus. All students and staff are also given access to an electronic scooter system within the EduCity Complex to reduce the environmental impact of vehicles dependent on fossil fuels.*

**6. Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?**

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.

*There are recycling bins available to students and staff in multiple locations within the medical school campus. However, an organic recycling program with compost bins has not been set up, and efforts are underway.*

**7. Does the medical school apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?**

3	Yes, the medical school has <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.

*The medical school has implemented sustainability guidelines for food and beverages but they are currently optional. The medical school has introduced a 'Bring-Your-Own' campaign in an effort to reduce plastic waste by offering discounts on meals when students and faculty use their own containers, while charging extra for each piece of disposable plastic purchased. The medical school has also removed single-use plastic water bottles and drinks from all vending machines, and has water filters installed in various locations across campus. The university is working on reducing the sale of packaged food and drinks from the on-campus cafeterias.*

**8. Does the medical school or institution apply sustainability criteria when making decisions about supply procurement?**

3	Yes, the medical school has <b>adequate</b> sustainability requirements for supply procurement <b>and is 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.
<i>There are no sustainability guidelines for supply procurement in NUMed.</i>	

<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.
<i>Sustainable practices for events are strongly encouraged by the university but not as part of the event requirements. A set of sustainability criteria has been established, however, the university is currently working on reviewing and implementing the guidelines for future events.</i>	

<b>10. Does your <u>medical school</u> have programs and initiatives to assist with making lab spaces more environmentally sustainable?</b>	
2	Yes, the medical school has <b>programs and 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.
<i>There are no efforts at the medical school to make lab spaces more sustainable.</i>	

<b>11. Does your <u>institution's</u> endowment portfolio investments include fossil-fuel companies?</b>	
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.
<i>The institution has not divested from fossil-fuel companies, but NUMed is currently working with IIB (EduCity/NUMed's campus Owner) to install solar system panels at NUMed to establish the use of on-site renewable energy.</i>	

<b>Section Total (9 out of 32)</b>	<b>D</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 Newcastle University Medicine Malaysia (NUMed) School of Medicine

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

Section	Raw Score %	Letter Grade
<b>Planetary Health Curriculum (30%)</b>	$(51/72) \times 100 = 72.22\%$	B
<b>Interdisciplinary Research (17.5%)</b>	$(7/17) \times 100 = 41.18\%$	C -
<b>Community Outreach and Advocacy (17.5%)</b>	$(6/14) \times 100 = 42.86\%$	C -
<b>Support for Student-led Planetary Health Initiatives (17.5%)</b>	$(8/15) \times 100 = 53.33\%$	C
<b>Campus Sustainability (17.5%)</b>	$(9/32) \times 100 = 28.13\%$	D
<b>Institutional Grade</b>	<b>48.96%</b>	<b>C</b>

## Report Card Trends

### Section Overview

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

**Planetary Health Report Card Trends for Newcastle University Medicine Malaysia (NUMed)**

