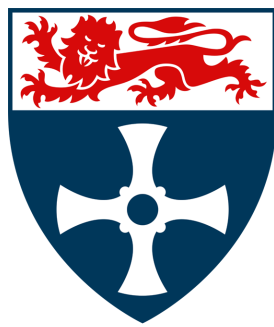




Planetary Health Report Card (Medicine): *Newcastle University of Medicine Malaysia*



Newcastle
University
Medicine Malaysia

2024-2025 Contributing Team:

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Land acknowledgment:

Summary of Findings

Overall Grade	B
Curriculum	A
- The staff in-charge of NUMed's sustainability initiatives have made major improvements to the curriculum over the last few years to ensure all aspects of climate change, sustainability, and healthcare are interspersed throughout the course. Recommendations: Include a session to cover the human-caused environmental threats in the local community.	
Interdisciplinary Research	C-
- NUMed has faculty engaged in planetary health research, although it is not their research focus. A student webpage has been developed to centralise sustainability efforts. A staff CME on 'Climate crisis, Health, and Healthcare' was held in 2022. The university is a member of the Global Consortium on Climate and Health Education (GCCHE).. Recommendations: Symposiums for planetary health targeted towards a student population. Improve the student webpage for sustainability efforts.	
Community Outreach and Advocacy	B
- Clubs & societies at NUMed regularly collaborate with community organisations for planetary health activities and host community-facing initiatives. Planetary health initiatives and updates are communicated to students through email and a student webpage. Some affiliated hospitals provide environmental health materials. Recommendations: Strengthen long-term community partnership. Expand accessible patient education on climate-related health risks.	
Support for Student-Led Initiatives	B
- NUMed supports student-led planetary health initiatives and sustainability efforts through financial incentives, research scholarships, and a dedicated student-led Planetary Health Society. Student representatives serve on the Environment and Sustainability Campus Committee. Extra-curricular activities to promote planetary health awareness have been carried out as well. Recommendations: Expand faculty-supported research opportunities. Strengthen engagement by integrating sustainability QI projects into the curriculum and increasing funding for student-led sustainability initiatives.	
Campus Sustainability	D
- The Environment and Sustainability Campus Committee oversees sustainability initiatives throughout the university. Recycling and compost programs are in place, and cafeterias are involved in sustainability efforts. More eco-friendly transportation options have already been arranged. Recommendations: Work towards a plan for carbon neutrality. Focus on making lab spaces more sustainable by implementing green guidelines. Improve on current sustainable guidelines for events and supply procurement.	

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance describes planetary health as “a solutions-oriented, transdisciplinary field and social movement focused on analysing and addressing the impacts of human disruptions to Earth’s natural systems on human health and all life on Earth.” This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanisation, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment, and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change “the greatest threat to global health in the 21st century,” many health professional 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 health professional training. It is imperative that we hold our institutions accountable for educating health professional students about the health impacts of climate change and other anthropogenic environmental changes, generating research to better understand health impacts and solutions, supporting related student initiatives, embracing sustainable practices as much as possible, and engaging with surrounding communities that are most affected by environmental threats. Because climate change and environmental threats disproportionately affect vulnerable populations (for example, communities of colour, older adults sensitive to health threats, and individuals in low-resource settings), these issues are inherently ones of equity and justice.

With the purpose of increasing planetary health awareness and accountability among health professional schools, we have created a Planetary Health Report Card that students internationally can use to grade and compare their institutions on an annual basis. This student-driven initiative aims to compare health professional 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, 4) community outreach centred on environmental health impacts, and 5) 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 health professional 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/Department vs. Institution:** When “Medical school” is specified in the report card, this only refers to curriculum and resources offered by the School/department 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 including all of its campuses. 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 students are taught to ask during medical encounters that elicits patients' exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mould after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution. Please be as specific as possible when providing evidence for this metric.
- **Elective:** The word "elective" refers to an optional course or lecture series that a 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.
- **Core Curriculum:** This refers to taught material that is delivered to the entire cohort of students in one year.
- **Clerkship / Outreach:** 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, outreach or placements. This is a relatively short (approximately 4-8 weeks) period of study and patient-centred clinical experience that takes place as part of the undergraduate programme.
- **Clinical rotation:** This is a term used to refer to placements that students go on (e.g., ophthalmology, surgery, cardiology).
- **Physiotherapy vs Physical Therapy:** For the purposes of this report card these terms are considered interchangeable. However, physiotherapy will be used primarily.
- **Community organisations:** For most institutions, there are existing groups that are not directly affiliated with the university and exist as a product of what the community the institution exists in cares about or needs. These specific community organisations relevant to this report include those that are focused around some aspect of climate and health preservation. These community organisations can include but are not limited to local mutual aid initiatives, underserved-resource distribution groups, clean-up and nature conservation groups, community gardeners, and other environmental-related organisations. If your institution does not have access to local volunteerships with community groups, please report any community organisations your institution or school has collaborated with.
- **Climate justice:** The idea that certain population groups and geographical locations which are disproportionately more impacted by climate change are already economically and socially disadvantaged. This double vulnerability sits alongside pre-existing social justice concerns and should therefore shift policy and practice to mitigate the inequitable effects of the climate crisis.
- **Extractivism:** The removal of natural resources typically in large quantities. Within anthropology this term is often used in the context of colonialism to refer to

the historic seizing of natural resources, a practice which has developed business models tied to ecological degradation and loss of biodiversity.

- **Global South:** Nations that often have less economic and industrial development and are typically in the southern hemisphere. These nations have been found to be disproportionately impacted by the climate crisis.
- **Low socioeconomic status (SES):** An individual or geographical area that across a variety of socioeconomic factors (e.g., income, education, race/ethnicity) is considered vulnerable. This vulnerability has been correlated to more adverse health outcomes often as a consequence of encountering more barriers in accessing and receiving healthcare.
- **Low and Middle-Income Countries (LMIC):** Countries that have lower degrees of economic affluence.
- **Anthropogenic:** Created through human activity
- **Marginalized communities:** Groups excluded from mainstream economic, educational, social, and/or cultural experiences due to race, gender identity, sexual orientation, age, physical ability, language, and/or immigration status (Sevelius et al., 2020).

Other considerations:

- If there are more than one “tracks” at your institution 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). Where possible please indicate the proportion of students that are on each track.

Completed in 2022 a [Literature Review by Metric](#) is available for the 2022 medicine report card metrics. We are in the process of updating this review and making it more applicable to all the disciplines. However the review serves as a rough collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.

Planetary Health Curriculum

Section Overview: This section evaluates the integration of relevant planetary health topics into the medical school curriculum. Today's medical students will be on the frontlines of tackling the health effects of climate and other environmental changes. Therefore, it is critical that medical students are trained to understand the health effects of these changes, as well as planetary health issues and principles more broadly. Topics like the changing geography of vector-borne diseases, the health consequences of air pollution, environmental health inequities, and disaster response principles must be part of every medical school's core curriculum.

Curriculum: General

1.1. Did your <u>medical school</u> offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year. (3 points)	
Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year. (2 points)	
The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health. (1 points)	
No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year. (0 points)	
Score Assigned:	2
NUMed offers an elective program with 4 spots whose primary focus is ESH/planetary health to the Year 4 medical students. It has the following learning objectives: 1. To describe the impact of climate change on planetary and public health. 2. To learn about how healthcare contributes to climate change. 3. To understand how health and climate mitigation actions co-benefit. 4. To explore opportunities and roles that healthcare professionals can play in tackling climate change.	

Curriculum: Health Effects of Climate Change

1.2. Does your <u>medical school</u> curriculum address the relationship between extreme heat, health risks, and climate change?
This topic was explored in depth by the core curriculum. (3 points)
This topic was briefly covered in the core curriculum. (2 points)
This topic was covered in elective coursework. (1 point)

This topic was not covered. (0 points)	
Score Assigned:	3
<i>A Year 5 lecture from the Good Medical Practice (GMP) module titled 'Climate, Health, & Healthcare' includes a task that covers the following objectives:</i> <i>1. To explain the impact of extreme temperatures, especially extreme heat, on health</i> <i>2. To identify factors that increase vulnerability to extremes of temperature, especially extreme heat</i> <i>3. To discuss how populations need to adapt to extreme temperatures, especially extreme heat through changes in the built environment and individual behaviour</i> <i>4. To discuss how public health and healthcare systems need to adapt their emergency preparedness and response systems to protect the population from extreme temperatures</i> <i>Students are given resources to cover these objectives and a group of students are tasked with summarising the context to the rest of the cohort as part of a 'flipped classroom' session.</i>	

1.3. Does your <u>medical school</u> curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?	
This topic was explored in depth by the core curriculum. (3 points)	
This topic was briefly covered in the core curriculum. (2 points)	
This topic was covered in elective coursework. (1 point)	
This topic was not covered. (0 points)	
Score Assigned:	3
<i>A year 5 lecture from the Good Medical Practice module titled 'Climate, Health and Sustainable Healthcare' covers this topic in depth. It explores 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 explores 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, etc.</i>	

1.4. Does your <u>medical school</u> curriculum address the impact of climate change on the changing patterns of infectious diseases?	
This topic was explored in depth by the core curriculum. (3 points)	
This topic was briefly covered in the core curriculum. (2 points)	
This topic was covered in elective coursework. (1 point)	
This topic was not covered. (0 points)	
Score Assigned:	3

NUMed has explored this topic in depth in a year 2 lecture titled 'Interactions between environment and health'. The 1854 Broad Street cholera outbreak, the COVID-19 pandemic, and the rise in incidence of tuberculosis are discussed to highlight climate change, its negative impact on the spread of vector-borne diseases, and water availability and quality.

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

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

3

NUMed covered these topics in depth through the year 2 Case 18 lecture titled 'Global Health' and the year 4 Clinical Decision Making (CDM) and Advanced Clinical Experience (ACE) modules.

- 1. The Global Health lecture includes slides about the sources of air pollution, the mechanism behind how air pollution eventually contributes to climate change, and its impact on health.*
- 2. The Year 4 CDM and ACE modules explore the hazards of air pollution and occupational risks and their impact on respiratory illnesses.*

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

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

3

At NUMed, this topic is covered in year 3 and year 5.

A Year 3 lecture 'Planetary Health and Sustainability in Healthcare' includes multiple slides on the cardiovascular health effects of climate change. One of them mentions the impact of raised temperatures and heatwaves on increased cardiovascular disease incidence.

The Year 5 lecture of the Good Medical Practice module titled 'Climate, Health & Sustainable Healthcare' explores how climate change contributes to an increased risk of premature death due to sedentary lifestyle and unhealthy diets. It includes a slide about the health co-benefits of

reducing heat in urban areas through active transport, minimising fossil fuel use, and better infrastructure leading to less cardiovascular disease rates.

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

This topic was explored **in depth** by the **core** curriculum.

This topic was **briefly** covered in the **core** curriculum.

This topic was covered in **elective** coursework.

This topic was **not** covered.

Score Assigned:

3

NUMed covers this topic in a year 2 lecture titled 'Interactions between environment and health' and in the year 5 lecture 'Climate, Health, and Sustainable Healthcare'

- 1. The year 2 lecture includes a case discussion about a situation where a local gentleman who was affected by recent floods is frustrated at an international elective medical student for contributing to the climate crisis and its associated effects. The case discussion focuses on how the medical student can approach this situation.*
- 2. The year 5 lecture includes a task with the objective 'to cover the mental health and neuropsychological effects of environmental degradation and climate change'*

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

This topic was explored **in depth** by the **core** curriculum.

This topic was **briefly** covered in the **core** curriculum.

This topic was covered in **elective** coursework.

This topic was **not** covered.

Score Assigned:

3

The year 5 lecture in the Good Medical Practice module titled 'Climate, Health and Sustainable Healthcare' explores this topic, and students are tasked to carry out self-directed learning (SDL) and present to their colleagues on the 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.

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

This topic was explored **in depth** by the **core** curriculum.

This topic was **briefly** covered in the **core** curriculum.

This topic was covered in **elective** coursework.

This topic was **not** covered.

Score Assigned:

3

At NUMed, this topic is covered in year 3 and 5.

A Year 3 lecture on 'Planetary health and Sustainability in Healthcare' discusses the impact of climate change on the health of marginalised/indigenous populations globally. It includes multiple slides that cover

- *Vulnerable populations disproportionately affected by climate change*
- *Climate-related hazards that threaten the health of indigenous populations*

The Year 5 6-hour sub-module in the Good Medical Practice module titled 'Climate and Sustainability' explores this topic through a 'flipped classroom' activity where students are tasked to carry out self-directed learning (SDL) and present to their colleagues on their topics. 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.*

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

This topic was explored **in depth** by the **core** curriculum.

This topic was **briefly** covered in the **core** curriculum.

This topic was covered in **elective** coursework.

This topic was **not** covered.

Score Assigned:	3
<i>At NUMed, this topic was briefly explored in both the third-year and fifth-year lectures with the learning outcome:</i> <i>Climate injustices including how the health impacts of environmental change are distributed unequally within and between populations.</i> <i>The Year 3 lecture on 'Planetary Health and Sustainability in Healthcare' includes multiple slides that cover:</i> <i>Disparity between emission of greenhouse gases and the estimate of per capita mortality from climate change</i> <i>How the observed impacts attributed to climate change like environmental changes, adverse physical symptoms, and food production differ between regions</i>	

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

1.11. Does your <u>medical school</u> curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
This topic was explored in depth by the core curriculum.	
This topic was briefly covered in the core curriculum.	
This topic was covered in elective coursework.	
This topic was not covered.	
Score Assigned:	3
<i>At NUMed, the year 5 sub-module titled 'Climate and Sustainability' explores this topic briefly. It includes a task about climate-smart Obstetrics & Gynaecology care that covers the following objectives:</i> <i>Reproductive health effects of industry related environmental toxins (e.g. air pollution, pesticides) & climate change.</i> <i>Evidence-based care practices vs. sustainability in Obstetrics & Gynaecology</i> <i>The topic was covered in a webinar and additional resources provided to a group of students who are tasked with summarising the topic into a 10-minute presentation to the rest of the cohort. This is part of a 'flipped classroom' activity.</i>	

1.12. Does your <u>medical school</u> curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?	
This topic was explored in depth by the core curriculum.	
This topic was briefly covered in the core curriculum.	
This topic was covered in elective coursework.	

This topic was not covered.	
Score Assigned:	0
<i>This topic was not covered at NUMed.</i>	

1.13. To what extent does your <u>medical school</u> emphasise the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?	
This topic was explored in depth by the core curriculum.	
This topic was briefly covered in the core curriculum.	
This topic was covered in elective coursework.	
This topic was not covered.	
Score Assigned:	3
<i>The importance of relearning Indigenous wisdom to help contribute to climate change adaptation strategies was emphasised during the year 3 lecture 'Planetary health and Sustainability in Healthcare'. The lecture includes slides on the importance of including indigenous practices and their contributions to combating climate change.</i>	

1.14. Does your <u>medical school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of colour, children, homeless populations, Indigenous populations, and older adults?	
This topic was explored in depth by the core curriculum.	
This topic was briefly covered in the core curriculum.	
This topic was covered in elective coursework.	
This topic was not covered.	
Score Assigned:	3
<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>	
<i>The Year 5 GMP (Good Medical Practice) module includes a learning objective 'Explain how global change such as the climate emergency, impacts on health at a global, local, and individual</i>	

level. Understand how the health impacts of environmental change are distributed unequally within and between populations

Curriculum: Sustainability

1.15. Does your medical school curriculum address the environmental and health co-benefits of a plant-based diet?

This topic was explored **in depth** by the **core** curriculum.

This topic was **briefly** covered in the **core** curriculum.

This topic was covered in **elective** coursework.

This topic was **not** covered.

Score Assigned:

3

At NUMed, this topic is part of the year 2 curriculum's learning outcomes, is covered in a year 3 lecture, and in the year 5 sub-module 'Climate & Sustainability'.

The 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.

The Year 3 lecture 'Planetary health and Sustainability in Healthcare' includes a slide about the health and climate co-benefits of cutting down on red and processed meat and increasing fruit and vegetable intake.

The Year 5 sub-module includes a task that covers the following learning objectives

- *The environmental and health co-benefits of a plant-based diet*
- *Explain how the changing climate is affecting environmental and social risks to heighten vulnerability for diabetes and obesity, preventive actions for practitioners, patients, organizations, and communities.*

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

This topic was explored **in depth** by the **core** curriculum.

This topic was **briefly** covered in the **core** curriculum.

This topic was covered in **elective** coursework.

This topic was **not** covered.

Score Assigned:

3

At NUMed, in the year 5 sub-module 'Climate & Sustainability' includes slides on

1. The components of the healthcare sector's carbon footprint: Energy use (heating, cooling, lighting, water), Waste handling, Consumables and medication supply, Meat-based food for patients, transportation for patients and staff, sterilisation and anaesthetics at the theatre, etc.
2. [Greener NHS](#) (organisational sustainability policies and the legal frameworks for reducing carbon emissions)

1.17. Does your <u>medical school</u> curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each)	Score
The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment (2 points)	2
The environmental impact of pharmaceuticals and over-prescribing as a cause of climate health harm. Alternatively teaching on deprescribing where possible and its environmental and health co-benefits would fulfil this metric. (2 points) .	2
The health and environmental co-benefits of non-pharmaceutical management of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes. This is commonly known as social prescribing in the UK. (1 point)	1
Environmental impact of surgical healthcare on planetary health and the climate crisis, and how can it be mitigated. (1 point)	0
The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anaesthesia's environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions. (1 point)	1
The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers. (1 point)	1
Waste production within healthcare clinics and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting) (1 point)	1
<i>A Year 3 lecture on 'Planetary health and Sustainability in Healthcare' includes a slide about the impact of inhalers on carbon footprint, and recommends a dry-powder inhaler which is 44x more friendly than a metered-dose inhaler (MDI). The slide mentions the hydrofluorocarbon content in MDIs and the impact this has on climate change.</i> <i>In Year 4, the Advanced Clinical Experience module includes two learning outcomes: 'Recognise the potential consequences of over-diagnosis' and 'Recognise the potential consequences of over-treatment'. Students cover these outcomes during their clinical placement learning or biweekly discussion sessions and are taught on the adverse health effects of over-treatment and the importance of certain investigations (e.g.: ultrasound) as first-line instead of other investigations (e.g.: x-rays, CT scans, MRI, PET scans) due to their increased environmental load. Students are also taught to identify adverse effects of over-prescribing in patients, and encouraged to practice deprescribing or reviewing the benefits/risks of polypharmacy to improve patient outcomes and reduce healthcare costs.</i>	

In year 5 of the MBBS programme, The Good Medical Practice module has covered the environmental impact of healthcare extensively, including the following components of sustainable clinical practices:

- 1. Sources of greenhouse gases in a healthcare setting, including anaesthetic gases, waste hauling, supply procurement, and how this contributes to the climate crisis.*
- 2. How clinical waste from PPE (including those used at the clinic) contributes to the climate crisis and how we can mitigate this as healthcare professionals.*
- 3. Role as future doctors in mitigating environmental issues by using disposable gloves rationally, investing in reusable materials and a decontamination system (e.g.: using a linen gown rather than disposable gowns for operations without biohazards), use products with recycled and bio materials, etc.*

The importance of non-pharmaceutical management like exercise, healthy diet, smoking cessation programs, and referral to patient support groups is emphasised throughout the clinical years (year 3, 4, and 5). However, the environmental benefits of social prescribing were not highlighted.

Curriculum: Clinical Applications

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

Yes, there are strategies introduced for having conversations with patients about climate change in the **core** curriculum. (2 points)

Yes, there are strategies introduced for having conversations with patients about climate change in **elective** coursework. (1 points)

No, there are **not** strategies introduced for having conversations with patients about climate change. (0 points)

Score Assigned:

2

A year 3 lecture 'Planetary health and Sustainability in Healthcare' part of the core curriculum includes slides on actions healthcare professionals can take to mitigate the effects of climate change. The curriculum recommends the following strategies:

- Framing climate action in health terms to generate greater motivation to act among the public.*
- Educate patients regarding conditions with an increased prevalence in the particular region owing to climate change.*
- Advise patients to reduce risk of health effects of climate change by reducing exposure.*
- Inform patients about strategies to reduce their carbon footprint that also provide health co-benefits, like walking instead of driving and limiting meat consumption.*

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

Yes, the **core** curriculum includes strategies for taking an environmental history. (2 points)

Only elective coursework includes strategies for taking an environmental history. (1 point)	
No, the curriculum does not include strategies for taking an environmental history. (0 points)	
Score Assigned:	2
<i>At NUMed, we are trained in our preclinical and clinical years to include environmental exposure as part of our focused history taking. This includes, but is not limited to:</i> - <i>Exploring the presence of occupational exposures (e.g. asbestos, aromatic amines, cadmium) in patients with occupational lung disease or certain cancers.</i> - <i>Establishing the type, location, and nature of work where relevant.</i> - <i>Exploring the patient's home environmental hazards like proximity to water sources, proximity to industrial zones, scheduled fogging in dengue-prone areas, etc. to consider possible public health interventions if necessary.</i>	

Curriculum: Administrative Support for Planetary Health

1.20. Is your <u>medical school</u> currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?	
Yes, the medical school is currently in the process of making major improvements to ESH/planetary health education. (4 points)	
Yes, the medical school is currently in the process of making minor improvements to ESH/planetary health education. (2 points)	
No, there are no improvements to planetary health education in progress. (0 points)	
Score Assigned:	4
<i>At NUMed, there is considerable engagement and interest from the medical school to implement and improve Education for Sustainable Healthcare which is very well supported by a strong team including Deans, staff, students, and external advisors.</i> <i>Over the past few years, NUMed has integrated multiple learning objectives, lectures, and student activities for planetary health education to ensure that future healthcare professionals are well aware of the climate crisis and how they can help mitigate it.</i> <i>NUMed's emphasis on planetary health education is quite robust given that topics are integrated longitudinally throughout the course. The aim for the future is to integrate sustainable healthcare topics within every module and case in the form of taught lectures, quality improvement projects, and interactive discussion sessions.</i>	

1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> curriculum?	
Planetary health/ESH topics are well integrated into the core medical school curriculum. (6 points)	

Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum. (4 points)	
Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s) . (2 points)	
There is minimal/no education for sustainable healthcare. (0 points)	
Score Assigned:	6
<i>At NUMed, planetary health topics are well-integrated into the core curriculum.</i> <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.</i> <i>In Year 3, a lecture titled 'Planetary health and Sustainability in Healthcare' includes extensive information regarding climate change, the adverse health effects, and the role of healthcare professionals in mitigating this.</i> <i>In Year 4, the module 'Clinical Decision Making' touches on the relationship between environmental exposures and lung diseases. However, the pathophysiology wasn't explored in depth.</i> <i>In Year 5, the sub-module on 'Climate and Sustainability' covers multiple learning objectives regarding sustainable healthcare topics as mentioned in this report. Students are given lectures and additional resources, and divided into groups with specific topics assigned to them. They are tasked with summarising their topics to the rest of the cohort in a 10-minute presentation with a Q&A session at the end. This 'flipped classroom' learning model encourages students to actively learn, reflect, and debate about planetary health topics.</i>	

1.22. Does your <u>medical school</u> employ a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course?	
Yes, the medical school has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (1 point)	
No, the medical school does not have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (0 points)	
Score Assigned:	1

At NUMed, a senior clinical lecturer is responsible to oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course. She works with a team of academic staff to curate the best way in integrating this into the syllabus. Although there is no specific staff that has the expertise in ESH/planetary health topics in NUMed to aid in this decision, there is expert guidance in the Newcastle UK campus. Both NUMed and Newcastle UK share the same curriculum.

Section Total (67 out of 72)

93.05%

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Interdisciplinary Research

Section Overview: *This section evaluates the quality and quantity of interdisciplinary planetary health research at the 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, institutions should fund research studying the health effects of climate change and anthropogenic environmental toxins. This obligation is particularly strong because the public and policymakers are more attentive to climate change when its implications for human health are emphasised.*

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <u>institution</u>?	
Yes, there are faculty members at the institution who have a primary research focus in planetary health or sustainable healthcare/vetcare. (3 points)	
Yes, there are individual faculty members at the institution who are conducting research related to planetary health or healthcare sustainability, OR are part of a national/international sustainability working group, but it is not their primary research focus. (2 points)	
There are sustainability researchers at the institution , but not specifically associated with healthcare/vetcare. (1 point)	
No, there are no planetary health and/or sustainability researchers at the institution at this time. (0 points)	
Score Assigned:	2
<i>3 of NUMed's staff members completed a project entitled 'Integrating Sustainability into Medical Education: Evaluating the Impact of the 'Planetary Health and Sustainability in Healthcare' Module on Student Outcomes', funded by Advance HE's Global Impact Grant. The module significantly improved student awareness of sustainability, with average ratings increasing from 2.9 to 4.1 and 85% of students committing to sustainable actions post-module, up from 55% pre-module. Qualitative feedback highlighted a significant shift, with students recognising the critical role of sustainability in medical practice. This project demonstrates the importance of integrating sustainability into medical education to prepare healthcare professionals for global health challenges.</i> <i>Researchers from NUMed participated in the Water Security and Sustainable Development Hub, a prestigious international research initiative spanning five countries—India, Ethiopia, Colombia, Malaysia, and the United Kingdom. This interdisciplinary project, funded by the Global Challenges Research Fund (GCRF) through UK Research and Innovation (UKRI), ran from 2019 to 2024. It brought together experts in public health, environmental health, engineering, social sciences, and governance—key components of planetary health—to collaboratively address water security challenges in each participating country. The project received significant recognition, earning the Queen's Anniversary Prize for Higher and Further Education (2023/2024). Among its key innovations, the Lab-in-a-Suitcase was highlighted for its ability to detect potential waterborne pathogens, including antibiotic-resistant bacteria, in diverse environments. This groundbreaking tool has led to several spin-off research projects exploring water security across Southeast Asia. One such project, in collaboration with an Associate Professor from NUMed and researchers from</i>	

Chulalongkorn University, Thailand, assessed water quality in the Chao Phraya River, Bangkok. Another initiative, conducted in Jakarta, Indonesia, examined water quality in the Ciliwung River in partnership with an Associate Professor from NUMed and Universitas Indonesia. These efforts continue to expand the research impact of the Hub, furthering understanding and solutions for regional water security.

As a results of the Water Security Hub's research activities, several scholarly articles have been published. In March 2024, a paper titled 'Students views and Perceptions on Outdoor Air Pollution in Iskandar Puteri, Malaysia' was published and a cross-sectional study on 'Perceptions of climate change and associated health impacts among communities in Johor River Basin, Malaysia' in July 2024. In August 2024, another paper titled 'Addressing Gaps in Water Protection Lawa for River Conservation' was published, further contribute to the broader discourse on planetary health by addressing critical gaps in water governance and environmental stewardship.

2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?

There is **at least one** dedicated department or institute for interdisciplinary planetary health research. (3 points)

There is **not currently** a department or institute for interdisciplinary planetary health research, but there are **plans** to open one in the next 3 years. (2 points)

There is an **Occupational and Environmental Health department**, but no interdisciplinary department or institute for planetary health research. (1 points)

There is **no** dedicated department or institute. (0 points)

Score Assigned:

0

There is no dedicated department or institute at NUMed.

2.3. Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your institution?

Yes, there is a process in which community members impacted by climate and environmental injustice have **decision-making power** in the climate + environmental research agenda. (3 points)

Yes, there is a process in which community members impacted by climate and environmental injustice **advise** the climate + environmental research agenda. (2 points)

No, but there are **current efforts** to establish a process for community members to advise or make decisions on the research agenda. (1 points)

There is **no** process, and **no** efforts to create such a process. (0 points)

Score Assigned:

0

There is currently no such process at NUMed.

2.4. Does your institution have a planetary health website that centralises ongoing and past research related to health and the environment?

There is an **easy-to-use, adequately comprehensive** website that **centralises** various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities. (3 points)

There is a website that **attempts to centralise** various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive. (2 points)

The **institution** has an **Office of Sustainability website** that includes **some** resources related to health and the environment. (1 point)

There is **no** website. (0 points)

Score Assigned:

2

NUMed has made efforts in creating a webpage on the student learning platform (Medical Learning Environment, MLE for short) that aims to centralise the Environment & Sustainability Campus Committee's efforts. This webpage offers information regarding the PHRC. It also offers resources related to health and environment., and student research updates from the Global Consortium (GCCHE) on Climate and Health Education, as well as upcoming workshops/courses/webinars organised by the GCCHE.

Further development of the webpage is underway.

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

Yes, the **institution** has hosted at least one conference or symposium on topics related to planetary health in the past year. (4 points)

Yes, the **institution** has hosted at least one conference or symposium on topics related to sustainable healthcare/vetcare in the past year. (3 points)

Yes, the **institution** has hosted a conference on topics related to planetary health / sustainable healthcare/vetcare in the past three years. (2 points)

The **institution** has not hosted any conferences directly, but they have provided financial support for a local planetary health event. (1 point)

No, the **institution** has not hosted a conference on topics related to planetary health in the past three years. (0 points)

Score Assigned:

2

On 20 February 2024, NUMed organised a one-day research seminar on antimicrobial resistance (AMR) with the central theme of its impact on planetary health. This seminar was jointly organised with Universiti Teknologi Malaysia and supported by the American Chemical Society. The event attracted 65 participants, including representatives from various sectors such as Agri Season Malaysia, Indah Water Consortium Sdn Bhd, Biocon Malaysia, the National Water Service Commission Malaysia, Ranhill SAJ Malaysia, the Iskandar Regional Development Authority, and the National Water Research Institute of Malaysia. An international expert from Newcastle University, UK, was also invited to deliver a talk and participate in a brainstorming session aimed at identifying key research priorities concerning AMR and its implications for planetary health. The discussions sought to propose evidence-based clinical practice guidelines to safeguard human health while also formulating policy recommendations for the government to mitigate the broader environmental impact of AMR. The seminar fostered an interdisciplinary dialogue between academia, industry, and policymakers, emphasising the urgent need for collaborative research and strategic interventions in addressing this critical global challenge.

2.6. Is your institution a member of a national or international planetary health or ESH/ESV organisation?

Yes, the institution is a member of a national or international planetary health or ESH/ESV organisation. (1 points)

No, the institution is **not** a member of such an organisation. (0 points)

Score Assigned:

1

NUMed is a member of the Global Consortium on Climate and Health Education ([GCCHE](#)).

Section Total (9 out of 17)

52.94%

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Community Outreach and Advocacy

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

3.1. Does your <u>institution</u> partner with community organisations to promote planetary and health?	
Yes, the institution meaningfully partners with multiple community organisations to promote planetary and environmental health. (3 points)	
Yes, the institution meaningfully partners with one community organisation to promote planetary and environmental health. (2 points)	
The institution does not partner with community organisations, but participates in community focused events relating to planetary health. (1 point)	
No, there is no such meaningful community partnership. (0 points)	
Score Assigned:	2
<i>At NUMed, the Foundation in Biological and Biomedical Science students organised a Mangrove Field Trip to Kampung Sungai Melayu, Gelang Patah, as part of their Study Skills Project. This trip allowed 28 students and 7 staff members to explore the biodiversity and ecological importance of mangrove ecosystems while engaging with the local fishing village community. Activities included a boat cruise, wildlife observation, and visits to local fishing and mussel farming sites, where students learned about sustainable aquaculture practices. This project successfully strengthened NUMed's commitment to environmental sustainability, conservation, and fostering partnerships with local communities in ecotourism initiatives.</i>	

3.2. Does your <u>institution</u> offer community-facing courses or events regarding planetary health?	
The institution offers community-facing courses or events at least once every year. (3 points)	
The institution offers courses or events open to the community at least once per year, but they are not primarily created for a community audience. (2 points)	
The institution has promoted community-facing courses or events, but was not involved in planning those courses or events. (1 point)	
The institution has not offered such community-facing courses or events. (0 points)	

Score Assigned:	3
<i>NUMed has started a new initiative called 'Trash to Treasure'. The campus is part of EduCity, which includes a number of colleges and universities. This initiative is designed with the EduCity students and staff in mind. It's a facebook platform for students and staff to upload items that they would like to sell or give away.</i> <i>The institution has taken initiatives to organise atleast one community-facing event a year; and plans to continue to do so for the foreseeable future. The Planetary Health Society, a student-led organisation, has planned a booth for 26th February in collaboration with a local app called 'Ambrrr' that seeks to encourage climate action in the local community by giving economic incentives like discount coupons.</i>	

3.3. Does your <u>institution</u> have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
Yes, all students regularly receive communication updates dedicated to planetary health and/or sustainable healthcare. (2 points)	
Yes, planetary health and/or sustainable healthcare topics are regularly included in communication updates to some courses . (1 point)	
Students do not receive communications about planetary health or sustainable healthcare. (0 points)	
Score Assigned:	2
<i>NUMed has a webpage on the student learning platform (MLE) for medical students which offers 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, and events offered by the Global Consortium On Climate and Health Education (GCCHE), and information relating to PHRC.</i> <i>Events and initiatives started by the Environment and Sustainability Campus Committee are regularly updated to staff and students through email.</i>	

3.4. Does the <u>institution</u> or <u>main affiliated hospital trust</u> engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?	
Yes, the institution or main affiliated hospital trust offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health. (2 points)	
Yes, the institution or main affiliated hospital trust offers one course relating to planetary health and/or sustainable healthcare for post-graduate provider. (1 point)	

There are no such accessible courses for post-graduate providers. (0 points)	
Score Assigned:	1
<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>	

3.5. Does your <u>institution</u> or its <u>affiliated teaching hospitals</u> have accessible educational materials for patients about environmental health exposures?	
Yes, the institution or all affiliated hospitals have accessible educational materials for patients. (2 points)	
Some affiliated hospitals have accessible educational materials for patients. (1 point)	
No affiliated hospitals have accessible educational materials for patients. (0 points)	
Score Assigned:	2
<i>The institution does not have educational materials for patients about environmental health exposures, but most government hospitals, including those affiliated with NUMed, provide brochures and posters about toxic exposures, the relationship between health & smoking cigarettes, eating unhealthy meals, having a sedentary lifestyle, etc.</i>	

3.6. Does your <u>institution</u> or its <u>affiliated teaching hospitals</u> have accessible educational materials for patients about the health impacts of climate change?	
Yes, the institution or all affiliated hospitals have accessible educational materials for patients. (2 points)	
Some affiliated hospitals have accessible educational materials for patients. (1 point)	
No affiliated hospitals have accessible educational materials for patients. (0 points)	
Score Assigned:	0
<i>The institution does not have educational materials for patients about the health impacts of climate change.</i>	

Section Total (10 out of 14)	71.42%
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Support for Student-Led Planetary Health Initiatives

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

4.1. Does your <u>institution</u> offer support for students interested in enacting a sustainability initiative/QI project?	
Yes, the institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum. (2 points)	
The institution encourages sustainability QI projects (to fulfil clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate. (1 point)	
No, the institution does not offer opportunities or support for sustainability initiatives or QI projects. (0 points)	
Score Assigned:	2
<i>NUMed's Environmental & Sustainability Campus Committee (ESCC) offers a comprehensive guide comprising sustainable tips aimed at encouraging all staff and students to integrate green practices into their event planning and execution, with the objective of inspiring a shift towards more environmentally responsible event hosting.</i> <i>The ESCC offers a financial rewards for events that adhere to these guidelines:</i> - RM600 for two qualifying event applications that are at least 70% compliant to the guidelines - RM300 for the three qualifying event applications that are at least 50% compliant to the guidelines	

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

There is a [Research Scholarship Scheme](#) that students can apply for which allows students to carry out research about planetary health and sustainable healthcare.

Students also have the opportunity to design their own research study & discuss it with the research team through the research clinic initiative. The team provides students with the guidance necessary to start their research project.

4.3. Does the institution have a webpage where students can find specific information related to planetary health and/or sustainable healthcare/vetcare activities and mentors within the institution? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.

The institution has a webpage with specific information related to planetary health or sustainable healthcare/vetcare that includes up-to-date information on relevant initiatives and contact information of potential mentors. (2 points)

There is an institution web page that features some information on projects and mentors within planetary health and sustainable healthcare within the institution, but it lacks key information. (1 point)

There is **no institution** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors. (0 points)

Score Assigned:

1

NUMed has a webpage on the student learning platform that offers 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 and events offered by the Global Consortium on Climate and Health Education (GCCHE), and information relating to PHRC.

4.4. Does your institution have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?

Yes, there is a student organisation **with faculty support** at my institution dedicated to planetary health or sustainability in healthcare. (2 points)

Yes, there is a student organisation at my institution dedicated to planetary health or sustainability in healthcare but it **lacks faculty support**. (1 point)

No, there is **not** a student organisation at my institution dedicated to planetary health or sustainability in healthcare. (0 points)

Score Assigned:

2

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.

4.5. Is there a student liaison representing sustainability interests who serves on a medical school or institutional decision-making council to advocate for curriculum reform and/or sustainability best practices?	
Yes, there is a student representative that serves on a department or institutional decision-making council/committee. (1 points)	
No, there is no such student representative. (0 points)	
Score Assigned:	1
<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. It also plays a part in suggesting new environment-friendly campus policies such as the Bring-Your-Own campaign for food vendors.</i> <i>The NUMed Student Association (NUMedSA) appoints one member to represent sustainability interests. The NUMedSA sustainability representative is invited to join the regular ESCC meetings.</i>	

4.6. In the past year, has the <u>institution</u> had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)	Score
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.	0
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.	0
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.	0
Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)	1
<i>The Mangrove Field Trip to Kampung Sungai Melayu organised by NUMed's foundation students allowed 28 students and 7 staff members to explore the biodiversity and ecological importance of mangrove ecosystems while engaging with the local fishing village community. Activities included a boat cruise, wildlife observation, and visits to local fishing and mussel farming sites, where students learned about sustainable aquaculture practices.</i>	

NUMed has a dedicated space called the 'Eco Lounge' to hold and promote planetary health events and initiatives. The Eco Lounge has a display of repurposed and upcycled items designed by students/faculty to inspire other students to do the same.

NUMed's Athletics & Cross Country Club (NUAXC) organises regular outdoors programs including weekly night runs and hikes.

Section Total (10 out of 15)

66.67%

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Campus Sustainability

Section Overview: This section evaluates the support and engagement in sustainability initiatives by the institution. The healthcare industry is a major contributor to greenhouse gas emissions as well as pollution that harms local, regional, and global ecosystems. While healthcare is, by nature, a resource-intensive endeavour, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinising every aspect of how our systems operate, from where we source our energy, to how we build our infrastructure, to what companies we invest in. Our medical schools, clinics, and hospitals must set the standard for sustainable practices, and show other sectors what is possible when it comes to minimising environmental impact.

5.1. Does your <u>institution</u> have an Office of Sustainability?	
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. (3 points)	
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 hospital sustainability. (2 points)	
There are no salaried sustainability staff , but there is a sustainability task force or committee. (1 point)	
There are no staff members or task force responsible for overseeing campus sustainability. (0 points)	
Score Assigned:	2
<i>There is an Environment and Sustainability Committee (ESCC) 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, the ESCC members are not in charge of sustainability at the hospital.</i> <i>However, most government hospitals and GP practices, including those affiliated with NUMed, have their own sustainability committees that are in-charge of implementing sustainability guidelines at the hospital.</i>	

5.2. How ambitious is your <u>institution's</u> plan to reduce its own carbon footprint?
The institution has a written and approved plan to achieve carbon neutrality by 2030 (5 points)
The institution has a written and approved plan to achieve carbon neutrality by 2040 (3 points)
The institution has a stated goal of carbon neutrality by 2040 but has not created a plan to reach that goal or the plan is inadequate (1 point)
The institution does not meet any of the requirements listed above (0 points)

Score Assigned:	5
<i>NUMed is part of SEDA's Energy Management and Efficiency program and has received approval and a certification for its plan to reduce its carbon footprint by 40%-45% by 2030. The university has successfully reduced its total energy expenditure by 26.47% from 2018 to 2023. Long-term goals of this initiative include:</i> - <i>Carbon-neutrality by 2030</i> - <i>Net-zero carbon emissions by 2050</i> - <i>Continue to implement and expand sustainability initiatives like energy-efficient infrastructure, waste reduction programs, and sustainable procurement practices.</i> - <i>To integrate sustainability into research and education</i> - <i>Position NUMed as a leader in sustainability within the medical education community to promote planetary health</i> <i>While the Environment and Sustainability Campus Committee at NUMed has stated a long-term goal of carbon neutrality, the institution has not created a plan to achieve carbon neutrality.</i>	

5.3. Do buildings/infrastructure used by the institution for teaching (not including the hospital) utilize renewable energy?	
Yes, institution buildings are 100% powered by renewable energy. (3 points)	
Institution buildings source >80% of energy needs from off-site and/or on-site renewable energy. (2 points)	
Institution buildings source >20% of energy needs from off-site and/or on-site renewable energy. (1 point)	
Institution buildings source <20% of energy needs from off-site and/or on-site renewable energy. (0 points)	
Score Assigned:	0
<i>The buildings at NUMed source <20% of energy needs from off-site and/or on-site renewable energy. NUMed has successfully worked with IIB (EduCity/NUMed's campus Owner) to install solar system panels on all buildings in Medini and EduCity to establish the use of on-site renewable energy. The installation is set to take place in the first quarter of 2025.</i>	

5.4. Are sustainable building practices utilised for new and old buildings on the <u>institution's</u> campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?	
Yes, sustainable building practices are utilised for new buildings on the institution's campus and the majority of old buildings have been retrofitted to be more sustainable. (3 points)	
Sustainable building practices are utilised for new buildings on the institution's campus, but most old buildings have not been retrofitted . (2 points)	

Sustainable building practices are inadequately or incompletely implemented for new buildings. (1 point)	
Sustainability is not considered in the construction of new buildings. (0 points)	
Score Assigned:	0
<i>Metric is not applicable since NUMed does not have permission to construct new buildings on the current campus premises.</i>	

5.5. Has the <u>institution</u> implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?	
Yes, the institution has implemented strategies to encourage and provide environmentally-friendly transportation options such as safe active transport, public transport, or carpooling and these options are well-utilised by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default. (2 points)	
The institution has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised. (1 point)	
The institution has not implemented strategies to encourage and provide environmentally-friendly transportation options. (0 points)	
Score Assigned:	2
<i>NuMed provides a free shuttle bus to students commuting from university-managed accommodation to the campus. Additionally, there are electric scooters available for students to use, bike racks, and walkways to provide students with better and more environmentally friendly ways to commute to the university. Students are offered a bus for transportation to their clinical placements in the early years, and encouraged to carpool to their clinical placements during the last two years of their program.</i>	

5.6. Does your <u>institution</u> have an organics recycling program (compost) and a conventional recycling program (aluminium/paper/plastic/glass)?	
Yes, the institution has both compost and recycling programs accessible to students and faculty. (2 points)	
The institution has either recycling or compost programs accessible to students and faculty, but not both. (1 point)	
There is no compost or recycling program at the institution. (0 points)	
Score Assigned:	2

NUMed has a compost program in both cafeterias of the university. Additionally, there are multiple waste baskets designated for paper, general waste, plastics, and glass throughout the campus in easily accessible and commonly used spaces such as outside lecture theatres, at the school entrance, outside of labs, near the entrances of the library, and other such areas.

NUMed also has a designated area for paper recycling, where students may deposit larger items to be recycled.

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

Yes, the institution has **adequate** sustainability requirements for food and beverages, including meat-free days or no red-meat, and **is engaged** in efforts to increase food and beverage sustainability. (3 points)

There are sustainability guidelines for food and beverages, but they are **insufficient or optional**. The institution **is engaged** in efforts to increase food and beverage sustainability. (2 points)

There are sustainability guidelines for food and beverages, but they are **insufficient or optional**. The institution is **not** engaged in efforts to increase food and beverage sustainability. (1 point)

There are **no** sustainability guidelines for food and beverages. (0 points)

Score Assigned:

2

The NUMed cafeteria is actively trying to reduce waste production by providing reusable plates, cups, and cutlery. They've implemented an extra charge for food or drinks packaged with takeaway containers or plastic cutlery as part of the 'Bring Your Own Campaign' in order to discourage students from choosing this option.

There are sustainability guidelines in place for food catering for any events in NUMed. This includes:

- *Stopping the use of single-use plastic and other disposable chopsticks*
- *Stop serving foods that come in single-use plastics (e.g: packaged buns, juice bottles, etc)*
- *Event organisers are asked to organise the food disposal to ensure waste is segregated into recyclable items, non-recyclable items, and compostable food waste.*
- *Food should be distributed to participants or donated to pre-identified groups/institutions*

There are also water filters around the university so that reusable water bottles can be refilled.

However, vending machines have been installed which sell bottled water and packaged snacks which are a popular option with students in a rush. Meat-free days or no-red meat has not been implemented, but it's part of our long-term goals in sustainable food practices.

5.8. Does the institution apply sustainability criteria when making decisions about supply procurement?

Yes, the institution has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement. (3 points)	
There are sustainability guidelines for supply procurement, but they are insufficient or optional . The institution is engaged in efforts to increase sustainability of procurement. (2 points)	
There are sustainability guidelines for supply procurement, but they are insufficient or optional . The institution is not engaged in efforts to increase sustainability of procurement. (1 point)	
There are no sustainability guidelines for supply procurement. (0 points)	
Score Assigned:	0
<i>There are no sustainability guidelines in place for supply procurement at NUMed</i>	

5.9. Are there sustainability requirements or guidelines for events hosted at the institution?	
Every event hosted at the institution must abide by sustainability criteria. (2 points)	
The institution strongly recommends or incentivizes sustainability measures, but they are not required . (1 point)	
There are no sustainability guidelines for institution events. (0 points)	
Score Assigned:	1
<i>NUMed's Environmental & Sustainability Campus Committee (ESCC) offers a comprehensive guide comprising sustainable tips aimed at encouraging all staff and students to integrate green practices into their event planning and execution, with the objective of inspiring a shift towards more environmentally responsible event hosting.</i> <i>The ESCC offers financial rewards for events that adhere to these guidelines, but events are not required to adhere to them to be approved.</i>	

5.10. Does your <u>institution</u> have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
Yes, the institution has programs and initiatives to assist with making lab spaces more environmentally sustainable. (2 points)	
There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives. (1 point)	
There are no efforts at the institution to make lab spaces more sustainable. (0 points)	
Score Assigned:	0
<i>At the moment, there are no official guidelines at NUMed to make lab spaces more sustainable</i>	

5.11. Does your <u>institution's</u> endowment portfolio investments include fossil-fuel companies?	
The institution is entirely divested from fossil fuels and has made a commitment to reinvest divested funds into renewable energy companies or renewable energy campus initiatives. (4 points)	
The institution is entirely divested from fossil fuels. (3 points)	
The institution has partially divested from fossil fuel companies or has made a commitment to fully divest , but currently still has fossil fuel investments. (2 points)	
The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organised advocacy for divestment. (1 point)	
Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that. (0 points)	
Score Assigned:	4
<i>The institution is entirely divested from fossil fuels and has invested funds into energy-saving campus initiatives and made a commitment to invest in renewable energy campus initiatives, which includes:</i> - <i>Solar system installation at NUMed's campus anticipated by July 2025.</i> - <i>Optimisation of Campus Chiller System with real-time AI load and temperature control, aimed at enhancing cooling efficiency, improving indoor air quality, and achieving at least 10% energy savings</i> - <i>Replacement of campus lights with LED lights for improved lighting efficiency & energy savings</i> - <i>Cleaning of air handling units on campus with Nano enzyme for better flow and energy efficiency</i>	
Section Total (18 out of 32)	
56.25%	

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Grading

Section Overview

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

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

**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 Newcastle University of Medicine Malaysia’s School of Medicine.

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(67/72) \times 100 = 93.05\%$	A
Interdisciplinary Research (17.5%)	$(9/17) \times 100 = 52.94\%$	C
Community Outreach and Advocacy (17.5%)	$(10/14) \times 100 = 71.42\%$	B
Support for Student-led Planetary Health Initiatives (17.5%)	$(10/15) \times 100 = 66.67\%$	B
Campus Sustainability (17.5%)	$(18/32) \times 100 = 56.25\%$	C+
Institutional Grade	$(Ax0.3 + Bx0.175 + Cx0.175 + Dx0.175 + Ex0.175) = 71.19\%$	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

