



Planetary Health Report Card:

Newcastle University Medicine Malaysia



2020-2021 Contributing Team:

- Students: Anisah Zuki, Chieng Shin Ying (Sabrina), Sundus Mansoor Abdulrahman, Pang Jie Yun (Shirley), Mohammed Nabeel Azeez
- Faculty Mentors: Dr Paul Hubbard, Dr Maria Lee
- *Primary Contact: Shirley Pang, J.Y.Pang2@newcastle.edu.my

Summary of Findings

Curriculum	C
<p>Newcastle University Medicine (NUMed) Malaysia covers planetary health (PH) topics throughout the pre-clinical and clinical years of the programme, where the coverage is more extensive in the latter. However, there are still a number of areas the curriculum lacks, namely the relevance of PH topics to mental health, neurophysiology, reproductive health, indigenous communities, plant-based diets, and approaches during patient encounters. Hence, the administration is planning to utilise this report as a reference point for future improvements to the programme’s learning materials.</p>	
Interdisciplinary Research	D-
<p>NUMed shows a great deal of interest in researching planetary health and healthcare sustainability, especially through a dedicated team of researchers who have a particular focus on tackling the United Nations Sustainability Goal Challenges. However, little action is taken to spread this interest, although some efforts have been made to make NUMed more sustainable. Neither the student body nor the general community are made aware of this team and their research, thus this research could be prioritized much better if a department dedicated to hosting more talks and creating a website to introduce concerns over sustainability, climate, etc was created.</p>	
Community Outreach and Advocacy	F-
<p>Community-based environmental voluntary programmes that medical students could be involved in have not been introduced in NUMed. There is also poor awareness and coverage of planetary health and sustainable healthcare within the medical school. It is hoped a specific page for planetary health will be developed on the online learning platform for students to easily access, so that opportunities and events are combined in one place. There is also lack of information regarding planetary health issues for patients at hospitals associated with the medical school.</p>	
Support for Student-Led Initiatives	F-
<p>The NUMed administration has been supportive of student-led health-related initiatives though, not much could be recorded as the number of initiatives had been lacking in the past year due to various restrictions. Despite that, both the administration and medical students have expressed interest in future collaboration and plans to implement more initiatives. A number of efforts that could be implemented include organising more events, movements, and establishing a student-led club that centres around planetary health/sustainability in medicine. Furthermore, the administration could: offer incentives for Planetary Health events; facilitate collaborative connections between students, staff and/or research mentors to create initiatives related to planetary health; and offer grants to medical students to enact sustainability QI project initiatives.</p>	
Sustainability	D
<p>NUMed had set up a sustainability team in January 2020. The team has been working on various aspects of sustainability such as the compost program and sustainable catering policies. They have also started discussions on the potential use of solar power to meet the energy needs of the campus. NUMed has implemented strategies to provide environment-friendly transport for the students. Potential areas that the sustainability committee could work on could include, but are not limited to, making lab spaces more sustainable and having a stated goal of carbon neutrality would further drive the initiative in the long run.</p>	

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance defines planetary health as “a field focused on characterizing the human health impacts of human-caused disruptions of Earth's natural systems.” 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 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.

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 change. Therefore, it is critical that medical students are trained to understand the health effects of climate change, as well as planetary health 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 medical school offer elective courses to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3*	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>In the previous year there was a 4-week sustainability student selected component (SSC) for 4th year students, this included aspects of sustainability in different healthcare settings. It also included group projects that involved a literature review. This was different to previous years as teaching was moved online during the pandemic but it is hoped the sustainability SSC will continue. In the current curriculum of 2020/2021 there are two elective options in sustainable healthcare/planetary health; one in year 3 and one in year 4.</i></p>	

Curriculum: Health Effects of Climate Change

2. Does your medical school curriculum address the relationship between extreme temperature health risks and climate change, as well as the socioeconomic/racial disparities in extreme heat exposure?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Extreme temperature health risks and climate change were not explicitly mentioned in the core curriculum.

3. Does your medical school curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?

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

This topic was covered loosely in the learning outcome, “Describe how the environment and health interact at the global level, including the effects of climate change on health” as part of case 18 in the year 2 curriculum. In the PDS6 climate change tutorial delivered in 5th year, one of the pre-reading materials addresses the impacts of heatwaves and storms on individual health.

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

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

In year 2, case 18, two learning outcomes encourage self study on the impact of climate change on the changing pattern of infectious diseases. These outcomes are, “Describe the link between globalisation and infectious disease pandemic threat” and “Describe the role of public health education in containing and delaying the spread of infectious diseases with pandemic potential”. Later in stage 5, during the PDS6 module, a taught climate change tutorial also touched on the topic, under the learning outcome, “The climate emergency/crisis and its impact on health at a global, local and individual level.” In this seminar students were encouraged to discuss and explore thoughts on the effect of climate change on the ongoing COVID-19 pandemic. Infectious diseases modules across all years of the spiral curriculum could be a great way to include this teaching in the curriculum going forward and in 2021/2022 this will be covered in depth.

5. Does your medical school curriculum address the cardiorespiratory health effects of climate change, including air pollution?

3	This topic was explored in depth by the core curriculum.
----------	---

2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>In Newcastle University's Year 4 Advance Clinical Experience (ACE) course (ACE117) online tutorial "Ecological, Environmental and Occupational Hazards in Ill Health", it addresses the link between environmental problems and health. A section of the tutorial is dedicated to discuss the effects of air pollution in cardiovascular and respiratory diseases including a case of fatal asthma attack that is linked to air pollution in London. Measures that can be taken to mitigate the effects are also discussed.</i></p> <p><i>This topic is also very briefly mentioned in Year 1 Case 7's lecture, "Understanding Asthma", and Year 2 Case 17's lecture, "Global Health", which demonstrate spiral integration.</i></p>	

6. Does your medical school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<i>This topic was not covered.</i>	

7. Does your medical school curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Year 5 PDS6 climate change seminar aims to meet the learning outcome "To have a broad understanding of how the climate emergency/crisis impacts on health at a global, local and individual level.", it mentions food and water security briefly. Case 18 in year 2 includes the learning outcome "Describe how the environment and health interact at the global level, including the effects of climate change on health", which covers relationships between health and climate change but not on ecosystem health.</i></p>	

8. 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, children, homeless populations, and older adults?

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

In the year 5 PDS6 seminar pre-reading it is mentioned that those in extreme poverty are most vulnerable to the effects of climate change. This has specifically been added as a learning outcome for year 5 in the 2021/2022 curriculum.

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

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

This was covered in year 5 PDS6 in the learning outcome “The climate emergency/crisis and its impact on health at a global, local and individual level” which included discussions around climate change impacts and a brief schematic showing impacts rurally vs in urban environments. The learning outcome “Describe how the environment and health interact at the global level, including the effects of climate change on health” briefly covers the unequal health impacts of climate change in year 2.

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

10. Does your medical school curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?

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

No outcomes or content in any of the learning outcomes including women’s health hospital placements.

11. Does your medical school curriculum address important human-caused environmental threats that are relevant to the university’s surrounding community?

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

Although air pollution is covered in many aspects of the course including in respiratory lectures, all of them are related to the North East of the UK in terms of previous industry and deprivation. Additionally, Year 4 ACE 117 tutorial includes the learning outcome: evaluate the role of ecological, environmental and occupational hazards in ill-health and discuss ways to mitigate their effects. All of these do not mention instances that are specific to communities surrounding NUMED.

12. Does your medical school curriculum address the unique climate and environmental health challenges that have impacted and are impacting Indigenous communities?

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

There is no content addressing the climate and environmental health challenges impacting Indigenous communities globally.

13. Does your medical school 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, and older adults?

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

In Newcastle University’s Year 4 ACE course (ACE117) online tutorial “Ecological, Environmental and Occupational Hazards in Ill Health”, some of the adverse effects of air pollution on children,

pregnant women and the elderly are briefly mentioned, highlighting how these populations are often more severely affected by anthropogenic environmental toxins.

Curriculum: Sustainability

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

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

Although there has been some mention of the benefits of a Mediterranean diet in some lectures on cardiovascular health, the health and environmental benefits of a plant-based diet is not part of the core curriculum at Newcastle University Medical School.

15. Does your medical school curriculum highlight the waste generated by the healthcare system and identify ways to advocate for and implement sustainable best practices in health care?

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

This is covered in Year 3 Essentials of Clinical Practice (EOCP) in the learning outcomes “Describe the knowledge and skills needed to improve environmental sustainability” and “Describe the principles and criteria for just and sustainable access to, and provision of, finite healthcare resources including referral, investigations, and treatment”. Additionally, in Year 4 Clinical Decision Making (CDM), another learning outcome covers this under “Demonstrate how to apply the following concepts in clinical management: Shared decision making, personalised care, reducing harm/waste, managing risk, reducing unnecessary variation in practice and sustainability in clinical management”.

Curriculum: Clinical Applications

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

2	Yes, there are strategies introduced for having conversations with patients about climate change in the core curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.
0	No, there are not strategies introduced for having conversations with patients about climate change
<i>No communication/role-play exercises regarding climate change has been integrated into the curriculum.</i>	

17. In training for patient encounters, does your medical school’s curriculum introduce strategies for taking an environmental history or exposure history?	
2	Yes, the core curriculum includes strategies for taking an environmental history.
1	Only elective coursework includes strategies for taking an environmental history.
0	No, the curriculum does not include strategies for taking an environmental history.
<i>In Year 1 Case 6 regarding COPD, students are taught to elicit a full social history, which includes environmental history and occupational exposures as part of a full clerking of a patient and detailed information-gathering. This includes discussion about asking patients about their living circumstances, occupation, hobbies and travel history. Students are taught to consider the impact of certain environmental exposures such as pesticides, air pollution and urban living environments.</i>	

Curriculum: Administrative Support for Planetary Health

18. Is your medical school currently in the process of improving Education for Sustainable Healthcare (ESH)/planetary health education?	
4	Yes, the medical school is currently in the process of making major improvements to ESH/planetary health education.
2	Yes, the medical school is currently in the process of making minor improvements to ESH/planetary health education.
0	No, there are no improvements to planetary health education in progress.
<i>In NUMED, the Environment and Sustainable Campus Committee was formed with the aim of enhancing the reputation of NUMED as a sustainable university campus, in which one of the responsibilities for this committee is to provide strategies guidance in relation to sustainability and to coordinate efforts to improve teaching related environmental sustainability. The lead for this committee, Dr Maria Lee, had delivered 3 hours of lectures on the topic of sustainability and global health during year 3 second semester integration day.</i>	

19. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the core curriculum?

6	Planetary health/ESH topics are well integrated into the core medical school curriculum.
4	Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum.
2	Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s).
0	There is minimal/no education for sustainable healthcare.

Some topics are integrated well into the cases in the pre-clinical years, especially the health effects of air pollution. Sustainable healthcare practices are well structured with similar themes repeated each year. The aim is to integrate the teaching throughout the curriculum as a strand.

20. Bonus: Does your medical school have a program that offers incentives for faculty/departments to develop new planetary health/ESH courses and/or incorporate planetary health/ESH into existing courses?

1*	Yes, the medical school has an incentive program.
0	No, the medical school does not have an incentive program.

No, the medical school does not have an incentive program.

Section Total (27 out of 58)	27
-------------------------------------	-----------

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 medical school?	
4	Yes, there are faculty members at the School of Medicine who have a primary research focus in planetary health and healthcare sustainability.
3	Yes, there are faculty members at the School of Medicine who have a primary research focus in a planetary health or healthcare sustainability.
2	Yes, there are individual faculty members at the School of Medicine who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.
1	There are planetary health and/or healthcare sustainability researchers at the institution, but none associated with the medical school.
0	No, there are no planetary health and/or healthcare sustainability researchers at the institution or medical school at this time.
<p><i>Yes, there are faculty members at the School of Medicine who have a primary research focus in planetary health and healthcare sustainability. The research team at NUMed now comprises 10 researchers from the UK and Malaysia. Much of the work they undertake with the collaborators in Malaysia and Worldwide is aimed at tackling the United Nations Sustainability Goal Challenges. More information on the research team can be found at https://www.ncl.ac.uk/numed/research/general/</i></p>	

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

0	There is no dedicated department or institute.
<i>NUMed does not have a dedicated department or institute for interdisciplinary planetary health research. But some of the major projects done by NUMed are directly linked to the UN Sustainable Development Goals.</i>	

3. Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your medical school?	
3	Yes, there is a process in which community members impacted by climate and environmental injustice have decision-making power in the climate + environmental research agenda.
2	Yes, there is a process in which community members impacted by climate and environmental injustice advise the climate + environmental research agenda.
1	No, but there are current efforts to establish a process for community members to advise or make decisions on the research agenda.
0	There is no process, and no efforts to create such a process.
<i>NUMed currently has no process nor any plans to include communities disproportionately impacted by climate change and environmental injustice in the decision making process or their inputs on the research agenda.</i>	

4. Does your institution have a planetary health website, or a website centralizing various campus resources related to health and the environment?	
3	There is an easy-to-use, adequately comprehensive website that centralizes various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.
2	There is a website that attempts to centralize various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The institution has an Office of Sustainability website that includes some resources related to health and the environment.
0	There is no website.
<i>No such website was set up under NUMed Malaysia.</i>	

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

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

6. Has your institution or medical school joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education?	
2	Yes, the medical school has joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education.
1	Yes, the institution has joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education, but the medical school specifically has not.
0	No, the institution has not joined the Planetary Health Alliance or the Global Consortium on Climate and Health Education.
<i>No, the institution has not joined the Planetary Health Alliance or the Global Consortium on Climate and Health Education.</i>	

Section Total (4 out of 19)	4
------------------------------------	----------

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 medical school partner with community organizations to promote planetary and environmental health?	
3	Yes, the medical school meaningfully partners with multiple community organizations to promote planetary and environmental health.
2	Yes, the medical school meaningfully partners with one community organization to promote planetary and environmental health.
1	The institution partners with community organizations, but the medical school is not part of that partnership.
0	No, there is no such meaningful community partnership.
<i>NUMed has no such meaningful community partnership.</i>	

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

3. Does your medical school have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
---	--

2	Yes, all students regularly receive communication updates dedicated to planetary health and/or sustainable healthcare.
1	Yes, planetary health and/or sustainable healthcare topics are sometimes included in communication updates.
0	Students do not regularly receive communications about planetary health or sustainable healthcare.
<i>Students do not regularly receive communications on planetary health or sustainable healthcare. However a sustainability section of the online learning platform may be developed in the future which would include updates about planetary health and sustainable healthcare.</i>	

4. Do hospitals affiliated with your medical school 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.
<i>No affiliated medical centres have accessible educational materials for patients.</i>	

5. Do hospitals affiliated with your medical school have accessible educational 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>No affiliated hospitals have accessible educational materials for patients.</i>	

Section Total (0 out of 12)	0
------------------------------------	----------

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 institution offer support for medical students interested in enacting a sustainability initiative?	
2	Yes, the institution offers grants available to medical students for students to enact sustainability initiatives.
1	The medical school encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available.
0	No, the institution does not offer opportunities or support for sustainability initiatives.
<i>NUMed Malaysia does not offer opportunities or support for sustainability initiatives.</i>	

2. Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
3*	The institution offers an explicit paid fellowship for medical students to do research related to planetary health and/or sustainable healthcare.
2*	The institution offers paid research opportunities for students and planetary health/sustainable healthcare projects would be considered eligible.
1	There are unfunded research opportunities for students to perform research related to planetary health/sustainable healthcare.
0	There are no opportunities for students to receive funding for planetary health/sustainable healthcare research.
<i>There are no opportunities for students to receive funding for planetary health/sustainable healthcare research at NUMed.</i>	

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

school and/or contact of information of potential mentors.	
2	The medical school has a web page with specific information related to planetary health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.
1	There is a medical school webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information.
0	There is no medical-school specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.
<i>There is currently no medical-school specific webpage for locating planetary health projects.</i>	

4. Does your medical school have funded, registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?	
2	Yes, there is a funded 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 and/or funding.
0	No, there is not a student organization at my institution dedicated to planetary health or sustainability in healthcare.
<i>There is currently no student organisation dedicated to planetary health or sustainability in healthcare. Hence, there are no entities that the university can fund for this. However, there is a staff led environment and sustainability focused committee with the involvement of two student representatives named 'Environment and Sustainable Campus Committee (ESCC)' that hosts events every year.</i>	

5. Is there a student liaison representing sustainability interests who serves on a medical school or institutional decision-making council to advocate for sustainability best practices?	
1	Yes, there is a student representative that serves on a medical school or institutional decision-making council.
0	No, there is no such student representative.
<i>There is a staff led environment and sustainability focused committee with the involvement of two student representatives named 'Environment and Sustainable Campus Committee (ESCC)' that hosts events every year.</i>	

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) that follow Leave No Trace principles.
<p><i>A few planetary health talks that were open to all students and staff were organised. Some examples include topics such as “Role of Medical Professionals in Climate Crisis” by Dr Maria (Newcastle University Medicine Malaysia) and “Philosophical and Ethical Considerations in Times of Environmental Emergencies and Technological Tsunamis” by Dr Roman Meinhold (guest speaker from Mahidol University’s International College).</i></p>	

Section Total (2 out of 14)	2
------------------------------------	----------

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 medical school and/or institution 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 and 2 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. Does your medical school and/or institution have a stated goal of carbon neutrality by 2050?	
4*	The medical school is already carbon neutral.
3	Yes, there is a stated carbon neutrality goal and the medical school has a well-defined and adequate plan in place to achieve this goal.
2	Yes, there is a stated carbon neutrality goal, but the medical school has not created a plan to reach that goal or the plan is inadequate.
1	There is a CO2 emission reduction goal, but it is not one of carbon neutrality.
0	There is no stated goal for reduction of CO2 emissions.
<p><i>There is no stated goal for reduction of CO2 emissions. However, NUMED Environment and Sustainability Committee had sent out an email to encourage NUMED staff and students to reduce</i></p>	

CO2 emission by several measures, such as by reducing car travel, reducing electricity usage and eating meatless meals.

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

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

Medical school buildings source <20% of energy needs from off-site and/or 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 rating system or sustainable building code/guideline?

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

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 environmentally-friendly transportation options 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 some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.
0	The medical school has not implemented strategies to encourage and provide environmentally-friendly transportation options.
<p><i>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.</i></p>	

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 both compost and recycling programs accessible to students and faculty.
1	The medical school has either recycling or compost programs accessible to students and faculty, but not both.
0	There is no compost or recycling program at the medical school.
<p><i>The campus only has recycling programs accessible to students and faculty. Compost programs on campus have been set to be established, however the national lockdown due to COVID-19 has caused this plan to be put temporarily on hold.</i></p>	

7. Does the medical school apply sustainability criteria when making decisions about the campus food and beverage selections?	
3	Yes, the medical school has adequate sustainability requirements for food and beverages and is engaged in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is engaged in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is not engaged in efforts to increase food and beverage sustainability.
0	There are no sustainability guidelines for food and beverages.
<p><i>There are currently no sustainability guidelines set into place for food and beverages. However, the draft for new catering policies is currently in progress for approval.</i></p>	

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

3	Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is engaged in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is not engaged in efforts to increase sustainability of procurement.
0	There are no sustainability guidelines for supply procurement.
<i>No current sustainability guidelines for supply procurement.</i>	

9. Are there sustainability requirements or guidelines for events hosted at the medical school?	
2	Every event hosted at the medical school must abide by sustainability criteria.
1	The medical school strongly recommends or incentivizes sustainability measures, but they are not required.
0	There are no sustainability guidelines for medical school events.
<i>Sustainable practices for events are strongly encouraged by the university but not as part of the event requirements.</i>	

10. Does your medical school have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
2	Yes, the medical school has programs and initiatives to assist with making lab spaces more environmentally sustainable.
1	There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are no efforts at the medical school to make lab spaces more sustainable.
<i>NUMed's lab spaces are not currently environmentally sustainable.</i>	

11. Does your institution's endowment portfolio investments include fossil-fuel companies?	
4	The institution is entirely divested from fossil fuels and has made a commitment to reinvest divested funds into renewable energy companies or renewable energy campus initiatives.
3	No, the institution is entirely divested from fossil fuels.

2	The institution has partially divested from fossil-fuel companies.
1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organized advocacy for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.
<p><i>The institution has not divested from fossil-fuel companies, but NUMed is currently working with IIB (EduCity/NUMed's campus Owner) and Petronas to explore the possibility to install Solar System in EduCity in order to utilise the renewal energy from Solar system installed by Petronas team, reducing exposure to fossil-fuel companies.</i></p>	

Section Total (7 out of 29)	7
------------------------------------	----------

Grading

Section Overview

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

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

Planetary Health Grades for Newcastle University Medicine (NUMed) Malaysia

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

Section	Raw Score	Grade
Planetary Health Curriculum (30%)	27 / 58 = 46.6%	C
Interdisciplinary Research (17.5%)	4 / 19 = 21.1%	D-
Community Outreach and Advocacy (17.5%)	0 / 12 = 0.0%	F-
Support for Student-led Planetary Health Initiatives (17.5%)	2 / 14 = 14.3%	F-
Campus Sustainability (17.5%)	7 / 29 = 24.1%	D-
Institutional Grade	24.4%	D-

