

# Planetary Health Report Card: Newcastle University



2021-2022 Contributing Team:

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## **Summary of Findings**

Overall	
Curriculum	
<ul> <li>Newcastle University has very good coverage and integration of planetary health (PH) concepts as sessions throughout medical school on improving sustainability in healthcare.</li> <li>Recommendations: Teaching on having conversations around PH is not yet taught. This could be as a clinical skills session or ethics session with scenarios to discuss with patients.</li> </ul>	
Interdisciplinary Research	D+
<ul> <li>Newcastle University has considerable research links within sustainability e.g. the population health sciences institute and OnePlanet. However, these could be utilised more by the medical school for interdisciplinary research. The medical school is currently in the process of joining international PH organisations.</li> <li>Recommendations: Newcastle Medical School could organise a conference directly related to sustainable healthcare and PH as well as setting up a specific webpage or newsletter for PH news.</li> </ul>	
Community Outreach and Advocacy	D+
<ul> <li>There are many links to community outreach projects through the University and Students Union h these are mostly environmental projects, the medical school is not involved in these projects and fe related specifically to health. Newcastle Teaching Hospitals have a few patient resources relating to</li> <li>Recommendations: Utilise the Universities existing partnerships with community outreach project PH and more direct community outreach options through student selected components.</li> </ul>	ew are o PH.
Support for Student-Led Initiatives	В
<ul> <li>Newcastle Medical School supports multiple active student groups, Students for Global Health and Sustainable Medics, which both receive funding from the Students Union and work closely with th school. Completing a sustainable QI project is also part of the curriculum.</li> <li>Recommendations: Support for student-led initiatives mostly comes from the wider University rat Medical School. The medical school could offer more support to students interested in carrying out projects and initiatives for example by collating a website for related opportunities and research.</li> </ul>	e medical ther than the
Campus Sustainability	A-
<ul> <li>Newcastle University is an extremely sustainable campus with it's newly developed Climate Action University aims to be carbon neutral by 2030.</li> <li>Recommendations: There are ambitious sustainability plans already in place at the University. We recommend focusing on improving lab sustainability and introducing sustainable guidelines for ever across the University.</li> </ul>	;

## **Statement of Purpose**

#### Planetary health is human health.

The Planetary Health Alliance describes planetary health as "a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth." This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanization, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change "the greatest threat to global health in the 21st century," many medical school's institutional priorities do not reflect the urgency of this danger to human health.

As future health professionals, we must be prepared to address the impacts of human-caused environmental changes on our patients' health. This preparation is in the hands of the institutions providing our medical training. It is imperative that we hold our institutions accountable for educating medical students about the health impacts of climate change and other anthropogenic environmental changes, generating research to better understand health impacts and solutions, supporting related student initiatives, embracing sustainable practices as much as possible, and engaging with surrounding communities that are most affected by environmental threats. Because climate change and environmental threats disproportionately affect vulnerable populations (for example, communities of color, older adults sensitive to health threats, and individuals in low-resource settings), these issues are inherently ones of equity and justice.

With the purpose of increasing planetary health awareness and accountability among medical schools, we have created a Planetary Health Report Card that medical students internationally can use to grade and compare their home institutions on an annual basis. This medical-student-driven initiative aims to compare medical schools nationally and internationally on the basis of discrete metrics in five main category areas: 1) planetary health curriculum, 2) interdisciplinary research in health and environment, 3) University support for student planetary health initiatives, and 4) community outreach centered on environmental health impacts 5) medical school campus sustainability.

## **Definitions & Other Considerations**

#### **Definitions:**

- Planetary Health: is described by the *Planetary Health Alliance* as "a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth." For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional 'environmental health' examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of medical school education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term "planetary health" to satisfy the metric.
- Education for Sustainable Healthcare (ESH): is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:
  - 1. Describe how the environment and human health interact at different levels.

2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.

3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.

• Medical School vs. Institution: When "medical school" is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (for example, undergraduate departments (USA), other related departments eg Public Health, Population Health departments). In contrast, when "institution" is specified in the report card, we are referring to the university more broadly. Any resource reasonably accessible by medical students, no matter where in the institution the

resource comes from or if it is specifically targeted for medical students, can meet this metric.

- Environmental history (Metric 19 in curriculum section): This is a series of questions providers are taught to ask during medical encounters that elicits patients' exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mold after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution.
- **Elective:** The word "elective" refers to an optional course or lecture series that a medical student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.
- **Clerkship:** This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations or placements.

## **New Resource:**

Added to our resources this year, **the Planetary Health Report Card Literature Review by** <u>Metric</u> collates the evidence behind each of the metrics in the Planetary Health Report Card. It serves as a collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.

## **Planetary Health Curriculum**

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

#### Curriculum: General

1. Did your medical school offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
Score explanation: During the academic year 2021/22, there were two 4-week student selected components (SSCs) available to both third and fourth year medical students. There is a sustainability SSC as well as a global health SSC to choose from. These SSCs addressed global pressures relating to the medical field such as extreme weather, vector changes and climate-driven mass migration, as well as promoting a more sustainable future when considering the interaction between healthcare and natural systems. There was also the option to undertake a quality improvement project.	

#### Curriculum: Health Effects of Climate Change

2. Does your medical school curriculum address the relationship between extreme heat, health risks, and climate change?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.

1 This topic was covered in elective coursework.

0 This topic was not covered.

Score explanation: The medical school curriculum addresses the issues relating to climate change and the disproportionate impact on certain populations through the learning outcomes 'To understand and appreciate the unequal impacts of climate change globally', 'Discuss the impact of climate change on the health of marginalised/indigenous populations globally' and 'Explain how global change such as the climate emergency, impacts on health at a global, local and individual level. Understand how the health impacts of environmental change are distributed unequally within and between populations' in years 2, 3 and 5 respectively.

**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.

Score explanation: This topic is covered briefly in the core curriculum, with several learning outcomes such as 'Describe how the environment and health interact at the global level, including the effects of climate change on health', 'Discuss the impact of climate change on the health of marginalised/indigenous populations globally and 'Describe how global change such as the climate emergency, impacts on health at a global, local and individual level' throughout years 2, 3 and 5 encourage further study and signpost to resources around the impact of the climate emergency on health and vice versa, including extreme weather events.

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.

Score explanation: This point is directly addressed through the learning outcomes '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 disease with pandemic potential' and associated resources which are examined in the Year 2 2021/22 curriculum.

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

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

spiral integration.

Score explanation: The Year 4 ACE course (ACE117) online tutorial "Ecological, Environmental and Occupational Hazards in Ill Health", addresses the link between environmental problems and health in depth. A significant section of the tutorial is dedicated to discuss the effects of air pollution in cardiovascular and respiratory diseases.

6. Does your medical school curriculum address the cardiovascular health effects of climate change, including increased heat?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
Envi prob	e explanation: In Newcastle University's Year 4 ACE course (ACE117) online tutorial "Ecological, ronmental and Occupational Hazards in Ill Health", it addresses the link between environmental lems and health. A section of the tutorial is dedicated to discuss the effects of air pollution in iovascular diseases. Measures that can be taken to mitigate the effects are also discussed. This

7. Does your medical school curriculum address the mental health and neuropsychological effects

topic is also very briefly mentioned in Year 2 Case 17's lecture, "Global Health", which demonstrates

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.

Score explanation: Not currently addressing the effects of Mental health on environmental degradation and climate change.

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

3	This topic was explored 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.
Score explanation: Case 18 in year 2 includes the learning outcome "Describe how the environment	

Score explanation: 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" covers relationships between health and climate change but not on ecosystem health.

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

3	This topic was explored 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.
Score explanation: This topic is not covered within the curriculum.	

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

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
Score explanation: The learning outcome "Describe how the environment and health interact at the	

Score explanation: 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

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

2	This topic was briefly covered in the core curriculum.

1 This topic was covered in elective coursework.

0 This topic was not covered.

Score explanation: Reproductive health outcomes are not explored with relation to industry toxins.

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

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
Score explanation: Air pollution is covered in many aspects of the course including in respiratory	

Score explanation: Air pollution is covered in many aspects of the course including in respiratory lectures, this is related to the North East in terms of previous industry and deprivation. The Year 4 ACE 117 tutorial also includes the learning outcome: evaluate the role of ecological, environmental and

occupational hazards in ill-health and discuss ways to mitigate their effects. Other human-caused environmental threats are not mentioned.

	13. To what extent does your medical school emphasise the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?	
3	Indigenous knowledge and value systems are integrated throughout the medical school's planetary health education	
2	Indigenous knowledge and value systems as essential components of planetary health solutions are included briefly in the core curriculum.	
1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in elective coursework.	
0	This topic was not covered.	
Score explanation: Health related to Indiginous populations or their knowledge of the environment are not included, nor what can be learned by the rest of the world about their practises.		

14. 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 colour, children, homeless populations, Indigenous populations, and older adults?

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

Score explanation: 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. The impact of health on different groups and the disproportionate effects is covered extensively in the curriculum as a whole. Specifically related to planetary health this is more extensively covered in optional resources.

Curriculum: Sustainability

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

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

- 2 This topic was briefly covered in the core curriculum.
- 1 This topic was covered in elective coursework.

0 This topic was not covered.

Score explanation: Year 2 learning outcomes include "Describe the nutritional risks and benefits associated with different forms of diet" which includes plant based diets. The impact on health of different foods, including meat, are included in many areas of the curriculum regarding nutrients. The environmental benefits of plant based diets are covered in less detail than the health benefits. There could have been more detail about specifically plant based diets.

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

Score explanation: At Newcastle University the carbon footprint of healthcare systems is explored in depth through multiple lectures in all years. Specifically in Year 4 there is the learning outcome of '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'.

 17. Does your medical school curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (1 point each)	
1	Waste production within the healthcare system and strategies for reducing waste in clinical activities, such as in the operating room
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.

1	The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anaesthesia environmental impacts, such as total intravenous anaesthesia or choosing less environmentally anaesthetic gas options with reduced greenhouse gas emissions	
1	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 fulfill this metric.	
1	The health and environmental co-benefits of non-pharmaceutical management of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes for obesity. This is commonly known as social prescribing in the UK.	
1	The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment	
envir meas cove inhat impa learr	Score explanation: During the Year 3 global health day the learning outcome 'Discuss the environmental impact resulting from healthcare provision and public interventions, how these may be measured and identify ways to improve the environmental sustainability of such health systems' is covered. There is also a lecture from anaesthetist Ian Baxterin Year 4 covering anaesthetic gases and inhalers. Additionally in year 3 as well as throughout clinical placements social prescribing and the impact of over-prescribing for health and the environment are well emphasised and included in the learning outcome 'Describe the principles and criteria for just and sustainable access to, and provision of, finite healthcare resources including referral, investigations and treatment'	

## Curriculum: Clinical Applications

	18. In training for patient encounters, does your medical school's curriculum introduce strategies to have conversations with patients about the health effects of climate change?	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the 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	
Score explanation: There is currently no training for having conversations with patients about the health effects of climate change.		

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

- 2 Yes, the core curriculum includes strategies for taking an environmental history.
- 1 Only elective coursework includes strategies for taking an environmental history.
- 0 No, the curriculum does not include strategies for taking an environmental history.

Score explanation: Currently there is significant teaching including multiple role play workshops in pre-clinical years where students are able to practice taking social histories and occupational histories. These include aspects of the patients environment and eliciting patients exposure risk factors especially focusing on air pollution, housing quality and environmental toxins which many people in the North East of England are exposed to.

#### Curriculum: Administrative Support for Planetary Health

**20.** Is your medical school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?

- 4 Yes, the medical school is currently in the process of making major improvements to ESH/planetary health education.
- 2 Yes, the medical school is currently in the process of making minor improvements to ESH/planetary health education.
- 0 No, there are no improvements to planetary health education in progress.

Score explanation: There is considerable engagement and interest from the medical school to implement and improve Education for Sustainable Healthcare. Dr Alberti is in charge of overseeing the integration of planetary health teaching across the curriculum. The aim is to integrate sustainable healthcare within every course and case, it will have three outcomes, the first of which will be taught, the second integrated in the clinical setting e.g. quality improvement projects and the third focusing on the responsibilities of a doctor. This is very well supported by a strong team including Deans, students and external advisors.

# 21. 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.

Score explanation: At Newcastle Medical School UK, planetary health topics are well integrated longitudinally throughout the curriculum. During years 1 and 2 there is considerable teaching on climate change issues, planetary health and sustainability through all the cases. There are specific sustainable healthcare learning outcomes which can be assessed on during preclinical years. In years 3, 4 and 5 this is then expanded and built upon to give a clinical focus to the planetary health teaching. This includes a sustainable quality improvement project in Year 4 and the option of a sustainable audit in Year 3 as well as further student selected components.

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

- 1 Yes, the medical school has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare
- 0 No, the medical school does not have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare.

Score explanation: Newcastle Medical School has a lead (Dr Hugh Alberti) who is responsible for overseeing the integration of sustainability teaching.

#### Section Total (48 out of 69)

48

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

## **Interdisciplinary Research**

<u>Section Overview:</u> 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?

- 3 Yes, there are faculty members at the School of Medicine who have a primary research focus in 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.
- <sup>1</sup> 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.

Score explanation: There is research focused on population health, particularly health inequalities, taking place at the Population Health Sciences institute, which is a part of the Faculty of Medical Sciences. Within this, some of this research addresses the health impacts of aspects of planetary health such as air pollutants and vector migration due to climate change, although not as a primary focus. More information can be found <u>here</u>.

	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.

Score explanation: There is research focused on population health, particularly health inequalities, taking place at the Population Health Sciences institute, which is a part of the Faculty of Medical Sciences. Within this, some of this research addresses the health impacts of aspects of planetary health such as air pollutants and vector migration due to climate change, although not as a primary focus. More information can be found <u>here</u>.

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.
Univ	e explanation: Despite having some outreach and community organisation input, Newcastle ersity does not currently have any process by which communities disproportionately impacted by ate change and environmental injustice can give input or make decisions about the research

agenda.

	bes your institution have a planetary health website that centralises ongoing and past arch related to health and the environment?
3	There is an easy-to-use, adequately comprehensive website that centralises various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.

2	There is a website that attempts to centralise various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The institution has an Office of Sustainability website that includes some resources related to health and the environment.

0 There is no website.

Score explanation: There is a comprehensive website on sustainability, found <u>here</u>. It includes opportunities, contacts and recent news about sustainability on campus, however there is little related specifically to health. The One Planet interdisciplinary research centre is the main area for resources related to sustainability research. The website found <u>here</u> looks at The One Planet scheme and how Newcastle university is trying to adopt sustainable practices, however, once again it says little about specific aims related to health.

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

4	Yes, the <b>medical school</b> has hosted at least one conference or symposium on topics related to planetary health in the past year.	
3	Yes, the <b>institution</b> has hosted at least one conference or symposium on topics related to planetary health in the past year.	
2	Yes, the 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.	
plan	Score explanation: There has not been a conference held directly by the medical school or university on planetary health in the past three years. There have been individual talks however these have not been put together into a conference/symposium.	

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

	Yes, the medical school is a member of a national or international planetary health or ESH organisation
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0 No, the medical school is not a member of such an organisation

Score explanation: Newcastle University Medical School is in the process of joining the Global Consortium on Climate and Health Education and the Planetary Health Alliance but is not yet members.

Section Total (6 out of 17)

6

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

## **Community Outreach and Advocacy**

<u>Section Overview:</u> 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.
Score explanation: The university student's union has partnerships with local Ouseburn Farm and has	

Score explanation: The university student's union has partnerships with local Ouseburn Farm and has a GoGrow opportunity for students to garden locally and on campus. These are not directly linked to environmental and planetary health for education purposes, but they are linked to sustainability. They are also not based at the medical school. The student's union also has an Ethics and Environment representative involved in working with students to "push forward each of our individual roles as global citizens", which in future could be a source of educational improvement and a partnership with the medical school.

# 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.

Score explanation: Newcastle University regularly holds public lectures and recent topics have included climate change and global corporations as well as a public debate around how the North East will confront the climate crisis.

# **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.

Score explanation: There are infrequent emails from the medical school to the students, and these do not include information about planetary health or sustainable healthcare. There is a new medical school newsletter and it is hoped this may include sustainability issues in the future.

4. Does the institution or main affiliated hospital trust engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?	
2	Yes, the institution or main affiliated hospital trust offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health.
1	Yes, the institution or main affiliated hospital trust offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
0	There are no such accessible courses for post-graduate providers
Medi Clim been Norti	e explanation: At Newcastle-upon-Tyne Hospitals (one of the main trusts affiliated with the ical School), they have hosted a series of multiple webinars during COP26 including 'Why the ate Emergency is a Health Emergency'. Through the Faculty of Sustainable Healthcare which has developed by Dr Elaine Winkley at Northumbria NHS Trust and run by Health Education England h East there is also an e-learning module on climate and health that is accessible to all ograduates.

**5.** Does your medical school or its primary affiliated hospital 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 centres have accessible educational materials for patients.

Score explanation: There is no affiliated patient information on environmental health exposures in the affiliated hospital trusts.

# 6. Does your medical school or its primary affiliated hospital 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.

Score explanation: Newcastle-upon-Tyne Hospitals have declared a climate emergency and have a page on their website detailing the impact of climate change on health.

## Section Total (5 out of 14)

Back to summary page <u>here</u>

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

5

## Support for Student-Led Planetary Health Initiatives

<u>Section Overview:</u> 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/QI project?

2	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.
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 and there is no requirement to participate.
0	No, the institution does not offer opportunities or support for sustainability initiatives or QI projects.
Score explanation: All students in year 5 will complete a sustainability QI project in their 2nd General Practice assistantship, this has been developed in collaboration with the Centre for Sustainable Healthcare. In addition to this students in Year 3 have the option of completing a sustainable QI project for their GP audit.	

2. Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
2	The institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	There are research opportunities for students to perform research related to planetary health/sustainable healthcare but these require student initiative to seek these out and carry them out in their spare time.
0	There are no opportunities for students to engage in planetary health/sustainable healthcare research.
Score explanation: There is the opportunity for students to undertake an intercalated year focusing on Global Health or Public Health which contain modules focused on planetary health. There are also	

student selected components in sustainability Additionally there are further opportunities for students to conduct research in planetary health if they seek these out.

<b>3.</b> Does the medical school have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.	
2	The medical school has a webpage with specific information related to planetary health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.
1	There is a medical school webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information.
0	There is no medical-school specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.

Score explanation: There is no webpage for locating planetary health projects.

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

2 Yes, there is a student organization with faculty support at my medical school dedicated to planetary health or sustainability in healthcare.

- <sup>1</sup> Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it lacks faculty support.
- 0 No, there is not a student organization at my institution dedicated to planetary health or sustainability in healthcare.

Score explanation: Both sustainable medics society and students for global health society have faculty support within the medical school and are active hosting events on planetary health and sustainability in healthcare.

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 practises?

1	Yes, there is a student representative that serves on a medical school or institutional decision-making council/committee.
1	decision-making council/committee.

0 No, there is no such student representative.

Score explanation: Newcastle University Students Union has a student environmental and sustainability committee involving students from a wide range of subjects and backgrounds to help make decisions.

# 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 organise hiking, backpacking, kayaking, or other outings for students)
Score explanation: There are multiple volunteering and student run projects at Newcastle University including EcoSoc who are involved in planting trees in the local community. There are also student groups who represent the university at national climate strikes including Extinction Rebellion Society and Students for Global Health who have been present at recent climate strikes.	

## Section Total (10 out of 15)

10

Back to summary page <u>here</u>

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

## **Campus Sustainability**

<u>Section Overview:</u> 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. D	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	
Score explanation: The Sustainability Team is based within Estates & Facilities and focuses on operational sustainability across the whole University campus and its activities. For this reason, there		

Score explanation: The Sustainability Team is based within Estates & Facilities and focuses on operational sustainability across the whole University campus and its activities. For this reason, there are no team members designated for sustainability within the Medical School or any other specific areas.

2. How ambitious is your medical school/institution's plan to reduce its own carbon footprint?	
4	The institution has a stated goal of carbon neutrality by 2030 or earlier and the medical school / institution has a well-defined and adequate plan in place to achieve this goal.
3	Yes, there is a stated carbon neutrality goal by at least 2040 and the medical school/institution has a well-defined and adequate plan in place to achieve this goal.
2	Yes, there is a stated carbon neutrality goal by at least 2040, but the medical school/institution 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.

Score explanation: Newcastle University is committed to net-zero carbon dioxide emissions by 2030, and this encompasses the medical school. It has a clear Climate Action Plan that outlines the work needed to meet this goal along with what has already been achieved. More information around the Climate Action Plan can be found <u>here</u>. The overarching target is for Newcastle University to achieve net-zero carbon dioxide emissions by 2030 on Scope 1 and 2 emissions, and ambitious targets have been set for Scope 3. More information is available in the full Climate Action Plan on the Sustainable Campus website.

# **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.

Score explanation: As part of our commitment to renewable energy we purchase approximately 20% of our electricity through a Power Purchase Agreement (PPA) which sees this portion generated by local renewable wind energy. All remaining electricity use (excluding energy supplied by third parties which equates to circa 10% of the University's total electricity usage) is procured through a Renewable Energy Guarantees of Origin (REGO) tariff, which in our last reporting year accounted for 90% of our total electricity consumption. Upon the completion of the latest phase of our Estate-wide Solar PV project by 3<sup>rd</sup> December 2021, we will operate 12 Solar PV arrays across campus, generating on average 1% of the total University's electricity demand. Our aspiration is to retrofit the entire University estate with Solar PV (excluding farms at this stage) by the end of the 2023/24 academic year, where we aim to be generating approximately 10% of the University's total electricity use. Currently, Solar PV is the only form of University-owned, on-site renewable energy technology we operate due to factors including geography and spatial constraints (our compact city-centre campus makes alternatives such as wind, tidal, etc very challenging). More information is available in the full Climate Action Plan on the Sustainable Campus website.

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

3	Yes, sustainable building practises are utilised for new buildings on the medical school campus
	and the majority of old buildings have been retrofitted to be more sustainable.

	Sustainable building practises are utilised for new buildings on the medical school campus, but
	most old buildings have not been retrofitted.

1 Sustainable building practises are inadequately or incompletely implemented for new buildings.

0 Sustainability is not considered in the construction of new buildings.

Score explanation: The Sustainable Construction Specification enables the design and construction of sustainable buildings and landscapes that support the delivery of the University's vision and strategy, and the University's Climate Action Plan in pursuit of the net-zero carbon emissions by 2030 target. The specification document can be viewed on the Sustainable Campus website under the 'Sustainable construction' tab.

Some buildings on campus have achieved BREEAM ratings, e.g. The Catalyst achieved the highest rating of 'Outstanding' (which is the first commercial office building in the North East to do so), and USB achieved 'Excellent'.

In terms of sustainability improvements on older buildings, there are many ongoing building refurbishment projects (either in motion or in the pipeline). The most recent example of this is the Henry Daysh Building which underwent a £60 million refurbishment including a new thermal envelope to improve insulation, more efficient heating systems etc.

A net-zero budget of £15 million per year has been committed to by the University which will be used to continue to reduce carbon emissions across the estate. This is on top of any external funding bids.

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-utilised by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.		
1	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.		
Score explanation: Newcastle medical school is located in the city centre therefore most students walk, cycle or use public transport to travel to campus. Carpooling and public transport are encouraged for			

clinical placements further afield and there is a bursary available for transport depending on the distance travelled.

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.	
Score explanation: Food waste is a segregated waste stream which is collected and sent to Anaerobic Digestion for energy recovery. The handling of food waste departs from the normal order of the waste hierarchy as the dual output of AD facilities, namely liquid digestate (which can be used instead of fossil fuel-intensive fertilisers) and biogas (which can be used to generate vehicle fuel, heat, electricity, combined heat and power, or refined and directly injected into the gas grid) results in a higher degree of environmental benefit when comparing the treatment method to composting.		
7. Does the medical school apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?		
3	Yes, the medical school has adequate sustainability requirements for food and beverages, including meat-free days or no red-meat, and is engaged in efforts to increase food and beverage	

sustainability.

2	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is engaged in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is not engaged in efforts to increase food and beverage sustainability.

0 There are no sustainability guidelines for food and beverages.

Score explanation: The Sustainable and Healthy Food Strategy and Action Plan has recently been updated, which is due to be ratified early 2022.

At catered Halls of Residence we have meat-free Mondays and 50% meat free options Tuesday to Friday. In restaurants, the hot meal options are 50% meat-free. In cafes we aim for 30% meat-free options however we're currently nearer 50% at the moment. Delivered catering is driven by customer choice, prepared fresh on the day. If the order is not explicit, then 30% meat free is the standard offer.

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.	
Score explanation: There is a Sustainable Procurement Policy and a Sustainable Procurement Strategy available: https://www.ncl.ac.uk/work-with-us/procurement/documents/		

9	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 incentivises sustainability measures, but they are no required.	
	0	There are no sustainability guidelines for medical school events.	
Score explanation: There are currently no official sustainability criteria or guidelines for events. In the past, with physical events, we have given guidance to large, in-person events by meeting with			

organisers beforehand.

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.
Score explanation: We have become a user of LEAF (Lab Efficiency Assessment Framework) for sustainability in laboratories and will roll this out amongst lab users at the start of 2021.

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 or has made a commitment to fully divest, but currently still has fossil fuel investments.	
1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organized advocacy for divestment.	
0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.	
Score explanation: We have achieved divestment from fossil fuel companies through a combination of approaches, both engagement with our fund managers to tighten restrictions on fossil fuel companies as well as movement of money away from certain funds. Where money was moved away from funds that contained fossil fuels within their portfolio, it was reinvested in funds that have a greater representation of Environmental, Social and Governance.		

## Section Total (26 out of 31)

Back to summary page <u>here</u>

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

26

## 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
А	80% - 100%
В	60% - 79%
С	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 Medical School

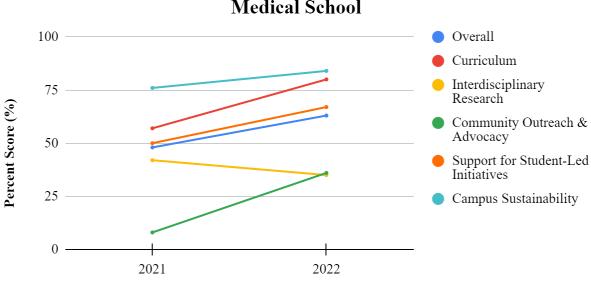
The following table presents the individual section grades and overall institutional grade for the Newcastle University School of Medicine on this medical-school-specific PHRC.

Section	Raw Score	Letter Grade
Planetary Health Curriculum (30%)	$(48 / 69) \ge 100 = 70\%$	В
Interdisciplinary Research (17.5%)	(6 / 17) x 100 = 35%	D+
Community Outreach and Advocacy (17.5%)	(5 / 14) x 100 = 36%	D+
Support for Student-led Planetary Health Initiatives (17.5%)	(10 / 15) x 100= 67%	В
Campus Sustainability (17.5%)	(26 / 31) x 100 = 84%	A-
Institutional Grade	60%	В-

## **Report Card Trends**

#### **Section Overview**

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





Year