Planetary Health Report Card (Medicine):

University of Birmingham

2023-2024 Contributing Team:

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Summary of Findings

Overall	C-

Curriculum	D

- University of Birmingham Medical School does include planetary health in the medical curriculum, but there is a lack of integration of this content within core curriculum. Planetary Health content is concentrated in the 1st and 2nd year lecture content, with a lack of clinically oriented teaching.
- **Recommendations:** The Medical School is currently undergoing a reform of its curriculum, so better longitudinal integration of planetary health into the core curriculum should be prioritised. This should also include a concerted effort to create a comprehensive programme of planetary health that covers both pre-clinical and clinical contexts.

Interdisciplinary Research	C+

- The University of Birmingham has shown increasing efforts to include planetary health in their research, albeit outside of the medical school. This is shown through the creation of BISCA (Birmingham Institute for Sustainability and Climate Action) in the last year.
- **Recommendations:** Birmingham Medical school could organise a specific planetary health conference aimed at students, as the Sustainable Surgery conference was targeted at health care professionals. Additionally, they should consider joining a national/international planetary health or ESH

Community Outreach and Advocacy	D-

- The Medical School provides very little community outreach on planetary health. Contrastingly, the University Hospitals Birmingham Trust provides a climate change e-learning course. Whilst the Integrated Care Board website offers info/resources on environment or sustainability in the NHS, no patient information is provided on the relationship between sustainability and health.
- **Recommendations:** The university should restart planetary health events and increase access to educational material on environmental health exposures.

Support for Student-Led Initiatives	B

- The University of Birmingham and the Medical School provide support for student groups dedicated to Planetary Health. Within the Medical School, Earth Resus Team receives funding from the Student Union and works with faculty to encourage sustainable practice. There are opportunities, both curricular and extracurricular for students to work on planetary health initiatives, such as the “Personal Interest Project”.
- **Recommendations:** The Medical School should aim to have more provisions for supporting student-led initiatives throughout the course of med school. Additionally, the University should consider more programs for students to have exposure to local agriculture and sustainable food systems.

Campus Sustainability	C

- The University of Birmingham Medical School has implemented a number of sustainable changes to their campus, including dedicated staff, eco-friendly transport options, retrofitted buildings, and sustainable procurement. However, there has been little progress with regards to sustainability guidelines for events at the medical school, and it is currently unknown as to the uptake of eco-friendly transport options. Furthermore, the University’s current commitment to reaching Net Zero by 2045 is suboptimal.
- **Recommendations**: There is still much to improve with the campus sustainability. The university should introduce sustainability guidelines for events and reconsider their commitment to Net Zero.

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance describes planetary health as "a solutions-oriented, transdisciplinary field and social movement focused on analysing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth." This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanisation, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment, and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change "the greatest threat to global health in the 21st century," many 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 colour, older adults sensitive to health threats, and individuals in low-resource settings), these issues are inherently ones of equity and justice.

With the purpose of increasing planetary health awareness and accountability among 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 centred on environmental health impacts 5) medical school campus sustainability.

Definitions & Other Considerations

Definitions:

- **Planetary Health:** is described by the Planetary Health Alliance as "the health of human civilisation and the state of the natural systems on which it depends." For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional 'environmental health' examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of medical school education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term "planetary health" to satisfy the metric.

- **Sustainable Healthcare:** As defined by the Academy of Royal Colleges, sustainable healthcare involves ensuring the ability to provide good quality care for future generations by balancing the economic, environmental, and social constraints and demands within health care settings. A sustainable healthcare system maintains population health, reduces disease burden and minimises use of healthcare services.

- **Education for Sustainable Healthcare (ESH):** is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:

    1. Describe how the environment and human health interact at different levels.

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

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

- **Medical School vs. Institution:** When "medical school" is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (e.g. undergraduate departments (USA), other related departments (e.g. Public Health, Population Health departments). In contrast, when "institution" is specified in the report card, we are referring to the university more

broadly. Any resource reasonably accessible by medical students, no matter where in the institution the resource comes from or if it is specifically targeted for medical students, can meet this metric.

- **Environmental history (Metric #19 in Curriculum Section):** This is a series of questions providers are taught to ask during medical encounters that elicits patients' exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mould after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution.

- **Elective:** The word "elective" refers to an optional course or lecture series that a medical student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.

- **Clerkship:** This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations or placements.

Other considerations:

- If there are more than one "tracks" at your medical school with two different curricula (for example, Harvard Medical School has a Pathways and HST curriculum track), you can choose to fill out a report card for each track, or fill out just one report card and average the scores received by each track in cases where the scores are different (see the 2021 Harvard or Oxford report cards as examples).

Added to our resources in 2022, the Planetary Health Report Card Literature Review by Metric collates the evidence behind each of the metrics in the Planetary Health Report Card. It serves as a collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.

Planetary Health Curriculum

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

Curriculum: General

1.1. 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: A score of 2 was given for the following content in the curriculum:

- *Year 2:* The elective personal interest project (PIP) module requires students to choose a topic from a list of ideas and produce a written essay on the subject. One such topic focuses on sustainability and healthcare, directly related to the impact between the environment and human health. Other topics also indirectly address sustainability and healthcare, such as vulnerable migrant healthcare and global health. However, choosing these specific topics is not compulsory.
- *Year 3:* Professional and Developmental Activities (PDA) week - there is an option to choose to engage in student led climate activities (listening to a podcast). However this was not the primary focus, so does not contribute to the score.

In previous years there was an intercalation available in global health which would have allowed the primary focus to be planetary health, but this was removed during the COVID-19 pandemic, but has now been reintroduced

Curriculum: Health Effects of Climate Change

1.2. 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: A score of 2 was given for the following two lectures covering this topic:
- *Year 1:* 'Determinants of Health' lecture, includes information on how the wider environment and living conditions affects human health, such as the effects of UV rays
- *Year 3:* 'The NHS doesn't need more doctors & nurses it needs fewer patients' This was a lecture presented by a doctor as part of the PDA week. There was a slide about the effects of climate change on health, including extreme weather events.

1.3. 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: A score of 2 was given for a lecture in Year 1 on the impact of air quality on respiratory health. It covers the effects of air pollution episodes such as Saharan dust storms and agricultural fires on health, and the long-term impacts of high pollution. However, it was not explored in depth.

1.4. 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: A score of 2 was given as there was one slide in a Year 2 antimicrobial lecture about the changing climate and increased use of antibiotics accelerating the effect of antimicrobial resistance.

1.5. 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.

Score explanation: A score of 3 was given for a Year 1 lecture on the impact of air quality on respiratory health. It covers the main long-term consequences of air pollution on respiratory health, such as loss of lung function and asthma.

1.6. 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.

Score explanation: A score of 0 was given as this topic was not mentioned in the learning outcomes, lectures or small group teachings for years 1-5.

1.7. 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.

Score explanation: A score of 0 was given as this topic was not mentioned in the learning outcomes, lectures or small group teachings for years 1-5.

1.8. 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: A score of 0 was given as this topic was not mentioned in the learning outcomes, lectures or small group teachings for years 1-5.

1.9. Does your <u>medical school</u> curriculum address the outsized impact of climate change on marginalised populations such as those with low SES, women, communities of colour, Indigenous communities, children, homeless populations, and older adults?	
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: A score of 2 was given because the PIP essay in Year 2 offers a choice on migrant health (vulnerable migrant health care) which may explore the effects of climate change on health. Additionally, some slides from lectures in the respiratory component and sociology components of the Year 1 curriculum address the disproportional impact of climate change and air pollution on people living in deprived areas.	

1.10. Does your <u>medical school</u> 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: A score of 0 was given because the topic is not covered directly in the course, however the PIP essay from Year 2 offers a choice on migrant health (vulnerable migrant health care) which explores the health of migrants internationally and therefore may cover the global impacts of climate change.	

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

1.11. Does your <u>medical school</u> curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
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: A score of 0 was given as this topic was not mentioned in the learning outcomes, lectures or small group teachings for years 1-5.	

1.12. Does your <u>medical school</u> curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?	
3	This topic was explored **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: A score of 2 was given for a Year 1 lecture on the impact of air quality on respiratory health. The lecture covers the impact of industrial emissions on respiratory health in the Birmingham City area as well as the local clean air policies (involving healthcare systems and hospitals) in place to improve health outcomes.	

1.13. To what extent does your <u>medical school</u> emphasise the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?	
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: A score of 0 was given as this topic was not mentioned in the learning outcomes, lectures or small group teachings for years 1-5.	

1.14. Does your <u>medical school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of colour, children, homeless populations, Indigenous populations, and older adults?	
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: A score of 0 was given as this topic was not mentioned in the learning outcomes, lectures or small group teachings for years 1-5.

Curriculum: Sustainability

1.15. Does your <u>medical school</u> 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: A score of 0 was given as this topic was not covered in the context of environmental sustainability, but the beneficial impact of plant-based diets on health are covered.	

1.16. Does your <u>medical school</u> curriculum address the carbon footprint of 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: A score of 2 was given for one of the topic choices for the PIP module in Year 2. This focused on sustainability and healthcare, exploring the impact of health systems on the environment.	

1.17. Does your <u>medical school</u> curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each)	
2	The health **and** environmental **co-benefits** of **avoiding** over-medicalisation, over-investigation and/or over-treatment
2	The environmental impact of **pharmaceuticals** and over-prescribing as a cause of climate health harm. Alternatively teaching on **deprescribing** where possible and its environmental and health co-benefits would fulfil this metric.
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. This is commonly known as social prescribing in the UK.

1	Environmental impact of **surgical** healthcare on planetary health and the climate crisis, and how can it be mitigated
1	The impact of **anaesthetic** gases on the healthcare carbon footprint and ways to reduce anaestheisa's environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions
1	The impact of **inhalers** on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	**Waste production** within healthcare **clinics** and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)
Score: 0 ***Score explanation:*** A score of 0 was given because although many of these points (such as the beneficial impact of non-pharmaceutical management and the consequences of over medicalisation) are covered in the curriculum, the environmental co-benefits are not mentioned.	

Curriculum: Clinical Applications

1.18. In training for patient encounters, does your <u>medical school's</u> 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: A score of 0 was given as this topic was not mentioned in the learning outcomes, lectures or small group teachings for years 1-5.	

1.19. In training for patient encounters, does your <u>medical school's</u> 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: In Year 2, the occupational health lectures cover the concept of an exposure history and the effects of environmental workplace hazards on health. Students are taught to ask about a patient's living conditions and occupation when taking a history. We have given a score of 2 because it matches the criteria, but it should be noted that these are not taught in the context of environmental sustainability.	

Curriculum: Administrative Support for Planetary Health

1.20. 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: A score of 0 was given as this topic was not mentioned in the learning outcomes, lectures or small group teachings for years 1-5. Although sustainability is currently being integrated into other courses across the institution (e.g. neuroscience, environmental health), there do not appear to be any improvements regarding ESH being made to the MBChB course thus far.	

1.21. 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*:* A score of 2 was given as two lectures on planetary health were given to Year 4 students. These did have formal learning outcomes, but as they were student-organised and not part of the core curriculum, do not meet the requirement for being appropriately integrated.	

1.22. 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: A score of 1 has been given as there is a specific member of staff (Professor Chris McCabe) responsible for overseeing curricular integration of planetary health and sustainable healthcare. There is also a medical and dental school environmental and sustainability group with different faculty members who meet every two months to discuss sustainability in the medical school.	

Section Total (21 out of 72)	**29.2%**

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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 emphasised.*

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your medical school?	
3	Yes, there are faculty members at the **medical school** who have a **primary** research focus in planetary health **or** healthcare sustainability.
2	Yes, there are individual faculty members at the **medical school** 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.

Score explanation: A score of 1 was given as there are no researchers looking into planetary health or healthcare sustainability in the Medical School. Such research can be found on the Research page including:

1. https://www.birmingham.ac.uk/research/spotlights/sustainability-case-studies.aspx#:~:text=Sustainability%20Research%20Impact-,We%20are%20working%20to%20understand%20the%20impact%20of%20climate%20change,decarbonisation%20of%20energy%20and%20transport.
2. https://www.birmingham.ac.uk/research/spotlights/climate-change-health.aspx/1000
3. https://www.birmingham.ac.uk/research/spotlights/thriving-planet.aspx

2.2. 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: A score of 3 was given as last year, the Birmingham Institute for Sustainability and Climate Action (BISCA) was set up as a dedicated institute for planetary health.

2.3. Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your 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.
Score explanation: It is unclear whether this is in the works, and there is currently no process.	

2.4. Does your institution have a planetary health website that centralises ongoing and past research 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: The University of Birmingham has several websites. These websites are easy to navigate and centralise the information. One thing to add, however, is the links between these websites could be clearer, so it was unclear whether the score should have been 2 or 3. However as the websites include the main characteristics defined, a score of 3 was given. The 2 main sites are: 4. https://www.birmingham.ac.uk/research/climate/our-research/index.aspx 5. https://www.birmingham.ac.uk/research/bisca/home-page.aspx	

2.5. Has your institution recently hosted a conference or symposium on topics related to planetary health?	
4	Yes, the **medical school** has hosted at least one conference or symposium on topics related to planetary health in the past year.

3	Yes, the **institution** 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.

Score explanation: On 22nd November 2023, the University held the World Sustainability conference 2023, alongside the Green Institute and the HeTa Food Research Centre of excellence. This had the theme of "Harnessing the Intersection of Food, Water and Energy for a Sustainable future".
Other conferences held included:

- Sustainable Financial Innovation Centre Annual Conference 2023 (25-26 November 2023 in Dubai)
- Faraday Institution Conference (11-13 September 2023)
- REPM 2023 (Rare Earth and future Permanent Magnets) (3-7 September 2023)
- Air, Earth, Fire, Water (15 June 2023)
- Towards a Greener Future (11 April 2023)

In addition, the University held the first Sustainable Surgery conference this year: https://www.birmingham.ac.uk/news/2023/world-first-sustainable-surgery-research-conference-held

2.6. Is your medical school a member of a national or international planetary health or ESH organisation?	
1	Yes, the medical school is a member of a national or international planetary health **or** ESH organisation
0	No, the medical school is **not** a member of such an organisation

Score explanation: The medical school is not a part of this type of organisation.

Section Total (10 out of 17)	**58.8%**

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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 colour. Institutions should partner with local communities affected by climate change and pollution to share information about environmental health threats, advocate together for change, and provide opportunities for students to be a part of this work.*

3.1. Does your medical school partner with community organisations to promote planetary and environmental health?	
3	Yes, the **medical school** meaningfully partners with **multiple** community organisations to promote planetary and environmental health.
2	Yes, the **medical school** meaningfully partners with **one** community organisation to promote planetary and environmental health.
1	The **institution** partners with community organisations, but the medical school is not part of that partnership.
0	No, there is **no** such meaningful community partnership.

Score explanation: We have given a score of 1 as the institution has maintained a number of partnerships with community organisations. These include

- The "Birmingham Energy Institute" which lead many projects and initiatives to improve the sustainability of the campus (available at: Birmingham Energy Institute)
- In East Birmingham the Tyseley Energy Park aims to transform clean energy innovation in Birmingham and West Midlands by developing new technologies and turning them into a viable energy system as a part of Birmingham's goals to reduce CO2 by 2030. Tyseley Energy Park
- The university is also a part of the Green Impact programme which supports environmentally and socially sustainable practice within organisations. Green Impact
- Fraunhofer Joint Research Platform Launch. There is a collaborative platform due to the growing concerns of global communities energy consumption. "The collaboration promotes the exchange of research staff and students between two organisations to encourage knowledge exchange and facilitate the development of new science".Birmingham –- Fraunhofer Joint Research Platform Launch - University of Birmingham

Unfortunately the medical school does not have any partnerships with environmental projects.

3.2. 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 **institution/medical school** have not offered such community-facing courses or events.
Score explanation: A score of 0 was given because the institution has not held events and workshops relating to planetary health since 2019 (here is an example).	

3.3. 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** receive communications about planetary health or sustainable healthcare.
Score explanation: *A score of 1 was given because the University of Birmingham weekly/biweekly newsletter sometimes includes news about planetary health.*	

3.4. 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
Score explanation: *A score of 1 was given because the main affiliated hospital trust (University Hospitals Birmingham) does provide staff with a voluntary e-learning module on planetary health and sustainable practice.*	

3.5. Does your medical school or its affiliated teaching hospitals have accessible educational materials for patients about environmental health exposures?	
2	Yes, the **medical school** or **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: *A score of 0 was given because there does not appear to be any educational materials directly related to environmental health exposures for patients, however there is some information about the effect of environment on health on ICB's website.*	

3.6. Does your medical school or its affiliated teaching hospitals have accessible educational materials for patients about the health impacts of climate change?	
2	Yes, the **medical school** or **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: *A score of 0 was given because the Birmingham and Solihull ICB does not appear to have any educational materials linking the impact of climate change to human health. However, there is some information on this website regarding the "Greener NHS" scheme, and has links at the bottom of the page to resources and materials for patients about sustainability in the NHS.*	

Section Total (3 out of 14)	**21.4%**

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Support for Student-Led Planetary Health Initiatives

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

4.1. Does your medical school or your institution offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the **medical school** or **institution** *either* offers grants for students to enact sustainability initiatives/QI projects *or* sustainability QI projects are part of the core curriculum.
1	The **medical school** or **institution** encourages sustainability QI projects (to fulfil clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, **but** there is no student funding available and there is no requirement to participate.
0	No, **neither** the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.
Score explanation: The medical school offers support to all students to undertake a QI project to make an academic poster as a compulsory component of the year 4 curriculum in the form. Students are permitted to undertake projects in any area of interest including the area of sustainability. As these are not all sustainability projects, a score of 1 was given.	

4.2. 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: The medical school offers an intercalated program in global health in which students can complete projects on planetary health or sustainable healthcare. Students can also pursue these topics in other student-selected components (MBChB Year 2 Personal Interest Project, MBChB Year 4 conference poster). Students can also engage with the Universitas 21 Global Healthcare challenge. There is a specific avenue in which students can select a supervisor for sustainable healthcare in the Personal Interest Project.	

4.3. 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 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: The Global Health team, who run the intercalation, work within the Institute of Applied Health Research (IAHR). Their research can be found here. However, this is not part of the medical school website, as the medical school is within the Institute of Clinical Sciences and not IAHR.	

4.4. 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 organisation **with faculty support** at my medical school dedicated to planetary health or sustainability in healthcare.
1	Yes, there is a student organisation at my medical school dedicated to planetary health or sustainability in healthcare but it **lacks faculty support.**
0	No, there is **not** a student organisation at my institution dedicated to planetary health or sustainability in healthcare.
Score explanation: Earth Resus Team is a society founded by medical students at the University, which receives support from the medical school. They advocate to the staff and on campus, and are supported by members of faculty (including making this report card!).	

4.5. Is there a student liaison representing sustainability interests who serves on a medical school or institutional decision-making council to advocate for curriculum reform and/or sustainability best practices?	
1	Yes, there is a student representative that serves on a medical school or institutional decision-making council/committee.
0	No, there is no such student representative.
Score explanation: The medical school has worked alongside Earth Resus Team, who have attended Interprofessional Education steering Group meetings and are involved in the curriculum reform. They have successfully embedded sustainability-themed lectures in the year 4 academic activities weeks, alongside helping arrange a sustainability SSE for Year 3 MBChB.	

4.6. 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: Projects for experience in organic agriculture are in the works of being made. A Head and Director of Sustainability education have been appointed.
The events and series that have happened at the University are open to staff and students.

University societies, including Earth Resus Team and Plastic Free UoB, work towards increasing student support and providing social volunteer opportunities such as litter picks. The University of Birmingham Conservation Volunteers have also worked with local and national organisations with aims to "conserve our environment".

Local volunteer opportunities that have happened previously include root bush planting and gardening. Additionally, Winterbourne House and Garden (A botanical garden located on campus) offers volunteering opportunities throughout the year.

Student societies offer opportunities to go on wilderness and outdoor programs and residential programs, including within the medical school.

Section Total (10 out of 15)	**66.7%**

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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 endeavour, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinising every aspect of how our systems operate, from where we source our energy, to how we build our infrastructure, to what companies we invest in. Our medical schools, clinics, and hospitals must set the standard for sustainable practices, and show other sectors what is possible when it comes to minimising environmental impact.*

5.1. Does your 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 University was scored 2. The University of Birmingham appointed a new Chief of Sustainability in 2023, and there is a sustainability committee for the medical school, however committee members have other roles and they are not salaried positions.	

5.2. How ambitious is your institution/medical school plan to reduce its own carbon footprint?	
5	The institution/medical school has a **written and approved plan** to achieve carbon neutrality by **2030**
3	The institution/medical school has a **written and approved plan** to achieve carbon neutrality by **2040**
1	The institution/medical school has a stated goal of carbon neutrality by **2040** but has **not created a plan** to reach that goal or the **plan is inadequate**
0	The institution/medical school does **not** meet any of the requirements listed above
Score explanation: Previously the university was scored 3 based on the fact that it had signed up to the UN Race to Zero global campaign, and had set a goal of attaining net zero Carbon for Scopes 1 & 2 by 2035 and Scope 3 by 2045. This goal and plan are still in place. However, the university states in their most recent guidance that they have a Net Zero Carbon Commitment of 2045 (link). Therefore, the institution was scored 0.	

5.3. Do buildings/infrastructure used by the medical school for teaching (not including the hospital) utilise 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**:* A score of 1 was given for the following reason: The University of Birmingham medical school uses 100% renewable energy to power their buildings. However, heating is provided by the Combined Heat and Power (CHP) plant on campus, which uses gas. It is challenging to determine the exact usage of renewable energy in proportion to non-renewable energy, but estimates suggest it is between 20% and 80% of total energy.

Also of note is the "Smart Campus" initiative, which is a positive step towards a sustainable campus with net-zero emissions. More information is available at https://www.birmingham.ac.uk/university/building/smart-campus/index.aspx.

5.4. Are sustainable building practices utilised for new and old buildings on the medical school campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?	
3	Yes, sustainable building practices are utilised 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 utilised 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.

Score explanation: A score of 2 was given due to the use of sustainable building for both new and existing structures. However, retrofitting has only occurred on a few buildings on campus, so some of the existing structures on campus still have the potential to be more energy efficient. It is difficult to ascertain the exact proportion of buildings which have been retrofitted.

The University of Birmingham is also developing the Birmingham Health Innovation Campus, which is dedicated to sustainability. This will help reduce energy consumption and emissions, support the development of green technologies, and promote healthy living through research and initiatives.

5.5. Has the medical school or institution implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental

impact of commuting?	
2	Yes, the medical school or institution has implemented strategies to encourage and provide **environmentally-friendly transportation options** such as safe active transport, public transport, or carpooling and these options are well-utilised by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
1	The medical school or institution has implemented **some** strategies to provide environmentally-friendly transportation options, but the options are **unsatisfactorily** accessible or advertised.
0	The medical school or institution has **not** implemented strategies to encourage and provide environmentally-friendly transportation options.
Score explanation: A score of 1 was given as the University of Birmingham medical school has improved accessibility for sustainable transport options, such as installing safe bike storage at the medical school, however this has not been advertised extensively. Uptake and effect of these measures are not recorded by the medical school.	

5.6. Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminium/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: A score of 1 was given. According to the Medical and Dental sciences staff induction handbook, the College has established a "bin-less paper recycling program", which enables staff to recycle and reduce the amount of waste that goes to landfill. Recycling sub-stations can be found in multiple places within the Medical School, including the Staff Common room, offering recycling of cans, plastic, paper, and cardboard. Although a student-lead composting initiative has been launched, this is campus-wide rather than exclusive to the medical school.	

5.7. 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 a**dequate s**ustainability 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 medical school was formerly awarded a score of 1, due to the fact that, based on the guidance notes for sustainable food policy, the University of Birmingham applies sustainability criteria to campus food and beverage selections, including local sourcing, reduced meat consumption, decreased plastic packaging, and high standards of sustainability.. The University has been awarded a "Good Egg Award" for its commitment to free range eggs, meets DEFRA standards for fish, and encourages the use of seasonal produce and organic products.

The Director of Sustainability at the College of Medical and Dental Sciences has reaffirmed that some considerations are made towards sustainability – i.e. decreased plasti packaging, engaging with hospitality – however this is still not perfect. Therefore a score of 2 was given.

5.8. Does the medical school or 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: A score of 3 was given, because based on the Sustainable procurement policy, the University of Birmingham applies sustainability criteria to its supply procurement decisions, including reducing carbon footprint, assessing environmental/social impacts, promoting waste hierarchy & circular economy principles, using Fairtrade products, fulfilling duty of care obligations, using ethical suppliers, and communicating the policy. The University also works with the HE Sector and other purchasing consortia to ensure their Sustainable Procurement Policy is similar to their own.

Although this does not apply specifically to the medical school, a score of 3 was still given because the catering services for the campus also provide for the medical school.

Sustainable food procurement policy (PDF - 436 Kb) 2019

5.9. 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.

Score explanation: A score of 0 was given because there do not seem to be any sustainability requirements/guidelines in place for events specifically in the medical school.

5.10. 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: A score of 1 was awarded as the medical school advertises several schemes which seek to reduce emissions in laboratories, such as the Leaf Scheme, however these are currently voluntary. The university is also developing the Birmingham Health Innovation Campus, dedicated to sustainability which will reduce energy consumption/emissions, support green tech development, and promote healthy living through research/initiatives.	

5.11. 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	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 organised advocacy** for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been **no efforts** to change that.
Score explanation: A score of 2 was given as the university still holds less than 1% of their investment portfolio in funds which cannot be confirmed to be free from fossil fuel investments.	

Section Total (16 out of 32)	**50.0%**

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Grading

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

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

**Within each grade bracket, a score in the top 5% (_5 to_9%), receives a "+", and a score in the bottom 5% (_0-_4%) receives a "--". For example, a percentage score of 78% would be a B+.*

Planetary Health Grades for Birmingham Medical School
The following table presents the individual section grades and overall institutional grade for Birmingham Medical School on this medical-school-specific Planetary Health Report Card.

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	(21/72) x 100 = 29.2%	D
Interdisciplinary Research (17.5%)	(10/17) x 100 = 58.8%	C+
Community Outreach and Advocacy (17.5%)	(3/14) x 100 = 21.4%	D-
Support for Student-led Planetary Health Initiatives (17.5%)	(10/15) x 100= 66.7%	B
Campus Sustainability (17.5%)	(16/32) x 100 = 50.0%	C
Institutional Grade	**43.2%**	**C-**

Report Card Trends

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