



Planetary Health Report Card (Medicine): *Imperial College London*



**Imperial College
London**

2022-2023 Contributing Team:

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Summary of Findings

Overall	C+
<u>Curriculum</u>	C-
<ul style="list-style-type: none"> Imperial College London offers some planetary health teaching in elective courses, such as the Global Health iBSc, and the new Lifestyle Medicine and Prevention module for early years. Recommendation: Imperial College London should increase the amount of planetary health teaching within the core curriculum and implement it longitudinally throughout the program to ensure students have a comprehensive understanding of planetary health and its importance. 	
<u>Interdisciplinary Research</u>	B
<ul style="list-style-type: none"> Imperial College London has dedicated researchers, affiliations with The Grantham Institute, and online resources for Planetary Health. Recommendation: To enhance interdisciplinary research, Imperial College London should consider joining the Planetary Health Alliance or the Global Consortium on Climate and Health Education. Additionally, the College could host a conference to bring together experts and researchers from various fields to discuss Planetary Health. 	
<u>Community Outreach and Advocacy</u>	B-
<ul style="list-style-type: none"> Imperial College School of Medicine prioritises education on Planetary Health within its iBSc course, hosts a sustainability week for all students and staff, and offers lectures on Planetary Health for post-graduate students. The Imperial College Healthcare Trust provides online resources on the relationship between air pollution and poor health outcomes. Recommendation: To increase community outreach and advocacy, it is recommended that Imperial College London should make more resources available online through the Imperial College Healthcare Trust. These resources should educate patients on the link between climate change and health effects, helping to raise awareness about Planetary Health and encouraging individuals to take action to reduce their impact on the environment. 	
<u>Support for Student-Led Initiatives</u>	C
<ul style="list-style-type: none"> Imperial College London provides numerous opportunities for students to pitch ideas and receive funding for their environmental projects. This includes, but is not limited to, The Enterprise Labs, The Venture Catalyst Challenge and the Undergraduate Research Opportunities Programme. Recommendations: The need for a centralised web page where medical students can find mentors, current events and advice on how to get started with research into this field. 	
<u>Campus Sustainability</u>	B-
<ul style="list-style-type: none"> Imperial College School of Medicine, along with the wider College, has made excellent progress in becoming a more sustainable campus. This includes the introduction of multiple sustainability campaigns, reducing the use of fossil fuels, and employing staff dedicated to sustainability. The College has shown a particular commitment to food and catering sustainability. Recommendation: While there is some room for improvement in campus sustainability, it may be challenging given the quantity of energy-exhaustive research that takes place in the medical school. Imperial College London has campaigns in place to encourage environmentally friendly travel, but further emphasis is recommended. 	

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 civilization 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 last year, the Planetary Health Report Card [Literature Review by Metric](#) collates the evidence behind each of the metrics in the Planetary Health Report Card. It serves as a collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.

Planetary Health Curriculum

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

Curriculum: General

1. Did your <u>medical school</u> offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>Score Explanation:</i></p> <ul style="list-style-type: none"> - In Year 1, students have the option of choosing “Global Challenges” or “Introduction to Environmental Economics” for their Horizons’ module. The “Global Challenges” module is a collaborative project working in line with the UN Sustainable Development Goals. The “Introduction to Environmental Economics” focuses on the control of environmental degradation and aims to provide students with a framework to critical evaluate government policy on environmental regulation on an international and global scale.^{[1] [2]} - In Year 1, students during their Lifestyle and Medicine Prevention course have to choose one Student Selected Component (SSC). One of the options is to take the Nutrition courses that focuses on how nutrition can help prevent disease and the beneficial impact of a vegan diet both on the planet and on an individual's health. - In Year 2, students have the option of choosing “Climate Change: Science and Solutions” for their I-Explore Module. The module’s learning outcomes include:^[3] <ul style="list-style-type: none"> - Construct evidence-based arguments demonstrating the urgency, implications and impacts of climate change - Explain the multidisciplinary nature of the climate crisis and identify opportunities for change across disciplines - Identify opportunities to leverage one’s own expertise to make a positive impact towards solving the climate crisis - In Year 4, Imperial Medical students have to take a mandatory iBSc subject as part of the Phase 2 Curriculum. This is in contrast to other medical schools where the iBSc is an optional part of the programme, hence iBSc courses will be included in Imperial’s Report Card. One of the iBSc subjects offered is Global Health, in which the impact of climate change on human health is taught, under the following learning objective: “Explain the impact of climate 	

change, conflict and other natural and anthropogenic events on the health of vulnerable populations around the world”.⁴¹

- There are no Specialty Choice Placements in Year 5 that relate to climate change (out of 70 options).

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:

- Year 2: Students have the option of selecting the ‘Climate Change: Science and Solutions’ for their I-explore module. Part 1 of this module focuses on evidence of ‘change in the physical environment’ and forecasts for the future, covering topics including heat and drought, and other forms of extreme weather. Part 3 of the module focuses on the impact of these changes on human populations, such as on population growth, migration and disease burden.
- As part of the Global Health BSc for 4th year, there is a lecture on climate change and environmental health. This lecture focuses on the effect on mortality of even a small change in temperatures. He also discusses which populations are at increased risk of this.

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:

- Year 2: Students have the option of selecting the ‘Climate Change: Science and Solutions’ for their I-explore module. Part 1 of this module focuses on evidence of ‘change in the physical environment’ and forecasts for the future, covering topics including heat and drought, and other forms of extreme weather. Part 3 of the module focuses on the impact of these changes on human populations, such as on population growth, migration and disease burden.
- Extreme weather events (including extreme heat) are briefly mentioned during the Global Health BSc in year 4 in the following lectures: “Climate change and heat waves” and “Environmental policy”.

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:

- *In year 2, the Global Health topic under the Lifestyle Medicine and Prevention module identifies factors contributing to climate change such as increased atmospheric carbon, increased average temperature and increasing globalisation as changing patterns of infectious disease globally.*
- *In year 5, as part of the Pathology course, a lecture titled “Pandemic Flu” demonstrates how pandemics may become a lot more common in the future. The lecture also mentions specifically how climate change will have an impact on pandemics in the future. It also mentions the specific impact on West Nile Virus, Dengue virus and Zika virus. This is covered under the learning objective: ‘Epidemiological impact: explain the geographical patterns of infectious disease and recognise the most common infectious agents causing high disease burden’, covering changes in patterns due to climate change.*

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:

- *In Year 2 a lecture titled ‘Asthma and Respiratory Immunology’ gave air pollution as a key environmental factor that can cause people to develop allergic asthma in sensitised, genetically susceptible individuals. Similarly, air pollution among other factors were mentioned as causing cumulative inflammatory damage in the pathogenesis of acute asthma flare-ups in school age children.*
- *In Year 2 a lecture on ‘Lung Cancer’ specifically mentioned indoor cooking fumes such as wood smoke, frying fats and the extensive use of biomass in South Asia as a cause of lung cancer. A subsequent lecture on ‘Respiratory Failure’ also mentioned that household air pollution from cooking fuels is the biggest risk factor worldwide for chronic respiratory disease, e.g. COPD in females.*
- *As part of the Global Health BSc in year 4, there is a lecture on Air Pollution Policy covering, in depth the effects of air pollutants on human health and the mechanisms behind this, as well as changes in policy regarding air pollution over time.*

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:

- *In Year 4, a learning objective under the intercalated Bsc on Topics in Remote Medicine has the following learning outcome: 'Explain the physiological and pathophysiological changes occurring in environments of extremes in pressure and temperature' This encompasses cardiovascular health effects among others.*
- *As part of the Global Health BSc in year 4, there is a lecture on climate change and heat waves. The lecture talks about the populations most at risk of this and mentions people with existing cardiovascular disease.*

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:

- *There is no teaching in the core or elective curriculum on the mental health effects of 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:

- *In Year 1, in the LMAP Student Selected Component, one of the options is to take the Nutrition courses that focuses on how nutrition can help prevent disease and the beneficial impact of a*

vegan diet both on the planet and on an individual's health. The course addresses in detail the relationships between health, individual patient food and ecosystem health, and climate change.

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

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 year 2, in the Global Health and governance topic, there is a mandatory video on Sustainable Development Goals discussing how low SES populations in Papua New Guinea who survive on subsistence farming are likely to be affected by rising sea levels and salination of farming soils. The aim of the Sustainable Development Goals was to increase global health equality.*
- *As part of the Global Health BSc in 4th year, a lecture on heat waves and climate change mentions the populations that are the most vulnerable to this. The lecturer mentions women, people with low SES, elderly and very young populations and people with chronic conditions.*

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:

- *In Year 2, the Global Health and governance topic under the Lifestyle and Prevention Medicine module explores the UN Sustainable Developments Goals and how climate change unequally impacts health across the globe.*
- *The Year 2 Global Health and governance topic under the Lifestyle Medicine and Prevention Module one of the learning objectives is to 'Describe the relationships between climate change, sustainability and planetary health in terms of global health'. For this objective, students had pre-reading material and a follow-up tutorial where they had to consider how the regional impacts of climate change such as famine, tropical disease, political and economic instability would perpetuate health inequalities.*
- *In Year 4 the Global Health BSc module covers the following learning objective "Explain the impact of climate change, conflict and other natural and anthropogenic events on the health of vulnerable populations around the world."*

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

11. Does your <u>medical school</u> curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> - <i>In Year 1: Whilst there are no particular learning outcomes relating to this topic, a lecture titled 'Introduction to Development and Ageing' covers the "Environmental influences and impacts" affecting foetal development and mentions "environmental chemicals" and "teratogens".</i> 	

12. Does your <u>medical school</u> curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> - <i>There is no teaching in the core or elective curriculum on the mental health effects of climate change.</i> 	

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.
<i>Score explanation:</i> - There is no teaching in the core or elective curriculum on this topic.	

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.
<i>Score explanation:</i> - In the Global Health BSc in year 4, although the effects of environmental toxins on health are discussed in the lecture on Air Pollution legislation, there is no coverage of the effects of these on marginalised communities.	

Curriculum: Sustainability

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.
<i>Score explanation:</i> - In Year 1: The Nutrition Student Selected Component of the Lifestyle Medicine and Prevention module, focuses on how nutrition can help prevent disease and the beneficial impact of a vegan diet both on the planet and on an individual's health.	

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.
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> - In Year 1 Lifestyle Medicine and Prevention Module, a lecture and tutorial based learning event titled “Sustainability in Healthcare Improvement” addresses the carbon footprint of the NHS. The lecture includes an infographic from “Breaking the fever: Sustainability and climate change in the NHS”^[5], depict that the “NHS is one of the largest contributors of greenhouse gas emissions in the UK” 	

17. Does your medical school curriculum cover these components of sustainable clinical practice in the core 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 anaesthesia environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions
1	The impact of 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)
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> - In Year 1 Lifestyle Medicine and Prevention Module, a lecture and tutorial based learning event titled “Sustainability in Healthcare Improvement”. The lecture promotes Sustainable Quality Improvement projects and the importance of “providing high-quality care to patients not just of today but of the future”. Students are informed about various sustainable clinical practice projects happening in the UK^[6] and taught on how medical students can carry out Sustainability-focused Quality Improvement projects (SusQI) of their own. This included discussion of projects such as ‘The UK Green Surgery Project’ which aims to reduce the carbon footprint associated with surgery including low carbon alternative surgical products and reducing unnecessary equipment. 	

Curriculum: Clinical Applications

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
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> - <i>Although the curriculum is otherwise rich in clinical communications teaching, there is no section of it dedicated to talking about the effects of climate change.</i> 	

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.
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> - <i>Learning outcomes in Year 3: "Holistic assessment: demonstrate the ability to assess and respond to patient problems appreciating the impact of clinical, psychological, social, religious and cultural factors" and "Demonstrate the ability to take, summarise and record a patient's medical history (including history of presenting complaint, past medical, medication, family, social and dietary history)" in which the occupational part of a social history should include things like toxins, living in an urban environment etc.</i> 	

Curriculum: Administrative Support for Planetary Health

20. Is your <u>medical school</u> 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.
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> - Unfortunately, despite numerous attempts to reach out to Imperial College faculty, no information regarding current plans of implementing or improving Education for Sustainable Healthcare could be gathered. 	

21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> curriculum?	
6	Planetary health/ESH topics are 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.
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> - There is some implementation of ESH and Planetary Health in the curriculum in Year 1 and Year 2 compromising of Quality Improvement, Auditing and teaching of Global Sustainability Goals but those topics alone aren't enough coverage of ESH/Planetary Health to award 6 points. 	

22. Does your <u>medical school</u> employ a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course?	
1	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.
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> - The Faculty of Medicine has a specific staff role, titled Director of Undergraduate Public Health Education, which fulfils this role. 	

Section Total (30 out of 72)	42%
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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.

1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <u>medical school</u>?	
3	Yes, there are faculty members at the 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:
 There is a moderate number of members within the Faculty of Medicine at Imperial with a primary research focus on planetary health. Examples of researchers include:

- [Dr Daniela Fecht's](#) research focuses on 'geographical variations in population health, with particular focus on urban systems; and environmental and health inequalities'. Their latest publications look at links between low-level exposure to air pollution and different diseases.
- [Dr Elaine Fuertes's](#) research focuses on 'the influence of environmental and behavioural factors, and their interaction, on the development of childhood and adult allergic diseases and respiratory health'.
- [Professor Kris Murray's](#) research focuses on 'climate change, infectious diseases and the health co-benefits of environmental interventions' alongside ecosystems, biodiversity and wildlife health.

Imperial College London has [The Grantham Institute](#) which is one of the seven Global Challenges Institutes established to address the most concerning issues currently facing the world. Its mission is 'to contribute to, and lead on, world-class research, training and innovation towards effective action on climate change and the environment'. There are currently 12 members of the Faculty of Medicine who are Grantham Affiliates for Environment and Health, amongst many others from faculties across the college including the Imperial College Business School, the Faculty of Natural Sciences and the Faculty of Engineering who are collectively working together to achieve 'a sustainable, resilient, zero-carbon future'.

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:

As mentioned earlier, Imperial College London has [The Grantham Institute](#) which is one of the seven Global Challenges Institutes established to address the most concerning issues currently facing the world. Its mission ‘to contribute to, and lead on, world-class research, training and innovation towards effective action on climate change and the environment’. Researchers from a wide range of disciplines including medicine, natural sciences, health economics and engineering are collectively working together to improve current understanding of climate change and its impacts on human health.

The [Institute for Global Health Innovation](#) is another Global Challenge Institute established by Imperial to tackle global health issues through research, education and training. Several projects relating to planetary health are currently underway. One example is [Climate Cares](#) which is a collective of researchers, educators, policy-makers and designers aiming to improve understanding of the impact of the current climate change crisis on mental health and establishing evidence-based practices that can promote resilience and empower affected individuals.

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:

To our knowledge, the Faculty of Medicine does not directly have a process whereby communities disproportionately affected by climate change and environmental injustice can give input or make decisions regarding the research agenda. However, The Institute for Global Health Innovation, which is one of the Global Challenges Institutes established by Imperial, aims to increase patient and public involvement and engagement in their work. In 2021, the ‘Healthy Environments, Diverse Perspectives’ project explored the views of under-represented groups on healthy environment research^[7]. Key

insights from this project included participants encouraging future research which focuses on preventative measures to bring health benefits, improving social equity and long-term sustainability of solutions. These will be used to guide future research done through the institute.

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:

Imperial College London’s website has the Transition to Zero Pollution blog^[8], The Grantham Institute blog^[9] and action hub^[10], which include articles covering planetary health, advice regarding climate action and current research in this field. Examples of articles include: ‘Veganuary 2023: how to go plant-based with the family on board’, ‘Nuts for the planet?’ and ‘The Paris Agreement: are we raising climate ambition fast enough?’. However, this doesn’t seem to be regularly updated and it is difficult to access past and upcoming events on the website, often requiring going through sub-pages.

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:

To our knowledge, Imperial College London has not hosted a conference dedicated exclusively to planetary health. However, Imperial did host a Sustainability Week^[5] earlier in 2022 which included an ‘Air and Health’ day wherein there were panel discussions regarding the health implications of air pollution and potential solutions. .

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:

Neither Imperial College London nor the School of Medicine have joined the Planetary Health Alliance (PHA) or the Global Consortium on Climate and Health Education.

Section Total (12 out of 17)

71%

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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.*

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.
<p><i>Score explanation: MBBS students at Imperial must intercalate. Students undertaking the Global Health iBSc participate in a Community Group Placement (CGP) with a London Community based organisation (CBO). There are 8 CBOs which Imperial collaborates with. One such organisation is the <u>Hammersmith Community Gardens</u>, and one of its aims is to improve green spaces for residents and wildlife. Students from the 2022-23 cohort undertook an asset-based approach to conduct a quality improvement project. The aim of this project was to improve inclusiveness and diversity of volunteers recruited into the group's <u>Get Out There (GOT)</u> project. The project itself enables participants to learn new skills in basic environmental management, such as habitat conservation; tool use; and wildlife identification. Moreover, the project recruits those who are unemployed. The students' projects also explored capacity-building opportunities for GOT volunteers to improve green spaces within the borough.</i></p>	

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: Imperial college is hosting a free “Environmental emergency- lecture and workshop” during its sustainability week. The course is two-hours in duration, and will be delivered on the 21st, 22nd, 23rd and 24th of February. The course aims to introduce students to the climate crisis, and efficacious solutions for professionals. Other courses will also be available to staff and students through sustainability week.

Imperial College has previously hosted “Imperial Lates” talks, which provided information on the planetary health topic “Food for thought” (including the impact of plant-based diets upon the planet), and “Back to nature”. Whilst no additional lectures have been delivered, those delivered in the past are still available to view online.

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: The school of medicine does not offer regular coverage of issues related to planetary health and/or sustainable healthcare. Faculty communicate to medical students regularly via emailed bulletins: content relating to the students’ curriculum is prioritised. Centralised communications from the College are instead more likely to include information relating to sustainable practices, but these are not necessarily specific to medicine.

However, following the recommendations from the 2020-2021 report card, links to the sustainable imperial newsletter will be distributed across all MBBS/BSc year groups via bulletins.

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: Whilst Imperial college offers courses for the continuing of professional development (CPD), those targeted at medical professionals do not appear to address planetary health or sustainable healthcare. There is however a new course titled “climate change risk management”, which will be offered in March 2023. The course aims to discuss the importance of mitigating climate change from an institutional level, and how this can be achieved. Moreover, the Undaunted partnership between the college’s Grantham institute and the Royal Institution hosts events available to all students, including post-graduates. A lecture titled “climate justice: fairness for a greener future” will occur during the college’s sustainability week. Running from 20-24th of February 2022, researchers

can present their work promoting the transition to net-zero, and students and staff can learn about Imperial's efforts to be more environmentally-conscious. Workshops and events will also be hosted.

It is noted that each hospital within the college trust has its own personnel for sustainable practices, due to trust premises not being considered Imperial campus buildings. There is thus no centralised member of staff who could be contacted whilst reviewing this metric. It is thus recognised the score explanation may understate the trust's current efforts for targeting post-graduate education in planetary health and sustainable healthcare.

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:

The Imperial healthcare trust green plan outlines some of the damaging impacts that polluted air has upon health. Air quality monitors have been installed within Charing Cross Hospital, with data available at Breathe London for viewing by both patients and staff.

It is noted that each hospital within the college trust has its own personnel for sustainable practices, due to trust premises not being considered Imperial campus buildings. There is thus no centralised member of staff who could be contacted whilst reviewing this metric. It is thus recognised the score explanation may understate the trust's current educational materials for patients regarding environmental health exposures.

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: Whilst the imperial college healthcare trust acknowledges the impact of air pollution upon health, the impact of climate change is not otherwise stated. The trust's efforts to disclose the impact of air pollution on health was instead discussed in metric 6, with air pollution considered contributory to climate change, and of its manifestations. It is noted that a web page from the college indicates research efforts from the business school to educate viewers on the relationship between climate change and health. No online sources from the trust or medical school are currently available, to our knowledge, regarding education materials for patients about climate change.

It is noted that each hospital within the college trust has its own personnel for sustainable practises, due to trust premises not being considered Imperial campus buildings. There is thus no centralised member of staff who could be contacted whilst reviewing this metric. It is thus recognised the score explanation may understate the trust's current educational materials for patients regarding climate change and health impacts.

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Additional resources: St Mary's hospital will imminently provide information on the trust's NHS green plan during the induction training of junior doctors. Hospital staff are to be provided with training and an education model on climate change and waste.

It is noted that [a blog](#) from Greener NHS identified that St Mary's Hospital partook in a trial for the drone-facilitated delivery of chemotherapy agents. It is reported that the initiative cuts each delivery time by 75%, whilst contributing to reducing emissions. Similarly, [another blog](#) described an initiative from Charing cross hospital which aimed to reduce the usage of single-use plastic cannulas by targeting those which are unnecessarily placed. This led to a reduction in patients who had an unused cannula inserted, from 40% to 27%.

Support for Student-Led Planetary Health Initiatives

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

1. Does your 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 <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 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 Enterprise Lab allows all students to find different funds to pitch their ideas to and receive funding. One of them is the Discovery Fund, a £500 bursary to help a person or a team develop their commercial idea.

The Venture Catalyst Challenge is Imperial's flagship entrepreneurial competition for Imperial students and alumni to develop an innovative idea for commercialisation and win cash prizes. There are 5 tracks (Energy & Environment, AI & Robotics, Health & Wellbeing, Creative & Consumer, Digital & FinTech). Each track winner is awarded £10,000 together with the possibility to compete at the grand final and be awarded the Grand Final Prize of £20,000. Furthermore there is a £10,000 prize for Social Impact. The only prerequisite is to have carried out customer and market research to demonstrate a real problem and an innovative potential solution.

The StudentShaper is a programme that supports partnership between staff and students on a broad range of projects in educational development and educational research open to the entire Imperial College staff and student body. The programme will provide financial support to students to facilitate them taking part in partnership activities.

While unfunded, more medical students are likely to participate in an optional biweekly sustainability module which explicitly teaches how to implement sustainability into a quality improvement project.

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.
<p><i>Score explanation:</i> At Imperial we have an Undergraduate Research Opportunities Programme (UROP) that allows students to get involved in research for a period of time (normally during summer). Nevertheless they need to be organised by students and are not organised by the medical school itself. The Transition to Zero Pollution initiative has funding for Imperial College London undergraduate students to undertake UROP placements for summer 2021. Up to 10 scholarships are available for projects of 6-10 weeks in length and will provide a bursary of £350 per week. Projects will need to be aligned to the Transition to Zero Pollution initiative. The Science and Solutions for a Changing Planet Doctoral Training Partnership (SSCP DTP) is a unique and prestigious doctoral training opportunity, funded by NERC and based at the Grantham Institute. This innovative programme integrates six Host Partners and a number of other private and public sector partners to train and inspire a new generation of environmental experts and leaders to tackle some of the toughest challenges of our time.</p>	

3. Does the <u>medical school</u> have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.	
2	The medical school has a web page with specific information related to planetary health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.
1	There is a medical school webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information.
0	There is no medical-school specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.
<p><i>Score explanation:</i> Imperial College has a web page titled Sustainability that contains all the information regarding all the sustainable actions, projects, events and educational opportunities there are at Imperial College, however this page has no information regarding planetary health and/or sustainable healthcare projects. Notably, the page is not specific to the medical school either.</p>	

4. Does your <u>medical school</u> have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?	
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.
<p><i>Score explanation:</i> <i>Students for Global Health at Imperial College is a student organisation that has a dedicated planetary health subcommittee and funding support from the Imperial College Union. Their focus is campaigning, advocacy, volunteering and addressing the UN's Sustainable Development Goals.</i></p>	

<p>5. Is there a student liaison representing sustainability interests who serves on a <u>medical school</u> or <u>institutional</u> decision-making council to advocate for curriculum reform and/or sustainability best practices?</p>	
1	Yes, there is a student representative that serves on a medical school or institutional decision-making council/committee.
0	No, there is no such student representative.
<p><i>Score explanation:</i> <i>While the medical school does not have an officer for sustainability, at the college level the Ethics and Environmental officer is responsible for ensuring these issues are dealt with.</i></p>	

<p>6. In the past year, has the <u>institution</u> had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)</p>	
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)
<p><i>Score explanation:</i> <i>For students that choose to intercalate in Global Health (intercalation is mandatory for ICSM students) they have a Community Group Placement (CGP) scheme in order to develop social accountability and community engagement skills. All CGP partner organisations are community-based organisations</i></p>	

(CBO) working with our local communities across London. One of them being the Hammersmith Community Gardens Association (HCGA) is a local environmental charity that manages several community gardens in Hammersmith and Fulham with a range of projects including conservation training schemes, volunteer gardening sessions, and health and wellbeing projects.

An optional sustainability module in third year features a variety of talks given to medical students to teach them how sustainability can be incorporated into their future careers as doctors.

Section Total (7 out of 15)

47%

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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.

1. Does your <u>medical school</u> and/or <u>institution</u> have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff , but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p><i>Score explanation:</i> Imperial College London does not have an office of sustainability however, there are multiple salaried staff members who have been tasked with increasing sustainability eg. Academic Lead for Sustainability and Sustainability Strategy Director. A Sustainability Strategy Committee has also been created that reports directly to the Management Board. A Sustainability Manager in Estates Operations has been appointed and is due to start in March 2023 and they will appoint a Sustainability Coordinator as part of a Sustainability Team within Estates.</p>	

2. How ambitious is your <u>institution/medical school</u> 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
<p><i>Score explanation:</i> Imperial College London is committed to net-zero CO2 emissions by 2040, and this extends to the medical school. There is a clear plan to achieve this detailed in the</p>	

	College's Sustainability Strategy 21-26: https://www.imperial.ac.uk/sustainable-imperial/ and there is a committee in place to deliver this.
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3. Do buildings/infrastructure used by the <u>medical school</u> 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.
<p><i>Score explanation:</i> 100% of imported electricity that Imperial College London uses is Renewable Energy Guarantees of Origin (REGO) backed. At the South Kensington campus, there is a Combined Heat and Power plant that generates 70% of the electrical requirements. This is not renewable however, is gas fired and therefore an efficient low carbon system. There are some very energy intensive buildings, as many of the medical school buildings are shared with Imperial research.</p>	

4. Are sustainable building practices utilised for new and old buildings on the <u>medical school</u> campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?	
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.
<p><i>Score explanation:</i> All new buildings in Imperial College London are evaluated to BREEAM excellent standard and there is a strong focus on sustainability in older buildings being refurbished, eg. the Hammersmith Hospital campus. The college aim is to consider sustainability at all stages of refurbishment and new building planning, and to work with architects and contractors to minimise the environmental impact of construction.</p>	

5. Has the <u>medical school</u> 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	The medical school has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.
0	The medical school has not implemented strategies to encourage and provide environmentally-friendly transportation options.
<p><i>Score explanation:</i> Imperial College London (ICL) emphasises the importance of climate consciousness with respect to travel. This is done via posters around campus and social media campaigns. Although there are ample bike racks at all ICL medical school sites, there are no current strategies to reduce un-sustainable travel.</p>	

6. Does your <u>medical school</u> 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.
<p><i>Score explanation:</i> Imperial College London has multiple clearly labelled bins on each campus site, including: dry recycling, regular waste, paper and plastics. There are also compost areas at each site with a cafeteria/ cafe/ food service amenity. These buildings are accessed by students and staff, and the bins are placed near elevators, building entrances and exits, in the food areas and outside labs.</p>	

7. Does the <u>medical school</u> 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.
<p><i>Score explanation:</i> Imperial College London has adequate sustainability campaigns for both food and drink. Plantworks was launched in April 2019 as Imperial's first entirely plant-based and vegan catering outlet. Plantworks features plant based food and drink, encouraging staff and students to make their diets more sustainable for the planet. The Drink, Refill, Repeat campaign encourages students and staff to transition from disposable drinks bottles and toward reusable containers. New water fountains</p>	

have been introduced across campus and plastic cups removed from water stations, saving approximately 850,000 plastic cups per year. The sustainable food and drink policy means that only Marine Stewardship Council (MSC) certified fish are served on-campus, all non-dairy milks are available at no extra charge, local and seasonal fruit are served over non-seasonal fruit. The campaign also aims to eliminate beef entirely from the campus menus by 2026.

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: Imperial College London's Sustainable Food & Drink Policy is led by the College's in-house catering team and has been informed by consistent consultation with students and staff. The policy ensures all fish served on campus is Marine Stewardship Council (MSC) certified, local produce is prioritised, educational materials are available in outlets on sustainable food and drink choices and community spaces are provided to support student and staff involvement in sustainable food projects. Beed products are being phased out from College menus by 30% each year, and will be removed entirely by 2025-26. There is limited information about sustainability of non-food stuff however, staff are encouraged to clean and re-use all possible lab equipment and are provided with a list of sustainable suppliers. There are currently no requirements for the amount or type of sustainable products that must be purchased.

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: While Imperial College London frequently hosts sustainability-focussed events, there is no sustainability criteria for events held at the medical school.

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.
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1	There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are no efforts at the medical school to make lab spaces more sustainable.
<i>Score explanation:</i> Imperial College London currently subscribes to LEAF - Laboratory Efficiency Assessment Framework, and are working with departments to increase the uptake of this scheme. LEAF is a standard set up to improve the sustainability and efficiency of laboratories.	

11. Does your <u>institution's</u> 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.
<i>Score explanation:</i> Imperial College London stated in 2020 “The College believes that, on the current evidence, thermal coal and tar sand extraction do not play a part in achieving the Paris Agreement targets and will therefore instruct the Endowment Board to divest from direct and indirect investments in companies engaged in these activities that are unable to make progress towards Paris Agreement targets”. The College does not accept research funding associated with fossil fuel extraction and instead works with energy companies on solar, wind, green hydrogen economy and environmentally friendly batteries. It is unclear to what extent the College has divested from fossil fuel companies, but a strong commitment to divest has certainly been made.	

Section Total (20 out of 32)	63%
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Grading

Section Overview

This section focuses on the grading of the report card. The institution received a grade for each of the individual sections as well as an overall institutional grade. Section point totals were tallied, divided by the total points available for the section, and converted to a percentage. The overall institutional

grade is a weighted average of the section grades, with curriculum receiving a higher weight owing to its larger number of metrics. Letter grades for each section and the institution overall were then assigned according to the table below.

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

**Within each grade bracket, a score in the top 5% (_5 to _9%), receives a “+”, and a score in the bottom 5% (_0- _4%) receives a “--”. For example, a percentage score of 78% would be a B+.*

Planetary Health Grades for the Imperial College School of Medicine

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(30/72) \times 100 = 42\%$	C-
Interdisciplinary Research (17.5%)	$(12/17) \times 100 = 71\%$	B
Community Outreach and Advocacy (17.5%)	$(9/14) \times 100 = 64\%$	B-
Support for Student-led Planetary Health Initiatives (17.5%)	$(7/15) \times 100 = 47\%$	C
Campus Sustainability (17.5%)	$(20/32) \times 100 = 63\%$	B-
Institutional Grade	55.21%	C+

Report Card Trends

Section Overview

This graph demonstrates trends in overall and section grades for the years in which Imperial College London has participated in the Planetary Health Report Card initiative.

