



Planetary Health Report Card (Medicine): *Trinity College Dublin*



Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

2022-2023 Contributing Team:

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Summary of Findings

Overall	C
<u>Curriculum</u>	B
<p>TCD's medical curriculum includes a module called 'Global Health' which covers aspects of sustainable development. However, it does not fully cover the concepts of Planetary Health or Climate Change. The addition of the 'Sustainable Healthcare' workshop this year was a major improvement, due to the platform for discussion among students about the relationship between climate change and healthcare.</p> <p>Recommendations: Further additions such as the aforementioned workshop are needed. We would like to see a larger emphasis on climate change as a threat to global health and it being added longitudinally to the core curriculum. We would like to see additional modules being added devoted to Planetary Health and the Environment.</p>	
<u>Interdisciplinary Research</u>	C
<p>TCD has several departments that receive funding for, and promote planetary health research among staff and students, but these are outside the domain of the School of Medicine. Additionally, the Nature+ research group tackled to focus on planetary health and sustainability has no members from the School of Medicine. TCD is a member of the Global Consortium on Climate and Health Education.</p> <p>Recommendations: Organisation of a planetary health focused conference would be of benefit. Membership to the Planetary Health Alliance could be considered. Expansion of the Healthy Trinity Webpage to a full website including planetary health news, events, and research contacts, perhaps through liaising with the Nature+ research group would prove beneficial in further promoting interdisciplinary research.</p>	
<u>Community Outreach and Advocacy</u>	F
<p>TCD Medical School and its affiliated hospitals have little community outreach relating to planetary health. The University does have some links to planetary health organisations, but the medical school itself has no direct role.</p> <p>Recommendations: Patients of the affiliated hospitals and students of the medical school should be informed about planetary health through educational materials, email updates, events, and academic learning opportunities. Obvious opportunities for improvement include engagement with community gardens and other such local organisations.</p>	
<u>Support for Student-Led Initiatives</u>	C
<p>TCD has an "Irish Doctors for the Environment" student working group. TCD has also launched various sustainability-related initiatives, including the E3 "Balanced Solutions for a Better World", and the Green Campus Programme. TCD offers research grants for students, however the projects must be initiated by the students themselves and are not necessarily related to sustainability.</p> <p>Recommendations: Increased support is needed for TCD medical students seeking sustainability-related research. We recommend the medical school launch a planetary health webpage, where students can learn about ongoing projects and search for mentors. TCD should also create a student representative role related to sustainability.</p>	
<u>Campus Sustainability</u>	C
<p>Trinity College Dublin has made consistent progress and efforts into becoming a more sustainable campus and has tried to involve all staff and students to participate in such efforts, as well as making relative facilities and services more accessible.</p> <p>Recommendations: There is still much to improve with the campus sustainability. Goals and plans are already in place at the Medical School, but have yet to be achieved. The college, and different schools within the college have set goals and plans; but those specific to the medical school are far from enough, and lacking of information.</p>	

Statement of Purpose

Planetary health is human health.

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

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

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

Definitions & Other Considerations

Definitions:

- **Planetary Health:** is described by the Planetary Health Alliance as “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 mold after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution.
- **Elective:** The word "elective" refers to an optional course or lecture series that a medical student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.
- **Clerkship:** This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations or placements.

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> <p>‘Global Health MOOC- Achieving Sustainable Development’ is an online elective from Future Learn (https://www.futurelearn.com/) which was offered to fourth year medical students in the summer of 2022. Topics explored in this elective include:</p> <ul style="list-style-type: none"> · Exploring the United Nations Sustainable Development Goals (SDG) framework · Examining why SDG3 ‘good health and wellbeing’ is critical for achieving sustainable development · Introducing challenges to ‘clean water and sanitation’ and ‘sustainable cities and communities’ 	

Curriculum: Health Effects of Climate Change

2. Does your <u>medical school</u> 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.
<p><i>Score explanation:</i></p> <p>As part of the ADVANCED CLINICAL AND PROFESSIONAL module, third year medical students must complete the ‘Global Health-Achieving Sustainable Development’ course in their second semester. It spans over a 4-week period and is worth 20% of the modules’ total grade. Upon completion of the 4 weeks students must answer a set of 5 MCQs to make sure their knowledge is satisfactory. The connection between extreme heat, climate change and potential health risks due to it are briefly covered in the course.</p> <p>Two lectures entitled ‘Environmental Health’ are administered to fourth year medical students as part of their PUBLIC HEALTH AND PRIMARY CARE (PHPC) module. These lectures explore the principles of Planetary Health, the health consequences of climate change and plant-based diets. The impact of increased temperatures on human health and heart related disease is covered in 5 of the slides.</p> <p>As of this year, a workshop tutorial entitled ‘Sustainable Healthcare’ led by doctors from IDE has been added as a mandatory part of the MEDICAL ETHICS, LAW & PROFESSIONALISM module for fourth year medical students. It is an interactive workshop based around the core principles of Planetary Health.</p>	

3. Does your <u>medical school</u> 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.
<p><i>Score explanation:</i></p> <p>Two lectures entitled ‘Environmental Health’ are administered to fourth year medical students as part of their PUBLIC HEALTH AND PRIMARY CARE (PHPC) module. These lectures explore the principles of Planetary Health, the health consequences of climate change and plant-based diets. It briefly covers extreme weather events.</p> <p>As of this year, a workshop tutorial entitled ‘Sustainable Healthcare’ led by doctors from IDE has been added as a mandatory part of the MEDICAL ETHICS, LAW & PROFESSIONALISM module for fourth year medical students. It is an interactive workshop focused around the core principles of Planetary Health. The topic of extreme and severe weather was discussed.</p>	

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:

Parasitology is a big component of the INFECTION AND IMMUNITY module taught in second year. The relationship between climate change and parasitic diseases was briefly covered. The topic of neglected tropical diseases (NTDs) and climate change being one of the 10 failings in global NTDs was also explored.

Two lectures entitled 'Environmental Health' are administered to fourth year medical students as part of their Public Health and Primary Care (PHPC) module. These lectures explore the principles of Planetary Health, the health consequences of climate change and plant-based diets. This includes a slide explaining the link between extreme weather events, changing biochemical flows and deforestation and infectious disease.

As of this year, a workshop tutorial entitled 'Sustainable Healthcare' led by doctors from IDE has been added as a mandatory part of the MEDICAL ETHICS, LAW & PROFESSIONALISM module for fourth year medical students. It is an interactive workshop based around the core principles of Planetary Health. The change in patterns of infectious disease due to changes in vector ecology and water quality caused by climate change was explored.

The 'Travel and tropical medicine' lecture in 5th year module INTEGRATED MEDICAL SCIENCE AND PRACTICE has a slide on the effect of climate, humidity and flooding on increased spread of vector-borne diseases.

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:

Air pollution's effect on respiratory health is briefly covered in LABARATORY AND INVESTIGATIVE MEDICINE module in third year. Its role as a risk factor for respiratory pathogenesis such as chronic bronchitis and lung cancers is explored.

Two lectures entitled ‘Environmental Health’ are administered to fourth year medical students as part of their Public Health and Primary Care (PHPC) module. These lectures explore the principles of Planetary Health, the health consequences of climate change and plant-based diets. This includes 3 slides explaining the negative effects of smog, household air pollution and warmer temperatures on respiratory disease.

As of this year, a workshop tutorial entitled ‘Sustainable Healthcare’ led by doctors from IDE has been added as a mandatory part of the MEDICAL ETHICS, LAW & PROFESSIONALISM module for fourth year medical students. It is an interactive workshop based around the core principles of Planetary Health. The increase in asthma and cardiovascular disease due to air pollution was pointed out. The increase in respiratory allergies and asthma due an increase in allergens caused by climate change was also discussed.

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:

Two lectures entitled ‘Environmental Health’ are administered to fourth year medical students as part of their Public Health and Primary Care (PHPC) module. These lectures explore the principles of Planetary Health, the health consequences of climate change and plant-based diets. It briefly covers the cardiovascular health effects of climate change.

As of this year, a workshop tutorial entitled ‘Sustainable Healthcare’ led by doctors from IDE has been added as a mandatory part of the MEDICAL ETHICS, LAW & PROFESSIONALISM module for fourth year medical students. It is an interactive workshop based around the core principles of Planetary Health. The effect of both extreme heat and air pollution caused by climate change on cardiovascular health was explored.

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:

Two lectures entitled ‘Environmental Health’ are administered to fourth year medical students as part of their Public Health and Primary Care (PHPC) module. These lectures explore the principles of Planetary Health, the health consequences of climate change and plant-based diets. This includes 1 slide explaining the negative consequences of resource scarcity, extreme weather events and loss of nature on people’s mental health. Depression, PTSD, anxiety and suicide are listed as potential consequences.

As of this year, a workshop tutorial entitled ‘Sustainable Healthcare’ led by doctors from IDE has been added as a mandatory part of the MEDICAL ETHICS, LAW & PROFESSIONALISM module for fourth year medical students. It is an interactive workshop based around the core principles of Planetary Health. The concept of climate anxiety and its effects on overall mental well being was discussed. The mental health impact of severe weather and environmental degradation was also a topic for conversation.

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:

Two lectures entitled ‘Environmental Health’ are administered to fourth year medical students as part of their Public Health and Primary Care (PHPC) module. These lectures explore the principles of Planetary Health, the health consequences of climate change and plant-based diets. Topics covered include the biodiversity loss due to acidification of the oceans, the doubling of water deficits worldwide, the destruction of homes and increased climate refugees as a result of rising sea levels. The lecturer links all of these problems to climate change.

As of this year, a workshop tutorial entitled ‘Sustainable Healthcare’ which led by doctors from IDE has been added as a mandatory part of the MEDICAL ETHICS, LAW & PROFESSIONALISM module for fourth year medical students. It is an interactive workshop based around the core principles of Planetary Health. Topics such as water and food supply changes and environmental degradation which have devastating consequences such as malnutrition, diarrheal disease; forced migration, civil conflict and mental health impacts respectively were explored.

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

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

1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i></p> <p>A lecture entitled ‘Health Equity’ is administered to fourth year medical students as part of their Public Health and Primary Care (PHPC) module. This lecture outlines the increased exposure to chemical pollutants in marginalised communities as well as the poor health outcomes in these communities as a result of the exposure in 2 of its slides.</p>	

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.
<p><i>Score explanation:</i></p> <p>A lecture entitled ‘Health Equity’ is administered to fourth year medical students as part of their Public Health and Primary Care (PHPC) module. This lecture outlines unequal health impacts between populations is covered extensively, but is unfortunately not linked to climate change at any point.</p>	

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> <p>In the Obstetrics & Gynaecology module in 4th year, there is one slide titled ‘Health Check - Occupation’ in the module ‘Preconception and Antenatal Care’ that outlines how women should avoid exposure to environmental agents that may be hazardous such as solvents, radiation and gases which may cause miscarriage and birth defects.</p>	

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

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<i>Score explanation:</i> This topic is not covered in the TCD medical curriculum.	

13. To what extent does your medical school emphasize 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> This topic is not covered in the TCD medical curriculum.	

14. Does your medical school curriculum address the outsized impact of anthropogenic environmental toxins on marginalized populations such as those with low SES, women, communities of color, 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>	
<p>In the lecture 'Health Equity' that 4th year students receive as part of the Public Health and Primary Care (PHPC) module, there are a number of slides on how there is increased exposure to chemical pollutants in marginalised communities as well as the poor health outcomes in these communities as a result of the exposure. This lecture is divided among 2 teaching sessions and is also examined as part of PHPC.</p>	

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.
<p><i>Score explanation:</i></p> <p>In 4th year at Trinity College Dublin, students receive 2 lectures entitled ‘Environmental Health’, as part of their Public Health and Primary Care (PHPC) module. This lecture series examines the principles of planetary health, a plant-based diet and the health effects of climate change. In part two of this lecture the personal and environmental benefits of plant based diets and nutrition are covered extensively, as well as the concept of a sustainable diet.</p>	

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> <p>In 4th Year, there is now a novel workshop tutorial led by doctors from Irish Doctors for the Environment (IDE), the workshop is titled "Planetary Health, Climate Change, and Sustainable Healthcare", and is a mandatory part of the 4th year module MEDICAL ETHICS, LAW & PROFESSIONALISM MDU44005.</p>	

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 fulfill this metric.

1	The health and environmental co-benefits of non-pharmaceutical management of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes. 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> <p>In 4th year students receive 2 lectures entitled ‘Environmental Health’, as part of their Public Health and Primary Care (PHPC) module. This lecture series examines the principles of Planetary Health, a plant-based diet and the health effects of climate change. This covers waste production in the healthcare system briefly and recommends introducing paperless systems and using the “Royal College of General Practitioners (RCGP) Green Toolkit”.</p> <p>This same lecture series outlined the impact of inhalers on the healthcare carbon footprint. It includes an infographic depicting the greenhouse gas impact of switching from a metered dose to a dry powdered inhaler being greater than avoiding a short flight or going vegetarian. These findings assume one of each inhaler is used monthly and are based on the following publication. https://iopscience.iop.org/article/10.1088/1748-9326/aa7541</p> <p>Lecture in 4th year of Public Health and Primary Care (PHPC) module covered social prescribing and its impact.</p>

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
<i>Score explanation:</i> This topic is not covered in the TCD medical curriculum.	

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

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

Score explanation:

During 2nd and 3rd Year, the TCD medical curriculum introduces students to history taking (MDU22003: Fundamentals of Clinical and Professional Practice, and MDU33003: Advanced Clinical and Professional Practice, respectively). During tutorial based teaching, students are taught the components of a complete history, which includes questions regarding living conditions, diet, occupational history and exposure to toxins. These generally fall under the umbrella of 'Social history'.

Curriculum: Administrative Support for Planetary Health

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

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

Score explanation:

In 2022, a new member of Faculty, Professor Darach O Ciardha, Head of Public Health and Primary Care (PHPC) module, was appointed to oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course.

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:

Certain topics such as the effect of climate change on patterns of infectious disease and the effects of climate change on respiratory health are covered in modules across 2nd (Infection and Immunity), 3rd (Global Health) and 4th year (Public Health and Primary Care). However, this is in relatively minor detail and it would be more correct to say that planetary health is primarily addressed in standalone lectures e.g. Environmental Health as part of the 4th year PHPC module.

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:

In 2022, a new member of Faculty, Professor Darach O Ciardha, Head of Public Health and Primary Care (PHPC) module, was appointed to oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course.

Section Total (52 out of 72)

72.22%

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

Interdisciplinary Research

Section Overview: This section evaluates the quality and quantity of interdisciplinary planetary health research at the medical school and broader institution. Interactions between health and the environment are complex and multifactorial. While climate change has been extensively studied from an environmental science perspective, planetary health is an emerging field. As leading health institutions with talented researchers and research resources, medical schools should fund research studying the health effects of climate change and anthropogenic environmental toxins. This obligation is particularly strong because the public and policymakers are more attentive to climate change when its implications for human health are emphasized.

1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <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.
<p><i>Score explanation:</i></p> <p>A 2 has been awarded as there are individual faculty members within the medical school conducting research related to planetary health care or sustainability. Such an example is Dr Ann Nolan, director of Global Health at Trinity. She runs the MSc in Global Health at Trinity. She is based at the school of medicine and her research is focused around HIV transmission and prevention and the increased health impacts on marginalised communities. Some of research relates to climate change, particularly in relation to changing patterns of infectious diseases, but it is not her primary research focus.</p> <p>A higher score was not awarded, as while there are individual faculty members at the medical school who conduct research related to planetary health or healthcare sustainability, there are none for which this is their primary research focus, such as can be found in the list of allied researchers under the Trinity Research Theme for Smart Sustainable Planet</p>	

2. Is there a dedicated department or institute for interdisciplinary planetary health research at your <u>institution</u> ?	
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.
<p><i>Score explanation:</i></p> <p>There are a number of institutes in TCD that carry out interdisciplinary environmental research but there is no mention of planetary health in their descriptions.</p> <p>Such institutes include:</p> <ul style="list-style-type: none"> - Trinity Centre for the Environment (TCE) - Trinity Centre for Biodiversity Research (TCBR) - Trinity Centre for Environmental Humanities (TCEH) - Future Cities: Trinity Centre for Smart and Sustainable Cities <p>There is an interdisciplinary initiative called Nature+ which aims to focus on sustainability and planetary health research however no members of this group are currently part of the TCD School of Medicine.</p>	

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 <u>medical school</u>?	
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.
<p><i>Score explanation:</i> Dr Ann Nolan and Dr Brenda O'Shea are both based at TCD and have undertaken work with counterparts in Primary Care in Malawi.</p>	

4. Does your <u>institution</u> have a planetary health website that centralizes ongoing and past research related to health and the environment?	
3	There is an easy-to-use, adequately comprehensive website that centralizes various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.
2	There is a website that attempts to centralize various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The institution has an Office of Sustainability website that includes some resources related to health and the environment.

0	There is no website.
<p><i>Score explanation:</i> Trinity College Dublin does not have a website dedicated to the research performed into health and the environment. There is a website section entitled Healthy Trinity that attempts to centralise some of the ongoing events and past research on climate change and health. This is a web page rather than an entire website and does not discuss ongoing or current research into the area. While this is not necessarily an Office of Sustainability website, it does fulfil a similar function and is still accessible to all students and staff in order to inform them about the impacts of climate change and health as researched in the institution. Additionally there is a webpage dedicated to sustainability research as supported by Trinity Centre for the environment. This is not a full website and does not provide any up to date information about ongoing research or events for students and staff.</p>	

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.

6. Is your medical school a member of a national or international planetary health or ESH organization?	
1	Yes, the medical school is a member of a national or international planetary health or ESH organization
0	No, the medical school is not a member of such an organisation
<p><i>Score explanation:</i> The school of medicine accepted an invitation from the Global Consortium on Climate and Health Education at Columbia. They officially became a member in 2022.</p>	

Section Total (8 out of 17)	47.06%
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Back to summary page [here](#)

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

Community Outreach and Advocacy

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

1. Does your medical school partner with community organizations to promote planetary and environmental health?	
3	Yes, the medical school meaningfully partners with multiple community organizations to promote planetary and environmental health.
2	Yes, the medical school meaningfully partners with one community organization to promote planetary and environmental health.
1	The institution partners with community organizations, but the medical school is not part of that partnership.
0	No, there is no such meaningful community partnership.
<p><i>Score explanation:</i></p> <p>Unchanged from previous years: Trinity has many partners with community organisations that promote planetary and environmental health. Some examples include Innovation for the Global Arctic, Climate Innovation Leadership Programme, UNI-ECO, and Challenge-driven Accessible Research-Based Mobile European University (CHARM-EU). The medical school has no specific role in these partnerships.</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.
<p><i>Score explanation:</i></p> <p>There have been no such community-facing courses or events.</p>	

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:

Unchanged from previous years: The medical school itself does not provide regular coverage of planetary health or sustainable healthcare. The institution does send sporadic emails covering sustainability, however these are not healthcare focused.

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

Unchanged from previous years: The Trinity Centre for Global Health runs an MSc in Global Health that includes a module on 'Health Environment and Climate'.

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 centers have accessible educational materials for patients.

Score explanation:

Our two main teaching hospitals have environmental services, but these are more focused on health and safety of the staff than patient education.

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:

Our two main teaching hospitals have environmental services, but these are more focused on health and safety of the staff than patient education.

St. James' Hospital took part in a local initiative to plant trees in 2021 where the hospital CEO said the hospital is 'committed to being a leader in sustainability and reducing our environmental impact.'

There is also a water bottle filling station in the hospital as part of the HSE Green Healthcare initiative that says 'reduce, reuse, recycle, refill'. These however, are not accessible educational materials for patients.

Section Total (2 out of 14)

14.29%

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

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 fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate.
0	No, neither the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.
<p><i>Score explanation:</i></p> <p>The school does offer research grants for students, however the projects must be initiated by the students themselves and are not necessarily sustainability-related.</p>	

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></p> <p>The school offers research grants for students (e.g. Health Research Board Summer Student Scholarships), however these are not necessarily sustainability-specific. If students wish to undertake a sustainability project, they must find an academic supervisor willing to conduct such a project with them. There are also research opportunities available within the school curriculum, however the vast majority of these projects do not pertain to sustainability.</p>	

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:

There is no medical-school specific webpage for locating planetary health projects. However, the main school website does have a webpage dedicated to sustainability initiatives, where students can learn about the research underway at the Trinity Centre for Biodiversity Research and the Trinity Centre for the Environment.

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

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

Score explanation:

Yes, there are 10 Trinity students involved with the Irish Doctors for the Environment student working group. This group is involved with compiling the planetary health report card and petitioning the school for improved sustainability practices and curriculum changes. In March 2022, faculty support was provided by Professor Darach O Ciardha.

In fourth year, there is now a workshop tutorial led by doctors from IDE, showing engagement from the School of Medicine with IDE. The workshop is entitled “Sustainable Healthcare”, constituting a mandatory part of the 4th year module “Medical Ethics, Law and Professionalism MDU44005”.

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:

There is no such representative. Any issues requiring institutional attention are relayed through general class representatives, who have no specific sustainability interest.

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)	
1	Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.
1	Panels, speaker series, or similar events related to planetary health that have students as an intended audience.
1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.
1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students)

Score explanation:

A PhD project was conducted on agricultural practices and the regulatory environment that governs antimicrobial use in Ireland.

The E3 “Balanced Solutions for a Better World” initiative was launched in 2018 to help bring forward world-leading discoveries under the themes of data, production, well-being, environment, resources and communities. It is a collaborative project between the School of Computer Science and Statistics, School of Engineering and the School of Natural Science. The project has led to the development of two new programmes at Undergraduate level - Environmental Science and Engineering, and Computer Science plus Geography.

Trinity Centre for the Environment hosted a climate hackathon on October 27th 2022, and opened applications for a new part-time module on Climate Leadership.

Trinity’s Green Campus Programme has organised various recycling programs and biodiversity campaigns, and has developed a new Trinity Pollinator Plan.

Trinity College Dublin has various societies that encourage outdoor activity, including a hiking society and a canoe and kayak society.

Section Total (7 out of 15)

46.67%

Back to summary page [here](#)

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

Campus Sustainability

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

1. Does your <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></p> <p>The Provost’s Advisory Committee on Sustainability and Low Carbon Living was established in February 2017, with staff and student representation. It is tasked with providing leadership in advancing the sustainability objectives in the College’s current Strategic Plan, especially on environmental and carbon footprint topics. The Provost has appointed both a sustainability champion and sustainability advisor to encourage and link behaviours, projects and initiatives throughout the university.</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></p>	

TCD's Business School has unveiled a strategy to become net carbon zero and carbon neutral by the year 2030. However, we have not been able to find data specific for the medical school. The TCD sustainability report of 2020 (the most recent available) states a goal of reducing carbon output by 50% by 2030, which has no mention of carbon neutrality specifically.

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

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

Score explanation:

The TCD sustainability report of 2020 states the goal of 15.2% increase in Renewable Energy Use Until 2020 vs 2006-2008 which was achieved. The most recent data available is 2020 states that the institution sources 14% renewable energy. We were unable to find data relating specifically to the Trinity Biomedical Sciences Institute (TBSI), which is the medical school building on campus.

99.5% of renewables used by Trinity is from increased renewables penetration on the grid, with 0.5% generated by on-site solar thermal panels to provide hot water at 4 locations (Pavillion, Lir Centre, New Square houses 33 and 28), and 0.03% from transport biofuels (excluding weightings).

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

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

Score explanation:

The [TCD sustainability report](#) of 2020 states the following regarding new buildings;

“Coupled with the challenge of decarbonisation there are expectations for more space. We are expanding our facilities with two very significant Near Zero Energy Buildings (NZEB) to our campus,

both fronting Pearse Street - the new Business School (BER - A2; opened May'19) and Printing House Square residences (Oisín House, scheduled for completion 2021, BER A2, BREEAM Excellent). The E3 Learning Foundry will also be an NZEB building with BER A3 and BREEAM Excellent ratings, and heritage building projects in the pipeline include the Rubrics and Chief Steward's House, and the Old Library. The Rubrics and Chief Steward's House will be substantially refurbished to NZEB within constraints of listing. Notably both will apply renewable heating without onsite fossil fuel using ground source and air source heat pumps".

Despite the aforementioned, there was no evidence of sustainable buildings regarding the medical school compound.

5. Has the medical school implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?

2	Yes, the medical school has implemented strategies to encourage and provide environmentally-friendly transportation options such as safe active transport, public transport, or carpooling and these options are well-utilized by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
1	The medical school has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.
0	The medical school has not implemented strategies to encourage and provide environmentally-friendly transportation options.

Score explanation:

Trinity has adopted five sustainable transport objectives of which the first three have been achieved:

1. Maintain Use of Sustainable Transport to 2020
2. Increase Renewable Energy Use by 10% in College Transport
3. Reduce Car Use by 5% reduction in single occupancy car trips by 2020
4. Increase use of bikes by 10%

TCD promotion for sustainable transport:

Trinity has been widely promoting sustainable ways of commuting like walking, cycling or skating etc. Trinity also benefits from direct access to public transport such as multiple bus lines coming from multiple areas, the DART line and Luas lines which stations are within walking distance. A Green Map is available on Trinity's official website to find on-campus secure bicycle-parking, and the locations of Dublinbikes and DART/Luas stations, which makes it easier for students to plan the journey ahead.

Trinity has a variety of remote conferencing options, to participate in meetings, conferences and workshops. The carbon footprint of travel is one of our biggest footprints, and in many cases travel can be avoided, saving the cost involved, the time involved, and the carbon footprint impact.

99% of Trinity staff and students used sustainable transport options up until the pandemic where a recent travel survey suggested only 81.8% would use sustainable modes of Transport.

Free showers are available between 7am and 9am Monday to Friday, at the Sports Centre for college staff who cycle to work.

Trinity is promoting the use of zero emission vehicles by providing two electric vehicle charge points for staff to charge their vehicles.

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:

TCD has recycling bins stationed in each department on campus. Around the other facilities of the campus, there are also paper bins, glass bins, mixed dry recyclable bins, clothes banks and battery bins.

Outside TCD, in Trinity Halls (student accommodation) and St James' Hospital (partnering hospital for Learning Development and Research & Innovation) there are also recycling bays that are accessible to students, faculty, and even the public.

TCD has a guide called 'Know Your Campus' which displays locations where students can find recycling and food and drink waste. There are facilities for both in the Trinity Biomedical Sciences Institute which is where the medical school is based.

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

3	Yes, the medical school has adequate sustainability requirements for food and beverages, including meat-free days or no red-meat, and is engaged in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is engaged in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are insufficient or optional . The medical school is not engaged in efforts to increase food and beverage sustainability.
0	There are no sustainability guidelines for food and beverages.

Score explanation:

Trinity has adopted 4 objectives to reduce our consumption of resources and migrate to more sustainable food choices:

1. Reduce paper use by 20%
2. Increase sustainable food use by 50%
3. Reduce large (5 gallon) bottled water use by 50%
4. Reduce disposable materials use

Currently only Objective 1 is achieved.

Trinity has a start-up called FoodCloud which brings businesses and charities together to reduce food waste and food poverty.

OneStepCloser, is social engagement platform used to engage students and staff on elimination of disposable plastics on campus and vegetarian choices of food at the Buttery Café (23% participation rate).

Reusable options in Trinity include

- Ceramic cups in the Buttery cafe and Pavillion are available for use
- Bringing your own cup provides a 40 cent or 10% discount off the price
- Thermos mugs (35cl) are available for purchase in the SU shops and main cafes for only €8.95 with an accompanying first free purchase of coffee or tea
- “Keep Cups” are available to buy in outlets around TCD (Science Cafe, SU shop, Buttery)

There is free water available in catering areas.

In the last week of the month of February in 2022, Trinity College Dublin is serving 75% plant-based food on campus to celebrate Trinity’s 20th annual Green Week. This means that anyone eating on campus for lunch will have one meat option, two vegan options and one vegetarian option. In addition, the surcharge for plant-based milks has been eliminated for the month of February and a vegan/palm-oil free vending machine has been installed in the Arts Building.

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:

The Sustainable Procurement Working Group (established by the Provost), created a Sustainable Procurement Policy which was approved by the College Board in 2019. Sustainable Procurement guidelines are available here for all staff involved in procurement of services and goods for Trinity.

Trinity has adopted 4 objectives related to sustainable procurement:

1. Tenders for procurement to include environmental criteria (100%)
2. Increase green criteria in tender marking by 10%
3. Improve use of whole life cycle costing
4. Reduce GHG Emissions in supply chain

All offices and departments are encouraged to purchase products based on a list of Sustainable Procurement suggestions regarding Human Health (i.e., less toxic substances upon manufacturing, installation and disposal), Ethical Considerations (i.e., manufactured without slave labour and in a safe secure environment), Environmental Protection (i.e., with improved recyclability, reusability, energy efficiency, and clean technology)

Collectively, Trinity’s purchasing choices support the implementation of the UN Sustainable Development Goals; reduce our environmental footprint; and affect market change by increasing demand for fairly priced and socially responsible products.

<https://www.tcd.ie/provost/sustainability/initiatives/sustainableprocurement/>

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:

There are sustainable event guidelines issued by the provost to achieve the “Green Flag” Campus aim.

These guidelines include considerations in terms of

1. Venue (accessibility to public transport, lift sharing between attendees, facilities to invite remote attendance, rooms with natural daylight etc.)
2. Food catering (vegetarian/vegan option, steps to reduce food waste, usage of reusable/compostable cutlery, access to water refilling areas etc.)
3. Communication (highlighting and publicizing the sustainability aspects of the event, reduction of number of marketing leaflets for printing etc.)
4. Accessibility to people with limited mobility
5. Affordability for low-income attendees
6. Consideration of gender ratio of panel/attendees

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:

TCD have a comprehensive ‘Green Labs Guide’ for researchers. Trinity Biomedical Science Institution (TBSI) has also committed to changing practices around water usage, energy consumption, plastic

waste, green chemistry, sustainable purchasing and management of substances inventory and Green Lab certification based on the guide.

<https://www.tcd.ie/provost/sustainability/assets/guides/green-labs-guide.pdf>

The TCD Institute of Neuroscience received a Platinum Green Lab Certification in recognition of their efforts to include sustainable best practices in the lab.

The TCD Faculty of Health Sciences funded three labs to register with My Green Labs in 2021, one of which is the Renal Inflammation group Lab in Trinity Translational Medicine Institute (TTMI) on the Trinity St James's Campus

LabCup was trialled in the campus to help reduce hazardous waste generation and improve safety in 2018. Hazardous biological and chemical waste was down 4.5% for two consecutive years. TCD facilitates living labs & supports sustainable start-ups.

Labcup trial rolled out to help prevent purchase of chemicals already in stock. Training on reducing contamination in hazardous waste bins.

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 organized advocacy for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.

Score explanation:

Trinity College Dublin has decided to sell off all of its investments in companies whose primary business is in the extraction of fossil fuels.

https://www.tcd.ie/news_events/articles/trinity-divests-from-fossil-fuels-as-part-of-global-campaign/

It is the first university on the island of Ireland to divest its oil, coal and gas investments. Trinity 's decision to divest was in response to an impressive 15 month student campaign 'Fossil Free TCD' and was made during November 2016.

However, Trinity has not been able to achieve a complete divestment from fossil fuels (despite goals being set to achieve so by March 2022). As of December 31st 2020, the college does not invest directly in companies whose "primary business" is in extraction of fossil fuels. However it has shares in at least 11 companies who operate in the extraction process, representing approximately 3.6% of the total Endowment Fund.

College's Investment Committee has decided to move its equity to a new index (Irish Life Climate Conscious Fund Index) which provides enhanced reduction in carbon intensity, carbon risk-rating and

severe ESG exposure, and an increased allocation to carbon solutions and contains no oil and gas production or energy generation companies.

Section Total (16 out of 32)

50%

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

Grading

Section Overview

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

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

Planetary Health Grades for the Trinity College Dublin School of Medicine

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(52/72) \times 100 = 72.22\%$	B
Interdisciplinary Research (17.5%)	$(8/17) \times 100 = 47.06\%$	C
Community Outreach and Advocacy (17.5%)	$(2/14) \times 100 = 14.29\%$	F
Support for Student-led Planetary Health Initiatives (17.5%)	$(7/15) \times 100 = 46.67\%$	C
Campus Sustainability (17.5%)	$(16/32) \times 100 = 50\%$	C
Institutional Grade	49.32%	C

Report Card Trends

Section Overview

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

Planetary Health Report Card Trends for the Trinity College Dublin School of Medicine

