



Planetary Health Report Card:

University College Dublin



2021-2022 Contributing Team:

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Summary of Findings

Overall	C -
<u>Curriculum</u>	D +
<ul style="list-style-type: none"> Planetary health (PH) exists throughout the medical curriculum. However, the level of detail remains sparse, and inclusion of PH relies on individual lectures. We want to emphasize that UCD recently partook in the Climate and Health in Medical Education (CHIME) workshop, a workshop aimed at improving PH teaching in Irish medical schools, with a particular focus on public health. Recommendations: PH connections in the curriculum should be made more explicit, with more dedicated time. The medical school should identify PH (including climate change) as a priority theme and include that material in learning objectives and test questions, in addition to filling in content gaps. 	
<u>Interdisciplinary Research</u>	C
<ul style="list-style-type: none"> UCD lacks an institute for interdisciplinary PH research, but the medical school may draw from existing centres such the Occupational and Environmental Health department, and that of individual faculty members. Recommendations: Student-led research within PH currently relies too heavily on students' initiative. Thus we would like to see a greater level of facilitation from the medical school to further enhance research opportunities within PH. 	
<u>Community Outreach and Advocacy</u>	D +
<ul style="list-style-type: none"> There is poor awareness of environmental advocacy programming amongst the students and faculty and a clear lack of community engagement from the institution, medical school and hospital trusts. Recommendations: We suggest that related material such as events are communicated to the student body as a means to encourage engagement and advocacy. 	
<u>Support for Student-Led Initiatives</u>	C -
<ul style="list-style-type: none"> The faculty and administration are supportive of student-led PH initiatives. However, we would like to see a greater level of support for such initiatives e.g., facilitating connections between research mentors and students, and providing stipends for research projects. Recommendations: We would like to see students actively being involved in the process of improving the level of PH teaching and research opportunities, a UCD specific webpage for locating planetary health and/or sustainable healthcare projects, and increased support of student-led QI initiatives. 	
<u>Campus Sustainability</u>	C
<ul style="list-style-type: none"> UCD as an institution is showing commitment to improving its carbon footprint. However, we would like to see a greater level of involvement from the medical school, as we believe the medical school should be at the forefront of this movement, both in terms of influencing the university, but also affiliated hospitals and other healthcare settings. Recommendations: A crucial starting point would be to assign one or more staff members to this. 	

Statement of Purpose

Planetary health is human health.

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

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

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

Definitions & Other Considerations

Definitions:

- **Planetary Health:** is described by the *Planetary Health Alliance* as “a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth’s natural systems on human health and all life on Earth”. For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional ‘environmental health’ examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of medical school education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term “planetary health” to satisfy the metric.
- **Education for Sustainable Healthcare (ESH):** is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:
 1. Describe how the environment and human health interact at different levels.
 2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.
 3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.
- **Medical School vs. Institution:** When “medical school” is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (for example, undergraduate departments (USA), other related departments eg Public Health, Population Health departments). In contrast, when “institution” is specified in the report card, we are referring to the university more broadly. Any resource reasonably accessible by medical students, no matter where in the institution the resource comes from or if it is specifically targeted for medical students, can meet this metric.
- **Environmental history (Metric 19 in curriculum section):** This is a series of questions

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

- **Elective:** The word “elective” refers to an optional course or lecture series that a medical student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.
- **Clerkship:** This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations or placements.

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 example).

Added to our resources this 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 medical school offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>Score explanation: There are no core curriculum or elective modules in Undergraduate or Graduate entry medicine whose primary focus is ESH/planetary health. Students may apply for the U21 HSG Summer School which is an annual optional opportunity for research and workshop participation. In 2018 the theme was "Climate & Global Health".</i></p>	

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: All students must undertake a module entitled Principles of Infection and its Treatment (MEMI30040) and Epidemiology, Biostatistics & Public Health (PHPS20010). In both of these modules, the risk of climate change in exacerbating tropical disease and increasing the risk of pandemics was mentioned.

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: Natural disasters and their impacts on community health were mentioned as risks for disease e.g., cholera in the Principles of Infection and its Treatment (MEMI30040) Module. An explicit link was not drawn between their frequency and climate change.

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: The impact of climate change on the changing patterns of infectious diseases was briefly covered in the aforementioned Principles of Infection and its Treatment (MEMI30040) Module.

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: This was briefly covered in the Cardiovascular & Respiratory Physiology Module, as the risk of air pollution was mentioned as being an exacerbant and, likely cause, in some cases of COPD and lung cancer.

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: Heat stress has been mentioned in PHYS20150 Cardiorespiratory Physiology but not mentioned or discussed in the context of global warming.

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: The role of social forces in mental health is mentioned, but environmental – in the sense of ecology and weather events – is not. Seasonal Affective Disorder (SAD) is mentioned in the psychiatry module, but this is not linked to 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 the Epidemiology, Biostatistics & Public Health Module, Prof. Patrick Wall offers three lectures on food security, global health and the environment. These discuss issues regarding food safety, animal and plant health, food borne disease and how these are being impacted by climate change.

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

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

Score explanation: This topic was not addressed in any public health or epidemiology lectures.

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: This topic is briefly mentioned by Professor Brendan Drumm in his international health III & IV lecture series in the Public Health Medicine, Epidemiology and International Health Module.

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

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

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

Score explanation: Air pollution is discussed during the Cardiorespiratory Module by Prof. Paul McLoughlin, but it is not further outlined in relation to reproductive health.

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

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

Score explanation: This is not covered. In addition, an incinerator has recently been constructed north of the University campus, there is waste-water disposal in Sandycove Bay, in the immediate vicinity of the University campus, and the university campus is on the path of a major Dublin commuter traffic.

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.

Score explanation: This topic is not covered at all in the medical curriculum in UCD.

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.

Score explanation: There is a lecture on healthcare inequality PHPS20010 Epidemiology, Biostatistics and Public Health, but does not associate anthropogenic climate change with these inequalities. However, a sizable minority of undergraduate students chose to undertake GEOL20240 Medical Geology which had a strong emphasis on the correlation between ecosystem health and human health. This is elective coursework and therefore we awarded 1 point.

Curriculum: Sustainability

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

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

Score explanation: Students have had the opportunity to study and research this on summer research electives - via Student Summer Research Awards (SSRA) Research Elective and have completed research topics on this historically, but it is not part of any core curriculum. It is noteworthy that any discussion of plant-based diets is in the context of pathologies e.g., anemia.

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

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

Score explanation: Hospital waste is discussed in some detail in the Cardio-Respiratory Module by Dr Coyne. The students are urged to think about waste generation and the reliance on single-use items

17. Does your medical school curriculum cover these components of sustainable clinical practice in the core curriculum? (1 point each)

1	Waste production within the healthcare system and strategies for reducing waste in clinical activities, such as in the operating room
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1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anaesthesia environmental impacts, such as total intravenous anaesthesia or choosing less environmentally anaesthetic gas options with reduced greenhouse gas emissions
1	The environmental impact of pharmaceuticals and over-prescribing as a cause of climate health harm. Alternatively teaching on deprescribing where possible and its environmental and health co-benefits would fulfill this metric.
1	The health and environmental co-benefits of non-pharmaceutical management of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes for obesity. This is commonly known as social prescribing in the UK.
1	The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment
<p><i>Score explanation:</i></p> <p><i>Hospital waste from plastics is discussed at the Hospital level in both of UCD's core teaching hospitals, St Vincent's University Hospital (SVUH) and the Mater Misericordiae University Hospital (MMUH). Both SVUH and MMUH have plastic waste reduction goals in place.</i></p> <p><i>The health and environmental impact of social prescribing is mentioned in the specialist training module MDSA40140 Medicine in the Community, PSYC40150 Psychiatry and in the pre-clinical module MDSA30320 Primary Care & Medical Practice. The health benefits are emphasised a lot more than the environmental ones.</i></p>	

Curriculum: Clinical Applications

18. In training for patient encounters, does your medical school's curriculum introduce strategies to have conversations with patients about the health effects of climate change?	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the core curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.

0	No, there are not strategies introduced for having conversations with patients about climate change
<i>Score explanation: The health effects of climate change are not incorporated into training for patient encounters in UCD.</i>	

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.
<i>Score explanation: Students are required to ask about environmental and occupational hazards e.g., ‘pigeon-fancier’s lung’ and ‘coal-miner’s lung’ and asbestos. This was specifically mentioned in MDSA30320 Primary Care & Medical Practice</i>	

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.
<i>Score explanation: The Vice-Dean of the school of medicine Prof. Donnelly has been receptive to discussions on curriculum change. PHRC students have met with the Vice-Dean and are working at forming a forum. The Vice-Dean is also considering accepting an invitation to join the Global Consortium on Climate and Health Education at Columbia University.</i>	

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.
<p><i>Score explanation: A few lectures are dedicated to PH throughout the curriculum. Those lectures that included some discussion on sustainable healthcare are; PATH30210 Endocrine in Health and Disease, PATH30190 Oncology & Immunopathology, MDSA30320 Primary Care & Medical Practice and PHPS20010 Epidemiology, Biostatistics & Public Health.</i></p>	

<p>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?</p>	
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: No such role exists in the medical school.</i></p>	

Section Total (26 out of 69)	26
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Back to Summary Page [here](#)

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 medical school?	
3	Yes, there are faculty members at the School of Medicine who have a primary research focus in planetary health or healthcare sustainability.
2	Yes, there are individual faculty members at the School of Medicine who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.
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: While several faculty members at the School of Medicine conduct research on topics within planetary health, it is not their primary focus.</i></p> <p><i>Faculty members conducting research within planetary health include (not an exhaustive list):</i></p> <ul style="list-style-type: none"> - <i>Prof Patrick Wall - His teaching and research interests include food borne diseases, lifestyle related diseases and health damaging consumer behavior. He is a co-director of the UCD Center for Behavior and Health which is engaged in research on behavioral economics, population health disparities and policy interventions.</i> - <i>Prof Mary Codd Analysis of Health Inequalities in Ireland and UCD Sustainable Development Goals Committee</i> <p><i>Prof Brendan Drumm is conducting research into sustainable change in the healthcare environment.</i></p>	

2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?	
3	There is at least one dedicated department or institute for interdisciplinary planetary health research.
2	There is not currently a department or institute for interdisciplinary planetary health research, but there are plans to open one in the next 3 years.

1	There is an Occupational and Environmental Health department, but no interdisciplinary department or institute for planetary health research.
0	There is no dedicated department or institute.
<p><i>Score explanation: The UCD School of Public Health, Physiotherapy & Sports Science has research units focused on the following amongst others: Occupational and Environmental Studies, Food and Health, and the UCD Center for Food Safety; https://www.ucd.ie/phpss/</i></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 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.
<p><i>Score explanation: There are no such efforts currently underway in the UCD School of Medicine and, to the best of our knowledge, no efforts to create such a process.</i></p>	

4. Does your institution 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: Estates Services has a 'green campus' section which details activities for Green Week and various volunteering initiatives, events and waste reduction initiatives on campus. There were result five on a Google Search for 'UCD Campus' - https://ucdestates.ie/green-campus/ The score given is 2 points because there is no central 'easy-to-use' website rather there is a newsletter and some webpages.</i></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.
<p><i>Score explanation: UCD runs an annual ‘green week’. UCD Medical Society co-hosted a talk: ‘Planetary Health: The Climate Crisis is a Health Crisis’ alongside Irish Doctors for the Environment in February 2020. The talk was aimed at getting students to engage in the topics of planetary health and climate change and provide information on how to get involved with initiatives within planetary health.</i></p>	

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 organization
<p><i>Score explanation: While UCD School of Medicine has been invited to join the Global Consortium on Climate and Health Education, the faculty have not yet accepted the invitation.</i></p>	

Section Total (9 out of 17)	9
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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: UCD as a university has relationships with biodiversity groups, incl. the Irish Govt. via the EPA, Dun Laoghaire Co. Co and student groups during Green Week, but not directly with the medical school.</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 medical school has not offered such community-facing courses or events.
<p><i>UCD has a yearly Green Week and supports biodiversity at the campus. The Medical School hosts talks and meetings on climate and health but generally at the initiative of a society or student group. The UCD in the Community website is a good resource for students wanting to take in various</i></p>	

community projects and initiatives. However, there isn't a directly focused initiative related to building community resilience to climate change.

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

2	Yes, all students regularly receive communication updates dedicated to planetary health and/or sustainable healthcare.
1	Yes, planetary health and/or sustainable healthcare topics are sometimes included in communication updates.
0	Students do not regularly receive communications about planetary health or sustainable healthcare.

Score explanation: There is a weekly students union newsletter sent via email and a monthly UCD-wide newsletter. Both have, at times, included healthcare related materials and topics, but these have not been targeted at medical students.

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: RCSI the main postgraduate teaching institute for surgeons runs CPD courses on 'Healthcare management' which includes information on sustainable healthcare. RCPI runs a Green Symposium which qualifies for CPD credits and discusses planetary health

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: Hospital literature is in pamphlet form. In SVUH respiratory clinic there are pamphlets that offer information to patients on environmental pollutants e.g. vehicle exhaust fumes and coal smoke.

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: MMUH have recently introduced inhaler recycling in their in-house pharmacy in an effort to reduce the negative climate impact of inhaler waste-production and enhance public awareness.

<https://www.teva.ie/> arranges this via Meagher's pharmacy in MMUH

Section Total (5 out of 14)	5
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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 institution offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum.
1	The medical school encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate.
0	No, the institution does not offer opportunities or support for sustainability initiatives or QI projects.
<p><i>Score explanation: UCD does have a portal to submit an environmental or sustainable project for consideration. It is not stated publicly but if they decide to develop it then funds are provided. Exact amounts are not publicly stated. In the medical school, students are offered the opportunity to undertake research electives for credit in any subject they choose. These have included environmental projects in the past; Carbon Dioxide Signaling and Environmental Exposure to Teratogens in Utero have been past projects.</i></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: Medical students can develop their own research agenda for a summer project and receive credit for it. This may receive funding from the university, but it is not guaranteed; https://www.ucd.ie/medicine/research/ssra/</i></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 such webpage provided by UCD School of Medicine.

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: The main driver of on-campus sustainability is estate services. There is [One Health Society](#) at UCD which is a trans-disciplinary student society with 'dedicated to improving the lives of all species – human and animal – through the integration of human medicine, veterinary medicine and Environmental Science's'. The society typically hosts talks and workshops throughout the year. Student members liaise with faculty regarding planetary health in the curriculum.

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: One does not currently exist.

6. In the past year, has the institution had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)

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

Score explanation:

UCD Medical Society co-hosted a talk: 'Planetary Health: The Climate Crisis is a Health Crisis' alongside Irish Doctors for the Environment in February 2020. The talk was aimed at getting students to engage in the topics of planetary health and climate change and provide information on how to get involved with initiatives within planetary health.

There are also several societies available to medical students that would offer wilderness and outdoors programs. For example Friends of MSF is a sub-soc of UCD Medical Society. UCD students also have access, and can join any UCD Society incl. UCD Mountaineering Club

Section Total (6 out of 15)

6

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 medical school and/or institution have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff, but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p><i>Score explanation: A 'green campus committee' was set up in 2015 by a group of UCD students and staff. The green campus committee aims to encourage students and staff to work together to implement projects and initiatives to raise awareness of environmental issues and improve the environmental performance of their institution. The UCD Green Campus project is focused on delivering projects where students can become actively involved. https://ucdestates.ie/green-campus/ However, there is no specific link between this committee and the medical school.</i></p>	

2. How ambitious is your medical school/institution's plan to reduce its own carbon footprint?	
4	The institution has a stated goal of carbon neutrality by 2030 or earlier and the medical school / institution has a well-defined and adequate plan in place to achieve this goal.
3	Yes, there is a stated carbon neutrality goal by at least 2040 and the medical school/institution has a well-defined and adequate plan in place to achieve this goal.
2	Yes, there is a stated carbon neutrality goal by at least 2040, but the medical school/institution has not created a plan to reach that goal or the plan is inadequate.
1	There is a CO2 emission reduction goal, but it is not one of carbon neutrality.
0	There is no stated goal for reduction of CO2 emissions.

Score explanation: We were unable to source a clear CO2 emission target. However, UCD does have clear plans and [initiatives](#) for how to reduce their energy consumption and consequent carbon footprint.

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: We were unable to access exact data in terms of renewable energy sources. However, UCD has invested in a renewable biomass boiler (wood pellets) that produces heat for the University district heating system, solar PV (photovoltaics) to produce renewable electricity and solar thermal panels that produce hot water. There is also a massive focus on energy efficiency, and UCD as an institution is on track to meet the 33% improved energy efficiency target.

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: UCD are applying sustainable practices to new [buildings](#), and retrofitting current buildings with features such as renewable biomass boiler (wood pellets) that produces heat for the University district heating system, solar PV (photovoltaics) to produce renewable electricity and solar thermal panels that produce hot water. The Medical School building itself is of modern construction and is well-insulated and incorporates passive design features.

5. Has the medical school implemented strategies to encourage and provide environmentally-

friendly transportation options for students and reduce the environmental impact of commuting?	
2	Yes, the medical school has implemented strategies to encourage and provide environmentally-friendly transportation options such as safe active transport, public transport, or carpooling and these options are well-utilized by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
1	The medical school has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.
0	The medical school has not implemented strategies to encourage and provide environmentally-friendly transportation options.
<p><i>Score explanation: The UCD campus is well served by public transport. In terms of active transport, it secure bike parking, commuting shower & locker facilities, and a bike shop available to students. However, the main hospitals affiliated with UCD do not offer similar levels of active transport initiatives and facilities. It does have a cycle to work day and bicycle parking however.</i></p>	

6. Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?	
2	Yes, the medical school has both compost and recycling programs accessible to students and faculty.
1	The medical school has either recycling or compost programs accessible to students and faculty, but not both.
0	There is no compost or recycling program at the medical school.
<p><i>Score explanation: Recycling and composting is readily available for students. UCD produces approx. 2,000 tonnes of Mixed Municipal Wastes per annum. Through processes used by its waste management service providers, less than 10% of this waste ends up in landfill.</i> https://ucdestates.ie/about/sustainability/waste-management/.</p>	

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.
<p><i>Score explanation: The medical school itself does not provide food and beverage offerings. In addition, the medical school itself does not seem to be engaged in efforts to increase food and beverage sustainability. However, the UCD student union, who run several food outlets on campus, have several sustainability and green initiatives, that medical students can avail of.</i></p>	

8. Does the medical school or associated institution apply sustainability criteria when making decisions about supply procurement?	
3	Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is engaged in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is not engaged in efforts to increase sustainability of procurement.
0	There are no sustainability guidelines for supply procurement.
<p><i>Score explanation: Some guidelines exist on an institutional level, but the medical schools does not have their own guidelines. The most recent review is from 2019 stating goals for sustainable procurement for the university; https://ucdestates.ie/about/wp-content/uploads/sites/2/2019/02/UCD-Environmental-Baseline-Review-2019-online.pdf</i></p>	

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.
<p><i>Score explanation: There are no sustainability guidelines for UCD medical school events.</i></p>	

10. Does your medical school have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
2	Yes, the medical school has programs and initiatives to assist with making lab spaces more environmentally sustainable.
1	There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives.

0	There are no efforts at the medical school to make lab spaces more sustainable.
<i>Score explanation: Labs in UCD do have reusable equipment and often make reagents themselves instead of purchasing cartridges. These are not on any website but internal to the labs.</i>	

11. Does your institution's endowment portfolio investments include fossil-fuel companies?	
4	The institution is entirely divested from fossil fuels and has made a commitment to reinvest divested funds into renewable energy companies or renewable energy campus initiatives.
3	No, the institution is entirely divested from fossil fuels.
2	The institution has partially divested from fossil fuel companies 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.
<i>Score explanation: UCD is, as of 2017, fully divested from fossil fuels.</i>	

Section Total (15 out of 31)	15
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Back to summary page [here](#)

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 UCD School of Medicine

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

Section	Raw Score	Letter Grade
Planetary Health Curriculum (30%)	$(26 / 69) \times 100 = 37\%$	D +
Interdisciplinary Research (17.5%)	$(9 / 17) \times 100 = 52\%$	C
Community Outreach and Advocacy (17.5%)	$(5 / 14) \times 100 = 35\%$	D +
Support for Student-led Planetary Health Initiatives (17.5%)	$(6 / 15) \times 100 = 40\%$	C -
Campus Sustainability (17.5%)	$(15 / 31) \times 100 = 48\%$	C
Institutional Grade	42%	C -

