

PLANETARY HEALTH REPORT CARD

APRIL 2024

MEDICINE

2023-2024 SUMMARY REPORT

Prepared by:

Medical students and faculty from 126 medical schools in 17 countries

With Support from:

Josiah Macy Jr. Foundation

Global Consortium on Climate and Health Education

Medical Students for a Sustainable Future

Planetary Health Alliance

UK Health Alliance on Climate Change

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1. ABOUT THE INITIATIVE

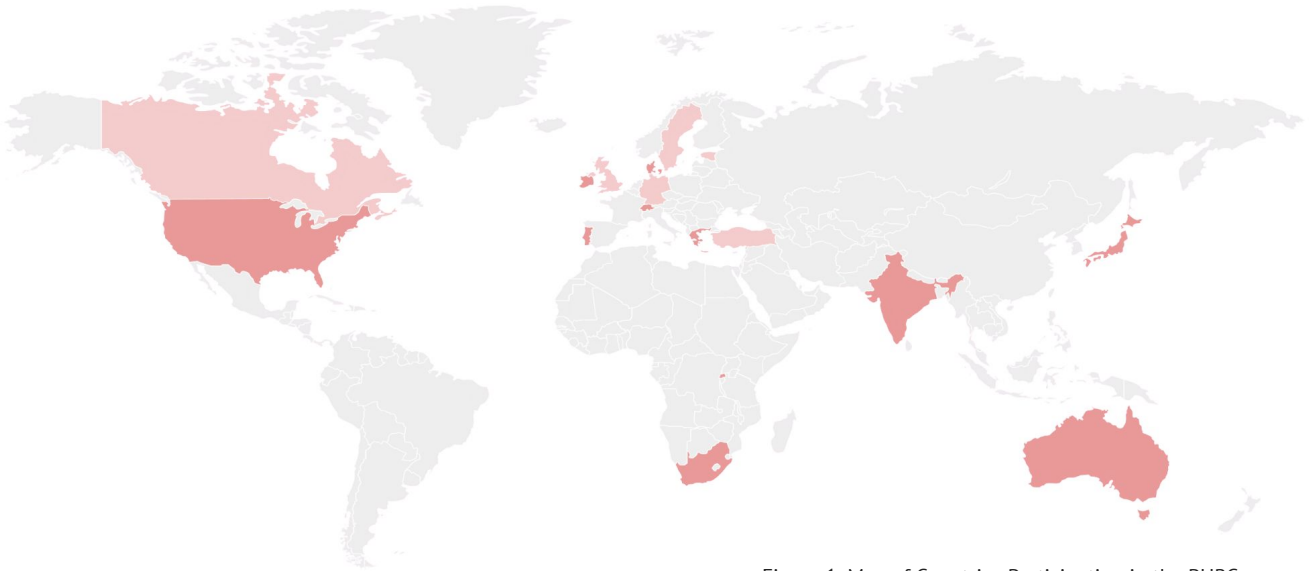


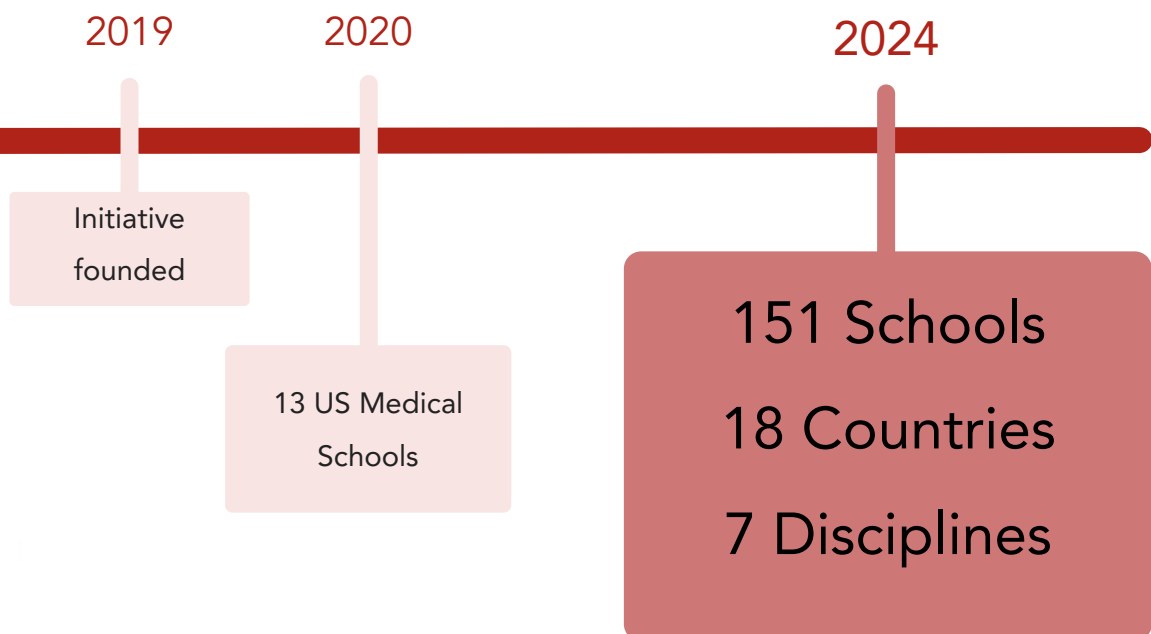
Figure 1: Map of Countries Participating in the PHRC

“Planetary Health is 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” (Planetary Health Alliance, 2024)

As future health professionals, we must be prepared to address the impacts of human-caused environmental changes on our patients’ health, and to understand and mitigate the environmental impact of clinical care. It is imperative that we hold our institutions accountable for educating health students on planetary health and education for sustainable healthcare, generating research to better understand health impacts and solutions, supporting related student initiatives, embracing sustainable practices on our campuses and in our hospitals, and engaging with surrounding communities that are most affected by environmental threats. Because climate change and environmental threats disproportionately affect marginalized populations, these issues are inherently ones of equity and justice.

With the purpose of increasing planetary health awareness and accountability among medical schools, the Planetary Health Report Card (PHRC) was developed as an institutional advocacy tool in 2019 by a group of medical students at the University of California, San Francisco School of Medicine. **The PHRC is a student-driven metric-based tool that aims to evaluate health professional schools on discrete metrics in five main category areas:** 1) Curriculum, 2) Interdisciplinary research in health and environment, 3) Community outreach and advocacy 4) Support for student-led initiatives and 5) Campus sustainability.

Since its founding just five years ago, the PHRC community has grown to encompass 18 countries and over 150 health professional schools. As it has spread across the world, it has left many examples of institutional change in its wake. Though initially developed by medical students to evaluate medical schools, the report card has now been adapted for dentistry, nursing, occupational therapy, pharmacy, physiotherapy, and veterinary medicine training programs, catalyzing interprofessional collaboration.



2. GOALS

- Operate as a “**needs assessment**” tool to identify institutions’ planetary health strengths and opportunities for growth.
 - Assemble synthesized, **institution-specific information** on planetary health resources useful for faculty and students
 - Facilitate **cross-institutional sharing** of planetary health resources that can catalyze curricular innovation
 - Establish a **global, interprofessional community** of like-minded students and faculty
 - **Track progress** in implementing planetary health curriculum and resources
 - **Advance the planetary health movement** in pursuit of a healthier and more equitable world
- 

3. SECTIONS OF THE REPORT CARD

Planetary Health Curriculum



Today's medical students will be on the frontlines of tackling the impacts of environmental degradation on human health. It is critical that medical education reflects those health threats. Topics like the changing geography of vector-borne diseases, the health consequences of air pollution, environmental health inequities, disaster response principles, and healthcare sustainability must be part of every medical school's core curriculum.

Interdisciplinary Research in Health and Environment



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 environmental health, the health effects of climate change, and climate solutions.

Community Outreach and Advocacy



Researching and teaching planetary health is necessary but not sufficient. It is critical that institutions also directly engage with communities most affected by ecological destruction. Although climate change is a problem largely created by those with power and resources, its impacts fall disproportionately on marginalized populations. Institutions should partner with local communities affected by climate change and pollution to share information about environmental health threats and collaboratively advocate for change. Students should be given opportunities to engage in this work.

3. SECTIONS OF THE REPORT CARD

Support for Student-Led Planetary Health Initiatives



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, convene in student groups, and receive funding for planetary health projects.

Campus Sustainability



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 transformation can begin with our educational campuses; medical schools must sustainably source energy, food, and supplies; ensure institutional investments are free of fossil fuels; and offer incentives for greening lab spaces and events.

4. PHRC-INSPIRED INSTITUTIONAL **CHANGE**

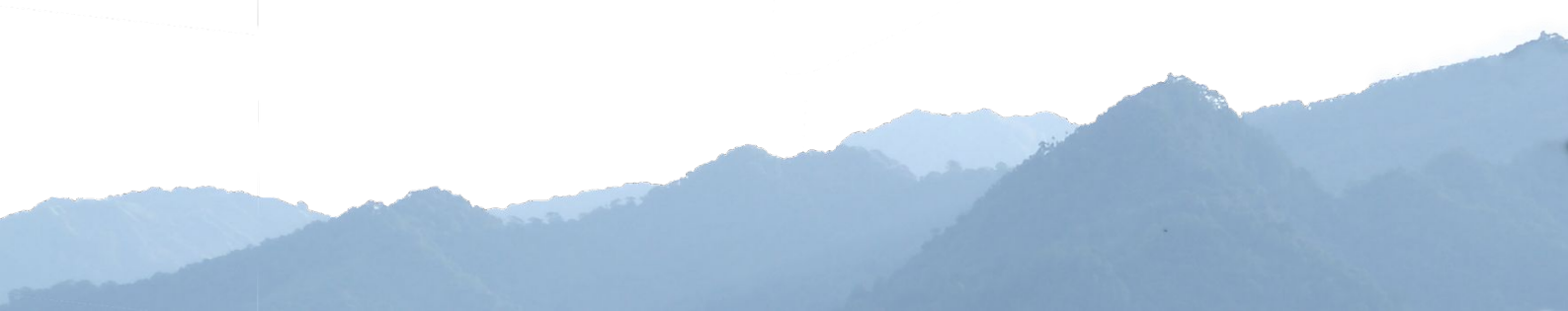
Students and faculty have successfully used the Planetary Health Report Card to improve planetary health engagement and promote institutional changes at their medical schools. Here are some examples from this year's feedback form.

RUSH MEDICAL COLLEGE

“We developed a class on climate justice that was guided by the components of the PHRC, raising our Curriculum score to a B this year!”

WASHINGTON STATE UNIVERSITY ELSON S. FLOYD COLLEGE OF MEDICINE

“We have continued to update our new Planetary Health Curriculum to incorporate student feedback and cover topics in more depth. In the past year two new lectures have been delivered for the first time. We have also successfully implemented a small-scale composting program at the Spokane Health Sciences campus.”



4. PHRC-INSPIRED INSTITUTIONAL CHANGE

UNIVERSITY OF COLORADO

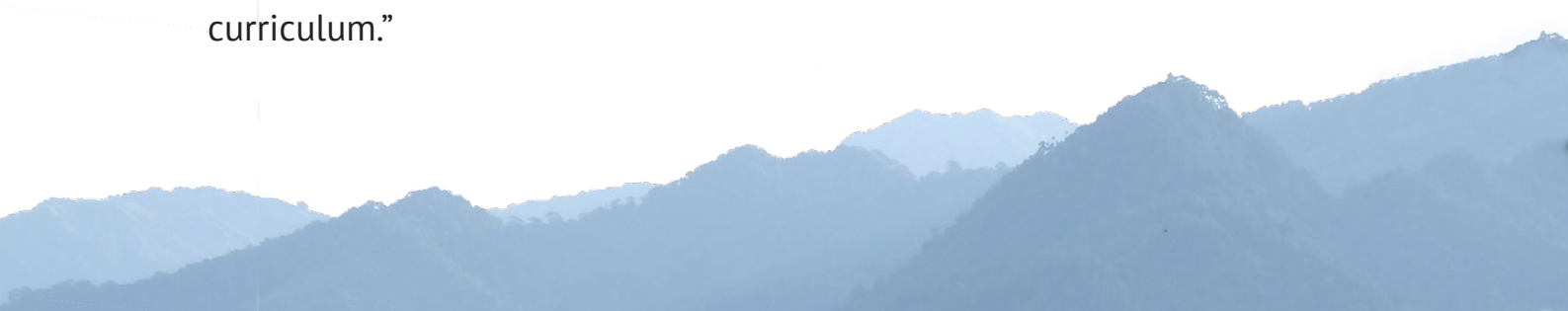
“This year, stemming from the work done in PHRC, a group of medical students led by their faculty mentor have established CHIP (Climate Health Integration Project). The students are working to integrate more planetary health concepts throughout the core curriculum.”

UNIVERSITY OF PORTO

“Following the completion of the PHRC, FMUP's Students Association initiated a week-long sustainability event aimed at addressing gaps identified during this project. Activities included beach cleaning, urban waste photography exhibition, upcycling workshops and recycling initiatives. Additionally, new recycling bins were purchased for the campus.”

UNIVERSITY OF ABERDEEN

“The curriculum scoring of the Planetary Health Report Card helped convince our University that change was required. A University funded summer project was undertaken by two medical students to generate learning outcomes on Planetary Health for the medical school curriculum.”



4. PHRC-INSPIRED INSTITUTIONAL CHANGE

UNIVERSITY OF QUEENSLAND

“We’ve been able to have meaningful discussions about the curriculum at a time when it is still being developed and refined. Following our conversations, we were asked to share the PHRC literature review and relevant research articles, as well as [premade learning resources](#), for a course coordinator to review with interest for consideration to include topics not currently in their courses”

OREGON HEALTH & SCIENCE UNIVERSITY

“The PHRC gave us actionable data that we are now using in talks with our administration to establish an official Climate and Health Thread for our SOM curriculum.”



5. RANKING TABLES

In this section of the summary report you can find ranking tables for each participating country. Click the country names below to be linked to their table.

AUSTRALIA

CANADA

DENMARK

ESTONIA

GERMANY

GREECE

INDIA

IRELAND

JAPAN

PORTUGAL

RWANDA

SOUTH AFRICA

SWEDEN

SWITZERLAND

TÜRKIYE

UNITED KINGDOM

UNITED STATES





2024 PHRC RESULTS MEDICINE


AUSTRALIA

(Click the school name to read their full report)

		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	University of Queensland, Australia	B	B	B-	C+	B	B
2.	University of Melbourne	B-	C+	B+	C	B	B
3.	The University of Tasmania	C	C	C-	C-	D-	A
4.	Monash University	C	C	C+	F	B-	C
5.	University of Wollongong	C-	C-	C+	F-	C	C
6.	Curtin University	D	C-	D-	F-	D	F

80-100% = A, 60-79% = B, 40-59% = C, 20-39% = D, 0-19% = F

Scores within top or bottom 5% awarded + or -, respectively

 = Overall score improved from 2022-2023 to 2023-2024



2024 PHRC RESULTS MEDICINE

CANADA

(Click the school name to read their full report)

		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	University of Saskatchewan	B	B	A-	C	A	D
2.	University of Ottawa	B-	C+	B+	C-	B	C+
3.	Queen's University - Canada	C+	B	B	D	C	C
4.	McGill University	C+	B	C	D+	C	C+
5.	Dalhousie University	C	C	B+	C	C	C

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2024 PHRC RESULTS MEDICINE

DENMARK

(Click the school name to read their full report)

		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	University of Copenhagen (UCPH)	C+	C-	B+	D	A-	A-

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2024 PHRC RESULTS MEDICINE


ESTONIA

(Click the school name to read their full report)

		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	University of Tartu	D+	C	C	C-	D	D-

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2024 PHRC RESULTS MEDICINE

GERMANY

(Click the school name to read their full report)

		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	Universität zu Lübeck	D+	C-	F+	C+	D	C-
2.	Medizinische Fakultät der Martin-Luther-Universität Halle-Wittenberg	D+	D+	B	D	D-	D

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2024 PHRC RESULTS MEDICINE


GREECE

(Click the school name to read their full report)

		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	University of Patras 	D	D	D-	D+	D	D
2.	Aristotle University of Thessaloniki (AUTH)	D	D	D+	F	C-	D-
3.	University of Crete	D	D	D-	D-	D	D

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2024 PHRC RESULTS MEDICINE


INDIA

(Click the school name to read their full report)

		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	Kalinga Institute of Medical Sciences, Bhubaneswar	C+	B+	B-	C-	C	C+
2.	St John's Medical College, Bengaluru	C	C	C-	C	B	C
3.	Srirama Chandra Bhanja Medical College and Hospital (Utkal University) 	C	A-	C	D-	C	D-
4.	Father Muller Medical College, Mangalore	D	D	F	D-	C-	D+

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2024 PHRC RESULTS MEDICINE

IRELAND

(Click the school name to read their full report)

		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	Royal College of Surgeons in Ireland	A-	A	A+	C-	A-	A-
2.	University College Cork	B-	C	B+	C-	B-	B+
3.	Trinity College Dublin	C+	A-	B	D-	C	C+
4.	University College Dublin	C-	C	C	D+	D	C
5.	National University of Ireland Galway	C-	D	B	F	B-	C

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2024 PHRC RESULTS MEDICINE


JAPAN

(Click the school name to read their full report)

		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	Nagasaki University	C+	C	A	C-	C	C+

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2024 PHRC RESULTS MEDICINE


PORTUGAL

(Click the school name to read their full report)

		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	Faculty of Medicine of the University of Porto	C-	D	C	C	C-	C+
2.	School of Medicine of the University of Minho	D-	D	F-	F	C	D

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2024 PHRC RESULTS MEDICINE


RWANDA

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		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	University of Global Health Equity	A	A	A	A	A-	B+

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2024 PHRC RESULTS MEDICINE


SOUTH AFRICA

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		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	Stellenbosch University	B	B	B-	B-	B	B+
2.	University of Witwaterstrand	D+	F+	B	C	C-	D+
3.	University of KwaZulu Natal	D-	D	D+	D	F	F-

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2024 PHRC RESULTS MEDICINE


SWEDEN

(Click the school name to read their full report)

		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	Karolinska Institutet, Stockholm	B	B+	B+	D+	B	B-

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2024 PHRC RESULTS MEDICINE

SWITZERLAND

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		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	University of Basel	B-	B+	C	B-	B	C+
2.	Universite de Geneve	B-	B	B-	C	B	C
3.	Universite de Lausanne	C+	B-	B	F	B-	B
4.	University of Bern	C	C	C	F	B	B
5.	ETH Zurich	C-	C	D	F	C	B-
6.	Universite de Fribourg	D+	C	D	F	C-	C
7.	University of Zurich	D	D	C	F	D-	C
8.	Università della Svizzera Italiana	D	D	C-	F+	D-	C

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2024 PHRC RESULTS MEDICINE


TÜRKIYE

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		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	Ege Üniversitesi	C	C	C	B-	D	D
2.	Çukurova University	C	B-	C	D+	C-	D
3.	Acibadem Üniversitesi 	C-	D	D	C	C	B
4.	Hacettepe Üniversitesi 	C-	C+	C	C	D	D-
5.	Karadeniz Teknik Üniversitesi	D	C	D	D-	D-	D-
6.	Ondokuz Mayıs University	D	D	C	D-	D	D
7.	Ankara University	D	D-	C-	D-	F	D

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2024 PHRC RESULTS MEDICINE

UNITED KINGDOM

(Click the school name to read their full report)

		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	Keele University	A	A	A	A	A-	A+
2.	University College London	A	B+	A	B+	A	A+
3.	Brighton and Sussex Medical School	A-	A-	A	A	A	B
4.	Lancaster University	B+	A-	A	C+	B	B+
5.	University of Dundee	B+	B	A	B+	B	B
6.	Barts (Queen Mary University of London)	B	A-	B	B	A	C+
7.	University of Southampton	B	A	A-	C	B-	B+
8.	Queen's University Belfast	B	A-	B+	C+	A	B-
9.	Peninsula Medical School (Plymouth)	B	B	B+	C+	A	B+
10.	University of Edinburgh	B	B-	A	B-	A-	B-
11.	University of Aberdeen	B	C+	B+	A	B	B
12.	University of Sheffield	B	B+	B	C+	B	C+
13.	University of Bristol Medical School	B	A-	A-	D+	C	B+
14.	Oxford Medical School	B	A	B+	D-	B	B
15.	Warwick Medical School	B	B	B-	D+	A	B

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UNITED KINGDOM

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		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
16.	University of Exeter	B	C	A	C+	B	B+
17.	University of Cambridge	B-	A	C	D	C	B+
18.	University of Manchester 	B-	C	B+	D+	B	A-
19.	University of Glasgow 	C+	B-	B	D	B	B-
20.	Swansea University	C+	B+	C-	D-	C	A
21.	Norwich Medical School (UEA)	C	C	C	D	B	C
22.	Cardiff Medical School	C-	D+	B-	D-	C	C+
23.	University of Birmingham	C-	D	C+	D-	B	C

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2024 PHRC RESULTS MEDICINE

UNITED STATES

(Click the school name to read their full report)

		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
1.	Emory University School of Medicine	A	A+	A+	A	A	B-
2.	UC Berkeley-UCSF Joint Medical Program	A-	B	A+	A	A-	B+
3.	UC San Francisco School of Medicine	B+	B	A+	A	A-	B
4.	University of Colorado School of Medicine	B	B	A	A	B	C-
5.	Harvard Medical School	B	B-	B+	B	A-	B
6.	UC San Diego	B	C	B+	A	B	A
7.	Cooper Medical School of Rowan University	B	C+	A-	B	A-	C+
8.	University of Washington School of Medicine	B	B	A-	B	C	B
9.	Icahn School of Medicine at Mount Sinai	B	C	A	B+	C	B-
10.	University of Pittsburgh School of Medicine	B	C-	A	C+	A	B
11.	University of Virginia School of Medicine	B-	B-	A-	C-	B	B
12.	Warren Alpert Medical School of Brown University	B	B	B	C+	B	B

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13.	University of Connecticut School of Medicine	B-	A-	B-	C	B	D+
14.	University of Michigan Medical School	B-	C-	A-	C-	A	B+
15.	University of Nebraska Medical Center	B-	C	B-	D+	A	B+
16.	Washington State University Elson S. Floyd College of Medicine	B-	B	B-	D+	A	C-
17.	Vanderbilt University School of Medicine	B-	B-	B	C	B	C
18.	Boston University School of Medicine	B-	C-	B-	C-	A-	B+
19.	NYU Grossman School of Medicine	B-	D+	A	B	B	C+
20.	University of Massachusetts Chan Medical School	B-	C+	C-	B+	B	C
21.	The Ohio State University College of Medicine	C+	B-	A	D+	B	C-
22.	Oregon Health and Science University	C+	A-	C	C-	B-	C
22.	University of Utah School of Medicine	C+	D+	A	C	A-	C
24.	University of Vermont	C+	C	B	C+	C	B





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		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
25.	Perelman School of Medicine at the University of Pennsylvania	C+	C+	B+	C	B	C-
26.	Northwestern University Feinburg	C+	B	A-	D	B	C-
27.	Creighton University School of Medicine Omaha Campus 	C+	C+	B+	C-	B	D+
28.	Indiana University School of Medicine 	C+	C	C+	D+	A	C+
29.	Albert Einstein College of Medicine	C+	B	D-	C+	B	D
30.	University of Minnesota Medical School	C	C	B	C	B	C-
31.	SUNY Upstate Medical School	C	C	C	C+	B	D+
32.	Rush Medical College	C	B	C	C-	C	C-
33.	Geisel School of Medicine at Dartmouth University	C	C+	C+	D+	B	D
34.	Columbia Vagelos College of Physicians and Surgeons	C	C-	B+	D	B	C+
35.	Loyola Stritch School of Medicine 	C	C-	C+	C	C-	B
36.	Creighton University School of Medicine- Phoenix Regional Campus 	C	C	C	C	B-	D+

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		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
37.	Chicago Medical School at Rosalind Franklin University of Medicine and Science	C	C+	C	C	B-	D
38.	Mayo Clinic Alix School of Medicine MN	C	C	C+	B	C	D
39.	John Hopkins School of Medicine	C	D	B	C	B	C-
40.	University of Maryland School of Medicine	C	C	C-	C-	C	C
41.	University of North Carolina School of Medicine	C	D-	A-	D+	B+	C+
42.	University of Missouri-Columbia School of Medicine	C	D-	C-	C+	A-	C+
43.	Penn State	C	C-	B+	D	C	D
44.	Sidney Kimmel Medical College at Thomas Jefferson University	C	C	C-	C+	B-	F+
45.	University of Oklahoma Health Sciences Center	C	D-	C	C+	B-	C
46.	University of Rochester School of Medicine and Dentistry	C-	D	B+	D	B-	D+
47.	Baylor College of Medicine	C-	C	C-	C	C-	D
48.	University of Arkansas for Medicine Sciences	C-	C-	C	C	C	D

80-100% = A, 60-79% = B, 40-59% = C, 20-39% = D, 0-19% = F

Scores within top or bottom 5% awarded + or -, respectively

= Overall score improved from 2022-2023 to 2023-2024

phreportcard.org



2024 PHRC RESULTS MEDICINE


UNITED STATES

(Click the school name to read their full report)

		Overall	Planetary Health Curriculum	Interdisciplinary Research	Community Outreach & Advocacy	Support for Student-led Initiatives	Campus Sustainability
49.	University of New England College of Osteopathic Medicine	C-	D	D+	D+	B	C
50.	Mayo Clinic Alix School of Medicine- Arizona	D+	F+	F	B+	C	D
51.	Loma Linda University School of Medicine	D	F	D+	D	B	D
52.	Idaho College of Osteopathic Medicine	D	C+	F-	F-	D-	C+
53.	Weill Cornell Medical School	D-	D	F+	F-	D-	D+

80-100% = A, 60-79% = B, 40-59% = C, 20-39% = D, 0-19% = F

Scores within top or bottom 5% awarded + or -, respectively

 = Overall score improved from 2022-2023 to 2023-2024

6. RECOMMENDATIONS

1. UTILIZE EXISTING RESOURCES AND COLLABORATE

Appreciate the work that has already been done in advancing planetary health across the world and draw upon resources from other institutions and organizations when developing learning objectives or new resources. Additionally, collaborate with other individuals, groups and institutions to facilitate efficient and quality advancements in planetary health and sustainable healthcare. *For additional resources, please see our [website](#).*

Useful resources include:

- [Climate Resources for Health Education](#) - an open-access repository of climate-health learning objectives, slides, and problem based learning cases for undergraduate and graduate medical education
- Medical Students for a Sustainable Future (MS4SF) [Curriculum Guide](#)
- [Education for Sustainable Healthcare](#) - a curriculum for the UK
- Centre for Sustainable Healthcare [Sustainable OI project resources](#)
- [Climate Health in Medical Education Network \(CHIME\)](#) - Irish Doctors for the Environment and the Royal College of Surgeons of Ireland.
- Global Consortium on Climate and Health Education (GCCHE) [Resource Bank](#)

2. ESTABLISH LEARNING OBJECTIVES

Formalize curricular content on both planetary health and sustainable healthcare with students by developing testable learning objectives. The curricular content should emphasize skill-building as well as clinical knowledge.

Examples include:

- A team of medical students at Emory University School of Medicine established and published a clear [set of climate and health learning objectives](#) for preclinical medical education, creating an integrated curricular plan of climate and health content which is now fully implemented.
- University College London Medical School has an overarching Intended Learning Outcome (ILO) for every year of the MBBS stating “Appreciate the impact of climate change and sustainability in healthcare”, and continues to try to embed planetary health teaching across its curriculum.

3. INTEGRATE CURRICULAR CONTENT LONGITUDINALLY

Planetary health (PH) and Education for Sustainable Healthcare (ESH) is relevant to every organ system, and spaced repetition is more effective for learning. Therefore, PH and ESH should be a cross-curricular theme integrated into existing lectures, small groups, and projects whenever possible, rather than a standalone lecture. Faculty members should be empowered, educated, and incentivized to integrate the topics into their existing content.

Examples include:

- *As the C25 curriculum (new curriculum) at Queen's University Belfast continues to develop as it expands into 4th year we have seen the implementation of the "G theme" of "Global and Population Health" expand as part of the longitudinally integrated GCAT double helix themes structure. This is evident in the lectures, tutorials and other activities throughout all of the years of medicine, incorporating the ESH sub-themes of "Global Health," "Public and Population Health" and "Social Accountability, Sustainable Healthcare."*
- *At Emory University (US), the Climate Change & Health curriculum, first introduced for the class of 2024, spans most organ-systems across the first 18 months of medical school. The Climate & Health Curriculum team engaged faculty members to incorporate climate learning points into existing lectures and to create new dedicated climate lectures. The curriculum also adds environmental health discussion points to small group activities.*

4. OFFER ELECTIVES AND STUDENT SELECTED COMPONENTS

In addition to the core curricular content on planetary health and environmental health required for all students, schools should provide opportunities for deeper exploration for interested students, such as electives, community engagement opportunities, and optional reading.

Examples include: (continued on adjacent page)

- *The Faculty of Medicine at the University of Basel, Switzerland, offers three elective projects for Master's students per year: "Planetary Health - what can doctors contribute to tackle ecological crises?" (Winter School), "Green Hospital: Sustainability in Healthcare" (Winter School) and "Nutrition and Medicine" (Summer School).*

Examples continued:

- *At St John's Medical College, Bengaluru, India, a Course titled 'Citizen Doctor' is present in the curriculum for first-year students. The objective of this course is to expose future doctors to all aspects of health and to bring about a sense of recognising the need for change. The course is conducted by the Department of Health and Humanities in St John's and is allotted "20" hours. The topics covered in the course are:*
 - *Climate change: its causes and consequences*
 - *Sustainability*
 - *Water: its pollution, management and conservation*
 - *Air pollution*
 - *Globalisation and over-consumption*
 - *Garbage management*
 - *Rights of a citizen*
 - *Key elements of democracies*
 - *Ecological mapping and action planning*
 - *Students were divided into groups to perform environmental mapping and interview various persons of interest in their college campus*
- *Rush Medical College offers the Health Equity & Social Justice Leadership Program (HESJLP), which is an elective track consisting of up to 20 students per cohort. The HESJLP gives students the opportunity to engage in enhanced clinical training and experiences focused on themes of global and local health equity/social justice.*

5. PROVIDE CLINICAL COMMUNICATION SKILLS

[Research](#) shows that community members rely on their primary care doctor for information on climate change. However, most medical students feel unprepared to answer patient questions on climate change. Therefore, medical schools should include a clinical curriculum on taking an environmental history and communicating information on planetary health to patients.

Examples include:

- *In Srirama Chandra Bhanja Medical College (India) there has been a direct vertical integration of community medicine curriculum with general medicine under various competencies. One such competency is IM25.13, where students are asked to counsel the patient and family on the prevention of various infections due to environmental issues in a simulated environment in a DOAP (Demonstrate, Observe, Assess, Perform) session as a skill assessment. In the assessment, students who are role-playing as doctors are encouraged to emphasize the link between climate change and disease when communicating with the individual who has assumed the role of the patient. Students are advised to provide a local and personal message as well as state the facts linking climate change to disease to the patient while also taking an evidence-based physician's approach.*

Examples continued;

- *In Bart's and the London School of Medicine and Dentistry, interactive activities such as a role-playing session look at how to communicate with patients about the impact that their behaviors can have on both their health and the environment. These include adapting diets to reduce meat consumption and heart disease and diabetes risk, and encouraging different modes of transport to travel less via car and promote active travel. These have been mainly incorporated into third and fourth year communication skills workshops.*

6. SITUATE TEACHING IN A GLOBAL CONTEXT

The ecological crisis is a global issue and given the interconnected nature of human health globally, medical students should understand the health impacts of climate change throughout the world, its disproportionate effects on low-resource nations, and impacts on global stability through mechanisms such as food security.

Examples include:

- *Keele University School of Medicine - In Year 1, students have the choice to research various topics that address this issue as part of their Academic Mini Review, an independent, compulsory, student-selected component of the curriculum. Topics such as 'Decolonizing the curriculum,' 'Global healthcare access and vaccination - can access really be equitable?,' 'Developing sustainable approaches to 21st century healthcare challenges,' allow students to explore the unequal regional health impacts of climate change.*
- *In the Karolinska Institute, Sweden, the following lectures are delivered:*
 - *Lectures given in the 5.5 year medical programme: In the core course Public Health and Environmental Medicine (2LK100, 12 credits), the lecture "Climate related vulnerability, inequality and injustice" of 30 minutes covers this subject. The subject is covered by the elective courses Global Surgery and Global Health.*
 - *Lectures given in the 6 year medical programme: In the core course Basic Science 1 (2LA000, 12 credits), the lecture "Climate change in relation to the determinants of health" addresses the inequality aspect of climate change, including the global regional unequal health outcomes such as climate related mortality.*

7. RESPECT FOR INDIGENOUS KNOWLEDGE

In teaching about planetary health and climate change, the curriculum should acknowledge how Indigenous communities, who have long lived in harmony with the planet, have knowledge and value systems that are an essential part of the solution. This topic should be covered across all health professional education internationally regardless of whether indigenous populations are locally present.

Examples include:

- *The University of Tasmania has placed great importance on Aboriginal and Torres Strait Islander peoples' culture, knowledge and their connection to health. There has been extensive teaching surrounding cultural awareness and Aboriginal health and perspectives. In the Year 3 CAM305 Domain 3 module 2.4 "Planetary Health" contains a talk which mentions the connection of indigenous communities to environment and planetary health and suggests that indigenous and local knowledge (ILK) should be considered in the healthcare systems response to climate change/planetary health.*
- *In Oregon Health and Science University, there is a medical school specific elective on Native American and Alaskan Native Health in which there is course content from and discussion around Indigenous perspectives on land and activism, including traditional ways of using land. For example, there is a required Native American Health Seminar series entitled "Climate, Identity, and our Health: Indigenous Lessons and Voice from the Front Lines to Prevent Climate Collapse".*

8. CENTER EQUITY

Ensure that planetary health and environmental health curricular content and auxiliary opportunities center the disproportionate impact of all health effects on vulnerable populations, such as communities of color, low-income communities, Indigenous populations, and older adults.

Examples include:

- *At Geisel School of Medicine at Dartmouth (US), the Race and Health Equity Longitudinal Curriculum includes three first-year sessions on environmental racism and discrimination. Additionally, there is a recently formed subcommittee focused on planetary health within a medical-school wide group dedicated to making longitudinal curricular changes related to race and health equity.*

Examples continued:

- *In Queen’s University Belfast, Year 2 students receive a lecture on “Climate, Health, and Sustainable Healthcare” which discusses the global distribution of carbon emissions compared to the mortality related to climate change (per million population). The discussion emphasizes the inequality in the magnitude of global emissions which are centered around western populations and its health effects which are mainly centered in the global south. This lecture points students towards resources related to climate justice and introduces the concept of Most Affected People and Areas (MAPA). Discussion around MAPA included an infographic stating how historically marginalized and colonized populations are largely exploited with little preparedness for climate disasters.*

9. DELIVER SOLUTION-ORIENTATED SUSTAINABLE HEALTHCARE TEACHING ALONGSIDE PROGRESSIVE AFFILIATED HOSPITALS

Students must understand that healthcare provision significantly contributes to environmental degradation and therefore patient morbidity. They must learn ways to mitigate this impact, including carrying out Sustainability Quality Improvement projects. For this learning to be effective, associated hospitals should be promoting sustainable practices and educating staff and patients.

Examples include:

- *At the Royal College of Surgeons Ireland, The THEP-2 curriculum culminates in a QI project in the final module “Prep for Clinical Practice” centred around sustainability in healthcare and medical practice. Students are to choose a topic and design an initiative to improve an aspect of sustainable healthcare. RCSI is currently looking for ways to give students the opportunity to physically implement the project they developed during the module*
- *At Newcastle University (UK), all final year students will complete a SusQI project in their second General Practice assistantship, a project in collaboration with the Centre for Sustainable Healthcare*
- *In Brighton and Sussex Medical School, In Year 4, module 402, the Public health task in the ENT, Neurology/Neurosurgery, Ophthalmology rotation includes a Sustainable Healthcare and Quality Improvement- The aim is to apply the principles of Sustainable healthcare and Quality improvement in a clinical setting.*

10. PROVIDE MENTORSHIP INCLUDING A DEDICATED FACULTY POST

Facilitate accessible mentorship of students with an interest in planetary health. Create a dedicated paid faculty position to oversee planetary health curricular integration, student mentorship, and other planetary health initiatives.

Examples include:

- *An increasing number of schools have dedicated faculty leads in Education for Sustainable Healthcare, Planetary Health, and/or Sustainable Healthcare. A few examples include Dr. Husein Moloo (University of Ottawa, Canada), Dr. Rebecca Philipsborn (Emory University, US.), Dr. Anna Jones (Brighton and Sussex Medical School, UK), Prof. Trevor Thompson and Prof. Kate Tilling (University of Bristol, UK), and Dr. James Bevan (Southampton University, UK).*
- *Nagasaki University (Japan) as a “Planetary Health Promotion Headquarters” comprising multiple faculty members with the role to promote initiatives related to Planetary Health.*
- *Brighton and Sussex Medical School’s Sustainable Healthcare Group has a comprehensive website which includes faculty members, their contact information, and their research projects. The Institute for the Environment at University of North Carolina hosts a central website which clearly lists institutional faculty who have research, mentoring, or teaching roles in environmental health.*

11. SUPPORT STUDENTS TO FACILITATE THEIR LEADERSHIP

Create funded opportunities for students to engage with planetary health, environmental health, and sustainability, such as sustainability grants, research fellowships, student groups, and community-based projects. Support student advocacy efforts and take action in response to student input.

Examples include:

- *Many schools have active student groups with faculty support. These include the ‘Climate Health Interest Group’ at University of Arkansas (U.S.), ‘Earth Resus Team’ at University of Birmingham (UK), and the ‘Environmental Team of AUTH’ at Aristotle University of Thessaloniki (Greece)*
- *Many schools have grants for student sustainability projects, such as McGill’s (Canada) Sustainability Projects Fund totalling 1 million dollars annually, Tufts University (US) Green Fund, Keele University’s (UK) Sustainability Fund, Emory University’s (US) General Sustainability and Social Justice Incentives Fund, the Living Laboratory Seed Fund University College Cork (Ireland), the University of Geneva (Switzerland) offering up to CHF 5,000, and University of Basel’s (Switzerland) Impulse Funding Programme.*

12. PRIORITIZE COMMUNITY ENGAGEMENT

Partner with community organizations, develop community-facing courses on planetary health, and include planetary health in patient educational materials and marketing.

Examples include

- *The University for Global Health Equity in Rwanda has a Community Engaging Department, which is a fully operational committee dedicated to ensuring community representation in the institution's activities. Communities have opportunities to participate in research that the Center for One Health conducts. When certain research projects are proposed, community members and local leadership are consulted, involved in decision-making processes, and empowered to contribute their knowledge, experiences, and perspectives to shape the research. Additionally, efforts are made to ensure that research findings are communicated back to the community in a timely, culturally sensitive and accessible manner, such as through radio shows, comic books and posters. Overall, the goal is to establish collaborative partnerships based on reciprocity, trust, and respect, and to foster long-term engagement with communities to address local priorities and promote environmental and social justice.*
- *At the University of Sheffield, Phase 2b medical students have opportunities to work with community organisations promoting planetary and environmental health during their 4 week Social Accountability SSC. Examples include: working at Heeley City Farm, which uses the background of a mini farm and community gardens to address inequality and lack of opportunity in the local community; working with local schools, where students are expected to explore with students key issues relating to access to sustainable food and health impacts of fuel poverty; and working with Schools' Climate Education South Yorkshire, which arranges conferences for schools on topics related to the climate and ecological emergency.*
- *Loma Linda University, Health's Community Benefit program centralizes implementation and reporting of community benefit investments across the four affiliated hospitals. Community Benefit investments include patient care benefits, health professions education, research, and community health benefits. Priorities and goals are driven by the Community Health Needs Assessment, which is a process that is undertaken every three years in collaboration with community-based organizations in San Bernardino and Riverside Counties to identify unmet health needs and identify opportunities for promoting health equity. The 2023 Community Benefit report highlights the institution's investments in the Jardin de Salud community garden in San Bernardino, weekly fresh produce distribution events, and 438 participants in the San Bernardino Healthy in Nature – Equity (SHiNE) Program outdoor education program offering environmental justice education and access to nature.*

13. LAUNCH AN INTERDISCIPLINARY CENTER

Institutions should create interdisciplinary centers with education, research, policy, and community engagement pillars that focus on the intersections between climate change, the environment, and health, bridging traditional divides among disciplines to ensure collective vision, problem-solving and action.

Examples include:

- *National University of Ireland - Galway, The Centre for One Health*
- *Uktal University (Srirama Chandra Bhanja Medical College) Centre for Environment, Climate Change and Public Health*
- *Newcastle University's (UK) One Planet interdisciplinary research center.*
- *The University of California's (US) newly launched Center for Climate, Health, and Equity.*
- *The University of North California (US) Institute for the Environment.*
- *Queen's University Belfast's (UK) Centre for Sustainability, Equality And Climate Action.*
- *The University of Leicester's (UK) Centre for Environmental Health and Sustainability.*
- *University of Otago's (NZ) Coastal people: Southern Skies interdisciplinary research center*
- *Karolinska Institute for Environmental Medicine*

14. ADVANCE RESEARCH

Encourage interdisciplinary research on planetary health and environmental health topics by facilitating research networks, awarding funding, hosting conferences, and recruiting researchers actively exploring these subjects.

Examples include:

- *At the University for Global Health Equity, Rwanda, there is an annual Global Health Research Day, which is a research conference that provides a platform for students, staff, and faculty research to share and showcase their work. This conference features One Health/ Planetary Health among the themes. In the past year, the medical school, through the (Student One Health Innovation Club) SOHIC hosted Cascading Debates Sessions, Panel Discussion Symposiums, and Seminars on Climate Change, Plastics Use, Green Building, and the Environment and Disease Pattern. There events were held in March, April, and November 2023, as well as a recent panel discussion in March 2024.*

Examples continued:

- *Karolinska Institutet (KI) School of Physiotherapy, under the Alumni Lecture Series, hosted a lecture on 'Sitting still- the greatest health issue of our time'. An interactive workshop was organized by the KI Lifestyle4Health network on how common public diseases can be prevented. The KI Council for Environment and Sustainable Development organized the KI Sustainability Day 2023 to increase knowledge of sustainability issues and provide tools and inspiration for students and staff at KI to contribute to a sustainable future.*
- *The University of East Anglia The Occupational Therapy Society hosted a seminar on sustainable healthcare (30.11.2023). This seminar discussed the impacts of the climate crisis on health, outlined the process of sustainable quality improvement and signposted to wider resources on sustainable healthcare*

15. CARBON NEUTRALITY GOALS AND FOSSIL FUEL DIVESTMENT

Divest institutional funding from fossil fuels, set ambitious carbon neutrality goals, and outline a thoughtful and achievable plan to meet those goals.

Examples include:

- *University College London announced it was to divest from existing stocks of fossil fuels by the end of 2019 in line with the [UCL sustainability strategy 2019-2024](#). UCL's [Ethical Investment Policy](#) included requirements to divest from companies involved in fossil fuel extraction or production.*
- *University College Dublin, Ireland is entirely divested from fossil fuels as of 2017.*
- *In June of 2023, Queen's University Belfast published the [Net Zero Plan](#) to achieve net zero greenhouse gas emissions by 2040, which follows with the UK carbon targets based on the Climate Change Act of 2008 to achieve net zero by 2050, Northern Ireland Climate Change Act of 2022, Belfast Carbon Targets, and the Higher Education specific guidance of 2023 from the Alliance for Sustainability Leadership in Education.*

16. IMPLEMENT DAY TO DAY SUSTAINABLE PRACTICES ON CAMPUS

Create an environmentally sustainable learning and working environment by setting and following guidelines for supply procurement, lab spaces, events, and buildings.

Examples:

- *The University of Melbourne has a detailed policy for procurement which states that “ensure procurement processes fulfill the University’s broad social and environmental obligations set out under the Sustainability Charter and Plan”. This policy is titled [Procurement Policy](#) (MPF1087). Sustainable supply and local suppliers are prioritized.*



7. LIMITATIONS

The 2023-2024 Planetary Health Report Card is the fifth iteration of the initiative, now with more participating schools, a larger, international leadership team, and refined metrics. Despite our extensive efforts to hone this initiative's metrics, process, and impact, we recognize that there are some limitations, as outlined below.

Overall Generalizability

While we do our best to keep our metrics specific and clear with guidelines for evaluation and accompanying examples, the report card does have some degree of subjectivity given that metrics are interpreted by students and staff at different medical schools. For example, teams at different schools may have differences in their interpretation of what constitutes content being covered “briefly” vs “in depth” in the curriculum. Although all report cards were read and edited by members of the leadership team to maximize consistency, this subjective element cannot be avoided completely. In the future, we hope to formally evaluate inter-rater concordance.

International Generalizability

Despite our efforts to anticipate limitations in metric international generalizability and to refine metrics for a global audience, we recognize that the metrics were originally developed with the U.S. medical education system in mind and as a result, there may be some unintentional cultural bias. As we continue to expand globally, we will work to anticipate and respond to feedback regarding international generalizability and cultural bias.



8. FUTURE DIRECTIONS

The 2024 Planetary Health Report Card marks our **5th year of student advocacy** in planetary health education. Inspired by the desperation to see climate change taught in health professional curriculums, our growth has been exponential. Some schools now have five published report cards, the cyclical process goes on and with each report card, marginal (sometimes extraordinary) gains are made.

Each year we strive to develop, the leadership team gets bigger, new ideas come and go, students graduate, and another cycle begins in October. **So what's next, where do we go from here? Below we outline our goals for the future:**

GOAL 1: PROMOTE INTERPROFESSIONAL COLLABORATION

The PHRC interprofessional expansion is among our greatest achievements. Education across all healthcare professions is crucial for a future where health systems effectively promote population and planetary health. Spanning seven health professions, published report cards are serving to align healthcare communities on the development of planetary health education. Published disciplines include medicine, dentistry, nursing, occupational therapy, pharmacy, physiotherapy, and veterinary medicine.

Our goal is to establish interdisciplinary teams that work together to complete report cards and collaborate on planetary health advocacy at their institution. Streamlining the report card sections will allow multidisciplinary teams to complete Research, Community Outreach, Student Support, and Sustainability sections together, whilst independently completing the Curriculum section.

GOAL 2: ENGAGE OUR COMMUNITY BEYOND THE REPORT CARDS

With each cycle and published report card comes a vast quantity of data: novel curriculum activities, inspiring student groups, community collaborations, sustainable energy and travel initiatives and much more. But this data largely stays locked up in individual report cards and cherry-picked examples for our summary report. The aim of the report card is to be not only a template for compiling information on institutional planetary health engagement, but also a tool for institutional advocacy.

8. FUTURE DIRECTIONS

Our goal is to improve the utilization of PHRC data, networks and community through faculty development days, facilitating school-to-school partnerships, exploring our data through research and collaborating with partners to promote planetary health development all year round. Not just identifying a school's strengths and weaknesses but taking an active approach to support their development too. Through our partnership with [Climate Resources for Health Education](#), we have mapped each PHRC metric to their curricula materials offering convenient and accessible solutions for institutions to improve specific metrics.

GOAL 3: COLLABORATE WITH STAKEHOLDERS TO DEVELOP THE INITIATIVE

The PHRC will always be **a student-driven initiative** and rely on the generosity and passion of the student teams completing the report cards. The initiative has grown in new and exciting ways but this comes at a financial and time cost. As of writing, we are in the last stages of being granted non-profit status, unlocking new potentials and streams of revenue for the development of the project. This new status comes with equal parts opportunity and responsibility. Formation of a Board of Directors will ensure we make the most of the opportunities presented and guide us in the future development of the initiative.

Our goal is to collaborate with partners, engage stakeholders and students to take this next step in our journey and ensure the longevity and value of the initiative for the future.



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12. CONTACT US

We rely on the passion and generosity of the hundreds of students involved in the initiative. If you don't see your **country, school or discipline** represented here we would love to hear from you. If you would like to support the work we are doing please share this report and our initiative with your colleagues, faculty and friends so we can reach as many people as possible.

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Dhruv Patel
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Gökberk Karaca
Şehla Nurefşan Sancak
Mirkan Dikeç
Ömer Faruk Sülüker

Ankara Üniversitesi Tıp Fakültesi

Orhun Kelsaka

Çukurova Üniversitesi

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Ahmet Kürşat Yılmazoğlu
Munise Elif Yüce
Öznur Yücel
Zeynep Yüksek
Mert Yüksel
İlkem Aliye Zafer
İbrahim Berk Zuberoğlu
Zarifa Abbasova
Nour Oubaed
Muhannad Aldarvış
Hendrin Muhammet
Huzeyfe Abdullah
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Pınar Sarıtaş
Sudenaz Dalkıran
Süleyman Şenlen
Rabia Habacı
Dicle Altürk
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Özgü Özgüden

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Aytaj Damirchiyeva
Begüm Uyguç
Cansu Levent
Merve Erdoğan
Taylan Ceylan
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Hacettepe Üniversitesi

Mert Can Güneş
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Hüda Eroğlu
Kübra Demir
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Suvan Suntharalingam

Aahana Jain

Izel Salehi-Majd

Sukriti Ray

Hannah Wright

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Yasmin Tyson

Pratibha Srikanthan

Vanessa Dam

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Cardiff Medical School

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Keele University

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Gilda Rastegar
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Akanksha Suresh
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Sumedha Attanti
Elisa Bass
Georgia Sullivan
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Kathryn Xu
Richard Roden

Northwestern University - Feinberg School of Medicine

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Zachary Heidrick

Norton College of Medicine, SUNY Upstate Medical University

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Samantha Ballas
Kathleen Renna
Katie Farkouh
Veronica Rive
Maushmi Chitale
Jessica Crooker
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Henry Hays-Wehle
Naomi Tsai
Rand Keller
Fiona Stefanik
Estee Emlen
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Clever Nguyen

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Paige Anschutz
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Krishi Korrapati
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Neha Basti
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14. APPENDIX 1: METRICS

SECTION 1: PLANETARY HEALTH CURRICULUM

Today's medical students will be on the frontlines of tackling the impacts of environmental degradation on human health. It is critical that medical education reflects those health threats. Topics like the changing geography of vector-borne diseases, the health consequences of air pollution, environmental health inequities, disaster response principles, and healthcare sustainability must be part of every medical school's core curriculum.

General

1.1 Did your medical school offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?

Health Effects of Climate Change

1.2 Does your medical school curriculum address the relationship between extreme heat, health risks, and climate change?

1.3 Does your medical school curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?

1.4 Does your medical school curriculum address the impact of climate change on the changing patterns of infectious diseases?

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

1.6 Does your medical school curriculum address the cardiovascular health effects of climate change, including increased heat?

1.7 Does your medical school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?

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

1.9 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?

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

14. APPENDIX 1: METRICS

Environmental Health & the Effects of Anthropogenic Toxins on Human Health

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

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

1.13 To what extent does your medical school emphasize the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?

1.14 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?

Sustainability

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

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

14. APPENDIX 1: METRICS

1.17 Does your medical school curriculum cover these components of sustainable clinical practice in the core curriculum?

- The health and environmental co-benefits of avoiding over-medicalisation, overinvestigation and/or over-treatment.
- 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.
- 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.
- Environmental impact of surgical healthcare on planetary health and the climate crisis, and how can it be mitigated.
- The impact of anaesthetic gasses on the healthcare carbon footprint and ways to reduce anesthesia environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions.
- The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
- Waste production within healthcare clinics and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting).

Clinical Applications

1.18 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?

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

14. APPENDIX 1: METRICS

Administrative Support for Planetary Health

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

1.21 How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the core curriculum?

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

14. APPENDIX 1: METRICS

SECTION 2: INTERDISCIPLINARY RESEARCH IN HEALTH AND ENVIRONMENT

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 environmental health, the health effects of climate change, and climate solutions.

- 2.1 Are there researchers engaged in planetary health research and healthcare sustainability research at your medical school?
- 2.2 Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?
- 2.3 Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your medical school?
- 2.4 Does your institution have a planetary health website that centralizes ongoing and past research related to health and the environment?
- 2.5 Has your institution recently hosted a conference or symposium on topics related to planetary health?
- 2.6 Is your medical school a member of a national or international planetary health or ESH organization?

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SECTION 3: COMMUNITY OUTREACH AND ADVOCACY

Researching and teaching planetary health is necessary but not sufficient. It is critical that institutions also directly engage with communities most affected by ecological destruction. Although climate change is a problem largely created by those with power and resources, its impacts fall disproportionately on marginalized populations. Institutions should partner with local communities affected by climate change and pollution to share information about environmental health threats and collaboratively advocate for change. Students should be given opportunities to engage in this work.

- 3.1** Does your medical school partner with community organizations to promote planetary and environmental health?
- 3.2** Does your medical school offer community-facing courses or events regarding planetary health?
- 3.3** Does your medical school have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?
- 3.4** Does the institution or main affiliated hospital trust engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?
- 3.5** Does your medical school or its affiliated teaching hospitals have accessible educational materials for patients about environmental health exposures?
- 3.6** Does your medical school or its affiliated teaching hospitals have accessible educational materials for patients about the health impacts of climate change?

14. APPENDIX 1: METRICS

SECTION 4: SUPPORT FOR STUDENT-LED PLANETARY HEALTH INITIATIVES

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, convene in student groups, and receive funding for planetary health projects.

- 4.1** Does your medical school or your institution offer support for medical students interested in enacting a sustainability initiative/QI project?
- 4.2** Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?
- 4.3** Does the medical school have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.
- 4.4** Does your medical school have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?
- 4.5** Is there a student liaison representing sustainability interests who serves on a medical school or institutional decision-making council to advocate for curriculum reform and/or sustainability best practices?

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4.6 In the past year, has the institution had one or more co-curricular planetary health programs or initiatives in the following categories?

- 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.
- Panels, speaker series, or similar events related to planetary health that have students as an intended audience.
- 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.
- Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
- Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
- Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students).

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SECTION 5: CAMPUS SUSTAINABILITY

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 transformation can begin with our educational campuses; medical schools must sustainably source energy, food, and supplies; ensure institutional investments are free of fossil fuels and offer incentives for greening lab spaces and events.

- 5.1** Does your medical school and/or institution have an Office of Sustainability?
- 5.2** How ambitious is your medical school/institution's plan to reduce its own carbon footprint?
- 5.3** Do buildings/infrastructure used by the medical school for teaching (not including the hospital) utilize renewable energy?
- 5.4** 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?
- 5.5** Has the medical school or institution implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?
- 5.6** Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?
- 5.7** Does the medical school apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?
- 5.8** Does the medical school or associated institution apply sustainability criteria when making decisions about supply procurement?
- 5.9** Are there sustainability requirements or guidelines for events hosted at the medical school?
- 5.10** Does your medical school have programs and initiatives to assist with making lab spaces more environmentally sustainable?
- 5.11** Does your institution's endowment portfolio investments include fossil-fuel companies?