

# QUB Students: Changing the Climate of Planetary Health Education

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What does climate change have to do with being a doctor or medical student in Northern Ireland? Why should you care about climate change? Advocating for global change to halt the climate crisis and to protect our environment is not just for the Greta Thunberg's and David Attenborough's of the world - healthcare professionals can also help lead the charge. The World Health Organisation has called climate change "the greatest threat to global health in the 21st century" <sup>(1)</sup>. The health of humanity is dependent on our environment which is changing rapidly and in disastrous ways; from rising global temperatures, increased frequency of abnormal weather patterns and natural disasters, urbanisation and destruction of vital environments for agriculture, and pollution levels, the environment has huge impacts and devastating effects on individual and population health. So, how can healthcare professionals in Northern Ireland make a difference and help combat climate change?

Over the past year, five students from Queen's University Belfast (QUB) contributed to an international report called the Planetary Health Report Card (PHRC). The PHRC is a student-driven, metric-based initiative to inspire planetary health and sustainable healthcare education engagement in medical schools <sup>(2)</sup>. Each participating school wrote and published school-specific individual reports alongside a larger comparative report on World Earth Day, the 22nd of April 2021. Alongside individual school reports, the comparative report was derived to help identify areas of strength and provide recommendations to all participants on improving engagement and education. This report was prepared by student teams with faculty input from sixty-two medical schools from across the USA, UK, Ireland and Canada, including QUB, and was supported by: Medical Students for a Sustainable Future; Planetary Health Alliance; Practice Greenhealth; Healthcare Without Harm; Students for Global Health; Global Consortium on Climate and Health Education; and Human Health & Climate Change Club at the University of California, San Francisco.

The PHRC was designed to operate as a needs assessment tool to identify planetary health strengths and opportunities for growth within and between medical schools. The PHRC consisted of discrete metrics in five main category areas: planetary health curriculum; interdisciplinary research in health and environment; university support for

student planetary health initiatives; community outreach (centred on environmental health impacts); and medical school campus sustainability. For each metric, individual scores were provided, alongside a detailed explanation of collated evidence and suggested recommendations for improvement. Generation of both a QUB-specific report and the comparative report has helped facilitate dialogue within the School of Medicine, Dentistry & Biomedical Science (SMDBS), its aligned research institutes, other schools within the university and the Student's Union; promoting cross-institutional sharing of best practice and showcasing innovative forms of planetary health engagement. The report will also be used to help track progress over the coming years as the medical school provides greater resources, promotes research and facilitates discussion between staff and students to help advance the global planetary health movement.

The core team at QUB was first established when team leader Victoria England, a member of QUB's Students for Global Health society, was asked to spearhead the initiative. Victoria is currently completing an intercalated master's degree in Clinical Health Psychology and recruited the remaining members of the team: Amanda Madera (BSc Biology, MPH Global Health), Hannah McPhee (BSc Biomedical Science, Year 2 Medicine), Rhiannon Wells (MSc Global Health, Year 4 Medicine) and Riley Westwood (Year 1 Medicine). Between them, the group have experience of living, working and volunteering in differing healthcare systems and health environments, including Northern Ireland, Germany, the Falkland Islands, India and East Africa. The student team engaged actively with faculty within the SMDBS, establishing regular review meetings for support, updates and information sharing, and along with the students, the staff have been committed and enthusiastic about addressing health inequalities, providing planetary health education, and tackling the climate crisis.

Compared to other participating UK Medical Schools, QUB was ranked within the top 10 for their overall grade, scoring well in most categories of the report, as can be seen in **Figure 1**. Whilst this is a very encouraging result, it is

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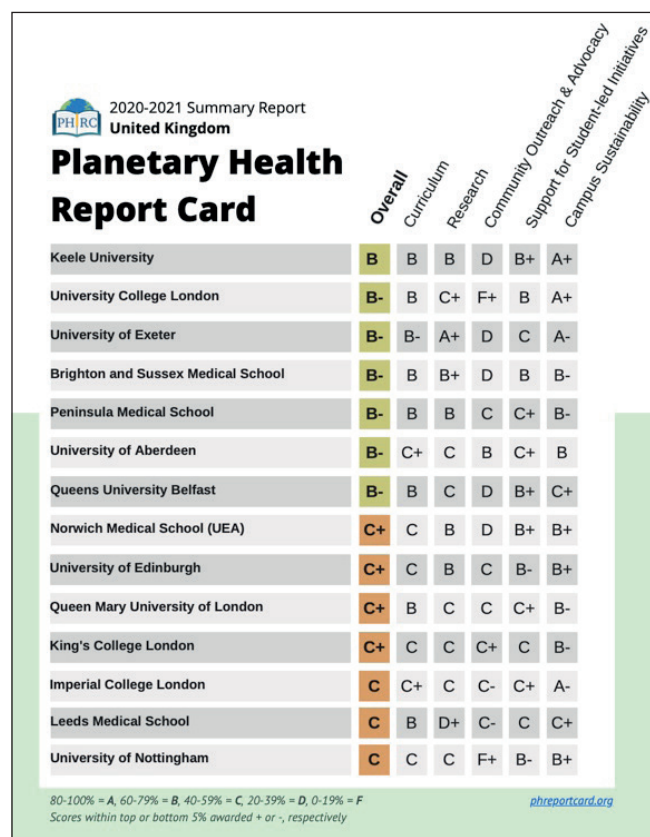
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important to remember that this report card is not a league table, but a needs assessment tool aiming to motivate and facilitate improvement.



**Figure 1:** Extract from Planetary Health Report Card Summary Ranking of UK Medical Schools. Overall, Queen's University Belfast scored a B-, a very encouraging grade at the beginning of this assessment of the university's dedication to planetary health education and activism. Image taken from (2).

## SUMMARY OF FINDINGS

### Curriculum

Planetary health and sustainable healthcare education are evident in the core curriculum - particularly following the introduction of the new medical C25 curriculum in 2020 - and various elective courses. One of the themes of the C25 curriculum, titled 'Global and Population Health' has enabled the longitudinal integration of planetary health subtopics into the core curriculum. This is integrated at a practical level, for example: discussions about a vegan diet due to concerns about the agricultural impact on the environment are included in a case concerning a patient with anaemia. In the comparative PHRC, QUB was highlighted as a good example within the metric of Curriculum due to the presence of this core longitudinal theme and its subtheme entitled "Social Accountability and Sustainable Healthcare" - these subthemes aim to highlight to students that, regardless of their stage of training, they must address the priority of health concerns that mandate wherever they serve. It also

highlights some of the concerns they will face, including the impact of the healthcare system on climate change and the government's commitment to a Net-Zero NHS by 2050. The availability of numerous Student Selected Components (SSCs) also led QUB to be highlighted as an exemplar in the Curriculum metric. SSCs included are "Healthcare Needs Smaller Feet – Sustainable Healthcare: Theory into Practice", "SusQI" and "Global Health: Concepts, Trends and Priorities", all of which involve discussions on sustainability within clinical practice and climate change. The new curriculum was only implemented within the last year (2020-21) and whilst making great strides in planetary health education, there is room for improvement, and in the coming years, planetary health will continue to develop as an integral part of the curriculum.

### Interdisciplinary Research

Currently, planetary health research is not a primary research focus within the medical school, and the university lacks an institute solely dedicated to planetary health research. Although there are no researchers with a primary focus on planetary health within the SMDBS, many researchers at Queen's are working on this, and the establishment of the Centre of Sustainability, Equality and Climate Change proves that planetary health research is becoming an area of expertise and importance within the wider university. Establishment of this centre offers many opportunities for interdisciplinary research and climate action in the coming years. The success of the conference entitled "Healthy People on a Healthy Planet", which involved several staff members from the school and others at QUB has further highlighted the need for environmentalism within medicine and should encourage similar events to take place in the future.

### Community Outreach and Advocacy

Many vital partnerships exist between QUB and the community, such as the Widening Participation Partnership, but few exist with the SMDBS itself, leading to a low score in this metric (**Figure 1**). Numerous community-facing events have been held including a collaboration between Northern Ireland Science Festival in which staff members from the School of Biological Sciences have presented research recognising the global and local impacts of climate change and ideas on how to mitigate these. Numerous working groups within the university strive towards better climate action, such as the QUB Students' Union (QUBSU) Climate Action Group, which communicate regularly with interested students and staff. Following the wider university's example, the medical school should continue to establish its community partnerships and hold events related to planetary health and sustainable healthcare.

### Support for Student-led Planetary Health Initiatives

QUB provides great support for student-led initiatives and scored very highly in this metric compared to other medical schools (Figure 1), but there is plenty of opportunity for greater involvement and funding for planetary health

Summary of 13 Recommendations from PHRC	
<b>Utilising Existing Resources</b>	Appreciate the work that has already been done in advancing planetary health across the world and draw upon resources from other institutions and organisations when developing learning objectives or generating new resources
<b>Learning Objectives</b>	Formalise curricular content on both planetary health and sustainable healthcare with students by developing testable learning objectives; the curricular content should emphasise skill-building as well as clinical knowledge
<b>Curricular Thread</b>	Planetary health and education for sustainable healthcare is relevant to every organ system, and spaced repetition is more effective for learning; therefore these 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 incentivised to integrate the topics into their existing content
<b>Electives and Student Selected Components</b>	In addition to the core curricular content on planetary health and environmental health required for all students, provide opportunities for deeper exploration for interested students, such as electives, community engagement opportunities, and optional reading
<b>Communication in Clinical Scenarios</b>	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 clinical curriculum on taking an environmental history and communicating information on planetary health to patients
<b>Planetary Health in the Global Context</b>	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; in teaching about planetary health and climate change, curriculum should acknowledge how indigenous groups who have long lived in harmony with the planet are disproportionately affected by climate change and many climate solutions require partnerships with indigenous populations
<b>Equity Focus</b>	Ensure that planetary health and environmental health curricular content and auxiliary opportunities centre the disproportionate impact of all health effects on vulnerable populations, such as communities of colour, low- income communities, indigenous populations, and older adults
<b>Support Students</b>	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
<b>Mentorship</b>	Facilitate accessible mentorship of students with an interest in planetary health
<b>Community Engagement</b>	Partner with community organisations, develop community- facing courses on planetary health, and include planetary health in patient educational materials and marketing
<b>Research</b>	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
<b>Interdisciplinary Centre</b>	Institutions should create interdisciplinary centres 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
<b>Sustainability</b>	Divest from fossil fuels, set carbon neutrality goals, and create an environmentally sustainable learning and working environment by setting guidelines for supply procurement, lab spaces, events, and buildings

**Figure 2:** Summary of the 13 recommendations identified by PHRC based on the information provided by the participating medical schools and their individual report cards. These recommendations provide a foundation for medical schools to build upon to further improve planetary health education, research and engagement.



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initiatives. For example, the SMDBS has a well-established and popular funded summer studentship scheme which would be an ideal opportunity for interested students to get involved in research related to either global or planetary health or investigating ways to improve sustainability within healthcare. The Student's Union also provides great support for such initiatives, by funding societies like Students for Global Health, and are partnered with other groups such as Green at Queen's, so students with an interest in this topic have various extracurricular activities to choose from during their time at university.

### Campus Sustainability

Sustainability is an ever-developing area within the university, with the development of numerous sustainability practices on campus, including the establishment of an Office of Sustainability, implementation of sustainable building practices, availability of a range of environmentally friendly transportation options, catering-specific sustainability criteria and a widely used recycling programmes. However, there are still several important steps that QUB needs to take to improve sustainability, including setting and achieving a goal of carbon neutrality, divesting from fossil fuels and increasing utilisation of renewable energy sources.

Alongside the individual goals established by each participating medical school, the PHRC identified 13 key recommendations across all participating institutions, as can be seen in **Figure 2**. These recommendations aim to inspire expansion of medical school's planetary health curriculum, research efforts and engagement with local communities most affected by climate change and environmental injustice. Based on the recommendations outlined by the PHRC, and analysis of Queen's report card, an action plan was created by the Queen's PHRC team and SMDBS faculty.

This action plan identified short-term and long-term goals for both the medical school and wider university to work towards, and encompassed the key recommendations made by the PHRC (**Figure 2**). For example, to address the recommendation entitled curricular thread, which aims to integrate planetary health and sustainable health education into learning as a cross-curricular theme, the school aims to create a toolkit to help learning facilitators explore and evaluate the importance of the "Global" theme within case studies, and many simple suggestions to incorporate planetary health topics into the current curricular content were made. Many resources exist at Queen's highlighting the university's dedication to climate action, although this information is difficult to find, and the development of a planetary health and sustainability website (currently in progress) will provide transparency to the university's commitment to climate action and help develop further resources. Other proposed goals outlined in the action plan included the creation of a sustainability handbook or induction for all new students to help explain what planetary health is and why it is important to consider within healthcare; and to increase community outreach, the group hopes to collaborate with organisations such as the Northern Ireland

Science Festival and the Northern Ireland Confederation for Health and Social Care (NICON). The creation of this report card has been a huge success within the SMDBS, with the findings discussed at the School Management Board Meeting and the Faculty Executive Board Meeting of the Faculty of Medicine, Health & Life Sciences, and has encouraged other schools to share best practice goals and get involved in the initiative. The SMDBS has since signed 'Health Declares: Climate and Ecological Emergency', declaring a climate emergency and committing the school to advocate to protect planetary and human health<sup>(3)</sup>. The student team has engaged with other key stakeholders within Queen's, including the Faculty Engagement Manager, QUB Estates Manager for Environment, the Student's Union and QUBSU Climate Action and Sustainability Group, beginning the process of building and strengthening interdepartmental groups dedicated to climate action, planetary health education and engagement. Going forward into the next academic year, 2021-22, the QUB student team is seeking to welcome more members to build upon the work done so far.

The PHRC is not a standalone metric to compare how well QUB is ranked compared to other universities in terms of its planetary health actions, but instead is a mediating platform to allow the students the opportunity to instigate positive change within the medical school and wider medical community to help change and shape our current healthcare system into a more sustainable one. This project has only further highlighted the importance and dedication required by healthcare professionals to educate, encourage and create positive change in a time of climate crisis.

So, how can you get involved in environmentalism and sustainability? Start small, and momentum will build: begin conversations around the subject, and make small changes where you see them – in your department, in your peer group, and in your own life! No individual can solve the climate crisis, but together, by making small changes, we can make a huge impact.

The full PHRC summary report can be accessed at <https://phreportcard.org> alongside the QUB specific report.

### Acknowledgements

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