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# Planetary Health Report Card (Medicine): *Queen's University Belfast*

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**QUEEN'S  
UNIVERSITY  
BELFAST**

2023-2024 Contributing Team:

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## Summary of Findings

Overall	B
<u>Curriculum</u>	A-
<ul style="list-style-type: none"> <li>Queen’s University Belfast (QUB) focuses on planetary health content in its new curriculum, integrating longitudinally into core lectures, tutorials and case-based discussion.</li> <li><b>Recommendations:</b> Continue to integrate planetary health and climate change into the core curriculum. It should be included in more depth in lectures, tutorials, cases and communication skills. We also recommend the continued development and implementation of projects such as the mandatory SusQI, and the transition to practice week Carbon Literacy session.</li> </ul>	
<u>Interdisciplinary Research</u>	B+
<ul style="list-style-type: none"> <li>QUB has a significant output of planetary health research, facilitated by a number of researchers in the medical school, and also the wider university. A number of these planetary health outputs are facilitated through the Centre of Sustainability, Equality and Climate Action (SECA) who run a website to centralise publications related to planetary health from QUB researchers.</li> <li><b>Recommendations:</b> QUB should continue to support faculty members who have a primary research focus on planetary health, and encourage any interdisciplinary work. SECA should continue to receive support to facilitate publications of planetary health research from QUB. The medical school should begin to develop processes to involve communities disproportionately impacted by climate change when making decisions on research agendas. QUB should also organise more conferences related to planetary health, as it has done in previous years and increase awareness of recordings of past events.</li> </ul>	
<u>Community Outreach and Advocacy</u>	C +
<ul style="list-style-type: none"> <li>QUB as an institution continues to partner with community organisations in their curriculum (through student selected components) and the Centre for Public Health.</li> <li><b>Recommendations:</b> The medical school should continue to partner with multiple community organisations, and should become more involved in the development of community facing events/courses with a focus on planetary health. They should continue work with their affiliated hospital trusts to create appropriate patient information regarding environmental exposure and climate change.</li> </ul>	
<u>Support for Student-Led Initiatives</u>	A
<ul style="list-style-type: none"> <li>QUB generally provides a wide range of support for student-led initiatives, with research opportunities available within the SMDBS, activities with the Students’ Union, and volunteer opportunities with the Sustainability Team. Information on the above initiatives is well-signposted on the Sustainability webpage.</li> <li><b>Recommendations:</b> The University provides more initiatives and support services than the Medical School. We recommend the Medical School dedicate time and resources to increasing volunteer and research opportunities for medical students, through the summer studentship scheme, Faculty events and advertising the support that is available for students to avail of for their initiatives.</li> </ul>	
<u>Campus Sustainability</u>	B-
<ul style="list-style-type: none"> <li>QUB has incorporated sustainable practices through building criteria, transportation, recycling, food and beverage selection, procurement and lab spaces.</li> <li><b>Recommendations:</b> To achieve the self-set 2040 NetZero target the university needs to completely divest from fossil fuel affiliated stocks and begin to improve its utilisation of renewable energy in buildings.</li> </ul>	

# Statement of Purpose

*Planetary health is human health.*

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

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

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

# Definitions & Other Considerations

## Definitions:

- **Planetary Health:** is described by the Planetary Health Alliance as “the health of human civilisation and the state of the natural systems on which it depends.” For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional ‘environmental health’ examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of medical school education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term “planetary health” to satisfy the metric.
- **Sustainable Healthcare:** As defined by the Academy of Royal Colleges, sustainable healthcare involves ensuring the ability to provide good quality care for future generations by balancing the economic, environmental, and social constraints and demands within health care settings. A sustainable healthcare system maintains population health, reduces disease burden and minimises use of healthcare services.
- **Education for Sustainable Healthcare (ESH):** is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:
  1. Describe how the environment and human health interact at different levels.
  2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.
  3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.
- **Medical School vs. Institution:** When “medical school” is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (e.g. undergraduate departments (USA), other related departments (e.g. Public Health, Population Health departments). In contrast, when “institution” is specified in the report card, we are referring to the university more

broadly. Any resource reasonably accessible by medical students, no matter where in the institution the resource comes from or if it is specifically targeted for medical students, can meet this metric.

- **Environmental history (Metric #19 in Curriculum Section):** This is a series of questions providers are taught to ask during medical encounters that elicits patients' exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mould after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution.
- **Elective:** The word "elective" refers to an optional course or lecture series that a medical student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.
- **Clerkship:** This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations or placements.

**Other considerations:**

- If there are more than one "tracks" at your medical school with two different curricula (for example, Harvard Medical School has a Pathways and HST curriculum track), you can choose to fill out a report card for each track, or fill out just one report card and average the scores received by each track in cases where the scores are different (see the 2021 Harvard or Oxford report cards as examples).

**Added to our resources in 2022, 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*

1.1. Did your <u>medical school</u> offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered <b>more than one</b> elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered <b>one</b> elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does <b>not</b> have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a <b>lecture</b> on planetary health.
0	No, the medical school has <b>not</b> offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>Score explanation:</i>            Medical students at QUB choose to study various 'Student Selected Components' (SSCs) in Years 1, 2, 3. Of the SSCs offered, there are currently a number that focus on Education for Sustainable Healthcare or Planetary Health. These are;</p> <ul style="list-style-type: none"> <li>- 'Global Child Health'</li> <li>- 'Medics in Primary Schools'</li> <li>- 'Pandemic Management'</li> </ul> <p>There are plans to initiate a mandatory sustainability quality improvement module, SusQI. SusQI was an SSC that ran the previously with the goal to educate students on the range of factors that can affect healthcare quality and sustainability. It allowed them to consider aspects locally that may need change in order to improve quality or sustainability. The mandatory 5<sup>th</sup> year SusQI will require students to work in small groups on an identified project with an NHS supervisor. The project will run alongside their core learning on placement and will finish with an assessment in the form of a poster presentation. This project was due to begin in the curriculum in September 2024, but has unfortunately been delayed due to logistical issues.</p> <p><i>Recommendation:</i>            Continue to develop and encourage students to undertake planetary health SSCs. Continue work on the SusQI module with the hope of implementing it in the following years.</p>	

*Curriculum: Health Effects of Climate Change*

1.2. Does your <u>medical school</u> curriculum address the relationship between extreme heat, health risks, and climate change?	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation:</i></p> <p>QUB is transitioning from the old curriculum C19 and the new model C25. The C25 curriculum is based around 4 GCAT themes (Global and Population Health, Clinical Science and Practice, Achieving Good Medical Practice, and Teamwork for Safe Care) which are integrated throughout the degree. Teaching is linked together with case based learning (CBL) at its core. The past few years there has been a large change in the format of teaching due to this transition to the C25 curriculum as it is developed and implemented.</p> <p>In the new C25 curriculum the lecture “Climate, Health and Sustainable Healthcare” delivered in second year contains infographics that show increasing temperatures and extreme heat due to climate change have both direct and indirect effects on the health of the population. It shows that extreme heat can cause heat related illness and death, and cardiovascular failure.</p> <p>The tutorial “Social Determinants of Health” describes extreme heat as a consequence of climate change and discusses its link with health issues such as heat related deaths.</p> <p><i>Recommendation:</i> Continue to integrate this topic longitudinally into the curriculum.</p>	

1.3. Does your <u>medical school</u> curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation:</i></p> <p>In the Year 2 lecture “Climate, Health and Sustainable Healthcare” there is discussion about the effect of climate change on the health of the general population. Infographics show that extreme weather events such as storms, drought and flooding have a direct impact on the health of individuals. This topic was mentioned numerous times throughout the slides, along with many other examples of how climate change impacts health, but was not the primary focus of the lecture.</p>	

The tutorial “Social Determinants of Health” introduces the idea of climate change as one social determinant of health. It discusses severe weather and extreme weather events as causes of increased injuries and fatalities as well as the long term mental health impacts.

*Recommendation:*

*This topic should be integrated longitudinally into the curriculum. There is scope for this to be included in other public health lectures, or in case studies included in CBL or tutorials.*

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

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

*Score explanation:*

In the lecture “Climate, Health and Sustainable Healthcare” it is stated that one of the indirect effects of climate change is a change in the spread of infectious and vector-borne diseases. An infographic on another slide adds to the previous statement, linking changing temperature with changing vector ecology and then furthermore listing specific examples of changes in vectors.

In the Year 1 Case 2 Overview lecture, the UN’s Sustainable Healthcare Development Goals are referenced multiple times and the relationship between the increased spread of infectious diseases and climate change is discussed. The lecture “Water and Sanitation” discusses this also.

The tutorial “Social Determinants of Health” addresses the impact of climate change on infectious disease patterns stating rising temperatures are linked to increased replication and spread of infections and vector borne diseases. Salmonella and Lyme disease are used as examples.

Within the “Pandemic Management” SSC offered to first years there is a session discussing how environmental factors and climate change impact infectious diseases.

*Recommendation:*

*Continue to integrate this topic longitudinally into the curriculum.*

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

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



*Score Explanation:*

In the C25 curriculum, the health effects of climate change on the respiratory system are emphasised at many points throughout the course in a longitudinal nature: both through case-based learning and tutorials.

In Year 1 Cases 6 and 7 are based on respiratory issues, and there are opportunities for students to research how air pollution would affect the chances of developing these diseases. Case 6 discusses asthma and respiratory disease and specifically includes the learning outcome “Describe global and local burden of respiratory diseases, and related risk factors including indoor and outdoor air pollution, and smoking”.

The lecture “Climate, Health and Sustainable Healthcare” addresses multiple health effects of climate change, including respiratory effects. Infographics and written slides demonstrate an increase in respiratory illness due to ground level ozone increase, pollution and pollen allergenicity. In addition, an example case is used of an 18-year-old with asthma and how their management could be altered to reduce carbon intensity.

The tutorial “Social Determinants of Health” explicitly states that depletion of air quality due to increased ground ozone levels is associated with increased morbidity and mortality by cause of respiratory illness. It also goes on to discuss changes in pollen levels and their effects on incidence of allergen sensitivities and asthma outbreaks.

*Recommendation:*

*Continue to integrate this topic longitudinally into the curriculum*

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

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

*Score explanation:*

In a Year 1 Lecture titled “The Social Determinants of Health” the UN’s Sustainability goals are mentioned but the direct impact of climate change on cardiovascular health is not explicitly stated. In the tutorial of the same title, it is demonstrated that climate change is linked to cardiovascular health by heat-related deaths.

The Year 2 lecture “Climate, Health and Sustainable Healthcare” addresses multiple health effects of climate change, including cardiovascular effects. The lecture contains infographics relating an increase in cardiovascular health problems to climate change through an increase in extreme heat and air pollution. It also demonstrates how methods to reduce/prevent the climate change such as active travel, eating less meat and improving home insulation are also beneficial for reducing incidence of cardiovascular disease.

*Recommendation:*

*Continue to integrate this topic longitudinally into the curriculum*

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

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

*Score explanation:*

In Year 1 of C25 curriculum, there is a lecture and a tutorial both entitled “*Social Determinants of Health*” which discusses the importance of green spaces to improve physical and psychological health. However, the focus is on the benefit of the environment on people's health and not specifically how it may be affected by environmental degradation. The tutorial highlights more explicitly the link between climate change and poor mental health. There is discussion of the climate crisis as a trigger for mental illnesses such as depression and anxiety, and as a cause of displacement, financial stress and increase in violence which all can contribute to mental ill health.

The lecture “Climate, Health and Sustainable Healthcare” discusses green prescribing, and the importance of nature as prevention and treatment. However, again the focus is on the benefit of green spaces on people’s health, not on how environmental degradation affects health.

*Recommendations:*

*This topic should continue to be integrated longitudinally. However, there should be more focus shifted onto the negative effect of environmental degradation on mental health.*

**1.8. 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 <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.

*Score explanation:*

This has been incorporated longitudinally in the C25 curriculum, in tutorials and case-based learning (CBL). Social determinants of health are discussed as learning intentions in CBL cases, meaning students are encouraged to think about the multitude of factors that may affect a person’s health, including whether or not they have access to healthy food and safe water.

In Year 1, Case 3 is themed around dietary anaemia with the learning intention “Consider factors influencing dietary choice, including availability, sustainability and cultural aspects”. This allows students to explore this idea in more depth.

Water and food security is discussed in Year 2 of the C25 curriculum in public health lectures “Climate, Health and Sustainable Healthcare” and “Water Sanitation and Hygiene”. The former discusses the

impact of food and water supply on malnutrition and diarrheal disease, the latter discusses the importance of water security to health and in relation to diarrheal disease.

The tutorial “Social Determinants of Health” also mentions rising water temperatures and contaminated water leading to increased incidence of food borne diseases. This tutorial introduces the idea of health being affected by many different factors, including their access to safe food and water as stated above.

*Recommendation:*

*Continue to integrate this topic longitudinally into the curriculum.*

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

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

*Score explanation:*

Year 2 students receive a lecture on “Climate, Health, and Sustainable Healthcare”. The lecture includes discussion of who is at risk of climate change related health effects. This includes slide that list the following groups of people who are most at risk:

- Those in poverty
- Women, children, and elderly
- Outdoor workers
- Those with chronic health conditions
- Those in megacities, small islands, coastal, mountainous or polar regions
- Those in countries with weak healthcare systems
- People who travel frequently

The same lecture also discusses MAPA (most affected people and areas) in relation to climate change. Discussion of MAPA included which groups of people are more likely to be affected by climate change such as marginalised groups.

The Year 1 lecture on the “Social Determinants of Health” discusses various factors that influence one’s health; one of which is the environment. The lecture refers to the Black Report which states that there is a class gradient between those with chronic diseases especially diseases of the respiratory system.

This lecture also discusses the life course theory which refers to the importance of early intervention in overall health in a person’s life. One of the factors that contribute to the life course theory is sustainable communities and places, highlighting the importance of environmental conditions on a person’s development.

*Recommendation:*

*Continue to integrate this topic longitudinally into the curriculum*

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

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

*Score explanation:*

Year 2 students receive a lecture on “Climate, Health, and Sustainable Healthcare” which includes a slide that discusses the global distribution of carbon emissions (billions of tons) compared to the mortality related to climate change (per million population). The discussion emphasises the inequality in the magnitude of global emissions which are centred around western populations and its health effects which is mainly centred 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 info-graphic stating how historically marginalised and colonized populations are largely exploited with little preparedness for climate disasters. Environmental activists from marginalised communities who speak up are often not safe as well.

The Year 1 lecture on the “Social Determinants of Health” also discusses various types of deprivation and poverty, one of which is known as area deprivation. This concept involves an increased potential for health risks in areas with disinvestment. The accompanying tutorial also encourages students to consider the importance of green and blue spaces in overall health especially in relation to respiratory health. However the effect of climate change has not been directly mentioned.

*Recommendation:*

*Continue to integrate this topic longitudinally in the core curriculum. Consider integrating aspects of this metric into the “In the footsteps of Dr. Livingstone” for students who are considering doing an elective in Africa.*

***Curriculum: 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)?**

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

*Score explanation:*

The Year 4 lecture on “Preconception Health” briefly mentions discussing occupational risks and exposures with individuals planning to have children. The importance of occupational history is also brought up in the Year 4 lecture “Antenatal care/screening/risk assessment”.

Case 14 in the Year 2 case based learning curriculum relates to a couple with infertility. A factor that students are encouraged to research is the effects of husband’s occupation in a chemical factory on his reproductive health. One of the discussed management plans for the husband presented in the case overview lecture also included discussing changes in his occupation to prevent further exposure. An essential learning outcome students are expected to take away from the case is “consider the social and environmental factors which impact fertility” allowing students to conduct their own research into environmental toxins and its effect on reproductive health.

The Year 2 lecture on “Reproduction and Health” contains a slide outlining various factors to consider when improving the health outcomes for mothers and babies. This involves removing risk factors such as smoking and wider determinants such as improving the overall environment separate from improving living conditions.

The Year 4 lecture on “Causes, investigations and treatment of the infertile male” introduces the concepts of estrogens and phytoestrogens in heavily processed foods and plastics used to contain foods and their contribution to male infertility. More discussion was made on how testicular dysgenesis occurs due to various environmental factors. The same lecture contains a diagram of a pregnant women outlining common environmental chemicals and their routes of exposure including: Polycyclic aromatic hydrocarbons (PAHs), Polybrominated diphenyl ethers (PBDEs), Heavy Metals, Pesticides, and other lipophilic chemicals such as DDT. However this lecture is supplementary learning on Queen's med portal and is not delivered during the Year 4 pillar week for Reproductive Health.

*Recommendation:*

*Continue to provide in-depth information of specific environmental causes of reproductive pathology within lectures and consider introducing a stand-alone lecture on environmental toxins in the year 4 reproductive health unit. The year 4 lecture on “Preconception Health” would be a good area to integrate examples of teratogenic risks that may occur in certain occupational environments.*

**1.12. 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 <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.

*Score Explanation:*

The Year 1 lecture “Social Determinants of Health” contains an onion diagram that stratifies the various factors involved in individual health with environmental conditions being considered a macro factor that influences all other aspects of health. The lecture also notes the existence of upstream factors, one of which is the improvement of community conditions through laws, policies and regulations in order to create downstream improvements on patient health.

In the Year 2 lecture “Water, Sanitation, and Hygiene”, discussion around water shortages in Northern Ireland have risen due to increased temperatures and more people staying indoors in the summer months. This relates to climate change and its effects on not only water usage, but the reaction of the water providers to increased water usage. The same lecture also stresses the importance of a “One Health” approach that intersects Global contexts, Economics, and Culture with our local ecosystems, wildlife, and community. The importance of this approach emphasises considering the relationship between global causes and its effects on the local community as well as the downstream effects of poor sanitation practices. This lecture was given during a period in which one of the largest lakes in Northern Ireland, Lough Naegh was undergoing a severe algal bloom. Connections to this event were briefly made in relation to water sanitation and environmental health.

The Year 2 lecture on “Climate, Health and Sustainable Healthcare” also introduces the local effects of climate change by discussing the increase in severity of local storms and temperature fluctuations experienced in Northern Ireland over the past few years.

Students in the end of their second year of medicine undergo a [Carbon Literacy](#) training session during their transition to practice week. This program began last year and is hoped to continue in 2024 as well. This session is made in collaboration with the organisation “Keep Northern Ireland Beautiful” and aims to get students to consider the effects of climate change and environmental damage on Northern Ireland itself. Effort is being made to integrate the effect of the health care system on our carbon footprint.

*Recommendation:*

*Continue to integrate this metric longitudinally into the curriculum.*

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

3	Indigenous knowledge and value systems are <b>integrated throughout</b> the medical school’s planetary health education
2	Indigenous knowledge and value systems as essential components of planetary health solutions are included <b>briefly</b> in the core curriculum.
1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.

*Score Explanation:*

This metric is not covered in the curriculum

*Recommendation:*

*We understand and acknowledge the disproportionate impact of climate change on indigenous communities who are not only marginalized but also rely heavily on the environment for their day to day needs. Their experiences facing indigenous people and the burden of climate change is important to understand however, these communities are not present in the UK and Ireland. Instead effort should be made to speak on marginalized demographics that are prevalent in Northern Ireland such as: Irish travelling community, homeless people, refugees, and asylum seekers.*

**1.14. Does your medical school curriculum address the outsized impact of anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of colour, children, homeless populations, Indigenous populations, and older adults?**

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

*Score explanation:*

The Year 1 lecture “Climate Health and Sustainable Healthcare” introduces the idea of Most Affected People and Places (MAPA), so discusses the outsized impact of the effect of climate change on marginalized populations. However, this lecture does not discuss explicitly the effects of anthropogenic toxins.

The Year 1 lecture “Social determinants of health” and its accompanying tutorial highlight environmental upstream factors such as pollution and its downstream effects. Students were provided a case study in which factors contributing to an elderly patient’s poor physical health could be discussed. The lack of green spaces and her living conditions in the middle of a city were important factors to consider.

Case 7 in the Year 1 curriculum is centred around a retired factory worker whose husband previously passed away from asbestosis due to his time working in a shipyard. She is currently experiencing various respiratory symptoms, which leads students to consider the effect of primary and secondary asbestos exposure on patient health. It also allows them to investigate the effects locally as many affected by asbestosis in Belfast were tradespeople.

*Recommendation:*

*The lecture on “Climate, Health, and Sustainable Healthcare” should provide an opportunity to further explore the effects of environmental toxins in the context of disproportionate effects on specific populations. The lecture already discusses “Most Affected People and Areas” (MAPA), which is a good starting point for such discussion.*

***Curriculum: Sustainability***

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

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

*Score Explanation:*

In Case 3 Year 1 students are presented with a case involving a person who is following a vegan diet and is experiencing nutritional deficiencies as a result. Students were encouraged to discuss how certain diets may result in poor nutritional intake. Additionally, one of the essential learning outcomes students were expected to take away from the case included a consideration of the factors that underlie a person's choice to be vegan including culture, availability, and sustainability. This learning outcome provides students in their CBL cases the opportunity to research the global footprint caused by factory farming and the carbon emissions caused by animal husbandry compared to agriculture. However, this is not mandatory.

The Year 1 lecture "Nutrition" features discussion on the "Eatwell Guide" which was used by the UK government to promote healthy eating and avoiding excess consumption of unhealthy foods and increasing grain and vegetable intake. Following this diet was said to be not only good for one's health, but also the environment. The lecture provides statistics showing how adherence to the Eatwell Guide was associated with a reduction of CO<sub>2</sub> emissions by 1.6kg per day. The lecture includes discussion of plant based diets such as veganism and the importance of effective dietary planning to avoid nutritional deficiencies. When discussing veganism or other plant based diets in the lecture, no discussion occurred on the global benefits of a plant based diet.

In the fourth year lecture "Nutrition" in the Aging and Health module, there is discussion of Fortimel, a plant-based alternative to the Forticeps nutritional supplement.

*Recommendations:*

*Continue to integrate this topic longitudinally in the curriculum within other lectures outside of conversations around nutritional deficiencies. Consider discussing the sustainability-related benefits of a plant based diet in the Year 1 lecture on "Nutrition".*

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

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

*Score explanation:*

The second year lecture, "Climate, Health and Sustainable Healthcare," takes an in depth look at the carbon footprint left by healthcare systems on an international and individual level. For example, infographics show how globally healthcare is responsible for 2Gt CO<sub>2</sub> emissions and that the CO<sub>2</sub> emissions of 1 hour of surgery using desflurane are equivalent to a car driving for 200-400 km. The lecture also looks at the impact the healthcare's carbon footprint has on climate change and the subsequent damaging effects on population health, from the direct such as respiratory conditions and increase in natural disasters to the indirect including an increase in transmission of vector borne diseases and demographic disruption. Furthermore there are strategies included to mitigate and adapt to the effects of a changing climate and how the healthcare systems such as the NHS can cut their carbon footprints with low CO<sub>2</sub> alternatives and preventative measures.

Further discussion on how healthcare systems can lighten their carbon footprint can be found in the "SusQI," tutorial in second year. It has the learning outcome, "describe what a carbon footprint is and consider the carbon footprint of the healthcare sector. The tutorial highlights how healthcare globally contributes to >5% of greenhouse gas emissions and demonstrates the link between quality



improvement in healthcare and its carbon footprint. Furthermore students are encouraged to think about their own carbon footprint and to find ways of reducing their own carbon footprint through using the PDSA cycle.

The topic of the impact of healthcare’s carbon footprint is integrated longitudinally, with the Year 3 case based learning having a case in which there is a learning outcome to, “Consider the carbon footprint of healthcare, particularly regarding alternative gases and waste.”, although this is not an essential learning outcome.

*Recommendation:*

*To continue to integrate the topic longitudinally as part of the G theme as the C25 curriculum continues to be rolled out.*

**1.17. Does your medical school curriculum cover these components of sustainable clinical practice in the core curriculum? (points for each)**

2	The health <b>and</b> environmental <b>co-benefits</b> of <b>avoiding</b> over-medicalisation, over-investigation and/or over-treatment
2	The environmental impact of <b>pharmaceuticals</b> and over-prescribing as a cause of climate health harm. Alternatively teaching on <b>deprescribing</b> where possible and its environmental and health co-benefits would fulfil this metric.
1	The health <b>and</b> environmental <b>co-benefits</b> of <b>non-pharmaceutical management</b> of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes. This is commonly known as social prescribing in the UK.
1	Environmental impact of <b>surgical</b> healthcare on planetary health and the climate crisis, and how can it be mitigated
1	The impact of <b>anaesthetic</b> gases on the healthcare carbon footprint and ways to reduce anaesthesia’s environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions
1	The impact of <b>inhalers</b> on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	<b>Waste production</b> within healthcare <b>clinics</b> and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)
	<p><i>Score explanation:</i></p> <p>Medicalisation and its effect on the health of patients is covered well in the first year lecture, “Introduction to Health and Social Determinants of Health,” and a learning outcome for CBL, comparing the biopsychosocial model to the purely biomedical model of healthcare and contrasting the highly medicalised birth process in Northern Ireland with the global south. Whilst the lecture goes into great depth regarding the health impacts it fails to mention any environmental co-benefits to avoiding over- medicalisation/investigation.</p> <p>The first year, “Social Determinants of Health,” lecture and, “Climate, Health and Sustainable Healthcare,” and “Water, Sanitation and Hygiene,” that second year students receive cover most</p>

of these components of sustainable practice. The “SusQI,” tutorial received by second years also assesses the carbon footprint of the healthcare system.

1. “Climate, Health and Sustainable Healthcare,” contains infographics highlighting the contribution of medicines as a scope 3 indirect contributor to climate change. The breakdown of healthcare’s carbon footprint attributes 12.1% to pharmaceuticals and introduces deprescribing as a way of “Lean service use,” to decrease emissions and improve health in an example of a type 2 diabetic patient.
2. “Climate, Health and Sustainable Healthcare,” and “Social determinants of Health,” both tackle social prescribing as a way of improving health, with the social determinants of individuals’ health being tied to their treatment. For example the access of people to green spaces, leisure centres, their accommodation and heating in relation to respiratory illnesses. The example of the type 2 diabetic patient is used again in regards to social prescribing, with education on weight management and the importance of an active lifestyle with a low fat/sugar diet.
3. “Climate, Health and Sustainable Healthcare,” presents infographics discussing the carbon footprint of anaesthetic drugs used in surgery such as Desflurane, one hour of usage being equivalent in CO2 emissions to 200-400 km of car travel. Furthermore it mentions how lower carbon alternatives can be used to reduce the carbon footprint and is built upon in the “SusQI,” tutorial. The third year case based learning desirable learning objective “Consider the carbon footprint of healthcare, particularly regarding alternative gases and waste,” allows students to investigate the impacts and alternatives to currently used anaesthetic gases.
4. “Climate, Health and Sustainable Healthcare,” supported by the “SusQI,” tutorial evaluates the impact of ventolin evohaler (pressurised metered dose) vs accuhaler (dry powdered) with studies showing the evohaler being equivalent in carbon emissions to a car driving 175 miles to just 4 miles with an accuhaler. Including information surrounding updated NICE guidelines that recommend the use of low carbon inhalers, further discussed in an example of how a patient with asthma can be better treated with intent to reduce carbon emissions.
5. The “Climate, Health and Sustainable Healthcare,” lecture contains information on medical plastic waste, with 2% of global plastic waste being medical with the problem worsening with a 6.1% rise year on year. While the “Water, Sanitation and Hygiene,” lecture discusses the extent of the spread of microplastics in the environment, partly as a result of healthcare.

*Recommendation:*

*While demedicalisation is covered well in the “Social Determinants of Health,” lecture in Year 1 and in CBL, we recommend integrating the environmental co-benefits. All of these topics could be further integrated longitudinally and are small, manageable additions. Deprescribing and over investigation could be better integrated, and could include social prescribing alongside pharmacology lectures.*

**Curriculum: 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?**

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 <b>elective</b> coursework.
0	No, there are <b>not</b> strategies introduced for having conversations with patients about climate change
<p><i>Score explanation:</i> At the present there is no evidence for this metric however upon reaching out to the clinical communication skills team it will be discussed during their content review for the academic year 24/25.</p> <p><i>Recommendation:</i> <i>Continue with the plan to discuss in content review. There is scope to include this content in Comms skills and CSEC, either through adapting vignettes or new tutorials.</i></p>	

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

2	Yes, the <b>core</b> curriculum includes strategies for taking an environmental history.
1	Only <b>elective</b> coursework includes strategies for taking an environmental history.
0	No, the curriculum does <b>not</b> include strategies for taking an environmental history.
<p><i>Score explanation:</i> Clinical Skills incorporates a number of different strategies for taking an environmental history as part of the history taking process, this is well integrated longitudinally from first to fifth year. It is delivered through in person sessions for face to face experience and also can be accessed online through the Medical Education Portal. Environmental history taking strategies are especially prevalent in respiratory history taking, including occupation, proximity to roads and accommodation.</p> <p>Furthermore the year one tutorial “Social Determinants of Health,” and lecture “Introduction to Health and Social Determinants of health” introduces first years to taking an environmental history from the very beginning of their medical journey. Through vignettes the tutorial improves students’ observational skills regarding the different aspects of exposure history, including accommodation, occupation and migration. Students also actively participated in the tutorial by creating posters to highlight the impact of climate change on the environment and the subsequent effects on health and how this could present in an environmental history.</p> <p><i>Recommendation:</i> <i>The importance of a social history is well integrated longitudinally throughout clinical skills however some aspects could be better emphasised. While employment is well covered through the lens of asbestosis - with the context of the shipyard industry of Belfast, other aspects such as access to greenspace and heat sources could be expanded upon.</i></p>	

***Curriculum: 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?	
4	Yes, the medical school is currently in the process of making <b>major</b> improvements to ESH/planetary health education.
2	Yes, the medical school is currently in the process of making <b>minor</b> improvements to ESH/planetary health education.
0	No, there are <b>no</b> improvements to planetary health education in progress.
<p><i>Score explanation:</i>            As the C25 curriculum 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.”</p> <p>Furthermore, as part of reflective practice for third year medics, this year saw the implementation of a mandatory sustainable healthcare themed reflection in order to better the understanding of students regarding ESH topics and the role they play in making healthcare more sustainable.</p> <p>Carbon literacy training has been implemented during transition to practice week, with a proposal to better integrate carbon literacy training and healthcare by asking clinicians with a special interest in sustainability or quality improvement to help with the training to facilitate discussion with students.</p> <p><i>Recommendation:</i>            We look forward to the continued rollout of the C25 curriculum into 5th year and to see the longitudinal integration of the G theme throughout the course and the further integration of the sustainable development goals. Also that as C25 is expanded we look forward to the previous years’ curricula being reviewed and evaluated to improve their delivery of ESH topics with help from our recommendations. The improvement of the reflective practice through adding the sustainable healthcare reflection has seen positive results with “excellent,” entries recorded so far. The implementation of the carbon literacy training was well received by the students who took part though was hindered by poor attendance during the transition to practice week and stands to be improved.</p>	

1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> curriculum?	
6	Planetary health/ESH topics are <b>well integrated</b> into the core medical school curriculum.
4	<b>Some</b> 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 <b>(a) standalone lecture(s)</b> .
0	There is <b>minimal/no</b> education for sustainable healthcare.
<p><i>Score explanation:</i>            With the continued development of the new C25 curriculum, ESH/Planetary health topics are well integrated longitudinally as core components of “Global and Population Health,” one of the four main GCAT themes that are woven through the curriculum across years of study. The G theme itself contains sub-themes relating to ESH including: Global Health, Sustainable Healthcare and Social</p>	

Accountability. GCAT themes are “vertically integrated,” throughout the course and are a cornerstone of learning outcomes for case based learning, ensuring that students keep the theme of Global and Population health in mind throughout their studies, rather than simply a standalone lecture or short series of lectures.

The integration of GCAT themes within case based learning however is not always fairly weighted on a case by case basis, some may have a global and population health learning outcome as desirable such as, “Consider the carbon footprint of healthcare, particularly regarding alternative gases and waste,” in year three, whereas other cases may simply be special interest. Fewer Global and Population Health themed learning outcomes are deemed “essential,” compared to the other main themes, resulting in many students missing out on sustainable healthcare outcomes in order to cover the essential learning objectives.

Additionally, the Global and Population Health theme is woven through several standalone lectures and tutorials throughout the years, this works well as it ensures all students are taught the relevant sustainable healthcare learning objectives, unlike the varied nature of case based learning. In first year, the lecture “Introduction to Health and Social Determinants of Health” and subsequent tutorial “Social Determinants of Health” in the introductory Fundamentals module provide a cornerstone for students’ knowledge of the G theme. The tutorial includes the learning objectives, “Discuss social determinants/upstream factors effect on health,” and with the focus to, “Discuss Climate Change as a Social Determinant of Health.” ESH themed topics are further built upon throughout the years, for example the “Climate, Health and Sustainable Healthcare,” lecture in second year.

Recommendation:

*As we enter 2025 and see the full rollout of the C25 curriculum into 5th year we hope that planetary health will continue to be integrated as well as it has been throughout the other years. Furthermore to continue to review and evaluate previous years in order to improve the understanding of ESH topics. The G theme of global and population health takes into account far more than just planetary health within the 6 different sub-themes, we recommend to continue to balance these topics in implementing them to the curriculum for example in case based learning. Although we acknowledge it can be difficult to tie planetary health into each case, more work can be done to create desirable ESH learning outcomes rather than special interest ones which are often missed by CBL groups.*

**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?**

1	<b>Yes, the <u>medical school</u></b> has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare
0	<b>No, the <u>medical school</u></b> does <b>not</b> have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare.

*Score explanation: n*

The medical school has the role of “G Theme” lead and deputy-lead for the new C25 curriculum theme of Global and Population Health, encompassing sub themes including “Social accountability and sustainable healthcare.” These roles are responsible for revising the new curriculum and integrating sustainable healthcare and the sustainable development goals longitudinally. The roles have eagerly engaged with the students of the sustainable healthcare development group and have helped us in improving the curriculum by incorporating suggestions. At present the role of lead is unfilled and waiting to be appointed, Dr Vivienne Crawford is the current deputy lead and has met with the

Sustainable Healthcare Development Group (SDHG), giving us valuable updates for the PHRC and the opportunity to give recommendations.

Furthermore, faculty meet with the Sustainable Healthcare Development Group on a regular basis, part of this work is to implement changes to the curriculum.

Recommendation:

*We hope that the role of academic lead for the G theme will be filled as soon as possible and would like to thank Dr Crawford for her work and dedication for the incorporation of sustainability into the curriculum.*

<b>Section Total (58 out of 72)</b>	<b>80.56%</b>
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*Are there additional curriculum resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.*

# Interdisciplinary Research

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

*All researchers named have consented to be included in this report.*

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <b>medical school</b> ?	
3	Yes, there are faculty members at the <b>medical school</b> who have a <b>primary</b> research focus in planetary health <b>or</b> healthcare sustainability.
2	Yes, there are individual faculty members at the <b>medical school</b> who are conducting research <b>related</b> 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 <b>institution</b> , but none associated with the medical school.
0	No, there are <b>no</b> planetary health and/or healthcare sustainability researchers at the <b>institution</b> or <b>medical school</b> at this time.

*Score explanation:*

Research outputs at QUB can be searched through the [PURE](#) online portal.

By searching the term “planetary health” in the PURE search engine, and refining results to the “School of Medicine, Dentistry and Biomedical Science” (QUBs medical school is within this school), three researchers (Dr Leandro Garcia, Professor Ruth Hunter, and Dr Ione Avila-Palencia) have been identified who directly engaged in planetary health research and healthcare sustainability in the QUB medical school. These researchers are also part of QUB’s Centre for Public Health. These researchers have also collaborated with other research staff in the QUB medical school, including Professor Frank Kee and Professor Bernadette McGuinness, whose work also has a planetary health research and healthcare sustainability focus.

[Dr Leandro Garcia](#) is the principal investigator (also working with Professor Ruth Hunter) on an ongoing research output which was also ongoing at the time of last year’s PHRC report.

- The project is named “[A vision of healthy urban design for NCD prevention](#)”. It is currently aiming to run from 2020 to 2024, and is funded by UKRI and NHMRC and is also a collaboration with the University of Melbourne. The project is focused on researching how non-communicable diseases (NCD) and urban designs, health inequalities are linked.

[Professor Ruth Hunter](#) has research outputs focused on planetary and population health. They have various research outputs with a planetary health focus including;

[“Advancing urban green and blue space contributions to public health”](#) which has contributed research towards the UNs 3<sup>rd</sup> sustainable development goal on “good health and well-being”

Professor Ruth Hunter is also a director of the [GroundsWell team](#) who are researching and improving green and blue space provision in urban areas. The research, included in last year's PHRC report, is a partnership between QUB, the University of Edinburgh, and the University of Liverpool. The research group has also run townhall meetings in Belfast focusing on the climate crisis.

Professor Ruth Hunter and Dr Leandro Garcia have both collaborated on a recent paper named [“What the physical activity community can do for climate action and planetary health?”](#) which focuses on how the promotion of physical activity can support climate action targets and commitments.

They have also collaborated on the research paper named [“Understanding the complex systems of climate change and NCDs: A Causal Loop Diagram”](#) This output has contributed research towards the UNs 3<sup>rd</sup> and 13<sup>th</sup> sustainable development goals on “good health and well-being” and “climate action”.

Professor Ruth Hunter, Dr Leandro Garcia, Dr Ione Avila-Palencia, Professor Frank Kee, and Professor Bernadette McGuinness (all part of the School of Medicine, Dentistry, and Biomedical Science) are all collaborators on the Supportive Environments for Physical and Social Activity, Health Aging and Cognitive Health project ([SPACE](#)). SPACE research focuses on links between urban environmental factors and cognitive health, including if urban living can be linked to dementia. The project also works within the UNs sustainable development goals (3) Good Health and Wellbeing and (11) Sustainable Cities and Communities.

Professor Ruth Hunter, Dr Leandro Garcia, and Professor Frank Kee have also been collaborating with other QUB researchers since 2020 on a project named [“Developing system-oriented interventions to reduce car dependency for improved population health in Belfast”](#). A published study protocol from 2021 highlights that the project's aims are to understand what determines car use in Belfast and to see if this can be changed. This project was included in last year's PHRC report. The main aim of this study was to reduce car use from a population health perspective in the Belfast City Region.

[Dr Ione Avila-Palencia](#) also has produced many research outputs with a planetary health focus.

This includes research papers from the previously mentioned SPACE project, including [“Mapping the complex systems that connects the urban environment to cognitive decline in adults aged 50 years and older: a group model building study”](#)

Dr Ione Avila-Palencia and Professor Ruth Hunter have also collaborated on research including the paper [“Healthy active ageing can help urban populations be more resilient to changing environments”](#)

Professor Jayne Woodside, who is also part of the School of Medicine, Dentistry, and Biomedical science, and also the Centre for Public Health, also has a planetary health and sustainability focus from the perspective of nutrition, with [research including the promotion of sustainable, healthy diets.](#)

*Recommendation:*

*The university should continue to support researchers undertaking projects with a focus in planetary health or healthcare sustainability.*

**2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?**



3	There is <b>at least one</b> dedicated department or institute for interdisciplinary planetary health research.
2	There is <b>not currently</b> a department or institute for interdisciplinary planetary health research, but there are <b>plans</b> to open one in the next 3 years.
1	There is an <b>Occupational and Environmental Health department</b> , but no interdisciplinary department or institute for planetary health research.
0	There is <b>no</b> dedicated department or institute.

*Score explanation:*

As mentioned in last year's report, QUB has a dedicated centre for interdisciplinary planetary health research. The [Centre of Sustainability, Equality and Climate Action \(SECA\)](#) works to facilitate and produce new research across QUB related to environmental and social issues.

SECA was previously known as the [Centre for Study of Risk & Inequality \(CSRI\)](#). CSRI Research outputs can be found [here](#).

SECA's (and previously CSRI) research objectives are centred around specific pillars including sustainability, equality, and climate action, and their website specifically mentions the goal of interdisciplinary work towards the UN's 17 sustainable development goals. [Recent outputs from SECA](#) include a report on a conference run by QUB and University of Galway on 3rd November 2023 named "What should Higher Education Institutions do about the Planetary Crisis?" Within this report is a section focusing on how research from universities in Northern Ireland and the Republic of Ireland should;

- 1) Be for public benefit and reflect how various communities are being impacted by climate change,
- 2) Promote collaboration between different researchers / university departments,
- 3) Explore changing changes to funding options to reduce reliance on corporations who may conflict with planetary health research aims,
- 4) Work to close the loop between researchers and universities by creating / improving teams focused on facilitating interdisciplinary planetary research.

Overall, This report reflects how SECA is facilitating interdisciplinary planetary research by trying to promote universities to respond to climate change

*Recommendation:*

*Continuing support for SECA should be a priority for QUB as this will allow for the development of research focused at addressing socio-ecological challenges.*

**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?**

3	Yes, there is a process in which community members impacted by climate and environmental injustice have <b>decision-making power</b> in the climate + environmental research agenda.
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2	Yes, there is a process in which community members impacted by climate and environmental injustice <b>advise</b> the climate + environmental research agenda.
1	<b>No</b> , but there are <b>current efforts</b> to establish a process for community members to advise or make decisions on the research agenda.
0	There is <b>no</b> process, and <b>no</b> efforts to create such a process.

*Score explanation:*

As mentioned in metric 2.2, SECA has produced a report from the conference named [“What should Higher Education Institutions do about the Planetary Crisis?”](#).

. In this report are sections on “research as/for public good” and “research culture and academic practice”. These sections encourage making planetary health research processes more open and “democratic” with collaboration encouraged from different communities (including refugee and immigrant communities) who are disproportionately impacted by climate change. While this report and conference has encouraged work towards including disproportionately affected communities, this has not filtered down to the level of the QUB medical school yet. Future work from this conference will hopefully improve QUBs medical schools performance in the 2.3 metric.

As discussed in previous QUB PHRC report cards, there are existing procedures that require the impact of research on the public and/or patients to be disclosed. This is part of the application process for researchers to receive grants from the UKRI. This is referred to as the [Personal and Public Involvement \(PPI\)](#). However, there is no requirement to discuss how communities may be disproportionately impacted by climate change.

*Recommendation:*

*It should be a priority for QUB to introduce processes which assess which communities may be impacted by climate change and environmental injustice. Reports from SECA show there is higher level work towards this and could facilitate future processes in the medical school which will allow these communities to give input on research.*

**2.4. Does your institution have a planetary health website that centralises ongoing and past research related to health and the environment?**

3	There is an <b>easy-to-use, adequately comprehensive</b> website that <b>centralises</b> 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 <b>attempts to centralise</b> various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The <b>institution</b> has an <b>Office of Sustainability website</b> that includes <b>some</b> resources related to health and the environment.
0	There is <b>no</b> website.

*Score explanation:*

There is a very easily accessible [sustainability section](#) under the research banner on the Queen’s website. This advertises a select few major projects relating to research in: sustainable energy, health technologies in sub-Saharan Africa, safe drinking water and others and it provides a link to the PURE

research search engine at QUB with the SDGs as filters. It also links to a page listing [climate change researchers at QUB](#)

This page also links to [SECA](#), which is the research centre at QUB that encourages research collaboration across the university within its pillars of sustainability, equality and climate activism. The SECA website includes a [list of faculty members](#) whose principles align with the centre and the school they are from; therefore it is possible to access the profiles of the researchers from the school of Medicine, dentistry and biomedical science to find planetary health research. However, it seems the main purpose of the website is to attract new members to this centre and to advertise SECA events and enable research collaboration.

There is no dedicated website to centralise research related to health and environment, however the QUB [PURE](#) research search engine can be used to effectively find relevant research by refining the search to ‘planetary health’, as mentioned in 2.1.

The ‘[Research Opportunities](#)’ tab can easily be used to search for funded PhD opportunities by refining the search to ‘Climate’ (planetary health does not bring up any funded opportunities). Alternatively, you could look up the planetary health researchers at QUB (see section 2.1) and contact them to ask them about opportunities, however it is not easy to find these opportunities using the sustainability section of the QUB website

*Recommendation: As suggested last year, SECA should have links to current, relevant research and also link to relevant funding opportunities*

## 2.5. Has your **institution** recently hosted a conference or symposium on topics related to planetary health?

4	Yes, the <b>medical school</b> has hosted at least one conference or symposium on topics related to planetary health in the past year.
3	Yes, the <b>institution</b> has hosted at least one conference or symposium on topics related to planetary health in the past year.
2	Yes, the <b>institution</b> has hosted a conference on topics related to planetary health in the past three years.
1	The <b>institution</b> has not hosted any conferences directly, but they have provided financial support for a local planetary health event.
0	No, the <b>institution</b> has not hosted a conference on topics related to planetary health in the past three years.

Score explanation:

SECA holds regular events, such as:

- How to be an Academic in a World on Fire Talk and hands-on workshop (13/12/2023)
- Tracing the Pre-lives of Lithium (5/12/2023)

In addition to this, on 30/01/24, the QUB Sustainability Team hosted a summit for students to voice sustainability concerns about education, food, travel and banking.

The Queen’s Annual Sustainability Lecture, titled ‘The Climate Crisis: Why we need to dig deeper’ occurred on 19/10/23 and SECA had its own annual sustainability lecture: ‘Who owns the Future?’ on 29/11/23.

The Queen’s sustainable construction conference will be held on 28/02/24.

A range of COP28 events were held at QUB from 30/11/23 to 12/12/23, including a mock COP and a panel discussion on the topic of ‘Connecting Belfast: Transforming Travel’. This included a number of representatives from the Alliance Party, Federation of Small Businesses, QUB, Sustrans, Translink and the Department for Infrastructure and allowed for a varied discussion on sustainable transport within Northern Ireland and QUB outlining their Net Zero goal.

Similarly to last year, an event is being held in the Medical Biology Centre QUB building for the NI science festival about planetary health aimed at 10-14 year olds. It is an interactive simulation of a 2035 ‘[Climate Emergency Department](#)’ at the Royal Hospital, where flooding, rising temperatures and higher levels of infectious diseases make treating patients in the ED more challenging. It is scheduled for 15/02/24 and 16/02/24.

Although the most recent of these are not closely aligned with planetary health, it is clear that [Queen’s has regular, relevant events](#) and encourages a cross-disciplinary approach to sustainability.

*Recommendation:*

*We recommend the medical school hosts a conference on topics relevant to planetary health and increases awareness of and improves access to the recordings of the previous Public and Planetary Health conference, which are very good quality but not often accessed.*

**2.6. Is your medical school a member of a national or international planetary health or ESH organisation?**

1	Yes, the medical school is a member of a national or international planetary health or ESH organisation
0	No, the medical school is <b>not</b> a member of such an organisation

Score explanation:

The School of Medicine, Dentistry and Biomedical Sciences is a member of the [Global Consortium on Climate and Health Education](#) after this was suggested by the 2020-2021 PHRC report.

Queen’s University Belfast is a member of the [Alliance for Sustainability Leadership in Education](#), which has been recorded in our PHRCs since the 2021-2022 report.

The School of Medicine, Dentistry and Biomedical Sciences has obtained a ‘[Beacon Site](#)’ status within the Centre for Sustainable Healthcare. The Centre for Sustainable Healthcare is a national charity that develops knowledge and resources to support the NHS to reach net zero carbon and wider sustainability goals.

*Recommendation:*

*We recommend the university and medical school remain a part of, and continues to be involved with, international planetary health organisations.*

Section Total (13 out of 17)	76.47%
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## Community Outreach and Advocacy

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

<b>3.1.</b>	
<b>Does your <u>medical school</u> partner with community organisations to promote planetary and environmental health?</b>	
3	Yes, the <b>medical school</b> meaningfully partners with <b>multiple</b> community organisations to promote planetary and environmental health.
2	Yes, the <b>medical school</b> meaningfully partners with <b>one</b> community organisation to promote planetary and environmental health.
1	The <b>institution</b> partners with community organisations, but the medical school is not part of that partnership.
0	No, there is <b>no</b> such meaningful community partnership.
<p><i>Score explanation:</i></p> <p>During Year 2, around one-third of medical students elect to study the ‘Medics in Primary Schools’ module. This involves medical students teaching local primary school pupils about health and medicine. Planetary health was added as a new topic to be covered by students in the 2021/22 cohort.</p> <p>The Centre for Public Health (CPH), a section of the medical school, works with the ‘Groundswell Project’ to provide community events and information sessions for the public. <a href="#">The Groundswell Project</a> is a team of researchers, local communities, implementers and policymakers that focus on understanding and promoting the importance of urban green and blue places and how they can be improved. In the past year, the Groundswell Project has hosted public events such as a webinar for ‘Inclusive Urban Green and Blue Spaces’ and a healthcare practitioners’ workshop entitled ‘Greening for Health Training Workshop: Using Evidence in Practice’.</p> <p>The Sustainability Team at QUB hosted a community litter pick, <a href="#">“The Big Autumn Clean Up”</a>, in November alongside Orchardville Belfast, a local charity helping individuals with learning disabilities and autism. Furthermore, QUB partnered with the RSPB to host a presentation on the importance of supporting wildlife in the environment. However, the medical school did not seem to be directly involved in these initiatives.</p> <p><i>Recommendations:</i> <i>We commend the university’s community outreach to local charities regarding sustainability, but we would recommend more involvement from the medical school. The medical school could partner with local patient advocacy groups/charities to highlight the importance of planetary health and environmental risk factors to patient health. Furthermore, the medical school could further</i></p>	

*facilitate student involvement with planetary health initiatives by including more sustainability-related options in the offering of student-selected components (SSCs).*

**3.2. Does your medical school offer community-facing courses or events regarding planetary health?**

3	The <b>medical school</b> offers community-facing courses or events at least once every year.
2	The <b>medical school</b> 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 <b>institution</b> has offered community-facing courses or events, but the <b>medical school</b> was not involved in planning those courses or events.
0	The <b>institution/medical school</b> have not offered such community-facing courses or events.

*Score explanation:*

QUB has hosted a [variety of talks](#) for students, staff and the community on sustainability. Previous discussions have focused on ‘Giving Psychology “Away” in a Climate Crisis’, ‘City Conversations: SDG Challenges for Belfast’ and ‘A Just Transition: Avoiding Agriculture vs Environment Divide in Ireland’.

The ‘[Sustainable Entrepreneurship Program](#)’ has also been launched by QUB to allow participants to “merge business acumen with sustainable practices”, however this was aimed at student participation and it is unclear if members of community not enrolled at QUB could take on the course. This could be a great program to be made more community facing.

The QUB Sustainable Healthcare Development Group (SHDG) team is organising their annual ‘[Climate Emergency Department](#)’ with the medical school. This event is part of the NI Science Festival and hopes to highlight the effects of climate change on healthcare with multiple interactive roleplay scenarios. It is a free event for children and young adults within the community.

The ‘[Queen’s Biology Showcase](#)’, hosted by the School of Biological Sciences in conjunction with the NI Science Festival, is also open to the public with discussion points on sustainable nutrition and the impact of climate change on disease transmission.

The university also hosts an annual sustainability lecture that is open to the public every year. This year’s speaker, Sir Jonathon Porritt, gave a talk entitled ‘[The Climate Crisis: Why we need to dig deeper](#)’. Furthermore, the Centre for Sustainability, Equality and Climate Action (SECA) hosted their annual sustainability lecture on ‘Who Owns The Future?’ by Professor Molly Scott Cato.

*Recommendations:*

*The university offers a range of sustainability events and talks across the year that are open to the local community, and the medical school also offers a number of community-facing sustainability events. We would encourage the medical school to continue offering these events; we recommend that they collaborate with other university departments to organise innovative and interdisciplinary community events. Furthermore, we would recommend that current courses (like the ‘Sustainable Entrepreneurship Program’) would be expanded to encourage more community involvement.*

**3.3. 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 <b>regularly</b> receive communication updates dedicated to planetary health and/or sustainable healthcare.
1	Yes, planetary health and/or sustainable healthcare topics are <b>sometimes</b> included in communication updates.
0	Students <b>do not</b> receive communications about planetary health or sustainable healthcare.

*Score explanation:*

Students within the medical school frequently receive email correspondence from the Centre for Medical Education (CME) and the School of Medicine, Dentistry and Biomedical Science. However, these emails only sometimes include information relating to planetary health and sustainable healthcare; communications regarding these areas are not regular. Staff from the CME have previously stated for last year's report that they hope to email a link to a page on sustainable healthcare, but this page does not currently exist.

QUB utilises a range of communications outlets, such as their sustainability account 'Green at Queen's', to promote news about sustainability on campus. This offers students an alternative and accessible way to keep up to date with planetary health and sustainability information. GreenatQueens has accounts on [Twitter](#), [Facebook](#) and [Instagram](#), giving students opportunities to access their information on a range of platforms.

Furthermore, we also note the consolidated bank of information that is available via the [QUB Sustainability website](#). This includes the '[Green at Queen's E-Zine](#)' to provide snippets of insight into on-campus projects. We welcome the wide and accessible range of sustainability communications offered by the wider university.

*Recommendations:*

*We appreciate the already vast volume of correspondence required to be communicated by the medical school to students, and we understand that a stand-alone page requiring regular updates may be difficult to manage. However, we would recommend that the medical school communicates existing forms of documents/resources/information to students regarding planetary health and sustainable healthcare. This could be via a faculty feature section on the QUB Sustainability website with links to resources. Such a page would provide a centralised sustainability resource for medical students. We believe that the appointment of a sustainability champion within the school would help to create and grow this initiative.*

**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?**

2	Yes, the <b>institution</b> or <b>main affiliated hospital trust</b> 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 <b>institution</b> or <b>main affiliated hospital trust</b> offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers



0	There are <b>no</b> such accessible courses for post-graduate providers
<p>Score explanation:</p> <p>QUB runs an <a href="#">MPH in Public Health</a> and an <a href="#">MPH in Global Health</a>, which a select number of medical students choose to intercalate in each year. These courses include an emphasis on global health and development.</p> <p>Furthermore, QUB offers a range of general sustainability courses at a postgraduate level such as their MSc degrees in '<a href="#">Leadership for Sustainable Development</a>', '<a href="#">Leadership for Sustainable Rural Development</a>' and '<a href="#">Climate Change</a>'.</p> <p>QUB also offers programs in conjunction with the external accreditation body <a href="#">SEDA (Staff and Education Development Association)</a>. This year, the module entitled 'Education for Sustainable Development (ESD)' was piloted to provide staff with postgraduate education related to the Sustainable Development Goals.</p> <p><i>Recommendations:</i>  <i>We recommend that the university offers more CPD courses, over a wider range of dates and sustainability topics. This may make sustainability education more accessible for those that cannot undertake an MSc/MPH. Furthermore, the affiliated hospital trusts could become more involved in the promotion and organisation of sustainability education activities. Collaboration between the university and hospital trusts could allow trust employees to undertake CPD courses offered by the university itself.</i></p>	

<b>3.5. Does your <u>medical school</u> or its <u>affiliated teaching hospitals</u> have accessible educational materials for patients about environmental health exposures?</b>	
2	Yes, the <b>medical school</b> or <b>all affiliated hospitals</b> have accessible educational materials for patients.
1	<b>Some</b> affiliated hospitals have accessible educational materials for patients.
0	<b>No</b> affiliated medical centres have accessible educational materials for patients.
<p>Score explanation:</p> <p>The medical school partners with all five hospital trusts across Northern Ireland, and so it is challenging to evaluate the range of resources available across hospitals and departments. Using the trust websites, we were able to find resources related to sun exposure and protection for patients in the <a href="#">Belfast</a>, <a href="#">Southern</a>, <a href="#">Northern</a> and <a href="#">Western</a> Trusts. The <a href="#">South-Eastern</a> Trust instead featured a piece from a patient who had previously suffered from skin cancer, who reiterated the importance of wearing sunscreen.</p> <p>However, we were unable to find patient resources relating to other environmental hazards, such as pesticides and pollution.</p> <p><i>Recommendations:</i>  <i>We appreciate that QUB is not directly involved in making educational materials for patients within each of the trusts. However, we would encourage the medical school to champion for improved sustainability resources for patients as this would improve the patient experience, and empower students and staff to promote sustainable health in a changing climate.</i></p>	

*Furthermore, we would encourage the trusts to contextualise their current resources regarding sun-exposure to include information on climate change and planetary health. We would recommend that future resources should include material relating to environmental exposures like air pollution and pesticides.*

**3.6. Does your medical school or its affiliated teaching hospitals have accessible educational materials for patients about the health impacts of climate change?**

2	Yes, the <b>medical school</b> or <b>all affiliated hospitals</b> have accessible educational materials for patients.
1	<b>Some</b> affiliated hospitals have accessible educational materials for patients.
0	<b>No</b> affiliated hospitals have accessible educational materials for patients.

*Score explanation:*

As mentioned regarding the previous metric, it is challenging to establish what information is available to patients given the range of departments and hospitals that QUB collaborates with. We could not find any evidence of online resources for patients related to the health impacts of climate change; this has notably not improved since our reports began in 2021. Information was available in some trusts, particularly the [Southern](#) and [South-Eastern](#) Trust, on their ongoing efforts to be more environmentally friendly but this did not include patient-facing resources on climate change itself.

*Recommendations:*

*We acknowledge again that QUB does not have a large say in the resources available to patients. Nonetheless, we believe it is important that trusts provide accessible information on the health impacts of climate change; we suggest that trusts supplement their current resources on environmental exposure with information on how this is related to our changing climate. For example, the existing educational materials on sun exposure could be updated to include information on increasing temperatures due to climate change. We would further encourage the trusts to utilise aspects like their primary care centres to provide resources (such as brochures/leaflets/QR code links) informing patients about the impacts of climate change on their health and healthcare system.*

<b>Section Total (8 out of 14)</b>	<b>57.14%</b>
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# 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.*

4.1. Does your <b>medical school</b> or your <b>institution</b> offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the <b>medical school</b> or <b>institution</b> <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 <b>medical school</b> or <b>institution</b> encourages sustainability QI projects (to fulfil clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, <b>but</b> there is no student funding available and there is no requirement to participate.
0	No, <b>neither</b> the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.

*Score explanation:*  
[Queen's Green Fund:](#)  
 QUB Green Fund is an annual scheme run by the Estates' Department, where both staff and students can submit applications for original projects that benefit the environment, Queen's and the local community. Since 2019, over 70 projects have received funding of up to £1500 and have included a range of projects including providing water condensers in the School of Chemistry and Chemical Engineering, saving thousands of litres of water required for experiments; QUB porters installed motion-sensitive cameras across campus to monitor wildlife on site; SU Volunteers revitalised Queen's Film Theatre's courtyard, creating a haven for wildlife and allowing staff to grow herbs. Last year, a member of the QUB PHRC group Fionán McBride received £300 to run Sustainable Cooking Classes in collaboration with Belfast City Council, teaching university students how to reduce kitchen waste whilst also cooking delicious recipes. The PHRC group successfully applied for funding to repeat these workshops in 2024 and also received Green Funding to run Sustainable Sewing Sessions, where staff and students can learn the basics of sewing and revitalising clothes to encourage less fast fashion use.

Sustainability and Quality Improvement (SusQI):  
 Dr Crawford, alongside Professor Diarmuid O'Donovan and Dr Rick Plumb, had been in the process of expanding a previously delivered SusQI SSC into a final year module as part of the core C25 curriculum. The idea behind the module was to allocate small groups of students to an NHS supervisor for approximately four months, to work on a quality improvement project and experience the complete PDSA cycle. Unfortunately, due to logistical problems, this will likely be run as a small pilot only in 2024-25. Professor O'Donovan has now left the university so Dr Crawford and Dr Plumb are continuing work on this module with the hopes that it will be rolled out in full after the 2024-25 academic year.

*Recommendation: The School of Medicine, having identified these logistical issues in running the SusQI module for 2024-25 should continue to troubleshoot these issues in order to develop and implement this fantastic module in future.*

**4.2. Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?**

2	The <b>institution</b> has a <b>specific</b> 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 <b>require student initiative</b> to seek these out and carry them out in their spare time.
0	There are <b>no opportunities</b> for students to engage in planetary health/sustainable healthcare research.

*Score explanation:*

Intercalated Degrees:

MPH and Masters in Global Health: Third-year medical and dental students can apply for an Integrated Masters degree. Of many courses available, the SMDBS runs a [Masters of Public Health](#) and a [Masters of Global Health](#). As per the nature of Intercalated Degrees, students need to take a year out of medicine to complete these.

Summer Studentships

A summer studentship in the Centre for Biomedical Sciences ran an eight-week project during Summer 2023 entitled “Investigating Sustainable Development Goals Literacy in BMS and HB Teaching”. As part of the project, Year 2 Biomedical Science and Human Biology students were quizzed on their sustainability knowledge and completed pre-and post-test questionnaires, the results of which were analysed. Additional work was undertaken to determine whether there were gaps in SDG implementation into the curriculum and highlight where these gaps could be filled.

The Centre of Public Health (CPH) had previously ran summer studentships pertaining to planetary and global health. In the summer of 2023, there was one studentship associated with planetary health; “Investigating the ecological association between mapped estimated radon class and lung cancer incidence in Northern Ireland”.

Other Masters Programmes:

There are an increasing number of [MSc courses related to Sustainable Development](#) appearing at Queen’s. This includes MSc Leadership for Sustainable Development and MSc Leadership for Sustainable Development, both offered by the School of Biological Sciences. Both courses have a small group project, where students engage with a host organisation across the year in a real-world project to promote sustainable development through experimental learning action research and work-based placements.

*Recommendation: The School of Medicine should continue to advertise the availability of these Integrated Masters at QUB to all students considering taking a year out to complete an additional intercalated degree. Researchers whose projects are centred around public and planetary health should be encouraged to host students for a summer studentship.*

**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.**

2	The <b>medical school</b> 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 <b>medical school</b> 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 <b>no medical-school</b> specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.

*Score explanation:*

[QUB Sustainability:](#)

QUB has a centralised Sustainability website for all sustainability news across the university, including information on the Net Zero Plan, Strategy 2023, staff and student initiatives and events on campus relating to sustainability and climate action. In the past year, this website has undergone renovation to become much more accessible and contains webpages on research, teaching, outreach & engagement, and diversity and inclusion. The Research webpage contains pertinent information relating to research projects at the university, articles relating to published projects and links to Pure, the internal registry of research outputs at Queen’s. Pure enables users to search for specific researchers, project areas and research related to certain SDGs. The webpage also includes a link to the SECA website, which contains a [contact list of academic members](#) of the centre and current PhD projects to help signpost people to key sustainability researchers

[Pure:](#)

As each School has their webpage and the accessibility of Pure, the QUB sustainability website does not contain a dedicated webpage listing all current sustainability researchers, publications or faculty members with interests in sustainable healthcare. Both publications, current projects and individual researchers listed on the Pure website have been SDG mapped, allowing website users to filter research based on particular SDGs as well as generic fields of research.

*Recommendation: Encourage the School of Medicine, Dentistry & Biomedical Science to create a specific Sustainability/Sustainable Healthcare webpage which highlights to students the specific measures the School is taking – in terms of policy, education, research and incentives – to improve sustainability within the School and combat the climate crisis. After the work undertaken to update the Sustainability website, and the information available on both Pure and the SECA website, we do not feel that the Sustainability team need to further update their website to include researchers.*

**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?**

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

*Score explanation:*

Sustainable Healthcare Development Group:

The Sustainable Healthcare Development Group (SHDG) is a working group consisting of medical students, academics from across the SMDBS, the School of Pharmacy, researchers, the Estates' team and the Faculty Pro-Vice-Chancellor. This group is dedicated to promoting sustainability and climate action within healthcare-related degrees and the Faculty, with links with other Sustainability teams across the university including the Students' Union.

Sustainability Network

The Estates' Team have created a Sustainability Forum and Sustainability Network that is open to staff and students of the university. There are three formal Forum meetings each academic year, whilst the network is an informal Microsoft Teams forum where people can post information about various events, projects and research opportunities relating to sustainability and environmentalism. Two student members of the SHDG sit on two of the new managerial boards pertaining to Sustainability - the Sustainability Board and Sustainability Engagement Group.

*Recommendation: Continue publication of the presence and work undertaken by the Sustainable Healthcare Development Group to continue fostering inter-faculty relationships and encouraging healthcare-aligned staff and students to get involved with planetary health.*

**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?**

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:*

Sustainability Board

A member of the SHDG sits in the Sustainability Engagement Group, one of the number of working groups who report information into the Sustainability Board, one of the management boards for the university. This Board covers the full remit of Sustainability reporting, including education, research, operations and outreach. The group provides an oversight on the delivery and progress of the University's Net Zero Commitments and key deliverables. Another student representative from the SHDG sits on this overall Sustainability Board. The Sustainability Engagement Group, just one of the many working groups involved with the Sustainability Board, includes representatives from Estates, the Pro Vice Chancellor, Communications, the Students' Union and other academic representatives.

Students' Union

Our Students' Union President, Beth Elder, is the main institutional student representative on Sustainability. As SU President, she sits on various committees, councils and management boards, and spends a lot of time highlighting environmental action and sustainability as a huge priority for her.

On an institutional level, there is an Environmental Action Student Association, the Chairperson of which is democratically elected. This chairperson elects a committee amongst themselves, like a club or society, to create a network of active students dedicated to environmental action at the university. This is still a very new role, replacing the previous position of Environmental Officer at the Students' Union, and unfortunately doesn't sit on any institutional committees. As this role develops, it is hoped that they will become heavily involved with the Sustainability branch of Estates and will be able to enact greater institutional change. The SU Website is currently being updated to advertise the improvements made to this role and how students can get involved with the group.

*Recommendations: Continue the development of the Environmental Action Student Association and encourage the formation of a strong relationship between the Association with the Sustainability Team and the wider Sustainability Network at Queen's to create a strong Association which, in future, can bring forward ideas and concerns relating to the environment to Senior Management at QUB.*

**4.6. 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 organise hiking, backpacking, kayaking, or other outings for students)

*Score explanation:*

1. [BT9 Elms Allotment](#)

Students living in student accommodation at Elms BT9 can get involved with their Student allotment. The allotment team provides free gardening sessions alongside the Conservation Volunteers on Wednesday afternoons, teaching students how to grow their own food and harvest food for the onsite community fridge. The allotment has also hosted cooking lessons for students using produce grown onsite. The SU group [Handy Helpers](#) offers numerous volunteering opportunities, including gardening and litter picking events, such as the Big Autumn Clean upheld on the 22nd November 2023.

The [UPSURGE](#) project, jointly led by Queen's researchers and Belfast City Council's climate unit, started in Belfast in early 2023. Nature-based solutions will be tested in five demonstrator cities across Europe to share learning and good practice on pollution alleviation, climate resilience and citizen health.

Students can also get involved in another project in Botanic Gardens by volunteering for [Friends of the Fields](#). As part of Horizon's UPSURGE project, Friends of the Field have co-designed a community garden with Belfast City Council and QUB. Students of the School of Natural and Built Environment can get involved.

The SU also has [links with community organisations](#) including Belfast Hills Partnership, RSPB and The Conservation Volunteers, allowing students to get involved with sustainability, environmental and conservation projects in the community.

2. With the official launch of QUB's NetZero Plan in November 2023, there have been several sustainability-themed talks across the university: TEDxQueen's University Belfast series in June was entitled ["Engineering our Sustainable Future"](#) and had talks from various Schools from Chemical Engineering to Psychology; The Planning Society hosted Chris Bridgman in September 2023 at an event entitled ["Greening the Rooftops"](#) to discuss the benefits of blue, green and bisolar roofs. The NetZero Launch Event included a [panel discussion](#) on the plan itself and an inaugural Sustainability lecture, this year hosted by Sir Jonathon Porritt. Students have also been welcomed at various other panel discussions including "Circular Economy - Fantasy or Reality" (21/11/23), "Transforming Travel" (06/12/23) and Mock COP28 (30/11/23).

QUB hosted ["Save Our Wild Isles: Food and Farming Conferences"](#) alongside RSPB Northern Ireland, Countryfile's Tom Heap, and the National Trust to bring together farmers, policymakers, academics and industry to discuss the role of agricultural policy reform in the context of the climate crisis, enabling students to network with various experts in the agricultural and farming sectors.
3. [SECA hosted a public meeting](#) on 02/10/23 in the Crisis at Lough Neagh following its toxic algae bloom earlier in the year. A diverse panel of speakers were involved in the event, including MLAs from various political parties, a representative from the Lough Neagh Partnership, a representative from the community group "Love our Lough", Friends of the Earth NI and the Director of Ulster Angling Federation
4. From the 2nd to the 6th of May 2023, staff, students, residents and volunteers from Forward South Partnership joined forces to tidy, paint and plant alongside University Square Mews to create a sensory garden and vibrant shared space at Queen's Film Theatre. This project was called [Transform Art Alley](#). Experts from neighbouring Schools, Art Society, and QUB's head gardener transformed the community alleyway. The event resulted in a fantastic renovation and a new sense of community within the area.

In October 2023, SECA hosted two drawing workshops ([13/10/23](#), [20/10/23](#)) in Botanic Gardens and Redburn County Park. Senior Lecturer from Belfast School of Art, Daniel Shippesides, took small groups to these areas of the local natural environment to participate in a drawing workshop.

SU Volunteer has hosted several community events in the last year. [The Big Autumn Clean Up](#) was held on the 22nd of November 2023 and brought together SU Volunteer, SU Community Engagement, and the Sustainability Team to join Orcharville Belfast, a local charity which helps individuals with learning difficulties, to collect waste around the student Holylands area. The following day, they teamed up with Positive Vintage to host a [sustainable fashion workshop](#) where students could enjoy styling and modelling themselves in secondhand outfits and engage in a discussion on vintage fashion and its impact on the environment.

After the success of last year's event, the Sustainable Healthcare Development Group held four sessions of ["Climate Emergency Department"](#) as part of the Northern Ireland Science Festival. This is an interactive simulation hosted by QUB InterSim designed to get our doctors of the future thinking about the impact climate change has on healthcare delivery and treatment. These sessions are on the 15th and 16th February 2024.
5. The SU is a partner in several community projects. This includes the [One Million Trees project by Belfast City Council](#), which aims to plant one million trees in Belfast by 2035. Staff and students at Queen's have multiple opportunities throughout the year to get involved with this and many other [gardening projects overseen by the Gardening Team](#). On 10/10/23, the Sustainability Team, the Grounds and Gardening Team and SU Volunteer's Handy Helpers planted winter bulbs at Riddel hall to increase biodiversity in the area. The Gardening Team also work with several local schools to help enhance biodiversity in the city. Staff and students can get involved with the [UPSURGE](#) project previously mentioned. The



UPSURGE project has links to not only QUB and Belfast City Council but also local stakeholders including Friends of the Fields previously mentioned. The project will look at growing food on contaminated land.

[“Geography at Work”](#) module, a programme which gives students real-world experience in applying their knowledge and research skills to problems confronting society. Projects undertaken as part of this module also allow civic organisations and community groups to tap into expertise provided by Queen’s in addressing local issues. The current programme is running two relatable projects: one is with World Development and Relief, investigating hardship and hope for people in the global south, and another looking at geological sites in the Belfast Hills. Projects undertaken as part of this module have fostered strong community links with the likes of the Belfast Hills Partnership, Habitat for Humanity, Forward South Partnership, Mapping Urban Regeneration and many more.

6. There are several [Clubs and Societies](#) registered with the Students’ Union which focus on wilderness and outdoor programmes. This includes the Mountaineering Club, Caving Club, Scout Network and QUB Climate Action Network. Further information about these Societies can be found on the QUBSU Website.

*Recommendations: QUB has dedicated substantial time and resources to fostering strong relationships with numerous community groups, and has provided many opportunities for students to get involved with these projects and schemes. We encourage the continued advertisement of these opportunities within the QUB and wider Northern Irish communities.*

**Section Total (13 out of 15)**

**86.67%**

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*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 endeavour, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinising every aspect of how our systems operate, from where we source our energy, to how we build our infrastructure, to what companies we invest in. Our medical schools, clinics, and hospitals must set the standard for sustainable practices, and show other sectors what is possible when it comes to minimising environmental impact.*

5.1. Does your <b>medical school</b> and/or <b>institution</b> 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 <b>at least one designated staff member</b> 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 <b>no specific staff member</b> in charge of medical school and/or hospital sustainability.
1	There are <b>no salaried sustainability staff</b> , but there is a sustainability task force or committee
0	There are <b>no</b> staff members <b>or</b> task force responsible for overseeing campus sustainability
<p><i>Score explanation:</i></p> <p>The university has a Sustainability Board which is responsible for overseeing and monitoring the University’s 2040 Net Zero commitment and also promote and embrace the Sustainable Development Goals across university wide activities. The Board meets quarterly to review the progress of the Universities Net Zero Plan. The board is joint chaired by Professor Michael Alcorn, Pro Vice-Chancellor of Strategic Projects and Sustainability, and Sara Lynch, Head of Sustainability. It consists of 7 academic staff nominees, 18 professional services nominees, 1 trade union representative and 3 student representatives. Sarah Lynch, attends the PHRC group meetings at QUB, along with the Medical Faculty, and is involved with regular discussions with both the students and staff from the school.</p> <p>The university also currently has an unpaid role (sustainability champions) appointed by or volunteered to represent their faculty in a <a href="#">university-wide sustainability network of individuals</a> with a common aim to lead and create positive change in their own areas or work. They support the work of the Sustainability Board on a local level by; creating a culture of sustainability, hosting information events and ensuring engagement in Queen’s wider sustainability programmes. They are mainly administrative and technical staff.</p> <p>Some faculties across Queen’s have explored employing a <a href="#">new paid role for a “sustainability champion”</a>. This role would differ from the current advocating role as a volunteer sustainability champion and instead would consist of keeping an up-to-date sustainability page relevant to both the university and their faculties information portals. Other responsibilities would include meeting with the senior management teams to help facilitate and streamline the feeding down of changes and also liaising with other departments of the university. There is an aim to achieve a general framework for this role which can be implemented across various faculties of the university to create continuity across</p>	

the various information portals. This new “sustainability champion” will have a different name so as to not create any confusion with the current sustainability champion.

\*\*This new sustainability champion role does not yet exist and so there is no designated staff member in the medicine, dentistry and biomedical sciences to represent the staff member.

*Recommendation:*

*We encourage Queens to continue with the development of this new Sustainability champion role.*

### 5.2. How ambitious is your institution/medical school plan to reduce its own carbon footprint?

5	The institution/medical school has a <b>written and approved plan</b> to achieve carbon neutrality by <b>2030</b>
3	The institution/medical school has a <b>written and approved plan</b> to achieve carbon neutrality by <b>2040</b>
1	The institution/medical school has a stated goal of carbon neutrality by <b>2040</b> but has <b>not created a plan</b> to reach that goal or the <b>plan is inadequate</b>
0	The institution/medical school does <b>not</b> meet any of the requirements listed above
	<p><i>Score explanation:</i></p> <p>In 2010 Queen's University Belfast launched the Carbon Management Plan and reached 23% reduction in emissions. In June of 2023 QUB published the <a href="#">Net Zero Plan</a> to achieve net zero greenhouse gas emissions by 2040. This plan was based on the 2018-2019 emissions of 105,430 tonnes of carbon dioxide equivalent for planning purposes. The new Net Zero Plan 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. QUB has adopted the principles of avoidance, reduction, lower carbon alternatives, and offsetting in order to achieve net zero. The plan outlines the current progress made from the 2010 plan and what they plan to do to achieve their goal of net zero by 2040.</p> <p><i>Recommendations: We support the University's Net Zero Plan and would like the plan to be made more accessible to students and the community to ensure they adhere to their plan and can be held accountable. Additionally, elaborating on their commitment to embracing “sustainable development goals” and more evidence on their plan to transition to a carbon neutral society.</i></p> <p><i>The Plan does recognize that 80% of emissions are not within the direct control of QUB, such as reliance on suppliers, infrastructure changes, the NI electricity grid, and energy security risks. However, QUB has not given suggestions on ways to circumvent this or combat these issues. 80% of the emissions being not within the university's control is a significant amount to disregard simply due to perceived lack of control. The university should provide reasoning for why this percentage of the emissions are not within their control.</i></p>

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

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

*Score explanation:*

While the university as a whole does state it generates “heat and electricity on campus” and utilises “renewable energy for all electricity from the National Grid”, it does not provide evidence for this in specific buildings or departments. The information available from the university website is not sufficient to directly corroborate the information that there is over 50% low carbon electricity consumed, nor that the electricity they purchase is renewable as stated.

The Estates Team and University Energy Manager were able to confirm that 44% of energy used in the Health Sciences campus was procured from renewable energy contracts. This information has recently been updated on the [university website](#).

In their Net Zero Plan they have a goal of installing solar panels and to continue to purchase renewable electricity. They have also said they aim to improve daylighting and reduce overheating in building infrastructure plans in order to reach their goal of < 500 kgCO<sub>2</sub>e/m<sup>2</sup> including carrying out a ‘Whole Life Carbon Assessment’ for buildings.

Information about the [“Whole Life Carbon Assessment”](#) can be found here;

*Recommendations: It is necessary to have clarity and transparency regarding energy practices in departments and throughout the university as a whole. We recommend QUB make a tangible commitment to renewable energy. Their Net Zero plan claims they will install solar panels across estates; we recommend they elaborate on this in order to be held accountable, e.g state the number of solar panels, when and where they will be implemented. It is also recommended they elaborate on the ‘Whole Life Carbon Assessment’ and their plan for reaching their target metric for CO<sub>2</sub>e/m<sup>2</sup> emissions.*

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

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

*Score explanation:*

The university continues to follow [BREEAM excellent standards](#) in addition to their own criteria that is more stringent than that of the aforementioned BREEAM criteria. As part of their Net Zero Plan they have new guidelines including [Passivhaus](#) for new buildings over £1 million, Enerphit Passivhaus for refurbishments over £1 million. Additionally, for projects over £1 million the university will carry out a [“Whole Life Carbon Assessment”](#) to align with the target of < 500 kgCO<sub>2</sub>e/m<sup>2</sup>. All retrofits and refurbishments less than £1 million will continue to target the [SKA Gold Rating](#). The university continues to prioritise retrofitting and reusing existing buildings. This will include upgrading building controls for heating, cooling, lighting, double and triple glazing, as well as LED lighting. All buildings throughout the university are to continue to be in line with the Net Zero Standards as well as BREEAM Excellent standards. Lab and research buildings Pre 1990 will be fitted with mineral wool insulation, LEDs, wall insulation, and double glazing replacements as needed. Queen’s will also be continuing to improve daylighting and reduce VOCs and optimise CO<sub>2</sub> levels for best health metrics.

*Recommendations: We recommended the university continues to engage in sustainable building practices including their Passivhaus for new buildings and their use of BREEAM Excellent standards. We recommend the university elaborate more on their own interpretation of Passivhaus further than the Passipedia general guidelines, passive or energy efficient buildings. Lastly, it is recommended they expand on their plan of action for improving daylighting and reducing overheating/VOCs for health metrics.*

**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?**

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

*Score explanation:*

The university has encouraged environmentally-friendly travel through the introduction and continual development of schemes such as...

- Sheffield bicycle stands at most builds (with shower facilities available for staff)
- [QUB Bike Hub](#) which caters to staff and students selling refurbished bikes at discounted rates and offering a range of servicing options
- Encouragement of public transport through the translink (local public transport company) Ylink travel cards which give students a 33% discount on all public transport travel.
- QUB and the Belfast Trust run a shuttle bus between the Belfast City Hospital and the Royal Victoria Hospital site to accommodate travel for both Hospital Staff and Healthcare students.
- Translink also provides a scheduled service from a location near the Student’s Union and the Queen’s Electronics, Communications, and Information Technology (ECIT), a site off the university’s Campus.

- Queen's "Care Share Club" which enables staff and students to find a potential car share arrangement to try to minimise the number of cars driven to and from the university campus.

The university has been part of the [Open Botanic](#) project which included members from QUB and was an engagement process with stakeholders along botanic avenue which would improve conditions on the street. In September 2022 Open Botanic trialled a festival exploring the possibility of pedestrianisation of the street and closed it off to cars. This festival was again carried out in September 2023.

The [Net Zero Plan](#) will help encourage and provide environmentally-sustainable options of travel through the introduction of interventions such as; making policy changes, strengthening students' insights into their carbon impact and setting annual targets through the [QUB Travel Plan](#). A part of The Travel Plan's role is to look at action based targets (e.g 10% reduction in peak period parking demand by 2028) to help quantify and guide areas of focus. 10% reduction in peak period parking demand. The Travel Plan's overall target is to reduce QUB's carbon emissions from commuting by 19% by 2028.

Outside of the university, governmental schemes such as the [Belfast Cycle Network](#) and the [Eastern Travel Plan](#) will increase the interconnectedness of the public transport network and cycle lanes which will benefit the university and inevitably help the Queen's aim for a Net Zero Plan and have a positive shift in the attitude of students towards more environmentally-friendly travel options. Phase 2 of the Belfast Gliders is soon to be implemented and will connect Elmwood to the ECIT QUB Campus.

*Recommendation: We encourage the University to continue to provide and promote sustainable travel options and should push to be a strong driving force behind higher body infrastructural changes for its surrounding campus area.*

**5.6. Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminium/paper/plastic/glass)?**

2	Yes, the medical school has <b>both</b> compost <b>and</b> recycling programs accessible to students and faculty.
1	The medical school has <b>either</b> recycling <b>or</b> compost programs accessible to students and faculty, but not both.
0	There is <b>no</b> compost or recycling program at the medical school.

Score explanation:

A university-wide strategy is in place to reduce the amount of waste going to landfill and thus, according to the [Net Zero Plan](#) 94% of the university's waste is diverted from going to landfill. The campus-wide placement and sufficient supply of various recycling bins from batteries to paper has helped to allow for this high percentage of recycling. In addition to these bins all organic food waste from university catering outlets and accommodations is composted; However, there are no food waste bins accessible to students in the majority of university buildings. The Sustainable Healthcare Development Group (SHDG) has previously raised this issue with the Estate Directorate who are aware and have assured the team that this issue is in review with an aim to implement compost bins, for student use, across campus. The Net Zero Plan aims to update the university waste policy, continue to review and audit waste streams for opportunities to reduce waste and set annual action targets to reduce inbound and outbound waste.

*Recommendation: We recommend that the university formulates a plan to begin the introduction of food compost bins into all major university buildings and continues to reduce its amount of waste going to landfill.*

**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)?**

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

Score explanation:

The medical school has no direct role in the campus food and beverage selections. [There are a number of campus initiatives to ensure food is sourced sustainably](#). These apply to both the university and private catering companies. There is guidance on sourcing produce that is local and seasonal. Campus Food & Drink have also established a ‘Plastic Reduction Project Group’ in collaboration with the Estates Environmental Team; A successful sustainable hospitality intervention of note was the “2CupGO” scheme introduced in the Riddle Hall Campus cafe on during September 2023, which introduced a no”single cup” cafe where customers paid a deposit for their cup when purchasing a drink beverage with either the option of keeping the cup (for further re-use) or returning it in exchange of a reimbursement of the deposit paid for the cost of the cup. In terms of reducing meat, there has been no direct implementation to have meat-free days, though the campus catering outlet provides a large number of meat-free options daily, which is a step towards reducing meat produce, especially considering NI’s farming culture and meat-reliant diet’s.

The [Net Zero Plan](#) (p46) discusses future plans to reduce the carbon impact of the purchased goods and services at Queens.

*Recommendation: We recommend that the university continues to support local and seasonal choices, and continues their proactive implementations to reduce plastic waste. We encourage the introduction of more sustainable options and introduction of meat free days.*

**5.8. Does the medical school or institution apply sustainability criteria when making decisions about supply procurement?**

3	Yes, the medical school has <b>adequate</b> sustainability requirements for supply procurement <b>and is engaged</b> in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are <b>insufficient or optional</b> . The medical school is <b>engaged</b> in efforts to increase sustainability of procurement.

1	There are sustainability guidelines for supply procurement, but they are <b>insufficient or optional</b> . The medical school is <b>not engaged</b> in efforts to increase sustainability of procurement.
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0	There are <b>no</b> sustainability guidelines for supply procurement.
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Score explanation:  
 The university as an institution has a [“Supply Chain Code of Conduct”](#) which has to meet the applicable Government Buying Standards and comply with the universities Environmental Policy statement and is endorsed by the University operating board. It references the United Nations Sustainable Development Goals, within the code one section is “environmental compliance”. Within this section it states for suppliers to “avoid, if possible, causing environmental damage” and to identify opportunities to/ innovate more environmentally friendly products/ service solutions.” University wide Procurement of goods and services contributes 23% of Queen’s GHG emissions. The current code emphasises the importance of environmental compliance but does not enforce the supply chain to make any compulsory changes, above achieving the national environmental laws and regulations required, which do not objectively push the procurement to lower their GHG emissions. The Scope 3 in the [Net Zero Plan](#) includes actions to improve the sustainability of procurement. Some of the planned interventions include; updating procurement policy and processes, developing a methodology to account for a transition to a net zero supply and setting annual targets for the procurement action on climate literacy to inform choices on whether to buy? What to buy? How to buy it? And how much to buy? Overall the supply chain code of conduct currently lacks enforcement of any policy that will push it to meet the 2040 NET Zero targets.

*Reccomendations: We recommend that Queen's “Supply Chain Code of Conduct ” be changed so that “environmental compliance” is mandatory in procurement, rather than just a suggested recommendation.*

**5.9. Are there sustainability requirements or guidelines for events hosted at the medical school?**

2	Every event hosted at the medical school <b>must</b> abide by sustainability criteria.
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1	The medical school <b>strongly recommends or incentivizes</b> sustainability measures, but they are <b>not required</b> .
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0	There are <b>no</b> sustainability guidelines for medical school events.
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Score explanation:  
 The university [Campus Food and Drinks](#) teams follow a sustainable food policy which the medical school will also be encompassed by if hosting events managed by the Events Team, who currently continue to hold a gold rating in the Green Meetings Accreditation. However, there are no official guidelines within the medical school specifically concerning event sustainability practices; largely, this is due to the informal nature of many of the society events including the time at which they are arranged.

*Recommendations: We recommend the medical school to encourage medical societies to follow sustainability guidelines, even at their informal/after hours events. This includes making the guidelines more accessible so that any one who uses the spaces or goes to book a room for an event has the chance to see the guidelines.*



**5.10. Does your medical school have programs and initiatives to assist with making lab spaces more environmentally sustainable?**

2	Yes, the medical school has <b>programs</b> and <b>initiatives</b> to assist with making lab spaces more environmentally sustainable.
1	There are <b>guidelines</b> on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are <b>no</b> efforts at the medical school to make lab spaces more sustainable.

*Score explanation:*

Labs in the School of Medicine at QUB are continuing to participate in the Laboratory Efficiency Assessment Framework (LEAF), with over 40 laboratories now participating in the LEAF certification programme up from 31 in 2023. Within the faculty of Medicine, Health and Life Sciences 33% of labs have achieved at least bronze status and this year they are hoping to increase that to 66% bronze, and to have all wet labs participate in the programme. Other research labs at QUB are continuing to follow this initiative as well. The LEAF programme was launched at QUB in 2021 as a criteria metric to help schools determine if they follow sustainable practices. The new Net Zero Plan aims to further the LEAF programme across labs throughout the university. In 2023 five labs gained silver accreditation, and 27 labs in the faculty of Medicine, Health and Life Sciences were accredited. The LEAF programme has labs peer audited to assess sustainability criteria with a focus on waste management, procurement, efficiency, and chemical management. In 2023 a new incentive, the Queen's LEAF Sustainability Champion Award was created to highlight an individual who supported the program and helped implement sustainability practices in labs.

*Recommendations: We recommended that QUB take further steps to encourage all labs throughout the university to participate in the LEAF program, as well as continue to publicise the program to students in order to encourage involvement and awareness of the importance of sustainability practices in their labs.*

**5.11. Does your institution's endowment portfolio investments include fossil-fuel companies?**

4	The institution is <b>entirely divested</b> from fossil fuels <b>and</b> has made a <b>commitment to reinvest divested funds</b> into renewable energy companies or renewable energy campus initiatives.
3	The institution is <b>entirely divested</b> from fossil fuels.
2	The institution has <b>partially divested</b> from fossil fuel companies <b>or</b> has made a <b>commitment to fully divest</b> , but <b>currently</b> still has fossil fuel investments.
1	The institution has <b>not divested</b> from fossil-fuel companies, but faculty and/or students are <b>conducting organised advocacy</b> for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been <b>no efforts</b> to change that.

*Score Explanation:*

QUB's first public action towards divesting from fossil fuels was in May 2017 when it announced intentions to divest from fossil fuel extraction and production companies by 2025, which was ushered and pushed by a two year long "Fossil Free QUB" campaign led by the QUBSU Climate Action Group.

The university's latest "[Responsible Investment Policy](#)" was approved on 15<sup>th</sup> December 2020. Within the policy "Environmental, Social and Corporate Governance (ESG)" factors and "Responsible Investment" are described as being important factors in investment decision making. In section 4.3 INVESTMENT Decisions the policy says, "the University has instructed its fund manager to take account of ESG considerations and provided that the effect is not materially detrimental to expected investment returns, the university will seek to transfer its indirect investments into funds which exclude companies involved in the extraction and production of fossil fuels by 2025." The policy is left open with soft edges and doesn't enforce complete divestment from fossil fuels to be made by 2025. Section 4.2 (Responsible Ownership) of the policy states that Queen's expects its fund manager will "act in a way that reduces and, ideally, eliminates corporate behaviour leading to environmental degradation [and] climate change". Queens have put the divestment policy at the discretion of their fund manager, BlackRock Investment Management.

For Queen's new Net Zero Plan investments come under their scope 3 emissions. The carbon impact of Queen's investments is not currently quantified in their carbon footprint baseline but is "an emerging area of focus". The new plan has 3 points on their approach to improving their responsible investments which involve; reviewing their terms of reference and membership of the investment committee, working with an independent advisor to improve their approach & updating their investment policy. Blackrock has created a carbon exposure index for portfolio holders; QUB's exposure index has reduced from 3.8% to 1.2% (2022-2023) which displays a decrease in carbon emissions associated with investments. Although these are positive signs the index doesn't reveal the true measurement of carbon emissions. Blackrock currently has 2050 outlined as its clear commitment date to achieving 'Net Zero' carbon emissions. It is necessary then that Queen's act proactively and make interventions to ensure they meet their predating target of Net Zero by 2040.

QUB's [Annual Report](#) has some detail available to the public on their performance and commitment to responsible investment.

*Recommendations: We implore QUB to quantify their carbon footprint created from investment scope 3 emissions and proactively act to make policy changes that facilitate the achievement of their 2040 NET Zero target.*

**Section Total (20 out of 32)**

**62.50%**

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

## Grading

### Section Overview

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

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

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

### Planetary Health Grades for the Queen's University Belfast School of Medicine

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

Section	Raw Score %	Letter Grade
<b>Planetary Health Curriculum (30%)</b>	$(58/72) \times 100 = 81\%$	A-
<b>Interdisciplinary Research (17.5%)</b>	$(13/17) \times 100 = 77\%$	B+
<b>Community Outreach and Advocacy (17.5%)</b>	$(8/14) \times 100 = 57\%$	C+
<b>Support for Student-led Planetary Health Initiatives (17.5%)</b>	$(13/15) \times 100 = 87\%$	A
<b>Campus Sustainability (17.5%)</b>	$(20/32) \times 100 = 62\%$	B-
<b>Institutional Grade</b>	$(A \times 0.3 + B \times 0.175 + C \times 0.175 + D \times 0.175 + E \times 0.175) = 74\%$	<b>B</b>

# Report Card Trends

## Section Overview

This graph demonstrates trends in overall and section grades for the years in which Queen's University Belfast has participated in the Planetary Health Report Card initiative.

## Planetary Health Report Card Trends for Queen's University Belfast

