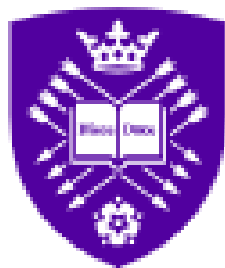




Planetary Health Report Card (Dentistry)

University of Sheffield



University of
Sheffield

2023-2024 Contributing Team:

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Summary of Findings

Overall	C
<u>Curriculum</u>	D
<ul style="list-style-type: none"> University of Sheffield does include planetary health in the curriculum, but it lacks integration longitudinally. In first and second year, various aspects of planetary health are discussed in lectures and in seminar work (ILAs). Recommendations: There is a lack of teaching about introducing conversations about planetary health into conversations with patients. This could be introduced in clinical skills, or early years clinical training. 	
<u>Interdisciplinary Research</u>	A-
<ul style="list-style-type: none"> The University of Sheffield hosted a series of webinars on topics related to planetary health and sustainability in 2021. However the series is not directly aimed at dental students. Recommendations: The School of Clinical Dentistry at the University of Sheffield could organise a conference directly related to Planetary Health. They could also join the Planetary Health Alliance and the Global Consortium on Climate and Health Education. 	
<u>Community Outreach and Advocacy</u>	D+
<ul style="list-style-type: none"> Multiple members of faculty at the Dental School run focus groups to heighten student interest in sustainability and planetary health. Recommendations: Improvements need to be made to promote more sustainable oral healthcare options for patients. As well as this, if the core curriculum had more of a focus on sustainability, this could lead to higher student engagement. 	
<u>Support for Student-Led Initiatives</u>	C-
<ul style="list-style-type: none"> The University of Sheffield and the Dental School support student groups dedicated to planetary health. Sustainability initiatives such as student-led debates are great examples of how the University is becoming more sustainable, and involving its students in the process. As well as this, during 4th year electives in the Dental School, students can decide to undergo planetary health research. Recommendations: Support for student-led initiatives mostly comes from the wider University rather than the Dental School. With the beginnings of a student planetary health group, with more faculty support, we hope that more students will want to get involved. 	
<u>Campus Sustainability</u>	C+
<ul style="list-style-type: none"> Sheffield Dental School is striving towards becoming more sustainable with changes such as removing single use plastics from labs and, in current refurbishments, replacing old equipment with more sustainable alternatives. The University of Sheffield, as an institution, has achievable goals for becoming carbon neutral in the future Recommendations: There is still much room for improvement within the dental school and in the university itself; however, with the current trajectory for a more sustainable campus, constant improvements are inevitable. Hopefully, with more faculty support and growing interest in the dental school, there will be a greater push for improvements. 	

Statement of Purpose

Planetary health is human health.

The Planetary Health Report Card is a metric-based institutional advocacy tool created by The Planetary Health Alliance (<https://phreportcard.org/about/>) for evaluating and improving planetary health content in health professional schools. Further detailed information can be obtained directly from The Planetary Health Report Card Initiative, that includes the annual summary reports from participating institutions across the world (<https://phreportcard.org/>).

The Planetary Health Alliance describes planetary health as “a field focused on characterising the human health impacts of human-caused disruptions of Earth's natural systems.” 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. There is a growing concern among health officials and policymakers about the impact of declining planetary health on oral health. Climate change is not only detrimental to the physiology of patients, but the effects are also likely to impact the operations and effectiveness of oral health services. Although the World Health Organization has called climate change “the greatest threat to global health in the 21st century,” many dental schools’ institutional priorities do not reflect the urgency of this danger to human health, including oral health.

As future oral health professionals, we must be prepared to address the impacts of human-caused environmental changes on our patients’ general and oral health. This preparation is in the hands of the institutions providing our dental training. It is imperative that we hold our institutions accountable for educating dental students about the general and oral 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 dental 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 these issues are inherently ones of equity and justice.

The Planetary Health Report Card (PHRC) seeks to increase planetary health awareness and accountability among health professional schools. The PHRC is tailored to different healthcare professionals: Medicine, Dentistry, Nursing, Pharmacy and Physiotherapy. This dental-student-driven PHRC initiative aims to audit the current status of planetary health awareness and compare dental schools nationally and internationally on the basis of discrete metrics in five main category areas:

- 1) Planetary health curriculum
- 2) Interdisciplinary research
- 3) Community outreach and advocacy
- 4) Support for student-led planetary health initiatives
- 5) Campus sustainability

At each participating institution, student-led, faculty-mentored teams fill out the report card, identifying opportunities for improvement and reaching out to relevant staff and faculty along the way. Results are published in an annual Earth Day report, which helps track institutional change over

time.

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 dental school oral healthcare education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term “planetary health” to satisfy the metric.
- **Education for Sustainable Healthcare (ESH):** is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. Consensus-agreed learning outcomes and methods of teaching and assessment have been published at a European level (Field et al. 2023). These have been incorporated into the [Graduating European Dentist curriculum framework](#). Learning outcomes for Environmental Sustainability in Dentistry (ESD) have also been proposed by Joury et al. (2021) based on a review of the literature and adaptation of current learning outcomes in medical education:
 1. Describe concepts and definitions of climate change, carbon footprint and sustainability
 2. Discuss the importance of environmental sustainability for the health of patients
 3. Discuss the carbon hotspots of dentistry and how these can be modified
 4. Evaluate the overall environmental impact of clinical dentistry and how this can be improved through innovation.
 5. Appraise how future healthcare professionals can help shape a sustainable healthcare system, and the knowledge and skills (such as leadership), change management and co-production that they will require.
 6. Evaluate current literature and participate in research on sustainability in dentistry.
- **Dental School/College vs. University:** The term ‘dental school/college’ in the PHRC refers to the unit within an institution (University) that is responsible for the delivery of dental and allied oral healthcare curricula and programmes. In contrast, the term ‘institution’ in the PHRC refers to the University as the central organisation to which the Dental School/College

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

- **Elective:** The term ‘elective’ refers to an optional course, lecture series, intercalated work experience or similar that a dental student may elect to participate in. This can be either a part of the core curriculum or an intercalated period of ‘work/academic experience’. The significance of the term ‘elective’ may refer to either the choice of taking this additional course/study period or to the choice of the content, or both.
- **Outreach:** Also known under the terms of Clerkship (USA), internships or vocational education. This is a relatively short (approximately 4-8 weeks) period of study and patient-centred clinical experience that takes place as part of the undergraduate programme. Students are placed in selected clinical practice settings that are geographically distant from the university’s main dental school/college or dental hospital (Davies *et al.* 2023). The purpose of an outreach programme is to provide the undergraduate dental students with a broader practice-based experience of oral healthcare provision. On occasion, outreach practices may focus on serving the needs of specific groups of patients.

Other considerations:

- If there are more than one “tracks” at your dental 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).

Instructions for Completion of the PHRC

This tool is composed of five categories, all with a similar question-and-answer style. Responders should answer each question as accurately as possible and provide justification for each score. In order to answer the questions accurately, it is anticipated that responders will need to seek input from students of different cohorts.

Each question should be answered by selecting one option from the list of four presented. These options are phrased in the appropriate context with the inclusion of the terms 'In-depth, Moderately, Briefly and Not covered'. These terms are defined as follows:

In-depth: A thorough understanding of the subject is achieved. Most of the suggested syllabus points and/or related topics are covered. The subject topics are covered in detail and in a meaningful and objective manner providing a comprehensive subject understanding. This may include a subject-specific module with substantial credits or incorporation of the subject in the existing curriculum at all levels and years of programmes. The subject topics are made relevant by being subject-specific (Example: The impact of service provision and patient carbon footprint is made relevant to the student by discussion as part of the 'Dental Public Health' core syllabus)

Moderately: A limited understanding of the subject is achieved. Some of the suggested syllabus points and/or related topics are covered. The subject topics are not covered in detail and a superficial subject understanding is achieved. The subject topics are covered only once at a particular point in time in the undergraduate course. There is little evidence of subject integration into the actual dental curricula.

Briefly: A very superficial understanding of the subject is achieved. Most of the suggested syllabus points and/or related topics are not covered. The topics are not covered in detail and a poor subject understanding is achieved. The subject topics are covered only once at a particular point in time in the undergraduate course. There is no subject integration into the existing dental curricula.

Not Covered: The subject is not part of the curriculum and is not covered anywhere nor in any form.

Each question/answer is followed by a short content outline of the topic areas that could be covered in the subject explored. These 'content outlines' aim to aid the responder in reaching an accurate answer and are not restrictive.

In all categories, the questions seek to obtain understanding of the content and depth of the learning and teaching provided for each of the topics explored. The curriculum content may be delivered in any form of learning and teaching format. The learning and teaching formats may be in formal lectures, course handbooks, tutorials, group discussions, invited speakers, on-line resources...etc. The actual format chosen by the dental school/college for the delivery of the content is not considered to be important, so long as it achieves the desired learning objectives/outcomes. All learning approaches are considered valid and desirable as they work in a complementary and synergistic manner.

How to answer the questions?

1. The responder should firstly carefully read the principal stem question
2. Now read the brief 'content outline' that is contained within the question and consider how your dental school/college maps against these criteria
3. Consult with other students or academic staff as required*
4. Select an answer that best captures the experience in your dental school/college
5. Add a brief justification for the selected answer

*It is anticipated that the respondent students may not have the required local insight to answer some of the questions that have a management/administrative component. Prior to responding, it is important that help is sought from the appropriate academic staff to gain the required information. This may be particularly especially the case for the sections: Community outreach and advocacy, Support for student-led planetary health initiatives and Campus sustainability

Planetary Health Curriculum

Section Overview: This section evaluates the integration of relevant planetary health topics into the dental school curriculum. Today's dental students will be on the frontlines of tackling the health effects of climate and other environmental changes. Therefore, it is critical that dental students are trained to understand the general and oral 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 as applicable to oral health must be part of every dental school's core curriculum.

Focusing on the curriculum that is delivered by the Dental School/College of your university, rate how the following topics have been addressed? You should consider depth of content and opportunities for further self-directed learning.

Curriculum: Environmental threats to Planet Earth

1.1. Climate change and its impacts on humankind and biodiversity	
3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.
<p><i>Score explanation:</i> The topic of climate change is very briefly mentioned in lectures in regard to how humans impact the environment through overuse of resources. Examples of lectures containing some information regarding climate change are the materials lectures in the 2nd BDS theme of BODC (basic oral and dental care). It is then again mentioned across the materials lectures in the 4th BDS theme of ICP (integrated clinical practice).</p> <p>Students have also been encouraged to consider it as an area of research during their elective period. This is carried out in semester 2 and 3 of 4th BDS and is discussed within semester 1 elective preparation lectures of 4th BDS. It can also be found in the pre-elective guide provided to 4th BDS in the elective theme.</p>	

1.2. Pollution and its impacts on humankind and biodiversity	
3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.

Score explanation: There is some mention in 1st and 2nd BDS materials lectures of mercury vapour/ amalgam products present during the placement/ removal of amalgam restorations, their effect on the environment and how to dispose of it correctly. However, this is only very superficial knowledge, it is more discussed in relation to effect on humans rather than on the environment.

1.3. The impact of climate change and pollution on human health

3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.

There has been no mention of this across any teaching through any years.

1.4. Environmental citizenship, the impact of human choices and current and emerging environmental actions

3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.

Score explanation: This teaching is not yet integrated into the core curriculum. However, it does often get taught by some members of staff in lectures and flipped learning sessions before clinics, and is then reinforced within these clinical sessions. This is not often done in relation to the impact it can have on the environment, but rather to cut costs in clinics. This is not formal teaching and not every student receives the information it is more down to which tutors you have supervising your clinical sessions.

Curriculum: Environmental Impact of Healthcare

1.5. The environmental impact of the health sector

3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.

1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.
<p><i>Score explanation:</i> There is mention, in lectures and practical sessions, of mitigating our impact on the environment through choices we make as a healthcare professional (for example, how our choices of materials may affect the waste produced), however it is again only very briefly talked about with no real detail or discussion of viable alternatives. For example this is covered in Professor Martin's restorative lectures in 4th BDS, and briefly mentioned in 1st and 2nd BDS when referring to medical waste.</p>	

1.6. The environmental impact of <u>oral</u> healthcare provision	
3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.
<p><i>Score explanation:</i> There is some discussion on the impact that oral healthcare can have on the environment. It is taught across a few lectures but in little detail across all the years of teaching. For example, in restorative lectures starting from 3rd year, there is a focus on reducing the number of visits needed for patients, in a number of contexts- one of which is to reduce the environmental footprint. This is further reinforced in years 4 and 5 in the ICP module.</p>	

1.7. The environmental impact of different oral healthcare interventions	
3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.
<p><i>Score explanation:</i> The Minamata Convention is covered in some detail, and in our materials lectures, there is some discussion on the impact materials have on the environment. We have also been examined on this topic in end of year exams. Factors outside of the practice aren't covered in any detail, for example patients travel to and from the surgery.</p>	

1.8. Measuring the impact that oral healthcare has on the environment	
3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.
There is no teaching on how to measure our impact on the environment.	

Curriculum: Sustainability in Oral Healthcare

1.9 The concept of environmental sustainability	
3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.
<p><i>Score explanation:</i> The definition of sustainability is well taught and there is brief coverage of the benefits of being sustainable. Again, this is done with a focus on being cost effective rather than environmental. It is also highlighted in the elective (year 4 semester 2) handbook that our projects should aim to be sustainable, and encourages undertaking sustainability as a topic for our final elective project.</p>	

1.10. The concept of sustainable healthcare	
3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.
There is no mention of any concepts of sustainable healthcare within the core curriculum.	

1.11. The concept of sustainable oral healthcare

3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.
There is no mention of any concepts of sustainable healthcare within the core curriculum.	

Curriculum: Sustainability through Good Oral Healthcare

1.12. The importance of good oral health for delivering sustainable oral healthcare	
3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.
<i>Score explanation:</i> The benefits of having a healthy non restored dentition is taught throughout the BDS course, but it is normally discussed in the context of preserving tooth tissue rather than how it can benefit the environment. The sustainability context is normally a brief mention in lectures rather than being the entire aim of the lecture.	

1.13. The role of oral disease prevention for the delivery of sustainable oral healthcare	
3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.
<i>Score explanation:</i> Prevention is covered in detail; it is well taught across the entire course. However, it has always been covered with patient welfare in mind, the environmental benefits do not get discussed, but could be inferred.	

1.14. Does your dental 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 subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.
<p><i>Score explanation:</i> There is a significant amount of teaching on evidence based best practice in terms of use and impact of fluoride on children, we also are taught about the potential negative effects of using mercury in pregnant and young patients. The environmental effects of conscious sedation (Nitrous Oxide) are also discussed in detail and are examined in the curriculum however, disproportionate impact is not necessarily addressed in these lessons as the focus is more on overall impact</p>	

1.15. The role of integrated oral care in delivering sustainable oral healthcare	
3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.
<p><i>Score explanation:</i> Teaching on how to approach appointments and how to use them efficiently is well taught from 1st BDS lightly in the oral cavity health and disease theme and then onwards through the course. We are also taught in detail the correct way to structure a treatment plan to avoid waste e.g don't place a restoration that will likely fail due to periodontal disease. We are also encouraged to use a multidisciplinary approach to maximise efficiency.</p>	

1.16. The role of ownership of care in delivering sustainable oral healthcare	
3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.
<p><i>Score explanation:</i> There is thorough teaching on the importance of CPD (continual professional development) which takes place after qualifying, however this is taught with a focus on delivering good outcomes for patients rather than taking environmental benefits into</p>	

account. CPD encourages clinicians to further develop their practical skills and achieve better outcomes, better outcomes means less clinical time and resources down the line for patients and therefore fewer wasted materials. Clinical governance and critical reflection on outcomes are also well covered. These aspects are all covered within the Clinical Governance part of the course, over a number of lectures given in 4th BDS and 5th BDS.

Curriculum: Making Sustainability Work

1.17. The role of the dental team in the provision of sustainable oral healthcare	
3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.
<p><i>Score explanation:</i> Antibiotic stewardship is taught throughout the course starting lightly in first and second year but with an emphasis in the integrated human disease theme in third year. This is then reinforced as the course progresses. This again doesn't have an emphasis on the environmental impacts.</p>	

1.18. Embedding environmental sustainability into patient care in clinical teaching spaces	
3	This subject was addressed in depth by the core curriculum.
2	This subject was moderately addressed in the core curriculum.
1	This subject was briefly addressed in core curriculum or other learning experiences (e.g. elective coursework).
0	This subject was not covered.
<p><i>Score explanation:</i> The importance of having a preventative approach in treatment is frequently mentioned in the clinical setting, as well as focusing on the environmental effects of amalgam in the clinical skills learning environment. There is also some mention of the advantage of correctly planned treatment that doesn't require the patient to come in unnecessarily, and therefore reduces carbon emissions. The importance of good quality care lasting longer is also mentioned in the IODC course. Improvements need to be made however, as environmental sustainability is still not a topic of conversation mentioned with patients, and the topic is not addressed in depth in the core curriculum. There are plans however to assess sustainability of each clinical session we have through a scoring system designed by the university however, this is yet to be implemented.</p>	


Section Total (17 out of 54)	D
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Interdisciplinary Research

Section Overview: This section evaluates the quality and quantity of interdisciplinary planetary health research at the dental 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, dental 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.

Consider how your dental school/college performs with regards to the research statements below.

This symbol at the beginning of a question -  - means that the question is unique to dentistry. The other questions in this section and those below are aligned to the medicine PHRC so please do collaborate if there is a medicine team at your institution completing the PHRC too!

2.1. Are there researchers engaged in Environmental Sustainability in Oral Healthcare research at your dental school?	
3	Yes, there are faculty members at the School of Dentistry who have a primary research focus in planetary health or healthcare sustainability.
2	Yes, there are individual faculty members at the School of Dentistry who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.
1	There are planetary health and/or healthcare sustainability researchers at the university, but none associated with the dental school.
0	No, there are no planetary health and/or healthcare sustainability researchers at the institution or dental school at this time.
<p><i>Score explanation:</i> There are multiple faculty members such as Professor Nicolas Martin, Dr. Steven Mulligan and Dr. Jonathan Dixon who are active in the field of sustainable dentistry research however, none of them have it as their primary field of research.</p>	

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

Score explanation: The university as a whole has multiple departments dedicated to planetary health, there is the [Sustainability Steering Group and the Global Health and Environment Department](#).

The university has the Sheffield Institute for Health and Related Research with research topics covering Global Health and Environment. Within this is the [Global Health Group](#) which spans multiple research topics.

2.3. Environmental Sustainability of the Research Laboratories of the Dental School/College

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

Score explanation: In the research department, significant efforts are being made to ensure chemicals are disposed of in a way that has minimal impact on the environment. Efforts have also been made to transition from single use plastics in the labs to reusable (often glass) substitutes. Single use plastics are being phased out of the labs. As students, we are simply aware of this fact and that the dental school continues to search for alternatives in materials where possible but we would need to ask more into any form of strategy. The labs are also currently looking at replacing older equipment that uses significant energy (i.e fume cupboards) with more sustainable alternatives.

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 easy-to-use, adequately comprehensive website that centralises various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.
2	There is a website that attempts to centralise various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The institution has an Office of Sustainability website that includes some resources related to health and the environment.
0	There is no website.

Score explanation: The University of Sheffield has a website called the [Centre for Energy, Environment and Sustainability](#) (CEES), which focuses on centralising ongoing and past research related to the environment. The information included on CEES demonstrates the wide

range of research related to this topic, one example being the the ‘Promoting Environmental Sustainable SMEs (PrESS) Project’ which focuses on educating businesses on the environmental impact of their supply chain, and another being ‘[The Big Energy Upgrade](#)’ which focuses on understanding how houses can be made more energy efficient.

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

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

Score explanation: The University of Sheffield Sustainability Committee is running events in conjunction with COP 28 summit, this includes talks with a range of different speakers and interactive workshops. This is not the first of this kind, but is an event the Sustainability Committee has run before.

2.6. Is your dental school active in national or international planetary health/environmental sustainability organisations or working groups within wider organisations?

1	Yes, the dental school is active in national or international planetary health/ESH/ESD organisations or planetary health/ESH/ESD working groups within wider organisations
0	No, the dental school is not active in such organisations

Score explanation: Faculty members of the dental school have been founding members of sustainability groups such as the [World Dental Federation](#).

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A-


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Community Outreach and Advocacy

Section Overview: This section evaluates dental 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.


Consider how your dental school/college performs with regards to the community outreach and advocacy statements below.

 3.1. Public engagement and participation with the dental school/college through community outreach and advocacy programmes	
3	There is a strong, active and impactful public engagement with the Dental School/College in environmental oral healthcare
2	There is moderate public engagement with the Dental School/College in environmental oral healthcare
1	There is minimal public engagement with the Dental School/College in environmental oral healthcare
0	There is no public engagement with the Dental School/College in environmental oral healthcare
<p><i>Score explanation:</i> Several faculty members at the dental school run programmes/focus groups to get the student body and other faculty thinking about sustainability and planetary health. However, engagement is not always high. The university also has a website on sustainable dentistry that is available to everyone, and highlights the importance of ‘reducing waste plastics and related CO2 emissions’ in the Clinical Dentistry Sector. This website also includes the works of Sheffield academics in relation to the Universities Grantham Centre outlining how dentistry could develop more sustainable practices.</p>	

 3.2. Dental school/college engagement and participation in the promotion of postgraduate professional development in environmentally sustainable oral healthcare	
2	Yes, the institution or main affiliated hospital trust offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health.
1	Yes, the institution or main affiliated hospital trust offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers

0	There are no such accessible courses for post-graduate providers
There are no courses relating to planetary health for postgraduate students	

3.3. Does your <u>dental school</u> have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
2	Yes, all students regularly receive communication updates dedicated to planetary health and/or sustainable healthcare.
1	Yes, planetary health and/or sustainable healthcare topics are sometimes included in communication updates.
0	Students do not receive communications about planetary health or sustainable healthcare.
<p><i>Score explanation:</i> Occasionally subjects relating to planetary health or sustainability projects are included in school wide emails. However, sometimes these lack any real detail. The university has an online sustainability newsletter, which sometimes includes planetary health topics. Sustainability issues have also been covered occasionally in the medical school newsletter when relating to good news stories from students; however, this is not a recurring theme.</p>	

 3.4. Dental school/college provision of educational resources for patients for the promotion of environmentally sustainable oral healthcare	
1	The dental school or dental hospital provide resources for patients on Environmentally Sustainable Oral Healthcare
0	There are no resources for patients on Environmentally Sustainable Oral Healthcare
There is currently no literature available to patients on promoting sustainable oral healthcare.	

Section Total (3 out of 8)	D+
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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 dental school or your institution offer support for dental students interested in enacting a sustainability initiative/QI project?	
2	Yes, the institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum.
1	The dental school encourages sustainability QI projects (to fulfil placement or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate.
0	No, neither the dental school or the institution offer opportunities or support for sustainability initiatives or QI projects.

Score explanation: The University of Sheffield offers resources to help students as part of their student [impact groups](#). Within this there are sustainability steering and delivering groups, where “gathering the views and input of students is a key part of [the universities] consultation”.

4.2. Does your institution offer opportunities for dental students to do research related to planetary health and/or environmental sustainability?	
2	The institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these require student initiative to seek these out and carry them out in their spare time.
0	There are no opportunities for students to engage in planetary health/sustainable healthcare research.

Score explanation: The only opportunity for planetary health research is during a student's elective period. This however has to be on a students own volition.

4.3. Does the dental school have a webpage where dental students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the dental school? For example, projects achieved, current initiatives underway at the dental school and/or contact of information of potential mentors.	
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2	The dental school has a web page 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 dental school webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the dental school, but it lacks key information.
0	There is no dental-school specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.
<p><i>Score explanation:</i> There is a web page relating to sustainable dentistry containing some information and the names of academics involved in sustainability related research. However it severely lacks information about the projects. Information can also be found on the University of Sheffield News website outlining how dentists from the university are helping to ‘move towards more environmentally friendly practices’, with researchers from the universities School of Clinical Dentistry having helped establish the ‘FDI World Dental Federation’s (FDI) inaugural Consensus Statement on Environmentally Sustainable Oral Healthcare’.</p>	

4.4. Does your dental 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 with faculty support at my dental school dedicated to planetary health or sustainability in healthcare.
1	Yes, there is a student organisation at my dental school dedicated to planetary health or sustainability in healthcare but it lacks faculty support .
0	No, there is not a student organisation at my institution dedicated to planetary health or sustainability in healthcare.
<p><i>Score explanation:</i> We have the beginnings of a student planetary health group and it has some faculty support however it is not fully active.</p>	

4.5. Is there a student liaison representing sustainability interests who serves on a dental 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 dental school or institutional decision-making council/committee.
0	No, there is no such student representative.
<p>There is no such student representative.</p>	

Section Total (4 out of 9)

C-

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Campus Sustainability

Section Overview: This section evaluates the support and engagement in sustainability initiatives by the dental 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 dental 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 <u>dental school</u> and/or <u>institution</u> have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or dental school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of dental school and/or hospital sustainability.
1	There are no salaried sustainability staff , but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p><i>Score explanation:</i> There is a South Yorkshire sustainability centre based at the university however, there is nothing for the dental school and the centre appears to have no dedicated staff apart from someone running the centre that is primarily part of chemical engineering. The site for the centre has “coming soon” under the staff section.</p>	

5.2. How ambitious is your <u>institution/dental school</u> plan to reduce its own carbon footprint?	
5	The institution has a written and approved plan to achieve carbon neutrality by 2030 and the dental school has a well-defined and adequate plan in place to achieve this goal
3	Yes, there is a written and approved plan to achieve carbon neutrality by at least 2040 and the dental school has a well-defined and adequate plan in place to achieve this goal.
1	The institution/dental school has a stated goal of carbon neutrality by 2040 but has not created a plan to reach that goal or the plan is inadequate
0	The institution/dental school does not meet any of the requirements listed above
<p><i>Score explanation:</i> The university has an approved plan to achieve a carbon neutral campus by 2030 and to be completely net zero in all affiliated activities by 2038, information on this can be found on the university's website and outlines how the institution aims to reach these goals. Furthermore you can view all of the university's environmental targets and the reasons why the university is aiming for these goals.</p>	

5.3. Institutional (University/Dental School) implementation of Environmental Sustainability strategies

3	There is strong, active and ambitious strategy for the promotion and implementation of Environmental Sustainability across all domains
2	There is moderate strategy for the promotion and implementation of Environmental Sustainability across all domains
1	There is minimal strategy for the promotion and implementation of Environmental Sustainability across all domains
0	There is no strategy for the promotion and implementation of Environmental Sustainability across all domains

Score explanation: There is a strong implementation of striving towards being [net zero](#) as a university by 2030, this a likely goal when reflecting on the university's last achievement of reducing carbon emissions by 47%. The university has outlined [targets](#) and [strategies](#) to reach in the years leading to 2030. 46% of the university's [fleet of vehicles](#) are electric, demonstrating the aim for low-carbon transport. The university is also working on establishing a [carbon offsetting scheme](#) to be used where unavoidable emissions are released. “[The SusSEd series](#) is a collection of engaging lunchtime talks and workshops open to all staff and students at the University, designed to provide attendees with the knowledge and skills needed to bring about a more sustainable world.” There are also incentives for students to be more sustainable, for example by bringing reusable cups to cafes on campus you can receive a discount. Within the university there are also community fridges containing unsold fresh goods to reduce food waste.

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

Score explanation: The University has many schemes and websites that students can access in order to promote more [sustainable travel](#), with ‘36% of staff and 80% of students either walk[ing] or cycl[ing] to campus’. There is also the [University Cycle Forum](#) where staff and students can help influence the ‘continuing development of the University Transport Policy’, highlighting the university's agenda to continue to become more environmentally friendly.

Statistics can also be found [online](#) to show how these efforts are cutting commuting emissions, and information on rewards schemes for those staff and students that travel more sustainably.

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

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

Score explanation: The dental school has a conventional recycling programme (card/ paper/ plastic etc), however no compost recycling programme is currently available.

5.6. Does the dental school or institution apply sustainability criteria when making decisions about supply procurement?

3	Yes, the dental school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are insufficient or optional . The dental school is engaged in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are insufficient or optional . The dental school is not engaged in efforts to increase sustainability of procurement.
0	There are no sustainability guidelines for supply procurement.

Score explanation: The institution has guidelines for [supply procurement](#) and [strategies](#) to improve upon this in the university. They have a statement which guides suppliers to source goods and services in accordance with laws and environmental impact. [Further information](#) can be found on the university's efforts to be more sustainable in regards to supply procurement, with examples of how they are reducing plastic in their cafes. The dental school does not have any documents that can be found relating to sustainable supply procurement.

5.7. Are there sustainability requirements or guidelines for events hosted at the dental school?

2	Every event hosted at the dental school must abide by sustainability criteria.
1	The dental school strongly recommends or incentivizes sustainability measures, but they are not required .
0	There are no sustainability guidelines for dental school events.

There are no sustainability requirements or guidelines for dental school events currently. The dental school also does not recommend or incentivise sustainability measures for events.

5.8. Does your dental school have programs and initiatives to assist with making lab spaces more environmentally sustainable?

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

Score explanation: There are no current specific guidelines within the dental school to make the lab spaces more environmentally sustainable, however there are members of staff who are trying to implement more sustainable measures within the lab, for example removing or reducing our use of single-use plastic and moving towards reusable materials like glass and metal. Efforts are also being made to ensure correct disposal of chemicals in order to prevent damage to the environment.

Section Total (13 out of 22)

C+

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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%

**Within each grade bracket, a score in the top 5% (_5 to _9%), receives a "+", and a score in the bottom 5% (_0- _4%) receives a "--". For example, a percentage score of 78% would be a B+.*

Planetary Health Grades for the Sheffield School of Dentistry

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(17/54) \times 100 = 31\%$	D
Interdisciplinary Research (17.5%)	$(14/17) \times 100 = 82\%$	A-
Community Outreach and Advocacy (17.5%)	$(3/8) \times 100 = 37\%$	D+
Support for Student-led Planetary Health Initiatives (17.5%)	$(4/9) \times 100 = 44\%$	C-
Campus Sustainability (17.5%)	$(13/22) \times 100 = 59\%$	C+
Institutional Grade	48.15%	C