Planetary Health Report Card (Pharmacy)

Monash University

2024-2025 Contributing Team:

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Land acknowledgment: Our report card is written on the lands of the Kulin Nations and I wish to acknowledge them as Traditional Owners.

Summary of Findings

Overall Grade	B

Curriculum	C+

Over the 2024–2025 period, planetary health education within Monash University's Bachelor of Pharmacy (Hons) curriculum has been significantly strengthened and expanded. Planetary health concepts and principles are now embedded across all four year levels, spanning multiple units and employing diverse teaching methods. Antimicrobial resistance and antimicrobial stewardship, particularly, is an area that has seen substantial growth, with the curriculum placing increasing importance on a planetary health approach. Opportunities for student involvement in co-designing curriculum content and participating in interprofessional collaboration activities have also emerged, fostering greater student engagement and leadership in planetary health education. Nevertheless, the overall curriculum coverage is inconsistent and lacks a clear direction, with some areas being thoroughly covered while others are addressed only minimally, or as optional extension content for students. Planetary health topics are notably absent from mandatory clinical practice experiences. There remains a clear need to further improve the depth and detail of planetary health education, and to ensure its integration follows a strategic, consistent and cumulative approach across all four years of the degree.

Interdisciplinary Research	A

Monash University has a strong focus on conducting planetary health and sustainable healthcare research through the Monash Sustainable Development Institute (MSDI) and the Planetary Health Division in the Faculty of Medicine, Nursing and Health. In 2024, Monash University hosted the World Health Summit Regional Meeting conference. The theme of the Regional Meeting focused on shaping the future of health, including climate health across the Asia Pacific. Over the past year, interdisciplinary research was conducted across faculties covering areas such as sustainable medicine design, antimicrobial resistance and planetary health multidisciplinary education.

Community Outreach and Advocacy	C+

Monash University demonstrates a strong commitment to planetary health through meaningful partnerships and educational initiatives. The university actively collaborates with various organisations to promote sustainability and environmental health, offering community-facing courses and events that engage students and staff. Programs such as sustainability workshops and public education initiatives highlight its dedication to advocacy and outreach. While Monash provides regular updates on sustainability, communication is inconsistent across campuses, limiting awareness among some student groups. Post-graduate education includes sustainability training for staff, but the lack of accredited courses reduces its impact. Additionally, there are no accessible patient education materials on environmental health or climate change within affiliated hospitals, highlighting a gap in community outreach. Strengthening communication efforts and expanding educational resources for both healthcare professionals and patients could enhance Monash's role in planetary health advocacy.

Support for Student-Led Initiatives	B

Over the 2024–2025 period, support for student-led planetary health initiatives declined from A to B+ as the Monash Society of Sustainability (MSOS) became inactive, leaving no dedicated student group for planetary health or healthcare sustainability. Additionally, there is also no student representative advocating for sustainability within the pharmacy faculty or institution serving on a decision-making council. However, the institution continues to foster engagement through initiatives like *Green Steps* for leadership development and planetary health research opportunities via MSDI. The university's research portal connects students to relevant projects and mentors. The institution promotes planetary health programs via The Monash Permaculture Garden (MPG), holds Planetary Health Champion Workshop for PharmAlliance students, The Climate Change Communication Research Hub

shares research through podcasts and seminars. There are robust volunteer programs and Monash University Outdoor Club (MUOC) enables students to participate in outdoor activities.

Campus Sustainability	**A-**

In the 2024-2025 Monash University has again demonstrated a strong commitment to campus sustainability, achieving a A- in the latest assessment; however, this marks a slight decline from the previous A rating due to the inclusion of more exploratory criteria in the Planetary Health Report Card, expanding on the scope of evaluation. Key successes include a dedicated Office of Sustainability, a Net Zero plan targeting carbon neutrality by 2030, and progress in sustainable building practices, waste management, and environmentally friendly transport. However, challenges remain, particularly in renewable energy integration, fossil fuel divestment, and the enforcement of sustainability policies. To address these gaps, Monash should expand on-site solar installations and secure power purchase agreements for renewable energy at Parkville. Stronger policies on campus food services should mandate local sourcing, reduced red meat options, and minimal plastic packaging. Sustainability requirements for events should be made mandatory to ensure consistent environmental standards. Additionally, Monash should fully divest from fossil fuels and reinvest in renewable energy projects and campus sustainability initiatives. Strengthening these strategies will enhance Monash’s role as a leader in planetary health and climate action.

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 health professional schools' 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 health professional training. It is imperative that we hold our institutions accountable for educating health professional 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 health professional schools, we have created a Planetary Health Report Card that students internationally can use to grade and compare their institutions on an annual basis. This student-driven initiative aims to compare health professional 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, 4) community outreach centred on environmental health impacts, and 5) 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 health professional 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.

- **Pharmacy School/Department vs. Institution:** When "Pharmacy school" is specified in the report card, this only refers to curriculum and resources offered by the School/department of pharmacy 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 including all of its campuses. Any resource reasonably accessible by pharmacy students, no matter where in the institution the resource comes from or if it is

specifically targeted for pharmacy students, can meet this metric.

- **Environmental history:** This is a series of questions students 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. Please be as specific as possible when providing evidence for this metric.

- **Elective:** The word "elective" refers to an optional course or lecture series that a 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.

- **Core Curriculum:** This refers to taught material that is delivered to the entire cohort of students in one year.

- **Clerkship / Outreach:** 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, outreach or placements. 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.

- **Clinical rotation:** This is a term used to refer to placements that students go on (e.g., ophthalmology, surgery, cardiology).

- **Physiotherapy vs Physical Therapy:** For the purposes of this report card these terms are considered interchangeable. However, physiotherapy will be used primarily.

- **Community organisations:** For most institutions, there are existing groups that are not directly affiliated with the university and exist as a product of what the community the institution exists in cares about or needs. These specific community organisations relevant to this report include those that are focused around some aspect of climate and health preservation. These community organisations can include but are not limited to local mutual aid initiatives, underserved-resource distribution groups, clean-up and nature conservation groups, community gardeners, and other environmental-related organisations. If your institution does not have access to local volunteerships with community groups, please report any community organisations your institution or school has collaborated with.

- **Climate justice:** The idea that certain population groups and geographical locations which are disproportionately more impacted by climate change are already economically and socially disadvantaged. This double vulnerability sits alongside pre-existing social justice concerns and should therefore shift policy and practice to mitigate the inequitable effects of the climate crisis.

- **Extractivism:** The removal of natural resources typically in large quantities. Within anthropology this term is often used in the context of colonialism to refer to the

historic seizing of natural resources, a practice which has developed business models tied to ecological degradation and loss of biodiversity.

- **Global South:** Nations that often have less economic and industrial development and are typically in the southern hemisphere. These nations have been found to be disproportionately impacted by the climate crisis.

- **Low socioeconomic status (SES):** An individual or geographical area that across a variety of socioeconomic factors (e.g., income, education, race/ethnicity) is considered vulnerable. This vulnerability has been correlated to more adverse health outcomes often as a consequence of encountering more barriers in accessing and receiving healthcare.

- **Low and Middle-Income Countries (LMIC):** Countries that have lower degrees of economic affluence.

- **Anthropogenic:** Created through human activity

- **Marginalized communities:** Groups excluded from mainstream economic, educational, social, and/or cultural experiences due to race, gender identity, sexual orientation, age, physical ability, language, and/or immigration status (Sevelius et al., 2020).

Other considerations:

- If there are more than one "tracks" at your institution 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). Where possible please indicate the proportion of students that are on each track.

Completed in 2022 a Literature Review by Metric is available for the 2022 medicine report card metrics. We are in the process of updating this review and making it more applicable to all the disciplines. However the review serves as a rough collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.

A note from the Contributing Team:

The Monash University Faculty of Pharmacy and Pharmaceutical Sciences is based at the Parkville campus, a specialist campus situated within Melbourne's biomedical precinct. All pharmacy curriculum delivery occurs at the Parkville campus, and pharmacy-specific events, student initiatives, and extracurricular activities are also hosted there.

Monash University has four campuses in Victoria, these are: Caulfield, Clayton, Parkville and Peninsula. The Faculty of Pharmacy and Pharmaceutical Sciences is located at Parkville campus. The Faculty of Medicine, Nursing and Health Sciences is located on a separate campus in Clayton. Section 1 (curriculum) and section 5 (campus sustainability) applies only to the Faculty of Pharmacy and Pharmaceutical Sciences at Monash University Parkville campus. Sections 2 to 4 are applicable to Monash University on an institution wide level.

Planetary Health Curriculum

Section Overview: ***This section evaluates the integration of planetary health topics into the pharmacy school curriculum.*** *Today's pharmacy students will be on the frontlines of tackling the health effects of climate and other environmental changes. Therefore, it is critical that pharmacy students understand planetary health issues and principles.*

1.1 Does your pharmacy school curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2

Score explanation:
The health impacts of extreme weather events are addressed to varying extents across three compulsory units in the four-year curriculum: PHR1011, PHR2041, and PHR3141. However, the coverage is relatively brief and primarily focuses on specific events, such as thunderstorm asthma.

- In PHR1011, the introductory lecture entitled 'Sustainability in Pharmacy' highlighted extreme weather events, including droughts, fires, floods and storms, as consequences of climate change and establishes their connection to human health.
- In PHR2041, students participated in a compulsory interprofessional activity with second-year medicine students, entitled 'Collaborative Care - Action on Asthma', which focused on responding to a thunderstorm asthma emergency. While the in-workshop discussion briefly identified climate change as a driving factor for thunderstorm asthma, learning materials did not explicitly link these events to anthropogenic change.
- In PHR3141, the 'Antimicrobials and antimicrobial stewardship' topic addressed the human health impacts of extreme weather events in greater detail compared to prior units. Pre-reading materials introduced extreme weather events as direct consequences of climate change that can negatively impact human health. The accompanying in-class workshop featured a thunderstorm asthma case, guiding students to recognise the ecological processes driving thunderstorms and their connection to the pathophysiological mechanisms of asthma. Students were finally tasked with considering how climate change may influence the prevalence and patterns of thunderstorm asthma.

The relationship between weather and human health was also explored as elective coursework within the PHR4012 unit, specifically in the 'Quality Use of Medicines' topic. This topic was an elective, self-directed learning module available to interested fourth-year pharmacy students. Pre-reading materials and associated infographics established that climate change and weather events can increase the prevalence and severity of pre-existing health problems, and can also contribute to new health problems by exacerbating existing social determinants of health.

1.2 Does your pharmacy school curriculum address the environmental impact of medicines in terms of their pollution, ecological impact and contamination of water systems?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3

Score explanation:
The environmental impacts of medicines are addressed in core coursework across all four years of the pharmacy curriculum, featuring in the compulsory units PHR1011, PHR2021 and PHR3141.

- In PHR1011, the introductory lecture entitled 'Sustainability in Pharmacy' identified pharmaceuticals as a source of pollution, highlighting direct emissions from the "manufacture, human and animal excretions and disposal" of medicines as well as indirect emissions through "supply chains" and the "direct chemical effects of active pharmaceutical ingredients in waterways and soil, and waste disposal". This pollution is linked to a range of human health harms such as respiratory disease, cardiovascular disease and cancer.
- In PHR2021, the 'Good Manufacturing Practice' topic briefly outlined the environmental implications of the manufacture, use and disposal of pharmaceuticals, making specific references to "waste handling, contaminated rinsing water and soiled gowning" . However, there was no further discussion of these concepts in laboratory classes.
- In PHR3141, the 'Antimicrobials and antimicrobial stewardship' topic thoroughly addressed the environmental impacts of antimicrobials. Pre-reading materials identified water, soil and air contamination occurring through the antibiotic 'life cycle', from production to excretion. The in-class workshop contained a case study focusing on the appropriate disposal of antimicrobials, emphasising its role in preventing contamination and mitigating antimicrobial resistance.

There were also opportunities for students to engage with this topic through elective coursework in the PHR4012, PHR5151 and PHR5252 units.

- In PHR4012, the 'Quality Use of Medicines' topic was available as an elective, self-directed learning unit. It provided a focused exploration of the environmental impacts of medicines, extending its scope beyond antimicrobials to include all types of medicines. Pre-reading materials and a webinar highlighted key issues such as greenhouse gas emissions and the contamination of waterways resulting from medicine use. The materials also addressed the value of the Return Unwanted Medicines (RUM) Project in mitigating the safety and environmental risks associated with inappropriate medicine disposal. An overarching learning outcome for this topic was to promote Quality Use of Medicines (QUM) while incorporating principles of environmental sustainability. To achieve this, a related activity tasked students with developing actionable strategies to mitigate the environmental impacts of metered dose inhalers (MDIs). The activity explored the harm caused by chlorofluorocarbon (CFC) and hydrofluorocarbon (HFC) propellants to the ozone layer. Students proposed various strategies to minimize this impact, including switching patients from pressurized metered dose inhalers (pMDIs) to dry powder inhalers (DPIs) and participating in pMDI recycling schemes.
- In the PHR5151 and PHR5252 units, a student team conducted research investigating knowledge of appropriate antibiotic disposal among Australian community pharmacists.

The resulting research poster, entitled ‘Exploring awareness of planetary health and antibiotic disposal advice across Australian Pharmacies: A mystery shopping expedition’, discussed environmental contamination as an important consequence of inappropriate antibiotic disposal, highlighting agricultural runoff, pharmaceutical discharges, and the excretion of waste by humans and animals as key contributors to this contamination.

1.3 Does your pharmacy school curriculum address the health effects of pharmaceutical industry- and manufacturing-related environmental toxins?

This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2

Score explanation:
The environmental toxins associated with the pharmaceutical industry and pharmaceutical manufacture are briefly addressed in individual topics within only three units of the pharmacy curriculum, namely PHR1011, PHR2021 and PHR4012. There is limited discussion of the associated human health impacts in compulsory coursework, however students may investigate this relationship further through self-directed research projects in the Inquiry and Innovation units, PHR5151 and PHR5252. Within these research-focused units, students may elect to conduct and/or present research on the health effects of the pharmaceutical industry and pharmaceutical manufacture.

As mentioned in metric 1.2:

- In PHR1011, the introductory lecture entitled ‘Sustainability in Pharmacy’ identified pharmaceuticals as a source of pollution, highlighting direct emissions from the “manufacture, human and animal excretions and disposal” of medicines as well as indirect emissions through “supply chains” and the “direct chemical effects of active pharmaceutical ingredients in waterways and soil, and waste disposal”. This pollution was linked to a range of human health harms such as respiratory disease, cardiovascular disease and cancer.
- In PHR2021, the ‘Good Manufacturing Practice’ topic briefly outlined the environmental implications of the manufacture, use and disposal of pharmaceuticals, making specific references to “waste handling, contaminated rinsing water and soiled gowning” . However, there was no further discussion of these concepts in laboratory classes.
- In PHR4012, pre-reading materials within the elective ‘Quality use of medicines’ topic specifically addressed greenhouse gas emissions and the contamination of natural waterways as key consequences of pharmaceutical industry activities.

1.4. Does your pharmacy school curriculum address the carbon footprint of healthcare systems?

This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1

Score explanation:
There was very limited inclusion of the carbon footprint of healthcare systems within compulsory coursework. While greenhouse gas emissions were briefly discussed in PHR3141 (see metrics 1.2 and 1.3), the concept of a 'carbon footprint' and the quantification of such emissions in terms of carbon dioxide equivalents were not explicitly introduced in any compulsory units.

Students could elect to explore the carbon footprint of the healthcare system in greater detail as elective coursework within PHR4012, PHR5151 and PHR5252 units.

- The elective 'Quality Use of Medicines' topic within the PHR4012 unit placed strong emphasis on the carbon footprint associated with global healthcare systems. Pre-reading materials highlighted the significant greenhouse gas emissions associated with both the lifecycle of medicines and the broader Australian healthcare sector. To support self-directed learning on strategies to mitigate healthcare-associated emissions, students were provided with additional resources, including the *Global Road Map for Health Care Decarbonisation Executive Summary* by Health Care Without Harm, and the *Delivering a Net Zero NHS* report by NHS England. As outlined in Metric 1.2, the elective materials also focussed on the greenhouse gas emissions linked to pressurized metered-dose inhalers (pMDIs). Related pre-reading materials identified transitioning to "lower carbon footprint" inhalers as a key strategy for promoting sustainable pharmacy practices and reducing the overall carbon footprint of the healthcare system.
- In PHR5151 and PHR5252, two student teams conducted research exploring the carbon footprint of pharmacy. For example, the research poster entitled 'Survey of Australian Hospital Pharmacists Adoption Of Sustainable Pharmacy Practice' explicitly discusses the significant carbon emissions associated with the healthcare system, and the need for robust sustainability programs to address this challenge.

1.5. Does your pharmacy school curriculum address the impact of climate change on the changing patterns of infectious diseases and increased antimicrobial resistance?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3

Score explanation:
The compulsory PHR3141 unit in the pharmacy curriculum provides a sustained examination of the

relationship between climate change, infectious disease patterns, and antimicrobial resistance (AMR). This connection is introduced in the Week 2 topic titled 'Antimicrobials and Antimicrobial Stewardship', and reinforced throughout all subsequent topics in the unit.

A team of Planetary Health Champions—consisting of five undergraduate pharmacy students and five faculty members—led the development and delivery of dedicated teaching materials as part of the Monash University FMNHS Planetary Health Education Project. Together, they collaboratively conceptualized, designed, and implemented a preparatory module and an interactive in-class workshop, integrating these materials into the topic as mandatory coursework for all PHR3141 students. Within this curriculum, planetary health was introduced as a guiding framework to illustrate the deep interconnections between climate change and infectious diseases. Pre-reading materials emphasized how extreme weather events, rising global temperatures, and other anthropogenic environmental changes contribute to the increasing prevalence of infectious diseases.

The primary focus of the curriculum, however, was on AMR as a pressing planetary health challenge. Pre-reading materials detailed how antibiotics enter aquatic and terrestrial ecosystems, bioaccumulate, and contribute to the development and spread of AMR. Key resources included direct quotes and visuals from the United Nations Environment Programme, framing AMR as part of the broader triple planetary crisis of climate change, biodiversity loss, and pollution.

The associated workshop activities emphasized actionable strategies for pharmacists to integrate planetary health principles into managing infectious diseases and antimicrobial stewardship (AMS) practices. For instance, students counseled a simulated patient on the safe and appropriate disposal of antibiotics, highlighting the environmental and public health risks of improper disposal. Another case study tasked students with identifying the risks of antibiotic overprescribing, reinforcing their role in promoting sustainable AMS practices.

1.6. Does your pharmacy school curriculum address the respiratory health effects of climate change and air pollution?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2

Score explanation:
The respiratory health effects of climate change and air pollution are included to varying degrees within the compulsory units PHR2041 and PHR3141.

- In PHR2041, the connection between respiratory diseases and air pollution was integrated throughout multiple topics. The 'Upper respiratory tract disorders' topic listed airborne pollutants (including perfumes, paint and other industrial fumes, dust, and irritants in tobacco smoke such as acrolein and nicotine) as known triggers of cough receptors in the throat and trachea, and thus possible causes of vasomotor rhinitis. The 'Chronic Obstructive Pulmonary Disease' topic described exposure to "cigarette smoke, occupational dust and chemicals, environmental tobacco smoke [and] indoor and outdoor

pollution" as a significant risk factor for COPD, and subsequently tasked students with identifying and optimising exposures.

- In PHR3141, the 'Antimicrobials and antimicrobial stewardship' topic introduced declining air quality as a consequence of climate change and possible cause of respiratory disease. Pre-reading materials briefly highlighted respiratory diseases as a public health concern exacerbated by environmental changes, and the accompanying in-class workshop explored this further through a thunderstorm asthma case. This activity tasked students to consider how climate change may influence the prevalence and patterns of thunderstorm asthma.

1.7. Does your pharmacy school curriculum address the cardiovascular health effects of climate change, including increased heat?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	0
Score explanation: The cardiovascular health effects of climate change are not explicitly integrated into compulsory or elective coursework across the four-year curriculum. While cardiovascular pharmacology and cardiovascular risk management is covered in great detail within the PHR2141 unit, coursework does not establish a clear connection between cardiovascular disease and climate change. Lecturers have briefly addressed extreme heat as a risk factor for cardiovascular events, however this is inconsistent and not included as a part of the assessable coursework.	

1.8. Does your pharmacy school curriculum address the relationship between climate change and allergies?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: The impact of climate change on atopic conditions is addressed as compulsory coursework within the PHR2041 unit, however the coverage is brief and primarily focuses on asthma and allergic rhinitis. Most notably, the interprofessional activity entitled 'Collaborative Care - Action on	

Asthma' utilised the clinical case of a thunderstorm asthma emergency to explore the relationship between environmental change and allergies. In-workshop discussions identified climate change as an important cause of increased pollen count, and therefore a contributing factor for asthma. These concepts are complemented by learning materials within the 'Antimicrobials and antimicrobial stewardship' topic of the PHR3141 unit. Pre-reading materials and accompanying infographics establish "increasing allergens" as a consequence of anthropogenic change, and therefore frame respiratory allergies and asthma as a human health impact of climate change. This connection is reinforced by the thunderstorm asthma case in the accompanying workshop.

1.9. Does your pharmacy school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	0
Score explanation: The mental health and neuropsychiatric effects of environmental degradation and climate change are not addressed within compulsory or elective coursework over the four-year degree. In the 'Antimicrobial and antimicrobial stewardship stewardship' topic of the PHR3141 unit, pre-reading materials contain an infographic identifying "mental health impacts" as a consequence of both extreme weather events and environmental degradation. However this is not explored further, and is not included as assessable coursework.	

1.10. Does your pharmacy school curriculum address the unequal regional health impacts of climate change nationally and globally, including the impact of social inequality?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	0
Score explanation: No curriculum content was identified to support this metric. Throughout many of the Professional Practice and Comprehensive Care units of the degree, coursework explicitly addressed regional health inequalities on a national and global scale. However, content focused primarily on	

accessibility, affordability, cultural and social barriers to health care. The regional health impacts of climate change were not included. The score for this metric remains unchanged from the previous 2023-24 Planetary Health Report Card, as no new curriculum content addressing this metric has been introduced.

1.11 Does your pharmacy school curriculum address the relationship between climate change and social determinants of health (e.g., reduced nutritional value of food)?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1
Score explanation: While social determinants of health are consistently emphasized and integrated across multiple units throughout the four-year curriculum, the relationship between these determinants and climate change is not covered in any compulsory coursework. This connection is only explored in the elective topic, 'Quality Use of Medicines', within the PHR4012 unit. An interactive webinar integrated into this topic presented the environment as a key social determinant of health, framing environmental degradation and climate change as potential threats to both individual and public health. An accompanying infographic further explained the connection between climate change and social determinants of health. It showed that climate change can directly harm health by increasing the prevalence and severity of existing health conditions. Additionally, it can indirectly impact health by worsening social factors, such as income, access to healthcare, and living conditions, leading to the onset of new health conditions. Finally, the interactive webinar introduced the 'triple bottom line' sustainability framework, which further reinforced the intersection between social and environmental predictors of health.	

1.12. Does your pharmacy school curriculum address the environmental and health co-benefits of a plant-based diet?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1

Score explanation:
The health benefits of a plant-based diet are briefly addressed across several compulsory topics throughout the second-year curriculum, particularly the PHR2142 unit. However, there is an exclusive focus on health benefits, and not environmental benefits.

The environmental and health co-benefits of a plant-based diet are introduced in the PHR3141 unit, where the concept of the "planetary health diet" is specifically explored. Pre-reading materials within the 'Antimicrobials and antimicrobial stewardship' topic highlight the planetary health diet as a strategy for integrating a planetary health approach into pharmacy practice. The materials emphasise the planetary health diet as a "plant-forward" diet, where plant-based foods comprise a large proportion of daily intake. However, there are no explicit opportunities in subsequent workshops to practice counselling a patient on a planetary health diet within the pharmacy context, nor is the planetary health diet addressed in other activities or assessable questions. A hyperlink to further information on the planetary health diet and its environmental and health co-benefits is provided for students who wish to explore the topic further. For the purposes of this metric, the relevant curriculum is therefore considered 'elective coursework'.

1.13. Does your pharmacy school curriculum cover these components of sustainable clinical practice? (1 point each)	**Score**
Waste production within the healthcare system and strategies for reducing waste in clinical activities such as single use plastic and packaging. (1 point)	1
Patient counselling on safe disposal of medications. For example, what can be disposed of and how to locate recycling schemes, in addition to certain drugs or drug classes that are most important to dispose of properly (e.g. hormonal contraceptives, drugs that are excreted unchanged/active metabolites). (1 point)	1
The impact of extreme heat, on patients on medications which can interfere with thermoregulation. (1 point)	0
The impact of anaesthetic gases on the healthcare carbon footprint. (1 point)	0
The environmental impact of pharmaceuticals and over-prescribing as a cause of climate health harm. Alternatively, teaching on de-prescribing where clinically appropriate and its environmental and health co-benefits would fulfil this metric. (1 point)	1
The health and environmental co-benefits of non-pharmaceutical management of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes for obesity. This is commonly known as social prescribing in the UK. (1 point)	1
The impact and benefits of benign by design pharmaceuticals through exploring medicinal chemistry concepts and/or discussing implications of excretion of active metabolites/unchanged drug products on ecological systems. (1 point)	1
Score Assigned:	5

Score explanation:

Item #1

- Waste production within the healthcare sector, along with specific strategies for healthcare professionals to address and mitigate waste, is not explicitly described in any compulsory coursework throughout the four-year curriculum. However, these concepts are explored in significant detail within the elective ‘Quality Use of Medicines’ topic in the PHR4012 unit, particularly during the concluding webinar for the topic. The webinar emphasised the substantial waste generated by the healthcare sector, with a particular focus on medication packaging, medical device waste, and paper waste produced through routine daily tasks in the community pharmacy setting. Existing systems and programs available to practising pharmacists in Australia were outlined to inform and encourage action. For example, the webinar educated on recycling solutions for blister packs and Webster-packs, which combine plastic and foil components. The webinar also encouraged students to develop their own waste mitigation strategies, offering feedback on their ideas and addressing questions related to waste management in the pharmacy context.

Item #2

- Strategies to support and facilitate patient counselling on the safe disposal of antimicrobials, particularly antibiotics, are integrated throughout compulsory coursework in the PHR3141 unit. The 'Antimicrobials and Antimicrobial Stewardship' topic provides an introduction to the interconnected environmental and health impacts of improper antibiotic disposal, such as discarding them in household landfill or flushing them down the toilet. Pre-reading materials offer an explanation of how such antibiotics enter aquatic and terrestrial ecosystems, where they can bioaccumulate and eventually contribute to the development and spread of antimicrobial resistance (AMR). Throughout all subsequent topics, students were encouraged to incorporate specific instructions on the safe disposal of antibiotics, such as using the RUM (Return Unwanted Medicines) program, into their patient counselling sessions. This skill of counselling on the safe disposal of antibiotics was then evaluated in the final examination.
- Further strategies for patient counselling on the safe disposal of medicines were covered as elective coursework within the ‘Quality Use of Medicines’ topic in the PHR4012 unit. As highlighted in previous metrics, pre-reading materials emphasized the importance of the Return Unwanted Medicines (RUM) Program in mitigating both safety and environmental risks associated with improper medicine disposal. Strategies for counselling patients on the RUM program were incorporated in a concluding webinar, where students received targeted feedback.

Item #5

- The health benefits of deprescribing are briefly covered throughout compulsory coursework across the four-year degree. However, the environmental co-benefits are not addressed until the elective ‘Quality Use of Medicines’ topic in the PHR4012 unit. A concluding, non-compulsory lecture highlights overprescribing as a form of climate health harm and, by extension, introduces deprescribing as a strategy for mitigating the environmental impacts of the pharmacy sector. During this non-compulsory lecture, students proposed potential strategies for pharmacist advocacy on the environmental and health co-benefits of deprescribing. Key strategies included confirming a therapeutic need prior to dispensing ‘repeats’ for antimicrobials, conducting regular medication reviews to identify opportunities for evidence-based deprescribing, and limiting the sale of complementary medicines and over-the-counter medicines unless there is sufficient evidence supporting their therapeutic benefit and an identified therapeutic need.

Item #6

Throughout the Comprehensive Care units of the degree, compulsory coursework placed a strong and sustained emphasis on the value of non-pharmacological interventions for the management of various chronic health conditions. However, the health benefits were framed as the primary rationale for such interventions, and the environmental co-benefits were only briefly discussed during in-workshop and in-lecture discussions. For example, adopting a plant-based diet and walking or riding a pushbike to work or school (rather than driving) were recommended as effective non-pharmaceutical strategies for the primary and secondary prevention of cardiovascular disease in the PHR2142 unit. Teaching staff facilitated discussions as to the environmental benefits of these strategies, and students could include this in motivational interviewing roleplays. However, there is significant scope to further reinforce such positive environmental implications in the compulsory curriculum.

The score for this metric remains unchanged from the previous 2023-24 Planetary Health Report Card, as no new curriculum content addressing this metric has been introduced.

Item #7

- The impact and benefits of "benign by design" pharmaceuticals are introduced through medicinal chemistry concepts in the compulsory PHR1222 unit. However, this coverage is brief and general, and would benefit from further expansion to provide a more meaningful exploration of the topic.

1.14. Does your pharmacy school curriculum discuss the environmental implications of various dosage forms, medication delivery devices, and/or excipients?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2

Score explanation:
The environmental impacts of specific dosage forms, medication delivery devices, and excipients were addressed sporadically and with limited depth across compulsory coursework throughout the four-year curriculum. These topics were not formally assessed, integrated into a cohesive theme, or given a defined role within the curriculum. For example, the PHR2021 unit included several in-lecture and in-workshop verbal discussions as to the amount of waste generated by different pharmaceutical dosage forms (ie. single-use vials versus multi-use containers, daily tablets versus implantable devices, daily injections versus weekly injections etc.), but these issues were not addressed in formal learning and teaching materials.

Elective coursework, however, offered a sustained and comprehensive exploration of the environmental implications of inhaled devices, such as pressurized metered-dose inhalers (pMDIs) and dry powder inhalers (DPIs). These issues were addressed within the elective ‘Quality Use of Medicines’ topic in the PHR4012 unit, which placed a strong focus on the use of hydrofluorocarbons propellants as a contributing factor to global warming. An interactive lecture provided a dedicated case study, exploring strategies for pharmacists to mitigate the emissions

associated with such devices. Specific strategies included counselling on correct inhaler technique to minimise medicine waste, switching patients from MDI to DPI inhalers where clinically appropriate, and disposing of used or expired inhaler devices responsibly.

There are plans to incorporate the environmental implications of inhaled devices into mandatory learning within the PHR2041 unit in 2025. The unit coordinator, Dr. Johnson George, brings significant expertise in this area, having recently co-authored the Thoracic Society of Australia and New Zealand's position statement titled *Environmental Impact of Inhaled Medicines*. Dr. George's contribution to this position statement positions him to lead this curricular enhancement effectively.

1.15. In training for patient communication, does your pharmacy school's curriculum introduce strategies for having conversations with patients about the health effects of climate change?

Yes, there are clear and detailed strategies introduced for having conversations with patients about climate change in the core curriculum (3 points)
Yes, having conversations with patients about climate change is briefly mentioned in the core curriculum. (2 points)
Yes, there are some examples of having conversations with patients about climate change in elective coursework. (1 point)
No, there are not strategies or examples for having conversations with patients about climate change (0 points)

Score Assigned:	2

Score explanation:
Throughout all Professional Practice and Comprehensive Care units of the degree, there was a sustained focus on communicating environmental health risks to patients. In the PHR2041 unit, various written materials, case studies and role-play activities placed particularly strong emphasis on communicating the respiratory health effects of exposure to air pollution. Students developed the skills to discuss air pollution as a risk factor/trigger for respiratory conditions such as COPD and propose appropriate management strategies (eg. smoking cessation, wearing PPE on construction sites etc.) in patient counselling sessions. Furthermore, the PHR2041 'Collaborative Care Action on Asthma' interprofessional activity, provided students with the opportunity to 'roleplay' discussing the risk of asthma emergencies during thunderstorm seasons and the protective measures that should be taken. However, these roleplay activities do not require students to explicitly communicate the link between climate change and such environmental risks (eg. air pollution and increased frequency of thunderstorms) to patients. A score of 2 was awarded because, while the curriculum teaches students to discuss the health effects of environmental risks, it does not clearly integrate climate change as the underlying cause in patient communication scenarios.

1.16. Does your pharmacy school curriculum guide students to consider the environmental impact of medications as a factor in addition to safety, efficacy, cost, and pill burden when comparing equivalent therapies?

This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1
Score explanation: Specific guidance on considering the environmental impact of medicines as a key factor in therapeutic decision-making is not included in any compulsory coursework throughout the four-year curriculum. However, elective coursework within the 'Quality Use of Medicines' topic in the PHR4012 unit provided an opportunity to explore this approach. The topic utilises the 'triple bottom line' sustainability framework to outline three vital factors for therapeutic decision-making: patient outcomes, economic costs and environmental costs. A webinar provided more explicit instruction on integrating the environmental domain of this framework. It encouraged students to consider "environmental impacts alongside other risks and benefits of medicines use, as part of shared decision-making with patients". It also guided students to consider the entire lifecycle of a medicine during therapeutic decision-making, including both procurement and disposal.	

1.17. Is your pharmacy school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?	
Yes, the school is currently in the process of making major improvements to ESH/planetary health education. (4 points)	
Yes, the school is currently in the process of making minor improvements to ESH/planetary health education. (2 points)	
No, there are no improvements to planetary health education in progress. (0 points)	
Score Assigned:	4
Score explanation: In 2024, planetary health education within the pharmacy curriculum saw substantial improvement and expansion, encompassing all four year levels, multiple units and diverse delivery methods. Most notably, a co-designed planetary health curriculum was developed and integrated into the existing compulsory coursework of the PHR3141 unit. This was a direct outcome of the FMNHS Planetary Health Education project. A team of five undergraduate pharmacy students and five faculty members collaboratively conceptualized, designed, and developed a comprehensive suite of learning and teaching materials. These materials introduced the concepts of planetary health and sustainable healthcare, while exploring actionable strategies for integrating such principles into the management of infectious diseases and addressing the global public health challenge of antimicrobial resistance. The impact of this planetary health curriculum on student understanding has been evaluated using a deductive approach based on the Planetary Health Education Framework. Findings were presented at several educational conferences throughout 2024, including the Monash Education Academy Learning and Teaching Conference and the Pharmacy and Pharmaceutical Sciences Education Research Symposium. Ongoing research continues to	

evaluate student understanding, with plans for future publication.

Additional advancements included the introduction of a dedicated lecture on planetary health in the PHR1011 unit. Finally, the PHR5151 and PHR5252 units featured two student-led inquiry projects on sustainable healthcare practices, reflecting the growing student interest in planetary health at the faculty.

These efforts will continue to evolve and improve, further enhancing planetary health education in the pharmacy curriculum in 2025.

1.18. Does your pharmacy school have a member of faculty to incorporate planetary health and sustainable healthcare as a theme throughout the curriculum ?	
Yes, there is/are a member(s) of faculty whose role is directly responsible for the incorporation of planetary health and sustainable healthcare as a theme throughout the curriculum (4 points)	
Yes, there is/are member(s) of faculty who are incorporating planetary health and sustainable healthcare as a theme throughout the curriculum as well as doing their principle role (2 points)	
There are no members of faculty who are incorporating planetary health and sustainable healthcare as a theme throughout the curriculum (0 points)	
Score Assigned:	4

Score explanation:
The pharmacy faculty has appointed an academic staff member, Suzanne Caliph, as the Sustainability Education Lead, a position she holds in addition to her primary role. It is the responsibility of the Sustainability Education Lead to support and collaborate with other faculty academics and pharmacy students in integrating planetary health education and sustainable healthcare principles in the pharmacy curriculum.

In addition to the Sustainability Education Lead, several other academic faculty members are actively involved in integrating planetary health and sustainable healthcare principles into the curriculum. At least four faculty members have contributed to the development of learning and teaching materials, in addition to supporting student-led initiatives and co-design projects.

1.19. Does your pharmacy school curriculum offer clinical practice experiences (for example, IPPE/APPE rotations in the U.S. or placement opportunities in the UK) that allow for the exploration of planetary health topics?
There are multiple clinical practice experiences/placements that allow for direct exposure to planetary health topics. (3 points)
There is one available clinical practice experience/placement that allows for direct exposure to planetary health topics. (2 points)

There are available clinical practice experiences/placements that allow for indirect exposure to planetary health topics. (1 point)
No, there are no such clinical practice experiences/placements available through the pharmacy school. (0 points)

Score Assigned:	2

Score explanation:
The pharmacy faculty offers the *Human Health and Climate Change Virtual Exchange Program* for fourth-year pharmacy students with an interest in planetary health, particularly in the context of global collaboration. This program is an international, transdisciplinary Collaborative Online International Learning (COIL) experience involving two Australian universities alongside two U.S. universities. The eight-week extracurricular course featured group activities exploring the intersection of climate change and health, with an added focus on fostering global partnerships within the healthcare sector.

1.20. Does your pharmacy school curriculum acknowledge a disparity in the effects of climate change? Specifically, does your curriculum address groups more vulnerable to environmental impacts, such as BIPOC, immigrant groups, low income populations, children, elderly, persons with disabilities, persons with pre-existing or chronic medical conditions?
This topic was explored **in depth** by the **core** curriculum. (3 points)
This topic was **briefly** covered in the **core** curriculum. (2 points)
This topic was covered in **elective** coursework. (1 point)
This topic was **not** covered. (0 points)

Score Assigned:	1

Score explanation:
A disparity in the impacts of climate change is addressed exclusively as elective coursework within the ‘Quality Use of Medicines’ topic in the PHR4012 unit. Pre-reading materials acknowledge that social and environmental determinants of health are inherently intertwined, and explicitly state that “environmental damage and climate change can therefore amplify existing health inequities”. Specific minority groups are not identified, nor are the specific factors that make these groups more vulnerable to environmental change explored. Further improvements could be made by examining the intersection of climate change and health inequities for the specific populations listed in this metric.

Section Total (38 out of 66)	**57.58%**

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

The curriculum maintains a consistent focus on judicious use of antimicrobials, emphasising the need for a clear therapeutic indication and well-defined risk-benefit profile that justifies use. Such themes are initially introduced within the context of upper respiratory tract infections topic, covered in PHR2041 unit for undergraduate students and PHR1001 for post-graduate students undertaking the Graduate Entry Pathway.

In the PHR1001 unit, the importance of judicious antibiotic use is highlighted through a targeted case study. Under the 'Cold and Flu' subtopic, a fictional patient presented with symptoms pathognomonic of a viral upper respiratory tract infection. Mary asked if she should request antibiotics from the doctor. Students were advised, "In the case of Mary, it is important to let her know that antibiotics treat bacterial infections, not viral infections. Thus, there is no point taking antibiotics. In fact, taking antibiotics when they are not required is a major problem in terms of causing antibiotic resistance."

Antimicrobial resistance (AMR) is recognised as a significant public health threat with far-reaching implications for the Earth system. Climate change and ecological shifts contribute to the development, transmission and spread of AMR, highlighting its interconnectedness with planetary health. By emphasising judicious antimicrobial use, these aspects of the curriculum address the growing threat of antimicrobial resistance through a planetary health lens.

Interdisciplinary Research

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

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your institution?	
Yes, there are faculty members at the **institution** who have a **primary** research focus in planetary health **or** sustainable healthcare/vetcare. (3 points)	
Yes, there are individual faculty members at the **institution** who are conducting research **related** to planetary health or healthcare sustainability, OR are part of a national/international sustainability working group, but it is not their primary research focus. (2 points)	
There are sustainability researchers at the **institution**, but not specifically associated with healthcare/vetcare. (1 point)	
No, there are **no** planetary health and/or sustainability researchers at the **institution** at this time. (0 points)	
Score Assigned:	3
Score explanation: Researchers from the Planetary Health Division in the Faculty of Medicine, Nursing and Health Sciences have a primary research focus in planetary health. Research from the Planetary Health Division has informed drinking, recycling water and air pollution guidelines, has underpinned updated vaccination policy including in vulnerable patient groups, and generated improvements to prevention programs and better health screening in high risk workplaces. There is also interdisciplinary planetary health research conducted between the Faculty of Pharmacy and Pharmaceutical Sciences and the Faculty of Medicine, Nursing and Health, exploring topics such as the carbon footprint of medication packaging in Australian hospitals, co-designing the infectious disease curriculum with students and scoping review to inform future planetary health multidisciplinary education on antimicrobial knowledge.	

2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?
There is **at least one** dedicated department or institute for interdisciplinary planetary health research. (3 points)

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. (2 points)
There is an **Occupational and Environmental Health department**, but no interdisciplinary department or institute for planetary health research. (1 points)
There is **no** dedicated department or institute. (0 points)

Score Assigned:	3

Score explanation: The Monash Sustainable Development Institute (MSDI) brings together interdisciplinary research capabilities on behaviour change and sustainability transitions. MSDI works in collaboration with Monash University's cutting-edge domain expertise, and partners with industry, policy, and community, to create actionable and evidence-based transition pathways for implementing real-world, transformative change. MSDI's transdisciplinary research is focused on six strategic themes: climate action, environment and health, sustainable cities and regions, circular economy, inclusive prosperity as well as leadership for the sustainable development goals (SDGs).

There is also a Planetary Health Division in the Faculty of Medicine, Nursing and Health Sciences. The Planetary Health Division is made up of environmental and occupational health researchers, infectious disease epidemiologists and many global health researchers.

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 institution?
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. (3 points)
Yes, there is a process in which community members impacted by climate and environmental injustice **advise** the climate + environmental research agenda. (2 points)
No, but there are **current efforts** to establish a process for community members to advise or make decisions on the research agenda. (1 points)
There is **no** process, and **no** efforts to create such a process. (0 points)

Score Assigned:	2

Score explanation:

Monash Sustainable Development Institute (MSDI) has engagement opportunities ranging from industry, government, not-for-profit and community. The Fire to Flourish program works at the intersection of disaster resilience and community development in partnership with communities across New South Wales and Victoria who were affected by Australian bushfires. Fire to Flourish aims to support communities to lead their own recovery, co-create foundations for long-term resilience and wellbeing, and disrupt cycles of entrenched disadvantage. The Program will trial and scale a new model of community-led resilience, amplified through partnerships with government, philanthropic, not-for-profit and private sector organisations.

Revitalising Informal Settlements and their Environments (RISE) is a research program which trials innovative and sustainable water and sanitation solutions in informal settlements in Fiji and Indonesia. Working with communities, governments, local leaders and global partners, RISE set out to transform human, environmental and ecological health in informal settlements across the developing world.

2.4. Does your institution have a planetary health website that centralises ongoing and past research related to health and the environment?	
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. (3 points)	
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. (2 points)	
The **institution** has an **Office of Sustainability website** that includes **some** resources related to health and the environment. (1 point)	
There is **no** website. (0 points)	
Score Assigned:	3
Score explanation: The Monash Sustainable Development Institute (MSDI) website compiles up to date information on research, initiatives, reports, education and event opportunities. The website is easy to navigate, comprehensive and updated regularly.	

2.5. Has your institution recently hosted a conference or symposium on topics related to planetary health?	
Yes, the **institution** has hosted at least one conference or symposium on topics related to planetary health in the past year. (4 points)	
Yes, the **institution** has hosted at least one conference or symposium on topics related to sustainable healthcare/vetcare in the past year. (3 points)	
Yes, the **institution** has hosted a conference on topics related to planetary health / sustainable healthcare/vetcare in the past three years. (2 points)	
The **institution** has not hosted any conferences directly, but they have provided financial support for a local planetary health event. (1 point)	
No, the **institution** has not hosted a conference on topics related to planetary health in the past three years. (0 points)	
Score Assigned:	4

Score explanation: In 2024, Monash University hosted the World Health Summit Regional Meeting conference focused on the future health of people across the Asia Pacific. This conference explored how science, innovation and policy can unite to address critical planetary health challenges in the Asia Pacific. Central topics of the World Health Summit included: Climate Change and Health-Responding to the climate emergency, Thriving Communities and Health-Living well and living well together. A report and session recordings from the World Health Summit Regional Meeting can be found here.

2.6. Is your institution a member of a national or international planetary health or ESH/ESV organisation?	
Yes, the institution is a member of a national or international planetary health **or** ESH/ESV organisation. (1 points)	
No, the institution is **not** a member of such an organisation. (0 points)	
Score Assigned:	1
Score explanation: Monash University is a member of the M8 Alliance- the academic foundation of the World Health Summit and Monash University's Monash Sustainable Development Institute is a part of the Planetary Health Alliance.	

Section Total (16 out of 17)	**94.12%**

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Community Outreach and Advocacy

Section Overview: ***This section evaluates pharmacy 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.*

3.1. Does your institution partner with community organisations to promote planetary and health?	
Yes, the **institution** meaningfully partners with **multiple** community organisations to promote planetary and environmental health. (3 points)	
Yes, the **institution** meaningfully partners with **one** community organisation to promote planetary and environmental health. (2 points)	
The **institution** does not partner with community organisations, but participates in community focused events relating to planetary health. (1 point)	
No, there is **no** such meaningful community partnership. (0 points)	
Score Assigned:	2
Score explanation: Monash University demonstrates moderate commitment to planetary health through partnerships and community-focused initiatives such as the Little Food Festival. The Monash Sustainable Development Institute (MSDI) leads global and local collaborations aligned with the United Nations Sustainable Development Goals, engaging with partners such as the World Health Organization and local councils to promote sustainability and health advocacy. The Little Food Festival exemplifies Monash's dedication to community outreach by educating children on food system literacy through interactive activities. This free community event promotes health, wellbeing and sustainability education, focused on the food system for young children. Monash's participation in international climate forums, such as COP29, and its campus-based eco-reconnection programs underline its global and local commitment to planetary health. Through these efforts, Monash establishes itself as fostering a meaningful partnership that advances environmental and community health. A score of 2 was appointed as Monash University has one partnership within the community to actively promote sustainability and environmental health.	

3.2. Does your institution offer community-facing courses or events regarding planetary health?

The **institution** offers community-facing courses or events at least once every year. (3 points)
The **institution** offers courses or events open to the community at least once per year, but they are not primarily created for a community audience. (2 points)
The **institution** has promoted community-facing courses or events, but was not involved in planning those courses or events. (1 point)
The **institution** has not offered such community-facing courses or events. (0 points)

Score Assigned:	3

Score explanation:
Monash University offers the Net Zero Me online course which can be found and completed on the online learning platform, Moodle. This induction course allows students to explore climate change and help understand impacts that contribute to climate change, along with how to address these. Monash Sustainability in Action club based in Clayton also presents multiple events and webinars every year to engage and educate students and staff. Some of these events based at the Clayton campus include Campus Sustainability Tours, Biketober and Plastic Free pop ups.

A score of 3 was given as Monash University offers engaging Planetary Health courses and events for students to participate in.

3.3. Does your <u>institution</u> have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?
Yes, all students **regularly** receive communication updates dedicated to planetary health and/or sustainable healthcare. (2 points)
Yes, planetary health and/or sustainable healthcare topics are regularly included in communication updates to **some courses**. (1 point)
Students **do not** receive communications about planetary health or sustainable healthcare. (0 points)

Score Assigned:	1

Score explanation: The Monash Sustainability in Action club based in Clayton provides regular communications related to planetary health and/or sustainable healthcare to university students and staff. Parkville students at Monash University receive occasional communications about planetary health or any form of sustainable initiatives via newsletters from the university, however the information is not regularly communicated.

A score of 1 was given as the main communication channel is based from the Clayton campus and topics surrounding sustainability and planetary health are not regularly covered in the Parkville newsletters.

3.4. Does the <u>institution</u> or <u>main affiliated hospital trust</u> 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?	
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. (2 points)	
Yes, the **institution** or **main affiliated hospital trust** offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers. (1 point)	
There are **no** such accessible courses for post-graduate providers. (0 points)	
Score Assigned:	2
Score explanation: Monash Health has a Sustainability Strategy and a Sustainability Action Plan. These have been presented to staff at staff forums and are accessible on the intranet page. There are some additional presentations available about carbon emissions and waste management, along with posters about recycling. These are all available via Monash health Learning and the Sustainability intranet page. Monash Health has 'Green Teams' in each clinical area, with Sustainability champions assisting in promoting and educating about initiatives in their area. Sustainable Healthcare in Practice is a short course offered by Monash University and is "recommended for existing health professionals, health educators, aspiring graduate students…". It aims to educate the "knowledge and skills to create an inclusive, equitable, restorative and resilient health system." The Environment and Sustainability Expert Master Degree is another course offered which teaches an "interdisciplinary foundation that allows you to analyse the interdependence of nature, society and the economy." It has five main specialisations that students can learn including environment and governance, corporate environmental and sustainability management, environmental security, international development and environment, and leadership for sustainable development. Sustainable Healthcare Fundamentals is another short course offered by Monash University aimed at "health professionals, non-clinicians, decision-makers, policy makers and those interested in sustainable healthcare", providing information about decarbonisation pathways and principles of a circular economy amongst other concepts.	

3.5. Does your institution or its affiliated teaching hospitals have accessible educational materials for patients about environmental health exposures?
Yes, the **institution** or **all affiliated hospitals** have accessible educational materials for patients. (2 points)
Some affiliated hospitals have accessible educational materials for patients. (1 point)
No affiliated hospitals have accessible educational materials for patients. (0 points)

Score Assigned:	0
Score explanation: Monash Health hospitals, which are the main affiliated teaching hospitals with Monash University, provide resources for patients specifically on their website, however when trying to find resources on environmental health exposures, no records were found.	

3.6. Does your institution or its affiliated teaching hospitals have accessible educational materials for patients about the health impacts of climate change?	
Yes, the **institution** or **all affiliated hospitals** have accessible educational materials for patients. (2 points)	
Some affiliated hospitals have accessible educational materials for patients. (1 point)	
No affiliated hospitals have accessible educational materials for patients. (0 points)	
Score Assigned:	0
Score explanation: None of the affiliated hospitals provide accessible educational materials for patients regarding the health impacts of climate change.	

Section Total (8 out of 14)	**57.14%**

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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 institution offer support for students interested in enacting a sustainability initiative/QI project?	
Yes, the **institution** *either* offers grants for students to enact sustainability initiatives/QI projects *or* sustainability QI projects are part of the core curriculum. (2 points)	
The **institution** encourages sustainability QI projects (to fulfil clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, **but** there is no student funding available and there is no requirement to participate. (1 point)	
No, **neither** the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects. (0 points)	
Score Assigned:	1
Score explanation: The Green Steps Leaders in Sustainability program is an opt-in, audition-based extracurricular short course offered to a select group of Monash University students from all faculties. It equips participants with essential skills and strategies to become sustainability leaders in their academic and professional spheres. Through practical experiences, including a consultancy project, students develop tools to foster systems change and build impactful movements. For pharmacy students, Green Steps provides a unique opportunity to address sustainability challenges within pharmacy practice, spanning community, hospital, and broader healthcare contexts. The program's overarching themes – systems thinking, equity, social justice, the Anthropocene, and planetary boundaries – encourage students to reimagine the interconnectedness of human and planetary health, inspiring innovative approaches to address pressing global challenges.	

4.2. Does your institution offer opportunities for students to do research related to planetary health and/or sustainable healthcare/vetcare?
The **institution** has a **specific** research program or fellowship for students interested in doing planetary health/sustainable healthcare/vetcare research. (2 points)
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. (1 point)

There are **no opportunities** for students to engage in planetary health/sustainable healthcare research. (0 points)

Score Assigned:	2

Score explanation:
Monash University offers graduate students research opportunities in planetary health/health promotion through Monash Sustainable Development Institute (MSDI). MSDI focuses on solution-focused sustainable development and offers scholarships for high quality doctoral research candidates based on merit.

Monash University's Health and Climate Initiative, as part of Monash Faculty of Medicine, Nursing and Health Sciences, focuses on assessing current strategies and developing innovative solutions to mitigate the effects of climate change on health and healthcare systems. Notably, the Monash Biomedicine Discovery Institute (BDI), one of the largest and most prestigious research institutes in the Southern Hemisphere, offers a variety of research opportunities, from Honours and Masters by Research to PhD/Doctorate programs, enabling students to explore a diverse range of health issues.

The 'Human Health and Climate Change Virtual Exchange Program' is available for honours year pharmacy students who are interested in taking part in a Collaborative Online International Learning (COIL) experience.

4.3. Does the institution have a webpage where students can find specific information related to planetary health and/or sustainable healthcare/vetcare activities and mentors within the institution? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.
The institution has a webpage with specific information related to planetary health or sustainable healthcare/vetcare that includes up-to-date information on relevant initiatives and contact information of potential mentors. (2 points)
There is an institution webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information. (1 point)
There is **no institution** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors. (0 points)

Score Assigned:	2

Score explanation:

Monash University Research Portal is a search engine designed to display the university's research activities, projects, and associated faculty members. It allows students to find research related to planetary health and/or sustainable healthcare/vetcare activities by searching specific projects, researchers or filtering research units (e.g. Planetary Health), or keyword search. The portal includes details about current projects, research areas, and contact information for faculty and mentors.

4.4. Does your institution have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?	
Yes, there is a student organisation **with faculty support** at my medical school dedicated to planetary health or sustainability in healthcare. (2 points)	
Yes, there is a student organisation at my medical school dedicated to planetary health or sustainability in healthcare but it **lacks faculty support.** (1 point)	
No, there is **not** a student organisation at my institution dedicated to planetary health or sustainability in healthcare. (0 points)	
Score Assigned:	1
Score explanation: Monash University students have a local, student-run branch of the national organisation, Doctors for the Environment Australia (DEA). Although the DEA provides support and funding to the student organisation, Monash University does not. AMSA (Australian Medical Students' Association) has AMSA Code Green, which is a subcommittee that focuses on planetary health. As with DEA, the Monash members of this student run organisation do not receive faculty support.	

4.5. Is there a student liaison representing sustainability interests who serves on a department or institutional decision-making council to advocate for curriculum reform and/or sustainability best practices?	
Yes, there is a student representative that serves on a department or institutional decision-making council/committee. (1 points)	
No, there is no such student representative. (0 points)	
Score Assigned:	0
Score explanation: Faculty of Monash Medicine, Nursing and Health Sciences (FMNHS) Planetary Health Education exemplifies a collaborative effort towards planetary health co-design between students and faculty to integrate planetary health into the curriculum. However, it does not specify the presence of a student liaison serving on a formal decision-making council.	

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)	**Score**

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.	0
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)	1
Score Assigned:	5

Score explanation:

- Monash Permaculture Garden (MPG) runs workshops, lectures, working bees, day trips and other activities to promote and educate about permaculture, sustainability and gardening. MPG members garden in accordance with permaculture practices, cook and eat with the produce grown at MPG and Monash University Community Farm (MUC Farm).
- Monash PharmAlliance Student Domain based in Monash Parkville Campus organised the Planetary Health Champion Workshop in collaboration with University College London PharmAlliance student domain in 2024. This online workshop aimed to enhance students' understanding on the connection between planetary health and pharmaceutical practices by engaging students through the guest speaker's presentation and small-group discussions.
- Climate change communication research hub: The Hub provides research, knowledge and ideas to millions of people. It serves as a bridge between climate science and society, empowering decision-makers and communities to address climate challenges. The hub runs podcasts, seminars and posts contents on social media to promote planetary health.
- Volunteer opportunities:
    - Our Village (St Kilda Mums) aims to help Victroian babies and children and prevent used essentials from ending up in landfill
    - FoodFilled aims to combat food wastage and alleviate hunger
    - Adult MIgrant English Program (AMEP) harvests a garden to grow food for people in need
- Monash University Outdoors Club (MUOC) hosts various events such as camping, bushwalking, cross-country skiing, rogaining, mountain-walking, rock climbing and kayaking. MUOC receives sponsorships from various companies enabling students to participate in activities at reduced cost.

Section Total (11 out of 15)	**73.33%**

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Campus Sustainability

Section Overview: ***This section evaluates the support and engagement in sustainability initiatives by the 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 pharmacy 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 institution have an Office of Sustainability?	
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 institution. (3 points)	
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 institution sustainability. (2 points)	
There are **no salaried sustainability staff,** but there is a sustainability task force or committee. (1 point)	
There are **no** staff members **or** task force responsible for overseeing campus sustainability. (0 points)	
Score Assigned:	3
Score explanation: At Monash University, the Campus Sustainability team spearheads efforts to transform the university's campuses into dynamic, sustainable environments that integrate education and innovation. The team consists of professionals with expertise in environmental planning, engineering, compliance, behavioural change, and sustainability reporting, collaboratively driving systemic change across the university's campuses, including that of the Faculty of Pharmacy and Pharmaceutical Sciences. There is an officially appointed pharmacy course sustainability lead, Dr Suzanne Caliph, who is specifically responsible for sustainability initiatives and planetary health curriculum for the faculty in addition to her academic roles.	

5.2. How ambitious is your institution's plan to reduce its own carbon footprint?
The institution has a **written and approved plan** to achieve carbon neutrality by **2030** (5 points)
The institution has a **written and approved plan** to achieve carbon neutrality by **2040** (3 points)
The institution has a stated goal of carbon neutrality by **2040** but has **not created a plan** to reach that goal or the **plan is inadequate** (1 point)
The institution/medical school does **not** meet any of the requirements listed above (0 points)

Score Assigned:	5

Score explanation: Monash University has committed to achieving Net Zero emissions by 2030, explored further here, demonstrating leadership in global energy sustainability through collaboration with industry, government, and research organisations. A comprehensive and well-defined strategy underpins this target, with substantial milestones already achieved. By 2020, 45,000 LED light upgrades reduced energy consumption, saving $2.4 million annually, and 12,000 solar panels were installed across Australian campuses, contributing to a 24% reduction in energy intensity. In 2022, Monash advanced its sustainability efforts through the Monash-Engie Alliance, exploring scalable zero-carbon solutions. Infrastructure upgrades include two electric bus chargers at Clayton Campus and 48 EV charging stations across Clayton, Caulfield, and Peninsula campuses. Fleet electrification continues as vehicles transition to hybrid and electric models. A long-term agreement with the Murra Warra Wind Farm ensures a significant share of renewable energy for campus operations. Efforts to phase out natural gas include installing renewable-powered electric heat pumps, with 30% of campus facilities fully electrified by 2024. Policies encouraging low-emission commuting and offsetting emissions from business air travel further support Monash's sustainability goals. Additionally, the university invests in carbon credits to address residual emissions and collaborates with suppliers to reduce Scope 3 emissions. As of 2023, renewable energy supplied 67% of Monash's total energy requirements, marking substantial progress towards its Net Zero ambition. See more here: https://www.monash.edu/about/strategic-direction/sustainable-development/progress-report-2023/monash-progress-report-2023/monash-progress-report-2023-goal-7/operations/accordion

5.3. Do buildings/infrastructure used by the institution for teaching utilize renewable energy?
Yes, institution buildings are **100%** powered by renewable energy. (3 points)
Institution buildings source **>80%** of energy needs from off-site and/or on-site renewable energy. (2 points)
Institution buildings source **>20%** of energy needs from off-site and/or on-site renewable energy. (1 point)
Institution buildings source **<20%** of energy needs from off-site and/or on-site renewable energy. (0 points)

Score Assigned:	2

Score explanation: Currently, there is no publicly available specific data indicating the proportion of energy requirements at Monash University's Parkville campus sourced from renewable energy. However, as part of Monash's Net Zero Initiative, all campuses are moving towards being fully powered by renewable energy by 2030. Across the university, renewable sources already supply 67% of the energy needs, and significant progress is being made through projects such as the installation of solar panels, wind energy agreements, and the electrification of facilities. This includes efforts at Parkville, such as energy-efficient upgrades and hot water system electrification, aligning with Monash's broader sustainability goals. Monash University has stated that it would achieve 100% renewable energy target in 2025, hence we assume that it is currently at least 80% renewable.

5.4. Are sustainable building practices utilised for new and old buildings on the institution's campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?	
Yes, sustainable building practices are utilised for new buildings on the institution's campus and the **majority** of old buildings **have been retrofitted** to be more sustainable. (3 points)	
Sustainable building practices are utilised for new buildings on the institution's campus, but most old buildings have **not been retrofitted.** (2 points)	
Sustainable building practices are **inadequately or incompletely** implemented for new buildings. (1 point)	
Sustainability is **not considered** in the construction of new buildings. (0 points)	
Score Assigned:	3
Score explanation: Sustainable building practices are actively implemented at Monash University's Parkville campus for both new and existing structures. These efforts align with Monash's broader sustainability objectives as outlined in its master plans and construction standards. The design of new buildings follows Monash University's Design and Construction Standards (see here: https://www.monash.edu/contractors/monash-design-and-construction-standards and here, Section A 05.01.01-06: https://www.monash.edu/__data/assets/pdf_file/0010/1811296/MDCS-V9.pdf), ensuring they meet sustainable benchmarks such as all-electric operations, rooftop solar readiness, and high-performance certifications. These buildings integrate features to minimise carbon emissions and enhance energy efficiency. Old buildings at Parkville are being retrofitted with sustainable features. For instance, projects include modernising facilities to reduce energy consumption and improve water efficiency. Refurbished structures adhere to the same sustainability guidelines to enhance comfort, environmental performance, and energy efficiency. Monash requires new construction and remodeling projects to follow principles such as maximising energy efficiency, minimising carbon footprints, and diverting 90% of construction waste from landfills. The Parkville campus specifically emphasises sustainable design aligned with its role in the Melbourne Biomedical Precinct. At the end of 2024, the Monash Parkville campus is petitioning to initiate the '343 Royal Parade Parkville Revitalisation Project' pending town planning approval.	

5.5. Has the institution implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?
Yes, the 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. (2 points)
The institution has implemented **some** strategies to provide environmentally-friendly transportation options, but the options are **unsatisfactorily** accessible or advertised. (1 point)
The institution has **not** implemented strategies to encourage and provide environmentally-friendly transportation options. (0 points)

Score Assigned:	2

Score explanation: The Parkville campus of Monash University participates in the Net Zero Transport Initiative, implementing strategies to promote environmentally-friendly commuting and minimise the environmental impact of transport. Monash is committed to improving public transport accessibility, with a target for 50% of campus commuters to utilise public transit by 2030. Active transport options, such as walking and cycling, are being prioritised, with a goal for 20% of students and staff to rely on these methods. However, Parkville lacks dedicated vehicle parking facilities, emphasising public transport as the primary mode of access. While carpooling incentives exist across the university, Parkville students depend heavily on buses and trams for their commutes. Challenges remain, as these public transport options are not wheelchair accessible, and students bear the cost of commuting independently.

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

Yes, the institution has **both** compost **and** recycling programs accessible to students and faculty. (2 points)

The institution has **either** recycling **or** compost programs accessible to students and faculty, but not both. (1 point)

There is **no** compost or recycling program at the medical school. (0 points)

Score Assigned:	2

Score explanation: Monash University's Parkville campus actively supports sustainable waste management practices through composting and recycling programs accessible to both students and staff. Organic waste, including food scraps, is collected and sent to commercial composting facilities where it is converted into nutrient-rich compost. This supports soil rehabilitation and land improvement efforts. Hazardous biochemical waste generated by the Faculty of Pharmacy and Pharmaceutical Sciences is managed according to strict environmental and safety guidelines, ensuring proper disposal methods are adhered to. These programs not only promote sustainability but also align with Monash University's broader goals of reducing waste and greenhouse gas emissions as part of its Net Zero Initiative.
See more here:

- Chemical waste guidelines: https://www.monash.edu/hsw/info-docs/chemical-management/waste-disposal
- Biosafety guidelines: https://www.monash.edu/hsw/info-docs/biosafety

5.7. Does the institution apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?

Yes, the institution has a**dequate s**ustainability requirements for food and beverages, including meat-free days or no red-meat, and **is engaged** in efforts to increase food and beverage sustainability. (3 points)

There are sustainability guidelines for food and beverages, but they are **insufficient or optional**. The institution **is engaged** in efforts to increase food and beverage sustainability. (2 points)
There are sustainability guidelines for food and beverages, but they are **insufficient or optional.** The institution is **not** engaged in efforts to increase food and beverage sustainability. (1 point)
There are **no** sustainability guidelines for food and beverages. (0 points)

Score Assigned:	2

Score explanation: Monash University applies sustainability criteria in decisions about campus food and beverage services, emphasising local sourcing, reduced environmental impact, and waste minimisation. Monash works with its campus food retailers to incorporate sustainable food practices. This includes sourcing local and seasonal produce to reduce transport emissions and environmental impact. Food outlets on campus are encouraged to minimise single-use plastics, with a strong emphasis on reusable packaging. Initiatives include the use of reusable cups, containers. Guidelines for sustainable events and catering promote the use of reusable crockery, local ingredients, and compostable packaging. These efforts are aimed at reducing waste and promoting environmentally friendly dining experiences on campus. Monash actively educates staff and students about sustainable food choices, hosting events and programs to highlight the importance of reducing food-related waste and emissions. However, the food options are limited to Sammy's cafe alone on the Parkville campus itself, food vendors in proximity to the campus appear engaged with sustainable packaging as per the legislation of the local area, but are not directly under the jurisdiction of, or in discussion with, Monash university, and as such do not strictly follow the same sustainability guidelines that are imposed on campus food and beverage selections.
See more here:

- Monash's Environmental, Social and Governance (ESG) Statement: https://www.monash.edu/about/strategic-direction/sustainable-development/sustainable-procurement-at-monash
- Sustainable Events and Meetings Guidelines: https://www.monash.edu/__data/assets/pdf_file/0009/1869318/Sustainable-Events-and-Meetings-Guidelines-August-19.pdf

5.8. Does the institution apply sustainability criteria when making decisions about supply procurement?
Yes, the institution has **adequate** sustainability requirements for supply procurement **and** is **engaged** in efforts to increase sustainability of procurement. (3 points)
There are sustainability guidelines for supply procurement, but they are **insufficient or optional.** The institution is **engaged** in efforts to increase sustainability of procurement. (2 points)
There are sustainability guidelines for supply procurement, but they are **insufficient or optional.** The institution is **not engaged** in efforts to increase sustainability of procurement. (1 point)
There are **no** sustainability guidelines for supply procurement. (0 points)

Score Assigned:	3

Score explanation: Monash University's Parkville campus integrates sustainability criteria into its supply procurement decisions as part of the university's overarching Responsible Procurement

Framework. The campus ensures suppliers align with Monash's sustainability objectives by prioritising reduced carbon emissions, waste minimisation, and sustainable resource use. These practices align with Monash's Circular Economy Framework, emphasising sustainable sourcing, material reuse, and waste reduction. Additionally, procurement strategies at Parkville support social responsibility through partnerships with Indigenous businesses and a commitment to addressing modern slavery risks. Using its eTendering portal, Monash evaluates supplier proposals based on sustainability, ensuring transparency and compliance with climate and circularity goals relevant to the Parkville campus and its operations.

5.9. Are there sustainability requirements or guidelines for events hosted at the institution?	
Every event hosted at the institution **must** abide by sustainability criteria. (2 points)	
The institution **strongly recommends or incentivizes** sustainability measures, but they are **not required.** (1 point)	
There are **no** sustainability guidelines for institution events. (0 points)	
Score Assigned:	1
Score explanation: Monash University's Parkville campus applies Sustainable Events and Meetings Guidelines to minimise the environmental impact of campus activities. These guidelines encourage using venues near public transport with natural lighting and efficient energy systems. Catering emphasises locally sourced, vegetarian, and ethically produced food, avoiding single-use plastics in favor of reusable or compostable options. Transport options such as public transit, carpooling, and bike storage are promoted, with virtual conferencing encouraged to reduce emissions. Waste management is prioritised by reducing printed materials, providing recycling bins, and minimizing food waste, aligning with Monash's Circular Economy Framework for sustainable operations. These guidelines are strongly recommended, rather than mandatory, and provide a checklist for event organisers to follow, but are not obligated to fulfill.	

5.10. Does your institution have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
Yes, the institution has **programs** and **initiatives** to assist with making lab spaces more environmentally sustainable. (2 points)	
There are **guidelines** on how to make lab spaces more environmentally sustainable, but not programs or initiatives. (1 point)	
There are **no** efforts at the institution to make lab spaces more sustainable. (0 points)	
Score Assigned:	2
Score explanation: Monash University integrates sustainability into its laboratory spaces, including those at the Parkville campus, through targeted programs that reduce environmental impact while fostering sustainable research practices. The Green Impact Program engages students and staff to adopt eco-friendly actions such as energy conservation, waste reduction, and resource optimisation.	

Laboratories are aligned with Monash's Circular Economy Framework, emphasising the minimisation of material waste and the reuse of resources. Sustainable procurement ensures that eco-friendly lab materials are prioritized, reducing waste and supporting the university's broader sustainability goals. Additionally, laboratories benefit from Monash's Net Zero Initiative, which incorporates energy-efficient infrastructure upgrades, such as LED lighting and electrified systems, to lower emissions across facilities.

5.11. Does your institution's endowment portfolio investments include fossil-fuel companies?	
The institution is **entirely divested** from fossil fuels **and** has made a **commitment to reinvest divested funds** into renewable energy companies or renewable energy campus initiatives. (4 points)	
The institution is **entirely divested** from fossil fuels. (3 points)	
The institution has **partially divested** from fossil fuel companies **or** has made a **commitment to fully divest**, but **currently** still has fossil fuel investments. (2 points)	
The institution has **not divested** from fossil-fuel companies, but faculty and/or students are **conducting organised advocacy** for divestment. (1 point)	
Yes, the institution has investments with fossil-fuel companies and there have been **no efforts** to change that. (0 points)	
Score Assigned:	2
Score explanation: Monash University holds index funds exposed to fossil fuel industries within its endowment portfolio, although making up less than 1% of the University's indirect investments. The university formally committed to divesting from fossil fuels in its first Environmental, Social, and Governance (ESG) statement in 2016, and this commitment was reinforced in updated ESG policies released in subsequent years. Monash was also the first Australian university to sign the United Nations-supported Principles for Responsible Investment (UNPRI) in 2017, further solidifying its dedication to sustainable investment practices. These measures reflect Monash's broader strategy to align its financial activities with its sustainability goals, including its Net Zero Initiative. Monash is increasingly allocating resources towards product development and capturing interest in climate aligned and social outcome oriented investments. Furthermore, all Monash fund managers must be signatories to the UNPRI.	

Section Total (27 out of 32)	**84.38%**

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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 Monash University School of Pharmacy
The following table presents the individual section grades and overall institutional grade for the Monash University School of Pharmacy on this pharmacy-school-specific Planetary Health Report Card.

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	(38/66) x 100 = 57.58%	C+
Interdisciplinary Research (17.5%)	(16/17) x 100 = 94.12%	A
Community Outreach and Advocacy (17.5%)	(8/14) x 100 = 57.14%	C+
Support for Student-led Planetary Health Initiatives (17.5%)	(11/15) x 100= 73.33%	B
Campus Sustainability (17.5%)	(27/32) x 100 = 84.38%	A–
Institutional Grade	**(Ax0.3 + Bx0.175 + Cx0.175 + Dx0.175 + Ex0.175) = 71.34%**	**B**

Report Card Trends

Section Overview
This graph demonstrates trends in overall and section grades for the years in which Monash University Pharmacy has participated in the Planetary Health Report Card initiative.