



Planetary Health Report Card (Medicine): Karolinska Institutet



**Karolinska
Institutet**

2023-2024 Contributing Team:

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Summary of Findings

Overall	B
<u>Curriculum</u>	B+
<p>Thanks to the efforts of individual faculty members, KI is making progress regarding the implementation of Education on Sustainable Healthcare (ESH). However, the implementation of ESH in the new 6 year medical program remains unclear and the time allocated to ESH remains relatively limited.</p> <p>Recommendations: Resources at KI need to be made available to educate more faculty members regarding planetary health to ensure a wider base for education/course development. More time should be allocated to these topics throughout the new 6-year programme, with better integration in the clinical semesters.</p>	
<u>Interdisciplinary Research</u>	B+
<p>Extensive research within planetary health and sustainable healthcare is scarce. While there are many collaborations with other research groups/institutions both in- and outside of Sweden, the departments of medicine in Solna and Huddinge are not often involved. KI has hosted conferences on planetary health, but none were aimed at medical students.</p> <p>Recommendations: KI should publish information regarding ongoing planetary health research, funding opportunities and transdisciplinary cooperation on the KI website; adding sustainability as a prerequisite to research proposals would facilitate rapid up-scaling of activities related to sustainability and planetary health.</p>	
<u>Community Outreach and Advocacy</u>	D +
<p>KI does not have any collaborations with sustainability-focused community organisations, nor does it organise courses or events targeted at the general public. In its internal communication, KI covers sustainability and planetary health, but not on a regular basis. KI offers some courses directed at students, teachers and professionals inside and outside of the institution.</p> <p>Recommendations: KI should set up partnerships with community organisations in Stockholm, Sweden and abroad; co-organise public events/courses that increase public awareness of the health impacts of climate change; and systematically cover sustainability and planetary health in its internal communication.</p>	
<u>Support for Student-Led Initiatives</u>	B
<p>KI recognises sustainability initiatives through its Sustainability Award, and has student representatives on its Council for Environment and Sustainable Development. Medical students interested in planetary health have to pursue independent initiatives outside the medical program. Support is provided to SSD, a KI affiliated student-led sustainability organisation.</p> <p>Recommendations: KI should continue to provide resources and support to student organisations like SSD that promote sustainability on campus. As KI is a medical university, it may consider collaborating with other universities or organisations to organise other types of activities or initiatives for planetary health.</p>	
<u>Campus Sustainability</u>	B-
<p>Most buildings are energy-efficient, and smaller initiatives such as bicycle repair days exist. A large part of emissions result from procurement and travelling, these being current focus areas for improvement.</p> <p>Recommendations: KI should implement and facilitate a composting system campus wide, mandate that campus restaurants encourage the purchase of more sustainable food (using scores, nudging or more plant-based menus) and render lab spaces more sustainable. Moreover, we would recommend KI make a public statement about fossil fuel divestment.</p>	

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 Organisation has called climate change “the greatest threat to global health in the 21st century,” many medical school’s institutional priorities do not reflect the urgency of this danger to human health.

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

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

Definitions & Other Considerations

Definitions:

- **Planetary Health:** is described by the Planetary Health Alliance as “the health of human civilisation and the state of the natural systems on which it depends.” For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional ‘environmental health’ examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of medical school education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term “planetary health” to satisfy the metric.
- **Sustainable Healthcare:** As defined by the Academy of Royal Colleges, sustainable healthcare involves ensuring the ability to provide good quality care for future generations by balancing the economic, environmental, and social constraints and demands within health care settings. A sustainable healthcare system maintains population health, reduces disease burden and minimises use of healthcare services.
- **Education for Sustainable Healthcare (ESH):** is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:
 1. Describe how the environment and human health interact at different levels.
 2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.
 3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.
- **Medical School vs. Institution:** When “medical school” is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (e.g. undergraduate departments (USA), other related departments (e.g. Public Health, Population Health departments)). In contrast, when “institution” is specified in the report card, we are referring to the university more broadly. Any resource reasonably accessible by medical students, no matter where in the institution the resource comes from or if it is specifically targeted for medical students, can meet this metric.
- **Environmental history (Metric #19 in Curriculum Section):** This is a series of questions providers are taught to ask during medical encounters that elicits patients’ exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be

expanded to include things like wildfire smoke exposure, air pollution and mould after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution.

- **Elective:** The word “elective” refers to an optional course or lecture series that a medical student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.
- **Clerkship:** This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations or placements.

Other considerations:

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

Added to our resources in 2022, the Planetary Health Report Card [Literature Review by Metric](#) collates the evidence behind each of the metrics in the Planetary Health Report Card. It serves as a collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.

Planetary Health Curriculum

Section Overview: *This section evaluates the integration of relevant planetary health topics into the medical school curriculum. Today's medical students will be on the frontlines of tackling the health effects of climate and other environmental changes. Therefore, it is critical that medical students are trained to understand the health effects of these changes, as well as planetary health issues and principles more broadly. Topics like the changing geography of vector-borne diseases, the health consequences of air pollution, environmental health inequities, and disaster response principles must be part of every medical school's core curriculum.*

Curriculum: General

Karolinska Institutet is currently implementing a new medical programme curriculum, progressively shifting from the 5.5 year medical programme to the 6 year medical programme. The implementation started in September 2021, and the old 5.5 year medical programme will be given until 2026. We have reviewed the courses of each curriculum that have been active in 2023-2024. The content of the courses beyond the sixth semester are yet to be decided.

1.1. Did your <u>medical school</u> offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>Score explanation:</i></p> <p>In 2023, one elective course over 4 weeks and 7.5 credits were offered in the final semester of the 5.5 year medical program, called Sustainable Health and Development (2XX081). Objectives of the course include:</p> <ul style="list-style-type: none"> ● Describe the concepts of sustainable health and sustainable development and the UN Sustainable Development Goals (SDG) according to the Agenda 2030 ● Analyse expected effects on health of the major sustainability challenges, such as climate change, extreme poverty, inequality, and reflect in depth on how these can be prevented and responded to ● Discuss how the challenges of sustainability may affect the clinical work of healthcare personnel, such as, possibly, a changed disease panorama or treatment complications due to a warmer climate ● Reflect on how cooperation between different professions within and outside the healthcare organisation contributes to improved health based on the sustainable development perspective ● Know and practically use selected tools to work with sustainable health and development. 	

Curriculum: Health Effects of Climate Change

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

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

Score explanation:

Lectures given in the 5.5 year medical programme:

- In the core course Public Health and Environmental Medicine (2LK100, 12 credits), given in the final semester, there are two full days of lectures on the subject climate and health. The lecture “Climate change and heat” of 30 minutes covers this subject in detail.

Lectures given in the 6 year programme:

- In the core course Basic Science 1 (2LA000, 12 credits), given in the first semester, the lecture “Climate change in relation to the determinants of health” of 30 minutes is held. This lecture covers the direct and indirect effects of extreme heat briefly.
- In the course core Basic Science 3 (2LA002, 18 credits), given in the second semester, the lecture “Prevention and climate mitigation - a clinical perspective” of 30 minutes is held. This lecture covers the direct and indirect effects of extreme heat briefly but in more detail than in Basic Science 1.
- In the course core Basic Science 5 (2LA004, 30 credits), given in the third semester, the relationship between extreme heat and kidney function is mentioned in a physiology lecture.

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

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

Score explanation:

Lectures given in the 5.5 year medical programme:

- In the core course Public Health and Environmental Medicine (2LK100, 12 credits), there are two full days of lectures on the subject climate and health, where this subject is covered in multiple lectures.

Lectures given in the 6 year medical programme:

- In the course core Basic Science 1 (2LA000, 12 credits), the lecture “Climate change in relation to the determinants of health” covers the adverse health outcomes of extreme weather briefly.
- In the course core Basic Science 3 (2LA002, 18 credits), the lecture “Prevention and climate mitigation - a clinical perspective” covers the adverse health outcomes of extreme weather, as

well as the vulnerability of the healthcare system, briefly but in more detail than Basic Science 1.

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

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

Score explanation:

Lectures given in the 5.5 year medical programme:

- In the core course Public Health and Environmental Medicine (2LK100, 12 credits), the lecture “Climate change and infectious disease panorama” of 30 minutes covers this subject in detail.

Lectures given in the 6 year medical programme:

- In the core course Basic Science 1 (2LA000, 12 credits), the lecture “Climate change in relation to the determinants of health” mentions the altered infectious disease panorama as an indirect effect and adverse outcome of climate change.
- In the core course Basic Science 3 (2LA002, 18 credits), the lecture “Prevention and climate mitigation - a clinical perspective” also mentions the altered infectious disease panorama as an indirect effect and adverse outcome of climate change.
- In the core course Basic Science 6 (2LA005, 7.5 credits), which is a course on infection biology given in the fourth semester, it is briefly mentioned that global warming affects the spreading of diseases with vectors, resulting in some infectious diseases spreading to new geographic areas.

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

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

Score explanation:

Lectures given in the 5.5 year medical programme

- In the core course Public Health and Environmental Medicine (2LK100, 12 credits), the lecture “Climate change and air pollution” of 30 minutes covers this subject in detail. In this course, there is also a lecture on “Work- and environment related respiratory diseases”.

Lectures given in the 6 year medical programme:

- In the core course Basic Science 1 (2LA000, 12 credits), the lecture “Climate change in relation to the determinants of health” mentions respiratory disease as a direct and indirect effect of climate change and air pollution.
- In the core course Basic Science 3 (2LA002, 18 credits), the lecture “Prevention and climate mitigation - a clinical perspective” covers the same content as in Basic Science 1, and also goes into more detail on the association between road traffic/transportation, air pollution and climate change, and addresses the mutually beneficial effects of active transportation to both climate and public health.

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

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

Score explanation:

Lectures given in the 5.5 year medical programme

- In the core course Public Health and Environmental Medicine (2LK100, 12 credits), there are two full days of lectures on the subject climate and health, where this subject is covered repetitively.

Lectures given in the 6 year medical programme:

- In the core course Basic Science 1 (2LA000, 12 credits), the lecture “Climate change in relation to the determinants of health” mentions cardiovascular disease as a direct and indirect effect of climate change, as well as a factor of vulnerability.
- In the core course Basic Science 3 (2LA002, 18 credits), the lecture “Prevention and climate mitigation - a clinical perspective” covers the same content as in Basic Science 1, but in more detail. It also addresses the mutually beneficial effects of active transportation to both climate and public health, regarding e.g. cardiovascular disease.
- In the core course Basic Science 5 (2LA004, 30 credits), the environmental aspects of cardiovascular disease are covered in a TBL (Team Based Learning) module in which learning about cardiovascular prevention is integrated.

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

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

Score explanation:

Lectures given in the 5.5 year medical programme

- In the core course Public Health and Environmental Medicine (2LK100, 12 credits), the lecture “Climate change and mental health” of 30 minutes covers this subject in detail.

Lectures given in the 6 year medical programme:

- In the core course Basic Science 1 (2LA000, 12 credits), the lecture “Climate change in relation to the determinants of health” mentions mental illness as a consequence of extreme weathers, briefly.
- In the core course Basic Science 3 (2LA002, 18 credits), the lecture “Prevention and climate mitigation - a clinical perspective” covers the same content as in Basic Science 1, and goes into more detail about prevention.

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

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

Score explanation:

These broader relationships under the umbrella term of planetary health are not covered in depth in the current curriculum.

Lectures given in the 5.5 year medical programme

- In the core course Public Health and Environmental Medicine (2LK100, 12 credits), there are two full days of lectures on the subject climate and health, where this subject is covered.

Lectures given in the 6 year medical programme:

- In the core course Basic Science 1 (2LA000, 12 credits), the lecture “Climate change in relation to the determinants of health” mentions reduced water and food security as indirect effects of climate change.
- In the core course Basic Science 3 (2LA002, 18 credits), the lecture “Prevention and climate mitigation - a clinical perspective” covers the same content as in Basic Science 1.
- In the core course Basic Science 5 (2LA004, 30 credits), the lecture “Societal and environmental aspects of pharmacological treatment - including sustainability aspects” covers water security in terms of pharmacological treatment.

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

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

Score explanation:

Lectures given in the 5.5 year medical programme

- In the core course Public Health and Environmental Medicine (2LK100, 12 credits), the lecture “Climate related vulnerability, inequality and injustice” of 30 minutes covers this subject in detail.

Lectures given in the 6 year medical programme:

- In the core course Basic Science 1 (2LA000, 12 credits), the lecture “Climate change in relation to the determinants of health” includes the vulnerability and justice aspects of climate change as learning objectives.
- In the core course Basic Science 3 (2LA002, 18 credits), the lecture “Prevention and climate mitigation - a clinical perspective” covers factors of vulnerability.

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

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

Score explanation:

Lectures given in the 5.5 year medical programme

- In the core course Public Health and Environmental Medicine (2LK100, 12 credits), the lecture “Climate related vulnerability, inequality and injustice” of 30 minutes covers this subject.
- The subject is covered by the elective courses Global Surgery and Global Health.

Lectures given in the 6 year medical programme:

- In the core course Basic Science 1 (2LA000, 12 credits), the lecture “Climate change in relation to the determinants of health” addresses the inequality aspect of climate change, including the global regional unequal health outcomes such as climate related mortality.

Curriculum: Environmental Health & the Effects of Anthropogenic Toxins on Human Health

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

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

Score explanation:

Lectures given in the 5.5 year medical programme):

- In the core course Public Health and Environmental Medicine (2LK100, 12 credits), there is a lecture called “Work and pregnancy” of 35 minutes, where this subject is partly covered.
- In the elective course “Perinatology” (2LK025, 7.5 credits), this subject was covered in one lecture. However, this course was given the last time in 2023.

Lectures given in the 6 year medical programme:

- To our knowledge, this subject is currently not covered in the core curriculum of the 6 year programme.

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

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

Score explanation:

Lectures given in the 5.5 year medical programme:

- The seminar "Risk assessment" during the core course Public Health and Environmental Medicine (2LK100, 12 credits) raises the connection between air pollution exposure, asthma and cardiovascular diseases. During the seminar, a graph showing the air quality in different residential areas in Stockholm is examined.

Lectures given in the 6 year medical programme:

- To our knowledge, this subject is currently not covered in the core curriculum of the 6 year programme.

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

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

Score explanation:

To our knowledge, the importance of Indigenous knowledge and value systems as essential components of planetary health solutions is currently not covered in the medical school curriculum. We recommend this topic to be covered by KI in reference to the Sami peoples.

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

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

Score explanation:

Lectures given in the 5.5 year medical programme):

- In the core course Public Health and Environmental Medicine (2LK100, 12 credits), there is a lecture on Health risk assessment. In such, emphasis is put on protecting vulnerable groups. Examples are given regarding children and groups with low socioeconomic status.

Lectures given in the 6 year medical programme:

- To our knowledge, this subject is currently not covered in the core curriculum of the 6 year programme.

Curriculum: Sustainability

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

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

Score explanation:

Lectures given in the 5.5 year medical programme):

- In the core course Public Health and Environmental Medicine (2LK100, 12 credits), the lecture “Climate mitigation strategies - diet” covers this subject in detail.

Lectures given in the 6 year medical programme:

- In the core course Basic Science 3 (2LA002, 18 credits), the lecture “Prevention and climate mitigation - a clinical perspective” covers this subject in detail.
- In the core course Basic Science 5 (2LA004, 30 credits), the new Nordic Nutrition Recommendations, in which the environmental and health co-benefits of reducing meat consumption are taken into account, are discussed in a TBL module.

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

3	This topic was explored in depth by the core curriculum
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2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i></p> <p>Lectures given in the 5.5 year medical programme:</p> <ul style="list-style-type: none"> In the core course Public Health and Environmental Medicine (2LK100, 12 credits), the lectures “Climate adaptation in healthcare”, “Climate mitigation strategies - choosing wisely”, “Climate mitigation strategies - greening healthcare” of 30 minutes each cover this subject. <p>Lectures given in the 6 year medical programme:</p> <ul style="list-style-type: none"> In the core course Basic Science 1 (2LA000, 12 credits), the lecture “Climate change in relation to the determinants of health” addresses the topic “sustainable healthcare” very briefly. In the core course Basic Science 3 (2LA002, 18 credits), the lecture “Prevention and climate mitigation - a clinical perspective” addresses the carbon footprint of healthcare, mentioning that 4% of all emissions globally can be attributed to healthcare. 	

1.17. Does your <u>medical school</u> curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each)	
2	The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment
2	The environmental impact of pharmaceuticals and over-prescribing as a cause of climate health harm. Alternatively teaching on deprescribing where possible and its environmental and health co-benefits would fulfil this metric.
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. This is commonly known as social prescribing in the UK.
1	Environmental impact of surgical healthcare on planetary health and the climate crisis, and how can it be mitigated
1	The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anaesthesia’s environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	Waste production within healthcare clinics and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)
<p><i>Score explanation:</i></p> <p>1. Covered in:</p> <p>a. 5.5 year programme: The core course Public Health and Environmental Medicine (2LK100, 12 credits) lecture “Climate mitigation strategies - choosing wisely”</p>	

- b. 6 year programme: The core course Basic Science 3 (2LA002, 18 credits) lecture “Prevention and climate mitigation - a clinical perspective”, and the core course Basic Science 5 (2LA004, 30 credits) TBL module about “General pharmacology” (e.g. emphasising that physical activity and dietary adaptations are preferable as first line treatment in diabetes mellitus type 2 and the metabolic syndrome.)
2. Covered in:
 - a. 5.5 year programme: The core course Public Health and Environmental Medicine (2LK100, 12 credits) lecture “Climate mitigation strategies - choosing wisely”
 - b. 6 year programme: The core course Basic Science 5 (2LA004, 30 credits) TBL module on “General pharmacology”, where the environmental and sustainability aspects of pharmacological treatment are included in the learning objectives.
 3. Covered in:
 - a. 5.5 year programme: The core course Public Health and Environmental Medicine (2LK100, 12 credits) lecture “Climate mitigation strategies - greening healthcare” mentions surgical healthcare as an example.
 - b. 6 year programme: To our knowledge, the environmental impact of surgical healthcare is currently not covered.
 4. Covered in:
 - a. 5.5 year programme: The core course Public Health and Environmental Medicine (2LK100, 12 credits) lecture “Climate mitigation strategies - greening healthcare” mentions anaesthetic gases as an example.
 - b. 6 year programme: To our knowledge, the environmental impact of anaesthetic gases is currently not covered in the core curriculum.
 5. Covered in:
 - a. 5.5 year programme: The core course Public Health and Environmental Medicine (2LK100, 12 credits) lecture “Climate mitigation strategies - greening healthcare” mentions inhalers as an example.
 - b. 6 year programme: The core course Basic Science 5 (2LA004, 30 credits) lecture “Societal and environmental aspects of pharmacological treatment - including sustainability aspects” mentions inhalers as an example.
 6. Covered in:
 - a. 5.5 year programme: The core course Public Health and Environmental Medicine (2LK100, 12 credits) lecture “Climate mitigation strategies - greening healthcare” covers waste production briefly.
 - b. 6 year programme: To our knowledge, the aspects of healthcare waste production are currently not covered in the core curriculum.
- However, many of these subjects are only covered in brief, and there are ambitions of integrating them to a higher extent, and longitudinally.

Curriculum: Clinical Applications

1.18. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies to have conversations with patients about the health effects of climate change?	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the core curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.

0	No, there are not strategies introduced for having conversations with patients about climate change
<p><i>Score explanation:</i></p> <p>Strategies introduced for having conversations with patients about climate change and health are currently not covered in the medical school core curriculum.</p>	

1.19. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies for taking an environmental history or exposure history?	
2	Yes, the core curriculum includes strategies for taking an environmental history.
1	Only elective coursework includes strategies for taking an environmental history.
0	No, the curriculum does not include strategies for taking an environmental history.
<p><i>Score explanation:</i></p> <p>Lectures given in the 5.5 year medical programme :</p> <ul style="list-style-type: none"> This is covered in the core course Public Health and Environmental Medicine (2LK100, 12 credits) <p>Lectures given in the 6 year medical programme:</p> <ul style="list-style-type: none"> This is covered in the course Basic Science 3 (2LA002, 18 credits), where work history and social history are taught in lecture, practised practically during clinical rotations, and discussed during seminars. The knowledge and skills are then deepened in the course Medical Diagnostics with Basic Scientific Integration (2LA006, 22.5 credits), semester 4. 	

Curriculum: Administrative Support for Planetary Health

1.20. Is your <u>medical school</u> currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?	
4	Yes, the medical school is currently in the process of making major improvements to ESH/planetary health education.
2	Yes, the medical school is currently in the process of making minor improvements to ESH/planetary health education.
0	No, there are no improvements to planetary health education in progress.
<p><i>Score explanation:</i></p> <p>According to the KI Environment and Climate Action Plan 2021–2024, education programs at KI should involve learning objectives envisioning that students are provided with knowledge and skills with regards to planetary health. However, the goals must be considered quite broad, with no details regarding an action plan forward, insufficient assignment of responsibilities on how to implement this, and lack of appropriate financing.</p>	

The 2023 PHRC was presented to the curriculum committee in fall 2023. At this occasion, the importance of the subjects was acknowledged, however we are unaware of any major action being taken since based on the identified areas for improvement.

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

6	Planetary health/ESH topics are well integrated into the core medical school curriculum.
4	Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum.
2	Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s) .
0	There is minimal/no education for sustainable healthcare.

Score explanation:

There are robust lectures on climate and health in the first two semesters (although only one 30 minute lecture each), and further integrated in pharmacology education during the third semester. However, the curriculum lacks clinical integration of ESH in the subsequent semesters. Instead of stand-alone lectures on ESH, the topic should be incorporated within various contexts in order to facilitate the development of key skills that are stated in KI's action plan, such as "critical and ethical thinking and reflection" and "the ability to reflect on one's own role in the local and global society".

Learning objectives about ESH should be included in new courses of the 6 year programme. However, there is no key responsible person for the practical integration of ESH, and to our understanding it is up to each of the individual course leaders. According to faculty, lack of knowledge on ESH is a major barrier for these course managers to actually implement ESH in respective courses. There are individual efforts to integrate ESH longitudinally, but there is no systematic approach. According to our considerations, there is no "read thread" that KI follows to implement ESH longitudinally.

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

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

Score explanation:

One employee is responsible for implementing global health and planetary health in the medical programme. This employee is a senior lecturer and an associate professor, with research focus on epidemiology and prevention. The employee is responsible for the course Public Health and Environmental Medicine (2LK100, 12 credits) in the 5.5 year medical programme, and for implementation of education on planetary health and sustainable healthcare in the 6 year programme. This employee has previously been involved in the process of last year's report card, and been helpful

and supportive in our work. Further, there is a need to assign responsibilities to one or several people to take charge of the practical implementations of ESH in every course.

Section Total (56 out of 72)

77.78%

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

Interdisciplinary Research

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

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <u>medical school</u> ?	
3	Yes, there are faculty members at the medical school who have a primary research focus in planetary health or healthcare sustainability.
2	Yes, there are individual faculty members at the medical school who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.
1	There are planetary health and/or healthcare sustainability researchers at the institution , but none associated with the medical school.
0	No, there are no planetary health and/or healthcare sustainability researchers at the institution or medical school at this time.

Score explanation:

Whenever the scoring system distinguishes between the medical school and the institution, we refer to the departments of medicine [Solna](#) and [Huddinge](#) as KI's medical school and refer to KI's other departments as the institution. At the departments of medicine Solna and Huddinge there are faculty members who have a primary research focus in planetary health. Research groups at the nephrology department have done extensive research on heat-related kidney disease and [collaborated with other disciplines](#), e.g. specialists in biodiversity and ecology. We are not aware of any other medical disciplines within KI departments of medicine, KI departments conducting medical research or KI as an institution overall involved in PH research, ongoing research projects on sustainable health care, climate change mitigation, or other environmental crises within health care.

In addition, KI is home to the [Institute of Environmental Medicine](#) (IMM) which does public health research on heat epidemiology, air pollution, green spaces and links to cardiovascular diseases, respiratory diseases and allergies including extensive national and international collaborations such as [EXPANSE](#) (Exposome powered tools for living in an urban setting), [SWEDEHEART](#) (Uppsala University) and [CHAIR-India](#) (The Consortium for Climate, Health & Air Pollution Research in India). As such, there are researchers at IMM whose primary research focus is in planetary health.

KI also contains several other health research organisations such as the [Centre of Excellence for Sustainable Health](#), the [Global Public Health](#) (GPH) department and the [Centre for Health Crises](#), all of which investigate public health problems. These centres are not as extensively dedicated to planetary health research but provide a supportive framework for the development of planetary health and sustainability.

Exemplifying publications from IMM and GPH relating to environmental health and clinical medicine are: [Yu et al. 2023 on lung function and air quality](#) and [Hellden et al. 2021 on pediatrics and climate change](#).

In addition, KI collaborates with the [Swedish Institute for Global Health Transformation](#) (SIGHT), as well as other universities (Uppsala, SU, KTH, Umeå) via workshops, conferences and other events to encourage cooperation in planetary health research. In 2021, the “One KI for Sustainable Development” project allocated resources for a call for research funding to encourage researchers at KI to engage with the Agenda 2030 and to further develop research aimed at meeting the SDGs. Five researchers were awarded funds of SEK 100-320 thousand each. Yet another KI organisation is [CLINTEC](#), a nephrology study division which contains several researchers who investigate the intersect of Planetary Health and kidney disease.

The Grants Office works to inform about funding opportunities linked to sustainable development. Within all of these named frameworks there is a potential to acquire new funding for interdisciplinary planetary health research within and beyond KI. As a possible role model for such activities, within Stockholm Trio Climate and Health involving Bolin Center, KTH Climate Action Center and KI, researchers have arranged several events broaching climate and health and are also planning a large scale study bringing in cross-disciplinary expertise to develop a collaboration center with projects studying climate and health.

In the [2022 update of the climate action plan 2030](#), KI has stated that it targets to increase research in the areas of climate change and health, climate-friendly healthcare, behavioral science research and prevention of ill health linked to climate change by 2024. In conclusion, KI is making significant efforts to produce planetary health research, and there is yet great potential within KI departments conducting medical research to include sustainability perspectives and planetary health considerations in ongoing research as well as further research at the intersect of clinical medicine, planetary health and sustainable health care.

Recommendations:

- Establishing further research in planetary health and sustainable healthcare within KI departments conducting medical research
- Acquiring funding for research on sustainable health care, specifically on mitigation, that is, reducing the carbon footprint of the health care sector, within different medical disciplines at KI departments conducting medical research
- Further engagement with KI’s Centre of Excellence for Sustainable Health, Centre for Health Crises, the GlobeLife collaboration between KI and Uppsala University, other Swedish and international collaborations, aiming at deeper engagement with planetary health research
- Adding a planetary health and sustainable health care lens to ongoing research projects at KI departments conducting medical research and at KI generally where appropriate
- Adding environmental sustainability consideration sections as a prerequisites to any future (clinical) research project proposal at departments conducting medical research, similar to considerations on ethics and equity as prerequisites
- Further participation in collaborative engagements between KI departments conducting medical research and other institutes on transdisciplinary planetary health research, e.g. cooperating with KTH Royal Institute of Technology on how to make single-use medical products reusable or at least recyclable

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

3

There is **at least one** dedicated department or institute for interdisciplinary planetary health research.

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

Score explanation:

KI's [Institute for Environmental Medicine](#) (IMM) is directly involved in researching environmental health and the effects of environmental exposures on human health. At IMM, research is conducted in epidemiology, toxicology, physiology, environmental medicine and risk assessment. To our knowledge, IMM is currently actively involved in planetary health research within the realm of clinical medicine (see above).

In addition, IMM has the task to provide authorities with support regarding environmental health risk assessment. Other institutions at KI such as the [Centre of Excellence for Sustainable Health](#), the [Centre for Health Crises](#) and the [Global Public Health department](#) all conduct public health research and provide supportive framework but are not directly dedicated to interdisciplinary planetary health research. In the [2022 update of the climate action plan 2030](#), KI has stated that it targets one or more positions as professor, associate professor, assistant professor or postdoc in one or more of the areas of climate change and health, climate-friendly healthcare, and/or behavioural science research and prevention of ill health linked to climate change by 2024. There is currently still no **central** initiative or funding for positions within this area, but there can still be positions within these areas that have been recruited by the departments. It has not been clearly stated how the Climate Action Plan goals have been followed-up or achieved.

Recommendations:

- Implementing climate action plan for 2030, ensuring climate and planetary health research is included and developed further
- Keeping KI's IMM research department engaged in planetary health research as well as expanding research on planetary health at other institutions such as the Centre of Excellence for Sustainable Health, the Centre for Health Crises and the Global Public Health Department
- Founding an institute dedicated to planetary health and sustainable health care or dedicating a subdepartment to planetary health and another to sustainable healthcare
- Increase transparency and communication of how KI's 2030 Climate Action Plan objectives are being met, or what initiatives are being taken to ensure that they are going to be met. Adjust the Climate Plan if necessary, and be transparent about the hurdles of achieving these goals on time.

2.3. Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your medical school?

3	Yes, there is a process in which community members impacted by climate and environmental injustice have decision-making power in the climate + environmental research agenda.
2	Yes, there is a process in which community members impacted by climate and environmental injustice advise the climate + environmental research agenda.

1	No , but there are current efforts to establish a process for community members to advise or make decisions on the research agenda.
0	There is no process, and no efforts to create such a process.

Score explanation:

We are unaware of any processes directly at KI departments of medicine by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the climate and environmental research agenda at KI. Meanwhile, we decided to give a score of 1 due to the following activities at KI as an institution:

Climate change in Uganda is particularly severe, with the country's climate being mostly tropical and climate change generating increasing patterns of extreme weather and seasonal changes. One of KI's largest [international collaborations is with Makerere University in Uganda](#). The partnership is to manifest itself in a [Centre of Excellence for Sustainable Health](#). A delegation from KI travelled to Uganda in May 2022 to cement the 23-year old relationship. Within this strong partnership, disadvantaged communities are included in decision-making processes on the research conducted. However, to our knowledge, there is no ongoing research of the Centre of Excellence for Sustainable Health related to planetary health. Thus community members in Uganda are not directly involved in the climate and environmental research agenda.

The Institute of Environmental Medicine (IMM) has an overseeing board of several national authorities e.g. Public Health Authority, National Board of Health and Welfare etc. and collaborates with international organisations to help support interdisciplinary planetary health research in disproportionately affected communities. In India, where climate change is a serious public health concern particularly on the level of air pollution, the Consortium for Climate, Health & Air Pollution Research in India ([CHAIR-India](#)) links environmental data to health datasets, and studies associations of short- and long-term air pollution and temperature with mortality and cardiometabolic and respiratory disease in rural and urban areas across India. KI has ongoing studies aiming to better understand health effects of air pollution, collaborating with CHAIR-India databases and FORMAS (a sustainable research fund in Sweden). This research will help Indian organisations better understand the health effects of climate change in their own population and environment. However, these Indian communities disproportionately affected by climate change do not hold decision-making power for the planetary health research agenda at KI.

Recommendations:

- Through discussion and eg. interviews, engage the communities disproportionately affected by climate change i.e. Ugandan and Indian collaborators, to determine what they suggest to improve the research agenda at KI based on their unique perspective, education and knowledge about climate change.
- Make co-design components compulsory for research conducted in and about communities disproportionately impacted by climate change and environmental injustice.
- Investigating the effects of climate change on the health of populations in Uganda, with emphasis on remote and vulnerable populations. Researching methods of health-related adaptation to climate change (e.g. related to malnutrition) and assistance in conserving these populations' ways of life and relationship to nature.
- Investigating the effects of global warming and increases in temperature on vulnerable populations such as geriatric populations. Particular emphasis on pharmacology, with certain drugs (ex. psychiatric drugs) having pharmacological interactions severely altered upon small environmental temperature increases or during excessive heat waves.
- Investigation into health-related [effects of climate change on for example the Sami](#), the indigenous people living in northernmost Scandinavia, and research into methods of assistance in conserving these populations' ways of life and relationship to nature.

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

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

Score explanation:

[Pages that directly address KI's environmental impact, current and future efforts](#) to reduce KI's carbon footprint, [options for faculty and students to get involved in sustainable development](#), and [contributions to the field of planetary health research](#) do exist on KI's website as well as partner websites. KI has a Council for Sustainable Development, and two coordinators for sustainable development. KI further has a "[Sustainable Development](#)" website, pooling all work related to the SDGs. This website is comprehensive and easy to use. The Project One KI for Sustainable Development is promoted here which currently leads to a web course in SDGs for all affiliated or employed at KI.

Previous work in this project includes workshops and [conferences on sustainable development](#) which attracted scientists from multiple fields, and two announcements of research grants that ultimately funded researchers from different KI departments. The Sustainable Development website also clearly lists upcoming and past events relating to sustainable development at KI. It also shows news articles about recent advancements in the understanding of planetary health and promotes current sustainability goals at KI. **However**, the website does not have a primary focus on health and the environment or planetary health. As such, researchers, educators and students with a primary interest in planetary health do not easily access work done or learn about opportunities at KI specifically related to this field.

Recommendations:

- Adding a focus on planetary health to the Sustainable Development website with all current information.
- Generating internet pages for KI's direct contributions to planetary health research providing data and publications with easy access. Promoting these pages on KI's official website. Promoting these websites on the websites of KI departments conducting medical research.
- Linking and emphasising health co-benefits of sustainability efforts on KI's websites related to sustainability efforts, e.g. transitioning from fossil to renewable energy sources at KI improves respiratory and cardiovascular health due to a decrease in air pollution; promoting public transport and bikes at KI improves air quality and cycling can have benefits for physical and mental health; and, mainstreaming plant-based diets at KI is beneficial to the environment and our health).

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

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

Score explanation:

KI has hosted the following events in the last year:

- [Global Conversation on Sustainable Health](#)
- [KI's Sustainability Day 2023](#)
- [Student Competition - Climate and Health: A Vision for Stockholm 2029](#)
- [Towards a Sustainable Future – the University and the Wider World](#)
- [Developing Sustainable Cities: Climate and Health](#)

However, there are no apparent conferences in place for Sustainability in Health Care. To our knowledge these events are hosted by KI and not directly the departments conducting medical research. In 2021, the 2nd “[KI Conference on Sustainable Development](#)” was hosted by KI, including funding initiatives to encourage KI researchers to engage in SDG-related questions.

Recommendations:

- Allowing and supporting the departments conducting medical research to host events related to planetary health on its own
- Launching conferences with topics related to sustainable health care and emphasising this topic at the many existing conferences at KI departments conducting medical research
- Making planetary health a primary focus at the next and subsequent GlobeLife conferences
- Continuing to develop and host the above-mentioned and similar events

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

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

Score explanation:

KI has held a membership in the [Planetary Health Alliance](#) since 2022, along with SU and KTH, and the Association for Medical Education in Europe. With regards to this, KI's contact person for the

Planetary Health Alliance and faculty mentor for this report, professor Peter Stenvinkel, PhD MD, will once yearly submit ongoing activities related to Planetary Health to the Council for Environment and Sustainable Development. We are unaware of any specific involvement of the departments conducting medical research with these organisations.

Recommendations:

- KI actively engaging with the Planetary Health Alliance and regularly reporting on related progress
- KI officially endorsing participation in the [Planetary Health Report Card](#)
- KI promoting and adopting the [Association for Medical Education in Europe Consensus Statement: Planetary health and education for sustainable healthcare](#)
- KI becoming an active member of the [Global Consortium on Climate and Health Education](#)
- KI departments conducting medical research actively engaging in the above-mentioned organisations

Section Total (13 out of 17)

76.47%

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

Community Outreach and Advocacy

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

3.1. Does your medical school partner with community organisations to promote planetary and environmental health?	
3	Yes, the medical school meaningfully partners with multiple community organisations to promote planetary and environmental health.
2	Yes, the medical school meaningfully partners with one community organisation to promote planetary and environmental health.
1	The institution partners with community organisations, but the medical school is not part of that partnership.
0	No, there is no such meaningful community partnership.
<p><i>Score explanation:</i></p> <p>We are unaware of any partnership between KI and community organisations affected by climate change.</p> <p>KI has two sustainability related centres that have the potential to establish collaborations with community organisations. The Center of Excellence for Sustainable Health is a collaboration between KI and Makerere University “to develop capacity and mobilise actions to drive the agenda for sustainable health”. It targets managers in healthcare and public health officers. Further collaborations are with Kinshasa School of Public Health, Benadir University and social innovation company Tinkr. The Center for Health Crises is a KI centre focused on research, education and interdisciplinary collaboration with the aim to increase capabilities to handle future health crises. It co-produced season 4 of Riskzonen, a podcast about threats, risk factors and about how society deals with health crises.</p> <p>The environment and climate action plan 2021-2024 formulates the following collaborative goals for 2024:</p> <ul style="list-style-type: none"> ● By 2024, the climate issue is an integral part of the KI's collaboration with its most important partner, the health sector. ● By 2024, the climate issue is addressed in all major collaborative projects in which KI participates. ● By 2024, KI contributes with its expertise on health linked to climate in several society-wide projects. ● By 2024, KI has an important role in the university sector in working on climate issues. <p>Now, in 2024, none of the “several society-wide projects” proposed have been identified.</p>	

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

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

Score explanation:

KI has participated in and hosted events such as the following ones in the last year that were partly open to the public, however, to our knowledge, few of them were primarily created for a public audience, and none were hosted directly by the departments conducting medical research:

- [Global Conversation on Sustainable Health](#)
- [KI's Sustainability Day 2023](#)
- [Student Competition - Climate and Health: A Vision for Stockholm 2029](#)
- [Towards a Sustainable Future – the University and the Wider World](#)
- [Developing Sustainable Cities: Climate and Health](#)

KI offers the following courses that are available to access for the public:

- [Innovation for Sustainable Health](#)
- [KI web course: Getting Started with the SDGs](#)
- [Introduction to social, economic and environmental sustainability and health](#)
- [One Health – transformation for sustainability - hybrid summer course](#)

3.3. Does your medical school have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?

2	Yes, all students regularly receive communication updates dedicated to planetary health and/or sustainable healthcare.
1	Yes, planetary health and/or sustainable healthcare topics are sometimes included in communication updates.
0	Students do not receive communications about planetary health or sustainable healthcare.

Score explanation:

The Department of Medicine, Huddinge, has the [MedH News](#) newsletter which has a section called 'Environment and Sustainability News' that regularly updates its staff and affiliates (including PhD students) about information that is related to sustainability and planetary health. However, since this is only aimed at staff and PhD students and not medical students, only 1 point can be awarded.

The [doctoral newsletter](#) has included a link to a student-led initiative on Planetary Health and Sustainability Education (PHSE) and encouraged its readers to sign the PHSE open letter in February 2023. As of June 2023, the department Neurobiology, Care Sciences and Society (NVS) also have set up a [webpage on planetary health](#). At the same time-point NVS started its "[Environmental and Climate](#)

[Awareness year](#)” where employees will be able to take part in different activities such as a [survey](#), [lectures & workshops](#), [challenges](#) and [written materials](#) at the webpage. However, this is only aimed at staff and PhD students and not physiotherapy students.

Further, while KI’s regular communication channels such as the [KI student newsletter](#), [KI Calendar](#) and medical newsletter do not have a dedicated space for sustainability issues, they often include seminars or activities related to sustainability or planetary health that have been done or are planned. When specific events or occasions are planned or have taken place, these are featured on KI’s news channels and information is disseminated on public screens on campus. Initiatives such as courses organised by single researchers are applauded, included in and spread via KI’s new channels.

Overall, sustainability is covered on a quite recurrent basis, but planetary health is covered rather sporadically in KI’s news outlets.

3.4. Does the institution or main affiliated hospital trust engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?

2	Yes, the institution or main affiliated hospital trust offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health.
1	Yes, the institution or main affiliated hospital trust offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
0	There are no such accessible courses for post-graduate providers

Score explanation:

KI offers a [1-hour online course on the SDGs](#) and on how to implement them in teaching activities. KI targets include the SDGs in its graduate and post-graduate education as part of the Intended Learning Outcomes from 2024 onwards.

Additionally, the [Center of Excellence for Sustainable Health](#), established through a collaborative effort between KI and Makerere University, offers training programs aimed at professionals in health, with the goal of enhancing capacity for sustainable development and sustainable health. However, none are focused on planetary health.

However, these courses are not specifically targeting individuals post-graduation but are rather aimed at professionals. They do have the aim of ensuring the professionals’ knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career.

Two lecturers at KI, Hanna Karlsson and Sara Widen, have been awarded with [KI’s Sustainability Award 2023](#) recently for training teachers to integrate sustainable development into KI’s courses and programmes using an innovative approach.

3.5. Does your medical school or its affiliated teaching hospitals have accessible educational materials for patients about environmental health exposures?

2	Yes, the medical school or all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated medical centres have accessible educational materials for patients.
<p><i>Score explanation:</i></p> <p>To our knowledge, KI departments of medicine and Karolinska University Hospital currently do not provide dedicated educational materials regarding environmental health exposures to patients.</p> <p>However, all the hospitals in the area fall under the umbrella of the Region Stockholm, which has a Center of Occupational and Environmental Health that has easily accessible information about air pollution, noise, chemicals, outdoor tobacco smoke, inequalities regarding environmental health, and further environmental exposures that affect health.</p> <p>Given that the hospitals in the region have patient materials about environmental health exposures, but KI and Karolinska University Hospital do not, we award one point.</p>	

3.6. Does your <u>medical school</u> or its <u>affiliated teaching hospitals</u> have accessible educational materials for patients about the health impacts of climate change?	
2	Yes, the medical school or all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated hospitals have accessible educational materials for patients.
<p><i>Score explanation:</i></p> <p>To our knowledge, KI departments of medicine and Karolinska University Hospital currently do not provide dedicated educational materials regarding climate change and its health impact to patients.</p> <p>However, all the hospitals in the area fall under the umbrella of the Region Stockholm, which has a center of Occupational and Environmental Health that has easily accessible information about climate change and about environmental exposures that affect health, such as, for example, air pollution, noise, chemicals, outdoor tobacco smoke and inequalities regarding environmental health.</p> <p>Given that the hospitals in the region have patient materials about climate change and its health effects, but KI and Karolinska University Hospital do not, we award one point.</p>	

Section Total (5 out of 14)	35.71%
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Are there additional community engagement and advocacy resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

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 <u>medical school</u> or your <u>institution</u> offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the medical school or institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum.
1	The medical school or 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.
0	No, neither the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.
<p><i>Score explanation:</i></p> <p>Groups, individuals, students, and staff at KI are eligible to receive the Sustainability Award. A certificate and money are given to the recipient(s) to further develop or improve initiatives at KI. However, to receive the award, candidates have to be nominated by a head of department and directors, so it is a bit unclear how students can be nominated for this award.</p> <p>KI's Centre for Health Crises and Centre of Excellence for Sustainable Health also hosts a student competition for a climate-neutral Stockholm in collaboration with KTH Climate Action Centre and the Bolin Centre at Stockholm University. However, this competition, titled "Climate and Health: A Vision for Stockholm 2029", does not mention any grants available for the winner.</p>	

4.2. Does your <u>institution</u> offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
2	The institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these require student initiative to seek these out and carry them out in their spare time.
0	There are no opportunities for students to engage in planetary health/sustainable healthcare research.
<p><i>Score explanation:</i></p> <p>There are many opportunities for medical students to perform research related to planetary health topics. The Institute of Environmental Medicine at Karolinska Institutet (IMM) or the Centre of</p>	

Excellence for Sustainable Health ([CESH](#)) are more focused on research in sustainability. However, these require the students' own initiative and are not a part of the medical program. There is no specific research program related to planetary health/sustainable healthcare research for medical students.

4.3. Does the medical school have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.

2	The medical school has a web page with specific information related to planetary health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.
1	There is a medical school webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information.
0	There is no medical-school specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.

Score explanation:

Karolinska Institutet (KI) has [One KI for Sustainable Development webpage](#) that lists all of KI's research, education, documents, and collaborative works regarding sustainability. The page has a news section that focuses on sustainability in KI and is updated at least once a month. The page also contains links to bodies in KI that work on developing sustainable environments, such as the Council for Environment and Sustainable Development and Environmental Coordinators, as well as links to research centres that focus on planetary health and sustainability.

4.4. Does your medical school have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?

2	Yes, there is a student organisation with faculty support at my medical school dedicated to planetary health or sustainability in healthcare.
1	Yes, there is a student organisation at my medical school dedicated to planetary health or sustainability in healthcare but it lacks faculty support .
0	there is not a student organisation at my institution dedicated to planetary health or sustainability healthcare.

Score explanation:

Within KI's student union (Medicinska Föreningen), there is an official committee called [Students for Sustainable Development](#) at KI (SSD), which is dedicated to engaging students in sustainability-related projects, not only in healthcare but also for general sustainability. SSD also promotes sustainability on social media and on campus, and provides a social platform for students at KI. However, at the departments of medicine themselves, there is no specific student sustainability group.

The Council for Environment and Sustainable Development provides funding for the venue for the Sustainable Research Week organised by Students for Sustainable Development in spring 2023. Additionally, the Council reserves seats for SSD members to represent their interests in meetings. However, no recurrent or systematic support or interest have been shown from faculty members of the medical school.

4.5. Is there a student liaison representing sustainability interests who serves on a medical school or institutional decision-making council to advocate for curriculum reform and/or sustainability best practices?

1	Yes, there is a student representative that serves on a medical school or institutional decision-making council/committee.
0	No, there is no such student representative.

Score explanation:

In [KI's Council for Environment and Sustainable Development](#), an advisory board to decision-making bodies at Karolinska Institutet, there are student representatives who are elected through the student union, Medicinska Föreningen (MF). Although this Council lacks executive power, it plays a crucial role in disseminating knowledge about sustainability, discussing environmental issues, and preparing sustainability-related proposals for action plans within the university. Additionally, the council also includes a co-opted seat for representatives from Students for Sustainable Development (SSD).

4.6. In the past year, has the institution had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)

1	Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.
1	Panels, speaker series, or similar events related to planetary health that have students as an intended audience.
1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.
1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)

Score explanation:

- **Projects:** no points awarded

- **Speaker series:** Karolinska Institutet (KI), under the Alumni Lecture Series, hosted a lecture on ‘Sitting still- the greatest health issue of our time’.
An interactive workshop was organised by the KI Lifestyle4Health network on how common public diseases can be prevented.
The KI [Council for Environment and Sustainable Development](#) organised the KI Sustainability Day 2023 to increase knowledge of sustainability issues and provide tools and inspiration for students and staff at KI to contribute to a sustainable future.
KI organised The Sustainable Research Week in which keynote speakers, researchers as well as science company representatives from all over the world, shared their knowledge and experience on the role of sustainability in research, current sustainability issues along with possible solutions.
- **Events:** The KI Impact Challenge event is arranged once a year and this year movement and physical activity were in focus. About 45 students from KI were tasked to come up with what is needed to make young people become more physically active.
The KI Health Promotion team trained a few students from each course to instruct ‘Movements Snacks’, which are short 5-7 minute exercise regimes, for their classes during breaks or between lectures to encourage physical activity among students.
‘Fix-your-own bike’ workshops were organised in collaboration with Bon Mécanique.
- **Cultural events:** No points awarded.
- **Volunteer opportunities:** No points awarded.
- **Wilderness/outdoor programs:** KI organised a ‘KI Fun Run’.

Section Total (11 out of 15)

73.33%

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

Campus Sustainability

Section Overview: *This section evaluates the support and engagement in sustainability initiatives by the medical school and/or institution. The healthcare industry is a major contributor to greenhouse gas emissions as well as pollution that harms local, regional, and global ecosystems. While healthcare is, by nature, a resource-intensive endeavour, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinising every aspect of how our systems operate, from where we source our energy, to how we build our infrastructure, to what companies we invest in. Our medical schools, clinics, and hospitals must set the standard for sustainable practices, and show other sectors what is possible when it comes to minimising environmental impact.*

5.1. Does your <u>medical school</u> and/or <u>institution</u> have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff , but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p><i>Score explanation:</i></p> <p>There is an Office of Sustainability at KI with one or more full-time staff member(s) dedicated to campus sustainability. This is also true for the University Hospital which has a Sustainability Unit, and environmental coordinators. When it comes to the medical school, however, no specific staff member is in charge of sustainability. There is one staff member that works part-time on the development of the medical curriculum with respect to the incorporation of Planetary Health.</p> <p>There are two environmental coordinators currently employed full-time at KI. Together with departmental environmental representatives (whose tasks fall within the scope of their employment) and the Council for the Environment and Sustainable Development, they implement the university's sustainability policies.</p>	

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

	<p><i>Score explanation:</i></p> <p>To our knowledge, no goal of carbon neutrality has been stated by the university. However, KI has signed the Climate Framework (an agreement between 37 Swedish universities) which states that all participating universities shall have implemented measures in order to be in line with the 1.5°C target of the Paris Agreement by 2030. A 50% reduction of greenhouse gas emissions should be realised by 2030 according to KI's Climate Strategy 2030. In order to cut back on greenhouse gas emissions, KI has executed an extensive top-down carbon mapping operation over 2019, which was first presented in 2023.</p>
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5.3. Do buildings/infrastructure used by the <u>medical school</u> for teaching (not including the hospital) utilize renewable energy?	
3	Yes medical school buildings are 100% powered by renewable energy
2	Medical school buildings source >80% of energy needs from off-site and/or on-site renewable energy.
1	Medical school buildings source >20% of energy needs from off-site and/or on-site renewable energy.
0	Medical school buildings source <20% of energy needs from off-site and/or on-site renewable energy.
<p><i>Score explanation:</i></p> <p>According to the 2022 update to the 2030 climate action plan, KI and Akademiska Hus (property owner) only have contracts for green electricity (100%). This energy is certified with the "Bra Miljöval" mark, which classifies it as renewable energy (excluding nuclear energy). According to the Environment and Climate Action Plan 2021-2024 the university buildings are heated with district heating, which is as of now not 100% renewable though. More than 90% of the total energy consumption of KI is estimated to be from renewable sources.</p> <p>In the past years, Akademiska Hus has put up solar panels on roofs on the KI campus in order to produce (a portion) of the energy locally. In the Lokalförsörjningsplan 2023-2026 it was stated that 442,700 kWh was produced this way in 2022.</p>	

5.4. Are sustainable building practices utilised for new and old buildings on the <u>medical school</u> campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?	
3	Yes, sustainable building practices are utilised for new buildings on the medical school campus and the majority of old buildings have been retrofitted to be more sustainable.
2	Sustainable building practices are utilised for new buildings on the medical school campus, but most old buildings have not been retrofitted .
1	Sustainable building practices are inadequately or incompletely implemented for new buildings.
0	Sustainability is not considered in the construction of new buildings.

Score explanation:

New buildings at the university campus (such as [the new hospital buildings](#) and [research buildings](#)) have been built in accordance with Miljöbyggnad guidelines and have received overall rating levels of Gold or Silver. According to the [Lokalförsörjningsplan 2023-2026](#) renovation projects should have a Miljöbyggnad rating of at least silver, though Akademiska Hus strives for a gold rating. The [renovation of the CMB building is an example of this](#), however this building will be rented out to different companies and not KI. To reduce the need for travel, KI is setting up/has set up hybrid meeting options in most lecture halls and meeting rooms.

5.5. Has the medical school or institution implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?

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

Score explanation:

KI is very well connected to public transport and safe active transport (e.g. bike lanes), and almost all students are using these options. [A bus connects both campuses \(Solna and Flemingsberg\) that KI students can use free of charge](#). KI also offers safe, indoor parking stations for bicycles. [KI has organised and offered free bicycle fixing workshops to staff and students, promoting cycling in the spring/summer](#).

KI does not directly subsidise public transportation for its students. However, KI students do benefit from [reduced fares on public transportation through Sweden's Mecenat system](#), recognised by KI. Information about environmentally-friendly public transport is provided during orientation, but emphasis is not placed on the importance of using sustainable transportation for planetary health reasons.

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

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

Score explanation:

KI has [recycling programs accessible to students, faculty](#) and staff and [a compost program is currently being implemented](#). However, the organic recycling is currently only available in a few locations and further rollout should be sped up.

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

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

Score explanation:

KI emissions from food and restaurants compose around 1500 tons of CO₂, which accounts for 3-4% of KI's annual emissions (2019). A calculation within the [climate mapping 2019](#) on measures for reduction of KI's climate impact showed that by only serving vegetarian dishes 2 days a week compared to serving only meat and fish dishes, it would be possible to reduce university emissions within the food category by 27%. The university is now promoting sustainable choices by indicating [One Planet Plate](#) compliancy in at least [one of their restaurants](#), though similar policies (CO₂ emissions per dish, more plant-based options, etc.) should be implemented in all campus restaurants. Individual departments and units such as [CNS](#), [CLINTEC](#) and the library also recommend plant-based food.

Even though the general goal of “greatly reducing greenhouse gas emissions from goods, services, food and waste” is stated in the sustainability guidelines, there are no clear aims stated in the Climate Strategy for 2030 to address sustainability of food and beverage served. No current guidelines exist regarding catering at KI events.

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

3	Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are insufficient or optional . The medical school is engaged in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are insufficient or optional . The medical school is not engaged in efforts to increase sustainability of procurement.

0	There are no sustainability guidelines for supply procurement.
<p><i>Score explanation:</i></p> <p>While there are extensive plans to set sustainability and climate requirements in all procurements, tenders and purchases, where possible, there are currently no sustainability requirements for supply procurement (e.g. similar to the requirements for suppliers brought forward by the National Health Service in England). Still, results from KI's climate mapping indicate that the most extensive climate-damaging emissions are coming from the purchase of goods (approximately 45% of emissions). During 2023, on behalf of the Council for Environment and Sustainable Development, a working group has developed proposals to contribute to reducing the negative environmental impacts of KI's consumption of goods and services.</p> <p>According to the 2022 update of the KI 2030 climate action plan, KI intends to have knowledge of its emissions from the consumption of goods and services by 2024. In the same year, sustainability and climate requirements will be set in all relevant procurements, calls and purchases, where possible. The requirements will be followed up on. Up to this point, it is unclear whether these guidelines will be binding or optional recommendations.</p>	

5.9. Are there sustainability requirements or guidelines for events hosted at the <u>medical school</u> ?	
2	Every event hosted at the medical school must abide by sustainability criteria.
1	The medical school strongly recommends or incentivizes sustainability measures, but they are not required .
0	There are no sustainability guidelines for medical school events.
<p><i>Score explanation:</i></p> <p>KI has a guide on “Sustainable meetings” for events hosted at and by KI, including but not limited to aspects such as energy use, purchases, food choices, transport, accessibility and waste management. The guide is based on Agenda 2030, the UN's 17 Global Goals for sustainable development and KI's guidelines for the environment and sustainable development. Using the guide and check-list is strongly recommended, however not required.</p>	

5.10. Does your <u>medical school</u> have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
2	Yes, the medical school has programs and initiatives to assist with making lab spaces more environmentally sustainable.
1	There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are no efforts at the medical school to make lab spaces more sustainable.
<p><i>Score explanation:</i></p>	

According to [the carbon mapping KI did in 2019](#), purchase of goods is the largest emission source at KI, with 45% of total emissions. Laboratory equipment as well as chemicals and pharmaceuticals account for the majority of emissions in this category. When it comes to real estate, laboratory energy use contributes the most to KI's emissions, as KI's large laboratory premises for educational and research activities have large energy requirements.

At the [recent KI sustainability day 2023](#) an emphasis was given to sustainable labs, and a pilot cooperation with MyGreenLab was announced for fall 2023. The Sustainable Development and Equal Opportunities Office has provided us information that KI works actively with lab safety and substitution of hazardous chemicals as well as with laboratory waste management. The next step is to focus on resource efficiency (e.g. energy and water).

[Currently, the department of Neurobiology, Care Sciences and Society has a dedicated web page with information on how to make lab spaces more environmentally sustainable](#), and links to their Environment and Sustainability Representative for further questions. However, KI central does not have programs or initiatives to make lab spaces more sustainable.

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

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

Score explanation:

Based on email correspondence with KI staff, we believe the university has divested entirely from fossil fuels. However, no public statement has been made regarding divestment, and we would recommend KI doing so [in line with other Swedish universities](#).

Section Total (20 out of 32)

62.50%

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

Grading

Section Overview

This section focuses on the grading of the report card. The institution received a grade for each of the individual sections as well as an overall institutional grade. Section point totals were tallied, divided by the total points available for the section, and converted to a percentage. The overall institutional grade is a weighted average of the section grades, with curriculum receiving a higher weight owing to its larger number of metrics. Letter grades for each section and the institution overall were then assigned according to the table below.

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

Planetary Health Grades for the Karolinska Institutet School of Medicine

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(56/72) \times 100 = 77.78\%$	B+
Interdisciplinary Research (17.5%)	$(13/17) \times 100 = 76.47\%$	B+
Community Outreach and Advocacy (17.5%)	$(5/14) \times 100 = 35.71\%$	D+
Support for Student-led Planetary Health Initiatives (17.5%)	$(11/15) \times 100 = 73.33\%$	B
Campus Sustainability (17.5%)	$(20/32) \times 100 = 62.5\%$	B-
Institutional Grade	$(Ax0.3 + Bx0.175 + Cx0.175 + Dx0.175 + Ex0.175) = 66.74\%$	B

Report Card Trends

Section Overview

This graph demonstrates trends in overall and section grades for the years in which Karolinska Institutet has participated in the Planetary Health Report Card initiative.

Planetary Health Report Card Trends for Karolinska Institutet

