Planetary Health Report Card (Medicine): Karolinska Institutet

2024-2025 Contributing Team:

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[1] Reviewed only the section on Campus Sustainability

Summary of Findings

Overall	B

Curriculum	A-

Sustainable Healthcare (SHC) occurs in several core courses of the medical programme, resulting in a high grade. However, explicit learning outcomes for SHC are missing, and we are concerned that the lack of practical integration makes the knowledge difficult to apply in clinical work.
Recommendations: We suggest practical integration of SHC, for example as case studies in seminars and by including the SHC aspect in OSCE exams. In addition, KI needs to train more teachers in SHC to ensure education doesn't hinge on a few key faculty members.

Interdisciplinary Research	A

KI's planetary health websites have improved. Several departments (e.g., IMM and CESH) conduct planetary health related research, but there is no dedicated section within the medical departments. KI has hosted conferences and collaborated with global health organizations, but vulnerable groups (e.g. Indian and Ugandan communities) are poorly represented and uninvolved in shaping the research agenda.
Recommendations: KI should boost community engagement in planetary health research, especially for those most affected by climate change, through co-design research. Establishing student funding for planetary health research and conducting SH research at KI would be clear improvements

Community Outreach and Advocacy	D+

In the past three years, KI has lacked collaborations with community organizations and has not provided public and health care providers with courses or educational material on planetary health.
Recommendations: KI should regularly organize events on the health impacts of climate change for both the general public and healthcare staff. Sustainability must also systematically be covered in internal communication. Finally, KI-associated hospitals should distribute education materials to all patients covering these topics and advocate for other hospitals to do the same.

Support for Student-Led Initiatives	A-

KI acknowledges sustainability initiatives through its Sustainability Award and has student representatives on its Council for Environment and Sustainable Development. Support is provided to SSD, a KI affiliated student-led sustainability organisation.
Recommendations: KI should continue to provide resources and support to student organisations like SSD. KI should also engage in organising and supporting events that provide students with more possibilities to get involved in and learn about planetary health. KI should provide opportunities to medical students that want to pursue activities in planetary health outside of the core curriculum.

Campus Sustainability	B

KI has signed up to agreements with other universities to conduct its activities in line with the Paris Agreement. However, emissions from travelling and procurement remain high. In addition to already existing small sustainability initiatives, a system for food waste was implemented last year.
Recommendations: KI should mandate that campus restaurants serve more sustainable food, render lab spaces more sustainable, and include sustainability considerations in their procurement procedures. Moreover, we urge KI to take a strong stance on climate action by publicly committing to fossil fuel divestment.

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance describes planetary health as "a solution-oriented, transdisciplinary field and social movement focused on analysing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth." This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanisation, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment, and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change "the greatest threat to global health in the 21st century," many health professional 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 health professional training. It is imperative that we hold our institutions accountable for educating health professional students about the health impacts of climate change and other anthropogenic environmental changes, generating research to better understand health impacts and solutions, supporting related student initiatives, embracing sustainable practices as much as possible, and engaging with surrounding communities that are most affected by environmental threats. Because climate change and environmental threats disproportionately affect vulnerable populations (for example, communities of colour, older adults sensitive to health threats, and individuals in low-resource settings), these issues are inherently ones of equity and justice.

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

Definitions & Other Considerations

Definitions:

- **Planetary Health:** is described by the Planetary Health Alliance as "the health of human civilisation and the state of the natural systems on which it depends." For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional 'environmental health' examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of health professional education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term "planetary health" to satisfy the metric.

- **Sustainable Healthcare:** As defined by the Academy of Royal Colleges, sustainable healthcare involves ensuring the ability to provide good quality care for future generations by balancing the economic, environmental, and social constraints and demands within health care settings. A sustainable healthcare system maintains population health, reduces disease burden and minimises use of healthcare services.

- **Education for Sustainable Healthcare (ESH):** is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:

    1. Describe how the environment and human health interact at different levels.
    2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.
    3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.

- **Medical School/Department vs. Institution:** When "Medical school" is specified in the report card, this only refers to curriculum and resources offered by the School/department 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 including all of its campuses. 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 students are taught to ask during medical encounters that elicits patients' exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mould after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution. Please be as specific as possible when providing evidence for this metric.

- **Elective:** The word "elective" refers to an optional course or lecture series that a student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.

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

- **Clerkship / Outreach:** This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations, outreach or placements. This is a relatively short (approximately 4-8 weeks) period of study and patient-centred clinical experience that takes place as part of the undergraduate programme.

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

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

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

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

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

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

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

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

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

- **Anthropogenic:** Created through human activity

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

Other considerations:

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

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

Planetary Health Curriculum

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

Curriculum: General

1.1. Did your medical school offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
Yes, the medical school has offered **more than one** elective whose primary focus is ESH/planetary health in the past year. (3 points)	
Yes, the medical school has offered **one** elective whose primary focus is ESH/planetary health in the past year. (2 points)	
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. (1 points)	
No, the medical school has **not** offered any electives on planetary health or electives that include ESH/planetary health topics in the past year. (0 points)	
Score Assigned:	2

Score explanation:

In 2024, 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). In 2023, 9 students took this course. Information on student numbers in 2024 is currently missing. Objectives of the course include:

- *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.*

1.2. Does your <u>medical school</u> curriculum address the relationship between extreme heat, health risks, and climate change?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3

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" covers this subject in detail.*

Lectures given in the 6 year programme:

- *In the core course Basic Science 1 (2LA000, 12 credits), the subject is mentioned in the 10 minute pre-recorded lecture "Climate change and health." (This lecture is part of the course section "Sustainable healthcare," consisting of 3 pre-recorded lectures of 10 minutes each, covering: 1) sustainable development with focus on the ecological dimension and "planetary limitations" with focus on climate change, 2) climate change and health (direct and indirect effects), 3) introduction to sustainable healthcare. In the iRAT/tRAT* of the module, there are two 2 MCQ questions based on these lectures, and the subject is also covered in course examination question(s).)*

**iRAT (Individual Readiness Assurance Test), tRAT (Team Readiness Assurance Test) are part of the team based learning (TBL) education.*

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

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 core course Basic Science 1 (2LA000, 12 credits), the subject is mentioned in the 10 minute pre-recorded lecture "Climate change and health". (This lecture is part of the course section "Sustainable healthcare", consisting of 3 pre-recorded lectures of 10 minutes each, covering: 1) sustainable development with focus on the ecological dimension and "planetary limitations" with focus on climate change, 2) climate change and health (direct and indirect effects), 3) introduction to sustainable healthcare. In the iRAT/tRAT* of the module, there are two 2 MCQ questions based on these lectures, and the subject is also covered in course examination question(s).)*

1.4. Does your <u>medical school</u> curriculum address the impact of climate change on the changing patterns of infectious diseases?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3

Score explanation:

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 subject is mentioned briefly in slides of the 10 minute pre-recorded lecture "Climate change and health", bringing up tick-borne infectious diseases in Sweden as an example. (This lecture is part of the course section "Sustainable healthcare", consisting of 3 pre-recorded lectures of 10 minutes each, covering: 1) sustainable development with focus on the ecological dimension and "planetary limitations" with focus on climate change, 2) climate change and health (direct and indirect effects), 3) introduction to sustainable healthcare. In the iRAT/tRAT* of the module, there are two 2 MCQ questions based on these lectures, and the subject is also covered in course examination question(s).)*
- *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 <u>medical school</u> curriculum address the respiratory health effects of climate change and air pollution?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3

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 subject is mentioned very briefly in the 10 minute pre-recorded lecture "Climate change and health". (This lecture is part of the course section "Sustainable healthcare", consisting of 3 pre-recorded lectures of 10 minutes each, covering: 1) sustainable development with focus on the ecological dimension and "planetary limitations" with focus on climate change, 2) climate change and health (direct and indirect effects), 3) introduction to sustainable healthcare. In the iRAT/tRAT* of the module, there are two 2 MCQ questions based on these lectures, and the subject is also covered in course examination question(s).)*
- *In the core course Basic Science 3 (2LA002, 18 credits), there are two lectures of 30 minutes each covering "co-benefits of lifestyle factors" with emphasis on diet and active transport, including air pollution. In addition, there is a seminar related to these lectures covering the subject, and it is covered in 2 exam questions.*
- *In the core course Clinical Medicine 1: Internal Medicine (2LA009, 30 credits), the health effects of air pollution, including e.g. asthma, are mentioned in the lecture "Primary and secondary prevention".*
- *In the core course Clinical Medicine 2: Applied internal medicine and related disciplines (2LA012, 25.5 credits), the lecture "Choosing wisely" covers the health consequences of air pollution, addressing that air pollution is the environmental risk factor that causes the largest burden of disease and premature death in Sweden.*

1.6. Does your medical school curriculum address the cardiovascular health effects of climate change, including increased heat?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3

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 subject is mentioned very briefly in the 10 minute pre-recorded lecture "Climate change and health". (This lecture is part of the course section "Sustainable healthcare", consisting of 3 pre-recorded lectures of 10 minutes each, covering: 1) sustainable development with focus on the ecological dimension and "planetary limitations" with focus on climate change, 2) climate change and health (direct and indirect effects), 3) introduction to sustainable healthcare. In the iRAT/tRAT* of the module, there are two 2 MCQ questions based on these lectures, and the subject is also covered in course examination question(s).)*
- *In the core course Basic Science 5 (2LA004, 30 credits), the environmental aspects of cardiovascular disease are covered in lectures and a TBL (Team Based Learning) module in which learning about cardiovascular prevention is integrated.*
- *In the core course Clinical Medicine 1: Internal Medicine (2LA009, 30 credits), the association between increased heat as well as air pollution and cardiovascular disease is mentioned in the lecture "Primary and secondary prevention".*

1.7. Does your medical school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3
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 subject is mentioned very briefly in the 10 minute pre-recorded lecture "Climate change and health". (This lecture is part of the course section "Sustainable healthcare", consisting of 3 pre-recorded lectures of 10 minutes each, covering: 1) sustainable development with focus on the ecological dimension and "planetary limitations" with focus on climate change, 2) climate change and health (direct and indirect effects), 3) introduction to sustainable healthcare. In the iRAT/tRAT* of the module, there are two 2 MCQ questions based on these lectures, and the subject is also covered in course examination question(s).*

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

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

Score Assigned:	2

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.*

Lectures given in the 6 year medical programme:

- *In the core course Basic Science 1 (2LA000, 12 credits), the subject is mentioned very briefly in the 10 minute pre-recorded lecture "Climate change and health". (This lecture is part of the course section "Sustainable healthcare", consisting of 3 pre-recorded lectures of 10 minutes each, covering: 1) sustainable development with focus on the ecological dimension and "planetary limitations" with focus on climate change, 2) climate change and health (direct and indirect effects), 3) introduction to sustainable healthcare. In the iRAT/tRAT* of the module, there are two 2 MCQ questions based on these lectures, and the subject is also covered in course examination question(s).)*
- *In the course Basic Science 5 (2LA004, 30 credits), a group exercise (briefly) addresses the issue with increasing levels of hormones and PFOS in Swedish lakes, with the learning outcome to be able to " ...account for the risks with pharmacological treatment from a individual and societal perspective". In the same course, the lecture "Societal and environmental aspects of pharmacological treatment - including sustainability aspects" covers water security in terms of pharmacological treatment.*

1.9. Does your <u>medical school</u> 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?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3
Score explanation: *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), factors of vulnerability is mentioned briefly in the 10 minute pre-recorded lecture "Climate change and health". (This lecture is part of the course section "Sustainable healthcare", consisting of 3 pre-recorded lectures of 10 minutes each, covering: 1) sustainable development with focus on the ecological dimension and "planetary limitations" with focus on climate change, 2) climate change and health (direct and indirect effects), 3) introduction to sustainable healthcare. In the iRAT/tRAT* of the module, there are two 2 MCQ questions based on these lectures, and the subject is also covered in course examination question(s).)* ● *In the core course Clinical Medicine 2 (2LA012, 25.5 credits), the lecture "Choosing wisely" mentions children as a vulnerable group for poor health outcomes of air pollution – such as asthma, allergies and poor pulmonary development, due to their physiology and "lifestyle" (often playing outside)*	

1.10. Does your <u>medical school</u> curriculum address the unequal regional health impacts of climate change globally?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 point)	
Score Assigned:	3
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 subject is mentioned briefly in the 10 minute pre-recorded lecture "Climate change and health". (This lecture is part of the course section "Sustainable healthcare", consisting of 3 pre-recorded lectures of 10 minutes each, covering: 1) sustainable development with focus on the ecological dimension and "planetary limitations" with focus on climate change, 2) climate change and health (direct and indirect effects), 3) introduction to sustainable healthcare. In the iRAT/tRAT* of the module, there are two 2 MCQ questions based on these lectures, and the subject is also covered in course examination question(s).)*

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

1.11. Does your <u>medical school</u> curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2

Score explanation:

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.

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 <u>medical school</u> curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?
This topic was explored **in depth** by the **core** curriculum. (3 points)
This topic was **briefly** covered in the **core** curriculum. (2 points)
This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)	
Score Assigned:	2

.Score explanation:

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:

- *In the core course Basic Science 1 (2LA000, 12 credits), the lecture "Climate change and health" brings up tick-borne infectious diseases in Sweden as an example of a local threat.*
- *In the core course Basic Science 5 (2LA004, 30 credits), the issue with hormones and PFOS in Swedish lakes as a consequence to pharmacological treatment is brought up as an example.*
- *In the core course Clinical Medicine 2 (2LA012, 25.5 credits), the lecture "Choosing wisely" addresses that air pollution is the environmental risk factor that causes the largest burden of disease and premature death in Sweden.*

1.13. To what extent does your <u>medical school</u> emphasise the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	0

Score explanation:

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. In the core course Basic Science 3 (2LA002, 18 credits), there is a three hour seminarium on the role of physicians in society where students extensively discuss topics in environmental medicine, which does include discussions on different value systems, but an explicit Indigenous perspective is not included as far as we are aware. In a Swedish context, indigenous knowledge and value systems from Sámi traditional medicine as outlined in Liu-Helmersson and Ouma (2021) could be incorporated in the medical curriculum.

1.14. Does your <u>medical school</u> 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?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: *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:* ● *In the core course Basic Science 3 (2LA002, 18 credits), there is a three hour seminarium on the role of physicians in society where students extensively discuss topics in environmental medicine, including the outsized impacts of environmental hazards to vulnerable communities.*	

Curriculum: Sustainability

1.15. Does your <u>medical school</u> curriculum address the environmental and health co-benefits of a plant-based diet?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3
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), there are two lectures of 30 minutes each covering "co-benefits of lifestyle factors" with emphasis on diet and active*	

transport. In addition, there is a seminar related to these lectures covering the subject, and it is covered in 2 exam questions.

- *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.*
- *In the core course Clinical Medicine 1: Internal Medicine (2LA009, 30 credits), the environmental and health co-benefits of the Nordic nutrition recommendations are mentioned in the lecture "Primary and secondary prevention".*
- *In the core course Clinical Medicine 2 (2LA012, 25.5 credits), the lecture "Choosing wisely" covers the environmental and health co-benefits of recommending a healthy diet to patients, addressing the negative health outcomes of a poor diet, and addressing that the diet of many people contains to little legumes and vegetables and too much red meat and cured meat products.*

1.16. Does your <u>medical school</u> curriculum address the carbon footprint of healthcare systems?

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

Score explanation:
Lectures given in the 5.5 year medical programme:

- *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.*

Lectures given in the 6 year medical programme:

- *In the core course Basic Science 1 (2LA000, 12 credits), the subject is mentioned briefly in the 10 minute pre-recorded lecture "The important role of the health care system in climate adaptation". (This lecture is part of the course section "Sustainable healthcare", consisting of 3 pre-recorded lectures of 10 minutes each, covering: 1) sustainable development with focus on the ecological dimension and "planetary limitations" with focus on climate change, 2) climate change and health (direct and indirect effects), 3) introduction to sustainable healthcare. In the iRAT/tRAT of the module, there are two 2 MCQ questions based on these lectures, and the subject is also covered in course examination question(s).)*
- *In the core course Clinical Medicine 2 (2LA012, 25.5), the lecture "Choosing wisely" covers this subject in depth, addressing that the healthcare system causes at least 5% of the total greenhouse emissions in the EU. It explains how the healthcare system is part of the problem.*

- *In the core course Clinical Medicine 3: Surgery (2EE134, 30 credits), the environmental impact of pharmaceuticals and consumption of single use materials are discussed – however, this is not covered in the learning outcomes nor in any lecture slides or seminars.*

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)	**Score**
The health **and** environmental **co-benefits** of **avoiding** over-medicalisation, over-investigation and/or over-treatment (2 points)	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. (2 points) .	2
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 point)	1
Environmental impact of **surgical** healthcare on planetary health and the climate crisis, and how can it be mitigated. (1 point)	1
The impact of **anaesthetic** gases on the healthcare carbon footprint and ways to reduce anaestheisa's environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions. (1 point)	1
The impact of **inhalers** on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers. (1 point)	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) (1 point)	1

Score explanation:

1. *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 co-benefits of preventive healthcare is covered in the core courses Basic Science 3 (2LA002, 18 credits), Basic Science 5 (2LA004, 30 credits) lectures and 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.). This is also covered in depth in the Clinical Medicine 2 (2LA012, 25.5) lecture "Choosing wisely". It is also briefly mentioned in Basic Science 1, in the lecture "The important role of the health care system in climate adaptation".*
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. The core course Clinical Medicine 2 (2LA012, 25.5), lecture "Choosing wisely" problematizes over-prescribing and addresses deprescribing as a part of choosing wisely.

3. *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: co-benefits of non-pharmaceutical management with emphasis on diet and active transport are covered in primarily the core courses Basic Science 3 (2LA002, 18 credits) and Clinical Medicine 2 (2LA012, 25.5).*
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 surgical healthcare as an example.*
    b. *6 year programme: The environmental impact of surgical healthcare is currently not covered in the learning outcomes, lecture slides or exam questions – but the environmental impact of pharmaceuticals and consumption of single use materials are discussed briefly in the core course Clinical Medicine 3: Surgery (2EE134, 30 credits).*
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 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.*
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" 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.*
7. *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?

Yes, there are strategies introduced for having conversations with patients about climate change in the **core** curriculum. (2 points)

Yes, there are strategies introduced for having conversations with patients about climate change in **elective** coursework. (1 points)
No, there are **not** strategies introduced for having conversations with patients about climate change. (0 points)

Score Assigned:	2

Score explanation:

Lectures given in the 5.5 year medical programme:

- *Strategies for having conversations with patients about climate change and health such as narrative consultations and motivational interviewing are covered in one lecture in the core course Public Health and Environmental Medicine (2LK100, 12 credits).*

Lectures given in the 6 year medical programme:

- *In the core course Basic Science 3 (2LA002, 18 credits), this is covered in a 30 minute lecture about climate communication.*
- *In the core course Clinical Medicine 2 (2LA012, 25.5), the topic is briefly mentioned in one slide where students are encouraged to ask their patients about lifestyle aspects, to inform about the importance of a healthy diet and physical activity and its environmental co-benefits, and to provide support and follow-ups regarding lifestyle interventions.*
- *(The core course Basic Science 1 brings up the role of the physician in the communication about climate change and health effects, but does not go into detail about strategies.)*

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?
Yes, the **core** curriculum includes strategies for taking an environmental history. (2 points)
Only **elective** coursework includes strategies for taking an environmental history. (1 point)
No, the curriculum does **not** include strategies for taking an environmental history. (0 points)

Score Assigned:	2

Score explanation:

Lectures given in the 5.5 year medical programme :

- *This is covered in the core course Public Health and Environmental Medicine (2LK100, 12 credits) and in the rotations in the hospital.*

Lectures given in the 6 year medical programme:

- *This is covered in the core course Basic Science 3 (2LA002, 18 credits), and in the rotations in the hospital.*

Curriculum: Administrative Support for Planetary Health

1.20. Is your medical school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?	
Yes, the medical school is currently in the process of making **major** improvements to ESH/planetary health education. (4 points)	
Yes, the medical school is currently in the process of making **minor** improvements to ESH/planetary health education. (2 points)	
No, there are **no** improvements to planetary health education in progress. (0 points)	
Score Assigned:	2
Score explanation: *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.*	

1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the core curriculum?	
Planetary health/ESH topics are **well integrated** into the core medical school curriculum. (6 points)	
Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum. (4 points)	
Planetary health/ESH is not integrated and is primarily addressed in **(a) standalone lecture(s).** (2 points)	
There is **minimal/no** education for sustainable healthcare. (0 points)	
Score Assigned:	4
Score explanation: *Climate and health is repeatedly covered during the first semesters of the medical programme – in both specific lectures/modules where ESH is the main focus, but also integrated in subjects such as pharmacology. The lecture time has increased since the last report card: for example in the first semester – now 30 minutes instead of 20 minutes. The subject has also been integrated into seminars in e.g. Basic science 1 and 3. Another change is that the lecture "Choosing wisely" has been scheduled to the 6th semester in the new 6 year programme, meaning that the students get this perspective in the beginning of their clinical rotations. This is positive in our opinion, however, we hope to see that the subject recurs several times later in the programme – otherwise there is a risk that it is forgotten by the time that the students graduate and start their clinical careers.*	

Our assessment is dependent/relying on the ESH content in the 5.5 year programme that is soon to be outphased. In order to keep up the grade in the upcoming years, the subjects that are currently only covered in the 5.5 year programme need to be integrated into the 6 year programme.

We hope to see that KI invests in the education of teachers, so that more people can be responsible for integrating the subject into the curriculum.

1.22. Does your <u>medical school</u> 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?	
Yes, the **medical school** has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (1 point)	
No, the **medical school** does **not** have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (0 points)	
Score Assigned:	1
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 the PHRC at KI, 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, even though currently the responsibility of individual courses lies with the host department, and there is no overarching responsibility for the implementation of planetary health throughout the different courses.*	

Section Total (60 out of 72)	**83.33%**

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Interdisciplinary Research

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

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your institution?	
Yes, there are faculty members at the **institution** who have a **primary** research focus in planetary health **or** sustainable healthcare/vetcare. (3 points)	
Yes, there are individual faculty members at the **institution** who are conducting research **related** to planetary health or healthcare sustainability, OR are part of a national/international sustainability working group, but it is not their primary research focus. (2 points)	
There are sustainability researchers at the **institution**, but not specifically associated with healthcare/vetcare. (1 point)	
No, there are **no** planetary health and/or sustainability researchers at the **institution** at this time. (0 points)	
Score Assigned:	3

Score explanation:

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 (Solna, Huddinge) involved in PH research, ongoing research projects on sustainable health care, climate change mitigation, or other environmental crises within health care.

Besides the departments of medicine, 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, allergies and nutrition. KI also contains several other health research organisations such as the Centre of Excellence for Sustainable Health (CESH), the Global Public Health (GPH) department, all of which investigate public health problems with some links to planetary health research.

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. Another exemplifying study is Hallström et al. (2023) which provides actionable insights into dietary priorities for reducing environmental burdens.

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.

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:

- *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*
- *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?	
There is **at least one** dedicated department or institute for interdisciplinary planetary health research. (3 points)	
There is **not currently** a department or institute for interdisciplinary planetary health research, but there are **plans** to open one in the next 3 years. (2 points)	
There is an **Occupational and Environmental Health department**, but no interdisciplinary department or institute for planetary health research. (1 points)	
There is **no** dedicated department or institute. (0 points)	
Score Assigned:	3

Score explanation:

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, the Department of Global Public Health and research groups on global infections and STIs all conduct public health research with some of which targeting vulnerable populations and providing supportive frameworks, but are not directly dedicated to interdisciplinary planetary health research. Recently, SciLifeLab's Planetary Biology capability was started to link molecular research to ecosystems and biodiversity 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. The new version for 2025-2027 is currently drafted. There is currently still no **central** initiative or funding for positions within this area, though there are positions at the departmental level. It has not been clearly stated how the Climate Action Plan goals have been followed-up or achieved.*

Recommendations:

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

Score explanation:

The following processes take place 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.

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 manifested in a Centre of Excellence for Sustainable Health. A delegation from KI travelled to Uganda in November 2024 to cement the 25-year old relationship. Within this strong partnership, disadvantaged communities are included in decision-making processes on the research conducted. The research centre states that climate change and health is one of four priority research areas. There have further been several seminars organized by CESH which focus on planetary health.

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.
Karolinska Institutet collaborates with international organizations like WHO to improve disaster preparedness and response. While these projects aim to support communities facing climate-related disasters, the websites do not indicate a process for these communities to directly influence the research agenda.

Recommendations:

- *Engage communities disproportionately affected by climate change (Ugandan and Indian collaborators, Sami indigenous people) through discussions and interviews to enhance the research agenda in KI. For indigenous groups like the Sami and northermost Scandinavian, focus on understanding cultural practices to develop sustainable strategies that respect their autonomy and help preserve their way of life.*
- *Make co-design, a process where researchers and the affected communities collaboratively plan research, mandatory for studies on communities disproportionately impacted by climate change and environmental injustice.*
- *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.*

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

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

Score explanation:

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. KI has interviewed multiple involved people in the medical sector to show consequences of fossil fuel use and global warming as well as the connections to the human health.

Recommendations:

- *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.*
- *Continuing to linking and emphasising health co-benefits of sustainability efforts on KI's websites related to sustainability efforts such as in this article, 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?	
Yes, the **institution** has hosted at least one conference or symposium on topics related to planetary health in the past year. (4 points)	
Yes, the **institution** has hosted at least one conference or symposium on topics related to sustainable healthcare/vetcare in the past year. (3 points)	
Yes, the **institution** has hosted a conference on topics related to planetary health / sustainable healthcare/vetcare in the past three years. (2 points)	
The **institution** has not hosted any conferences directly, but they have provided financial support for a local planetary health event. (1 point)	
No, the **institution** has not hosted a conference on topics related to planetary health in the past three years. (0 points)	
Score Assigned:	3
Score explanation:	

KI has (co-)hosted the following events in the last year (2024-2025):

- *Global Conversation on Sustainable Health*
- *KI's Sustainability Day*
- *Student Competition - Climate and Health: A Vision for Stockholm 2029*
- *Workshops "Exploring head, heart and hands in teaching and learning for planetary health" at the Education Congress*
- *Workshop on Sustainability champions*
- *Discussion on Key Competencies for Sustainable Health (non-public)*
- *Book release "Nature's Intelligence" by Peter Stenvinkel*
- *Animal research at KI. Present and future activities in relation to ethics and animal welfare*
- *SciLifeLab Planetary Biology 2024 Conference*

However, there are no apparent conferences in place for Sustainability in Health Care.

Recommendations:

- *Launching conferences with topics related to sustainable health care and emphasising this topic at the many existing conferences at KI departments conducting medical research*
- *Encouraging students to propose themes and lead sessions or workshops during such symposiums.*
- *Continuing to develop and host the above-mentioned and similar events*

2.6. Is your institution a member of a national or international planetary health or ESH/ESV organisation?

Yes, the institution is a member of a national or international planetary health **or** ESH/ESV organisation. (1 points)
No, the institution is **not** a member of such an organisation. (0 points)

Score Assigned:	1

Score explanation:

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. KI has joined the Global Consortium on Climate and Health Education and intends to join its European network, however KI has been an inactive member. We are unaware of any specific involvement of the departments conducting medical research with these organisations.

Recommendations:

- *KI should actively promote the mass open online courses offered by the Global Consortium on Climate and Health Education*
- *KI departments conducting medical research should actively engage in these networks*
- *KI should endorse participation in the Planetary Health Report Card*

Section Total (15 out of 17)	**88.24%**

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Community Outreach and Advocacy

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

Note from the KI PHRC workgroup:
Karolinska Institutet scores rather low in this section, as it seemingly does not partner with community organizations. The university has a lot of partnership with professional organizations and other universities (such as the region Stockholm and Stockholm trio), which are not included in the currently used definition of community organisations. To give suggestions/possibilities of community outreach and advocacy, the PHRC workgroup will map community organisations that Karolinska Institutet could partner with in the future.

3.1. Does your institution partner with community organisations to promote planetary health?	
Yes, the **institution** meaningfully partners with **multiple** community organisations to promote planetary and environmental health. (3 points)	
Yes, the **institution** meaningfully partners with **one** community organisation to promote planetary and environmental health. (2 points)	
The **institution** does not partner with community organisations, but participates in community focused events relating to planetary health. (1 point)	
No, there is **no** such meaningful community partnership. (0 points)	
Score Assigned:	1
Score explanation: *We are unaware of any partnership between KI and community organisations affected by climate change. The Center for Health Crises is a KI centre focuses on research, education and interdisciplinary collaboration with the aim to increase capabilities to handle future health crises.* *Other than that, KI is part of the United Nations Sustainable Development Solutions Network (SDSN) that "connects Nordic universities and other knowledge institutions to go from knowledge to action for the SDGs".* *The environment and climate action plan 2021-2024 formulated several collaborative goals for 2024. However, now, in 2024, none of the "several society-wide projects" proposed have been identified and information about the outcome of the action plan is yet to be released.*	

Furthermore, KI is starting to collaborate with the region Stockholm to further sustainable development and sustainable healthcare. Though not a community organisation in the strict sense of the word, we decided to award KI one point in this category as all these efforts together contribute towards promoting planetary health in the wider community (both in Stockholm and abroad) in their own ways, and as such we decided to award two points.

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

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

Score Assigned:	1

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:

- *News & Events | CESH*
- *Environmental and sustainability efforts at Biomedicum*
- *KI's Sustainability Day 2025*

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

- *KI web course: Getting Started with the SDGs*
- *Introduction to social, economic and environmental sustainability and health*

KI also offers the next freestanding courses in English:

- *Sustainable Health and Development, | Karolinska Institutet*
- *Global Health and Disaster | Karolinska Institutet*
- *Public Health Response in Health Crisis and Disasters | Karolinska Institutet*
- *Qualitative Research and Evaluation Methods in Disasters | Karolinska Institutet*

All of these require 180 credits in a science field, the first one, 120 credits and the third one, 210.

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

Yes, all students **regularly** receive communication updates dedicated to planetary health and/or sustainable healthcare. (2 points)
Yes, planetary health and/or sustainable healthcare topics are regularly included in communication updates to **some courses**. (1 point)
Students **do not** receive communications about planetary health or sustainable healthcare. (0 points)

Score Assigned:	1

Score explanation:

The Department of Medicine, Solna and the Department of Oncology and Pathology have a standing point on sustainability in their newsletters, though many other departments do not.

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.

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

Score Assigned:	0

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.

However, this course does not specifically target post-graduates but is rather aimed at KI teaching staff. It does not have as a main aim of ensuring the professionals' knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career.

The senior assistant lecturer Emma Swärdh has been awarded with KI's Sustainability Award 2024 for her dedication and leadership to raise awareness of climate and health, as well as for sustainable development.

Last year we awarded a point for this question, but as the audience of these activities is internal, we decreased the score.

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

Yes, the **institution** or **all affiliated hospitals** have accessible educational materials for patients. (2 points)
Some affiliated hospitals have accessible educational materials for patients. (1 point)
No affiliated hospitals have accessible educational materials for patients. (0 points)

Score Assigned:	1

Score explanation:

To our knowledge, KI departments of medicine and Karolinska University Hospital currently do not provide dedicated educational materials regarding environmental health exposures to patients.

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.

In addition to that, educational material with specific focus on work environment is included in the medical programme and is produced by SBF. It however does not mention planetary health or climate change and its effects on occupational health.

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.

3.6. Does your institution or its affiliated teaching hospitals have accessible educational materials for patients about the health impacts of climate change?	
Yes, the **institution** or **all affiliated hospitals** have accessible educational materials for patients. (2 points)	
Some affiliated hospitals have accessible educational materials for patients. (1 point)	
No affiliated hospitals have accessible educational materials for patients. (0 points)	
Score Assigned:	1
Score explanation: *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.* *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.* *In addition, the teaching material includes current information about environmental risks: heat waves as a threat against health.* *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.*	

Section Total (5 out of 14)	**35.71%**

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Support for Student-Led Planetary Health Initiatives

Section Overview: ***This section evaluates institutional support for student-led planetary health initiatives, such as funding, fellowships, programming, and student groups.*** *Planetary health is a young field and, as young people facing a future deeply shaped by climate change, students are often some of the first at an institution to engage with it. Institutions should provide support for students to engage in sustainability quality improvement (QI) initiatives, discover mentors in their area of interest, and receive funding for planetary health projects.*

4.1. Does your institution offer support for students interested in enacting a sustainability initiative/QI project?	
Yes, the **institution** *either* offers grants for students to enact sustainability initiatives/QI projects *or* sustainability QI projects are part of the core curriculum. (2 points)	
The **institution** encourages sustainability QI projects (to fulfil clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, **but** there is no student funding available and there is no requirement to participate. (1 point)	
No, the institution **does not** offer opportunities or support for sustainability initiatives or QI projects. (0 points)	
Score Assigned:	2

Score explanation:

Groups, individuals, students, and staff at KI are eligible to receive the Sustainability Award, upon decision from the KI's Council for Environment and Sustainable Development. Last year there were three nominations, two groups of teachers and one individual teacher. A certificate and money are given to the recipient(s) to further develop or improve initiatives at KI. Although students are eligible to receive this award upon recognition of their sustainability initiatives, nomination is done by a head of department and directors, so it is a bit unclear how students themselves can secure a nomination.

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.

KI's Council for Environment and Sustainable Development has funded the 2023,2024 and 2025 SSD Sustainable Research Week, a student-led initiative that touches upon sustainable laboratory practices, alternatives to hazardous chemicals and animal models and integrating principles of social sustainability into the research environment.

In addition, KI provides the Minor Field Studies (MFS) scholarship program, which allows both undergraduates and advanced level students to conduct field research in low and middle-income countries and collect data for their degree projects. Their projects need to link to one or more UN SDGs.

4.2. Does your institution offer opportunities for students to do research related to planetary health and/or sustainable healthcare/vetcare?	
The **institution** has a **specific** research program or fellowship for students interested in doing planetary health/sustainable healthcare/vetcare research. (2 points)	
There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these **require student initiative** to seek these out and carry them out in their spare time. (1 point)	
There are **no opportunities** for students to engage in planetary health/sustainable healthcare research. (0 points)	
Score Assigned:	1
Score explanation: *There are 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 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 institution have a webpage where students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the institution? For example, projects achieved, current initiatives underway at the institution and/or contact of information of potential mentors.	
The institution has a webpage with specific information related to planetary health or sustainable healthcare/vetcare that includes up-to-date information on relevant initiatives and contact information of potential mentors. (2 points)	
There is an institution webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the institution, but it lacks key information. (1 point)	
There is **no institution** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors. (0 points)	
Score Assigned:	2
Score explanation: *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. The page has been recently updated, in June of 2024.

4.4. Does your institution have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?	
Yes, there is a student organisation **with faculty support** at my institution dedicated to planetary health or sustainability in healthcare. (2 points)	
Yes, there is a student organisation at my institution dedicated to planetary health or sustainability in healthcare but it **lacks faculty support.** (1 point)	
No, there is **not** a student organisation at my institution dedicated to planetary health or sustainability in healthcare. (0 points)	
Score Assigned:	2
Score explanation: *Within KI's student union (Medicinska Föreningen), there is an official committee called Students for Sustainable Development (SSD), which is dedicated to engaging students in sustainability-related projects, not only in healthcare but also for general sustainability. SSD 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 at KI provided funding for the venue for the Sustainable Research Week organised by Students for Sustainable Development in spring 2024. The council has also helped with promotion and organisation of the event. 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 department or institutional decision-making council to advocate for curriculum reform and/or sustainability best practices?	
Yes, there is a student representative that serves on a department or institutional decision-making council/committee. (1 points)	
No, there is no such student representative. (0 points)	
Score Assigned:	1
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.
The council includes a co-opted seat for one representative 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)	**Score**
Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.	0
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.	0
Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)	1

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 2024 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.*

    - *seminar:https://news.ki.se/calendar/stockholm-trio-seminar-interdisciplinary-research-and-education-for-sustainable-development*
- ***Events**:*
    - *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.*
    - *The workshop FOODSHIFT Pathways | Karolinska Institutet provided educational personal with information and tools on how to teach young people to be more sustainable focusing on the food crisis and food waste.*
- ***Cultural events**:*
    - *A workshop focused on integrating arts in humanities and medical science was held this year.*
    - *https://news.ki.se/calendar/ki-culture-day-2024-perception-in-focus-arts-science-and-human-experience*
- ***Volunteer opportunities**: No points awarded.*
- ***Wilderness/outdoor programs**:*
    - *KI organised a 'fun run'.*
    - *Every term the KI sports day takes place*

Section Total (12 out of 15)	**80.00%**

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Campus Sustainability

Section Overview: ***This section evaluates the support and engagement in sustainability initiatives by the institution.*** *The healthcare industry is a major contributor to greenhouse gas emissions as well as pollution that harms local, regional, and global ecosystems. While healthcare is, by nature, a resource-intensive endeavour, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinising every aspect of how our systems operate, from where we source our energy, to how we build our infrastructure, to what companies we invest in. Our 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 institution have an Office of Sustainability?	
Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is **at least one designated staff member** for sustainability at the hospital. (3 points)	
There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but **no specific staff member** in charge of hospital sustainability. (2 points)	
There are **no salaried sustainability staff,** but there is a sustainability task force or committee. (1 point)	
There are **no** staff members **or** task force responsible for overseeing campus sustainability. (0 points)	
Score Assigned:	3
Score explanation: *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.* *There are two environmental coordinators currently employed full-time at KI. Additionally, there is an employee, who works 4 hours per week with communication on sustainability. 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.*	

5.2. How ambitious is your institution's plan to reduce its own carbon footprint?
The institution has a **written and approved plan** to achieve carbon neutrality by **2030** (5 points)
The institution has a **written and approved plan** to achieve carbon neutrality by **2040** (3 points)

The institution has a stated goal of carbon neutrality by **2040** but has **not created a plan** to reach that goal or the **plan is inadequate** (1 point)
The institution does **not** meet any of the requirements listed above (0 points)

Score Assigned:	1

Score explanation:

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.

5.3. Do buildings/infrastructure used by the institution for teaching (not including the hospital) utilize renewable energy?
Yes, institution buildings are **100%** powered by renewable energy. (3 points)
Institution buildings source **>80%** of energy needs from off-site and/or on-site renewable energy. (2 points)
Institution buildings source **>20%** of energy needs from off-site and/or on-site renewable energy. (1 point)
Institution buildings source **<20%** of energy needs from off-site and/or on-site renewable energy. (0 points)

Score Assigned:	2

Score explanation:

According to the environmental report for Karolinska Institutet 2024 94% of KI's energy consumption (electricity, heating and cooling) is from renewable sources, and when it comes to electricity and cooling 100% is from renewable sources.

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.

5.4. Are sustainable building practices utilised for new and old buildings on the institution's campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?
Yes, sustainable building practices are utilised for new buildings on the institution's campus and the **majority** of old buildings **have been retrofitted** to be more sustainable. (3 points)

Sustainable building practices are utilised for new buildings on the institution's campus, but most old buildings have **not been retrofitted.** (2 points)	
Sustainable building practices are **inadequately or incompletely** implemented for new buildings. (1 point)	
Sustainability is **not considered** in the construction of new buildings. (0 points)	
Score Assigned:	3
Score explanation: *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. In 2014, the new hospital building in Solna received LEED gold certification. 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 except for student accommodation. 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 institution implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?	
Yes, the institution has implemented strategies to encourage and provide **environmentally-friendly transportation options** such as safe active transport, public transport, or carpooling and these options are well-utilised by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default. (2 points)	
The institution has implemented **some** strategies to provide environmentally-friendly transportation options, but the options are **unsatisfactorily** accessible or advertised. (1 point)	
The institution has **not** implemented strategies to encourage and provide environmentally-friendly transportation options. (0 points)	
Score Assigned:	2
Score explanation: *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 during spring/summer to promote cycling.* *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 institution have an organics recycling program (compost) and a conventional recycling program (aluminium/paper/plastic/glass)?	
Yes, the institution has **both** compost **and** recycling programs accessible to students and faculty. (2 points)	
The institution has **either** recycling **or** compost programs accessible to students and faculty, but not both. (1 point)	
There is **no** compost or recycling program at the institution. (0 points)	
Score Assigned:	2
Score explanation: *KI has recycling programs accessible to students, faculty and staff and a food waste collection program in lunch rooms across the campus has been implemented.*	

5.7. Does the institution apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?	
Yes, the institution has a**dequate s**ustainability requirements for food and beverages, including meat-free days or no red-meat, and **is engaged** in efforts to increase food and beverage sustainability. (3 points)	
There are sustainability guidelines for food and beverages, but they are **insufficient or optional**. The institution **is engaged** in efforts to increase food and beverage sustainability. (2 points)	
There are sustainability guidelines for food and beverages, but they are **insufficient or optional.** The institution is **not** engaged in efforts to increase food and beverage sustainability. (1 point)	
There are **no** sustainability guidelines for food and beverages. (0 points)	
Score Assigned:	2
Score explanation: *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.) have been suggested to be implemented in all campus restaurants. Individual departments and units such as CNS, CLINTEC and the KI 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 institution apply sustainability criteria when making decisions about supply procurement?

Yes, the institution has **adequate** sustainability requirements for supply procurement **and** is **engaged** in efforts to increase sustainability of procurement. (3 points)

There are sustainability guidelines for supply procurement, but they are **insufficient or optional.** The institution is **engaged** in efforts to increase sustainability of procurement. (2 points)

There are sustainability guidelines for supply procurement, but they are **insufficient or optional.** The institution is **not engaged** in efforts to increase sustainability of procurement. (1 point)

There are **no** sustainability guidelines for supply procurement. (0 points)

Score Assigned:	2

Score explanation:

While there are extensive plans to set sustainability and climate requirements in all procurements, tenders and purchases, where possible, there are currently no university-wide 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. A report was handed over to the President to whom the Council reports.

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 shall be set in all relevant procurements, calls and purchases, where possible. The requirements shall be followed up on. Up to this point, these guidelines are not binding and only optional recommendations.

Individual departments such as the Department of Dentistry and the University Dental Service are environmentally certified according to ISO 14001:2015, which includes that environmental

requirements are set for procurements and followed up during the contract period. 20% of procured suppliers in prioritised purchasing categories must be audited each year.

5.9. Are there sustainability requirements or guidelines for events hosted at the institution?	
Every event hosted at the institution **must** abide by sustainability criteria. (2 points)	
The institution **strongly recommends or incentivizes** sustainability measures, but they are **not required.** (1 point)	
There are **no** sustainability guidelines for institution events. (0 points)	
Score Assigned:	1
Score explanation: *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*	

5.10. Does your institution have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
Yes, the institution has **programs** and **initiatives** to assist with making lab spaces more environmentally sustainable. (2 points)	
There are **guidelines** on how to make lab spaces more environmentally sustainable, but not programs or initiatives. (1 point)	
There are **no** efforts at the institution to make lab spaces more sustainable. (0 points)	
Score Assigned:	1
Score explanation: *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.* *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. Information includes further*	

links to MyGreenLab, network opportunities that are not organized by KI, and the use of safer chemicals. In addition, in 2024, a research group at the department of clinical science, intervention and technology (CLINTEC) was the first group at KI to conduct an assessment for certification according to My Green Lab.

5.11. Does your institution's endowment portfolio investments include fossil-fuel companies?	
The institution is **entirely divested** from fossil fuels **and** has made a **commitment to reinvest divested funds** into renewable energy companies or renewable energy campus initiatives. (4 points)	
The institution is **entirely divested** from fossil fuels. (3 points)	
The institution has **partially divested** from fossil fuel companies **or** has made a **commitment to fully divest**, but **currently** still has fossil fuel investments. (2 points)	
The institution has **not divested** from fossil-fuel companies, but faculty and/or students are **conducting organised advocacy** for divestment. (1 point)	
Yes, the institution has investments with fossil-fuel companies and there have been **no efforts** to change that. (0 points)	
Score Assigned:	3
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 (22 out of 32)	**68.75%**

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Grading

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

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

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%)	(60/72) x 100 = 83.33%	A-
Interdisciplinary Research (17.5%)	(15/17) x 100 = 88.24%	A
Community Outreach and Advocacy (17.5%)	(5/14) x 100 = 35.71%	D+
Support for Student-led Planetary Health Initiatives (17.5%)	(12/15) x 100= 80%	A-
Campus Sustainability (17.5%)	(22/32) x 100 = 68.75%	B
Institutional Grade	**(83.33x0.3 + 88.24x0.175 + 35.71x0.175 + 80x0.175 + 68.75x0.175) =72.72%**	**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.