

Planetary Health Report Card: Srirama Chandra Bhanja Medical College and Hospital (Utkal University)



S.C.B. MEDICAL COLLEGE

2021-2022 Contributing Team:

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Summary of Findings

Overall	D
Curriculum	В-
 At SCBMCH there is a lack of direct integration of planetary health into the curriculum. Across the years, various aspects of planetary health are indirectly discussed in different lectures. There is no e planetary health or carbon footprint in the seminars or tutorials. Recommendations: A direct integration of planetary health into the core curriculum with a separa discussing different health impacts of climate change would be helpful. The development of flashc highlighting the locally relevant health effects of climate change to encourage dialogue with patient. 	e first three discussion of te module ards nts is needed.
Interdisciplinary Research	F
 Although SCBMCH has an ethics committee it does not have a dedicated department that has a conlist of interdisciplinary research publicly available. There is no website that provides information of and past research, nor are there conferences related to planetary health research. Recommendations: SCBMCH should form a committee dedicated to planetary health and sustainat development research in collaboration with Utkal University's Centre for Environment, Climate che Public Health. Setting up a website dedicated to planetary health updates and news would be useful. 	mprehensive on ongoing able nange & Il.
Community Outreach and Advocacy	F
 Campaigns and activities organised by our medical school do not actively involve the community. not have any accessible educational materials for patients. Recommendations: SCBMCH should form a planetary health committee with a student r dedicated to organising outreach activities in schools and other colleges to promote awareness and the health impacts of climate change. 	Hospitals do representative education on
Support for Student-Led Initiatives	D
 SCBMCH supports student-driven activities but there have not been many initiatives related to plat The lack of a dedicated research group and no proper supervision/encouragement at the undergrade medical school makes it difficult to carry out QIPs or research related to planetary health. Recommendations: The medical school should support students interested in working in the field health by providing a platform to network with faculty/other researchers having similar interests. 	netary health. uate level in d of planetary
<u>Campus Sustainability</u>	F+
 SCBMCH has made a good start towards becoming a more sustainable campus in terms of using subuilding materials as well as energy optimisation. Water management systems have demonstrated a 28.9% according to the Green Rating for Integrated Habitat Assessment. However, there is a long worder to become a carbon-neutral campus. Recommendations: SCBMCH campus should have a net zero carbon goal. To reduce the carbon f promote good health, active travel such as walking and the use of bicycles should be encouraged as students & faculty within the campus. 	ustainable a reduction of way to go in cootprint and mongst the

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance describes planetary health as "a solutions-oriented, transdisciplinary field and social movement focused on analyzing 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, urbanization, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change "the greatest threat to global health in the 21st century," many medical school's institutional priorities do not reflect the urgency of this danger to human health.

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

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

Definitions & Other Considerations

Definitions:

- Planetary Health: is described by the *Planetary Health Alliance* as "a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth". For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional 'environmental health' examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of medical school education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term "planetary health" to satisfy the metric.
- 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 first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:
 - 1. Describe how the environment and human health interact at different levels.
 - 2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.
 - 3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.
- Medical School vs. Institution: When "medical school" is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (for example, undergraduate departments (USA), other related departments eg Public Health, Population Health departments). In contrast, when "institution" is specified in the report card, we are referring to the university more broadly. Any resource reasonably accessible by medical students, no matter where in the institution the resource comes from or if it is specifically targeted for medical students, can meet this metric.

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

Other considerations:

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

Added to our resources this year, the Planetary Health Report Card <u>Literature Review by Metric</u> collates the evidence behind each of the metrics in the Planetary Health Report Card. It serves as a collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.

Planetary Health Curriculum

<u>Section Overview:</u> 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. Di Edu	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?				
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.				
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.				
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.				
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.				
Score explanation: No current elective option exists. There is no provision for any electives for undergraduate medical students at SCBMCH. Limited workshops are there but they do not cover					

Curriculum: Health Effects of Climate Change

planetary health-related topics.

2. D risks	2. Does your medical school curriculum address the relationship between extreme heat, health risks, and climate change?			
3	This topic was explored in depth by the core curriculum.			
2	This topic was briefly covered in the core curriculum.			
1	This topic was covered in elective coursework.			
0	This topic was not covered.			

Score explanation: As a part of the third-year core curriculum at SCBMCH, the Community Medicine lecture titled 'Heat and its effect' under the unit 'Environment' features a discussion on heat and its hazards. The causes and risk factors of rising temperatures were briefly discussed, but it did not explore in depth the linkages of rising temperatures with climate change.

3. D indiv	3. Does your medical school curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?			
3	This topic was explored in depth by the core curriculum.			
2	This topic was briefly covered in the core curriculum.			
1	This topic was covered in elective coursework.			
0	This topic was not covered.			
Scor	e explanation: A lecture on disaster management in Community Medicine covered the various			

Score explanation: A lecture on disaster management in Community Medicine covered the various extreme weather events. It discussed how they impact individual health and overwhelm the healthcare system. Techniques to meticulously manage these crises through triage and contingency plans along with preventive strategies at various levels were taught. The lecture included ways our community and hospitals can be prepared for extreme weather events, especially cyclones, which are very common in the state of Odisha (where the medical college is situated).

4. D patte	oes your medical school curriculum address the impact of climate change on the changing erns of infectious diseases?
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
Scor and deter	e explanation: The third-year core curriculum in Community Medicine titled 'Concept of health diseases' defines the determinants of health and gives examples of each. Under the 'Environmental rminants' section, there is a point listed as 'External anyironment' which talks about physical

and diseases' defines the determinants of health and gives examples of each. Under the 'Environmental determinants' section, there is a point listed as 'External environment' which talks about physical, biological and psychological components. Protection and promotion of family and environmental health are the major issues in the world today. Additionally, in the chapters on various infectious diseases, like malaria & dengue, different risk factors including climate change and urbanisation were briefly covered. Also, in the lecture on 'Zoonotic diseases', anthropological causes for the emergence of exotic infections were discussed. However, the curriculum doesn't discuss the details of the mechanisms by which climate change impacts infectious diseases.

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

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

Score explanation: At SCBMCH, in the third-year core curriculum a lecture is dedicated to air pollution and its impact on respiratory health. Climate change was briefly integrated into this lecture in the form of indices of thermal comfort zones and how global warming is distorting these. Mitigation measures to reduce the burden of air pollution were discussed.

In the fourth-year core curriculum in Internal Medicine, a disease-wise approach was taken and they briefly discussed environmental hazards, toxins and pollution as causes of diseases like COPD and cancer.

6. Does your medical school curr	culum address th	e cardiovascular	health ef	ffects of	climate
change, including increased heat?					

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

Score explanation: At SCBMCH, in the first year of medical school under the physiology core curriculum competency (PY11.8) cardio-respiratory changes in exercise (isometric and isotonic) were discussed and the cardiorespiratory changes in resting state and various environmental conditions (heat & cold) were compared. An entire lecture was taken for the PY11.8 in which the cardiovascular, as well as respiratory health effects of climate change were explored in depth. Again under competency PY5.9 the effects of increased environmental temperature on heart rate & cardiac output were discussed. In addition, the increased risk of cardiovascular ailments like heart attack and worsening angina due to constriction of blood vessels in cold environments was briefly described.

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

3 This topic was explored in depth by the core curriculum.

- 2 This topic was briefly covered in the core curriculum.
- 1 This topic was covered in elective coursework.
- 0 This topic was not covered.

Score explanation: At SCBMCH, this topic was explored in depth in the first year subject of physiology in the chapter titled 'Stress'. In the first-year lectures, the negative impact of climate change, food insecurity and population displacement on mental health were discussed. Additionally, the potential triggering of mental illness such as depression and anxiety from environmental exposures (such as air pollution & extreme weather conditions) were discussed. Strategies to reduce stress and improve mental well-being such as through green spaces that help individuals to be connected to the natural environment whilst providing fresh air to breathe were also covered.

8. Does your	medical	school	curriculum	address	the	relationships	between	health,	individual
patient food ar	nd water	securit	y, ecosystem	health, a	nd c	limate change	?		

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

Score explanation: At SCBMCH a lecture on 'Sustainable Development Goals' addressed topics like eradication of poverty, hunger and ensuring environmental sustainability. The topic 'Ecosystem and Health' was covered in the chapter 'Environment and Health'. The importance of water security and food security was also highlighted in the lecture on 'Public Health Programs' in India. Malnutrition and its causes, including food insecurity due to the changing climate, were explained. However, the correlation between climate change and food security was not explicitly stated, hence why we awarded only 2 points.

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

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

Score explanation: How climate change affects marginalised populations is not directly covered in our curriculum. However, factors that contribute to climate change such as mining in specific regions of the

state (such as Sukinda) and how it affects the tribal population are mentioned. In the lecture on 'Chronic Kidney Disease', the epidemiology section discussed how the indigenous communities in mining areas and older adults are disproportionately affected. Lectures also discussed how heat waves significantly affect the nomadic population.

10. Does your medical school curriculum	address t	the unequal	regional	health i	mpacts of	of climate
change globally?						

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
Score clima	e explanation: SCBMCH curriculum does not address the unequal regional health impacts of ate change globally.

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

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

3 This topic was explored in depth by the core curriculum.
2 This topic was briefly covered in the core curriculum.
1 This topic was covered in elective coursework.
0 This topic was not covered.
Score explanation: 'Community Medicine' lecture briefly discussed the correlation between

Score explanation: 'Community Medicine' lecture briefly discussed the correlation between environmental hazards and toxins leading to cancers of the reproductive system. Lectures on specific diseases like endometrial, vaginal, and cervical cancer covered in Obstetrics and Gynaecology also briefly covered this topic. A lecture in forensic medicine also discussed the effect of pesticides and other toxins on women of reproductive age.

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

3 This topic was explored in depth by the core curriculum.
2 This topic was briefly covered in the core curriculum.

1 This topic was covered in elective coursework.

0 This topic was not covered.

Score explanation: The chapter titled 'Occupation and Health' discussed various man-made hazards and risk factors leading to an array of diseases such as pneumoconiosis, asbestosis, neoplasia, exacerbations of COPD and asthma. Biomagnification and poisoning due to DDT and mercury were also discussed. The death of aquatic animals like fishes, corals etc. due to anthropogenic environmental damage was also covered in that lecture. And fish is a part of the staple diet in the coastal state of Odisha. Recommendations to improve water, sanitation, and hygiene to reduce the incidence of dengue fever and other diseases were also discussed briefly. Another lecture on food adulteration (such as paneer, eggs, and rice) discussed how it is a threat to the surrounding communities.

13. 7 and	13. To what extent does your medical school emphasise the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?				
3	Indigenous knowledge and value systems are integrated throughout the medical school's planetary health education				
2	Indigenous knowledge and value systems as essential components of planetary health solutions are included briefly in the core curriculum.				
1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in elective coursework.				
0	This topic was not covered.				
Score explanation: In the lecture on 'Integrated Management of Neonatal and Childhood Illness (IMNCI)' home remedies were discussed for children who present with only fever and rhinorrhea. These home remedies are part of our indigenous knowledge and value systems - such as using ginger, black pepper, honey and basil leaves. In the first year, there are dedicated hours for the students to learn and practise yoga. AYUSH (Ayurveda, Yoga, Unami, Sidha, Homoeopathy) is a separate field that focuses specifically on Ayurveda knowledge and practices. However, details of Ayurveda are not included in the allopathic medical curriculum.					

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

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

Score explanation: Community Medicine lecture on the topic 'Environment and Health' covered the impact of anthropogenic environmental toxins briefly. Especially indoor pollution affecting women cooking with fossil fuels, coal and wood and how it is associated with respiratory illnesses was briefly discussed. A chapter on 'Tuberculosis' also highlighted that incidence of these diseases is more in people with low socioeconomic status such as those living in slums, prisons etc. However, there was a lack of direct integration and in-depth discussion about this topic.

Curriculum: Sustainability

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

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
Scor	e explanation: SCBMCH addresses the health benefits of a plant-based diet but not the

Score explanation: SCBMCH addresses the health benefits of a plant-based diet but not the environmental benefits of a plant-based diet in the lecture on 'Nutrition' in Community Medicine. Specific benefits of plant-based diets on the prevention of colon cancer risks and increased longevity are discussed.

16. E	16. Does your medical school curriculum address the carbon footprint of healthcare systems?		
3	This topic was explored in depth by the core curriculum		
2	This topic was briefly covered in the core curriculum.		
1	This topic was covered in elective coursework.		
0 This topic was not covered.			
Score explanation: SCRMCH curriculum does not address the carbon footprint of the health care			

Score explanation: SCBMCH curriculum does not address the carbon footprint of the health care system.

17. Does your medical school curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (1 point each)

1 Waste production within the healthcare system and strategies for reducing waste in clinical activities, such as in the operating room

The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry 1 powdered inhalers over metered-dose inhalers. The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anaesthesia environmental impacts, such as total intravenous anaesthesia or choosing less environmentally anaesthetic gas options with reduced greenhouse gas emissions 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 1 co-benefits would fulfil this metric. The health and environmental co-benefits of non-pharmaceutical management of conditions where appropriate such as exercise or voga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes for obesity. This is commonly known as social prescribing in the UK. The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment

Score explanation: In SCBMCH, sustainable clinical practice in terms of hospital waste management is adopted. Colour-coded bins with clear signage are placed at various locations throughout the medical hospital and help the patients as well as healthcare workers to conveniently use them. In the operating room, supervised use of gloves, apron, head cap and footwear reduces medical waste as well.

Also in the second year of medical school, the pros and cons of anaesthetics for pain management were discussed and it included the negative impacts of anaesthetic gases on the healthcare carbon footprint.

In competency PH1.10 of the second-year medical school curriculum, the need to deprescribe and its environmental benefits were discussed along with the health and environmental impact of polypharmacy.

Non-pharmaceutical management of certain conditions (such as diabetes, hypertension and obesity) and its importance were covered in detail in medicine, pharmacology, and community medicine lectures.

Social prescribing and counselling the patients regarding over-medicalisation, over-investigation and over-treatment are taught by our mentors in our clinical rotations positions starting from the second year until the one-year mandatory internship (house surgeon year).

Curriculum: Clinical Applications

18. In training for patient encounters, does your medical school's curriculum introduce strategies to have conversations with patients about the health effects of climate change?

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

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

Score explanation: Strategies for discussing climate change and health with patients are not included in the current curriculum and are excluded from patient discussions.

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

2	Yes, the core	curriculum	includes	strategies	for taking an	environment	al history.
_				~			

- 1 Only elective coursework includes strategies for taking an environmental history.
- 0 No, the curriculum does not include strategies for taking an environmental history.

Score explanation: Lectures on clinical history taking taught us the strategies for taking environmental history as part of previous exposure. This was covered in subjects like Internal Medicine, Paediatrics, and Obstetrics & Gynaecology. Also, this is commonly practised during the mandatory internship year.

Curriculum: Administrative Support for Planetary Health

20. Is your medical school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?

- 4 Yes, the medical school is currently in the process of making major improvements to ESH/planetary health education.
- 2 Yes, the medical school is currently in the process of making minor improvements to ESH/planetary health education.
- 0 No, there are no improvements to planetary health education in progress.

Score explanation: There has been an increase in vertical integration of planetary health education topics into the first and second-year curricula since 2019 after the change in the MBBS curriculum by the National Medical Commission. SCBMCH has implemented the changes in the curriculum by incorporating the said topics into its lectures for first and second-year students. Furthermore, there has been an increase in the number of lectures on climate change and the organisation of activities promoting the idea of climate change and sustainability.

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

 4 Some planetary health/ESH topics are appropriately integrated into the core medical stud curriculum. 2 Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s). 	6	Planetary health/ESH topics are well integrated into the core medical school curriculum.
2 Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s).	4	Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum.
	2	Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s).

0 There is minimal/no education for sustainable healthcare.

Score explanation: At SCBMCH the planetary health topics are longitudinally integrated. For example, the first-year curriculum covers biochemistry (discusses the production of free radicals by different pollutants) and genetics (discusses the effect of pollutants on DNA methylation patterns). Then in the second-year curriculum in pulmonary health, the various environmental causes of lung carcinoma are discussed. A chapter on 'Neoplasia' covers environmental pollutants and their relation to carcinogenesis. Although "Planetary health" is not stated explicitly in any of these lectures.

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

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

Score explanation: There is a lack of awareness about planetary health and sustainable healthcare. There is no dedicated staff member or faculty who is responsible for overseeing the integration of planetary health into the curriculum or improving campus sustainability.

Section Total (43 out of 69)

43

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

Interdisciplinary Research

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

1.Are there researchers engaged in planetary health research and healthcare sustainability research at your medical school?				
3	Yes, there are faculty members at the School of Medicine who have a primary research focus in planetary health or healthcare sustainability.			
2	Yes, there are individual faculty members at the School of Medicine who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.			
1	There are planetary health and/or healthcare sustainability researchers at the institution, but none associated with the medical school.			
0	No, there are no planetary health and/or healthcare sustainability researchers at the institution or medical school at this time.			
Score explanation: The university that SCBMCH is a part of (Utkal University) has a centre for <u>Environment, Climate Change and Public Health</u> . Recently, a seminar was conducted on <u>Climate</u> <u>Change, Sustainability and Public Health</u> by the university. Research is carried out on topics such as Gender, climate change and the politics of vulnerability; Governance challenges in addressing climate concerns in Coastal Asia and Africa; <u>women-headed households, migration and adaptation to climate</u> <u>change in Mahanadi delta</u> by Asha Hans from the department of political science. But SCBMCH has no such ongoing research.				

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

Score explanation- No dedicated department for interdisciplinary planetary health research at our institution.

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

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

Score explanation: No public information is available for community participation in driving the agenda for research.

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

Score explanation: There is no website that centralizes ongoing and past research related to health and the environment but efforts are going on to integrate that information related to research on the main website of our medical school.

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

4 Yes, the **medical school** has hosted at least one conference or symposium on topics related to planetary health in the past year.

3	Yes, the institution has hosted at least one conference or symposium on topics related to planetary health in the past year.	
2	Yes, the institution has hosted a conference on topics related to planetary health in the past three years.	
1	The institution has not hosted any conferences directly, but they have provided financial support for a local planetary health event.	
0	No, the institution has not hosted a conference on topics related to planetary health in the past three years.	
Score explanation: The institution has not hosted a conference on topics related to planetary health in the past three years although awareness activities, plantation activities, and cleanliness drives are		

being carried out regularly.

6. Is your medical school a member of a national or international planetary health or ESH organization?				
1	Yes, the medical school is a member of a national or international planetary health or ESH organization			
0	0 No, the medical school is not a member of such an organization			
Score explanation: No, the medical school is not a member of such an organisation.				

Section Total (1 out of 17)

Back to summary page <u>here</u>

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

1

Community Outreach and Advocacy

<u>Section Overview:</u> 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 color. 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.

1. Does your medical school partner with community organizations to promote planetary and environmental health?

Yes, the medical school meaningfully partners with multiple community organizations to promote planetary and environmental health.
 Yes, the medical school meaningfully partners with one community organization to promote planetary and environmental health.
 The institution partners with community organizations, but the medical school is not part of that partnership.
 No, there is no such meaningful community partnership.

Score explanation: No such meaningful partnership exists between SCBMCH and the community.

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

3	The medical school offers community-facing courses or events at least once every year.			
2	The medical school offers courses or events open to the community at least once per year, but they are not primarily created for a community audience.			
1	The institution has offered community-facing courses or events, but the medical school was not involved in planning those courses or events.			
0	The medical school has not offered such community-facing courses or events.			
Score explanation: Events such as plantation drives, cleanliness drives, donate-a-tree initiatives, and Swatch Bharat Abhigyan activities are carried out at SCBMCH annually. However, they are not primarily created for community participation.				

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

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

Score explanation: The medical school does not provide students with regular coverage of issues related to planetary health or sustainable healthcare.

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

2	Yes, the institution or main affiliated hospital trust offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health.

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

0 There are no such accessible courses for post-graduate providers

Score explanation: No such courses for post-graduates are available at SCBMCH but some indirect courses that incorporate elements of planetary health are available at Utkal University.

5. Does your medical school or its primary affiliated hospital have accessible educational materials for patients about environmental health exposures?	
2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated medical centers have accessible educational materials for patients.
Score	e explanation: No information and accessible material are available for the patient.

6. Does your medical school or its primary affiliated hospital have accessible educational materials for patients about climate change and health impacts?

2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated hospitals have accessible educational materials for patients.
Score explanation: No information and accessible material are available for the patient.	

Section Total (2 out of 14)

2

Back to summary page <u>here</u>

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

Support for Student-Led Planetary Health Initiatives

<u>Section Overview</u>: 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.

1. Does your institution offer support for medical students interested in enacting a sustainability initiative/QI project?

- 2 Yes, the institution *either* offers grants for students to enact sustainability initiatives/QI projects *or* sustainability QI projects are part of the core curriculum.
- The medical school encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate.
- 0 No, the institution does not offer opportunities or support for sustainability initiatives or QI projects.

Score explanation: SCBMCH doesn't offer support for medical students interested in enacting a sustainability initiative/QI project.

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

- 2 The institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
- There are research opportunities for students to perform research related to planetary health/sustainable healthcare but these require student initiative to seek these out and carry them out in their spare time.
- 0 There are no opportunities for students to engage in planetary health/sustainable healthcare research.

Score explanation: There are very limited opportunities for research at an undergraduate level at our medical school. However, if students are interested in research related to planetary health or sustainable healthcare they can take this up with the faculty. Student-led initiatives drive this process.

3. Does the medical school have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the

medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.

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

Score explanation: No such web page providing specific planetary health-related projects are currently available.

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

- Yes, there is a student organization with faculty support at my medical school dedicated to planetary health or sustainability in healthcare.
 Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it lacks faculty support.
 No, there is not a student organization at my institution dedicated to planetary health or
- 0 No, there is not a student organization at my institution dedicated to planetary health or sustainability in healthcare.

Score explanation: No such student organisation is dedicated to planetary health engagement, but the student services guild (student council) is responsible for making such decisions or initiatives.

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

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

Score explanation: Students services guild (student council) is responsible for making such decisions or initiatives depending on the interests of the council members.

6. In the past year, has the institution had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)	
1	Project where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.
1	Panels, speaker series, or similar events related to planetary health that have students as an intended audience.
1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.
1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students)
Score explanation: Programs organised for 'Environment Day' and 'Earth Day' included speakers on planetary health topics. Planetary health was integrated into various activities including debates, extempore speech, and poster design. Students also had the opportunity to volunteer for plantation and cleanliness drives.	

Section Total (5 out of 15)

5

Back to summary page <u>here</u>

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

Campus Sustainability

<u>Section Overview:</u> This section evaluates the support and engagement in sustainability initiatives by the medical school and/or institution. The healthcare industry is a major contributor to greenhouse gas emissions as well as pollution that harms local, regional, and global ecosystems. While healthcare is, by nature, a resource-intensive endeavor, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinizing 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 minimizing environmental impact.

1. Does your medical school and/or institution have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff, but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
Scor	e explanation: No staff member or task force exists for overseeing campus sustainability at

Score explanation: No staff member or task force exists for overseeing campus sustainability at SCBMCH.

2. How ambitious is your medical school/institution's plan to reduce its own carbon footprint?	
4	The institution has a stated goal of carbon neutrality by 2030 or earlier and the medical school / institution has a well-defined and adequate plan in place to achieve this goal.
3	Yes, there is a stated carbon neutrality goal by at least 2040 and the medical school/institution has a well-defined and adequate plan in place to achieve this goal.
2	Yes, there is a stated carbon neutrality goal by at least 2040, but the medical school/institution has not created a plan to reach that goal or the plan is inadequate.
1	There is a CO2 emission reduction goal, but it is not one of carbon neutrality.
0	There is no stated goal for reduction of CO2 emissions.
Score explanation: SCBMCH does not have a stated goal for the reduction of CO2 emissions.	

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

3	Yes medical school buildings are 100% powered by renewable energy
2	Medical school buildings source >80% of energy needs from off-site and/or on-site renewable energy.
1	Medical school buildings source >20% of energy needs from off-site and/or on-site renewable energy.
0	Medical school buildings source <20% of energy needs from off-site and/or on-site renewable energy.
Score explanation: <u>Current infrastructure renovation</u> includes the installation of a solar photovoltaic system with a capacity of 15kWp on-site to reduce the energy demand from non-renewable energy	

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

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

sources.

Score explanation: <u>In structural and non-structural applications</u>, for both concrete and masonry work minimum of 30% of cement is replaced with fly ash. All paints and adhesives used in the project have low volatile organic compounds (VOCs) content. The insulation, refrigerant, and fire fighting system used in the building have no components with ozone depletion potential.

The majority of the old building have been or are currently being renovated. Such as replacing old, high-energy-consuming fluorescent bulbs with newer, low-energy-consuming LED bulbs and whitewashing buildings to reflect sunlight which would make the buildings naturally cooler.

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

2 Yes, the medical school 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-utilized by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.

- 1 The medical school has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.
- 0 The medical school has not implemented strategies to encourage and provide environmentally-friendly transportation options.

Score explanation: SCBMCH has <u>battery-operated vehicles</u> for transporting patients within the campus.

6. Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?
2 Yes, the medical school has both compost and recycling programs accessible to students and faculty.
1 The medical school has either recycling or compost programs accessible to students and faculty, but not both.
0 There is no compost or recycling program at the medical school.

Score explanation: There is an <u>established biomedical waste management system</u> which includes different bodies that are responsible for collecting and recycling waste. Coloured coded dustbins available for the segregation of different types of waste in hospitals but not in academic blocks or hostels.

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

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

8. Does the medical school or associated institution apply sustainability criteria when making decisions about supply procurement? 3 Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement. 2 There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is engaged in efforts to increase sustainability of procurement. 1 There are sustainability guidelines for supply procurement, but they are insufficient or optional. There are sustainability guidelines for supply procurement, but they are insufficient or optional. There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is not engaged in efforts to increase sustainability of procurement. 0 There are no sustainability guidelines for supply procurement. Score explanation: There are no publicly available sustainability guidelines for supply procurement.

9. Are there sustainability requirements or guidelines for events hosted at the medical school?	
2	Every event hosted at the medical school must abide by sustainability criteria.
1	The medical school strongly recommends or incentivizes sustainability measures, but they are not required.
0	There are no sustainability guidelines for medical school events.
Score explanation: There are no sustainability guidelines for medical school events.	

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

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

Score explanation: No such recommendations and initiatives are in place in order to make lab space more sustainable.

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

4	The institution is entirely divested from fossil fuels and has made a commitment to reinvest divested funds into renewable energy companies or renewable energy campus initiatives.
3	No, the institution is entirely divested from fossil fuels.
2	The institution has partially divested from fossil fuel companies or has made a commitment to fully divest, but currently still has fossil fuel investments.
1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organized advocacy for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.
Score explanation: In India, for government medical colleges the financial investment portfolios are not easily accessible and we were not able to find any public information about this. We might need to file a right to information to understand this. But, this is beyond our capacity right now. The only information that could be obtained was that <u>the school website</u> is supported by a private bank as a part of their corporate social responsibility and <u>articles</u> have been found linking the bank with fossil fuel financing and infrastructure projects. As none of the options deems fit we have decided to give it a score of 0.	

Section Total (6 out of 31)

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

6

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
А	80% - 100%
В	60% - 79%
С	40% - 59%
D	20% - 39%
F	0% - 19%

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

Planetary Health Grades for SCBMCH

The following table presents the individual section grades and overall institutional grade for Srirama Chandra Bhanja Medical College and Hospital on this medical-school-specific Planetary Health Report Card.

Section	Raw Score	Letter Grade
Planetary Health Curriculum (30%)	$(43 / 69) \ge 100 = 62.32\%$	В-
Interdisciplinary Research (17.5%)	(1 / 17) x 100 = 5.88%	F
Community Outreach and Advocacy (17.5%)	(2 / 14) x 100 =14.29%	F
Support for Student-led Planetary Health Initiatives (17.5%)	(5/15) x 100=33.33%	D
Campus Sustainability (17.5%)	(6 / 31) x 100 =19.35%	F+
Institutional Grade	57 (31.45%)	D