Sustainable healthcare education: integrating planetary health into clinical education

The field of planetary health has emerged as a way to prevent further destabilisation of the earth systems and to avoid actions that would herald large-scale morbidity and mortality.[1] Health professionals—who have been trained to advocate for health, communicate risk, and manage complex systems—are ideally placed to raise awareness of and educate about planetary health. Many clinicians realise that the health-care systems in which they work leave deep environmental footprints. Yet the clinician's voice has been inexplicably quiet on global-ecological change. Why is this so, and what can be done about it?

The educational directives that dictate the training of health professional are notoriously slow to change. New evidence and social norms are incorporated only by the dedicated efforts of change agents at national or institutional levels.[2] Clinical educators at faculty and dean level have generally resisted the inclusion of planetary health in their undergraduate and postgraduate curricula, either because they are not aware how important the topic is or because they tend to focus on illness treatment over prevention. In all settings, there is a dearth of curricular space and faculty expertise.[3]

For the past 10 years, the Sustainable Healthcare Education network has experimented with ways of including planetary health literacy in clinical training. Three learning objectives (panel 1) have been established that link the relationship between ecosystems and human health to the skills needed to reduce the environmental impacts of health systems, and include environmental considerations in clinical ethical reasoning).[4]

***Panel 1*: Sustainable Healthcare Education learning outcomes**

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.

The Sustainable Healthcare Education network has succeeded in changing health professional curricula at several levels. First, at the national level, academics, clinicians, and students have gathered evidence to justify the inclusion of sustainable healthcare learning objectives in the UK national medical curriculum.[4] These learning objectives have also been taken up by nurse educators in Europe and medical educators in the USA. Second, within the health services groundbreaking work has been done to develop models of sustainable clinical specialties (eg, green nephrology, sustainable psychiatry, and sustainable primary care).[5] Moreover, professional working groups have been formed, including groups for occupational therapy and physiotherapy. Third, individual institutions have made planetary health education clinically relevant by publishing case studies and teaching materials, developing educational activities and approaches (panel 2), and introducing

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For more on **sustainable healthcare education and planetary health education** see https://networks.sustainablehealthcare.org.uk/network/sustainable-healthcare-education

For more on the **NurSusTOOLKIT project** see http://www.nursus.eu

***Panel 2*: case studies**

Nursing

The University of Plymouth, England has embedded Sustainable Healthcare Education into the nursing and midwifery curriculum to strengthen clinical practice and leadership skills. Interactive scenarios have allowed students to learn about the health effects of climate change.[8] To address expected shortages in the supply chains,[8] the university's nursing and design students collaborated to identify threats to products used in everyday practice and developed practice and design solutions to address shortages and solid waste management.

As part of an EU-funded NurSusTOOLKIT project nurse educators produced teaching resources in various languages, including German, Spanish, Dutch, and English. Evaluation of this intervention with students in universities in the UK, Spain, and Germany showed that scenario-based teaching increased student knowledge, was found to be engaging,[8] and convinced other teaching colleagues to extend sustainable health care across the nursing and midwifery curriculum.

Medicine

At the University of Cape Town, South Africa, medical students in their fourth-year study environmental health history taking. When students diagnose a patient, they are trained to identify environmental health risks in relation to the patient's socioeconomic status. This is important because a large percentage of South Africa's population live in poverty. Through role play, students identify symptoms linked to environmental hazards and symptoms that could be climate induced.[6]

Educators of health professionals and the planetary health community are invited to build on these case reports and resources to develop training appropriate to their institutional, geographical, and cultural context and share them with the Sustainable Healthcare Education network.

peer-to-peer training for medical faculty.[6] Some institutions have also listened to student perspectives to co-develop and co-deliver teaching,[7] and have therefore inverted traditional knowledge hierarchies and developed new and sustainable models of health care.[3]

Sustainable health-care education applies planetary health concepts to medical education, which allows students to develop professional attitudes and skills to cope with complex problems in interprofessional collaborations. Practical activities based on local institutional creativity and regional environmental issues can reinvigorate the links between clinical practice and the health of the environment.

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