





# ENVIRONMENTAL RESEARCH HEALTH

## EDITORIAL

### Linking human and planetary health: focus on environmental sustainability and health care

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## 1. Introduction

Climate change affects both the health and wellbeing of individuals and populations, and the health-care systems on which they rely. Today, backsliding on climate action by some of the world's wealthiest nations is worsening health threats during a period when the world is on track to warm to 2.7 °C above pre-industrial levels by 2100 [1]. These climate effects are 'destabilizing the planetary systems and environmental conditions on which human health and life depend' [1].

Globally, climate change has been responsible for an unprecedented 23% surge in health-related deaths since the 1990s, including deaths from extreme heat, precipitation, and drought [1]. Climate-related threats to human health reached record levels in 2024: extreme heat resulted in a 63% increase in heat-related deaths compared to the 1990s; extreme precipitation affected 64% of the Earth's land surface, and threatened health by triggering flash floods and landslides; and extreme drought spiked to 299% above 1950s levels, raising wildfire risk and resulting in reduced food and water security [1]. Earth's warming also increased the incidence of food-borne, water-borne, and vector-borne disease [2]. Health effects of climate change also included indirect health harms, with extreme weather 'straining the economy, reducing labor productivity, increasing worker absenteeism, and burdening health systems, which, in turn, affects the socio-economic conditions that support health and wellbeing'[1].

This Focus issue on 'Environmental Sustainability and Healthcare' lies at the intersection of health and the environment, spotlighting both the adverse effects of climate change on human health, as well as upstream and downstream climate harms that healthcare systems produce through carbon-emitting practices. An overarching theme apparent in the papers of the Focus issue is the tight linkage between human and planetary health. Just as an unhealthy planet endangers human health, people suffering poor health utilize carbon-emitting healthcare systems that endanger the planetary health. The papers in the Focus issue divide into two groups: the first group of papers emphasizes climate change's harmful effects on human health, while the second group stresses the healthcare system's damaging effects on planetary health.

## 2. Adverse effects of climate change on individual and population health

A first set of papers examines strategies to address the growing health harms of climate change by better integrating health into climate policies designed to mitigate climate severity and adapt to climate damage. In 'Activating health professionals as climate change and health communicators and advocates,' Campbell and colleagues propose investing in training health professionals to prepare them to serve as

‘trusted voices,’ educating people about climate risks to their health and advocating for solutions that benefit both people and the planet [3]. Lenihanlkin, Ariana and Atuire also explore integrating health into climate policies, placing emphasis on justice and avoiding policies that entrench health inequities [4]. They advocate ‘just transformations’ that disrupt and dismantle inequitable structures, replacing them with more equitable ones.

### 3. Upstream and downstream harms to human health from healthcare systems

A second group of papers explores the role of healthcare systems as greenhouse gas emitters. They highlight that the healthcare sector is not only a responder to climate-related shocks to human health but a source of climate harms. On a global scale, the carbon footprint of the healthcare sector is substantial: if it were a country, it would be the fifth-largest carbon emitter [5]. Globally, healthcare is responsible for 4.4% of global net carbon emissions [6].

In ‘Reporting Units in Life Cycle Assessments of Hospitals,’ Keil suggests that environmentally friendly healthcare systems should hold themselves accountable by reporting their environmental impact while aiming to minimize it [7]. Doing so, the author argues, aids decision-makers by helping to identify opportunities for mitigation, fund green choices, and track progress or backsliding. Zeroing in on the United States, Locke reviews U.S. healthcare sector literature to gauge how transparency is interpreted and applied [8]. The review demonstrates a shift toward more sustainable practices by healthcare systems, including more transparent reporting, with many companies now routinely tracking their greenhouse gas emissions or waste and setting goals to reduce them.

Cummins’ paper, ‘Healthcare in an unstable climate,’ argues for climate change policies that prioritize public health initiatives benefitting a large portion of the population [9]. For example, Cummins advocates revising vaccine schedules to cover more vector-borne diseases as the geographical range of vectors expands. Overall, Cummins favors keeping healthcare systems resilient and able to flex to changing conditions and address new and emerging climate harms.

De Maack and Dupras explore how ethical theories and frameworks offer insights into challenges that can arise on the path to more sustainable healthcare systems. In particular, they consider instances where environmental sustainability and human health appear to be in tension, such as instances where pursuing a health service for an individual appears to have ‘too great an impact on the environment,’ such as the use of inhalers with hydrofluorocarbons to treat asthma or chronic obstructive pulmonary disease [10]. The authors press for normative guidance about how to balance trade-offs ethically, and urge bioethicists to develop a ‘trade-off ethics’ that draws insights from multiple ethical frameworks and approaches while also integrating empirically grounded information about complex real-world cases.

Finally, Charlotte explores the bioethical dilemmas that arise in the changeover to greener healthcare systems [11]. The author contrasts bioethics’ traditional focus on the welfare of patients, with the new ‘green bioethics,’ advocated by some scholars [12, 13]. Among the many findings are that patients regard their providers’ primary responsibility to be patients, not the environment, suggesting the need for patient education about the interconnection between human and planetary health.

### 4. Conclusion

Together, the analyses of this Focus issue point to a tight link between *human* and *planetary* health. Not only does ‘human health and human civilization depend on flourishing natural systems;’ natural systems, in turn, require ‘wise stewardship.’ [14] Future research should examine more closely the ethical challenge of balancing the twin imperatives to protect human and planetary health. As some contributors noted, ethical theories and frameworks can assist with this effort. However, more work is needed to translate ethical theories and frameworks into practical guidance. A key contribution of this Focus issue is considering human and planetary health in tandem and considering tensions between them head-on. Avoiding siloed approaches reveals the moral complexities of choices societies face on the path to green healthcare systems and a sustainable planet.

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