# Healthcare Decarbonisation Education for Health Profession Students: A Scoping Review

Sustainability (Switzerland) • Review • *Open Access* • 2026 • DOI: 10.3390/su18021068

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## Abstract

Climate change is the greatest health threat of the 21st century, with healthcare contributing approximately 4–5% of global greenhouse gas emissions. Decarbonising healthcare, the deliberate reduction of emissions across all healthcare activities, is essential to reduce the health sector's environmental impact while maintaining equitable, high-quality care. Preparing future health professionals for sustainable, low-carbon practice is increasingly recognised as critical; however, education on healthcare decarbonisation remains inconsistent and weakly embedded in curricula. This scoping review mapped existing educational resources for pre-registration health profession students. Following the JBI methodology, six databases (Scopus, Web of Science, MEDLINE, CINAHL, PsycINFO, and GreenFILE) were searched in April 2025 (updated in October 2025). Data were thematically analysed. In total, 32 studies met inclusion criteria, comprising 17 mixed-methods, 11 quantitative, and 4 qualitative designs. Most interventions were multimodal, addressing sustainability or climate change through simulation, digital, formal, or didactic methods. Knowledge and attitudes were the most frequently evaluated outcomes. Thematic analysis identified knowledge

and awareness, attitudes and emotional responses, behavioural intent and action, identity formation through collaborative learning, and barriers to decarbonisation. Findings suggest that blended, interactive, and technology-enhanced education improves knowledge, attitudes, and identity, but sustained impact requires longitudinal, skills-based, and policy-aligned interventions to drive meaningful healthcare decarbonisation action. © 2026 by the authors.

## Author keywords

climate change; environmental sustainability; health professions education; healthcare decarbonisation; low-carbon healthcare; pre-registration health professions; sustainability education

## Indexed keywords

**GEOBASE Subject Index**

carbon; climate change; environmental impact; greenhouse gas; health care; health education; student; sustainability

## Funding details

Details about financial support for research, including funding sources and grant numbers as provided in academic publications.

| Funding sponsor | Funding number | Acronym |
|---|---|---|
| Department for the Economy<br>See opportunities by DfE ↗ | | DfE |

**Funding text**

This research is funded by a Department for the Economy (DfE) Northern Ireland Postgraduate Research Studentship.

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Indexed keywords

Funding details

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