

Environmentally sustainable health and social care: Scoping review

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Glossary of terms/abbreviations

Adaptation - measures taken to adapt to climate change (or other environmental change), in order to maintain resilience or functionality

'Bottom up' carbon footprinting - calculating the carbon dioxide emissions generated by an organisation, product or activity using detailed local data on the individual processes undertaken and the emissions associated with these

CO₂ - carbon dioxide, the principal contributor to the greenhouse effect

CO₂e - carbon dioxide equivalent - a measure of production of the full range of greenhouse gases, expressed in terms of the equivalent amount of carbon dioxide

Environmental change - changes to the natural environment at a number of levels (local, regional, international etc). Within this definition we include climate change, depletion of natural resources such as water or fossil fuels, and higher utility prices resulting from this

Environmental impact - in this report this refers to the effect of the activities of the health and social care sector on the natural environment, through emissions of carbon dioxide, use of finite natural resources, creation of waste and other processes

Emissions factor - a standard multiplier used in carbon footprinting methodologies giving the volume of CO₂e emissions per unit of a specified activity

Health and social care - any services provided by the statutory or independent sector in support of a person's health or social care needs. Much of the research reported concerns the NHS and statutory social care provision, but the findings of the review should be understood as applying to the private and voluntary sector as well. Informal care provided by

individuals and families is not discussed explicitly, but can be considered as part of the same 'system'.

Integrated care - any approach which aims to provide better co-ordination of different elements of care, reducing the fragmentation or duplication of the services provided. This can take place at a number of levels, including closer co-ordination between health and social care, primary and secondary care, or mental and physical health care.

Mitigation - measures taken to reduce carbon dioxide emissions or other environmental impacts

Narrow-plan - building designs which have a high external surface area per unit volume, with few rooms lacking external walls

Sustainable - making use of financial, natural and social resources in a way such that current needs are met without jeopardising the ability of future generations to meet their needs. In some cases in the report, the term 'sustainable' is used as shorthand for 'environmentally sustainable', i.e. sustainable specifically with respect to use of natural resources and generation of environmental impacts.

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Executive Summary

Background

A sustainable approach to health and social care is one which is capable of meeting the needs both of today's population and of future generations. While the importance of financial sustainability is widely acknowledged, the idea that services must also be sustainable in terms of their use of natural resources, or in their ability to adapt to environmental change, is a more recent one. Nonetheless, it is an idea which has received increasing attention over the last decade.

A number of factors have contributed towards raising the profile of environmental sustainability within health and social care. The scale of the sector's activities means that it has a significant environmental impact, and is coming under increasing pressure to reduce this. At the same time, the environmental changes that can be anticipated over the coming decades can be expected to have multiple consequences for service provision and population needs.

There may also be positive reasons for the health and social care sector to engage with the issue of environmental sustainability, including potential co-benefits in terms of reduced costs, improved public health and quality of care, and reductions in health inequalities. As discussed below, there are close conceptual connections between environmental sustainability and other system objectives, in particular productivity, prevention and integration.

A growing number of managers and professionals are introducing changes to the way health and social care services are provided, with the objective of improving the sustainability of their activities. There is a need for rigorous evaluation of such innovation and for wider research to guide further developments.

Aims

This scoping review outlines a co-ordinated approach towards future research activities in this area, with a view to creating an evidence base

which supports the health and social care sector in adopting more environmentally sustainable approaches. It describes the existing research in this area and places environmental sustainability within the context of the financial challenges facing the health and social care system. Specific objectives were:

- To map the existing evidence base on environmental sustainability in health and social care
- To identify what research will be needed to support a more environmentally sustainable approach towards health and social care, and to develop a framework to coordinate future research
- To explore and highlight the connections between environmental sustainability and the productivity agenda

Methods

The scoping review had three components:

1. A review of published research and policy documents on environmental sustainability in health and social care. This included a review of articles from the business and management literature exploring how other sectors are aligning sustainability and productivity
2. Semi-structured interviews with 28 representatives of key stakeholder groups
3. An online Delphi exercise with over 60 contributors, in which participants were asked to prioritise research needs identified during the literature review and stakeholder interviews

The results from the three methodological strands are presented in an integrated way.

Results

How is the health and social care sector performing on environmental sustainability?

Health and social care have a significant environmental impact. Carbon dioxide emissions attributable to the NHS in England are greater than the annual emissions from all passenger flights departing from Heathrow

airport. Less is known about environmental costs associated with social care, non-NHS health services, or particular service types, population groups or organisations.

Evidence suggests that environmental change may have a number of effects on health and social care needs in the UK, as well as direct effects on service delivery. However, limited attention appears to have been given by researchers or managers to the question of how services may need to adapt in order to improve resilience to these changes.

There appears to be a reasonably high strategic commitment to sustainability within many health and social care organisations, but there is wide variation, and less consistent evidence of strategy being translated into tangible action. Nonetheless, there are numerous cases of local projects within both health and social care where structural, operational or clinical changes have been made that have reduced environmental impacts. In many cases there is evidence that financial and other benefits have been achieved as well, although robust evaluation of these effects is often lacking.

The connection with other system objectives

There is a clear conceptual connection between environmental sustainability and the productivity challenge - both agendas call for a re-focusing on efficiency, value and prevention of avoidable activity. Modelling suggests there are a number of approaches which could generate considerable cost savings as well as reducing environmental impacts, and a growing number of case studies indicate that some of these predicted benefits can be realised in practice. There is some evidence from other businesses for a link between sustainability and profitability, although this is contested.

There is an emerging evidence base exploring potential health co-benefits related to environmentally sustainable approaches such as promoting active travel and reducing meat consumption. There are also potential co-benefits in terms of quality of care. For example, developing more integrated forms of care, making better use of new technologies such as telecare, delivering care in settings closer to service users' homes, or removing duplication or redundancy from care pathways all have the potential to reduce environmental impacts while at the same time improving patient experience and outcomes.

What would a more sustainable approach to health and social care look like?

Our review identified changes that may be needed at three levels:

- **Innovation** – changes to models of care, and to health and social care technologies
- **Behaviours, attitudes and cultures** – changes to organisational cultures, professional behaviours and attitudes within services, and public behaviours and attitudes in society at large
- **System governance and policies** – changes to the way the health and social care system is governed, and the policy levers used for this

Actions at each of these three levels are closely interdependent, and our overall conclusion is that substantial changes will be needed at all three levels if an environmentally sustainable approach to health and social care is to be successfully developed

Some progress can be made by improving the efficiency of existing processes, technologies and facilities and minimising unnecessary resource use at the day-to-day operational level. Though necessary, this alone is unlikely to be sufficient. The scale of the environmental challenge demands a more fundamental transformation in the way health and social care is provided.

To a large extent, the transformation needed is the same as that called for on financial and quality grounds. Services need to be redesigned to shift care upstream and place greater emphasis on primary care, prevention and self-management. A more integrated system providing well-coordinated support for people's multiple needs could be more sustainable from both an environmental and financial perspective if this reduces inefficient use of resources. In this sense, environmental sustainability provides a new lens through which to view existing problems in the health and social care system, and a new way of assessing existing policy solutions.

At the same time, some changes will be needed which are specifically related to environmental sustainability - such as work to improve the resilience of facilities and care systems to environmental change. A dual approach is therefore needed.

What are the research needs?

Research will be needed to support the development and implementation of more sustainable approaches. The report discusses a broad range of research needs at each of the three levels described above. Particular priorities will include:

- Developing a more detailed understanding of the scale of the problem posed by environmental sustainability. This will include measuring the environmental costs associated with units of care, and assessing the impact of environmental change on future care needs and services.
- Development and evaluation of metrics and methods for assessing environmental costs in health and social care. There is an immediate need for this in order to support the above.
- Research on the co-benefits of sustainable approaches. Robust measurement of the financial returns on investments in sustainable approaches will be a key part in this.
- Research focused on implementation - examining the individual, organisational and systemic barriers to change, or aiming to identify how existing policy goals can be delivered in the most sustainable way.
- Research on preventative approaches and whether these can reduce demand for formal care. This emerged as a major priority throughout all stages of our review and will be key to developing a more environmentally sustainable system.
- Improving our understanding of how procurement and commissioning processes can be used to drive sustainable practices in supply chains and service providers.
- Research on medicines management and prescribing practices aiming to reduce inefficient or wasteful use of pharmaceuticals.

In addition to funding specific research projects, we argue that sustainability should increasingly be included in wider research as a dimension of quality akin to access or equity. In particular, evaluations of the cost-effectiveness of new technologies, interventions or care pathways should quantify environmental costs and include these within the analysis.

Conclusions

The sustainability agenda is increasing in importance in the health and social care sector, and the research community needs to be able to respond to this. Building the evidence base will require a dual approach which includes commissioning research explicitly focused on environmental sustainability, while also exploiting opportunities for existing research programmes to create relevant knowledge. Research funders of all kinds need a clear understanding of what sustainable development is and how it impacts on their research programmes.

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Addendum:

This project team was originally commissioned and funded by the NIHR SDO programme to complete a scoping review of environmentally sustainable health services. The project team received additional funding from the Social Care Institute for Excellence (SCIE) to complete a parallel scoping review of environmentally sustainable social services. The final report resulting from this project was reviewed and published by NETSCC. From January 2012, the NIHR SDO programme merged with the NIHR Health Services Research programme to establish the new NIHR Health Services and Delivery Research (NIHR HS&DR) programme.