

Sustainable by Design:

Accelerating greener healthcare through the power of collaboration

Dr Fiona Adshead

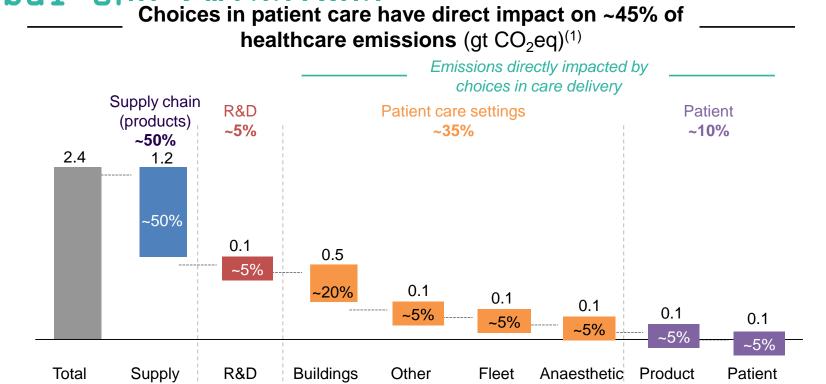
Decarbonising Life Sciences, 25th November 2025

Context: The healthcare sector, whose mission is to protect and promote health, is responsible for almost 5% of global GHG emissions



Healthcare's climate footprint is equivalent to ~5% of global net emissions⁽¹⁾

- If the health sector were a country, it would be among the top 5 largest emitters on the planet⁽²⁾
- The global health care climate footprint is equivalent to the annual greenhouse gas emissions of 500+ coal-fired power plants⁽²⁾



gases

travel

use

The healthcare sector therefore has a **key role to play in decreasing global GHG emissions**, not only considering manufacturing, use, and disposal of healthcare products but also how care to patients is delivered

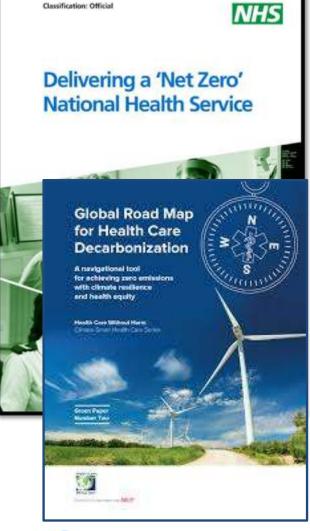
chain

healthcare

emissions



Net Zero: the inevitable future of healthcare





Discover how the NHS is becoming greener. Search Greener NHS













Classification: Official

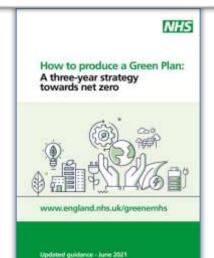
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14 July 2023 | BMA House, Londor

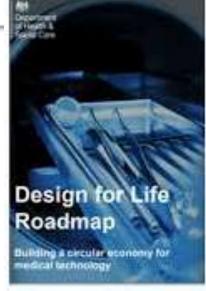
Delivering greener care for a healthier future



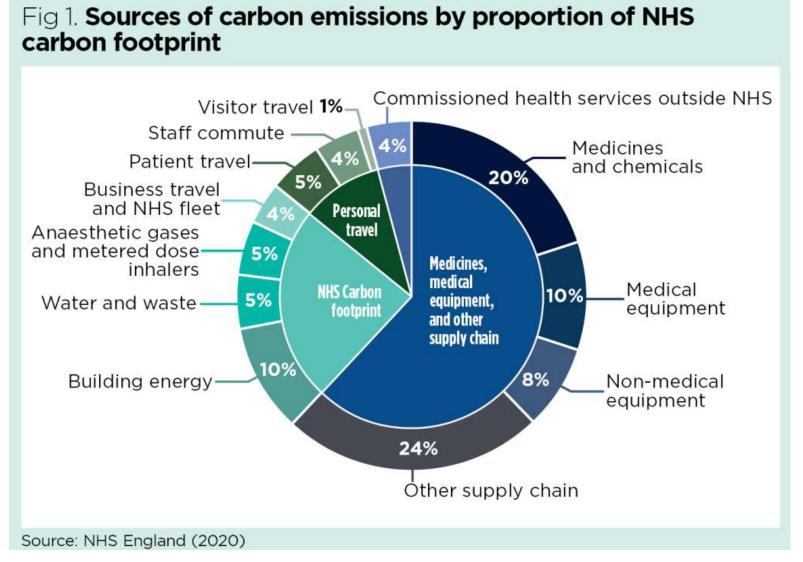








The Imperative to Shape the Supply Chain



Policy Measures fiscal and regulatory Prohibit or prevent

Reporting regulations

Tax & incentives

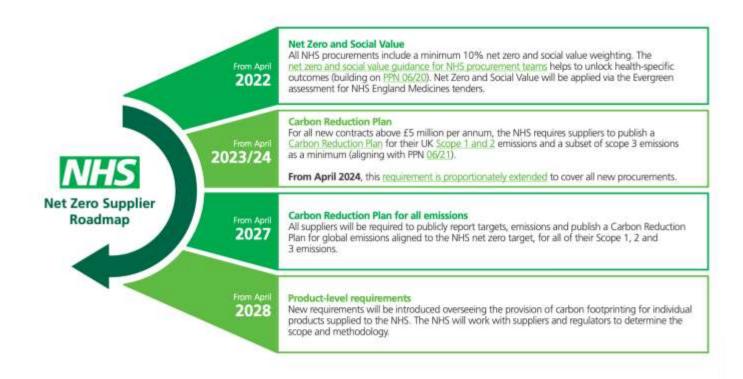
Procurement



Net Zero: Setting health system expectations through

NHS Net Zero Supplier Roadmap





Published November 2023 | england.nhs.uk/greenernhs



EMISSIONS SCOPE 1 SCOPE 3 SCOPE 2 TRAVEL OUTSIDE GHGP SCOPES MEDICAL DEVICES COST FUELS MEDICINES £..... 9 a B PATIENT, VISITOR TRAVEL NOIS FACILITIES 0=0 888 AMAESTHETICS BV 龠 MANUFACTURING NHS CARBON NHS CARBON FOOTPRINT **FOOTPRINT PLUS**

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The Race to Zero



This report released during COP28 shows an increase in the sector's Race to Zero commitments while highlighting the need for increased action in scope 3 reductions and collaborative supply chain engagement



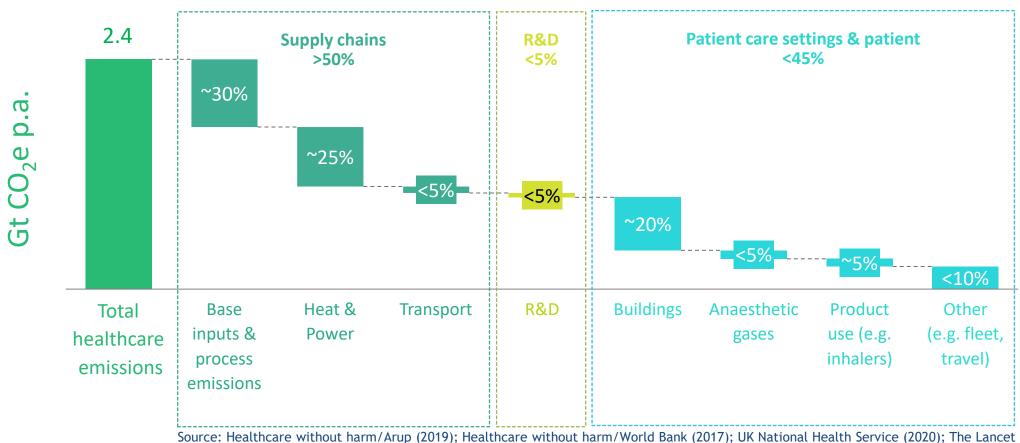






Sustainable By Design: Innovative Action Needed Across the Value Chain

Healthcare produces 2.4GT CO₂e p.a. (4-5% of global GHGs)







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Lower carbon models of care are key to becoming Net Zero



NHS England. Areas of focus. 2022. Available here: https://www.england.nhs.uk/greenernhs/a-net-zero-nhs/areas-of-focus/ do (Accessed October 2023) (Accessed November 2023)

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1. PREVENTION 2. PATIENT SELF-CARE Promoting health and Empowering patients to preventing disease by take a greater role in tackling the causes of managing their own illnesses and inequalities health and healthcare PRINCIPLES OF SUSTAINABLE CLINICAL PRACTICE 3. LEAN SERVICE 4. LOW CARBON DELIVERY **ALTERNATIVES** Streamlining care Prioritising treatments and technologies with a systems to minimise lower environmental wasteful activities impact CENTRE (NO SUSTAINABLE HEALTHCARE Mortimer, F. The Sustainable Physician. Clin Med 10(2). April 1, 2010. D110-111.

Centre for Sustainable Healthcare. What we do. 2023. Available here: https://sustainablehealthcare.org.uk/what-we-

The Sustainable Healthcare Coalition

...is a partnership of healthcare companies and other health agencies drawn together to address some of the most pressing sustainability issues in global healthcare.

Our purpose is to facilitate the journey towards good health and wellbeing on a finite planet, through open-minded collaboration across public and private healthcare.

We engage, connect and accelerate action.

Sustainable Healthcare Coalition Our core group draws in participation from other health system players including trade bodies, state healthcare providers, public health institutions and international agencies.











































Measuring the impact of care to drive

change

World's first guidance on how to measure the carbon footprint of pharmaceuticals and medical devices and the environmental impact of whole care pathways using an activity analysis;



Freely available guidance and an online calculator and emission factors



CARE PATHWAYS MODULES

- GP consultation
- Patient travel
- Emergency Department visit
- Inpatient bed day
- · Surgical procedure
- Self-management
- Diabetes Management







Start Calculation





Patient Travel to GP x3



Patient travel to Hospital



Care pathway

Clinicians Driving Innovation

Trusted partnerships join up the system and accelerate change by learning together through case studies & innovation:

- Carbon footprint of renal haemodialysis services at Newcastle UTH informing local and national carbon reduction plans with an international carbon calculator and novel procurement asks;
- Shifting towards prevention and early intervention such as testing for pre-eclampsia, vaccination for influenza, and modifying disease progression;
- Measuring the impact of digital approaches supporting selfcare;
- General practice carbon calculator to identify and manage non-clinical emission hotspots.

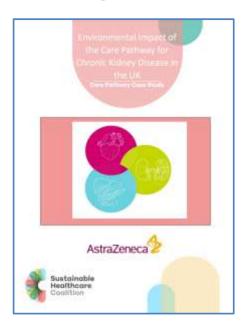
General practice carbon calculator Boehringe Ingelheim A practical calculator for general practices Decarbonising Life Sciences: 25th November 2025

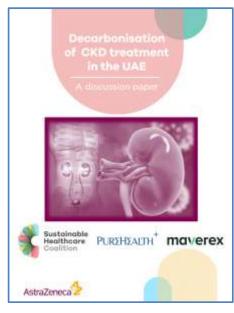
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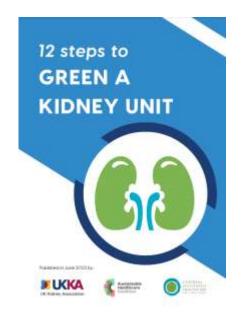


Applying Insight for Collaborative A

Providing insight for sustainable kidney care:



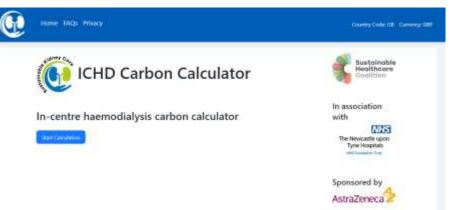




https://shcoalition.org/environmental-impact-of-the-carepathway-for-chronic-kidney-disease-in-the-uk/

rces/12-steps-green-kidney-unit

https://networks.sustainablehealthcare.org.uk/resou



https://ichdcarbon.org/









Clinicians Driving Innovation Through

Understanding pathway impacts and shaping products and services through procurement GREEN-Y

Target Unmet Need =	Engage (global market for innovative products / services)	Procure Novel products / services
 ✓ State Goals ✓ Vet by procurement experts ✓ Incorporate expert feedback ✓ Create / 'Joint Statement of Demand' draft 	 Stakeholder consultation (kidney community, later industry) → Incorporate feedback Supplier / industry consultation → Incorporate feedback 	 Finalize strategy & update JSD with endorsing societies Distribute initial generic JSD to stakeholders Distribute JSD to supply chain Initiate development of product-specific JSDs
	INNOVATIV	



Sustainable

Healthcare





- haemodialysis acid concentrates
- reverse osmosis systems
- dialysis-related consumables
- innovative dialysis systems

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Source: Stigant CE, Barraclough KA, Harber M, Kanagasundaram NS, Malik C, Jha V, Vanholder RC. Our shared responsibility: the urgent necessity of global environmentally sustainable kidney care. Kidney International, 2023 Jul 1:104(1):12-5.: Whyles G, Van Meerveld H, Nauta J. Forward Commitment Procurement: The European Journal of Social Science Research, 2015 Jul 3;28(3):293-311.

Patient Care Pathway Resources

- Development of online 'knowledge hub' on SHC website
- One-stop portal with easy to use, step-by-step guide, carbon calculator tool, worked examples, case studies
- Enables simple pathway carbon footprint calculation for carbon hotspot identification enabling data to drive change



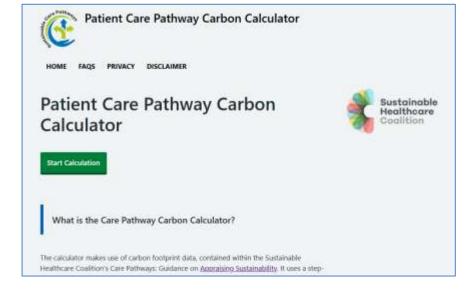


https://shcoalition.org/sustainable-care-pathways-knowledge-hub/



https://carepathwaycarbon.org/







The SMI: Accelerating the Delivery of Net Zero Health

The Sylainable Markets Initiative (SMI) is the world's go-to private sector organization for sustainable transition. With the vision of its founder, His Majesty King Charles III, and its unique convening power, the SMI facilitates action between world leaders and CEOs to position sustainability at the heart of global value creation. Level Health Systems Task Force with members from across the healthcare ecosystem:

Sustainable Markets Initiative

Leverage digital health solutions to decarbonise clinical trials

- Commit to a common clinical trial footprint framework by 2023
- Measure and report on phase 2 & 3 clinical trial emissions by 2025
- Set trial emission reduction targets for 2030 at the latest
- Incentivise CROs/ suppliers to commit to a framework to measure and reduce emissions
- Target 90%+ of trials starting in 2025 to include a review of how digital solutions can reduce emissions





Adapting a care pathway approach: creating a standardised assessment to estimate emissions from

clinical trials

To create a sector framework:

- Methodology and guidance to assess and report on carbon footprint of clinical trials
- In support of reporting of footprint, an openaccess tool with activity-based data to identify emission hotspots

Sustainable



Milestones

- Methodology and guidance published Q1 2024
- Open-access tool launched Q1 2025
- Engagement with key stakeholders as part of process to build awareness, acceptance and deployment
- Expanded database and Knowledge Hub in 2025

Method, Guidance, Data and Tod







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Clinical Trial Carbon Calculator

What is the Calculator?

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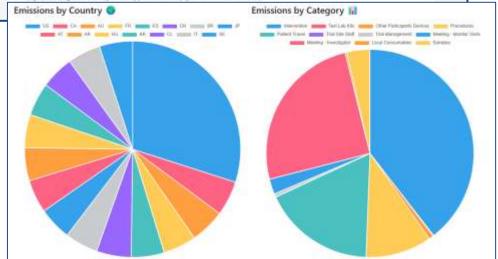
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Low-carbon clinical trials resources and an invitation to

Sustainable Clinical Trials Knowledge Hub



Knowledge hub:

https://shcoalition.org/clinical-trials/



What is the Clinical Trials Hub? Assessing a Clinical Trial Taking Action with the Carbon Calculator Building Sustainability into Trial Design

Join the Community of Practice

Clinical trial carbon calculator:

https://clinicaltrialcarbon.org/











Achieving Net Zero: All have a Role to Play in Decarbonisation

Decarbonisation needs to become an integral part of how all stakeholders assess options to deliver high quality, patient centric care. Health systems are complex, and all stakeholders need to be involved in designing and adapting solutions – with each having a role to play.



Clinicians and healthcare professionals:

- Implement guidelines focused on prevention & early intervention
- Optimise investigation, prescribing & treatment
- · Use lower-emission treatments when available & safe
- · Implement recommendations to decarbonise their own care settings
- · Support increased sustainability education for healthcare professionals



Government and policymakers:

- Pass policy that enables a green transition in health systems
- Fund emissions reduction initiatives in healthcare settings
- Enable the use of digital solutions to improve health and reduce emissions
- · Support healthy, low-carbon lifestyles

Health authorities & payers:

- · Align coverage to reduce emissions
- Promote healthy lifestyles

Patients and patient groups:

- Share information on how patient care options impact the climate
- Empower patients to explore and align on green care options with healthcare professionals



Providers & facility managers:

- Identify emissions hotspots & set targets
- Increase energy efficiency & switch to greener forms of energy
- Decarbonise transport by electrifying fleets
- Reduce emissions from hospital waste
- · Educate staff on emissions reductions
- · Design carbon neutral facilities

Regulatory bodies:

 Adopt green criteria in new treatment approval (e.g., green labelling), including CO₂e as a key metric

Pharma, biopharma, med-tech:

- · Publish product-level emissions date
- Decarbonise own operation & supply chain
- Redesign products to reduce their cabon footprint
- Invest in prevention & early detection



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Lessons from Evidence-Based Practice: How to Be?



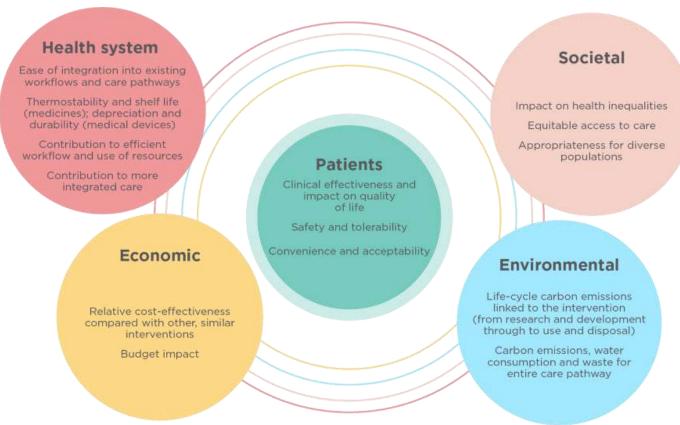


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Developing a Comprehensive Vision of Value

Presenting the case for why environmental impact should be a component of value-based care



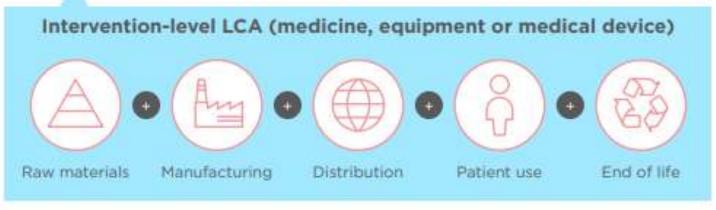




The Need to Assess The Impact Across the Whole Care

Pathway







Invitation to co-create solutions: guiding principles for all

Work together to create a methodologically sound, transparent approach which rewards innovation to lower environmental impact whilst prioritising health outcomes and access:

- Patient health outcomes come first Advancing environmental goals should never come at the expense of improving patient outcomes.
- Take a care pathway approach to measurement

Assessing the environmental impact of a given health intervention must take a comprehensive approach, looking at the context within which health interventions are used and their impact over time.

access

We need to safeguard against unintended consequences where added requirements by HTA agencies could lead to delays in patient access.

- Take a multi-stakeholder approach
 - HTA agencies and academia should work closely with industry, payer, patient and carer organisations, and professional societies to build consistent and feasible methodologies, and evaluate their application in practice.
- Ensure open communication and transparency

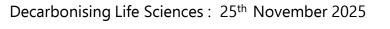
Getting this right will take time and must be guided by collaboration and dialogue between all stakeholders.

Build environmental literacy

We must all work together with patient organisations and professional societies to facilitate informed care choices for patients, and ensure patient perspectives are appropriately reflected in discussions about evolving HTA and other decision-making frameworks that will affect their care.

Protect innovation and patient

Sustainable



Conclusions and Recommendations for Action

Trusted partnerships join up the system and accelerate change through innovation:

- Action is needed across the whole value chain: supply chains must be a key focus for decarbonisation and understanding their impact can drive innovation through procurement;
- Measuring impact with consistent metrics demonstrates that change is possible by identifying hot spots and bringing a new lens to old problems of how care and research can be delivered;
- Reimagine system rules so that quality is based on environmental impact as well as clinical outcomes & cost which are often mutually reinforcing goals;
- Cross-sector collaborations encourage open-minded conversations with common purpose, seek new perspectives and possibilities from clinicians and patients, and will be critical for future success;
- Act now with an experimental mindset and learn by doing.













Optimise existing care pathways

Beyond the Evidence: Leadership, Values, Choices and Decisions



















Say hello...

We are always open to conversations and engagement with like-minded organisations we can collaborate with on common agendas.

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Keith Moore, Progamme Coordinator Keith@shcoalition.org 07584 162 437

