



**Sustainable  
Healthcare  
Coalition**

# **Sustainable by Design: Accelerating greener healthcare through the power of collaboration**

**Dr Fiona Adshead**

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**Decarbonising Life Sciences, 25<sup>th</sup> November 2025**

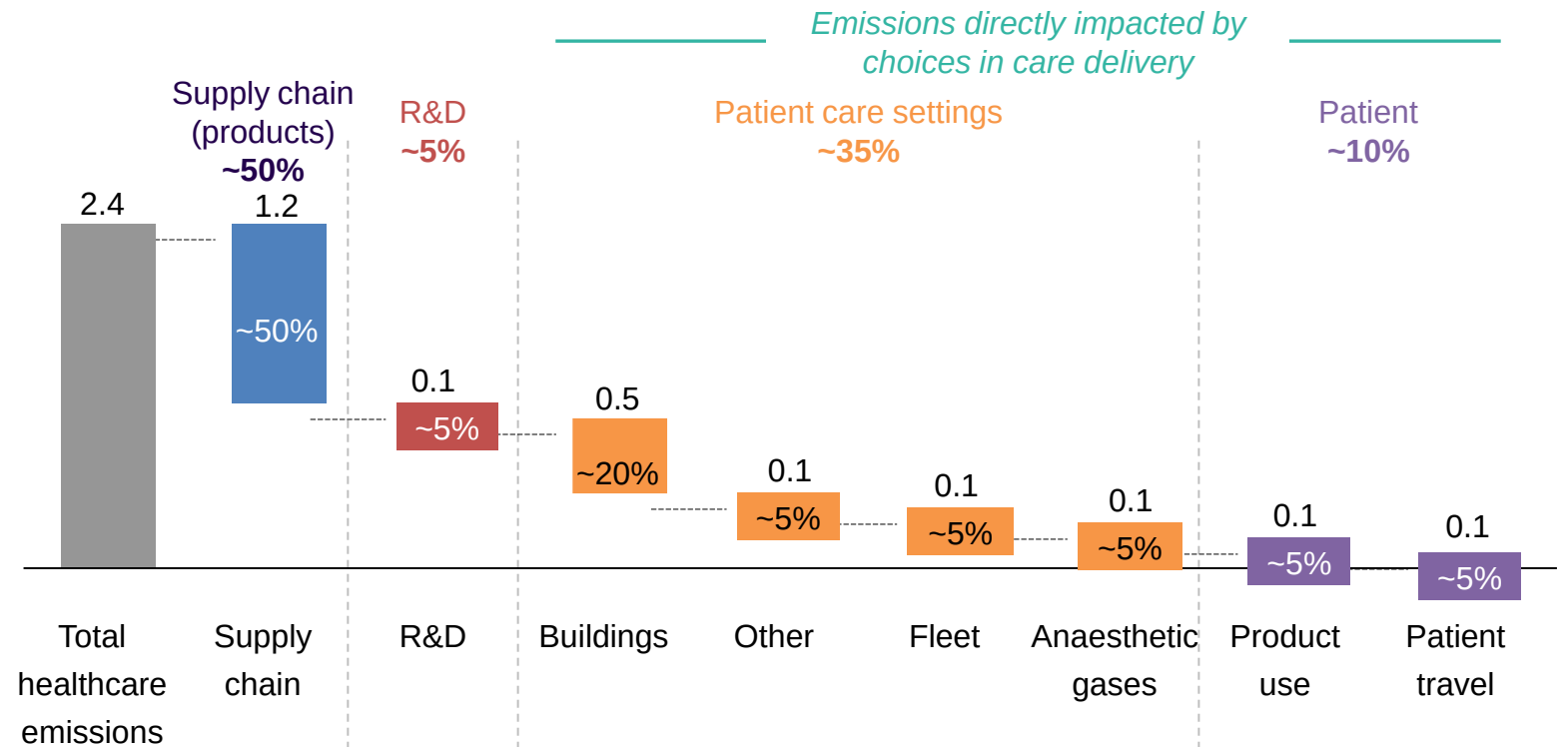
# Context: The healthcare sector, whose mission is to protect and promote health, is responsible for almost 5% of global GHG emissions



**Healthcare's climate footprint is equivalent to ~5% of global net emissions<sup>(1)</sup>**

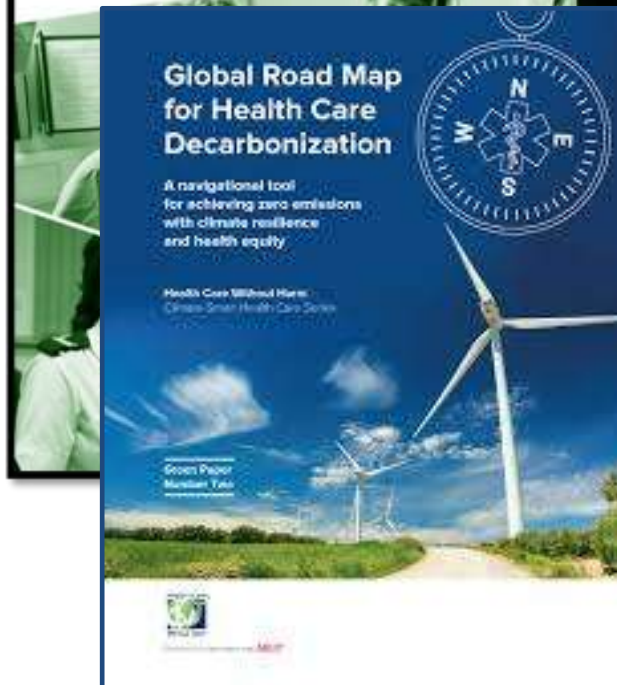
- If the health sector were a country, **it would be among the top 5 largest emitters on the planet<sup>(2)</sup>**
- The global health care climate footprint is **equivalent to the annual greenhouse gas emissions of 500+ coal-fired power plants<sup>(2)</sup>**

**Choices in patient care have direct impact on ~45% of healthcare emissions (gt CO<sub>2</sub>eq)<sup>(1)</sup>**



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

# Net Zero: the inevitable future of healthcare

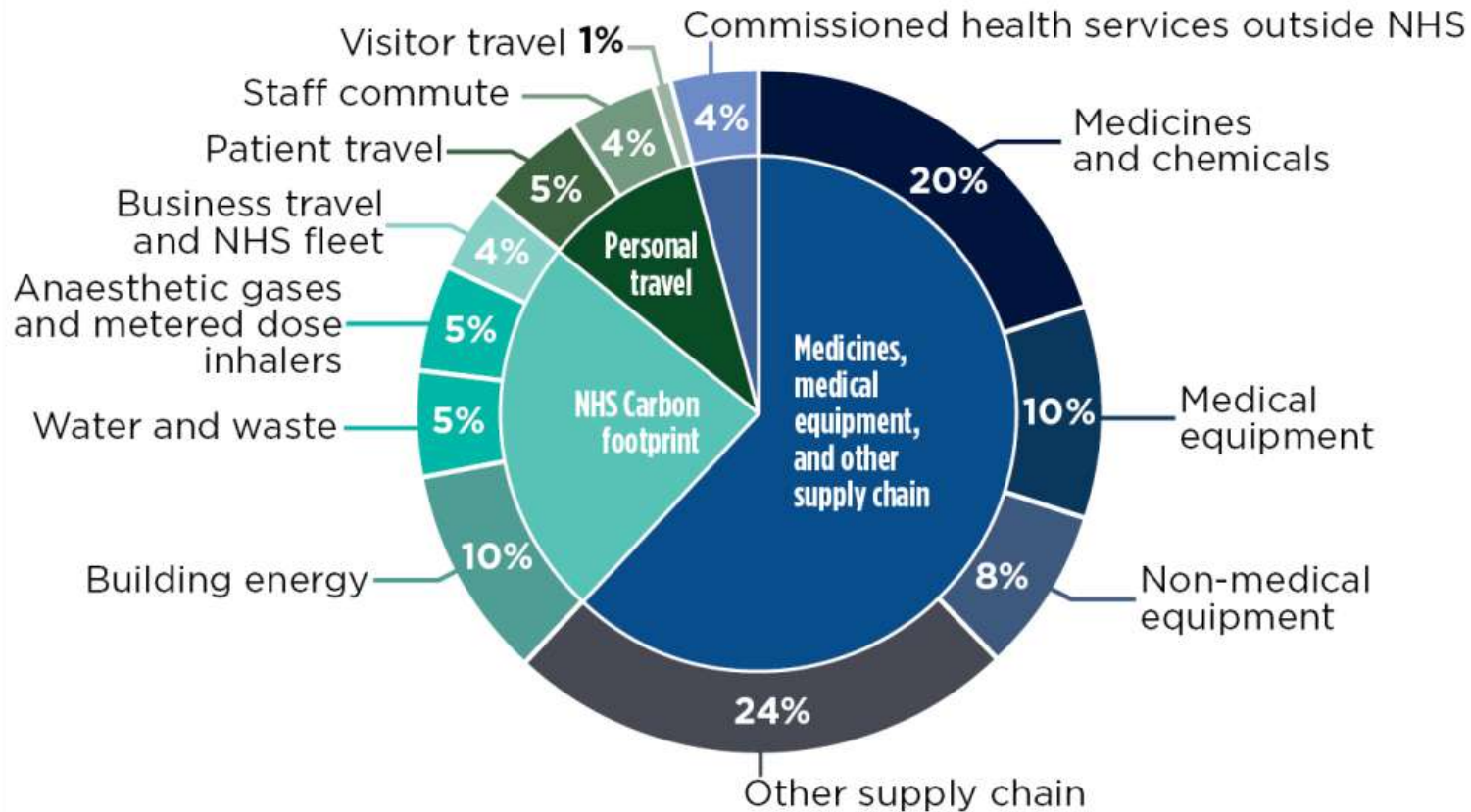


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# The Imperative to Shape the Supply Chain

Fig 1. Sources of carbon emissions by proportion of NHS carbon footprint



Source: NHS England (2020)

*Policy Measures -  
fiscal and  
regulatory  
Prohibit or prevent*

*Reporting regulations*

*Tax & incentives*

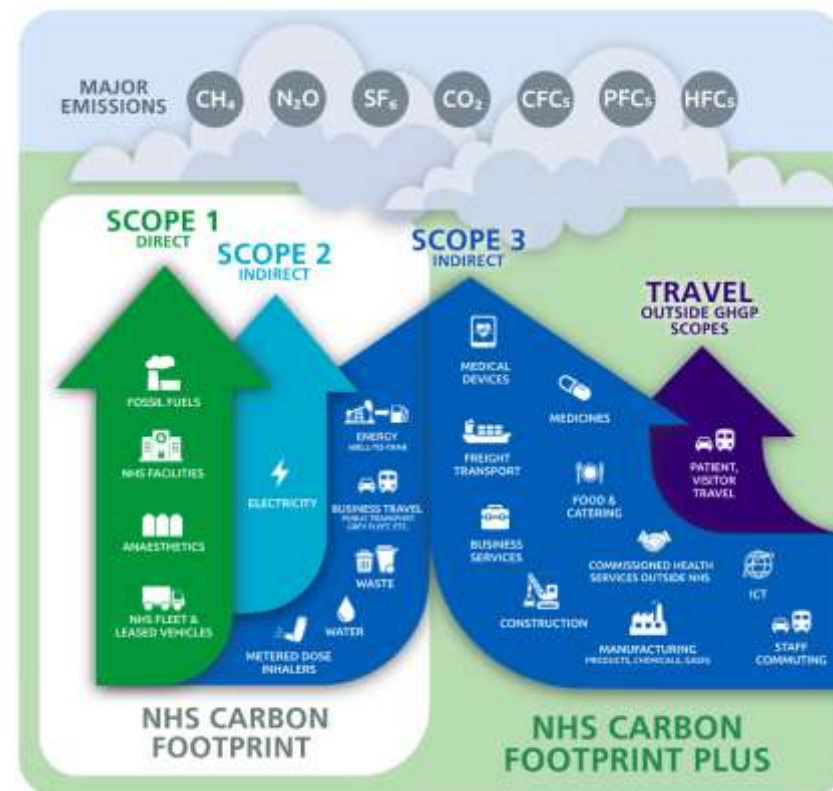
*Procurement*

# Net Zero: Setting health system expectations through

## NHS Net Zero Supplier Roadmap



Published November 2023 | [england.nhs.uk/greenemhs](https://england.nhs.uk/greenemhs)



# The Race to Zero



## The Carbon Impact of Biotech & Pharma

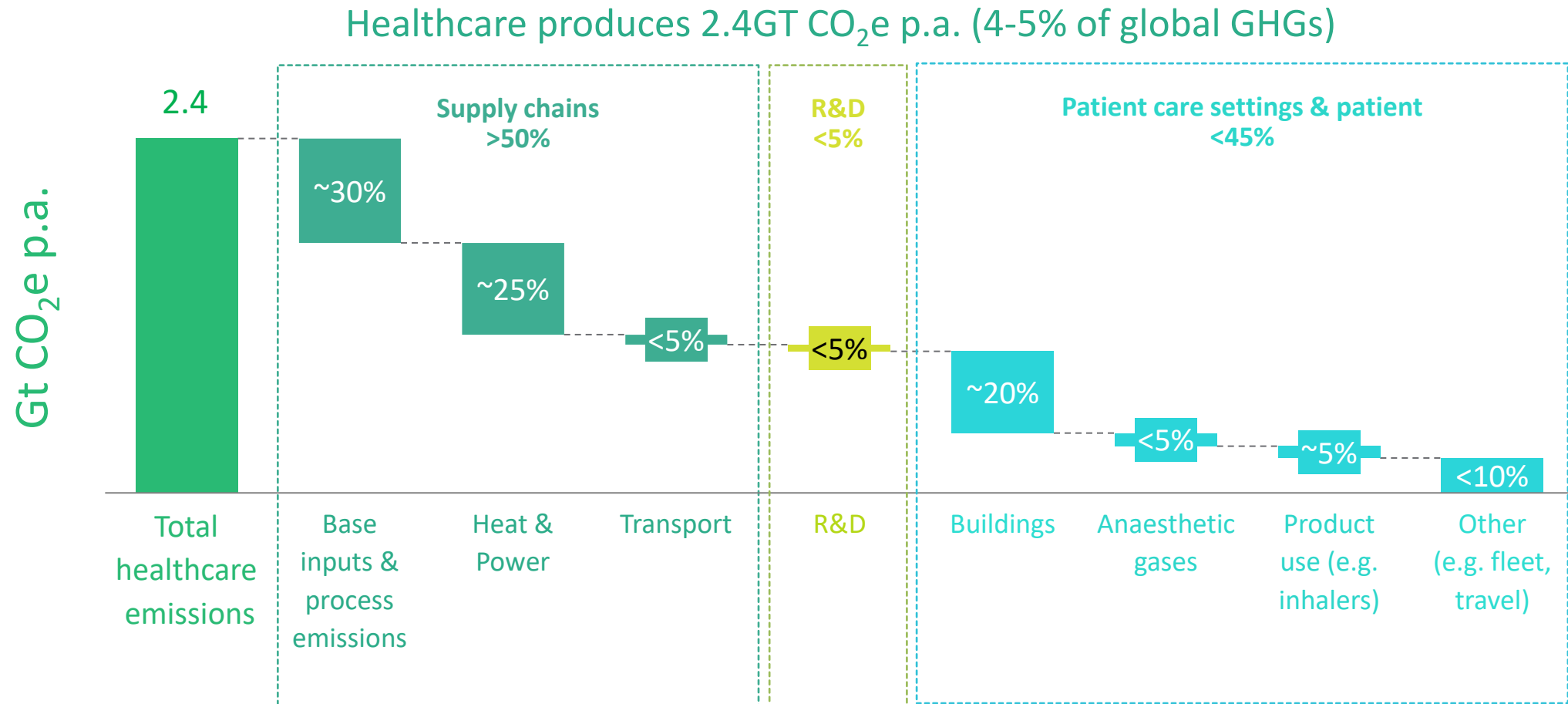
COLLECTIVE ACTION  
ACCELERATING PROGRESS  
TO THE UN RACE TO ZERO

*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*



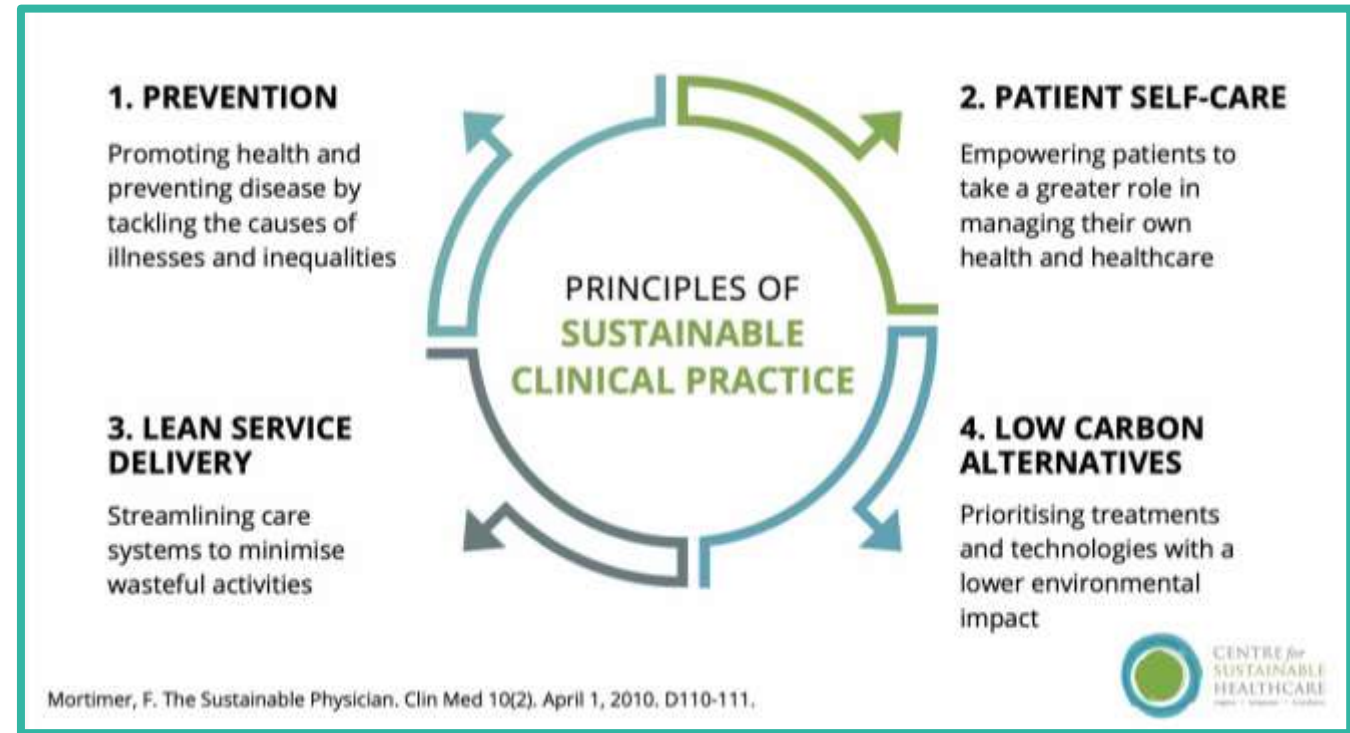


# Sustainable By Design: Innovative Action Needed Across the Value Chain



Source: Healthcare without harm/Arup (2019); Healthcare without harm/World Bank (2017); UK National Health Service (2020); The Lancet Countdown (2020, 2018); Environmental research letters (2019); Health affairs (2020); BCG analysis

# 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/> (Accessed November 2023)

Centre for Sustainable Healthcare. What we do. 2023. Available here: <https://sustainablehealthcare.org.uk/what-we-do> (Accessed October 2023)



# 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.



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



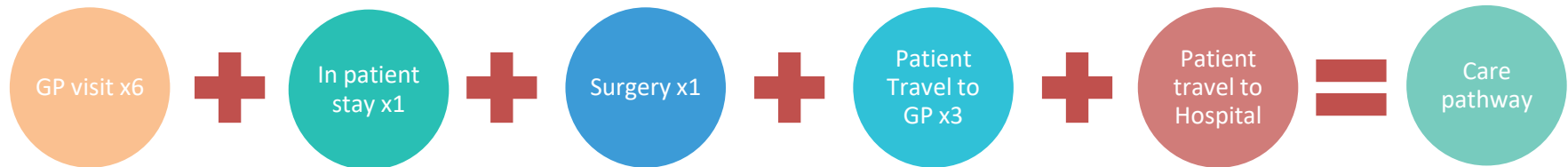
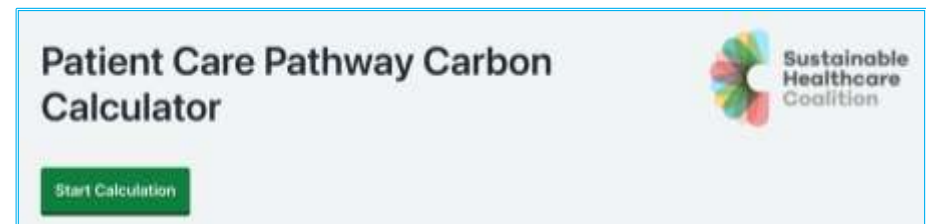
# Measuring the impact of care to drive change

- 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;
- Understand the current footprint of services and how **innovation can transform healthcare systems** through **case studies** that visualise care and **demonstrate impact**;
- 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



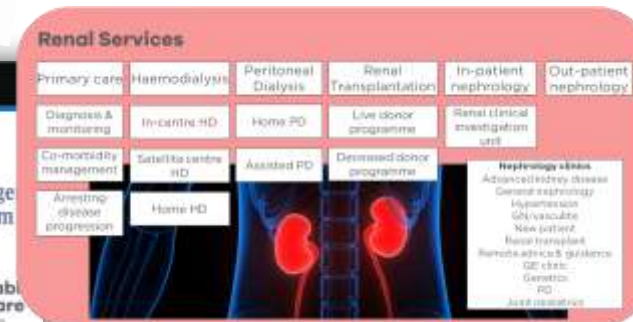
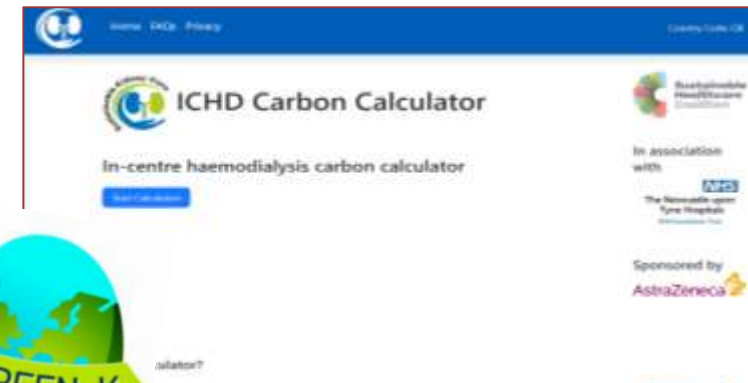
# Clinicians Driving Innovation

*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.



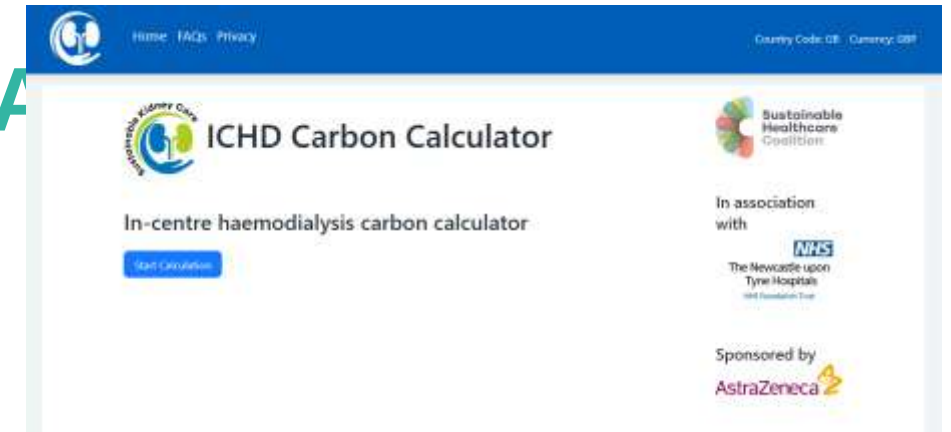
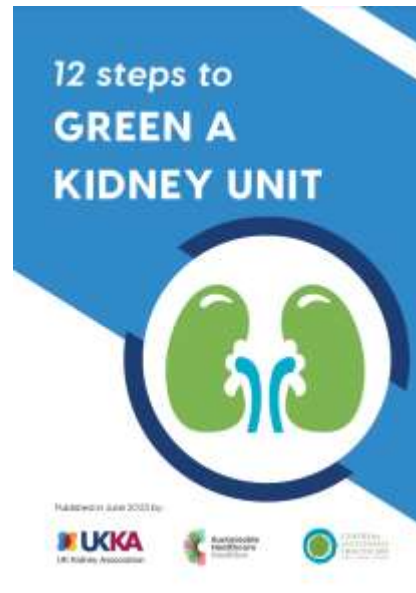
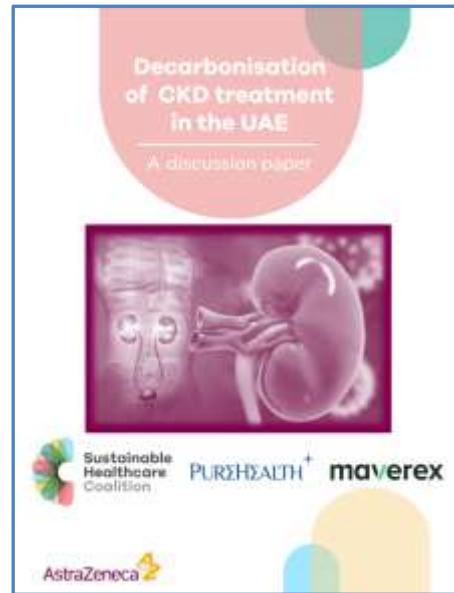
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# Applying Insight for Collaborative A

*Providing insight for sustainable kidney care:*



<https://ichdcarbon.org/>

**KitNewCare**  
Sustainable Care, Lasting Impact

**UKKA**  
UK Kidney Association  
Sustainable Kidney Care



<https://shcoalition.org/environmental-impact-of-the-care-pathway-for-chronic-kidney-disease-in-the-uk/>

<https://networks.sustainablehealthcare.org.uk/resources/12-steps-green-kidney-unit>



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# Clinicians Driving Innovation Through

## Procurement

Understanding pathway impacts and shaping products and services through procurement



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



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# 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 Systems

The Sustainable 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.

**Sustainable  
Markets  
Initiative**

Commitments of CEO-level Health Systems Task Force with members from across the healthcare ecosystem:

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



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**Sustainable  
Markets  
Initiative**

CEOs from seven global healthcare companies have signed an Open Letter to address the 100 million tonnes of carbon dioxide equivalent emissions produced by clinical trials every year.

Read the Open Letter at [sustainable-markets.org](https://www.sustainable-markets.org)

<sup>1</sup> Commitments as stated in SMI press release, 3 Nov 2022 : <https://www.sustainable-markets.org/news/seven-pharma-ceos-announce-new-action/>

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

## Vision

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 open-access **tool** with **activity-based data** to identify emission hotspots

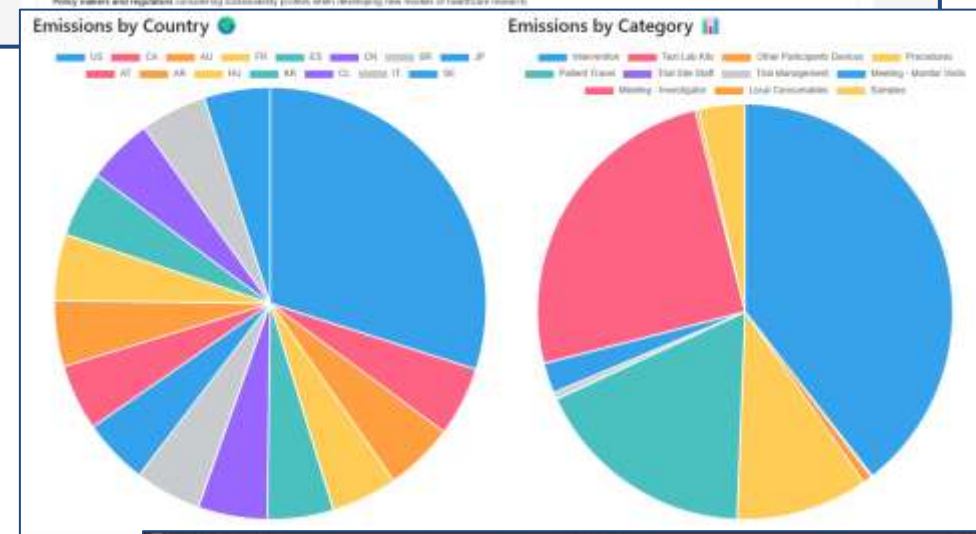
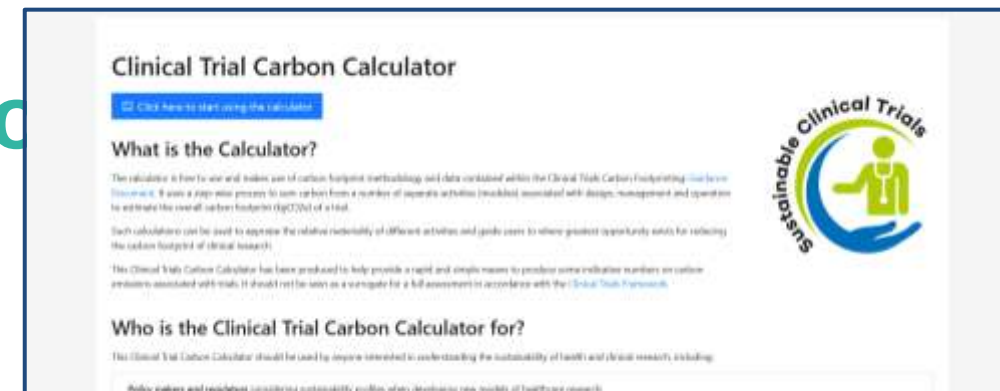
## Key organisations involved



## 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 Tool

[illegible]



# Low-carbon clinical trials resources and an invitation to

## Sustainable Clinical Trials Knowledge Hub



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

## Knowledge hub:

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



## 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 CO<sub>2</sub>e as a key metric

## Pharma, biopharma, med-tech:

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

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Source: [Health Care Without Harm](#), [WHO](#), [Academic Literature](#), [BCG Analysis](#) from SMI Publication, [Decarbonising Patient Care Pathways: How Choices In Patient Care Can Drive Reduction in Carbon Emissions](#) ( <https://a.storyblok.com/f/109506/x/88fe7ea368/smi-hstf-pcp-whitepaper.pdf> )



# Lessons from Evidence-Based Practice: How to Be?



Collaborative  
Mindset



Experimental  
Mindset



Action  
Mindset

1

~~CHANGE  
THE RULES~~

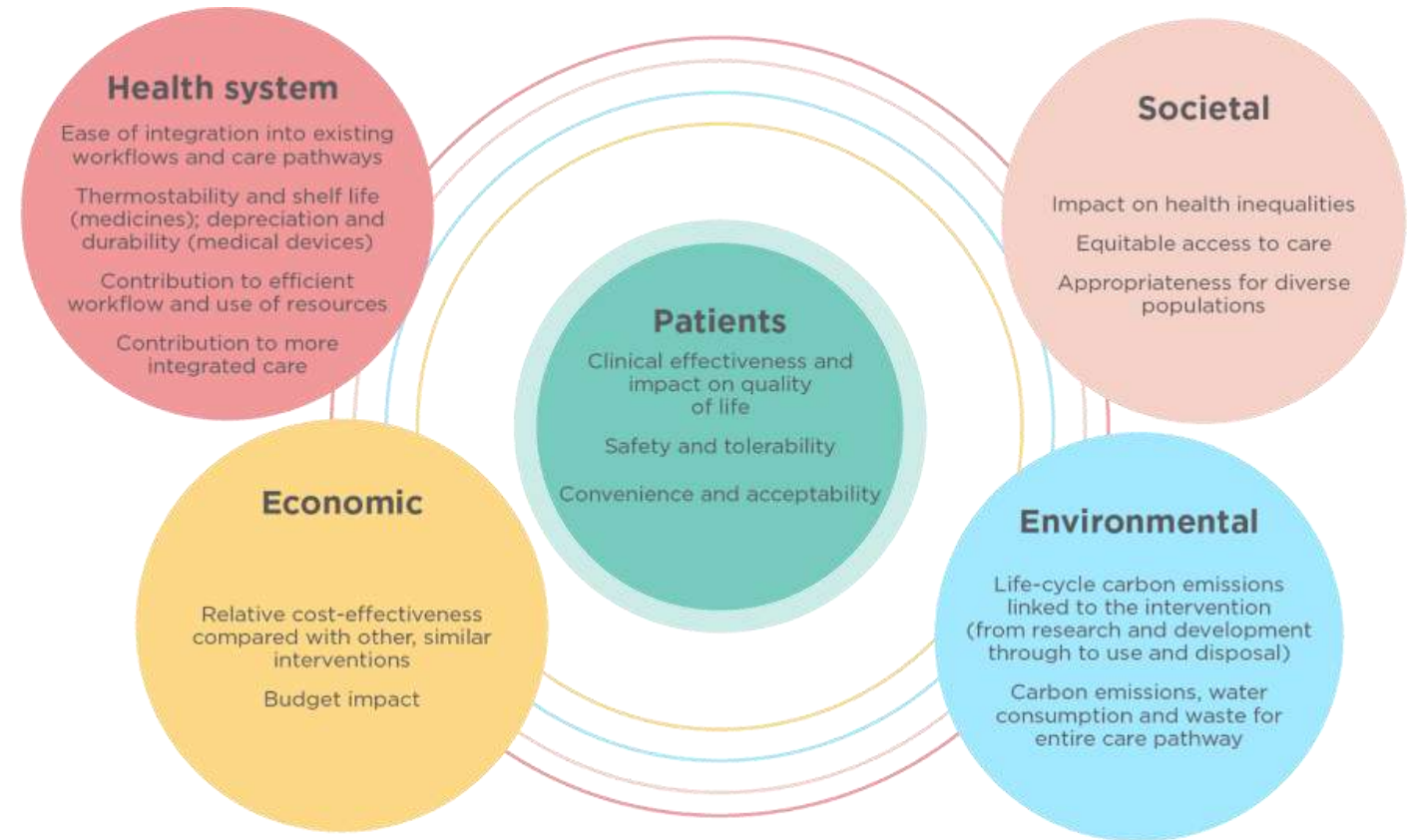
**BACK  
TO THE  
FUTURE**



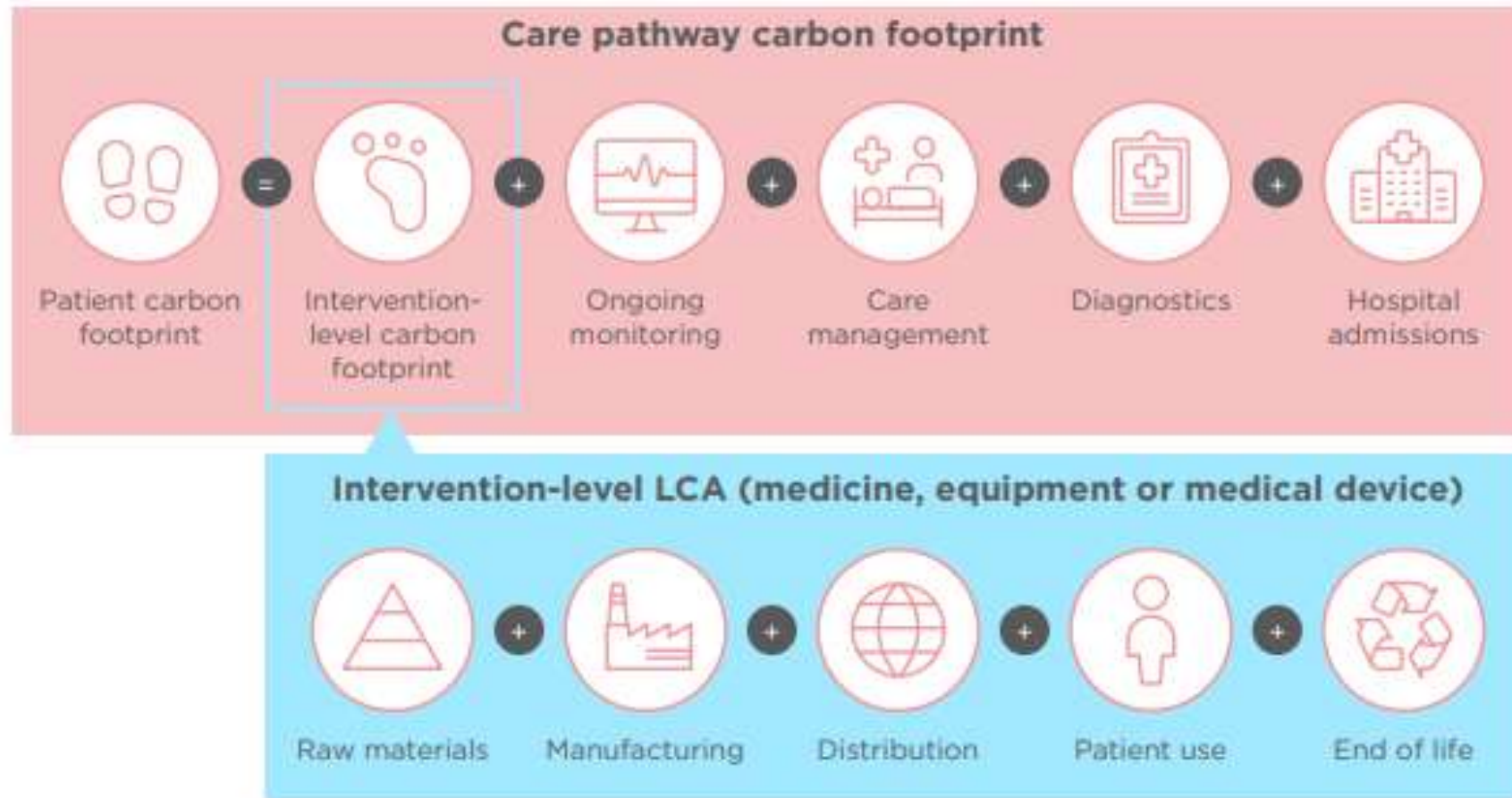


# Developing a Comprehensive Vision of Value

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.

- **Protect innovation and patient**

## **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**

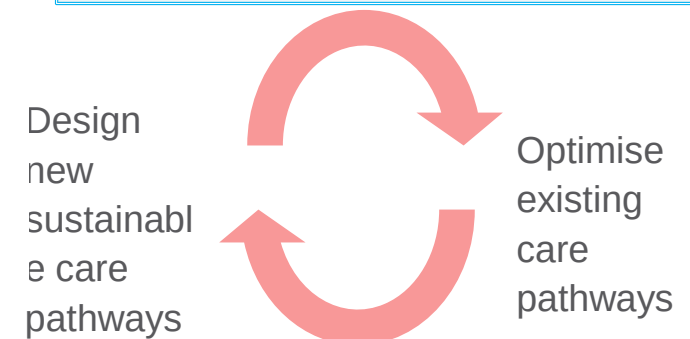
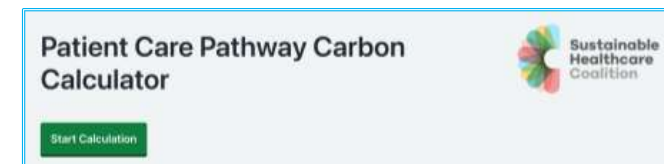
We must all work together with patient organisations and professional societies to facilitate informed care choices for patients, and ensure patient perspectives are appropriately reflected in discussions about evolving HTA and other decision-making frameworks that will affect their care.



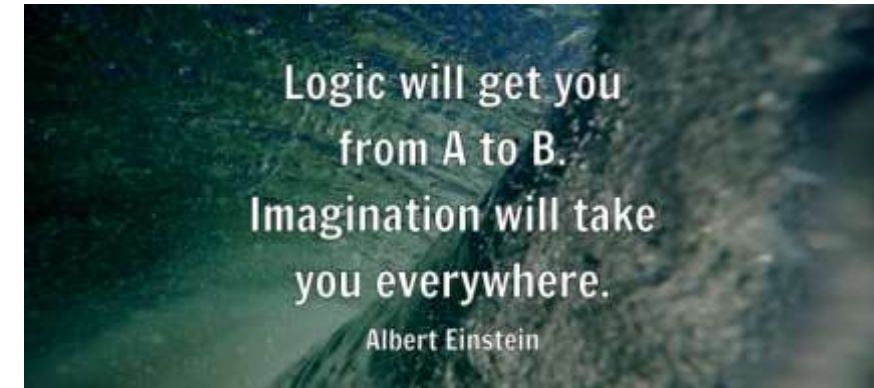
# Conclusions and Recommendations for Action

*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.



# 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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