



PHILIPS



County Durham
and Darlington
NHS Foundation Trust

Working together to **green critical care**

How County Durham and Darlington NHS Foundation Trust (CDDFT) partnered with Philips to undergo a 360-sustainability assessment; identifying improvement and optimization opportunities to reduce carbon footprint and material waste in its Intensive Care Unit (ICU).

Background and challenges

Healthcare's environmental footprint is a global problem. Many organizations are recognizing that they need to take urgent steps to reduce their impact, whilst planning how to provide holistic care in the future.

In the UK, it's reported that the National Health Service (NHS) accounts for 4% of the UK's carbon dioxide (CO₂) emissions¹ and is responsible for around 20 million tonnes of CO₂ emissions annually². It is undergoing a journey to be the world's first net zero health service, with a target of reaching net zero by 2040 for emissions it controls directly and 2045 for emissions it can influence.

But the NHS can't do this alone, especially as 62% of emissions are identified as 'Scope 3' (indirect). To succeed, there must be significant collaboration

across the public and private sectors, including suppliers and partners. CDDFT understands that a sustainable future for the Trust and the wider NHS will be one that embraces partnerships and innovation; and identifies ways of driving the highest quality clinical care through environmental improvements.

Philips was the first private-sector organization to approach CDDFT, offer a collaborative hand, and support its aims to become an exemplar Trust for environmental sustainability in human healthcare.

We share a common purpose: to enable sustainable high-quality healthcare that improves, maintains, or restores health; is affordable to all now and in the future; while minimizing negative impacts on the environment.

Sustainable healthcare challenges in the UK

**£1,621
per bed,
per day³**

UK critical care
is expensive

**125kg  emissions
per bed,
per day⁴**

UK acute care CO₂ footprint makes up **56% of the NHS footprint**, with critical care being a part of this

**+9% demand for
critical care⁵**

Unlike most other categories of hospital bed in the NHS, the total number of critical care beds has increased

1. <https://www.england.nhs.uk/greenernhs/national-ambition/>

2. <https://www.kingsfund.org.uk/projects/time-think-differently/trends-sustainable-services>

3. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7045184/>

4. [https://www.thelancet.com/pdfs/journals/lanph/PIIS2542-5196\(20\)30271-0.pdf](https://www.thelancet.com/pdfs/journals/lanph/PIIS2542-5196(20)30271-0.pdf)

5. <https://www.kingsfund.org.uk/publications/nhs-hospital-bed-numbers>

Ambitions and solutions

Trust ambitions

County Durham and Darlington NHS Foundation Trust is one of the largest integrated care providers in England, employing over 7,000 members of staff and serving a population of over 650,000 people.

The Trust recognizes that it has a key role to play in reducing its carbon emissions and, as an anchor institution, support the local community in adapting to climate change.

"We are still very much in the beginning stages of our sustainability journey, but working with Philips, who also has a strong interest and footing in sustainability, has complemented our efforts and opened our eyes to other key focus areas. The team that we worked with are a credit to the business – amazing individuals, who were focused, hard-working and engaging, with unbounded enthusiasm."

Sue Jacques, Chief Executive, County Durham and Darlington NHS Foundation Trust



"We are dedicated to helping the NHS achieve its ambition to become the world's first net zero health service by 2040. For us, this is more than a pledge, as we're taking real action with forward-thinking Trusts like County Durham and Darlington. This piece of work was the first of its kind for us here in the UK and we're excited to continue to drive success within this partnership."

Stephen McMillan, Solutions Leader, Europe and UK&I, Philips

The solution

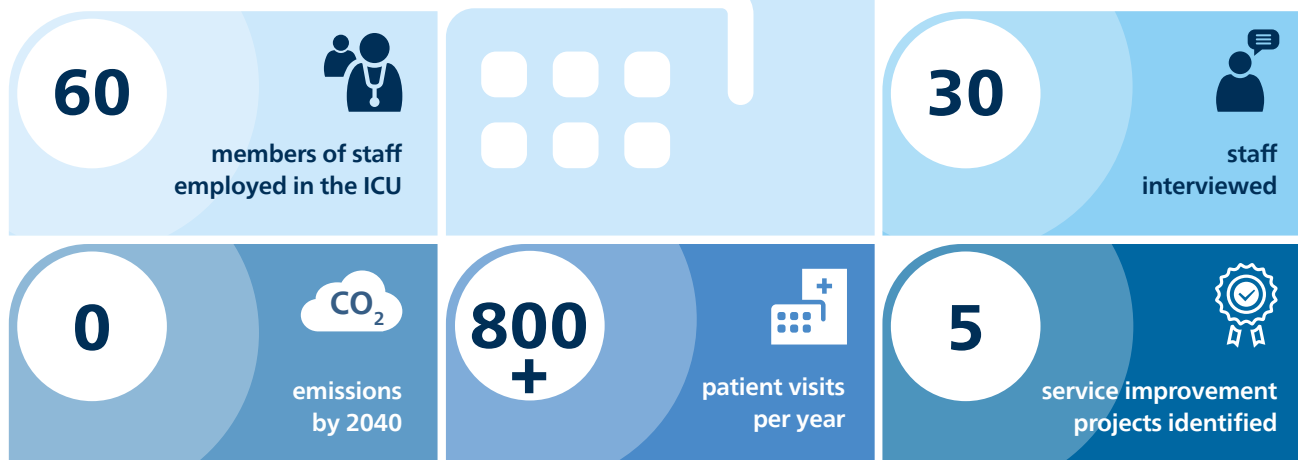
'Greening critical care' is a joint response between the Trust and Philips. Through the Trust's existing Managed Service strategic partnership in radiology, Philips suggested a holistic analysis of the existing care environment with a focus on material and waste management.

The aim of the program was to identify critical opportunities to reduce carbon footprint and material waste across patient care pathways and staff workflows.

Critical care was strategically chosen as a focus area as per patient, it is a high consumer of electricity and single use items and is one of the most expensive types of care. The program fosters sustainable optimization across all aspects of critical care: clinical process, supply chain, technology, and healthcare environments.

Project overview

Project in numbers



360 collaborations

Consultants with environmental and clinical expertise from the Philips team applied a 360-degree methodology, including extensive data analysis and observation, as well as discussions with medical and administrative staff in the ICU. This took place over a six-month period.

In addition, the Philips team interviewed stakeholders from areas such as clinical services (nurses, physicians, physiotherapists, rehabilitation specialists), facility, waste and sustainability management, as well as procurement, supply chain and real estate.

In partnership with staff at CDDFT, Philips consultants analyzed current state data, made on-site field visits for key CDDFT stakeholder interviews, and held shadowing and observation sessions in the areas of clinical workflow, supply chain and procurement, medical technology, and experience design.

"There was an early realization that we shared the same understanding about what collaboration really means as with climate change, we either all cross the line together or no-one crosses it at all. The team were amazing, professional, accessible, and thought holistically. They didn't just come in and say, 'let's talk carbon', they were open to discuss our interests too. In fact, because of the collaborative work we undertook on the ICU and the relationship we forged, we were able to recommend Philips sign the Aspen Institute's Cargo Owners for Zero Emission Vessels (coZEV) ambition statement; sending a signal of urgency across industries to accelerate decarbonization of the maritime value chain. It was the first healthcare supplier organization to sign, and we hope it will pave the way for others."



Dr Richard Hixson, Consultant in Anaesthesia and Critical Care Medicine at Country Durham and Darlington NHS Foundation Trust

Key areas for analysis

The experienced Philips consultants went through an extensive fact-finding exercise, using proven data visualization tools to analyze the information, exploring the following areas:

- **Clinical process** – patient flow in, flow-through and flow out of the ICU and the impact this had on carbon and materials consumption.
- **Supply chain** – ways to reduce waste and CO₂ impact from single use items.
- **Staff experience** – ways to improve staff engagement in the topic of sustainability.
- **Medical technology** – ways to reduce power, as well as utilize central integration and Artificial Intelligence (AI).
- **Spatial** – ways to optimize space, adapt existing building stock and climate management.



360 collaborations

The team then produced a detailed report, highlighting key sustainability opportunity areas and recommendations for targeted improvements, which will now serve as a blueprint for further change. These were showcased at a joint workshop event, with a particular focus on medical equipment, estates and facilities, clinical operations, and supply chain. The following areas were outlined, alongside specific key performance indicators (KPIs) to measure:

- **ICU discharge optimization:** including resolving bottlenecks, optimizing staff capacity planning, reducing resources that patients do not require when getting ready for discharge, and reuse of consumables. Example KPIs: patient outcomes realized per CO₂ emissions produced, total CO₂ emissions produced per year.
- **Reducing waste in the supply chain:** including reducing the CO₂ and waste volume impact associated with single use items; saving costs by using less and moving to reusable equipment where possible. Example KPIs: number of projects / improvement cycles conducted, percentage of consumables re-used in ICU and total volume of consumables used.
- **Staff experience:** driving cultural change by training staff on the latest sustainability requirements, identifying sustainability ambassadors, enabling staff to share ideas, measuring success, and recognizing staff for their efforts. Example KPIs: number of staff trained on sustainability, number of sustainability projects initiated by staff.
- **Medical technology:** reducing excessive noise in the ICU from patient alarms, as well as power reduction and effective management of assets. Example KPIs: reduction in measurable power waste.
- **Strategic refurbishment masterplan:** reducing CO₂ emissions by appraising the existing building stock and exploring ways to retain and adapt. Example KPIs: extending lifespan of existing buildings, reduction of costs and CO₂ emissions.

Taking action

During the workshop, stakeholders from Philips and CDDFT discussed the importance of the findings and demonstrated a commitment to driving them forward. The Trust is already implementing some of the recommended initiatives, including:

- Sustainability reminders in the daily ICU huddle
- Environmental impact assessment line in daily reviews led by Dr Richard Hixson
- Pharmaceutical reviews – ensuring drugs prescribed are still required and when they are, assessing whether they can be given via the enteral rather than the intravenous route to reduce waste
- Only opening equipment when needed to prevent unnecessary waste
- Ensuring PPE use is appropriate to each patient, not a blanket policy
- Actively de-medicalising patients as their health improves, reducing frequency of monitoring and removing monitoring when clinically indicated
- Sustainability included in rolling Quality Improvement projects

In addition, CDDFT has achieved over 95% compliance with the NHS England net zero education module. The team are now planning to measure the impact of the interventions made.

“It was very helpful to be doing a piece of work that was structured in a different way to what we’ve done before, and it was a real delight for the teams that were working with Philips. Our report out session brought in key team members who had been involved, as well as senior management, and commitments were made to drive key changes and ensure they move forward. The relationship with Philips is going to be important for the next phase of our sustainability work and it’s great to have such a trusting, productive and innovative partnership.”

Sue Jacques,
Chief Executive, CDDFT

“The outcomes were enlightening. We knew there were going to be areas to address, but Philips took time to undertake quantitative analysis which validated our suspicions and provided outputs we could present back to the wider Trust. For me, I believe the quality of care we provide on the unit has improved because of the work, as well as through the direct way we serve certain groups of patients. For example, by looking at patient flow and de-medicalisation of patients, we are helping to ease demand on critical care by adjusting medication, removing monitoring that is no longer required and moving patients onto new pathways, in a positive way.”

Dr Richard Hixson, CDDFT



“Working with the team at County Durham and Darlington NHS Trust was a fantastic opportunity to not only support them with their sustainability goals, but also pilot a new proposition for Philips, which we are now excited to take to market. While the UK healthcare market has made good progress towards becoming more sustainable and less carbon-intensive, we are keen to support other Trusts in identifying critical sustainability patient and staff experience touchpoints and improvement & optimization opportunities, to reduce carbon footprint and material waste.”

Aylin Groenewoud, Senior Experience Lead Sustainability, Philips

Sustainable healthcare with Philips

As a leading health technology company, our purpose is to improve people's health and wellbeing through meaningful innovation, positively impacting 2.5 billion lives per year by 2030. We strive to make the world healthier and more sustainable and are committed to helping the NHS achieve its ambition to become the world's first net zero health service by 2040.

Acting responsibly towards the planet and society is part of our DNA, but we can't achieve this goal by ourselves. Since making this commitment, we've teamed up with governments, NGOs, hospitals, customers, consumers, and others to work towards this target, and have been involved with some incredible projects around the world.

Interested to learn more?

Let's talk. Even better, let's collaborate.

Strategic partnerships are long-term collaborations, delivered through a shared accountability model with joint commitment to goals, risk and performance. Through co-creation, we deliver future-proof solutions that solve your key challenges, improve outcomes, and contribute to the long-term success of your organization.

Learn more about Philips Strategic Partnerships:

www.philips.co.uk/healthcare/medical-products/partnerships

Visit the Philips Environmental, Social and Governance webpage:

www.philips.co.uk/a-w/about/environmental-social-governance.html

Visit the County Durham and Darlington NHS Foundation Trust website: www.cddft.nhs.uk

Find out more about the Cargo Owners for Zero Emission Vessels initiative: www.cozev.org

Results from case studies are not predictive of results in other cases. Results in other cases may vary.

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