

NHS
Blood and Transplant



Environmental
Sustainability in
Transplantation

RAG Meeting
14th May 2025
Mr John O'Callaghan
Consultant Transplant Surgeon
UHCW

The NHS and climate change

NHS is the first health system to embed net zero into legislation (Health and Care Act 2022)

Duty on all NHS organisations to contribute towards reaching environmental targets

- For emissions directly controlled by the NHS:
 - Net zero by 2040
 - 80% reduction by 2028-32
- For emissions the NHS can influence
 - Net zero by 2045
 - 80% reduction by 2036-39

ESIT Core team

- Chair: Matt Welberry Smith
- Co-chair: John O'Callaghan
- Rosa Montero
- Carrie Scuffell
- Laura Barton



NHSBT/ODT ESIT Working Group

Wider group

- Transplant Medicine
- Transplant Surgery
- Transplant Coordinators
- OTDT leadership
- British Transplant Society
- NHSBT Statistics
- NHSBT Sustainability Dept
- Centre for Sustainable Healthcare



Part of the OTDT Clinical Team within NHSBT

ESIT Green Champions Network
Launched April 2025



ESIT Vision and Mission

Vision

Enabling an environmentally sustainable future for transplant services in the UK

Mission

*Providing the UK transplant community with the **data, strategies and tools** needed to improve environmental sustainability in the delivery of transplant services*



Raise awareness and increase engagement to improve understanding and knowledge in relation to environmental sustainability



Influence long-lasting positive change and making change accessible through the development of toolkits, metrics and other resources.



Collaborate with partners to maximise opportunities for improvement and drive innovation

Activity to date

- Group creation (March 2023) and Formal launch (April 2025)
- 2025-28 Strategy
- Building partnerships
- “Top tips” document
- Overlapping work with Live Kidney Donor Network
 - Donor pathway analysis with Centre for Sustainable Healthcare
- Green Champions



Top Tips on Making Transplantation Green in your Unit



Blood and Transplant

Communicate and Engage

Set up a Green/Sustainability Working Group in your unit with leadership representation

- Consider designating Green Champions to drive projects forward - The Centre for Sustainable Healthcare has a wealth of resources to help your Green Champion engage colleagues [Centre for Sustainable Healthcare](#)
- Ensure broad involvement across the service. Examples include - e.g. anaesthetics, theatre management, outpatients, immunology services, dietetics, [psychology](#) and many others!
- Consider carbon literacy training
- Use the way that Quality Improvement activity can overlap with better sustainability
- Join the relevant sustainability networks through the [Sustainable Healthcare Network Hub](#) to share good ideas, opportunities, and encouragement
- Engage with Operational Delivery Networks [NHS England » Operational Delivery Networks](#) and other regional structures like Transplant Collaboratives on sustainability, sharing ideas, activity, and best practise
- Get your patients involved as patient ambassadors on sustainability [Community Green Ambassador Role Description \(kidney example\)](#)

Reduce and Decarbonise Travel

Patient Travel

- Aim to offer at least 25% virtual clinics
- Create / use one stop diagnostic / treatment hubs to reduce the number of visits
- Look into reducing aborted transport (e.g. hospital transport sent to patients who are away or already in hospital)
- Set up a regular review of hospital transport processes for your unit and a working group to reduce this overtime

Staff Travel

- Use clinics localised to the patients where possible to reduce overall travel
- Promote flexible working (including working from home where appropriate)
- Actively avoid non-essential flights (including for organ transportation)
- Use low carbon routes to meetings and conferences (<https://routezero.world/#/>)

Use of flights

- Make every effort to reduce use of flights whether for organ transportation, staff movement, ~~conferences~~ or supply chains

Adopt Green Theatres

- Adopt the Intercollegiate Green Theatre checklist ([green-theatre-posters-rcsed-a4-161022.pdf](#) and [Green Theatre Checklist](#))
- Anaesthetic considerations e.g. Total Intravenous Anaesthesia (TIVA) & re-usable equipment
- Preparation for surgery e.g. adoption of reusable textiles and reduction of water consumption
- Intra-operative equipment considering what is essential vs. optional: reduce, reuse, replace
- Post-operative care e.g. greener waste streams, recycling batteries/metals, power-off at close



Blood and Transplant

More Transplantation

- Find ways to increase the number of transplants in your particular patient population (both live [where appropriate] and deceased donors)
- Draw up specific and measurable targets to improve access to transplantation for disadvantaged groups, appropriate to the population the unit serves
- Improve organ utilisation – look at the [Organ Utilisation Group recommendations](#) and apply them to your unit
- For kidney units – remember that kidney transplants are greener than dialysis – pre-emptive transplants help even more
- Set measurable strategic targets to increase live donor transplantation

Improve Graft Survival

- Apply interventions that are known to reduce injury at transplantation and/or reduce post-transplant [damage](#)
- Apply evidence-based interventions to improve graft survival, and life year gains, in long term transplant care
- Make use of both prehabilitation and rehabilitation services around transplantation
- Focus on reducing poor concordance where appropriate

Get an Environmental Audit of Transplant Unit Buildings and Estates

Get estates and facilities for an environmental audit. This may have already happened in many Trusts. There are a lot of things that can lead to that help the Trust as well as the environment, for example:

- Retrofit buildings to reduce heat loss with cost effective insulation
- Improving resilience of the estate to cope with high temperature environmental [events](#)
- Utilise smart heating (appropriate temperatures e.g. when buildings are occupied vs empty)
- Switch all lights to LEDs
- Work with IT to ensure all monitors and computers are energy efficient


At a Trust level, there's even more that leaders can do:


Lead yourself in these areas or encourage your Trust leadership, and support them, in doing things like these:

- Decarbonise energy sources – aim for 100% renewable
- Improve the impact of procurement - this is a significant component of carbon footprint. Any significant or recurring purchases need careful consideration from an environmental perspective
- Banking – change what is funded by changing where funds are held - switching accounts away from banks that promote funding for fossil fuels or [single use](#) plastics. This matters at an individual level too - [www.bank.green](#)
- Promote engagement with innovations that improve sustainability, for example:
 - Support innovation in environmental sustainability in all areas
 - Smart theatres
 - Unmanned organ transportation
- Help the transplant unit green/sustainability group engage with the Trust level sustainability group and strategy
- Promote the known positive overlap between Quality Improvement activity and sustainability

ESIT strategy document





Blood and Transplant


 **Environmental Sustainability in Transplantation**


2025-2028 Strategy

Vision
Enabling an environmentally sustainable future for transplant services in the UK

Mission
Providing the UK transplant community with the data, training, resources, strategies and tools to improve environmental sustainability in their service delivery, and to increase the priority of environmental sustainability in UK transplantation as a whole.




Blood and Transplant



Environmental Sustainability in Transplantation (ESIT) Working Group Strategy

Key document acronyms:
ESIT: Environmental Sustainability in Transplantation
ES: Environmental Sustainability

Strategy Summary
There is a clear need for transformation of all NHS service to an environmentally sustainable footing

The ESIT working group will


- 1) Raise awareness and increase engagement around ES in transplant services
 - a. Grow the ESIT network of environmental champions equipped to promote change
 - b. Educate transplant professionals at all levels, and share best practise
 - c. Represent ESIT in national and international forums
 - d. Develop tools for professional, Trusts and services to use in ES in transplantation
- 2) Influence long lasting positive change
 - a. Review clinical pathways to identify opportunities for change
 - b. Develop dashboard metrics for use by transplant units
 - c. Develop and embed appropriate ES aspects in OTDT/NHSBT centre activity reporting
- 3) Collaborate with partners
 - a. Set up a multi-agency collaboration on ES in transplantation
 - i. Including, but not limited to: professional (BTS¹), sustainability (CSH²) and industry partners
 - b. Leverage funding for activities in all strategic arms
 - c. Source educational opportunities in ES for ESIT members
 - d. Provide consultative support both internally (NHSBT) and externally where appropriate


This is a living strategy that will evolve over time as we continue to develop our thinking. Our progress against our strategy, including any updates we make, will be published on our ESIT webpage.

Key workstreams

- Developing a network of green champions in transplantation
- Review of clinical pathways
- Toolkit and dashboard development
- Development of ES reporting to centres
- Setting up multi-agency Taskforce

2


Blood and Transplant



Strategy in full

The need for change

All human activity is climate relevant; the climate emergency faces all health services with the need to assess, plan, and adapt, adopting the most sustainable practices available. On 1 July 2022, the NHS became the first health system to embed net zero into legislation, through the Health and Care Act 2022. This places duties on all NHS organisations to contribute towards reaching environmental targets and reducing our collective impact on the economy, with two key overall targets:

With around 4% of the country's carbon emissions, and over 7% of the economy, the NHS has an essential role to play in meeting the net zero targets set under the Climate Change Act (Delivering a 'Net Zero' National Health Service).

- For emissions directly controlled by the NHS (the NHS Carbon Footprint), to reach net zero by 2040, with an ambition to reach an 80% reduction by 2028 to 2032
- For emissions the NHS can influence (our NHS Carbon Footprint Plus), to reach net zero by 2045, with an ambition to reach an 80% reduction by 2036 to 2039.

In 2022/23, the NHS facilitated almost 4,800 transplants, and in 2023 there were over 7,000 patients waiting for a transplant. The clinical transplant community has an important role in contributing towards environmental sustainability matters and embedding improvements within clinical practice.

Within transplantation there are serious challenges – organ shortages, growing transplant waiting list, and significant workforce shortages, alongside growing costs of service delivery. As innovative solutions and technologies are identified to support transformation within transplantation and deliver much-needed widespread improvements, the ESIT group will focus minds to ensure environmental sustainability is a golden thread throughout all transformations, making use of the most innovative environmental sustainability solutions at the same time.

As a group we strongly support preventive healthcare and improving population health, as this, in itself, unlocks improved environmental sustainability. However, there will always be a need for transplantation in the UK, and ESIT is essential to ensuring that we, as a transplant community:

Minimise our impact on the environment

Embed sustainability into clinical practice

ESIT will influence positive change to achieve these aims through raising awareness, providing educational resources, benchmarking and reporting of sustainability aspects for transplant units, and leveraging funding for clinical pathways analysis across donation, retrieval, transplantation and post-transplant care.

3

What are we going to do about it?

....in UK transplant services

- 1) Raise awareness and increase engagement around ES in transplant services
 - a. **Grow the ESIT network** of environmental champions equipped to promote change – using the ODT webpage and CSH network space as information repositories
 - b. **Educate transplant professionals** at all levels, and share best practise
 - c. **Represent ESIT** in national and international forums
 - d. **Develop tools** for professional, Trusts and services to use in ES in transplantation



**Raise awareness and
increase engagement** to
improve understanding and
knowledge in relation to
environmental sustainability

What are we going to do about it?

....in UK transplant services

- 2) Influence long lasting positive change
 - a. **Review clinical pathways** to identify opportunities for change, from an environmental sustainability perspective
 - b. **Develop dashboard metrics** for use by transplant units, as well as a supporting toolkit to help implement sustained positive change
 - c. **Develop and embed ES aspects in OTDT/NHSBT centre activity reporting**



Influence long-lasting positive change and making change accessible through the development of toolkits, metrics and other resources.

What are we going to do about it?

....in UK transplant services



3) Collaborate with partners

- a. Set up a **multi-agency collaboration** – including professional (BTS, LDN), sustainability (CSH), and industry partners
- b. **Leverage funding** for activities in all strategic arms
- c. **Source educational opportunities** in ES for ESIT members (2025/26 dates to be rolled out shortly)
- d. **Provide consultative support** both internally (NHSBT) and externally where appropriate



Collaborate with partners to
maximise opportunities for
improvement and drive
innovation

ESIT strategy roadmap

ESIT 2025-2030 Implementation Roadmap

Key:  Activity  Milestones

Year	Y1 2025				Y2 2026				Y3 2027				Y4 2028			
Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Priority 1: Increase Awareness & Engagement	Formally launch ESIT															
	Promote ESIT and recruit/retain members and champion network															
	Update ESIT website		Launch ESIT newsletter		ESIT newsletter		ESIT newsletter		ESIT newsletter		ESIT newsletter		ESIT newsletter		ESIT newsletter	
	Develop Champions Charter		Develop Champions training & induction package				Develop transplant centre ESIT training package				Rollout and implement transplant centre ESIT training package					
	Rollout 2025 Comms Plan				Rollout 2026 Comms Plan				Rollout 2027 Comms Plan				Rollout 2028 Comms Plan			
	Attend BTS		Review ESIT membership & identify target members		Attend BTS		Champions webinar		Invite annual ESIT dashboard self-assessment		Attend BTS		Attend ESOT		Attend BTS	
Attend ESOT		Champions webinar		Champions webinar		Champions webinar		Champions webinar		Champions webinar		Champions webinar		Champions webinar		
Develop and rollout ESIT dashboard				Invite annual ESIT dashboard self-assessment				Invite annual ESIT dashboard self-assessment				Invite annual ESIT dashboard self-assessment				
Priority 2: Influence Long-Lasting Positive Change	Clinical pathway analysis & toolkit development: Key exemplar selected from solid organ options, retrieval and donation				Publish analysis and change recommendations				Clinical pathway analysis & toolkit development: Exemplar 2 selected from solid organ options, retrieval and donation				Publish analysis and change recommendations			
	Identify best forum for raising awareness of ESIT research		Optimise registry data items to include ESIT key ESIT fields				Y1: 12 months ESIT data item rollout				Review first year of new ESIT registry data and update dashboards and strategic plans					
	Develop funding strategy		Develop research strategy for ESIT				Actions dependent on strategy development, TBC									
	Rolling applications for relevant funds		Y1: 12 months ESIT data item rollout				Review first year of new ESIT registry data and update dashboards and strategic plans									
	Support Live Kidney Donor Network with ongoing analysis of Living Donor Kidney pathways		Optimise registry data items to include ESIT key ESIT fields				Y1: 12 months ESIT data item rollout				Review first year of new ESIT registry data and update dashboards and strategic plans					
Priority 3: Collaborate with Partners	Identify opportunity for ESIT WG training				Work with partners to support 2027 strategic priorities				Work with partners to support 2028 strategic priorities							
	Multi-agency taskforce development with BTS, CSH, industry, create governance framework and funding streams, project development				Advertise e.g. Fellowships and recruit, project commencement (>1 if funding allows)											
	Identify education partners to address gaps in ESIT WG education				ES education opportunities (funded if possible) for ESIT WG members											
	Support Live Kidney Donor Network with ongoing analysis of Living Donor Kidney pathways				Work with partners to support 2027 strategic priorities				Work with partners to support 2028 strategic priorities							
	Identify opportunity for ESIT WG training				ES education opportunities (funded if possible) for ESIT WG members											

Opportunities for Retrieval

Pathway analysis

Place further emphasis on proximity as part of organ offering algorithms

Develop 'NORS retrieval travel principles' to standardise the UK's approach, and identify opportunities for quality improvement

Reduce the number of non-proceeding callouts (will SCORE cover?) – e.g. virtual scouting?

Review the kit used by the NORS team (to impact positively for the triple bottom line)

Environmental

Financial

Social

23/24 Retrieval Journeys by Road

2023/24 Retrieval callouts:
2,146 (excluding kidney)

2023/24 proceeding retrievals:
1,534 (excluding kidney) (70% of
all callouts)

2023/24 proceeding retrievals:
143,298 miles



This is equivalent to:
46,091.80kgCO₂e

Or:

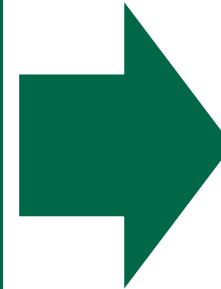
- 2,300 trees growing for one year
- 6.5 return flights from London to Hong Kong in economy
- 223,430 hours of TV (or streaming the Lord of the Rings Trilogy 19,700 times in a row)

23/24 Retrieval Journeys by Air

2023/24 Retrieval callouts:
413 (excluding kidney)

2023/24 proceeding retrievals:
306 (74% of all callouts)

- 2023/24 proceeding retrievals:
255 overland flights, of which:
- 16 would have taken 3 hours or less by road
 - 38 would have taken between 3 to 4 hours by road



The carbon footprint of all non- proceeding flights was: 30,876kgCO₂e

The carbon footprint of all proceeding flights was: 73,296kgCO₂e. This

Of which, flights where road journeys would have been less than <3 hours:
2,002kgCO₂e

This is equivalent to charging 240,000 smartphones, or eating a beefburger and fries every day for 4 years

- By road, this would have been:
816kgCO₂e



Sign the ESIT Pledge here



Environmental
Sustainability in
Transplantation



@ESIT-NHSBT



ESIT@NHSBT.NHS.UK