



# Carbon Footprint for the In-Centre Haemodialysis Patient Pathway

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## Introduction

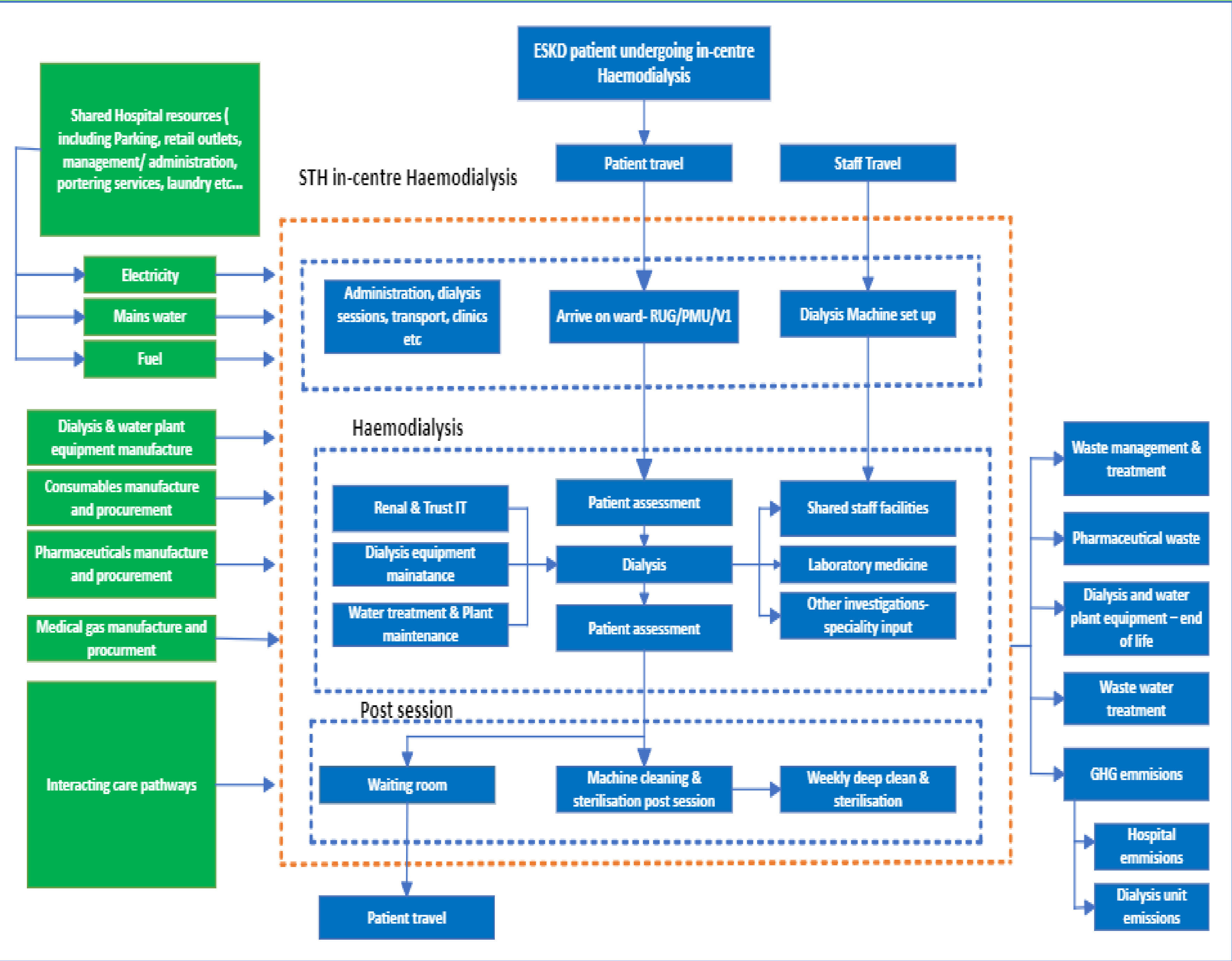
Sheffield Teaching Hospitals NHS Foundation Trust (STH) has developed a carbon footprint report with an aim of minimising the environmental impact of its renal services. The aims of this project were to:

- Undertake a comprehensive evaluation of Haemodialysis (HD) delivery for services at STH and understand where the environmental impacts lie.
- To use the available toolkit to develop metrics and a baseline measurement and to identify opportunities for reducing the carbon intensive areas.
- Assess the baseline measurement and develop a roadmap to a more sustainable care pathway for patients at End-Stage Kidney Disease (ESKD)

This poster includes the assessment of outpatient In-Centre Haemodialysis (ICHD) services at the Northern General Hospital including the wards Renal Unit G, Peter Moorhead Unit and Vickers 1. It was undertaken in compliance with the guidance on appraising sustainability of care pathways.

It is hoped that the findings from this assessment, in addition to the implementation of outlined recommendations, will help support the NHS with its carbon reduction targets, as detailed below:

- For the emissions we control directly (the NHS Carbon Footprint), we will reach net zero by 2040, with an ambition to reach an 80% reduction by 2028 to 2032;
- For the emissions we can influence (our NHS Carbon Footprint Plus), we will reach net zero by 2045, with an ambition to reach an 80% reduction by 2036 to 2039.<sup>1</sup>
- Ensuring that suppliers decarbonise their own processes, the NHS will no longer purchase from suppliers who do not meet or exceed NHS outlined targets, by the end of the decade.”<sup>2</sup>

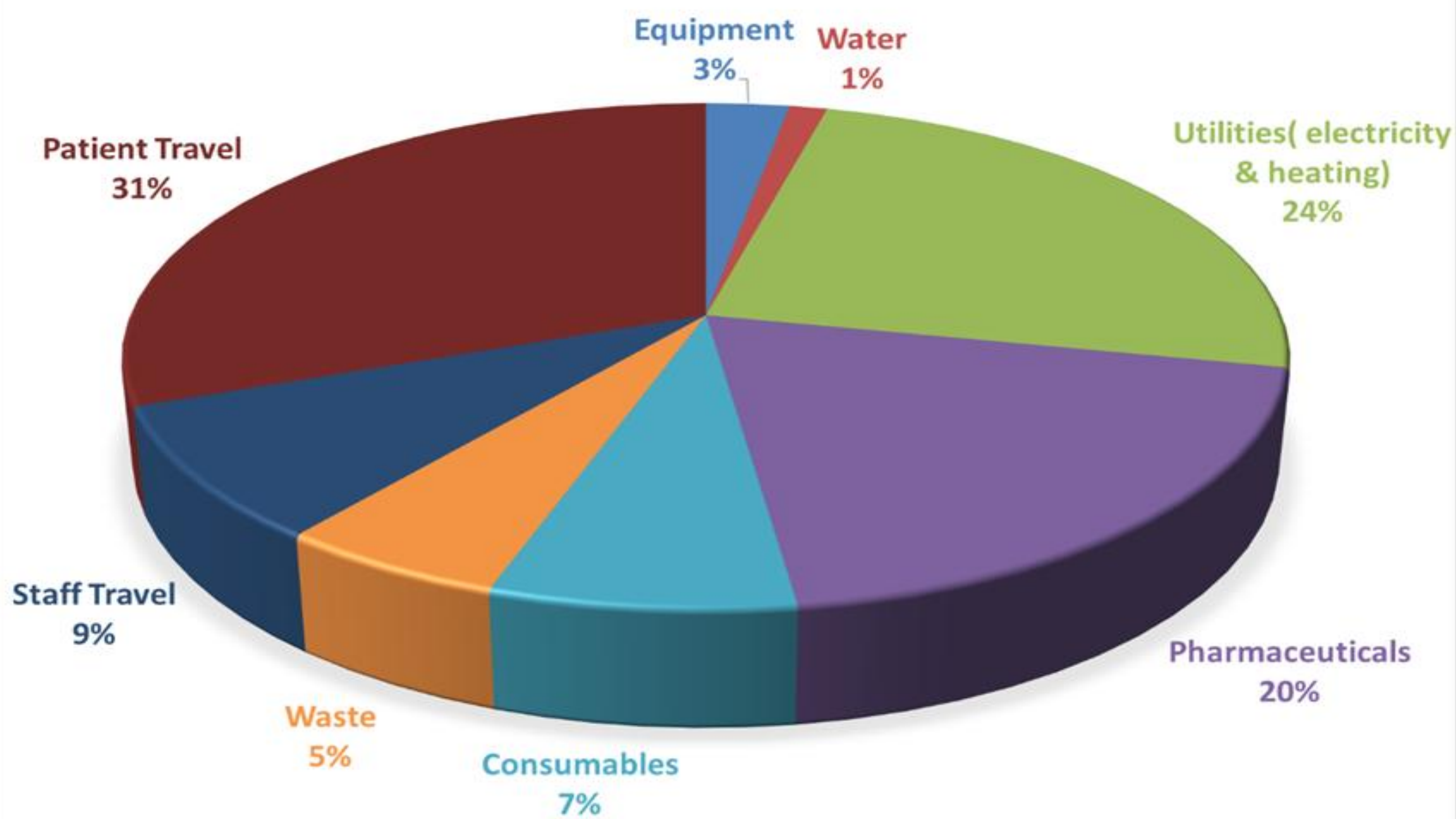


## Carbon dioxide equivalent emissions (CO<sub>2</sub>e)

The total CO<sub>2</sub>e emissions for ICHD at Sheffield Teaching Hospitals NHS Foundation Trust are calculated to be **827,947 kgCO<sub>2</sub>e** during **2023** which is equivalent to **driving 98 times around the world**  
**48,204** dialysis sessions were undertaken during 2023.  
This equates to **17 kg CO<sub>2</sub>e** per session



## Total Haemodialysis care pathway CO<sub>2</sub>e emissions



## Description of our Patient Care Pathway

The scope of this evaluation covers the activities of the dialysis unit at STH, which delivers long term HD treatment to out-patients with End Stage Kidney Disease ( ESKD). There are additional patients that receive treatment either at home or in the satellite unit. These have not been included as part of this assessment. The assessment was undertaken for January - December 2023 which reflects the current practice post pandemic.

The care pathway includes the environmental impacts arising from the manufacture, distribution, use, and end of life treatment of the following:

- Electricity, fuel, and water usage from the shared hospital resources used by the staff/patients associated with the HD unit
- Dialysis machines and water plant equipment;
- Consumable products used, e.g. dialysers and bloodlines; and pharmaceutical products used, e.g. acid dialysis concentrates and other solutions

## Conclusion and Recommendations

This evaluation provides the first step in developing a roadmap to deliver a net-zero renal care pathway. The environmental impacts of Haemodialysis at Sheffield Teaching Hospitals during 2023 have been calculated and an understanding of which activities contribute to the overall carbon emissions has been achieved. The assessment was undertaken using the Sustainable Healthcare Coalitions’ ICHD carbon calculator. This calculator presented some limitations as generic footprint for pharmaceutical, consumables and equipment were used, so the calculation is not specific to items used at STH.

The following **recommendations** will now be explored to help reduce the environmental impacts associated with providing ICHD care:

- Undertake a deep dive into patient travel arrangements.
- Explore opportunities to move patient treatment closer to home, thereby reducing “ care miles” associated with Haemodialysis.
- Review the current Did Not Attend ( DNA) rates.
- Undertake a specific travel survey of the staff working within the Renal units at STH.
- To work with the Sustainable Healthcare Coalition to improve the metrics.
- Assessment of the manufacture, packaging and distribution of consumables and pharmaceuticals.
- Engage with Estates to assess whether metering could be undertaken.
- Improve waste streams and introduce recycling.
- Collaboration with Estates improve the baseline metric for water use.
- Review opportunity to reduce flow through dialysis machines to reduce water usage.
- Agree KPI’s and metrics to support the roadmap to net zero

The assessment would not have been possible without the data collection support of the following individuals at Sheffield Teaching Hospitals NHS Foundation Trust: Kate Anderson - Matron, Mandy Plant - Matron, Christine Stubbs - Matron, Claire Winters - Deputy Pharmacy Procurement & Contracts Manager, Peter Townsend & Daniel Hattersley - Estates, Pez Holda - Pharmacy IT Specialist, Maria Mahon - Waste Manager/Facilities Health and Safety Lead, Ben Croft - Assistant Procurement Analyst

References  
<sup>1</sup>Greener NHS » Delivering a net zero NHS (england.nhs.uk)  
<sup>2</sup>Sustainable Care Pathways Guidance | Sustainable Healthcare Coalition (shcoalition.org)