Reducing UnNecessary Carbon in HaemoDialysis by Recycling Acid Concentrate Canisters

INTRODUCTION

Reducing carbon emissions from in-centre haemodialysis (ICHD) is one of the key priorities for the **Yorkshire and Humber Kidney Network (YHKN).** In partnership with the **UK Kidney Association (UKKA) Kidney Quality Improvement Partnership (KQIP),** a regional project was set up. This project was named **Trying to Reduce UnNecessary Carbon in Haemodialysis (TRUNC_HD).**



A significant source of plastic waste in dialysis is the disposal of dialysis acid concentrate cannisters. **The aim of this project was to standardise practice across the service of recycling acid concentrate canisters by end of 2024.**



Image X Y&H TRUNC-HD Programme

Jan – March 2024	March	April – June	June	July – Sept	Sept	Oct – Dec	May 2025
Unit face to face QI training and support	Y&H virtual sharing progress meeting	Unit face to face QI training and support	Y&H virtual sharing progress meeting	Unit face to face QI training and support	Y&H virtual sharing progress meeting	Unit face to face QI training and support	Y&H face to face celebration event

METHODS

Project leads were identified and participated in the **Y&H TRUNC-HD programme (see image X).**

Step 1 Info gathering

Step 2 Engaging stakeholders

Step 3 Confirm cannisters can be recycled

Step 4 Communicate

Step 5 Prepare cannisters

Before and after the implementation of changes, data was collected to calculate the **environmental, financial and social impact** of the project The emission factor for recycling only include emissions attributed to the transportation of waste to the recycling facility.

RESULTS

6 of our 8 dialysis units recycle plastic canisters = 19,344 canisters a year

Waste process	Annual carbon footprint of this waste stream (kgCO2e)*	Annual cost of waste disposal*
Recycling	32-36	£445.90-502.71
Low-temperature incineration with EfW	861-971	£548.29-618.05
Low-temperature incineration with EfW	1248-1407	£1036.39-1168.44
Autoclave decontamination Low-temperature incineration with EfW	2850-3212	£2254,54-2541.80

Predicted carbon savings per year

2.8 – 3.1 kgCO2

Predicted financial savings per year

£1,800 – 2,000

**The an-al carbon emissions and financial results are provided as a range as our organisation is in the process of switching from 1:34 to 1:44 acid concentrate, in which there is a weight difference between the two different canisters.*

CONCLUSION

- This initiative underscores the critical need to **reevaluate waste classification** and **disposal practices** in healthcare.
- **Collaboration with external stakeholders** and **learning from other units** were instrumental in driving this change.
- **The remaining two units,** located at a different hospital trust sites, **are working towards implementing a recycling program** following discussions with their sustainability teams.
- **Further efforts are underway to review whether other consumables used in our units can be recycled**, advancing our commitment to sustainability.

Contact – Laura.Travis@nhs.net