

Green Nephrology Awards 2012

Glasgow Renal Services: Reduce, Reuse, Recycle and beyond

Within NHS GGC, 505 people attend our chronic hospital haemodialysis programme equating to 78,780 resource intensive treatments per year in six renal dialysis units (RDUs). Small environmental and cost savings per treatment will translate into much larger savings overall. Thus targeting reduction of clinical waste and unnecessary consumable equipment use will be an effective method of reducing GHG emissions without impacting on the number or quality of treatments. Additionally an overall approach to reducing carbon emissions has been developed using the Sustainable Action Planning (SAP) tool.

Benefits to environmental sustainability

Clinical waste savings of **80 tonnes CO₂e** and £14,318 annually have been saved across all six RDUs.

Additionally, five sites used 1.7kg polyethylene Griff Bins® rather than orange clinical waste bags. By reverting to standard waste bags, approximately 14,000 bins, **43 tonnes CO₂e** and £92,832 have been saved annually (£84,000 from purchasing and £8,592 from incineration).

Method of CO₂e calculation:

1. The CO₂e emission conversion factor for the incineration of clinical waste has been taken as 1.8 tonnes CO₂e per tonne clinical waste (Connor A, Lillywhite R, Cooke MW. The carbon footprint of a renal service in the United Kingdom. QJM; 103(12):965-75.)

2. The CO₂e does not account for domestic waste, which has increased in weight, due to uncertainty surrounding an appropriate conversion factor. NHS GGC has an exemplary domestic waste policy with the majority of waste recycled. So although it may represent a net CO₂e saving, further information is required before this calculation can be included.



1. The equipment used per dialysis session. 2. Separation into clinical and domestic waste

Additional benefits

Benefits to staff

The use of a network of ground level representatives promotes good environmental practice at work and also engages staff in implementing change through seeing savings directly attributable to their actions quantified.

Benefits to NHS GGC

The approach will generate lasting institutional change and can be adapted to other high resource areas within NHS GGC such as theatres, ITUs and day case units with large potential savings.

Details of implementation

This project has run for just over one year. The steps were:

1. Set up a Working Group:
 - Identify keen local representatives from each RDU.
 - Engage senior stakeholders including senior nursing and medical staff, Estates, and Trust Sustainability Officer.
2. Focus initially on “quick wins” to reduce clinical waste by diverting it into the domestic waste stream:
 - Audit current patterns of consumable equipment use and disposal.
 - Identify safe opportunities for reducing clinical waste.
 - Identify equipment that could be safely removed from the dialysis process.
 - Consider potential health and safety or infection control issues identified and raise these with these departments as appropriate.
 - Implement change and determine the cost and environmental savings by weighing clinical and domestic waste from two dialysis sessions before and after planned waste reduction measures.
 - Review annually to ensure change is maintained and any new improvements are adopted.
3. Develop an overall Sustainable Action Plan for each unit focusing on lighting, heating and cooling, water use, papers and printing and travel. This has started at the Vale of Leven RDU and will be extended to the other RDUs.
4. Extend to inpatient dialysis facilities and look for additional opportunities e.g. reducing clinical waste for inpatient biopsy procedures.



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