

Cutting waste and saving money in Automated Peritoneal Dialysis Fluid

Automated Peritoneal Dialysis (APD) is a dialysis therapy for patients in their own home. APD requires approximately 10-15 litres of dialysis fluid to be drained into and out of the patient's abdomen, for 8-10 hours per night. The waste fluid is generally disposed of down a toilet or drain.

North Cumbria Acute
Hospitals NHS Trust

Waste



What was the issue being addressed?

There were two options available for patients

Drain lines- an APD drain line consists of a plastic tube 4-10 metres long which is placed into the toilet/drain and allows the fluid to be drained directly away. It is easy to use and convenient for some patients. However, the drain line requires a patient's APD machine to be within 10 metres of the toilet/drain, this is often not possible. The line needs to be trailed across the floor from the machine into the bathroom. This is a risk as a trip hazard. Drain line boxes are very large and cumbersome and their disposal adds to the significant volume of household waste that dialysis patients generate.



The system replaces the need for lines and bags

Drain Bags- Two 15 litre empty bags collect drained fluid. Bags need to be carried into the bathroom to empty fluid down the toilet/drain daily. The bags are difficult to carry. This can prove especially challenging for patients whose bathroom is downstairs or a long distance from their bedroom. Bags present a safety issue when carrying, and when emptying fluid can splash into the face. It also is an issue for patients who have physical limitations, are elderly and frail. Disposal of drain bags significantly adds to the volume of household waste.

What action was taken to overcome the issue?

A pilot study of the U-Drain system was carried out. U-Drain is a drainage system that is permanently installed into a patient's home. It allows dialysis fluid to be drained into the external waste system. It consists of a small socket, with a one-way valve. The APD machine is then attached directly to the U-Drain socket and fluid is able to drain into the external soil pipe. Following every treatment the U-Drain is flushed through with disinfectant to decontaminate and ensure no blockages.

Feedback was very positive. The patient noted many benefits including ease of use, no risk of injury, increased space and other occupants were able to use the bathroom normally.

What was the impact?

12 months supply of APD drain bags/lines costs £1200-1300 per patient

Installation of the U-Drain system costs £350

12 months supply of U-Drain consumables costs £500 per patient

U-Drain reduces the amount of drain lines and drain bags being manufactured, stored and delivered. Less household waste is generated reducing the volume of waste being sent to landfill.

The carbon, waste and water reductions for using U-drain compared to conventional drain bags can be seen below:

- Carbon emissions (KgCO₂e) : Drain bags 1,152 - U-drain 10
- Waste plastic (Kg): Drain bags 328.5 - U-drain 1.83
- Water (litres): Drain bags 4,380 - U-drain 31

(figures calculated by Carbon Footprint Ltd).

The benefits to patients are seen immediately with improvements to safety, storage, disposal and reduced household waste requirements.

"An innovative development in peritoneal dialysis fluid waste management which benefits patients and the environment and is cost effective and simple to use."

Sally Tait , Peritoneal Dialysis Specialist Nurse

Lessons learned / success factors?

U-Drain is now offered as a drain option to all APD patients at North Cumbria Acute Hospitals NHS Trust. Patient feedback from users has been central to this and is very positive. One patient with a downstairs bathroom and was too frail to carry drain bags downstairs to be emptied. Without U-Drain, the patient would have had to return to hospital Haemodialysis. The ability to communicate effectively and building a strong relationship with U-Drain has been integral to the success of this project.

Scaling up

If U-drain were to be rolled out across the UK for the estimated 4,000 APD patients, the NHS could realise big financial environmental savings and improvements for patients and staff.

Over a five year period potential savings of:

- £16.6 million
- 23 million KgCO₂e,
- 6,500 tonnes waste plastic
- 87 million litres water.

Other U-drain benefits include time saved by staff (between 5 and 20min/person/visit), allowing patients to be treated at home and reduced transportation of large volumes of plastic.

www.u-drain.co.uk

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