Renal Dialysis Bottle Compacting

Barts Health in partnership with Skanska Facilities Services have worked together to reduce waste disposal costs by £2.8million over the past four years. Recent work has involved working to segregate recyclables from the domestic waste, to further reduce waste costs and the carbon footprint of waste services.

Barts Health NHS Trust

Waste

What was the issue being addressed?

Four Renal Units were generating over ½ tonne of waste bottles every month taking up a large amounts of space within the areas waste holds. Moving around frequent exchanges of domestic waste carts full of 6 litre bottles of 'air', created inefficient portering movements of this waste stream within two of the hospital sites.

Once in the domestic waste compactor, the bottles did not crush flat, preventing compactors to reach their near maximum weight / lift load. This meant increased transport emissions and waste costs.

What action was taken to overcome the issue?

The waste management team decided the bottles could be segregated and compacted on site. Working with the "Reverse Vending Corporation", a machine was designed and built to compact the bottles; the first of its kind in a hospital environment. This has increased the efficiency and cost of the waste clearance process.

It has also allowed the Trust to explore the material rebate markets.

The machine was designed to have a small spatial footprint, allowing the unit to be installed inside two Renal Units. This ensures the bottles are compacted at point of use, guaranteeing efficiency from the start of this specific waste product removal process.

What was the impact?

Two machines are in place at Renal Units within Whipps Cross University Hospital and Newham University Hospital. The machine crushes and reduces each bottle by 40% volume; this, in turn, reduces the number of internal domestic waste cart movements by 50%.

The two machines are predicted to save £13,000 in waste costs over a ten year period. Each machine will be cost neutral after the first year, if rebates for the virgin material are applied.

Savings are achieved through reduced transport compactor lift costs. This will reduce road transport miles, reducing emissions and congestion. The machines provide increased compliance with regulations and allows for the creation of revenue generating waste streams from the segregated plastic.

"Having innovation built in to our waste FM contract, as a tender award requirement, SKANSKA have worked brilliantly to source dynamic opportunities for our Trust, by working with innovative third parties, like the Reverse Vending Corporation, to produce kit that incentives waste resources"

Neil Allen; Barts Health's waste and environment manager

Lessons learned / success factors?

The machine is showing positive outcomes after being installed for over six months. The efficiency of the machine is highly dependent on staff participation.

Having a strong engaging relationship with the stakeholders involved has been a key part of the change process..

Locating the machine in the space where the empty containers were stored before disposal avoids the potential worries around storage space constraints.

Scaling up

These machines could be implemented throughout Renal Units within the NHS, where piped cleaning agents to dialysis machines are impracticable.

The machine has a short payback time and has shown to have immediate cost savings.

Segregating and compacting bottles can be sold for recycling reprocessing firms. A nationwide network of these machines could enable local or nationwide collection agreements, further increasing the cost saving potential of the machines.

With over 22,331 patients receiving dialysis in hospitals around the UK , there is potential for these machines to be installed across many parts of the country..

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