

Yellow Clinical Waste Bin Usage

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Dear Editor,

Our institution is one of four hospitals selected as a pilot GreenED site, committed to sustainable healthcare practices. We conducted a quality improvement project to quantify inappropriate non-medical waste in yellow clinical waste bins and evaluate its financial and carbon footprint impact in the Emergency Department.

The healthcare sector significantly contributes to global carbon emissions through waste generation and disposal. One large healthcare system generates approximately 538,600 tonnes of waste annually, requiring £115 million for disposal and incineration¹. Globally, the healthcare sector accounts for 4.4-5.2% of greenhouse gas emissions². Yellow clinical waste costs approximately €1,071 per tonne for processing, significantly higher than general waste disposal, making waste segregation critical for both environmental sustainability and cost management.

We conducted a prospective audit in the ambulatory Emergency Department, weighing yellow clinical waste bins nightly for three consecutive weeks before and after implementing a ten-step intervention blueprint. The multidisciplinary approach involved Infection Control, Microbiology, Clinical Nursing Management, facilities management, and waste management services to identify inappropriately placed bins. Interventions included removing seven bins serving no clinical purpose, staff education through weekly teaching sessions, installation of waste segregation posters, and visual documentation of disposal patterns.

Post-intervention analysis revealed a reduction of 12 kg in total yellow bin waste over 15 days. Pre-intervention average daily waste was 3.66 kg, decreasing to 2.86 kg post-intervention, representing a 22% reduction. Extrapolating these results to annual figures for a department with 43,000 attendances, this equated to an annual reduction of 2.92 tonnes, resulting in 3,136 kg CO₂ reduction and cost savings of €3,127. These calculations apply to the ambulatory Emergency Department only.

Our findings demonstrate that simple, targeted interventions can achieve measurable reductions in clinical waste generation and associated environmental impact. The multidisciplinary approach proved essential, ensuring that bin removal maintained clinical safety standards while providing practical insights into waste handling logistics. Visual documentation of inappropriate waste disposal proved particularly effective for engaging staff awareness and administrative support. The ten-step blueprint provides a reproducible framework that other Emergency Departments can adapt to reduce carbon emissions and waste disposal costs while maintaining infection control standards. Implementation across all hospital departments could yield substantial cumulative environmental and financial benefits, supporting broader healthcare sustainability initiatives.

Declarations of Conflicts of Interest:

None declared.

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