



Improving sustainability and reducing waste in operating theatres: A snapshot quality improvement project on waste disposal adherence in operating theatres.

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Abstract

Background: Appropriate disposal of clinical waste is critical for ensuring safety, reducing environmental impact and lowering incineration costs. From 2018-2021 it is estimated that East Lancashire Hospital NHS Trust (ELHT) spent ~£100-150,000 on incineration of clinical waste, with incineration costing £535 per tonne. Despite the availability of six specialised waste streams in operating theatres, there are concerns of incorrect waste disposal. Contamination of recyclable streams leads to unnecessary incineration, further increasing CO₂ emissions and disposal costs. This study aimed to identify common errors in waste segregation to align with the Greener NHS programme goal of a carbon-neutral NHS by 2040.

Methodology: Photographs of cytotoxic/cytostatic drug waste, sharps bins, clinical waste bins and domestic/non-clinical waste bins were taken at 11 theatres over four weeks. These photographs were compared to ELHT's standard operating procedures to identify disposal errors. Exclusion criteria including duplicate and blurry images were applied.

Results: Sharps bins had the highest contamination rate, with >90% of waste incorrectly disposed. Cytotoxic/cytostatic waste streams followed, with almost 80% of waste incorrectly disposed. Both clinical waste and pharmaceutical waste streams showed similar contamination rates of around 46%. Recyclable waste bins had a >38% rate of incorrect disposal.

Discussion: These results highlight major missed opportunities to recycle and numerous instances of waste being unnecessarily incinerated. Correct disposal of these items would result in a tangible reduction in CO₂ emissions and disposal costs. Targeted interventions, such as staff education and improved signage, are essential to address these issues.

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Cite as: Nickson, M., Joseph, T., Gayle, K., Lewis, C., Magill, E., & Lie, J. Improving sustainability and reducing waste in operating theatres: A snapshot quality improvement project on waste disposal adherence in operating theatres. *Impact Surgery*, 2(2), 62. <https://doi.org/10.62463/surgery.155>