

Project Title

Optimising Recycling in CGH Operating Theatres

Project Lead and Members

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Tenny Chow

Organisation(s) Involved

Changi General Hospital

Healthcare Family Group(s) Involved in this Project

Medical, Nursing, Healthcare Administration

Applicable Specialty or Discipline

Anaesthesia, Operating Theatre, Environmental Services

Project Period

Start date: Not Available

Completed date: Year 2023

Aims

CGH OT started paper/plastic recycling program in 2015. However over time, recycling quality had deteriorated. PVC and aluminium could not be recycled by the prevailing vendor.

Aim to work with a new vendor to increase recycling streams, optimise recycling quality and quantity and improve knowledge and behaviour of OT staff towards recycling in the OT.

Project Attachment

See poster appended/ below

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Conclusion

See poster appended/ below

Project Category

Care & Process Redesign

Build Environment, Inventory Space Management

Keywords

Recycling

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Singapore Healthcare Management 2023



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Introduction

The CGH Operating Theatre (OT) started a paper/plastic recycling program in 2015. However over time, recycling quality had deteriorated. PVC and aluminium could not be recycled by the prevailing vendor.

The CGH Department of Anaesthesia, OT staff (nurses/OTT) and Environmental Services (ES) aimed to work with a new vendor to increase recycling streams, optimise recycling quality and quantity and improve knowledge and behaviour of OT staff towards recycling in the OT.

Methodology

OT staff were surveyed to assess their pre-existing knowledge and behaviour towards recycling and identify perceived challenges. Concurrently, an audit of the existing plastic recycling bins was done to check on the items segregated for recycling.

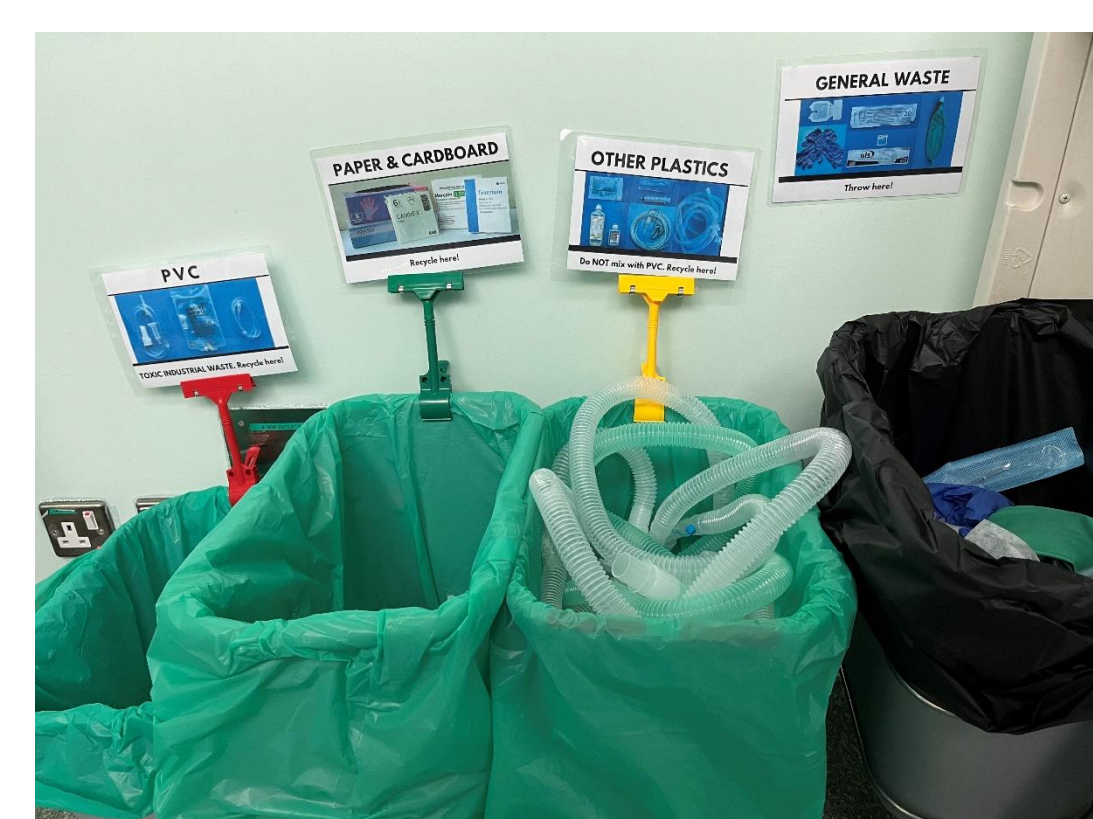


Figure 1: Labels for recycling bins Figure 2: Posters in CGH OT for education

A multi-pronged intervention approach of education to bridge knowledge gaps and address perceived problems, as well as posters, reminders and signs to provide 'nudges' to OT and ES staff to recycle. (Figure 1 and Figure 2)

PVC, Aluminium recycling and an extended range of plastic recycling with the new vendor started (Figure 3 and 4). Medication bottle plastic caps were collected for upcycling. After an interval, another audit was undertaken to ascertain if the quality and quantity of recycling had improved.

Results

	Pre-intervention	Post-intervention	Change
General plastic	10 kg per week	20-25 kg per week	10 kg per week
PVC	0	7 kg per week	7 kg per week
Plastic caps	0	1.7 kg per week	1.7 kg per week
Aluminium	0	1 kg per month	1 kg per month

Table 1: Weights of Recycled Items Pre and Post Intervention

From our audits, the average percentage of correctly recycled general plastic items also improved significantly from 67% (29%-92%) to 88% (75%-100%). However, the average percentage of correctly recycled PVC was lower at 71% (11%-100%), suggesting room for future education and improvement.

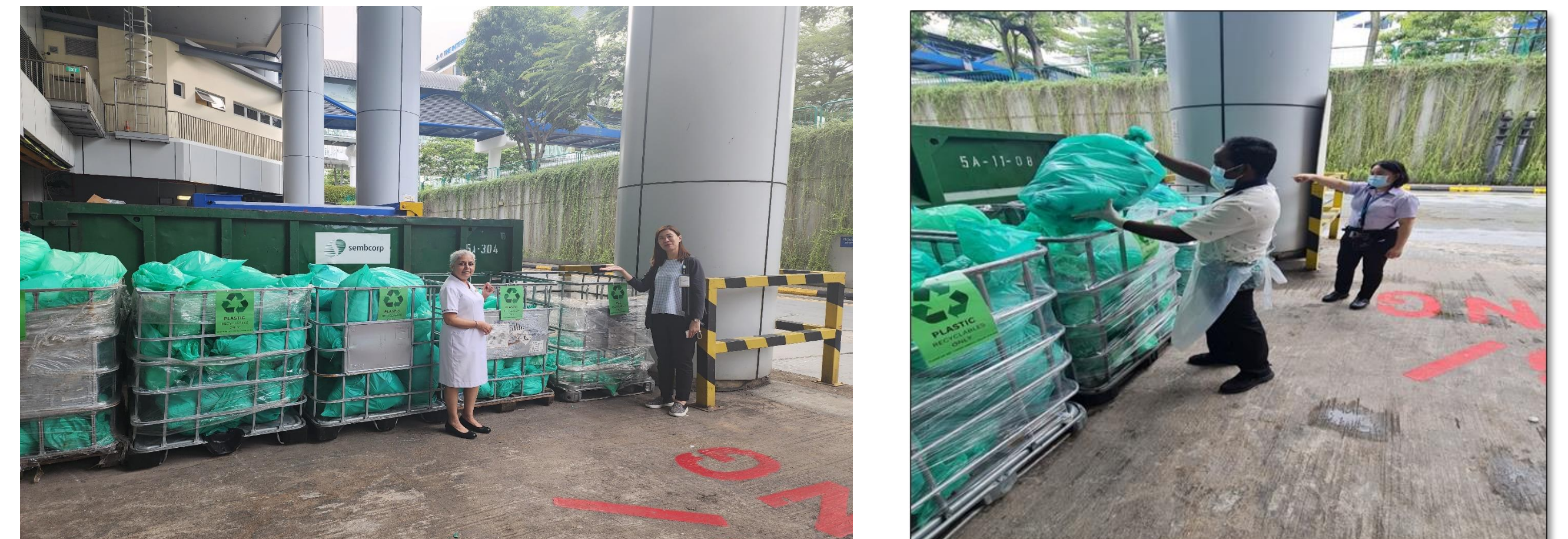
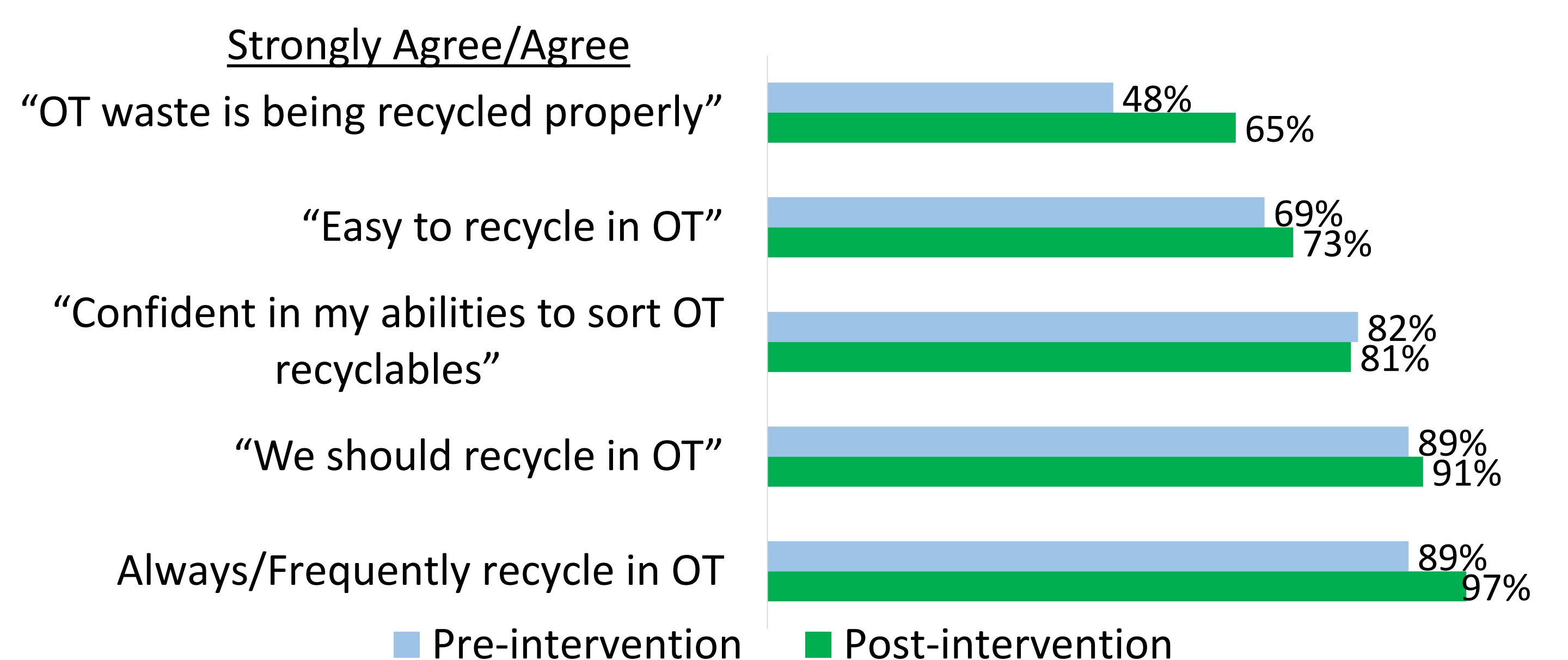


Figure 4 and 5: CGH PVC and plastic recycling cages collected by housekeepers

It can be seen from the survey results in Graph 1, that while most fields improved post intervention, confidence in the ability to sort OT recyclables remained similar. Given our audit results, we believe this is due to a false sense of confidence pre-intervention.



Graph 1: Survey Results Pre and Post-intervention

Knowledge tested during the surveys also showed significant improvement post-intervention. Pre-intervention, only 39% (15%-64%) was able to correct identify recyclable items, but this improved to 63% (49%-77%) post-intervention. Significantly, the percentage of staff aware that PVC could not be recycled together with plastic only increased from 46% to 59%, further reinforcing the need for future education.



Figure 6 & 7: Percentage that knew these 2 items are not recyclable improved from 15% to 49% and 64% to 77% respectively

Conclusion

There has been significant improvement in both the quality and overall quantity of recycling in OT. A total of 43kg of PVC, 116kg of plastics and more than 1kg of aluminium was recycled in 6 weeks, with further increases in subsequent weeks to 25kg/week of plastic recycling. In addition, another 10kg of plastic caps were repurposed. In total, 170kg of OT waste was collected in 6 weeks for recycling.