

National Green Theatres Programme Action for Adoption

Introduce Reusable Plastic Drug and Equipment Trays

March 2024

About

This information is to raise awareness about this carbon saving action. There is no formal requirement to report on this action through the National Green Theatres Programme, however Boards are encouraged to consider how they are adopting this action, ensuring they are connected with any relevant initiatives or national work streams.

Background

Drug trays are used for the temporary storage of anaesthetic drugs and other equipment during surgical procedures.

Current practice across Scotland indicates that whilst disposable trays continue to be used in some sites, the use of reusable plastic drug and equipment trays is something that several Health Boards have already implemented.

It is now widely recognised that single-use culture in operating theatres has a negative environmental impact. The National Green Theatres Programme (NGTP) are progressing a number of actions that move away, where appropriate, from single use items and reintroduce reusable equipment.

Reintroduction of reusable drug and equipment trays has the potential to reduce both carbon emissions and costs. Whilst these savings may be less than those achieved by other NGTP actions, reducing the amount of single use items found within theatres will lead to a much greater cumulative benefit. Consideration should also be given to the number of procedures performed annually, approximately 278, 000¹, which highlights that whilst savings per tray are small, the high number of procedures increases the savings considerably.

The National Green Theatres Programme are keen to encourage consideration of any and all opportunities to reduce the amount of waste being produced within the theatre environment. Given that drug trays are not limited to use within operating theatres there is significant potential to maximise carbon savings by expanding the adoption of this action to other hospital areas.

Reusable Drug and Equipment Trays

Reusable trays are made of polypropylene and are guaranteed to withstand at least 1000 autoclave cycles. Given that the cleaning process being implemented in NHS Scotland sites is either to wash with soap and water or to wipe down using antiseptic wipes, it is anticipated that these products will exceed this predicted life span quite considerably.

¹Public Health Scotland Data Tables [Cancelled planned operations - Month ending 31 December 2023 - Cancelled planned operations - Publications - Public Health Scotland](#) (accessed 26/02/24)

Feedback from Boards who have already implemented utilisation of reusable trays cite a number of perceived advantages:

1. Colour coding

- Use of red trays – easily identifiable as being anaesthetic equipment
- Use of colour coded trays – each coloured tray associated with specific drugs/equipment

2. Repurposing

Sourcing plastic trays from elsewhere in the operating stream, for example the plastic trays found as part of cataract surgery kits, once the cataract procedure is complete. This is reported to have contributed to a small cost saving, and also reduces the amount of waste generated by this procedure.

Disposal of Single Use Drug Trays

Single use drug trays can be either plastic or pulp, due to their composition pulp products are not recyclable. Under waste legislation there is no option in terms of pharmaceutical products, meaning if a product, blister pack or pot etc has been in contact with a pharmacy product then it must be disposed of via the pharmaceutical waste stream.



Potential Carbon and Cost Savings

The following calculations focus only on the materials the trays are made from, using figures taken from the 'Inventory of Carbon Emissions²'. They do not include transportation or disposal costs.

Item	Material	Weight (kg)	Emission Factor (kgCO ₂ e/kg)	Emissions / use (kgCO ₂ e)*
Single Use Tray	Polyurethane	0.024	4.55	0.1092
Reusable Tray	Polypropylene	0.135	4.49	0.000606

*Emissions / use = weight of item x Emission Factor Specific to Material / number of uses across lifespan
 Lifespan of reusable tray = 1000 uses

Replacing single use with reusable drug trays has the potential to save:

	108.5 kgCO₂e for every 1000 trays used.		£22 for every 1000 trays used.**
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**Assuming approximate cost of single use tray = 2.5 pence per tray, approximate cost of reusable tray = £3 per tray

Contact us

If you have any questions about this action, please contact the National Green Theatres Programme by emailing cfsdgreentheatres@gjnh.scot.nhs.uk

² ICE Database - https://circularecology.com/embodied-carbon-footprint-database.html#.XKX_oJhKhPY