



# BEST PRACTICE GUIDE

## Healthcare Risk Waste Reduction in the Theatre



The EPA's Green Healthcare Programme (GHCP) found that, on average, 20% of the healthcare risk waste bags generated in acute hospitals come from the theatre. So it is an important location to look at when trying to reduce the quantity of healthcare risk waste generated in a healthcare facility. This Best Practice Guide outlines actions to minimise the quantity of waste, particularly healthcare risk waste, generated in the theatre.

### How do you reduce the quantity of healthcare risk waste generated in your theatre?

The measures can be classed into three groups:

#### 1 Prevent the generation of waste

The best option for managing waste, recyclables and healthcare risk waste, is to prevent the waste being generated in the first place.

Prevention options will not only reduce the quantity of waste produced and the associated cost, but may also provide additional costs savings e.g. through reduced purchasing.

#### 2 Review the healthcare risk waste classification policy

Waste may be unnecessarily classified as healthcare risk waste.

#### 3 Increase the segregation of recyclables and minimise the non-risk waste content in the healthcare risk waste

A significant proportion of the waste generated in the theatre is in the form of recyclable materials, mainly packaging. There is a big potential to increase recycling levels in the theatre, and so reduce the associated waste management costs. The healthcare facility should try to maximise the quantity of material segregated in recycling bags.





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### 1 Prevent the generation of waste

#### Generation of unused materials

In theatres a set list of material and instruments (a surgical kit) is prepared for each procedure. Certain materials may no longer be used due to a change in the procedure or the instruments used. Additionally, a number of a material may be provided 'just in case'.

For hygiene reasons, any material that is not used in a theatre procedure cannot be removed for subsequent use, and is disposed of. To prevent the generation of these unused materials, the theatre should consider the following:

- Consult with anaesthetists, nursing and other staff who manage the waste, to determine the common items that are unused after procedures.
- Review the unopened material left after a procedure. Include clean material which may have been removed from its packaging, but not actually used. Start with the most common procedures first. Review a number of the procedures to determine if the material is commonly unused.
- Do different surgeons have different preferences for instruments in the surgical kit? Can a standardised list be generated for each procedure?
- Is sterile water for irrigation provided in larger volumes than is needed for a procedure? The unused liquid must be disposed of, representing a double cost to the facility. Can smaller containers of fluid be provided for the procedure?
- A list of materials that may be suitable for removal from each surgical kit can then be produced. Remember to look at surgical kits that are bought in pre-prepared by suppliers. Consult with the suppliers to remove the unwanted materials and review costs accordingly.



**Sterilised and prepared theatre kits**

Staff may be uneasy with the removal of a material from the surgical kit. Any materials removed from the surgical kit, can be provided in a nearby location within easy access if needed.

**The review of the materials in kits and what is actually is used, should also be applied to minor procedure kits and suture kits used in wards and clinics.**

#### Tried and Tested!

A hospital in the US reviewed the materials provided in their surgical kits. By removing the materials that were no longer used, the hospital reduced waste by 2.4 tonnes and saved the equivalent of €64,000 per annum.

### 2 Review the healthcare risk waste classification policy

In general, for the majority of hospitals, all waste that has been in contact with the patient on the operating table, but may not be contaminated with blood or bodily fluid, is automatically classified as clinical waste. This includes table covers, gowns, etc. This automatic classification should be reviewed to determine if this type of material could instead be classified as non-risk waste.

This automatic classification may reduce the time staff spends on managing waste. Materials are often left on the cover, the cover gathered together and it and its contents placed into the healthcare risk waste (HCRW) bin. However, this practice significantly increases the cost of waste disposal.

#### Reduce use of disposable materials

Where possible, the hospital should try to replace disposable single-use instruments, gowns, aprons and covers used in the theatre, with reusable alternatives.

- Single-use materials are heavily packaged. Reducing the usage of single-use instruments will also reduce the quantity of packaging to be managed.
- Disposable gowns and covers are bulky and fill up waste bags quickly. Studies carried out in other countries, have found that staff members can prefer the comfort of reusable gowns and aprons\*.
- Reusable instruments are cleaned and sterilised in-house or externally. The cost of sterilising instruments in the Central Sterile Services Department, or externally should be considered when reviewing the use of disposable instruments.

\* *CliniCum; The magazine for Managers in the Hospital, December 2010*

#### Waste prevention measures in other jurisdictions: Use of reusable rigid sterilisation cases

Sterilisation wrapping (plastic and paper) is generated in large volumes in the theatre. This wrapping (often blue) is bulky and quickly fills up waste bags. Reusable aluminium cases are used for the sterilisation of instruments in a number of US facilities. The system significantly reduced the cost of purchasing and disposing of wrapping, with a number of additional benefits (reduced tear or puncture of kits and subsequent re-sterilisation need, storage container for used materials). The payback period for the cost of purchasing equipment was in the region of only 2.5 years.

## 3 Increase the segregation of recyclables and minimise the non-risk waste content in the healthcare risk waste



Mobile recycling bin - brought to theatre preparation area to encourage segregation of recyclables

### Remove the clinical bin from the area when not needed

Prior to the commencement of the procedure, when instruments and materials are being prepared, remove the HCRW bin from the area or move to a position where it is not readily accessible. If the bin is not available, staff cannot incorrectly place material in the bin.

### Provide enough recycling bins

Recycling bins should be provided in all areas where recyclables are generated (operating theatre, preparation rooms, etc.).

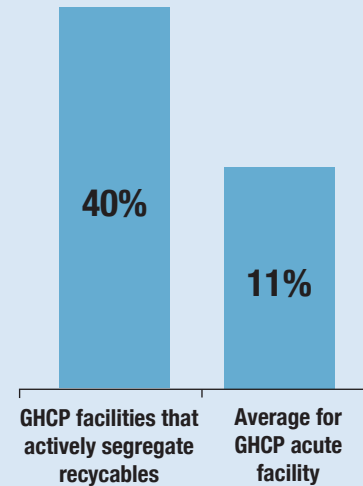
A GHCP facility with a high level of recycling in the theatre, uses a mobile recycling bin (stand with open bag). The stand can be moved close to the area(s) where preparation of materials takes place. Having the bin closer to the staff makes segregation easier, as staff do not have to carry loose packaging to a fixed bin.

Where space is limited in the theatre during the procedure, the mobile stand can be removed prior to the start of the procedure. Another option is to line one of the HCRW bin or general landfill waste bin with a clear bag. All packaging is placed into this bag during preparation, with the clear bag removed prior to the start of the procedure.

### Maximise the segregation of recyclable materials before the start of the procedure

Maximising the quantity of packaging on materials that is removed and segregated before the start of a procedure, reduces the potential for packaging to be contaminated and treated as healthcare risk waste. Unpacking material before the procedure also reduces the time that staff have to spend preparing materials during the procedure (when their time is most valuable)

### Level of recycling in theatres



In those GHCP facilities that actively segregated recyclables in the theatre, 40% of the total theatre waste was recycled. In other GHCP facilities, on average, only 11% of the waste was recycled.



Large volume of packaging on materials stored in a theatre scrub room





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### 3 Increase the segregation of recyclables and minimise the non-risk waste content in the healthcare risk waste (continued)

#### EASE OF THE SEGREGATION OF NON-RISK MATERIALS INTO GENERAL LANDFILL AND RECYCLING BAGS

BEFORE THE PROCEDURE	DURING THE PROCEDURE	AFTER THE PROCEDURE
<p style="text-align: center;"><b>Easy</b></p> <p>Material is definitely not contaminated.</p> <p>All waste should only be placed into the recycling or general landfill bins.</p>	<p style="text-align: center;"><b>Medium</b></p> <p>Large number of staff in the theatre, and work requirements, may restrict the ability of relevant staff to move waste to the correct bin.</p> <p>The relevant bins should be placed in the vicinity of the staff most likely to manage the waste.</p>	<p style="text-align: center;"><b>Difficult</b></p> <p>Staff are usually under time pressure to empty and clean the theatre. Generally, all disposable waste is left on the operating table or instrument stand covers. The covers are gathered up and all waste is disposed of as healthcare risk waste.</p> <p>Instead staff should quickly review the materials to determine if contaminated and dispose of in the correct bin.</p>

#### SEGREGATE RECYCLABLES: Ensure staff know what can be placed in the recycling bags.

Following consultation with the facility's waste contractor and/or suppliers, a list of what can be placed in the recycling bags should be generated and provided to all staff.

Materials (once clean) which are generally suitable for inclusion in mixed recycling bags in theatres include:

- Packaging including
  - plastic and paper composite packaging (both hard plastic and plastic film) e.g. peel pouch plastic film
  - rigid plastic packaging
  - cardboard
  - paper packaging
- CSSD wrapping
- Plastic containers from surgical kits e.g. graduated containers, trays, etc.
- Plastic IV giving bags and bottles, once empty
- Table coverings and gowns – in line with the theatre's clinical waste classification policy

