

# Circular Interventions for Medical Plastics

MRA Consulting Group

A project for the NSW EPA



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**NSW Environment  
Protection Authority**



The specialists in recycling, waste and planning

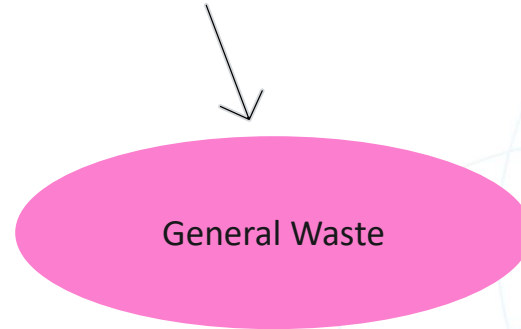
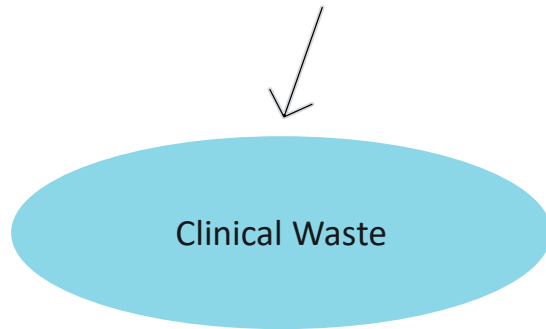


# WHAT IS MEDICAL PLASTIC WASTE?

## Clinical and General Waste

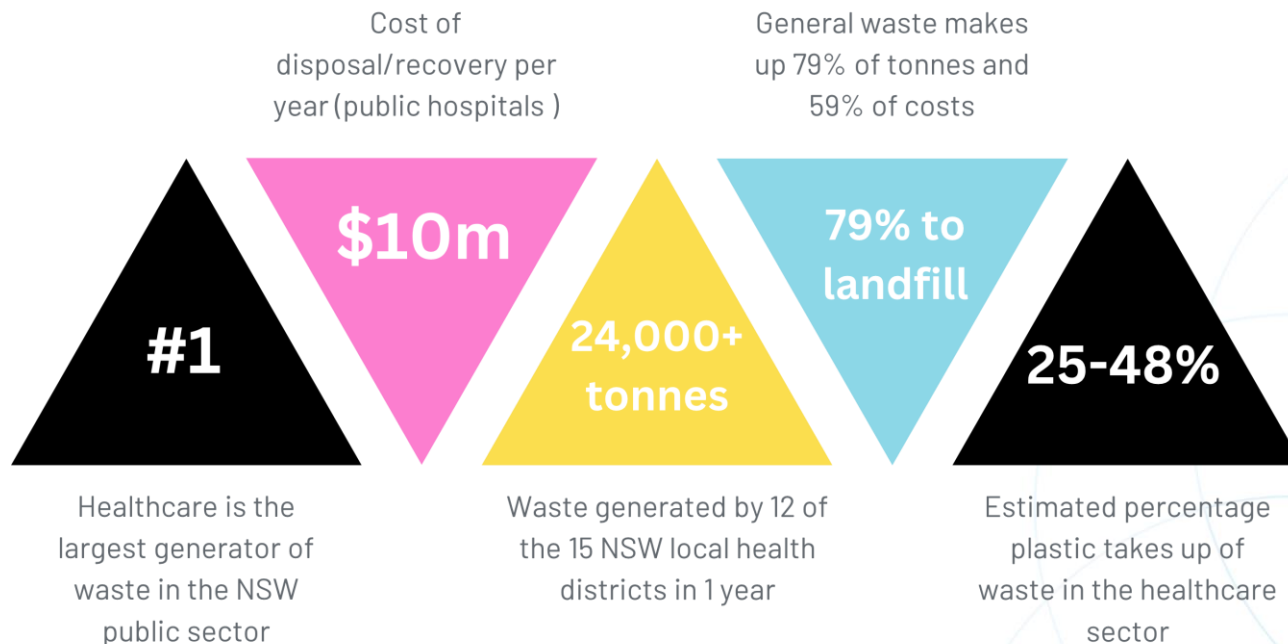


Soft plastics: aprons, plastic bags, and packaging etc.  
Rigid plastics: disposable bowls and kidney dishes etc.



# WHAT IS THE PROBLEM?

## 5 points of context



# OBJECTIVES OF THE PROJECT

3 focus areas



Assist medical facilities to transition to circular economy outcomes for plastic waste



Research and trial innovative methods to reduce and recover plastic waste



Identify system wide mechanisms that support long-term outcomes for plastic waste

# WHAT DID THE PROJECT INVOLVE?

## Methodology overview

1. Desktop research /  
reviewed audit data

2. Consultation with  
experts

3. Developed and  
trialled interventions

4. Measured impact  
and identified  
mechanisms

# BARRIERS TO CIRCULARITY IN HOSPITALS

6 key barriers



# 3 INTERVENTIONS TRIALLED

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**1. Ice Brick Reuse**



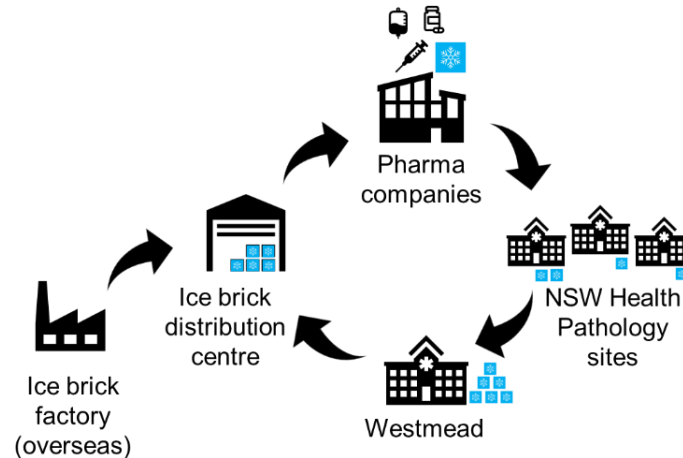
**2. Reusable Holloware  
in Theatres**



**3. Plastic Baling &  
Recycling in Theatres**

# 1. ICE BRICK REUSE

## Circular interventions for medical plastics





## Circular interventions for medical plastics



- Highly engaged lab champions
- Engagement of supply chain stakeholders
- Space to store boxes at HO site



- 8 hospitals participated
- 8-week trial
- Established a reverse logistics network
- 1096 ice bricks (1206kg) delivered to supplier for cleaning
- **Potential diversion from landfill of 51,000 bricks (61 tonnes) per year in NSW**

## 2. REUSABLE HOLLOWWARE IN THEATRES

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**Single-use hollowware (bowls and dishes) in theatres were disposed of as general or medical waste**



**Single-use hollowware was replaced with reusables, sterilised onsite and packed into custom surgery kits**

## 2. REUSABLE HOLLOWARE IN THEATRES

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#### REQUIREMENTS FOR SUCCESS

- Highly engaged staff
  - Onsite sterilisation capacity
- Time and resources for sterilisation



#### OUTCOMES

- 46 packs used in 46 surgeries
- 8-day trial
- 328 single-use plastic items (16kg) diverted
- Supply chain sovereignty
- **Potential diversion from landfill of 148,200 items (10 tonnes) per year at 1 hospital**

### 3. PLASTIC BALING & RECYCLING IN THEATRES

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**6x 1100L bins (48kg) of plastic waste is generated in theatres each day and transported to loading dock**



**Baling recycled plastic at the source reduced contamination and improves storage capacity and workflow**

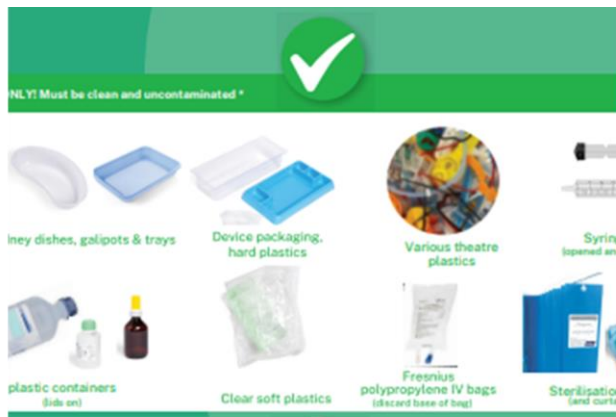


# 3. PLASTIC BALING & RECYCLING IN THEATRES

## Circular interventions for medical plastics

### REQUIREMENTS FOR SUCCESS

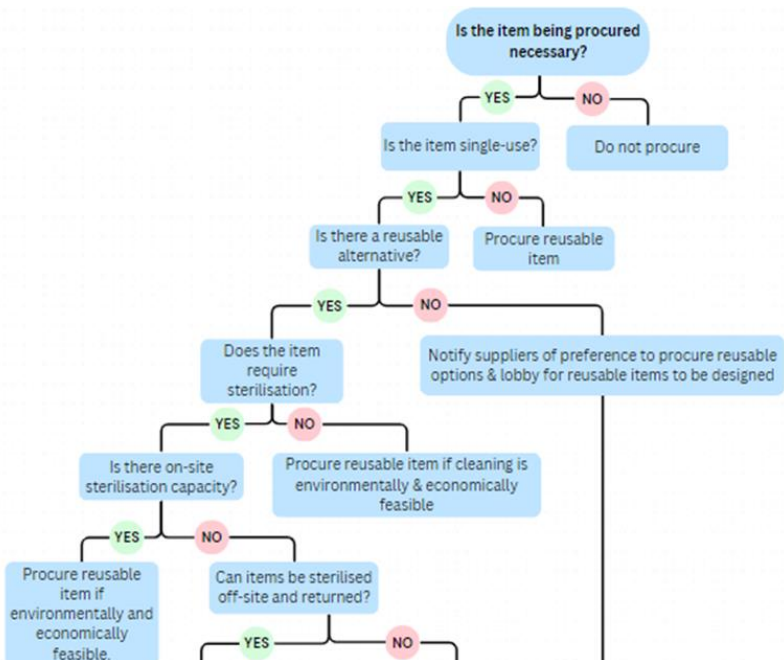
- Highly engaged staff
  - Posters to communicate process changes to staff
- Baling equipment installed
  - Bin Trim Equipment Rebate



### OUTCOMES

- 2x small footprint balers installed in theatre waste room
- 240kg diverted per week
- Improved workflow
- **Potential diversion from landfill of 12 tonnes per year at 1 hospital**

# MECHANISMS TO SUPPORT LONG-TERM OUTCOMES



## Data

Waste & procurement data framework for hospitals

## Design

Prioritise design of reusable and recyclable items for medical plastic items and packaging

## Procurement

Prioritise zero waste hierarchy in procurement processes: include stronger sustainability criteria

## Transparency

Include information for items such as polymer type and recyclability

## Consistency

Develop and promote standard approach to recycling at hospitals

# HOW MUCH WASTE COULD BE DIVERTED?

In 1 year across 3 hospital trials



**83,000 tonnes of plastic waste**

**OR around 500,000 single-use items**

# Thank you

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## Business Programs

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