HIND CONSULTANCY

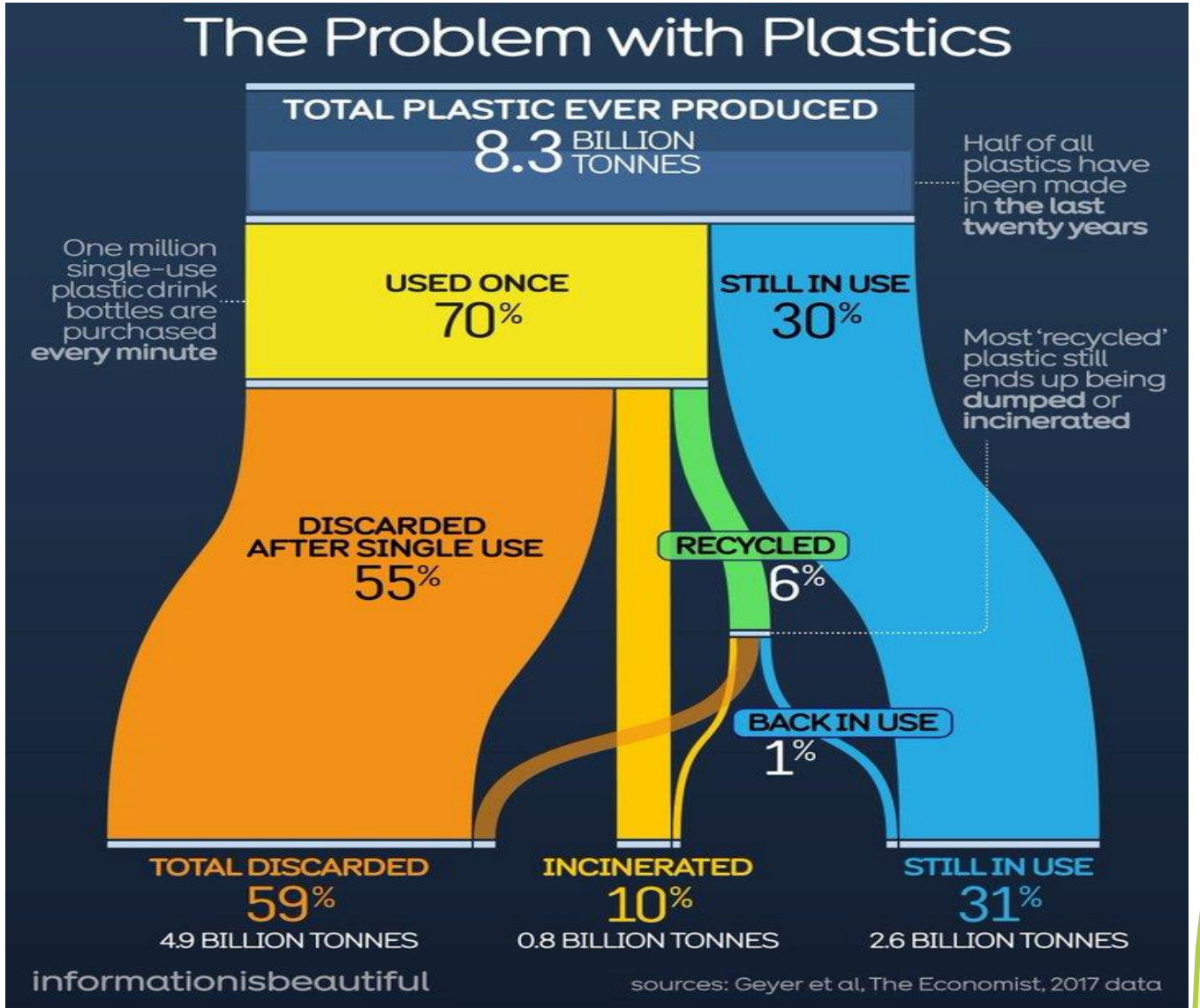
Reducing Single-Use Medical Items

Climate Action Accelerator

Importance of Reducing Single-Use/Plastic in Hospitals

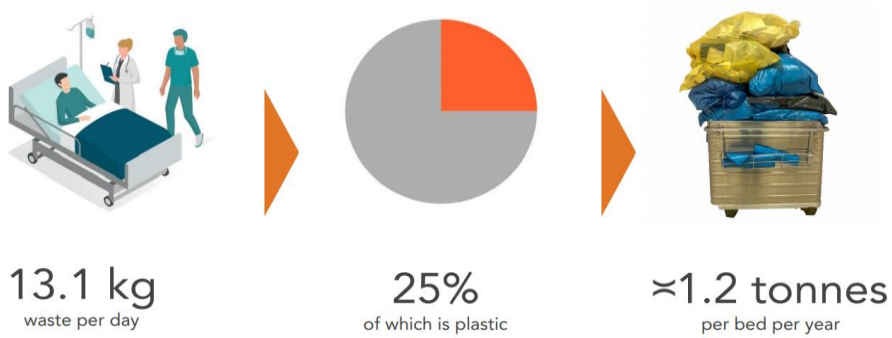
The Problem With Plastics

- Global average of 28kg of plastic waste per person.
- Microplastics have even been found in the human placenta and in lung tissue.
- Research has shown that polystyrene beads can cross the placental barrier and plastic particles pass from mother to foetus.
- Oil & gas extraction plus high energy use in production.



The Problem With Single Use

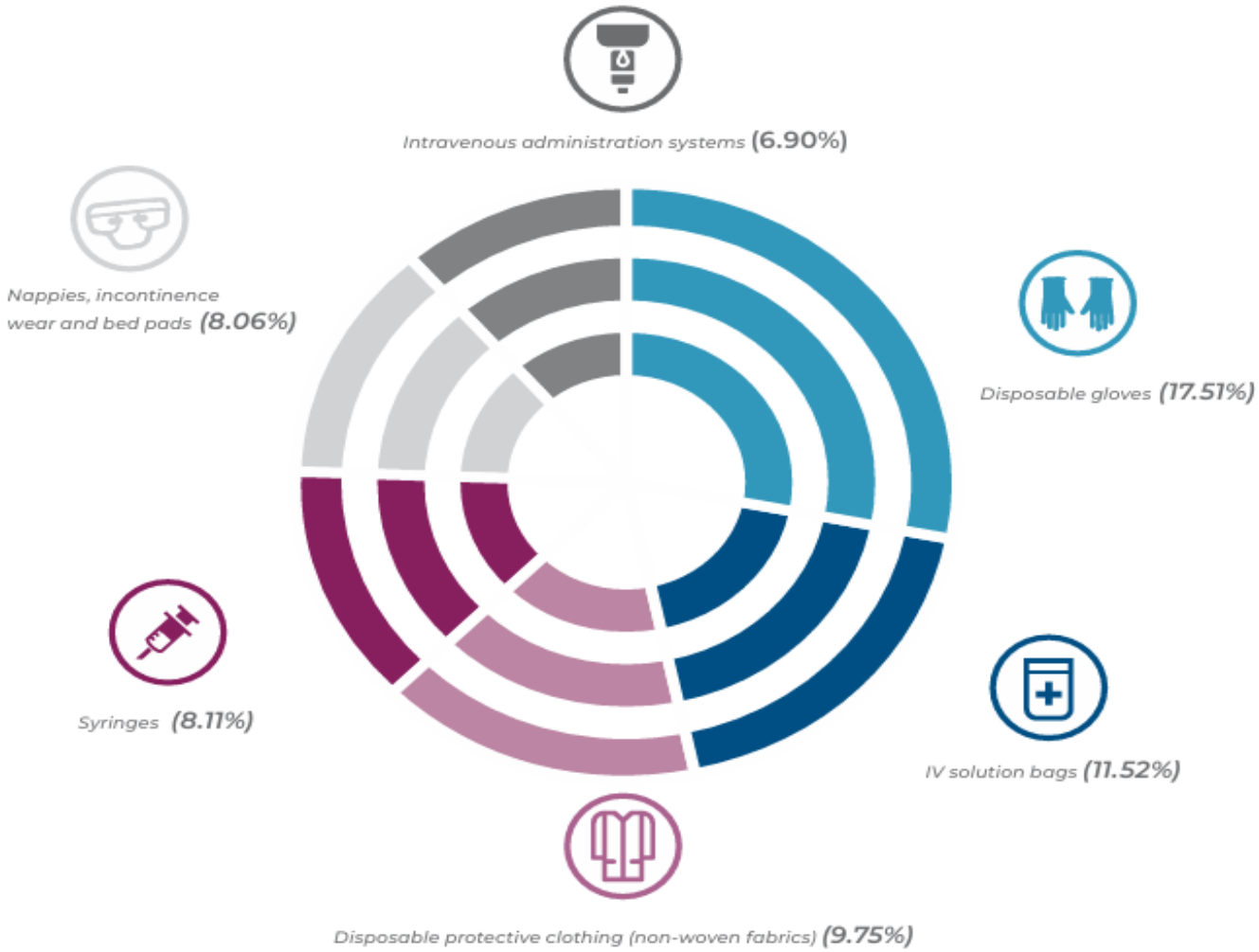
- Hospitals generate over 13kg of waste per bed per day (of which 15-25% is hazardous).
- Cost implications.
- Reliance on Supply Chain.
- Often marketed as being “safer”.



- *Around 100 single use items in standard cataract operation*
- *Over 4m carried out annually in Europe*

Current Usage & Priorities

Key Medical Categories



- Six product categories accounted for over 60% of the total plastic used

Source: P14 [2021-09-23_Measuring-and-reducing-plastics-in-the-healthcare-sector.pdf (noharm-europe.org)]

Common Non Medical Items

Catering materials:

- Cups
- Cutlery
- Plates
- Trays
- Single-serving snacks packaging
- Small drink containers (e.g. 85ml bottles)
- Condiment sachets
- Bottled water

Patient care:

- Disposable medicine pots
- Wipes sachets (non-disinfectant)
- Wipes and cleaning cloths
- Continence care products (e.g. nappies)

Others:

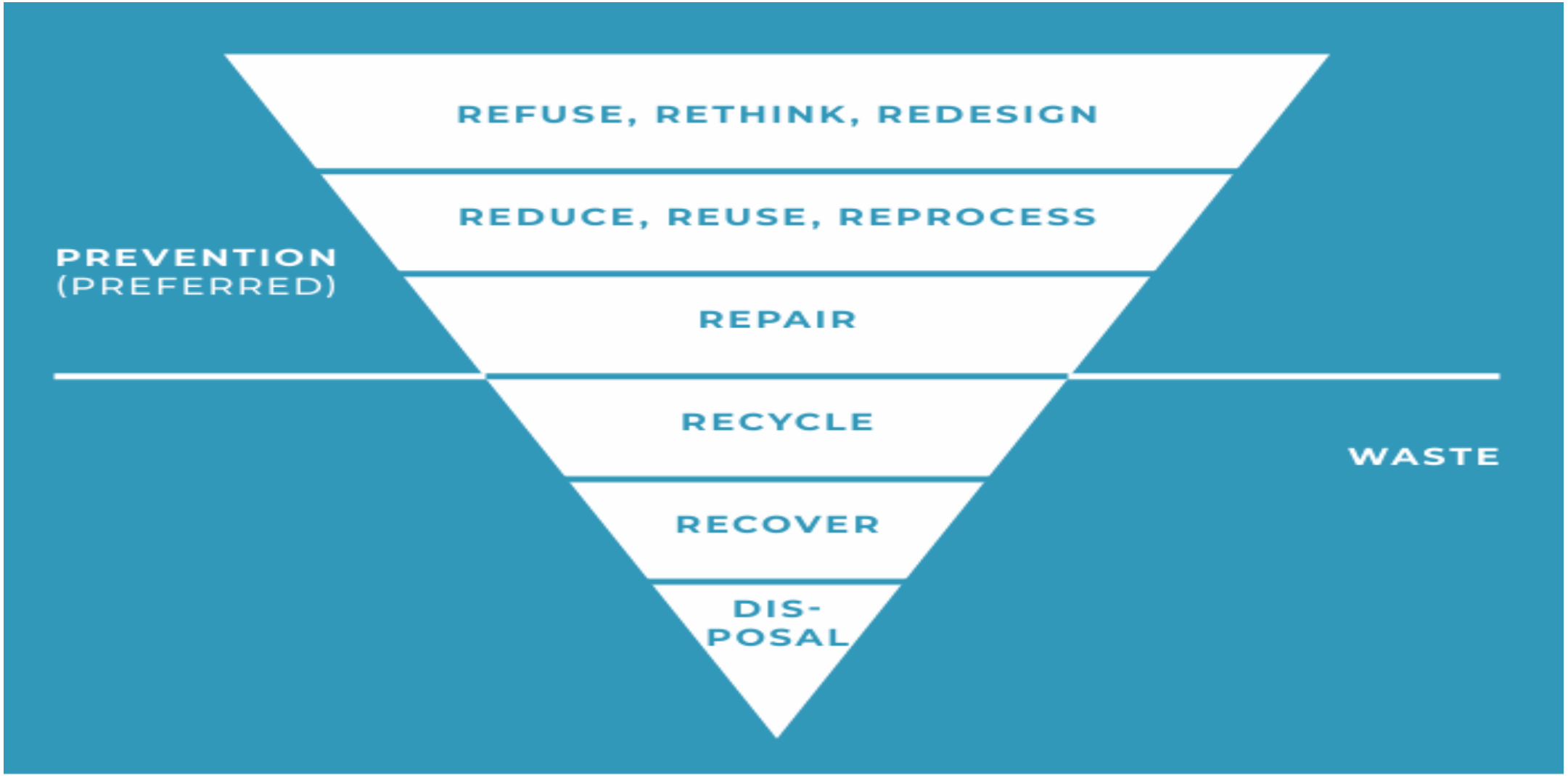
- Plastic bags
- Sponges
- Small plastic toy

Key Strategies for Reduction

Key Strategies

- **Supply chain assessment**: Evaluate current procurement practices and identify opportunities for improvement.
- **Alternative materials**: Explore eco-friendly alternatives to single-use plastics.
- **Recycling and waste management**: Implement effective recycling programs within hospital premises.

The Waste Hierarchy



The waste hierarchy [Adapted from Zero Waste Europe's Zero waste hierarchy]

Moving to Circular Economy

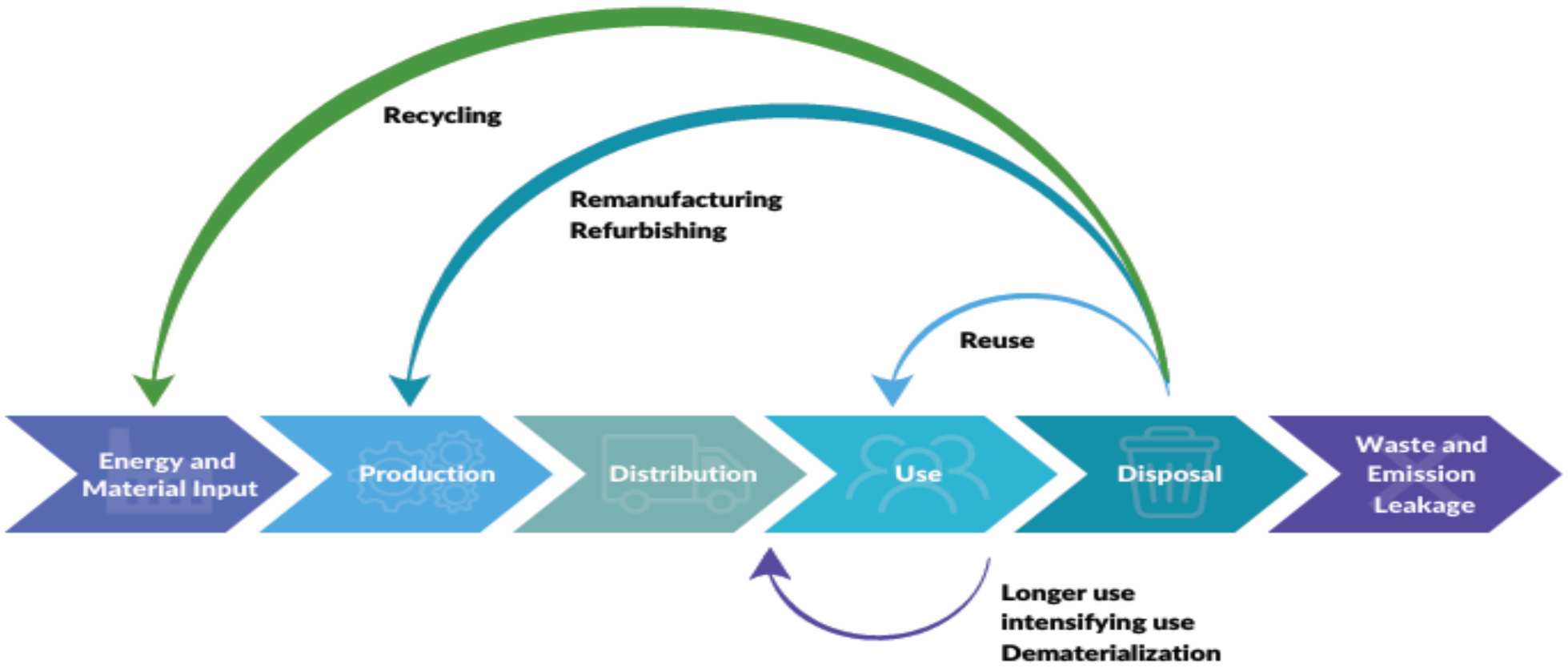


Figure 3: Circular and linear utilization models[8]

Remanufacturing

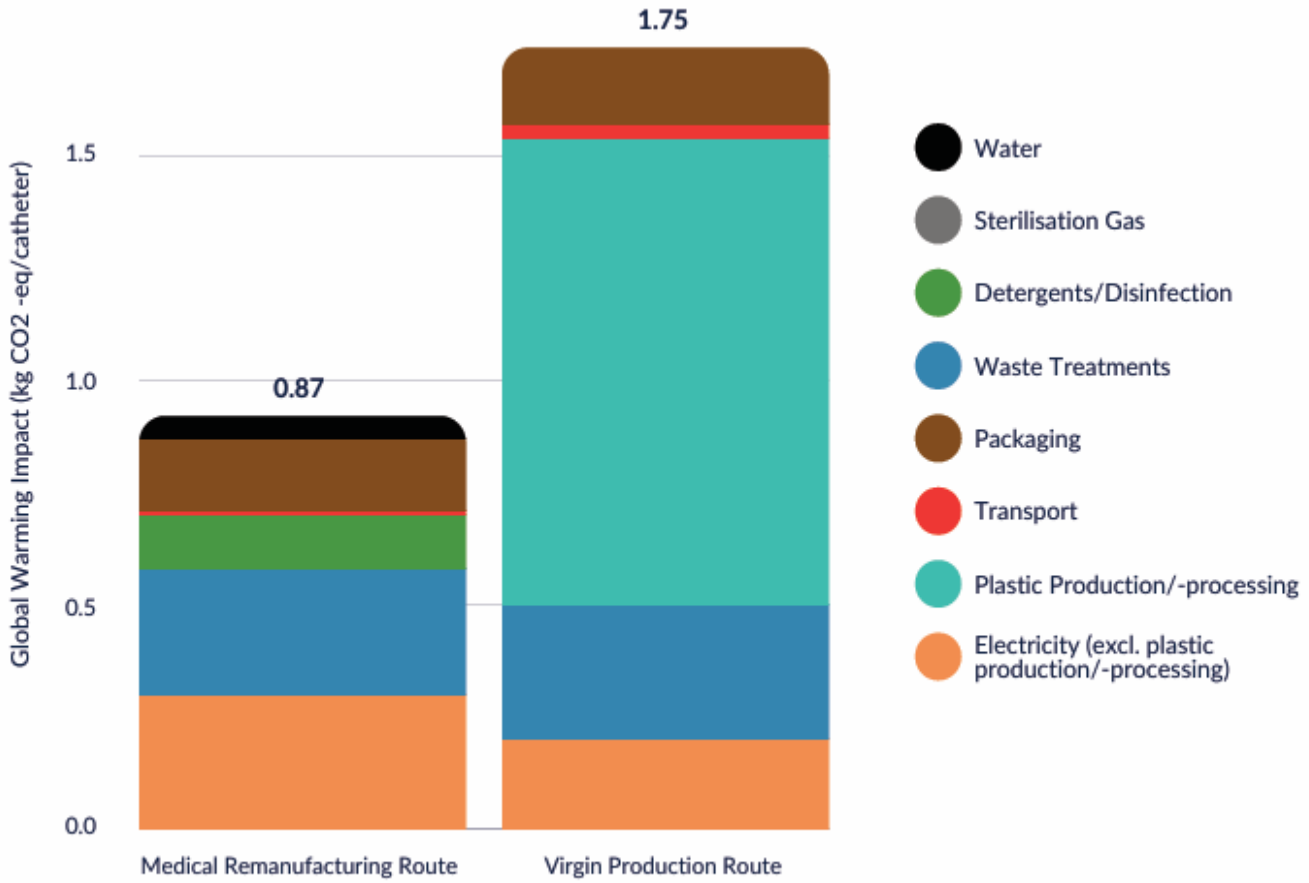


Figure 2: Comparing CO_2 impact of new and reprocessed EP devices[6]

'The use of remanufactured circular mapping catheters is safe, efficient and reliable. Widespread use of remanufactured single use devices offers the possibility of significant economic benefit'

Leung et al. Journal of Interventional Cardiac Electrophysiology

Source: Reusing, Recycling, and Reprocessing in Healthcare_ART0292 Rev. 1.pdf (hubspotusercontent-na1.net)

Case Studies & Examples

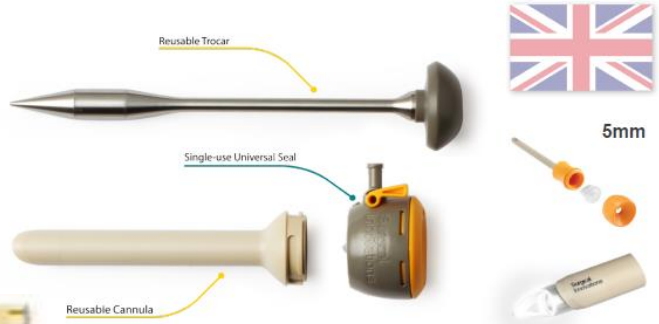
Proven Examples

Gloves off: You don't have to wear gloves when...

University Hospitals Sussex NHS Foundation Trust

Reduce single use plastics in operating theatres

YelloPort Elite™ Resposable™ port access system with full range of trocar tips



Theatre Caps: bee7e3_434817fd253d48dca78625961e02fe18.pdf (warwickmed.co.uk)

Reusable Isolation Gowns

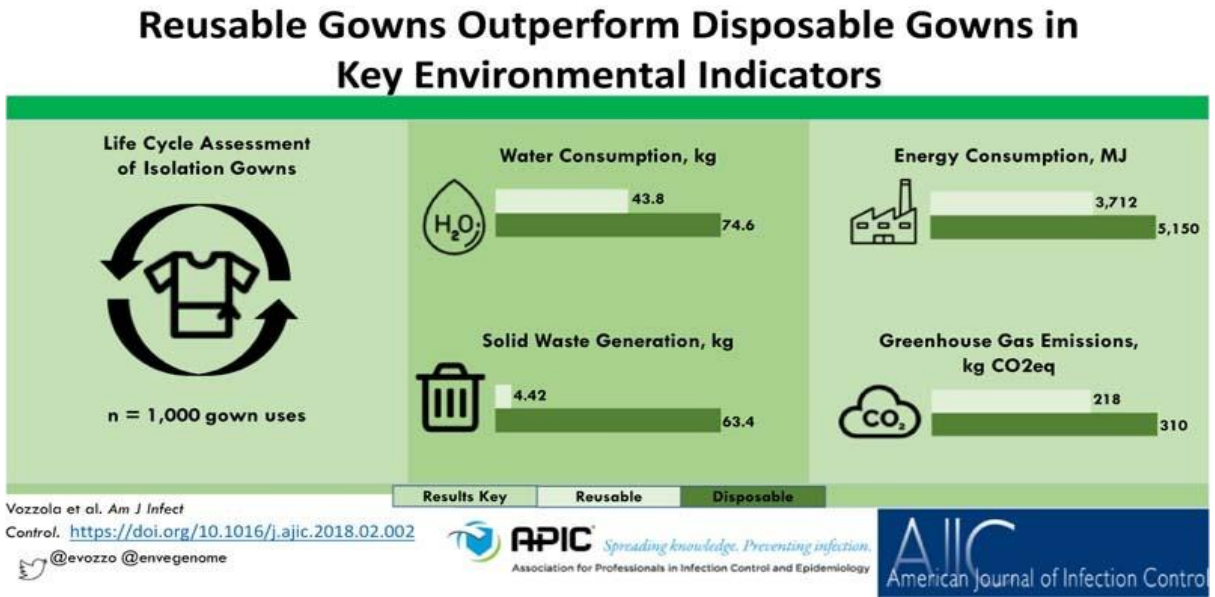
Case Study from Ronald Reagan UCLA Medical Center, Los Angeles, California

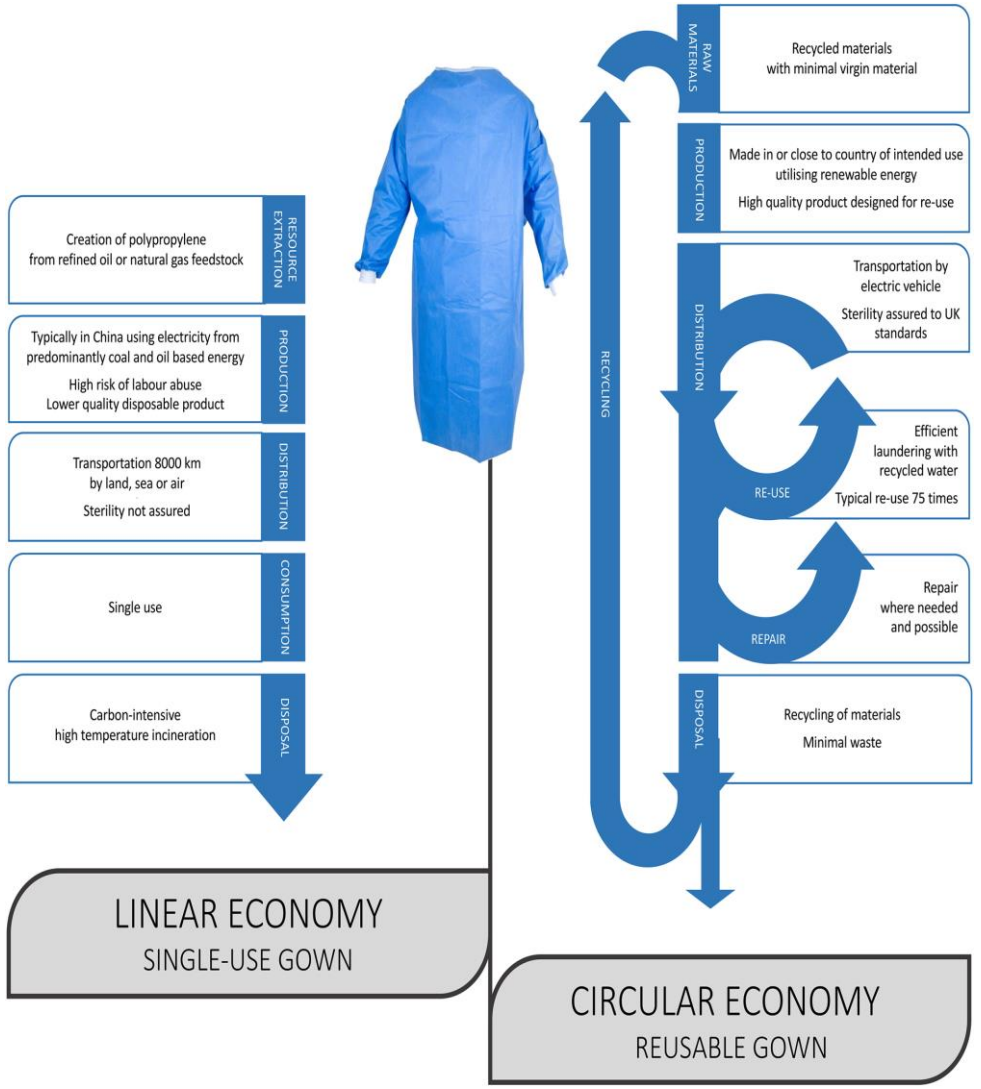
Over 3.3 million reusable gowns have been used as of November 2015, resulting in total financial savings of over $1.1 million.

297 tons of waste has been diverted from the landfill as a result of this program

Originally projected to have a lifespan of between 50 and 75 uses, the actual lifespan of the reusable gowns is typically between 75 and 100 uses

Different sizes available so better user experience.





Source: Our over-reliance on single-use equipment in the operating theatre is misguided, irrational and harming our planet | The Annals of The Royal College of Surgeons of England (rcseng.ac.uk)

Couch Roll

- Couch covers “serve little purpose” from an infection prevention point of view.
- Save average hospital £3,900 (4,600 Euros) per year as well as 55 miles of paper, equivalent to 7.5 trees.
- Reduction of 1,776kg in clinical waste and 4,107kg of C02e per year

Source: Call to reduce waste by getting rid of paper couch covers | Nursing Times

Remanufacturing Medical Devices

	2020	2021 (Q2)	NHS potential
Hospitals on board - collections	24	34	62+
Devices collected	18,094	12,032	22,000
Weight of devices collected	1,476 kg	1,799 kg	3.3 tonnes
Payments for collections	**£142,037**	**£94,152**	**£170k**
Hospitals on board - purchase	1	4	62+
Remanufactured devices purchased	81 (one trial site)	502	7.7k
Estimated savings	**£12,120**	**£78,385**	**£1.2m**
CO_2 reduction	70 kg	437 kg	6.7 tonnes

Diagnostic Catheters | Ablation Catheters | 3D Mapping Catheters | Surgical and Orthopaedic Instruments | Endoscopic and Further Medical Devices

Source: Device-Remanufacturing-How-to-Guide-ppt.pdf (lpp.nhs.uk)

Changing Practice – Reducing Unnecessary Cannulation

- Project team designed posters encouraging staff to ‘contemplate before you cannulate’.
- An audit after 12 months showed a 25% decrease in cannulation during attendance in the emergency department, down to 61%.
- Of the patients cannulated during attendance, only 27% were unused, down from 40%.
- This constitutes a reduction of 40 unnecessary cannulations a day and suggests a potential annual reduction in associated carbon of around 19,000 kgCO2e with a cost saving of around £95,000.

Source: Greener NHS » Reducing unnecessary cannulation at Charing Cross Hospital (england.nhs.uk)

Further Reading

- Reusing, Recycling, and Reprocessing in Healthcare_ART0292 Rev. 1.pdf (hubspotusercontent-na1.net)
- Device-Remanufacturing-How-to-Guide-ppt.pdf (lpp.nhs.uk)
- Measuring and reducing plastics in the healthcare sector | Health Care Without Harm (noharm-europe.org)
- Plastic Pollution Facts and Issues | The Problems With Plastic (plasticfreejuly.org)
- Waste | Practice Greenhealth
- ucla_isolation_gown_case_study.pdf (practicegreenhealth.org
- https://rcem.ac.uk/wp-content/uploads/2023/05/Any-Dept-Reducing-Unnecessary-Cannulation-1.pdf

Thank You

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