



GREEN ANAESTHESIA: REDUCING WASTE FROM NEURAXIAL ANAESTHESIA IN THE COOMBE HOSPITAL – A QUALITY IMPROVEMENT PROJECT (QIP)

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BACKGROUND

- Climate crisis: greatest threat to human health in the 21st century
- **Sustainability** in healthcare is a key issue;
- Healthcare sector **4.4%** of global carbon emissions; comparable to the **5th largest emitter** in the world in 2019¹
- The Coombe Hospital is a large provider of women's health in Ireland
- **6,974** deliveries and **6,042** gynaecological procedures² in 2023
- Neuraxial anaesthesia plays a major role in care of these women with significant waste from premade packs

AIMS

- To audit the use of items within neuraxial packs in the Coombe; identify items not routinely used by > 50% of anaesthetists
- Inform a QIP to reduce waste, cost and facilitate a more sustainable practice

METHODS

- Following institutional approval;
- Anaesthetic staff (**24**) were surveyed on which items they used
- Data on neuraxial rates were taken from annual reports and epidural logbooks
- Data on cost was collected from procurement and pharmacy departments

RESULTS

- Survey response rate **79%** (19)
- 5,815 neuraxial packs used per annum at **€8.98** each
- Epidural packs consisted of **20** items
- SAB packs consisted of **14** items
- **9** items were unused by >50% of staff across both packs

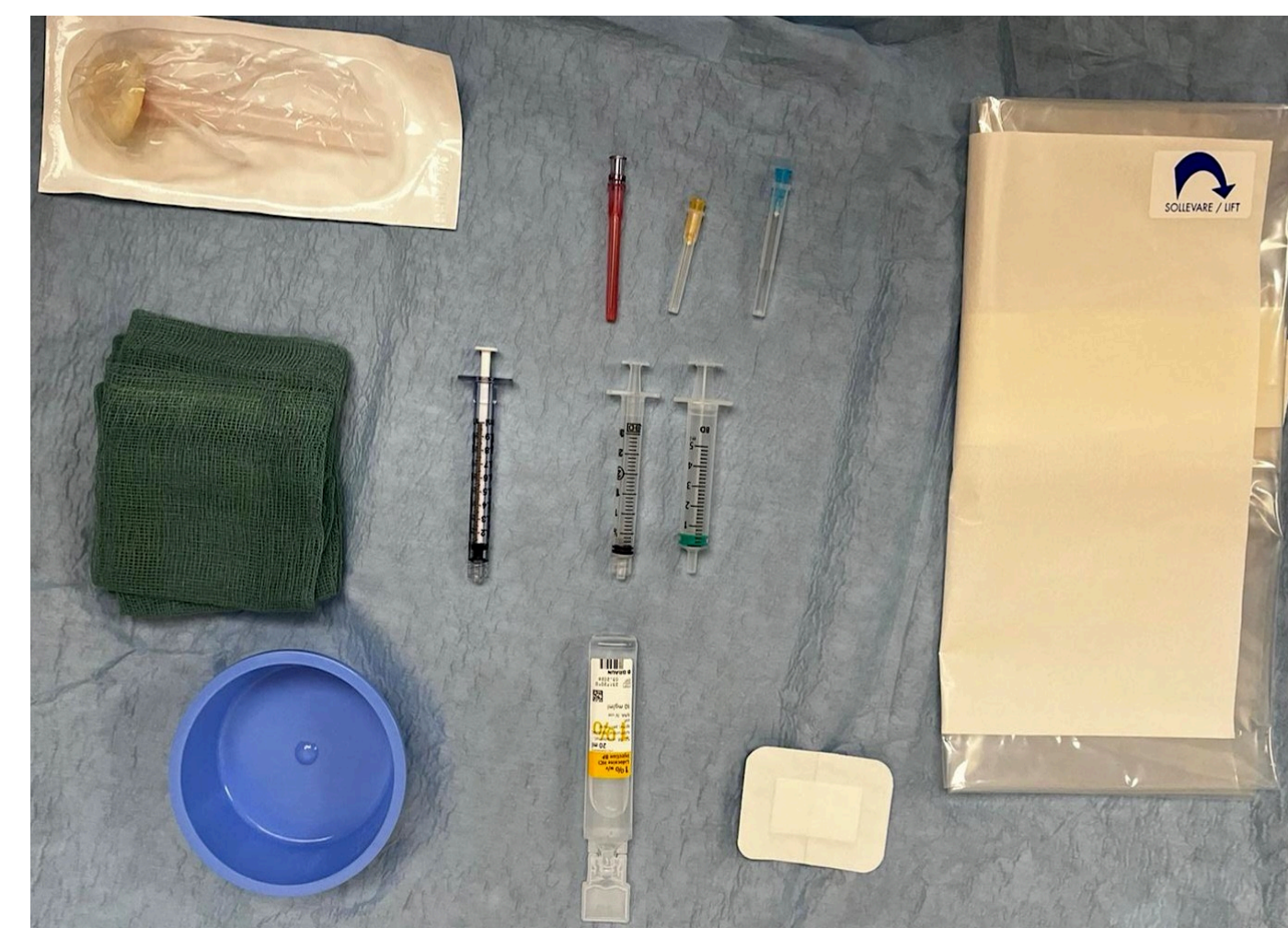
Survey Results		
% Respondents		
	Used	Unused
Epidural anaesthetic pack		
21 G needle	31.6%	68.4%
Strip adhesive bandage	47.4%	52.6%
Sterile Huck towel	26.3%	73.7%
3 ml Luer lock syringe	26.3%	73.3%
20 ml 1% lidocaine	5.3%	94.7%
1 ml Luer lock syringe	0%	100%
Spinal anaesthetic pack		
10 ml Luer lock syringe	31.6%	68.4%
2.5 ml Luer slip syringe	15.8%	84.2%
21 G needle	36.8%	63.2%



PICTURE 1. INITIAL NEURAXIAL PACK; ITEMS NOT ALWAYS USED FOR BOTH CIRCLED



PICTURE 2. PROPOSED EPIDURAL PACK



PICTURE 3. PROPOSED SPINAL PACK

DISCUSSION

- The College of Anaesthesiologists of Ireland and the Royal College of Anaesthetists advise **minimisation of waste**
- Green Anaesthesia is crucial
- Rationalising procedure packs; a simple yet high yield way sustainability in daily practice
- Unnecessary items were excluded which led to a cost benefit of **€0.45** per pack
- Extrapolated to **€2,616.75** per annum or **€13,083.75** over 5 years
- **26,877** items saved from clinical waste per annum; with **134,385** items saved over 5 years
- Does not include the **hidden costs**; financial and CO2e in the waste disposal of these items
- This project demonstrates that small changes can lead to a tangible improvement in sustainability and a step closer to green anaesthesia
- We encourage other units to review and eliminate redundant items in their procedure packs

REFERENCES

1. Elliot K, Durdin S. Sustainability International Agreements. In: Environmentally Sustainable Anaesthetic Practice e-Learning. London, UK: Royal College of Anaesthetists; 2020. https://www.rcoa.ac.uk/sites/default/files/documents/2022-01/RCoA%20Sustainability%20e-learning%20all%20chapters_1.pdf
- *The Coombe Hospital Annual Report 2023*. Available at: https://static1.squarespace.com/static/5df2275ab592b63d2d87fd51/t/672a1a510c699e15c26299f0/1730812509710/The+Coombe_Annual+Report+2023_Web.pdf (Accessed: 22 January 2025).