Sustainable Waste Management in the Operating Room

Yilmaz Ates, Ashley Connolly, and Trayce Wilk
Department of Academic Nursing, Nurse Anesthesia Program | Wake Forest University School of Medicine

Introduction

Background and Significance:

- In 2021, the WHO declared climate change the most significant health threat facing humanity
- U.S. healthcare contributes to 8.5% of greenhouse gas emissions
- Hospitals produce 4 billion pounds of waste
- Disposal of recyclable waste costs $0.02 per kg compared to $0.62 per kg of infectious waste

Problem Statement:

- AHWFB-WMC lacks receptacles for recyclable medical material in the OR and recycling policies, which inhibits proper waste segregation

Aims:

- To improve knowledge about waste management and recycling in the surgical suites of AHWFB-WMC

Objectives:

- Critically analyzed the literature to enhance staff knowledge about recycling and waste management at AHWFB-WMC.
- Developed a survey that obtained information about staff attitudes and practices of recycling at AHWFB-WMC.
- Developed an educational seminar presentation that included information about recycling, healthcare waste, and its impact.

Methodology

PICO Question: In the operating room setting, did implementing a recycling program compared to current waste disposal practices lead to reduced waste, cost savings, and a positive environmental impact?

Project Site:

Atrium Health Wake Forest Baptist-Wilkes Medical Center (AHWFB-WMC)

Key Stakeholders:

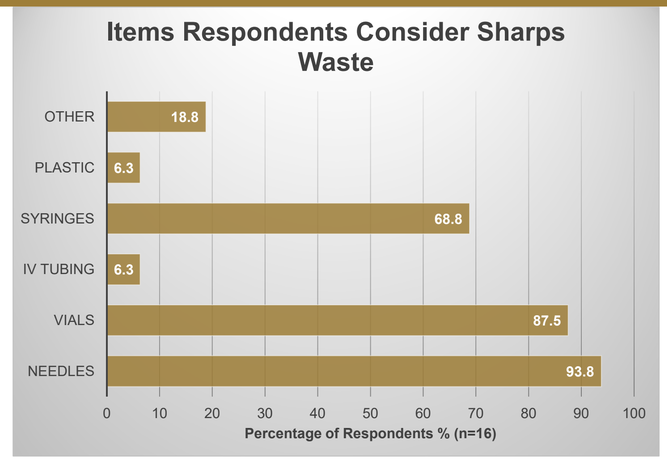
Administrators (Chief CRNA and OR nurse manager), anesthesia providers (nine CRNAs and three anesthesiologists), the surgical team (Registered Nurses, Surgical scrub technicians, and Anesthesia Technicians), supply chain, and environmental services

Data Collection:

14 question survey developed and distributed through REDCap between December 2024 and January 2025

Results

- Total survey responses included 16 participants with a response rate of 51.6%
- 75% of respondents agreed they would be willing to participate in a recycling program in the OR
- Over 80% agreed they would like to have more knowledge about recycling and regulated medical waste
- The most significant barriers to recycling in the OR by staff included lack of hospital policy 68.8% and lack of recycling receptacles 81.3%
- Knowledge gaps exist regarding the correct disposal of items in the sharps bins and bins for regulated medical waste (biohazard bins)



Recommendations

- The amount of waste produced that could be recycled ranges between 15 to 65%.
- Quantifying volumes of waste provides baseline data when implementing a recycling program
- Staff education is essential.
- Surveys, audits, presentations, learning modules, and visual aids build a foundation for improved knowledge
- Ongoing education is vital in changing perceptions and increasing staff awareness of policies
- Providing multiple bins and resizing waste containers helps mitigate improper disposal.
- Recycling programs demonstrated savings between $873 per month to $694,140 annually.

Conclusion

- Implementation of a recycling program can produce both cost-savings and environmental benefits.