Less is More: Optimizing Surgical Trays Reduce Cost and Environmental Impact

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Background

• The health care sector accounts for an estimated 10% of U.S. greenhouse gas (GHG) emissions
• The US health care sector would rank 11th if ranked as it’s own country
• Sterilization of surgical instruments is a significant contributor to GHG emissions

Research Objectives

Perform a comprehensive examination and subsequent optimization of the pediatric surgical trays by:
1) Updating surgical trays
2) Optimizing instruments and tray types
3) Quantifying impact of change

Methods

• Urban, free-standing academic children’s hospital with 13 pediatric surgeons performing 3,000-3,500 cases annually
• Audit of trays with key stakeholders
• Eliminate instruments, decrease unique tray types

Results

• Prior to optimization: 7 unique tray types reduced to 3.
• The total number of instruments decreased from over 3,400 to just over 2,800
• Annual cost savings of $40,524
• Annual GHG emissions reduced by 4.73 metric tons of CO2 equivalent to driving 12,118 miles or driving from Seattle, WA to Key West, FL over 4 times

Other Benefits

• Improved set up efficiency → Potential for shorter back table set up
• Improved safety → Potential to decrease overuse injuries
• Reduced Confusion → Reorganized order of instruments by techs

Conclusions

• Optimization of surgical trays improves efficiency
• Substantial cost savings & reduction in environmental impact
• Environmentally responsible healthcare delivery