

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

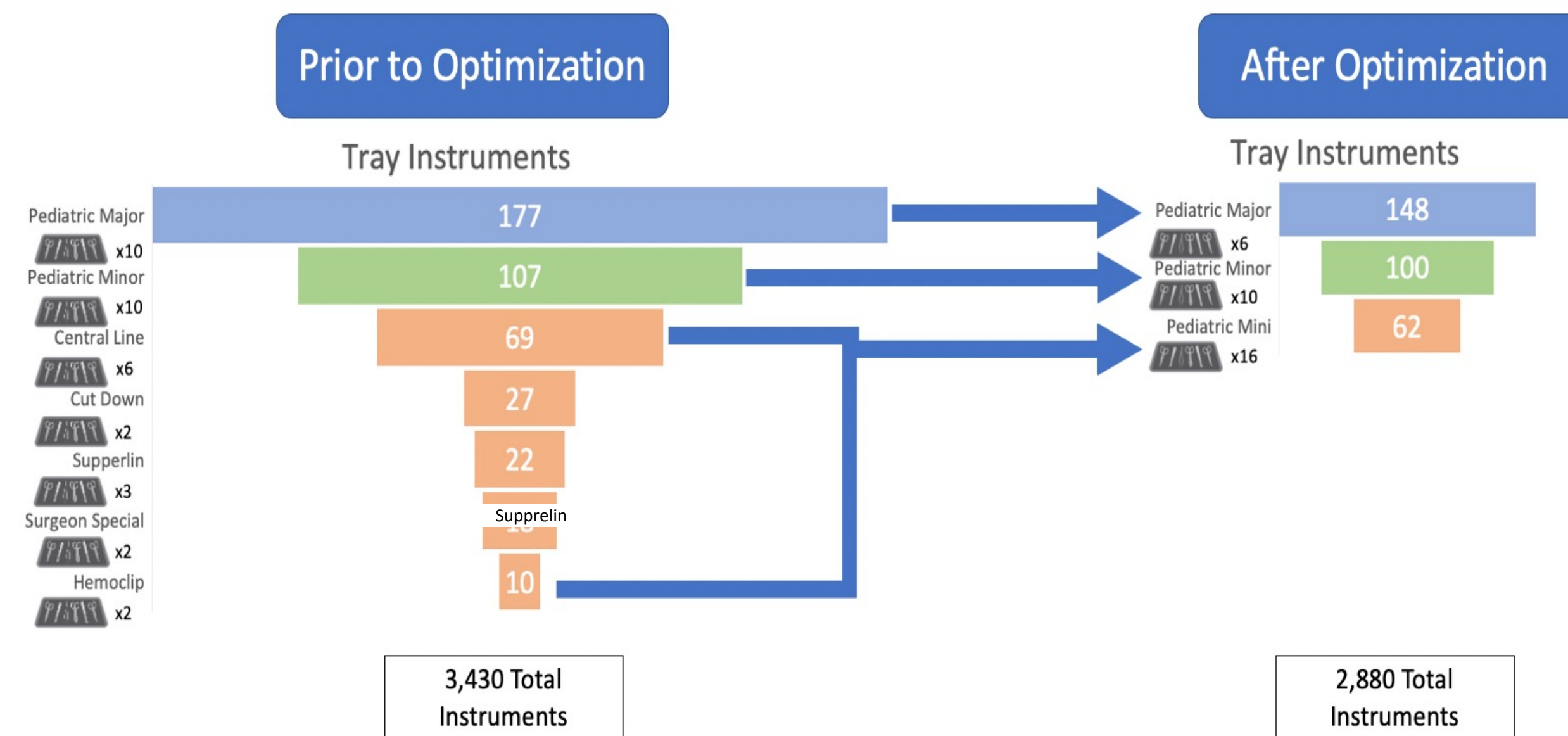
Research Objectives

Perform a comprehensive examination and subsequent optimization of the pediatric surgical trays by:

- Updating surgical trays
- Optimizing instruments and tray types
- 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

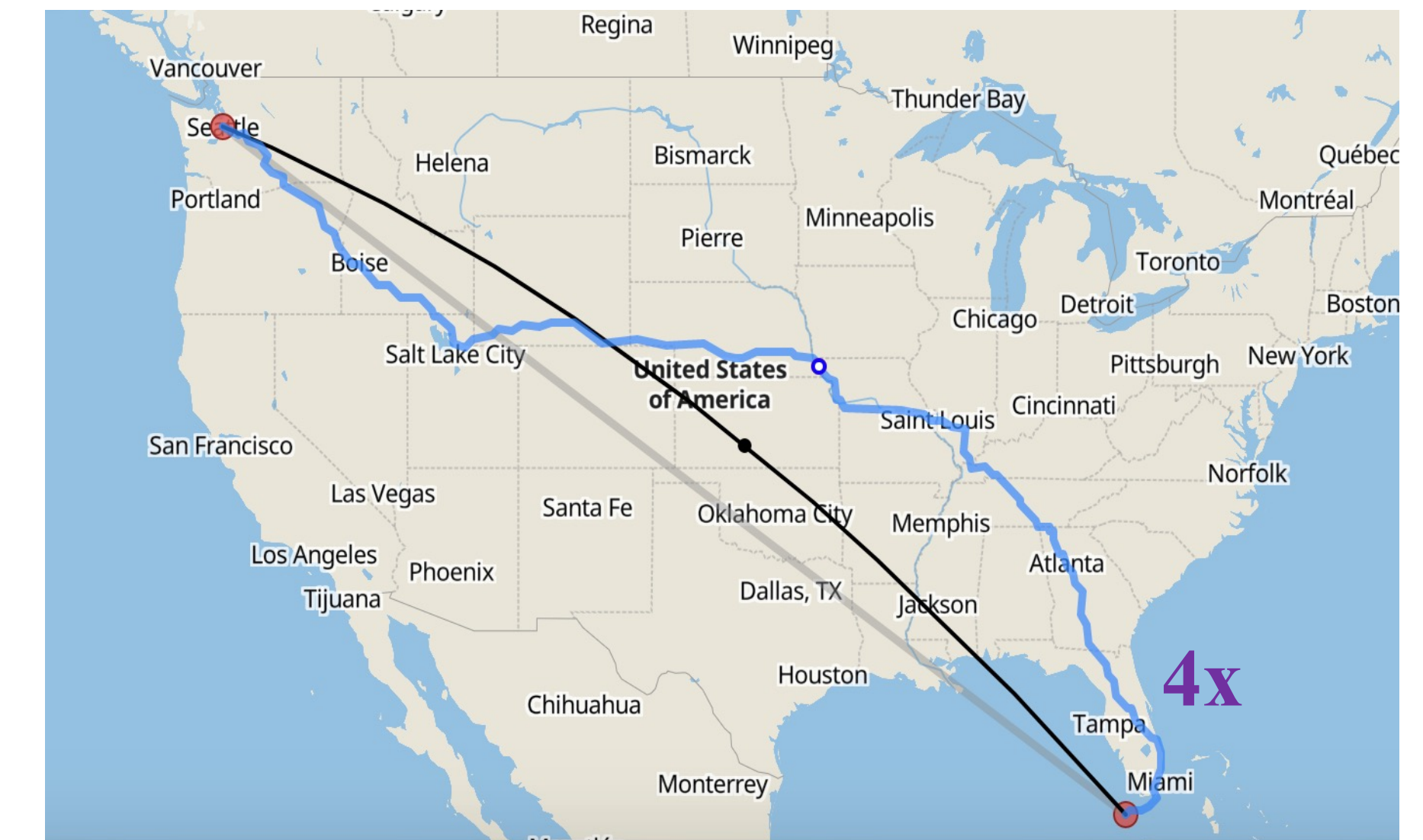


Pre and post optimization tray breakdowns and instrument amounts

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

Annual GHG Emissions Reduction Equivalent



The equivalent miles driven for the amount of CO₂ equivalents is 12,118 miles which is the equivalent of driving from Seattle, Washington to Key West, Florida 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