

# Lean and Green: Minimizing Waste in Hand Surgery

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## Introduction

Costs associated with hospital waste disposal approximate \$360 million dollars per year, representing a significant portion of hospital resources. Approximately 30% of hospital waste is generated in operating rooms (ORs).

Efforts to streamline OR processes and standardize practices has substantially increased waste production but may not benefit patient care or operating efficiency.

Surgeon involvement is necessary to ensure patient safety and quality of care during coordinated efforts to improve efficiency and reduce the environmental burden of surgical procedures.

## Methods

- Routine hand procedures appropriate for local anesthesia with a streamlined instrument set were identified including:
  - carpal tunnel releases
  - trigger finger releases
  - cyst excisions
- A “lean” set-up was created with a subset of instruments and minimal draping
- Data was collected from applicable surgical cases performed between October 2014 and June 2015 at a University-affiliated Surgery Center
- Two weeks post-operatively, patients rated their overall experience and anesthesia experience
- Associated costs were determined from hospital charges
- Incidence of infection was recorded from medical records

## Results

	“Lean” Set-Up	Standard Set-Up
# of Cases	67	103
Waste Generated	5.2lbs	5.6lbs
Overall Experience	9.8	9.8
Anesthesia Satisfaction	9.7	9.2

## Conclusions

- Trash generation, experience rating, and anesthetic satisfaction rating were not statistically significant
- Standard cases cost more than double to setup with \$230 in material costs versus \$105
- Using only local anesthetic avoided pre-operative testing (physical, blood work, chest x-ray, EKG) reducing overall costs by \$791-\$1,493 per case
- There were no differences in infection rate