



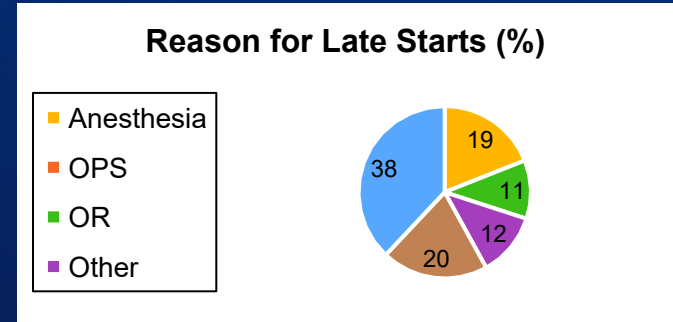
Improving Operating Room Efficiency Using the Six Sigma Methodology

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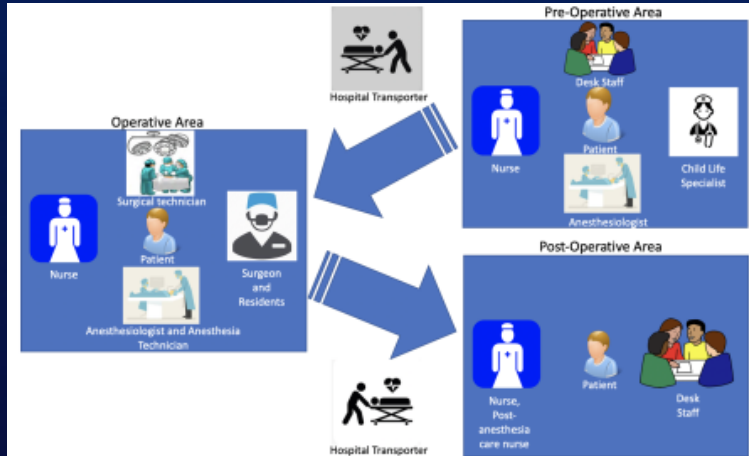
DMAIC Part 1: Define, Measure, Analyze

- Six Sigma is a data-driven approach of continuous improvement to help create a system in which 99.99966% of products are free from deficits
 - Utilized at a rural, tertiary care facility in Texas with goals of improving OR efficiency
- Define and Measure: measured variables included on-time first starts, close-to-cut time, turnover time

- Analyze:
 - First start goal of 80%



- Close-to-cut time (goal 45 minutes):
 - Highest in Neurosurgery (≈ 80 minutes)
 - Lowest in ENT ($\approx 45-50$ minutes)
- Turnover time (goal of 20 minutes):
 - Lowest in Cardiothoracic and ENT ($\approx 20-25$ minutes)
 - Highest in Neurosurgery, Ophthalmology, Pediatrics, and Urology (≈ 30 minutes)



DMAIC Part 2: Improve and Control

OR Personnel	Improvements to Role
Porters	<ul style="list-style-type: none">• Approximately 5 people in room to increase efficiency• Established roles
Nurses	<ul style="list-style-type: none">• Page surgeons when patients enter holding• Update preference cards on surgeons• Bring patient into room while opening instruments so anesthesia can begin their work• Have one RN interview next patient while current case is ongoing
Anesthesia	<ul style="list-style-type: none">• Stagger starts by 15-20 minutes• Have attending see next patient while current case is ongoing• Proper ongoing communication between CRNA, anesthesiologist, and anesthesia
Surgeons	<ul style="list-style-type: none">• Ensure consent and H&P are in order• If resident is closing case, site mark next patient• If surgeon doesn't arrive on time, no first start

- Control: Monitor changes
 - Not implemented due to resistance from OR personnel.
- Areas for improvement:
 - Ensure horizontal and vertical buy-in and leadership
 - Proper communication and commitment
 - Promote shared goals
 - Active reinforcement
 - Obtain feedback from all personnel
 - Ensure proper data collection