Improving First Case On-Time Starts in Thoracic Surgery

Brianna M. Gaytan, M.H.A.[1], Charles R. Sims III, M.D.[2], Tyler C. Little APRN, CRNA, D.N.P.[3]
Department of Anesthesiology and Perioperative Medicine
Site: Rochester

DEFINE

TEAM MEMBERS

Brianna M Gaytan, MHA, Charles R Sims III, MD, Tyler C. Little, APRN, CRNA, DNP, Timothy B. Curry, MD, PhD, Thomas M. Stewart, MD, Ryan E. Hofer, MD, Janani S. Reisenauer, MD, Mitchell J. Kerfeld, MD, Alyssa S. Friese, RN, Janet L. Plein, RN, Karl E. Bjellum, MSN, RN, Sarah M. Rabe, CSA, Jennifer M. Krueger, RN, Cassie H. Momoh, CSA, Jamie M. Mathison, MSN, RN

BACKGROUND

Delays in first case starts can lead to subsequent delays in cases for the remainder of the surgical day. This can delay care to patients with significant downstream effects to surgical personnel, resources, processes and procedures in the surgical suite.

GAP IN QUALITY

The OR Benchmark Collaborative completed a comparative analysis benchmarking 134 surgery centers and acute care hospitals across the U.S. The analysis showed a median first case on-time start of 64.3% compared to 88.3% at the 90th percentile. Mayo Clinic has set a standard across its surgical suite that operating rooms should meet 90% first case on-time starts. From January 2022-December 2022, 51% of first cases in thoracic operating rooms 501-504 started on time.

AIM STATEMENT

This project aimed to improve on-time starts in operating rooms 501-504 from 51% to 90% in 6 months without negatively impacting staff satisfaction.

INSTITUTIONAL SIGNIFICANCE

Baseline data showed nearly half of thoracic surgery patients with first cases experienced a delay in their care with the possibility that this led to delays in subsequent patient cases. This project aims to improve care giver efficiency by removing wasteful steps and establishing standard workflows. Setting timing, sequencing and workflow methods reduces variation and decision-making time, allowing care givers to focus more on delivering efficient high-quality care instead of deliberating on individual process steps.

MEASURE

IMPROVEMENT MEASURE BASELINE AND SAMPLE SIZE

A total of 786 first case starts in our thoracic surgical practice were pulled from the SPI Metrics Dashboard from January 2022 - December 2022. The data showed that in thoracic surgery operating rooms 501-504, 51% of first cases started on time.

DATA COLLECTION PLAN FOR IMPROVEMENT MEASURES

Data was pulled weekly and monthly by core project team members from the SPI Metrics Dashboard. Cases were considered on time if they started no later than 5 minutes past the listed start time. On-time start is measured as a percent of cases starting on time.

ANALYZE

POTENTIAL CAUSES

For a case to start on time, a preop evaluation, consent and site marking performed by the surgical resident, a visit to the patient in preop from the anesthesia team, a surgical briefing, setup of the operating room, and retrieval of the patient from preop must be completed prior to room start time. Staff were surveyed on potential causes and results were organized into a pareto diagram. Primary factors leading to delays were found to be completion of consent and site marking as well as the surgical briefing.
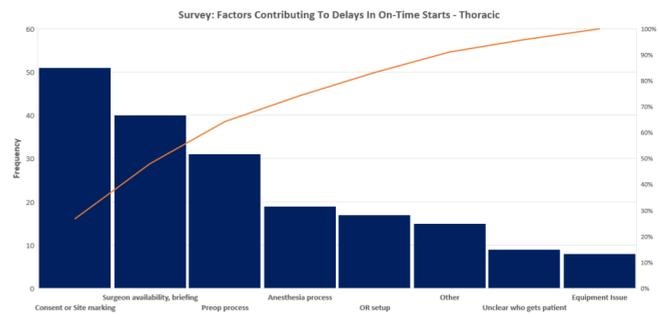
FIGURE 1

Figure 1 shows results from a survey in which staff were asked to identify factors causing delays to first cases.

KEY CAUSE SELECTED

Gemba walks, process observations, and staff interviews were conducted. The information gathered was organized into process maps and timelines which helped visualize process bottlenecks.

Primary findings from root cause analysis were:
- Lack of standard work among several preoperative processes (consent and site marking, surgical briefing, anesthesia visit, staff assigned to get patient)
- Lack of real time visible communication among stakeholders in the value stream.
- Surgeon and Anesthesiologist arriving late to perform their processes
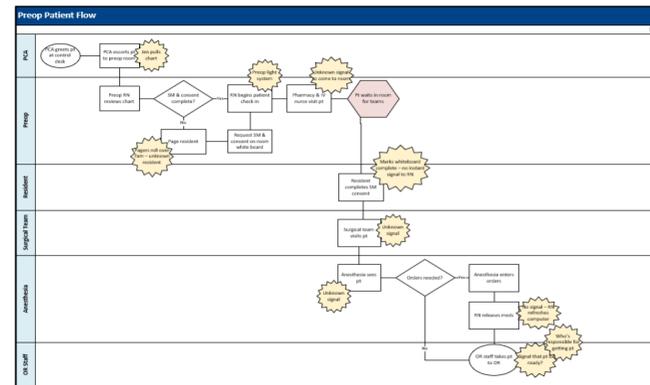
FIGURE 2

Figure 2 shows a process map that was created to highlight individual steps and breakdowns in communication leading up to case start.

IMPROVE

INTERVENTIONS ARE SELECTED AND TESTED

Two PDSA cycles were conducted over a six-month period. Interventions centered around establishing standard work. Standard work provides a framework for how staff should complete a series of tasks. It eliminates ambiguity, improves communication and consistency, and reduces errors by ensuring all staff follow the same processes.

1. Thoracic Surgery residents are to complete consent and site marking at 0700. In the second PDSA, this information was incorporated into orientation to ensure information handoff during rotations.

2. The surgical briefing will take place in the OR at 0715. The surgeon, anesthesia providers, nurse circulator, CSA, and CST are to be present in person. A briefing will take place over the phone only if necessary.

3. Anesthesia will bring the patient from preop to the OR at 0720. During the first PDSA cycle, the CSA was selected as the designated role, but we found this did not work well with their workflows. During the second PDSA cycle, the anesthesia provider was designated to bring the patient to the OR.

COMPARISON FOR THE IMPROVEMENT MEASURE

On-Time starts improved from 51% to 81% over the six-month improvement period. 61.1 hours of operating room time was saved compared to the same time frame in the previous year.
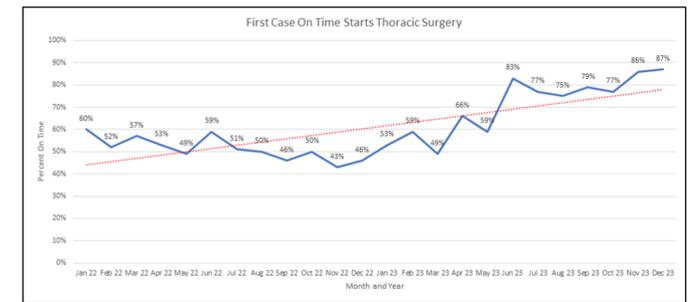
FIGURE 3

Figure 3 depicts a graphical timeline of monthly on-time starts from baseline data through the final improvement cycle.

CONTROL

LESSONS LEARNED

The scope of the value stream for this project required a coordinated multidisciplinary effort. Processes affecting delays in on time starts involved the preop area, operating room, residents, surgeons and anesthesia providers. To help accomplish this, champions from each group were carefully selected to include those with influence among their group.

When analyzing root causes, we found data was helpful to get started, but in person Gemba walks and staff interviews were the most helpful tools for framing specific process issues.

COMMUNICATION

For each intervention, PDSA forms detailed the team members involved, a timeline with exact implementation dates and a communication plan with exact dates for disbursement. Data was pulled weekly, and the sponsor reviewed the results and forwarded to stakeholders.

MONITORING PLAN

A team in Thoracic will pull the on-time start data monthly. If results fall out of expected range, they will pull a detailed delay reasons report from Epic and connect with necessary stakeholders to adjust the processes in place.

REFERENCES

1. *Data for benchmarking your OR's performance.* (2012, January 27). OR Manager. https://www.ormanager.com/or-performance-2/

2. *Standard Work.* (n.d.). Gemba Academy. https://www.gembaacademy.com/resources/gemba-glossary/standard-work