



Optimizing Procedural Capacity in Current Gastroenterology Endoscopy Footprint

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Background

The demand for hospital endoscopy services has increased to the point that the 4 room suite of procedure rooms at Mayo Clinic Hospital (MCH) in Arizona is inadequate. From 2009 to 2013, the endoscopy suite at MCH averaged 15% year-over-year increases in procedural volume. With an increase in the number of therapeutic procedures and the constraint that only 2 of the 4 procedure rooms can accommodate the use of anesthesia, the need to optimize the use of those two rooms is critical. Since the plan to build a new endoscopy suite with additional anesthesia capacity will not occur until at least first quarter 2016, an alternative solution was required. A multi-disciplinary team from GI and Anesthesiology used Lean/Six Sigma methodologies to increase patient appointment capacity without impacting patient safety.

Objective

The aim was to increase the capacity for procedures with anesthesia in the MCH endoscopy suite by 20% before the end of first quarter 2013, without increasing the risk to the patient.

Planning/Research Methods

Multiple stakeholders were consulted including GI Administrative leadership, GI Physicians, GI Nurses and Technicians, GI Scheduling, Anesthesiology Physicians and CRNA's along with Anesthesiology administrative leadership. A multi-disciplinary Lean team was assembled with key stakeholders above to represent areas that would be impacted by future change. A three-day Kaizen event was held early in the process to solicit improvement ideas from an expanded group of stakeholders.

Implementation Methods

Several interventions were implemented with an overall strategy noting that only introducing one change would not deliver the results required to obtain a successful solution. An impact difficulty matrix was completed to prioritize interventions based on perceived improvement outcome and time/resources needed to implement the change. The following improvements were made:

- Create consistent anesthesia teams to optimize the anesthesia practice and process flow
- More accurately align scheduled blocks with specific procedure times
- Develop specialized GI nurse and technician teams for therapeutic procedures
- Monitor and improve on-time starts
- Established room turnover procedures to engage all staff in the room in parallel activities to minimize the time to turn over the room

Results

The implementation of the various interventions listed above quickly improved the efficiency and workflow in the hospital endoscopy suite. Counterbalance data was measured to ensure changes made would not impact patient safety or quality delivered in the procedural suite. Based upon the results of the project (p-value = 0.206), the group was able to conclude that complication rate did not change significantly due to the selected interventions.

The specific outcomes of the project included:

- Procedure counts per day: 15.2 at baseline to 16.7 (9.8% increase)
- Peak number of patients (rooms 3 & 4) by 3 p.m.: 11 to 13 (18% improvement)
- Room turnover time per patient: 26 minutes to 24 minutes (8%)
- Scope-out to scope-in per patient: 51 minutes to 47 minutes (8%)
- Pre-op time per patient: 71 minutes to 54 minutes (24%)
- Decrease in endotracheally intubated procedures from 68% to 40%
- Effort has begun to ensure additional procedures are being directed to the hospital GI practice in order to take advantage of the increase in capacity

Contact

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