

Joint Perioperative Efficiency Adds Capacity to Parallel Rooms

Scheduling, perioperative time and staff utilization improvements adds new revenue

AT A GLANCE

- 550-bed county and teaching hospital in large, urban area
- Regional center for trauma, burn care, transplants and rehabilitation
- 12 OR suites and a strong desire to grow joint replacement volume

ISSUES

- Lack of coordinated preoperative processes affecting surgical day
- Poor coordination between nursing, anesthesia and the surgeon
- Inefficient use of parallel operating room model

RESULTS

Improved perioperative efficiency enabled additional surgical cases in the same amount of time, adding over \$1.4 million in new contribution margin for the hospital.



INTRODUCTION

A large county teaching hospital and regional center for trauma, burn care, transplants and rehabilitation was interested in growing their joint replacement volume. The hospital is a 550-bed county medical center in a large city in the Great Lakes region of the United States with 12 OR suites. Although they had multiple surgeons performing joint replacement cases, the vast majority were performed by one surgeon who split his cases between the hospital and a competing hospital.

On most surgical days the leading joint surgeon would use two operating rooms to perform five joint replacements, finishing by 7:30 pm. The surgeon believed that he could greatly increase his volume if the hospital had a more efficient perioperative process.

SOLUTION

At the surgeon's recommendation, the hospital contracted with Accelero Health Partners to conduct a thorough analysis of their joint replacement perioperative process and to create a plan for improvement. There were many issues that led to delays during the surgical day, including poor scheduling processes that left gaps in the schedule, outdated preference cards and inadequate patient optimization prior to surgery. The joint surgeon did use parallel rooms, however, the processes were inefficient. And finally, the movements of the staff, patient, surgeon and anesthesia were not well orchestrated.

Based on these findings, Accelero presented a plan and instituted numerous changes focused on improving scheduling, creating goals for perioperative case time elements and developing an integrated process for using parallel rooms for joint replacement surgeries.

Scheduling

Scheduling processes were modified to use the surgeon’s typical ‘incision to close times’ for primary hip and knee replacements, improving scheduling accuracy with fewer gaps. Preference cards were updated with current nomenclature to prevent delays and unnecessary equipment. All patients were required to attend the preoperative education class that set patient expectations for the day of surgery.

Perioperative Efficiency

The hospital’s case time elements for joint replacements were benchmarked against the Accelero hospital database. For the most part, individual elements – patient in room to incision, incision to close, close to patient out and room turnover – were below the average. Goals were created, shared and agreed upon by all of the stakeholders (TABLE 1). To ensure targets were met, the team identified and removed any barriers that could negatively impact case times.

| Time in Minutes | Hospital | Target | Variance |
|------------------------------|------------|------------|-----------|
| ‘Patient In’ to ‘Incision’ | 40 | 25 | 15 |
| ‘Incision’ to ‘First Stitch’ | 100 | 80 | 20 |
| ‘Close’ Process | 20 | 20 | 0 |
| ‘Close’ to ‘Patient Out’ | 15 | 8 | 7 |
| Room Turnover | 35 | 30 | 5 |
| Total Time | 210 | 163 | 47 |

TABLE 1 | Total knee and hip replacement perioperative times v. new targets.

Parallel Room Model

Accelero took the newly created case time elements and mapped out a plan to coordinate patient flow, staff activities, anesthesia and surgeon movement for a fully integrated parallel room model (FIGURE 1).

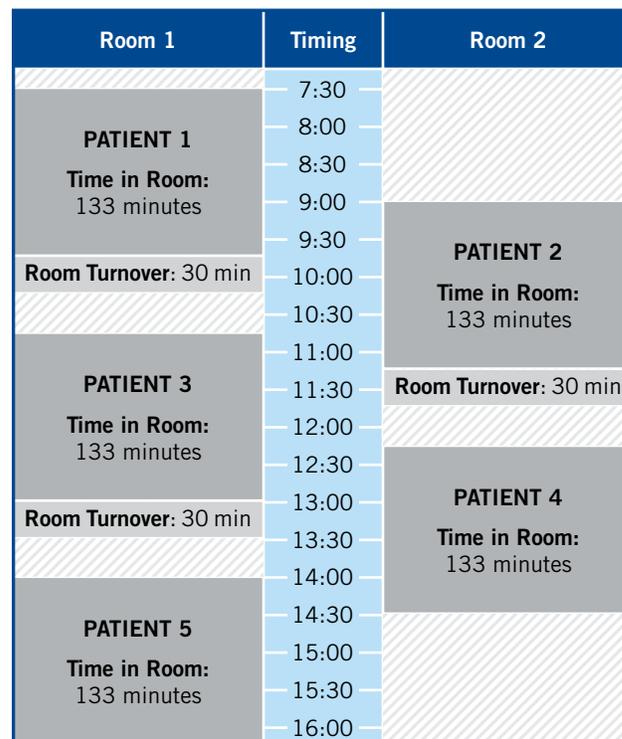


FIGURE 1 | Integrated parallel room model for joint replacements.

This model was used to dramatically improve OR, staff and surgeon utilization. On the first day of implementation the surgeon completed five joint replacement cases by 4:45 p.m., a savings of two hours and forty five minutes compared to his previous typical OR day. As a result of these improvements, the surgeon moved all of his joint replacement cases to the hospital.

SUMMARY

By improving scheduling accuracy, creating joint replacement case time goals, tracking case time elements and creating an integrated parallel room model, the hospital was able to remove nearly three hours from the surgical day and create added capacity. As a result, staff morale improved, staff overtime was greatly reduced and the primary joint replacement surgeon added significant volume to the hospital, resulting in \$1.4 million in new contribution margin.



Accelero Health Partners, a subsidiary of Zimmer Holdings, Inc.
 117 VIP Drive, Suite 320 | Wexford, PA 15090
 Phone: 724-799-8210 | www.accelerohealth.com

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