

**CASE STUDY:**

# **Operational Efficiency Interventions in a 25-OR Hospital**

Exploring practice and process revisions that  
can create measurable change.



## The Situation: The Impact of OR Inefficiency

This case study reviews operational efficiency measures for a large quaternary care hospital that conducts 27,000 annual surgeries in 25 operating rooms.

Many of these cases are referred from other local health systems in the region. While this hospital had the opportunity to expand its volume, inefficient processes prevented it from adding new cases to an already full schedule. It also struggled with lower-than-desired patient and surgeon satisfaction ratings, as well as inflated costs related to case delays and room holds.

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## The Actions: Efficiency-Focused Interventions

In response to these challenges, administration tapped Sullivan Healthcare Consulting to assess the surgical services department and develop a series of initiatives designed to improve operational efficiency over a two-year project from 2016 to 2018.

To ensure collaboration among siloed departments, Sullivan Consultants started by establishing a governance committee to align administration, nursing, anesthesia, and surgery toward the common goal of improving operational efficiency and enhancing the overall patient experience. With this new decision-making structure in place, we also engaged an advisory group of surgeons to verify department performance and drive discussions about progress

toward efficiency objectives. Multidisciplinary performance teams in each department guided changes to support the new interventions.

Sullivan Consultants also developed an extensive pre-admission preparation program, a first for this hospital. Before reporting for surgery on the day of the procedure, every patient will have at least one preparation appointment to identify the best clinical pathway for their needs. Patients do not need additional consultations, tests, or screenings upon arrival for surgery, which reduces delays and room holds that decrease efficiency.

The team established a patient-focused coordination intervention to manage interaction among the nursing, anesthesia, and surgery teams during the preoperative phase. A detailed timeline establishes responsibilities for each group, along with a workflow that keeps the schedule on track. This interven-

tion reduces the chances these health care providers would inadvertently interfere with one another's efforts. Building a framework for open communication allows each group to understand the other's needs and expectations.

Delays in recovery also drive delays and inefficiencies in the OR. Close collaboration with anesthesia allowed the transition to short-acting anesthesia agents where appropriate. The team also revised and refined the discharge instructions so patients could be sent home quickly upon recovery.

## The Results: Measurable Improvements

While implementing and iterating these interventions over the two-year improvement period, Sullivan Consultants carefully analyzed and tracked these operational efficiency benchmarks.

### On-Time Cases

The rate of on-time first-case starts affects the timing of the rest of the day's cases. With our operational efficiency measures in place, the hospital increased on-time case starts from 40 percent in January 2016 to

approximately 58 percent by the end of the fourth quarter of 2018 (Figure 1). When allowing the teams a 5-minute grace period, on-time starts increased from about 60 percent at the beginning of the study period to approximately 75 percent by the end of the study period.

### ON-TIME FIRST-CASE STARTS 7-8 AM | 2016 TO 2018

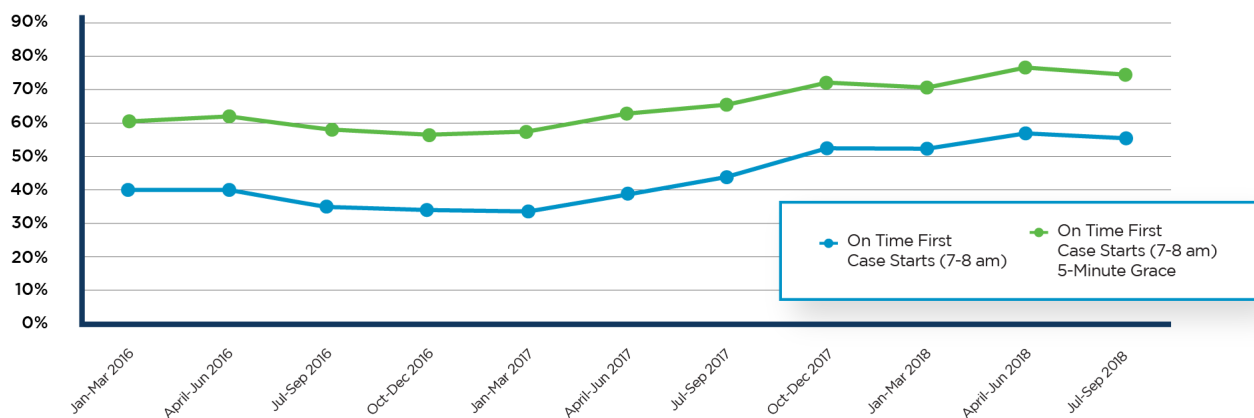


Figure 1

## AVERAGE DELAY IN MINUTES | 2016 TO 2018

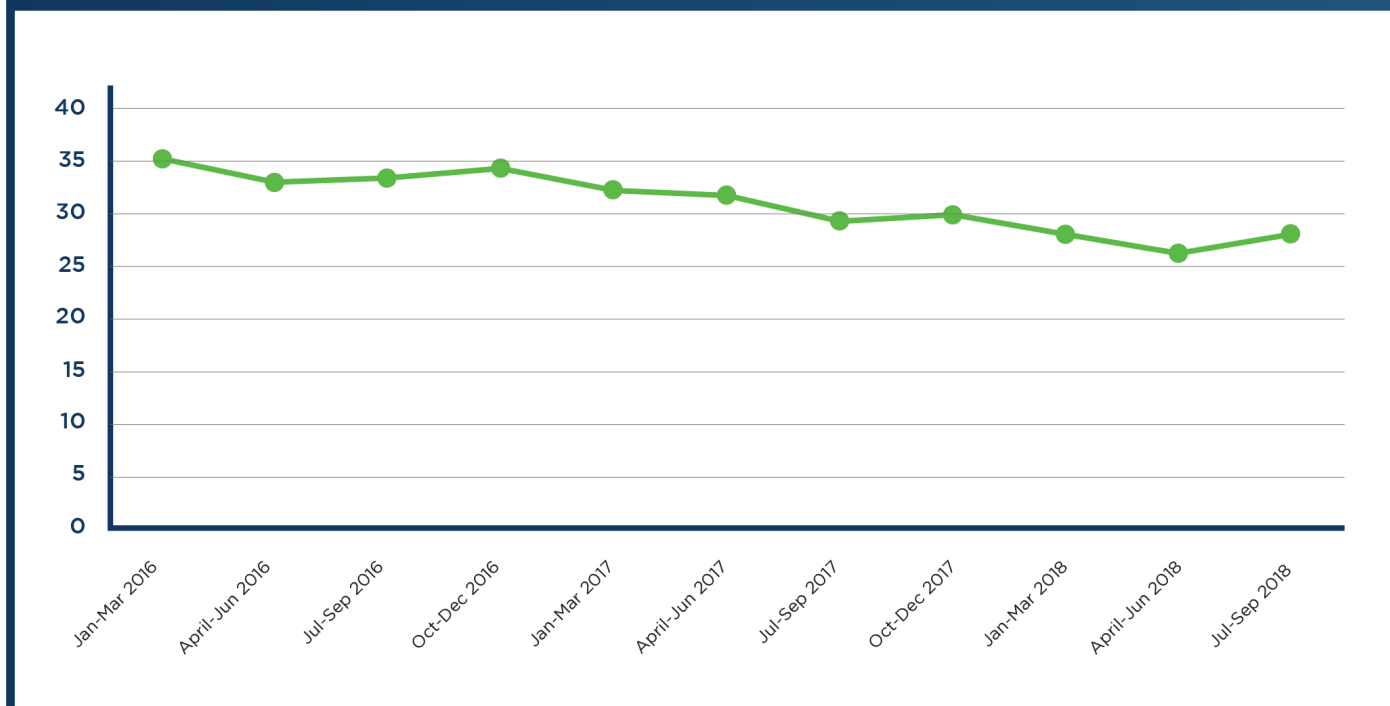


Figure 2

The team also reviewed the number of minutes that each case was delayed over the study period. Measures such as case coordination and the preoperative preparation program reduced case delays by an average of 8 minutes, about a 22 percent time decrease (Figure 2).

### Operating Room Turnover Times

Countless activities must occur between cases to prepare the OR for the next patient. As a regional referral center, this hospital handles highly complex surgeries that require even more steps, including but not limited to robotic surgeries, orthopedic cases, and total joint replacement procedures. At the beginning of the study, turnover times averaged 42.197 minutes. By the end of 2018, the average turn-

over time decreased to under 41 minutes per room, a savings of more than 2 minutes per room per surgery.

### Operating Room Holds

This metric reviews the average patient volume waiting for an available operating room as well as the number of average minutes for each delay. Often, OR holds occur because of a backup in the post-anesthesia care unit (PACU).

While patient hold volumes peaked at 100 percent early in the study, they decreased to about 45 percent by the end of 2018 (Figure 3). The amount of time for each delay decreased from an average of 16 minutes to less than 10 minutes.

## AVERAGE OPERATING ROOM HOLD START DTS TO OPERATING ROOM HOLD END DTS (MIN)

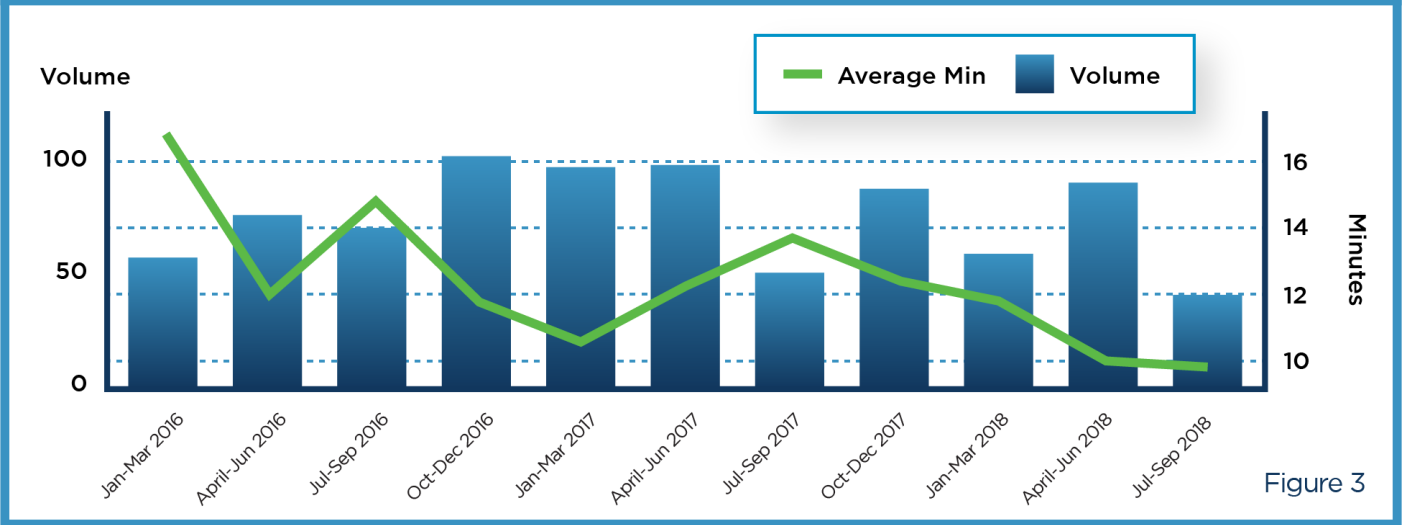


Figure 3

## PACU Delays and Holds

Sullivan Consultants reviewed the data to determine how long patients remain in this recovery unit and the reasons for extended stays. After implementing revised anesthetic

and discharge protocols, the hospital decreased the average length of stay in the PACU from 115 minutes to 100 minutes, representing a 13 percent improvement (Figure 4).

## LENGTH OF STAY IN PACU

Average InPACU DTS to OutPACU DTS (min)

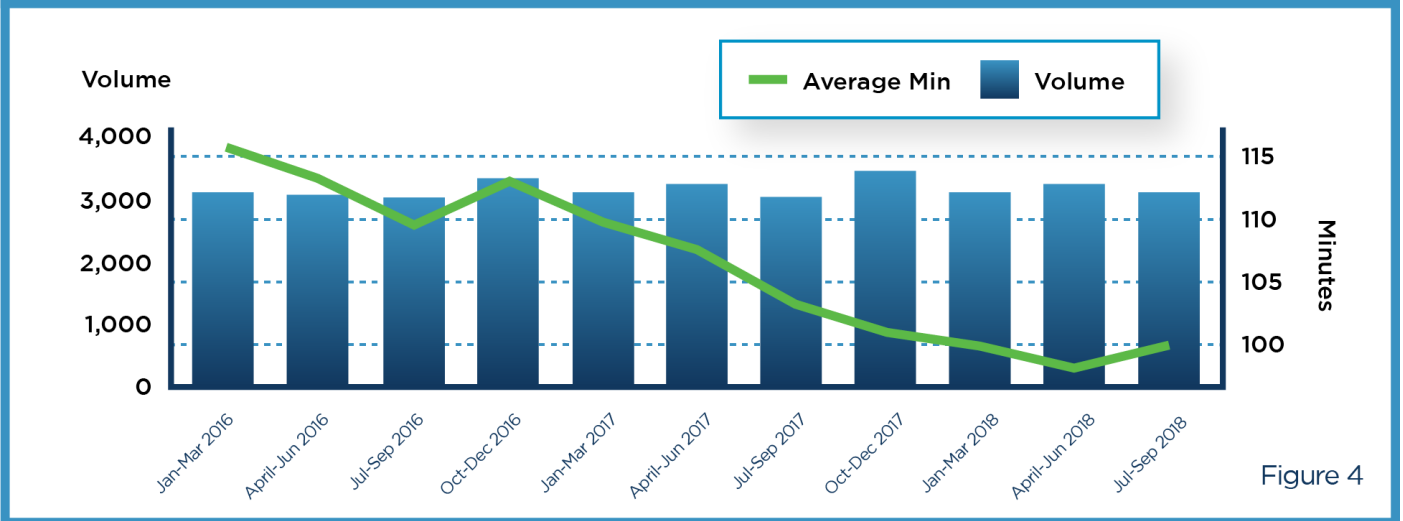
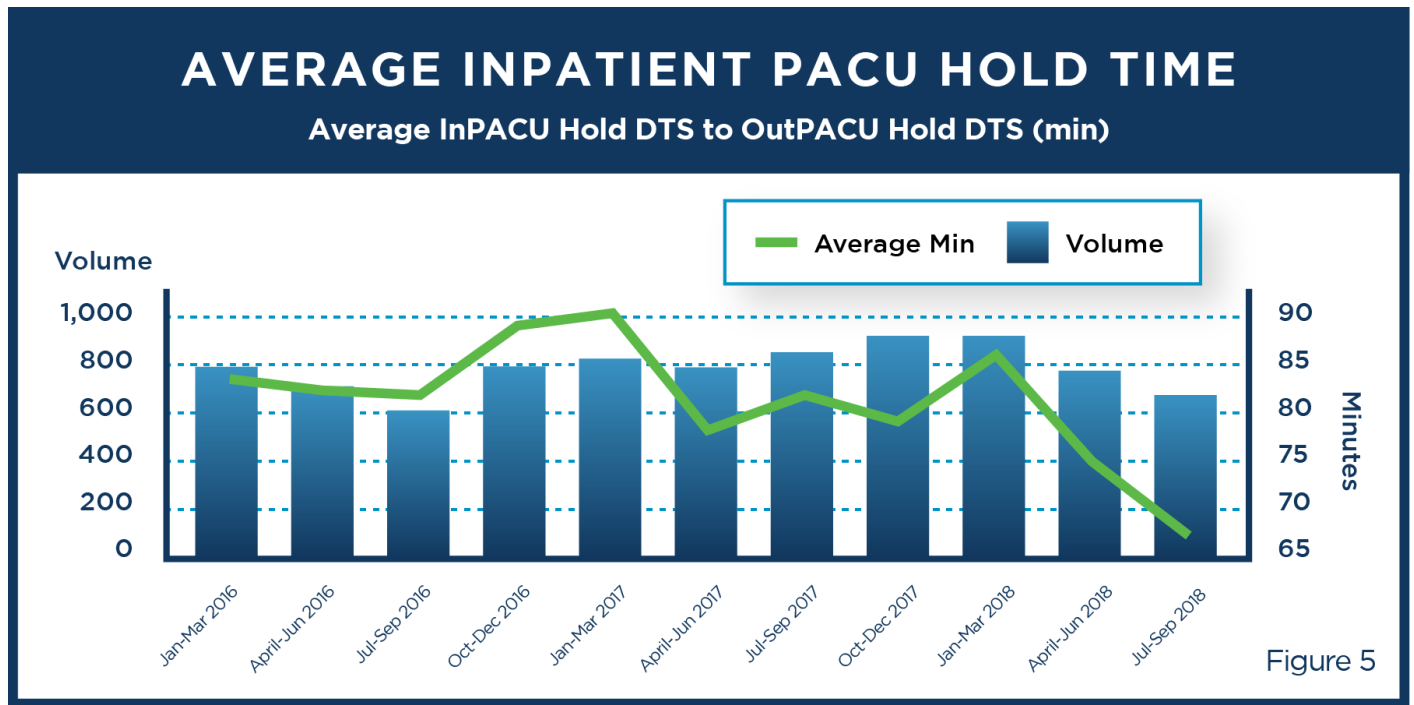
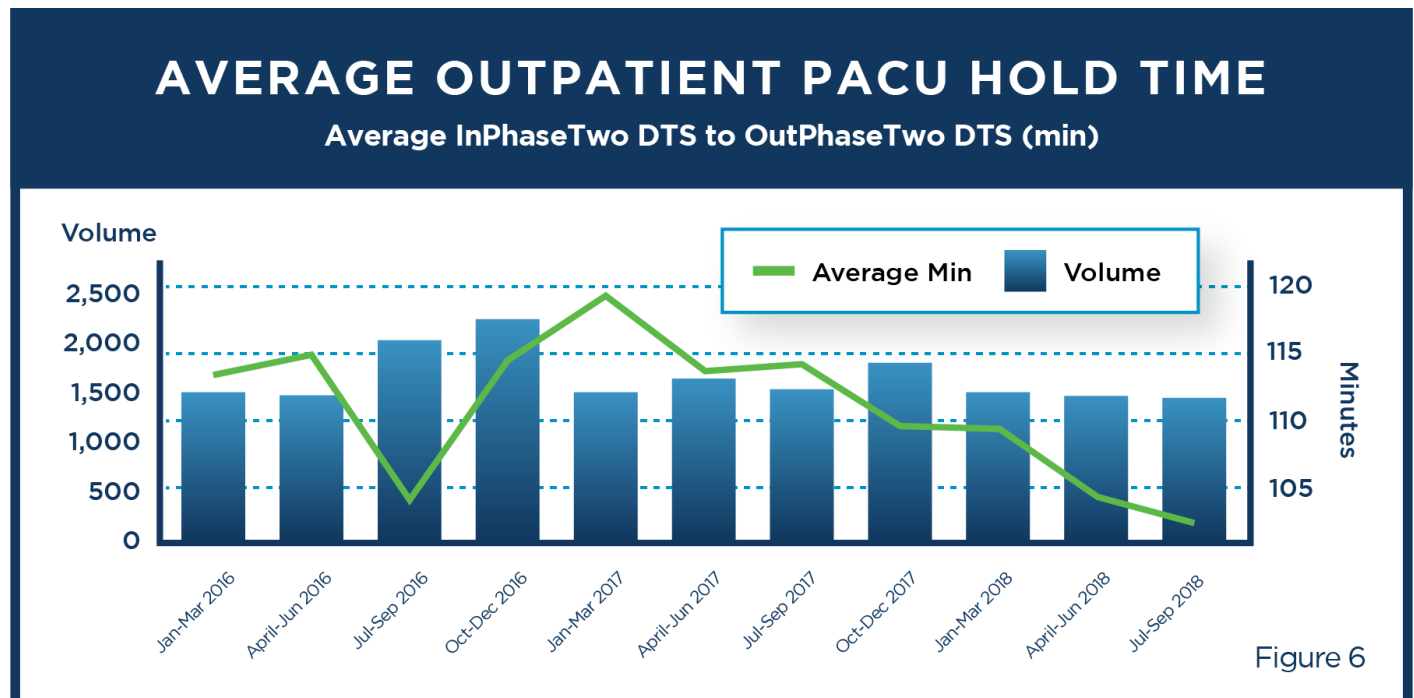


Figure 4

The team also reviewed the average amount of time to transfer inpatients from the PACU to the inpatient unit. These interventions resulted in a 20-minute decrease among this population, an improvement of 25 percent (Figure 5).



The average PACU to discharge time for outpatients decreased from 113 to 102 minutes over the study period (Figure 6).



# Establishing Best Practices for OR Efficiency

In sum, health care facilities that struggle with operating room delays, declining profitability, and low satisfaction scores can realize measurable improvements with these best practices:

- Governance in place to support and guide initiatives
- Leadership focused on the urgency of making improvements
- Front-line teams with consistent daily engagement toward meeting objectives
- Champions for the improvement initiatives in both the anesthesia and surgery departments
- Standardization of work by front-line teams
- Staff-level coaching toward goals and objectives
- Daily tracking of metrics toward goals with visible, transparent progress outcomes
- Recognition of success at the individual and team levels

# Contact Us

to learn more about how operational efficiency programs from Sullivan Healthcare Consulting can drive dramatic OR improvements in profitability, use of resources, and patient and surgeon satisfaction.



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