

# Decreasing Day of Surgery Cancellation

## Perioperative Service line, SBH Health System



### Introduction

Operating Rooms (OR's) are among the most important locations in terms of generating both revenue and expense in a hospital. Efficient use of the OR implies optimizing revenue while minimizing expense. High through put is as essential as patient centered outcomes and a low incident rate of complications. There are well established key performance indicators (KPI) for OR efficiency.<sup>1,2</sup> On-time first case starts and room turn over times are among the most commonly looked at KPI's, because these metrics contribute heavily to surgeon satisfaction. Accurate case duration estimates and "wheels in to incision times" are less frequently appreciated but significantly contribute to the overall efficiency of an operating room. Utilization of available room minutes is a global marker of efficiency; it can be used to measure scheduling accuracy, adjusted to quantify the efficiency of turnover time, block time, or resource allocation. Case cancellations are among the most disruptive of the efficiency metrics. Cases that are canceled on the day of surgery create inefficiencies and dissatisfaction for surgeons and the patients. In the OR, tremendous resources are invested to be sure that the people, equipment, supplies and space are available, for a given operation. When any case is canceled for any reason, if a subsequent case cannot fill the void, the time, personal and physical resources invested in the case become an unusable sunk cost.

### AIM

The Perioperative Service line recognized an opportunity to improve patient satisfaction and Operating Room efficiency, by decreasing the number of procedures canceled on the planned day of service (DOS). The aim of this project is to decrease the rate of case cancellations on the day of surgery by 50% over a 6-month period beginning Sept 1, 2018. This will be accomplished through improved communication and having the Attending Surgeon be directly responsible for booking and scheduling surgical procedures

### Plan

Objective: Reduce the Incidence Day of surgical case cancellations.  
Prediction: The incidence of DOS cancellations will decrease when the Attending Surgeon is responsible for accurately booking and scheduling surgical procedures.

#### Cycle Plan:

- Who: Attending Surgeon
- What: Scheduling surgical cases
- Where: Main Operating Room.
- When: From Sept. 2018- Feb. 2019.

#### DATA Collection: Directed review/ analysis

Total number of cases canceled on day of surgery and the reason for cancellation.

Base line Data: Analytic Chart review (2750) patients

March 2018- Aug 2018

Comparison Data: Analytic chart review (3200) patients  
Sept 2018- Feb 2019

#### Sustainability tracking

March 2019- ongoing (440 patients)

### Do

The Perioperative service line consistently reviews key performance indicators focusing on opportunities to improve the care that we provide, the patient experience and the efficiency of the operating rooms.

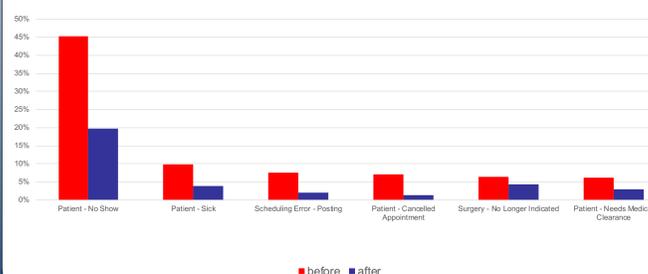
Utilizing the analytics program that was installed with the Surgical Information Systems EMR, we were able to identify the leading causes of inefficiency in our operating room suite. In 2018, Cancellation on the DOS was occurring at an average rate of 20% with a range of 17%-24%, this was Identified as significantly higher than the national average of 4.6 -13% with the gold standard being <5%<sup>3</sup>

A retrospective 6 month review of the cases that were canceled on the day of surgery identified that despite the personal phone call from the ambulatory surgical unit to the patient, on the night before surgery and confirmation of the patients planned attendance for surgery, 45% of the DOS cancellations were related to patient "no show". An additional 10% of the same day cancellations were related to the patient being ill on the day of surgery. The next most frequent reasons for a case being canceled on the DOS are related to "scheduling error" and "surgery no longer indicated" 7% and 6% respectively.

A review of the scheduling process and preventable scheduling errors suggested that data drop out and / or miscommunication could potentially be responsible for a significant amount of the cancellations. All Stakeholders agreed that the best way to eliminate the drop out of data was to have the single person who knows the patient best be responsible for Booking and scheduling the case in the operating room.

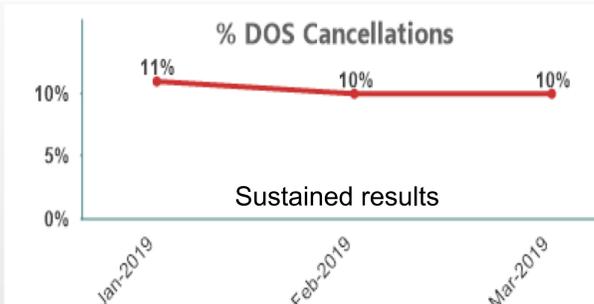
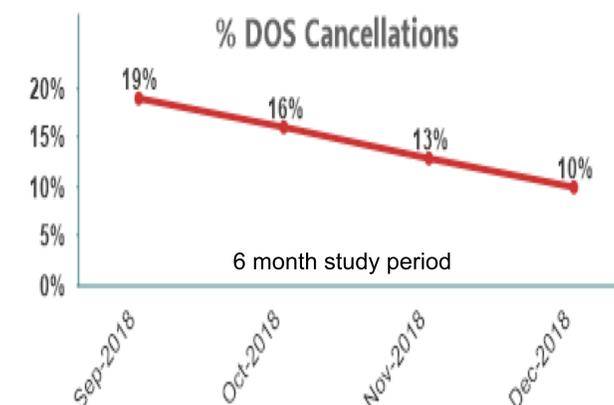
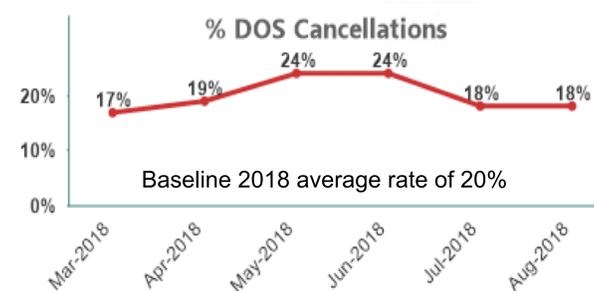
A process improvement trial was initiated and monitored for the subsequent 6-month period where the Surgical Attending was requested to be directly responsible for scheduling all surgical cases. The surgical resident or any member of the surgical team would continue to make the OR aware of potential cases and provide essential information such as MR number and other patient identifiers, thus reserving a place in the que. However, the case would not be formally entered into the schedule until the Attending surgeon confirmed the reservation.

Top 5 reasons for cancelation of surgery on DOS



### Study

The results of this trial support our prediction that the direct communication between the Surgical Attending scheduling a case and the person receiving the booking facilitates improved information transfer and has resulted in an overall decreased rate of cancellation on the day of surgery by 50%. This improvement has developed and has been sustained for over 7 months and is the result of changing only a single input. While we did not anticipate that patient related reasons for DOS cancellation such as "patient no show" or Patient cancellation after arrival, would change, the impact was universal.



### Act

We recognize that our population is at risk for an atypically high cancellation rate on the day of surgery. It was commonly believed that much of this incidence was due to personal and family issues that appear to be unavoidable.

As a result of the sustained outcomes from this trial we have come to appreciate that when the attending surgeon is responsible for booking the surgical procedure directly with the Operating Room Scheduler, or Charge Nurse, not only does the incidence of information dropout decrease, resulting in less scheduling errors, but the efficiency of the entire scheduling system is improved and the rate of DOS cancellation is decreased without discrimination. Clearly there has to be other conditions at play which were not intended or directly accounted for in this study. Whether it be case selection, Surgeon availability or Patient illness, having the person most responsible and aware of the patient and their complete set of circumstances be responsible for scheduling surgery has, to date, proven successful, at decreasing DOS cancellations.

As previously mentioned, the "gold standard" for DOS cancellation is <5% which means we need to appreciate an additional 50% reduction in our current cancellation rate. The perioperative service is currently preparing to re-initiate a formal coverage of a Pre Anesthesia Testing which historically has also shown great improvement in the DOS cancellation rates, as well as projects to enhance the availability of equipment and a new system for insurance verification. While these and other contributory factors may be small when isolated, their collective impact can be dramatic.

There are "accepted" measures of OR efficiency that have been identified as areas of improvement including first case start times, and overtime utilization. Of Macario's 8 factors we have moved into the middle grouping for case cancellations, and duration bias through the use of our analytics enhanced perioperative EMR. Our staffing costs and contribution margin (revenue - variable costs), and per minute cost per case are fixed by outside forces, while our PACU admission delays turnover times and scheduling gaps with open booking are in the highly successful categories. It is clear that efficiency in the operating room not only contributes to the bottom line but also fosters patient satisfaction. While these two metrics contribute significantly to the Triple Aim, efficiency in the operating room also contributes to the satisfaction and quality of life, and decreased burnout for our Surgeons, Anesthesiologists, Nurses and support staff alike.

### Bibliography

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