

Resolving Resistance to OR Scheduling Changes: Implementing a Multi-faceted Model

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Abstract

One of the biggest problems with introducing new scheduling models in hospital operating suites is the lack of buy-in by people who comprise the operating suite. Our approach increases the probability of buy-in by directly addressing behavioral issues and incorporating feedback mechanisms that help personnel see how they benefit from changes. This model has the advantage of being able to be updated in real time, rather than with long lag times. This increases the probability that operating suite personnel will accept the system, as potentially problematic scenarios can be simulated with results seen and discussed before proceeding. Surgeons, who tend to influence whether or not new practices will be adopted, have the opportunity to understand how any changes will affect their own personal utility function. They will immediately be able to see the trade-off between time in the OR and revenue earned.



When under siege, it can be difficult to make changes that will ultimately be beneficial, as you are so busy defending your current position. *Image source: John Hart studios.*

Introduction

How cases are scheduled within an operating room suite can have significant effects on the financial health of a given hospital. Having a scheduling model that effectively integrates finance, accounting, and operations research that is easily accessible to all OR personnel can not only increase profitability, but also employee satisfaction and productivity. Overcoming inherent cultural, identity, and behavioral economic heuristics and biases are all barriers that need to be addressed before any long-term changes can be made.

Fixed capital assets in the OR are frequently under-utilized; hospital-employed physicians and other personnel time may not be scheduled for maximum productivity. By scheduling effectively, both labor and capital usage can be maximized.

The Players

The human element plays a central role in the effective use of fixed assets in the operating suite. Three major sets of players linked to operational performance in the OR can be identified:

- **Surgical team** (surgeon and anesthesia, assisted by nurses and techs)
- **Administration** (accounting, finance, operations research, risk management)
- **Operating room manager** (intermediary between clinical and non-clinical groups)

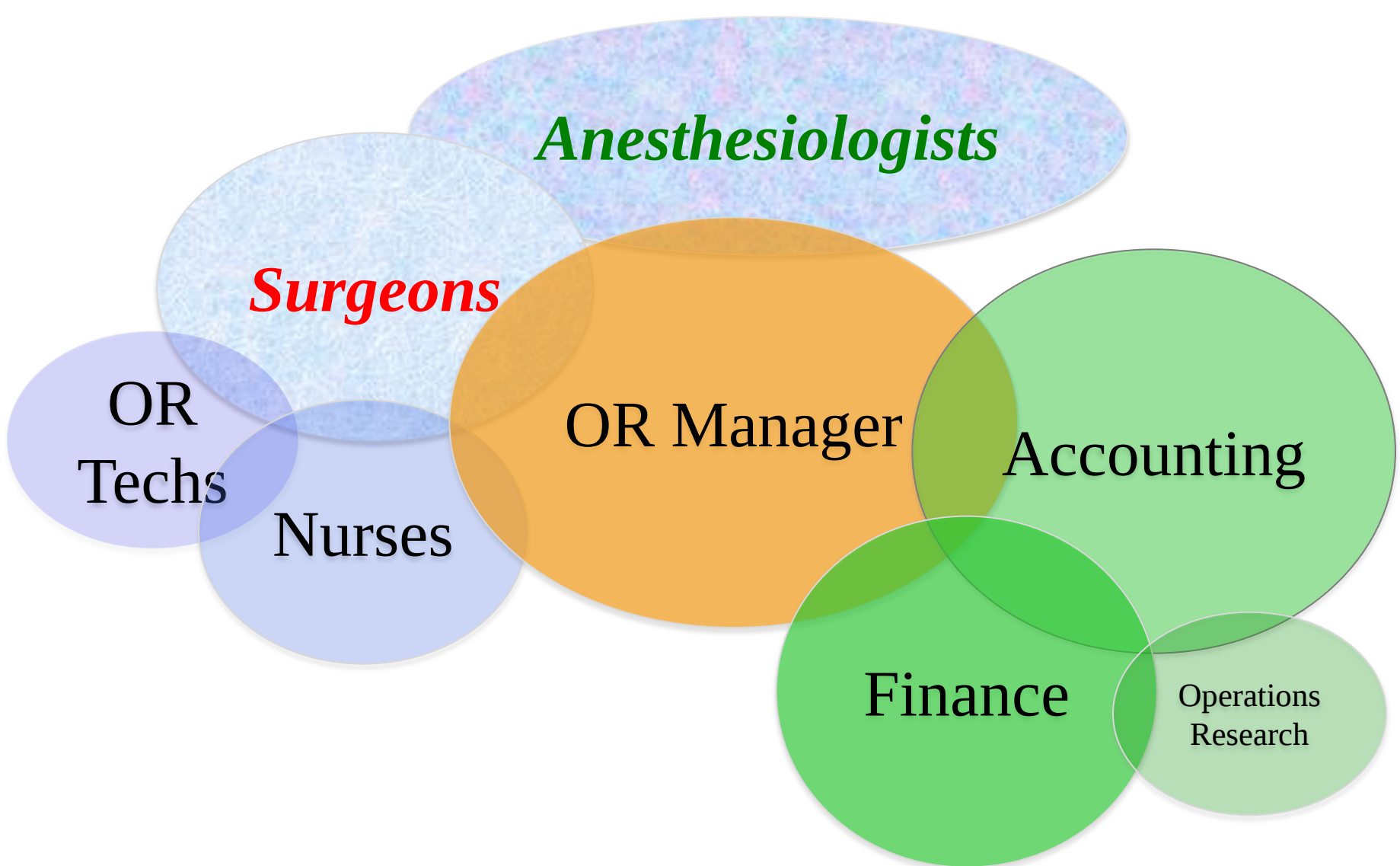


Figure 1. Complex interaction of disciplines and allegiances in the operating room suite

Each group has a different goal:

- **Hospital administration:** seeking most through-put with least cost (Levy, Lawrence, and Shiple, 2009)
- **Surgeons:** first case of day block time, rapid turnover, low cancellation rates, on-time starts (Macario, 2006)
- **Anesthesia:** decrease downtime of anesthesia personnel while providing customized, safe anesthesia
- **Nurse managers:** adequate reserve capacity, flexibility to move cases around (Macario, 2006)
- **Risk managers:** low or no injury to patients while in the operating suite (Marcario, 2006)

It becomes obvious that it will be difficult to meet each of the groups' goals all of the time. People coming from a business background need to remember that surgery is an event and not a process (Cassell, 1987). The culture of operating suites and the role of human emotion needs to be addressed directly. Conflicts between physicians and administrators have been described as "intractable" and linked to identity (Fiol, Pratt, and O'Connor, 2009). Other researchers note that there are distinct cultural allegiances within the operating suite that have the potential to harm the hospital's well-being (Riley and Manias, 2009).

Seeing the difference

Each of the differing goals needs to be recognized and appropriate trade-offs made, on an on-going basis. Hence, the need for a dynamic model that can be updated in real time and provide a paereto optimal solution benefitting all personnel.

Example: Dr Schlicter, an orthopedic surgeon prefers to have on-time starts and rapid turnover, so that he can finish earlier in the day and schedule patients in his office during the afternoon. His PA is able to close for him.

Before: Dr. Schlicter's original schedule with four cases is shown in top portion of the chart below. He starts at 7am and sequentially works through the four cases without any closing assistance from his PA. He stays in the OR suite until late in the afternoon, precluding any scheduling at the office on that day. Nurses, OR techs, and anesthesia have to be available throughout the day also to meet Dr. Schlicter's needs.

After: The lower portion of the graph shows an optimized schedule for Dr. Schlicter, taking into account his preferences. Not only is he better off, but so are the other personnel who are involved with assisting with the surgery. Dr. Schlicter has a later start, yet his room finishes 175 minutes earlier than was the case with his original schedule. His total OR time is 210 minutes less. This requires the use of two rooms (flipping) and the assistance of his PA to close cases for him.

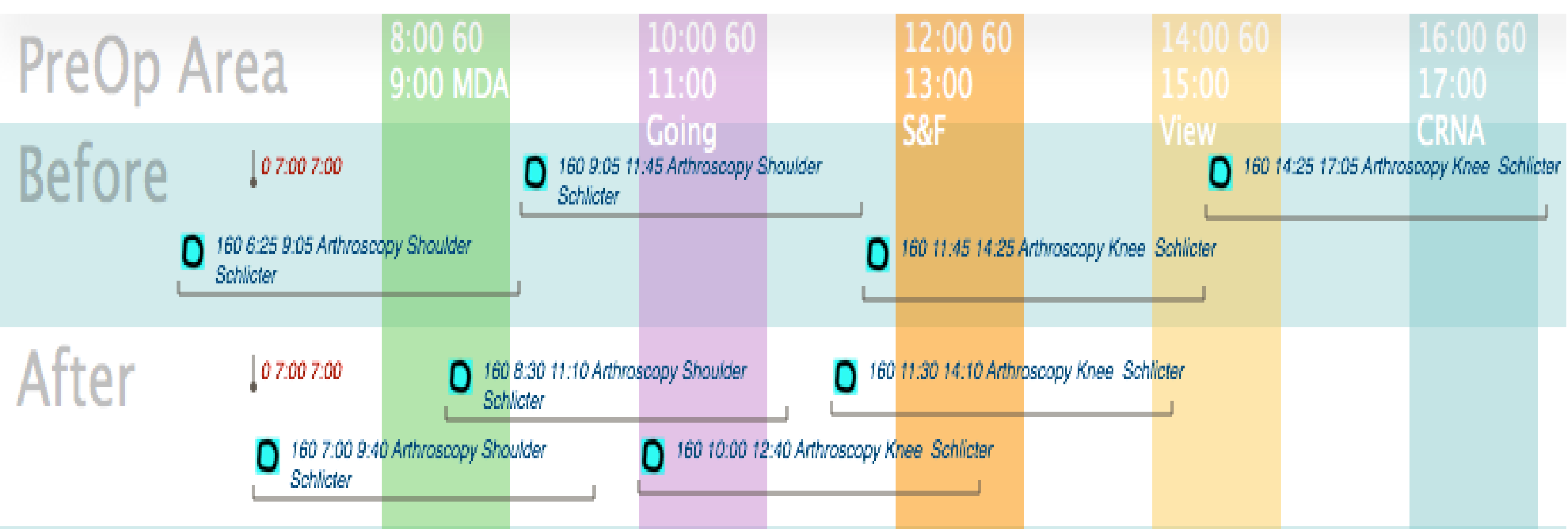


Figure 2. Before and After. The 'Before' portion of the graph shows the traditional schedule. The 'After' is the optimized schedule taking the surgeon's preferences into account.

The vertical green, purple, orange, gold, and blue bars each indicate 60-minute time periods.

Each horizontal case line shows the total duration of the case, start and end time, procedure and surgeon, who is also identified by a unique icon.

Results: This reduction in total surgical time for one surgeon benefits not only the surgeon himself, but also all support staff. When this scheduling technique is used, increased satisfaction by the OR staff has been observed. Furthermore, all operating room groups reported that their stated goals were not compromised. Revenues to both independent personnel and hospitals is increased without additional costs being incurred.

Conclusions

Resistance to buy-in by participants in the operating suite when introducing a new scheduling model can be overcome by addressing concerns that different stakeholders have prior to implementation. The multi-faceted model shown here has solid underpinnings in accounting, finance, and operations theory, which enable the astute manager to optimize use of operating suite resources (labor and capital). This model provides multiple perspectives of the effects of different scheduling scenarios in a visual format, making it inherently accessible to all constituents. Affected parties can not only visually see the impact of any proposed change on their own well-being, but also how that change effects the operating suite as a whole. This provides a platform for discussion among the different cultures that comprise the operating suite and increases the probability of buy-in by all parties.

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For further information

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