CASE STUDY
RIGHT SIZING BLOCK ALLOCATIONS
IN THE OPERATING ROOM
CoxHealth, the only not-for-profit health system in southwestern Missouri acquired a 150-bed hospital in Branson, Missouri at the end of 2012. To achieve the benefit of the acquisition as quickly as possible, the health system needed a swift integration effort focused on eliminating redundancies and implementing performance improvement opportunities. Leadership engaged Berkeley Research Group (BRG) within the first 30 days of the acquisition. In April 2013, the CoxHealth President and CEO, Steve Edwards, introduced the Working Smarter initiative in response to a changing reimbursement environment in terms of:

- Sequestration
- Medicare cuts and lack of Medicaid expansion in Missouri
- Cuts associated the Affordable Care Act
- Cuts associated Disproportionate Share payments

CoxHealth partnered with the Berkeley Research Group to identify and implement $60 million dollars of greater efficiencies in revenue cycle, labor, non labor and Human Resources expense reduction, patient throughput and length of stay reduction, and clinical documentation. A 2005 technical report by the Health Care Financial Management Association titled “Achieving operating room efficiency through process integration” indicated that Operating Rooms (ORs) have been estimated to account for more than 40% of a hospital’s total revenues and a similarly large proportion of their total expenses, which makes them a hospital’s largest cost center as well as its greatest revenue source.

Thus, the Surgical Services departments at the flagship campus, Cox South, were benchmarked to gauge possible labor expense reduction and process improvement opportunities. The assessment, conducted by Berkeley Research Group, identified opportunities to improve OR utilization, block utilization and staff productivity.

The scope of the initiative included the Cox South campus which houses the 800-bed acute care facility, CoxSouth, with 22 Operating Rooms, 140 FTEs and of volume of almost 18,000 cases a year, the Meyer Orthopedic & Rehab Hospital (MORH) with 6 Operating Rooms, 29 FTEs and 4,600 cases per year, and the CoxHealth Surgery Center (CSC), an Ambulatory Surgery Center with 4 Operating Rooms, 20 FTEs and approximately 4,300 cases per year.
ISSUES AND PROBLEMS

The first phase of the project involved assessing the current state and identifying opportunities for improvement. During the assessment phase it was determined that block utilization by definition was in the mid 50s overall. However, the block utilization was falsely inflated by the use of the atypical calculation methodology.

Compounding the issue was a policy that stipulated that surgeons need only utilize 65% of block time to maintain their block time.

Knowing this, the BRG Surgical Services Subject Matter Expert and the CoxHealth Vice President of Clinical Services and the Chief of Surgery implemented a strategy to prove that to gain efficiencies, OR utilization needed to be maximized and to do this the block utilization rules needed to change. The project structure established was key to gaining alignment and support for performance improvement.

The point that the block rules needed to be revisited was proven with the OR utilization data.

The South facility data indicated that although 20 rooms were staffed and available from 7:00 am to 3:00 pm on weekdays, the rooms in progress peaked at 15 in the early morning and were down to 10 rooms by 3:00 pm. This resulted in a prime time utilization approximately 59% against an expected utilization of 75-80%.

The data also revealed that utilization was not smooth throughout the week as Tuesdays had a utilization of 59% while Thursdays had a utilization of 50%.

Furthermore, utilization of the staffed and available at MORH OR was 55% with variability throughout the week ranging from 63% to 50% and at CSC was 58% with variability in utilization throughout the week ranging from 52% to 72%.

This low level of utilization across the 3 ORs was occurring when physicians complained that they could not get add-on cases on the schedule until late in the day. As a result, this was adversely impacting their work life balance.

This data led to a consensus that the timing was right to take another look at the block rules, the block utilization target and required data collection to track block utilization.
**APPROACH**

As prior attempts to change the block utilization rules were conducted through the full Surgery Executive Committee (SEC), which included the Chairs of each Service, BRG suggested a smaller committee, the Block Utilization Committee, with appointed representatives from each of the 3 facilities comprised of surgeons with high volume. Each physician was approached and agreed to be actively involved in the project.

This Committee was charged with making recommendations relative to the scheduling and block rules through rapid weekly design meetings over a 12-week period and forwarding those recommendations to both the SEC and the Department of Surgery. The committee structure and approval process utilized ensured that the block rules could be rapidly designed while still giving all surgeons using the operating rooms a voice in the development of the rules.

There were four critical success factors relative to physician engagement employed throughout project that guaranteed its success.

**"Us" not "Them" Engagement** — A project logo was created and used in all presentation materials to emphasize that this was a Cox initiative, not a BRG initiative. It was also emphasized that the project was to continue the culture of collaboration between the physicians and Surgical Services management in achieving the end goal.

**Effective Communication** — Meetings were scheduled in advance at a time and day of the week suggested by the physician members. Agendas were developed and sent out prior to each meeting.

**Imperative for Change** — Data was shared with the Block Utilization Committee to create buy-in and acceptance of the imperative for change throughout the project. The team also focused on transparency by informing the physicians that the data revealed an opportunity to improve block utilization and associated staff scheduling.

**Sustainability** — It was emphasized throughout the project that the policy, procedures and tools developed needed to improve efficiencies and those efficiencies needed to be sustainable.
GOALS

The OR utilization data by facility, time of day and day of week was shared with the Block Committee at the first meeting. The group committed to being guided by a data driven approach to decision making and the following goals were outlined:

- Development of new scheduling and block policies including target levels of block utilization necessary to retain block time
- Identification of outpatient caseload that could readily transfer to CSC
- Development of new block schedule
- Creative development of software to monitor block utilization
- Gain staffing efficiencies

In right sizing the blocks, a three-step approach was taken by the Block Committee:

- Development a high level work plan
- Performance of analysis of block utilization by surgeon, group, and service
  - Development of a report of physician, group and service block need at 75% and 80% utilization
- Determination of Gynecology case volume that could potentially transfer to CSC from Cox South to:
  - Decompress the Cox South blocks
  - Improve CSC OR utilization

The first step in the work plan was developing a new scheduling and block rules. To guide the process, a comprehensive literature search was performed relative to scheduling and block best practices. Existing scheduling and block policies were compared to best practices and the following CoxHealth block rules were acknowledged to be aligned with identified best practices:

- Block utilization parameters development with transparency, by consensus, fairly and equitably
  - (However, the methodology for calculation of block utilization was overly complex, only required 65% utilization of block time, was labor intensive [taking over 36 hours per month to prepare each facilities block report] and resulted in ineffective use of OR resources).
- Add-on room allocated daily to reduce variability associated with interruptions in the daily schedule imposed by urgent and emergent cases for Trauma and Orthopedic cases
- Automatic release of blocks to First Come First Served (FCFS) scheduling
- Monthly calculation of block utilization with review on a quarterly basis
- Block reallocation occurring after surgeon notification verbally and in writing including the plan to reduce and/or change the block allocation

The existing block utilization parameters made it very difficult for a surgeon to lose block time even though their performance did not approach a best practice level. Block time went unused with no penalty. Block utilization data and quarterly block utilization reports from the previous calendar year were collected. Understanding the current state methodology was necessary to move the Committee to a more standard calculation of block utilization.
The power of data was used to review scheduling and block rules that were not aligned with best practices. The Block Committee came to consensus and supported the following scheduling and block rule improvements:

- Raising the block utilization target to 75% at South and MORH and 80% at the CSC
- Allocation of open time in the block schedule
- Allocation of a dedicated add-on room for non-Trauma and Orthopedic cases
- Allocation of block time at CoxSouth in primarily 8-hour increments
- Full blocks released at least 30 days in advance of the surgery date are deducted from the allocated block hours in the calculation of block utilization
- Block utilization credit for all time utilized (both inside and outside the allocated block hours) on the block day
- Smoothing the distribution of case load throughout the week

**SMOOTHING CASE LOAD**

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<th>MON</th>
<th>TUE</th>
<th>WED</th>
<th>THU</th>
<th>FRI</th>
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The work plan also detailed how the analysis of needed block time would be performed and the timeframe needed to build the new block utilization tool.

The plan also accounted for meeting with the surgeons one-on-one over a five-week period to determine how to best meet the needs of the surgeon in the block reallocation process.

At this time, CoxHealth was in partnership negotiations with a large physician practice numbering over 100 physicians. It was imperative that physicians’ clinic hours were taken into consideration during the block reallocation process. A clinic communication plan was developed to inform the clinics well in advance of any changes in the block schedule.

Behind the scenes, work continued in the build of the block utilization tool. The block time model was built on a clean slate premise using the previous calendar year data.

- Each surgeon’s total cases, OR hour and actual turnover time were calculated.
- In the clean slate methodology, it was assumed that each surgeon’s surgery hours (OR hours plus turnover time) met the 75% or 80% target and were inflated by 20 -25% to arrive at the hours needed per physician.
- The premise underlying the methodology was that in the first quarter some physicians may have more time allocated than needed but that the block rules built on best practices would allow for quarterly reallocation to the needed hours of OR time per physician.

- The needed hours per physician were then used to create the block schedule and at CoxSouth were built in 8-hour increments. So surgeons with less than 8 hours per week need of OR time were either given an eight-hour block every other week or encouraged to schedule in open time.
- The new block model also reduced the number of service and group blocks in favor of individual surgeon blocks to improve the ease of tracking block utilization.

Before the blocks could be finalized the cases performed at CoxSouth that could readily be transferred to the Ambulatory Surgery Center were identified.

- A meeting was held with Chairman of the Gynecology to discuss the rational for transfer of the cases which included decompression of Cox South, available block time at CSC and lower overhead costs, identification for reasons physicians were resistant to performing outpatient cases at this venue and identification of equipment needs to meet the needs of surgeons wishing to transfer cases to the ASC.
- The Chairman then met with the physicians to gauge interest in the transfer of cases to the ASC.
RESULTS

Block utilization improvements:

- Two quarterly block utilization data reviews have taken place since the new block model went into practice
- In those two reviews, 40 blocks were reallocated
- There has been incremental Gyne volume transfers to CSC
- Five new surgeons were accommodated and given block time without increasing room availability
- MORH is approaching the targeted block utilization rate of 75%
- South and CSC have improved but are not yet meeting the targeted rates of 75 and 80%

The rightsizing of the blocks was the cornerstone to achieving over $2 million in labor savings in Surgical Services. Other complimentary initiatives were launched to achieve the targeted labor savings including:

- Enhancing the management structure
- Establishing a worked hours per unit of service staffing target for each department
- Adjusting staffing as needed in each department. (Note: CoxHealth made a commitment to achieve the labor savings without layoffs)
- Implementing productivity management tools.

Volume and staffing data were displayed graphically to assist managers and staff in visualizing the actual staffing needs. The various strategies the managers and staff used to reach the targeted worked hours per unit of service included:

- Attrition
- Reduction of incidental overtime
- Work flow redesign
- Shift changes aligned to volume
- Nurse patient ratio alignment
- FTE status changes
- Staffing to volume

Ongoing performance was monitored using a biweekly productivity tool generated for each department detailing the volume, actual and targeted worked FTEs, actual and targeted worked hours per unit of service, and the variance.

CONCLUSIONS

With the new block model and productivity improvement strategies in place, CoxHealth Surgical Services exceeded the $2 million labor expense reduction goal by $44,000. With the development of robust analytics, the block monitoring tool and productivity monitoring tools, Surgical Services at CoxHealth is poised to meet the challenges associated with the changing reimbursement environment by maximizing the use of the Operating Room resources while simultaneously satisfying the physician customers of the Operating Rooms relative to block time access.

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<th>FACILITY</th>
<th>BASELINE BLOCK UTILIZATION</th>
<th>POST PROJECT BLOCK UTILIZATION</th>
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<tr>
<td>South</td>
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<tr>
<td>MORH</td>
<td>56%</td>
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<tr>
<td>CSC</td>
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<td>65%</td>
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ABOUT BRG

Berkeley Research Group, LLC is a leading global strategic advisory and expert consulting firm that provides independent advice, data analytics, authoritative studies, expert testimony, investigations, and regulatory and dispute consulting to Fortune 500 corporations, financial institutions, government agencies, major law firms, and regulatory bodies around the world.

BRG experts and consultants combine intellectual rigor with practical, real-world experience and an in-depth understanding of industries and markets. Their expertise spans economics and finance, data analytics and statistics, and public policy in many of the major sectors of our economy, including healthcare, banking, information technology, energy, construction, and real estate.

BRG is headquartered in Emeryville, California, with offices across the United States and in Australia, Canada, Hong Kong, Latin America and the United Kingdom.

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