



**SURGICAL
DIRECTIONS**

*Staffing to Demand
to Improve On-Time Starts,
Case Length and Turnover Times*

Learning Objectives

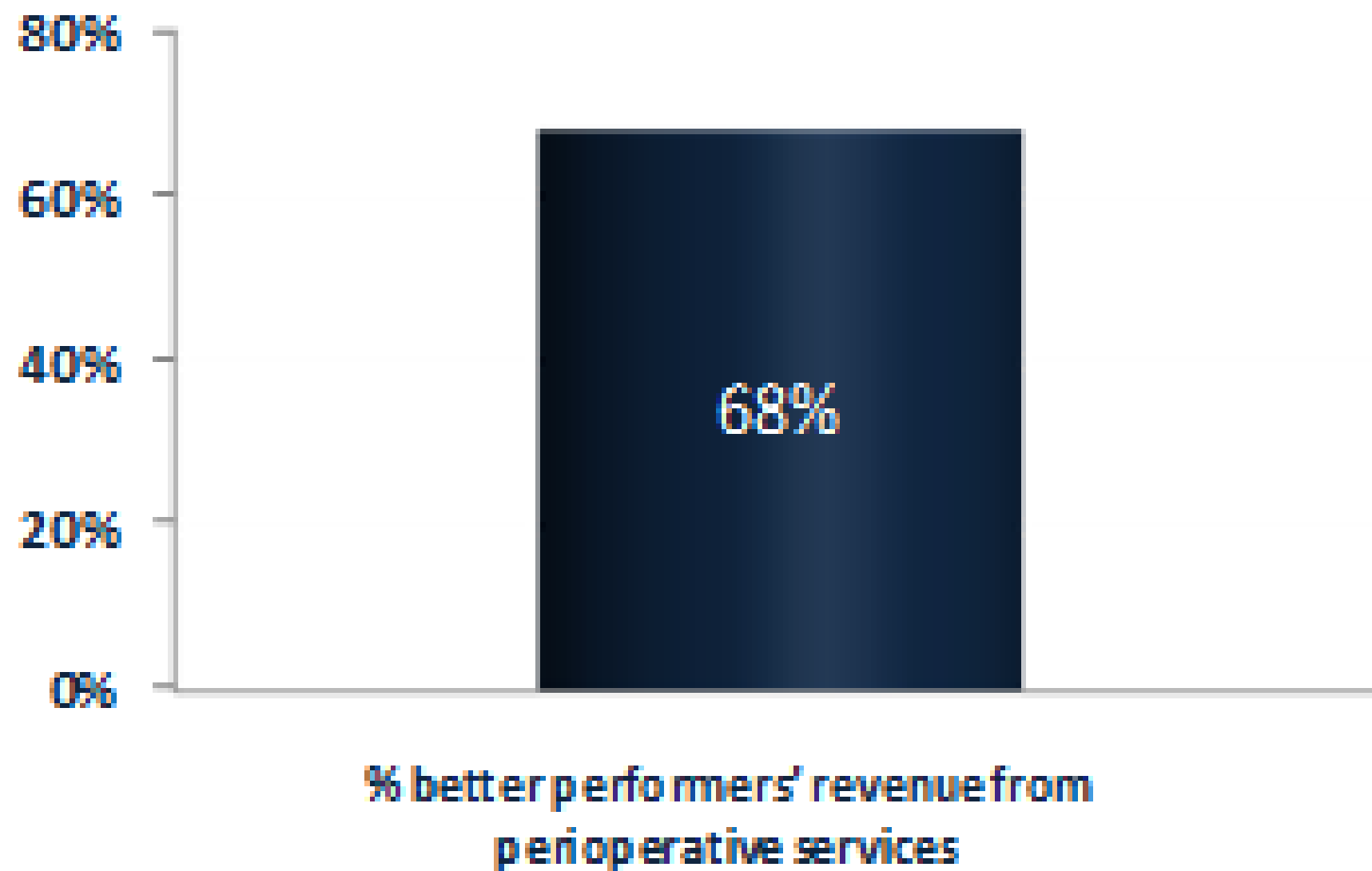
- Define a process to determine the appropriate number of rooms to run per day based on historical inpatient and outpatient case volume
- Organize a team consisting of surgeons, anesthesiologists and senior leadership to redesign the OR's block and open room scheduling to meet the needs of clinicians and the organization
- Create a staffing plan that matches clinical, material and equipment resources to support the demand while increasing efficiency and reducing overall costs

Introduction

- Staffing to demand is the leading indicator in high performing and successful perioperative leaders and departments that drives improvement in first case on-time starts and reduces turnover times
- Staffing to demand increases the bottom line revenue for the facility through increased volume and throughput and elimination of waste
- Traditional staffing methodology was owned solely by nurses
- Staffing models must be matched to OR utilization and the OR Business Manager holds the key to unlocking the data necessary to define these models. Further, the OR Business Manager must have the analytical competency to guide nursing on how to effectively staff to demand

Why Focus on Perioperative Services?

Perioperative Services are key to a hospital's success



Perioperative services drive hospitals' performance.

- Over 68% of better performing hospitals' revenue
 - 60% of margin is derived from better performing perioperative services.
- Successful system under Value-Based Purchasing/ACO provides both surgeons and payors more value for surgical services. Equation: **Outcome/Cost**

By helping our clients tackle the complexities and minimize the political and cultural barriers, our clients have experienced significant improvements in surgeon, staff, and patient satisfaction, which has resulted in improved access to the OR, sustainable growth in surgical volume, and increased market share.

Conflicting Perspectives

➤ Surgeon:

- “I Want a room when I want it. I don’t care what it costs; I need it!”

➤ Anesthesia:

- “I want the rooms full between 7am and 5pm and then only emergencies.”

➤ Nursing:

- “I want the rooms full between 7am and 3pm, but closed from 11:30 to noon. The more efficient I am, the more work I have to do, so what is my incentive?”

➤ Administration:

- “I want the rooms running 24 hours a day with well paying patients while utilizing staff on straight time.”

Conflicting Perspectives

- Know how to communicate business terms in a simplistic, consistent, and organized manner
- Apply data-driven decision making
- Manage the P&L
- Manage the vendor relations
- Manage the physician interactions in terms of block time, vendor management, and market/physician demand

	2009	2014	Variance
Respondents who have a business manager	37%	33%	- 4%
Average salary	\$76,000	\$96,000	\$20,000
Clinical background required	78%	28%	- 50%
4+ direct reports	51%	49%	- 2%
Teaching hospitals with business managers	54%	65%	9%

Business Manager Prevalence

About one-third (34%) of surgical services departments have a business manager, according to the 2010 *OR Manager Salary/Career Survey*. The position is more common in teaching hospitals (52%) than in community hospitals (30%). The majority (58%) of departments with 10 or more ORs have an OR business manager. The complete survey results for OR business managers are in the *November 2010 OR Manager*.

The top 5 responsibilities for OR business managers, according to the survey are:

- Financial analysis/reporting
- Value analysis/product selection process
- Annual budget
- Billing/reimbursement
- Materials management

Where to Start Whether You're the Director or Business Manager

Step One

Establish block and open scheduling rules through appropriate governance.

- If you don't have an appropriate governance structure, seek assistance in establishing this structure. It usually takes outside assistance to change culture and transform leadership. If you don't have the appropriate structure in place, ensure that the appropriate metrics and transparency are in place and that the rules are enforced
- Determine the appropriate number of rooms to run, based upon historical volume and scheduling patterns which meet the performance needs of the hospital and ensures appropriate access to the surgical schedule for surgeons. (cost and revenue = contribution margin that meets organizational targets)
- Redesign the block schedule so that it meets the needs of the surgeons' access to the hospital and provides ample open time and add-on time with the appropriate costs and revenue stream that meets the hospital's operational needs

Collaborative Governance

**Create a Perioperative governing body to align incentives.
An Operations Committee for all aspects of Perioperative Services**

Surgical Leadership

OR Nursing Leadership

Anesthesia
Leadership

Exec. Hospital
Leadership



Surgical Services Executive Committee (SSEC)

- Chaired by Medical Director(s) of Perioperative Services
- Administration-sponsored Surgery Board of Directors
 - Controls access and operations of OR
- Sponsors and directs Perioperative team activity

SSEC Initiatives

- Initial focus of SSEC should be on improving access to the OR by reviewing block schedule and guidelines
- Establish mechanisms to effectively monitor and track performance
 - Generate monthly reports illustrating key indicators of OR performance. Reports should be shared with OR staff on a consistent basis
 - Have a dedicated and knowledgeable OR resource responsible for gathering data related to surgical services
- Develop a “daily huddle” that includes Co-Medical Directors, Director of Surgical Services, Scheduling, PAT and coordinators to start proactively manage operations
 - Focus on optimizing surgeon access
 - Use “huddle” and new block schedule to reduce gaps and improve OR utilization
 - Focus on improving relations / cooperation between anesthesia and nursing

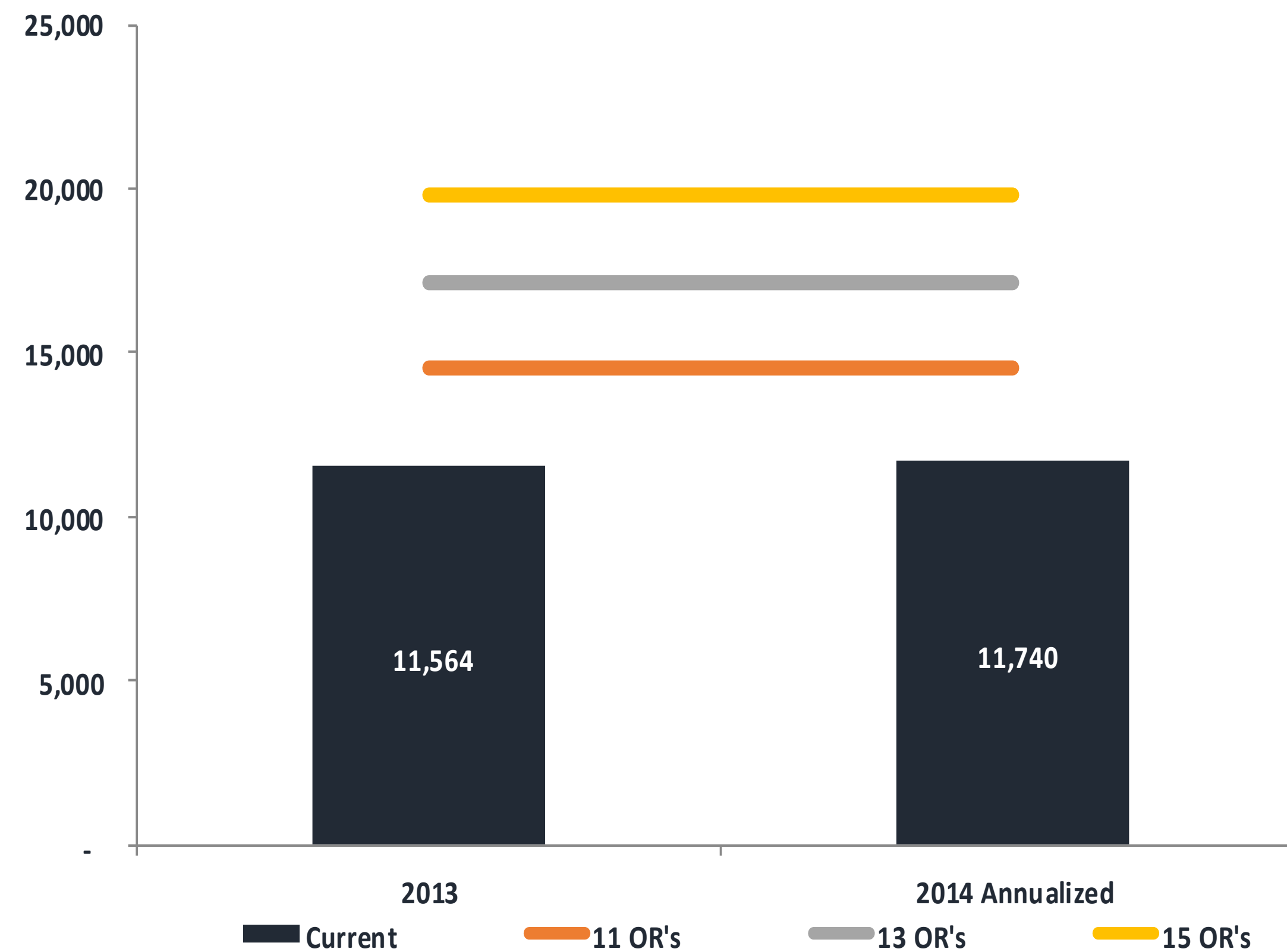
Typical Opportunities for Improvement

Metric	Benchmark	Hospital	Rating
Block Schedule	8 hr blocks plus open time; 75% utilization	4.5, 5, 8, 10+ hour blocks *50% block utilization w/ TOT	●
Cases per OR Main OR	IP 950 cases OP 1,400 cases Total: 1,319 cases per OR ASC volume benchmark = 1,400 per OR	IP: 175 cases OP: 789 cases Total: 964 cases per OR ASC per OR: 964 per OR	●
Day of Surgery Cancellations	<1%	8%	●
Turnover Time	IP: 20-30 minutes OP: 10-20 minutes	IP: 45 minutes OP: 37 minutes	●
First Case On-Time Starts	90% or greater within 5-7 minutes of start time	~63%	●
Pre-Admission Testing	Evaluating >90% of patients prior to surgery Formal Medical director/ Current protocols	No formalized Anesthesia Medical Directorship Lack of communication and review of PAT findings before the day of surgery	●

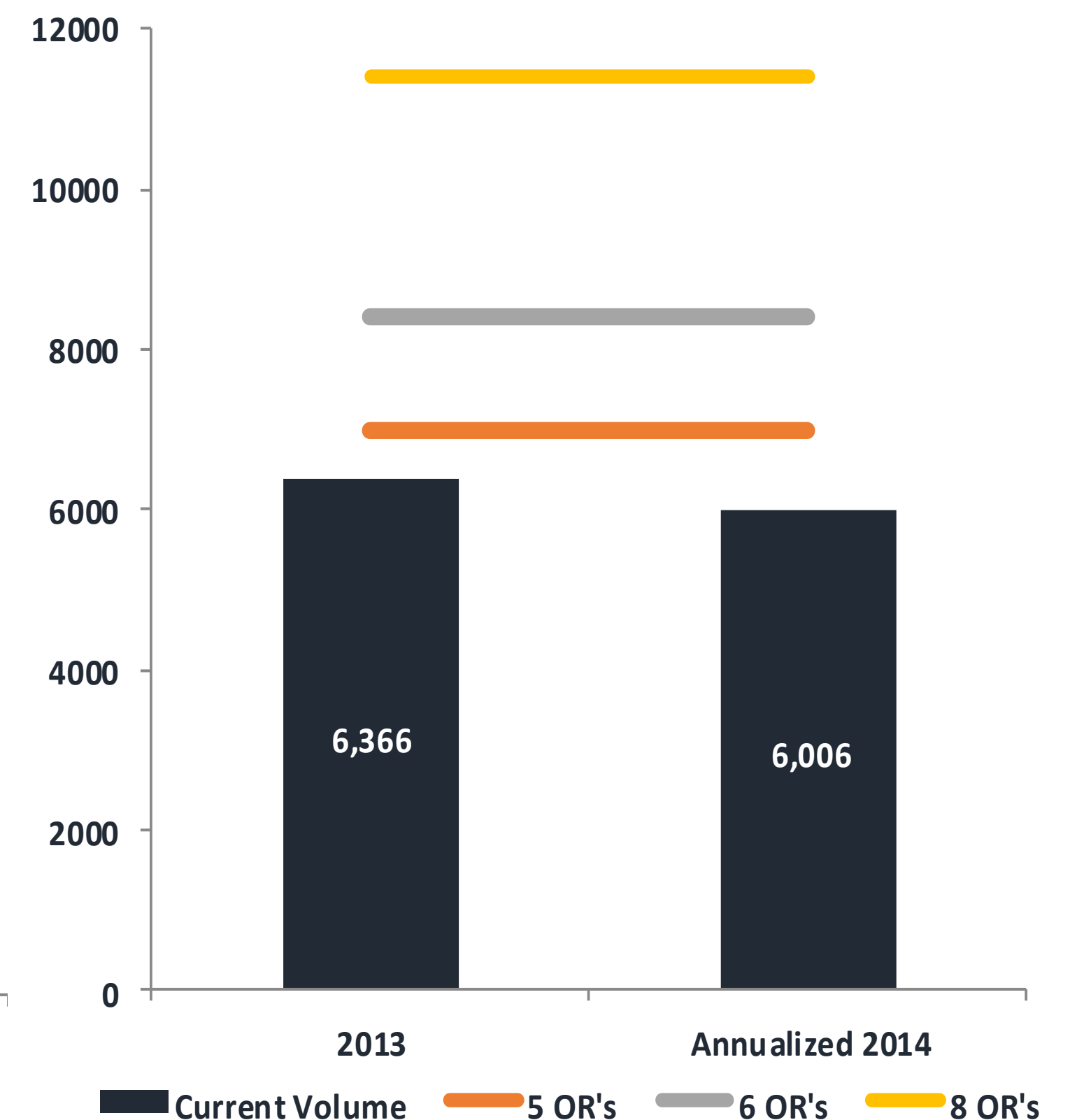
Volume Analysis Current Capacity Greatly Exceeds Demand

Yet surgeons have difficulty accessing the schedule...

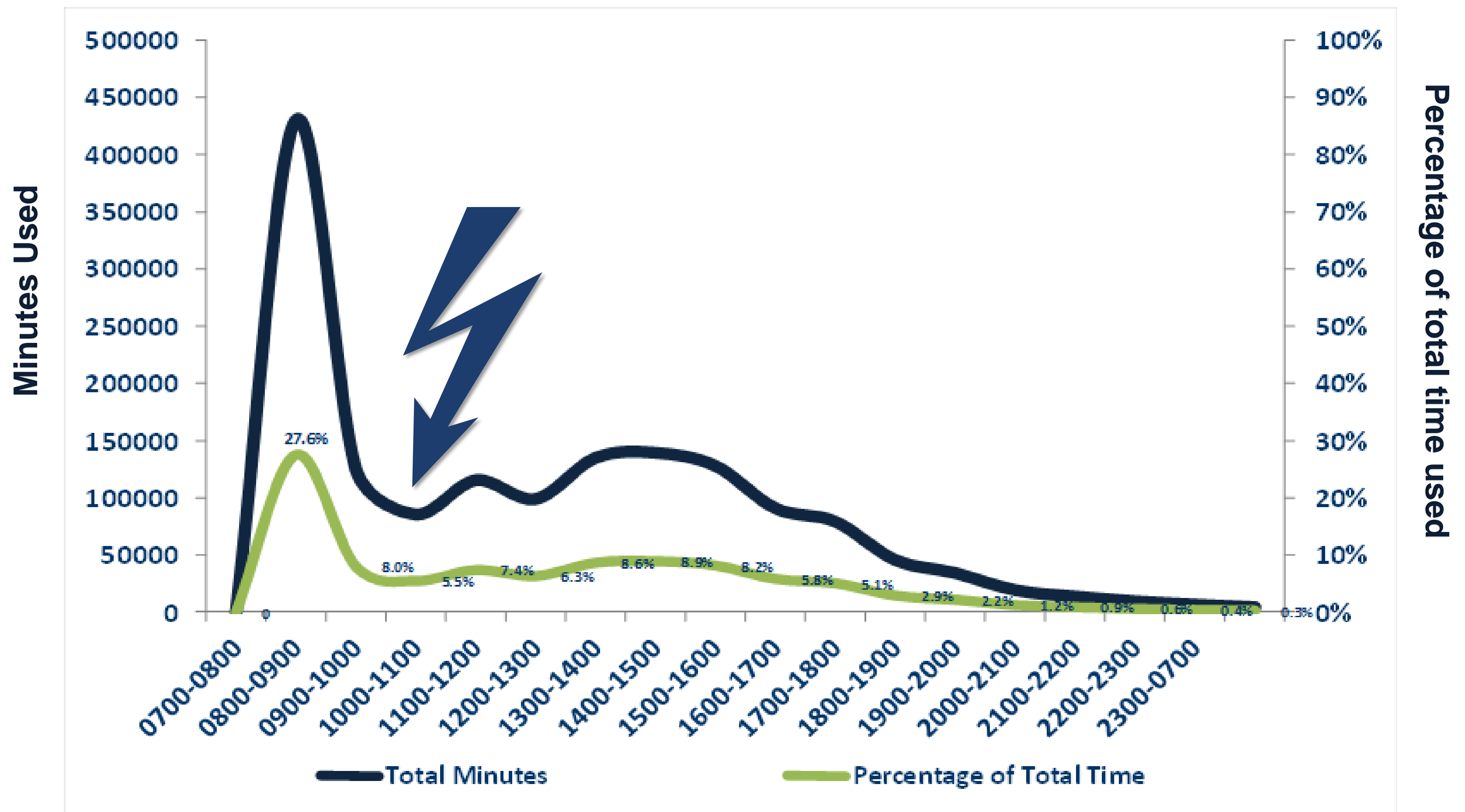
Hospital Volume



ASC Volume



Operating Room Resources Are Not Fully Utilized After 10 am



SSEC Work Plan

- Develop a Surgical Services Executive Committee (SSEC)
- Determine the number of rooms that should currently be running based upon volume and block utilization
- Analyze block utilization per surgeon per group and determine the threshold to maintain block
- Define block scheduling rules
- Set dates for surgeon sign-up
- Set dates for roll-out of new block
- Develop a monthly Surgeon scorecard
- Monitor quarterly utilization metrics with block revisions ever 6 months

“Ideal” Block Schedule Example

20% Open Time

Monday																
	1	2	3	4	5	6	7	8	9	10						
7:00																
7:30	Boes 45.17%	Avery 45.17%		Smith 45.17%	OPEN	Bell 62.46%	Micahels 79.00%	OPEN	Tims 45.17%	Joe 45.17%						
8:00																
8:30																
9:00																
9:30																
10:00		Wells 45.17%	Hamacher 52.45%													
10:30																
11:00																
11:30																
12:00			Joe 45.17%													
12:30																
13:00																
13:30																
14:00																
14:30																
15:00																
15:30																
16:00																
16:30																

Block Improvements

Room availability needs to be enhanced between 17:30-19:30

Rooms Running in Main OR (Weekday)

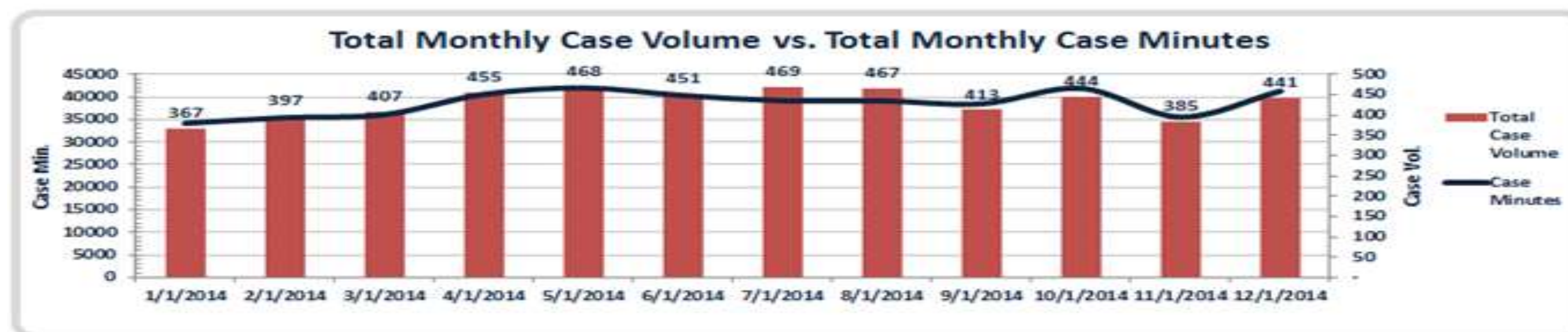
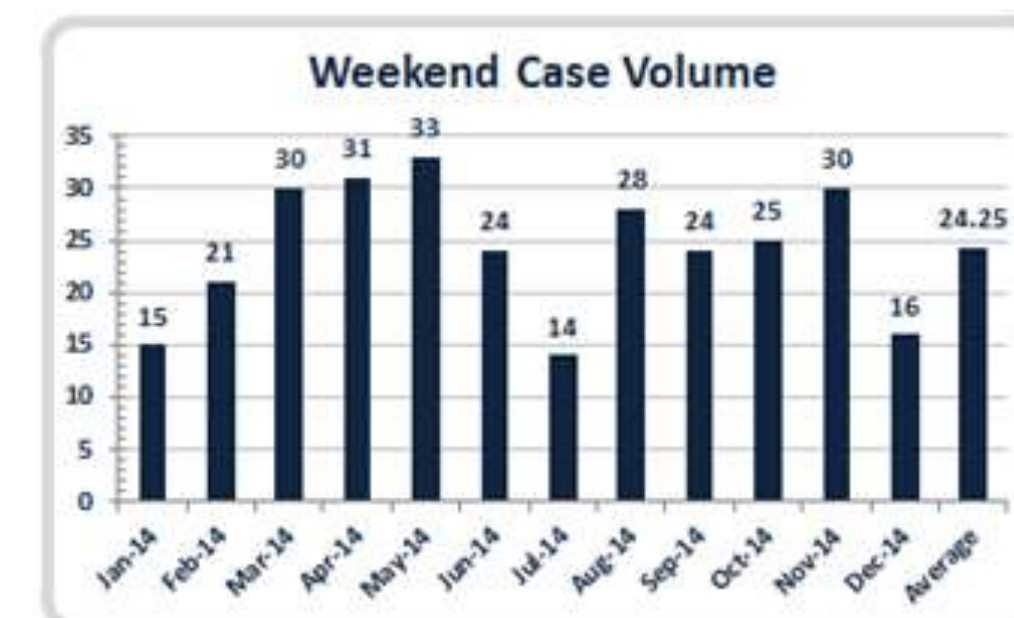
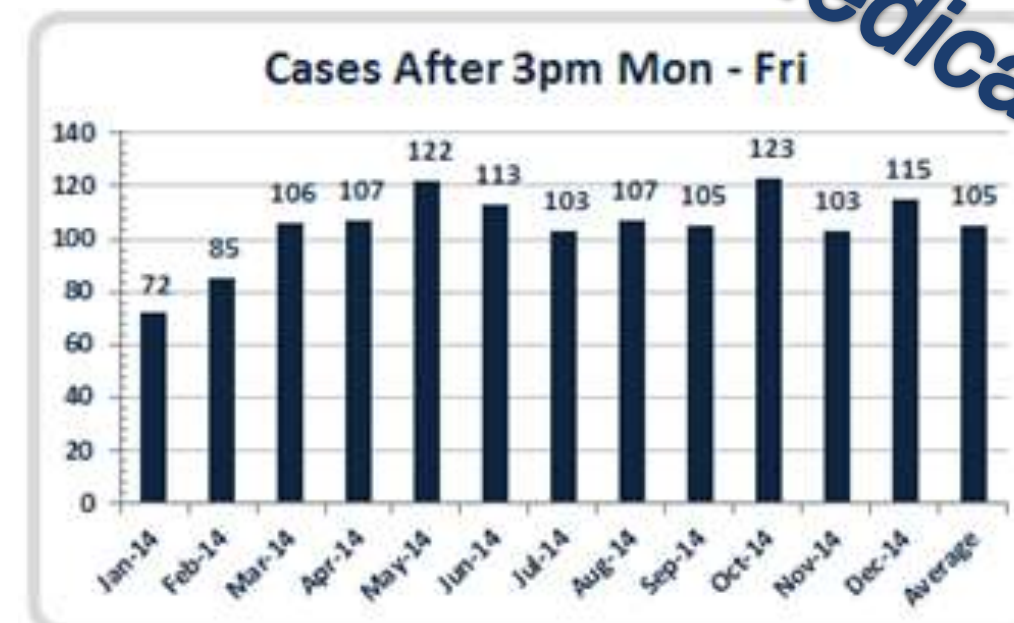
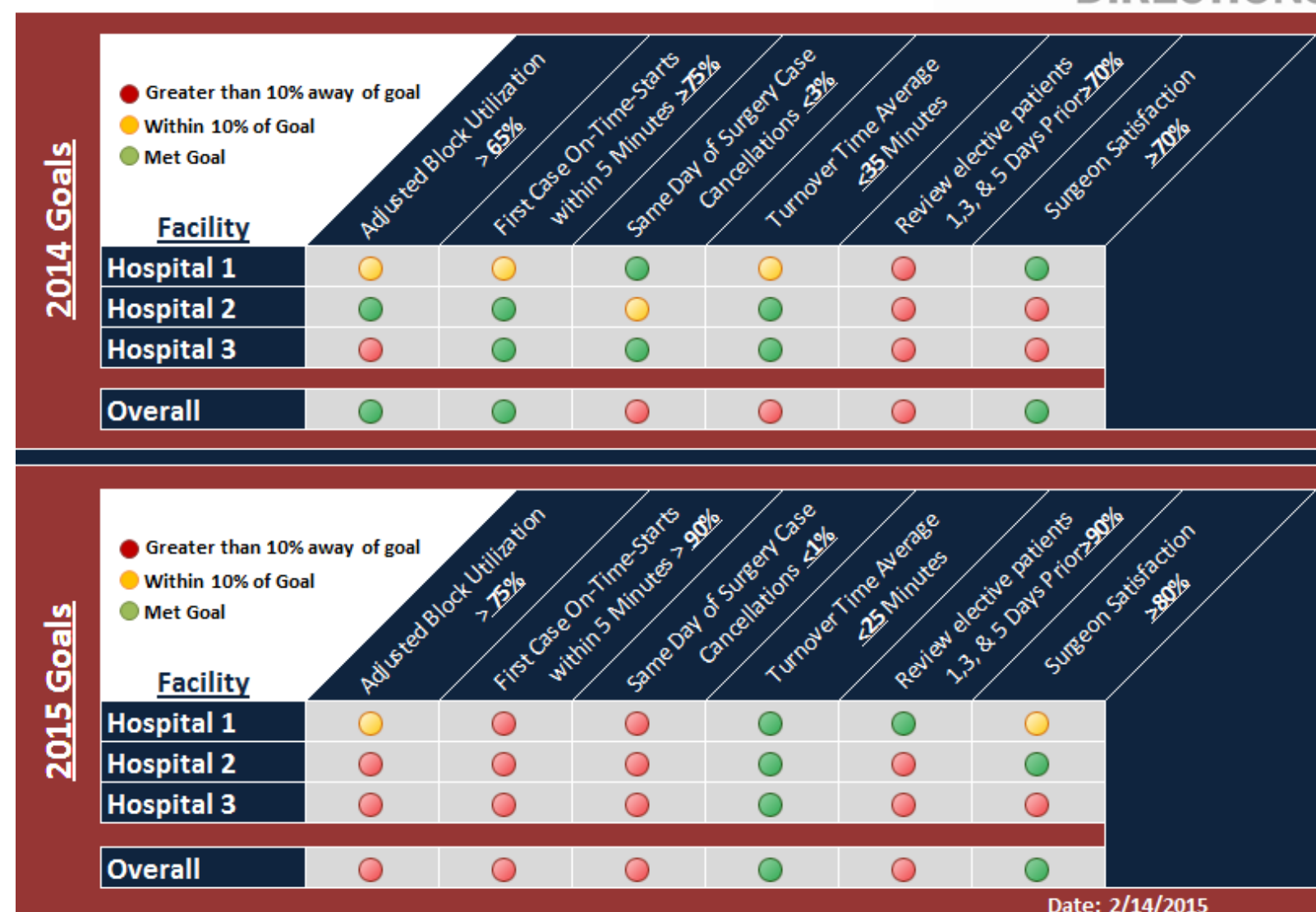
Time Period	Number of Rooms Running
0700-1530	15
1530-1730	15
1730-1930	8
1930-2300	3

SSEC Dashboard Sample

Multi Facility
Medical Center

Perioperative Services Dashboard

SURGICAL
DIRECTIONS



Physician Scorecard



Dr. Mike Miles

Overall Utilization

59.62%

Total Cases

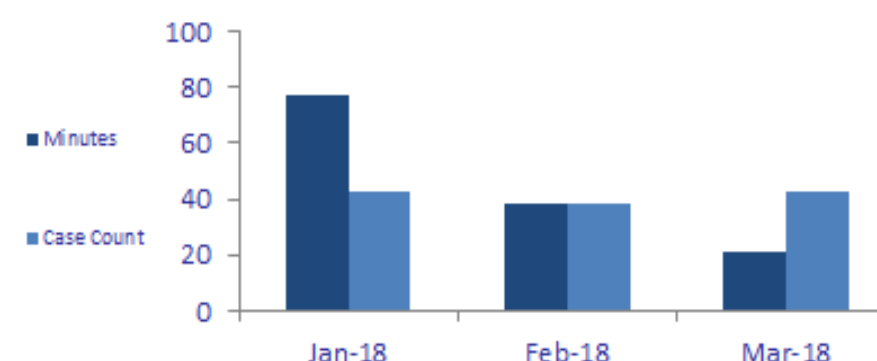
29

Cost Per Case Avg.

\$ 1,701.95

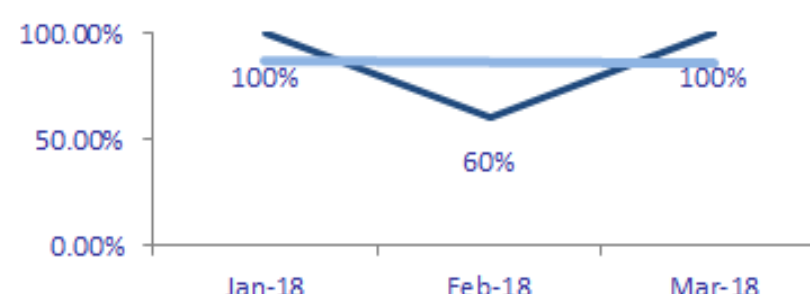
Turnover

Month	Minutes	# of Turnovers	Case Count
Jan-18	77	1	43
Feb-18	38	9	38
Mar-18	21	8	43



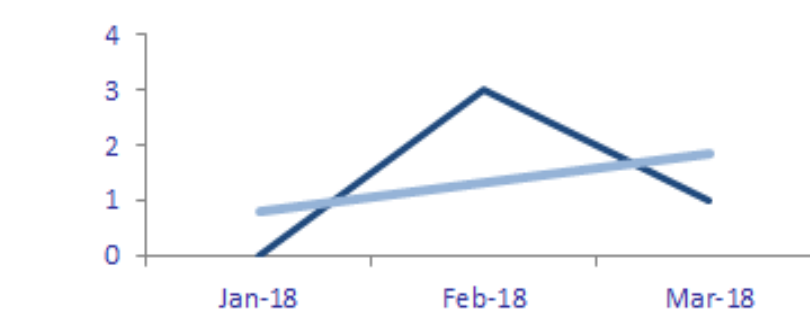
On-Time Starts

Month	Cases	On-Time	Percentage	Delay Reason
Jan-18	3	3	100%	Surgeon Delay
Feb-18	5	3	60%	Surgeon Delay
Mar-18	3	3	100%	Surgeon Delay



Day of Surgery Cancellations

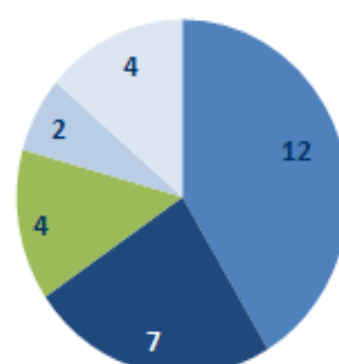
Month	Cases	Reason for Cancellation
Jan-18	0	Rethinking surgery
Feb-18	3	Cannot find a ride
Mar-18	1	Looking at other avenues for care



Procedure Counts

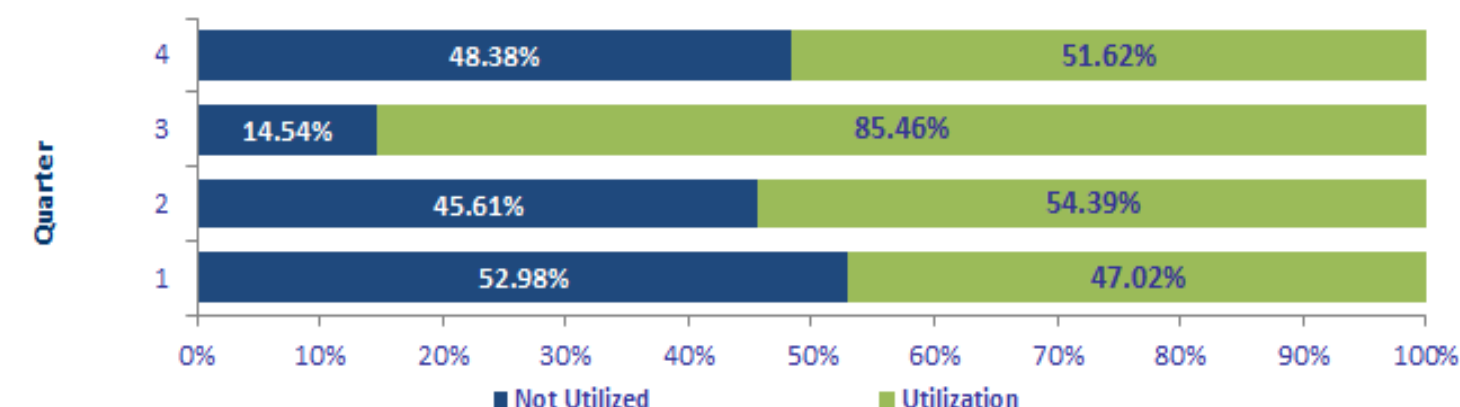
Primary Procedure	Jan-18	Feb-18	Mar-18	YTD	Total Count
Lap Chole	3	7	2	12	55
Lap Appy	0	7	0	7	31
Breast Biopsy	1	2	1	4	26
Radical Mastectomy	1	0	1	2	19
Inguinal Hernia	2	2	0	4	17

■ Lap Chole
 ■ Lap Appy
 ■ Breast Biopsy
 ■ Radical Mastectomy
 ■ Inguinal Hernia



Block Utilization

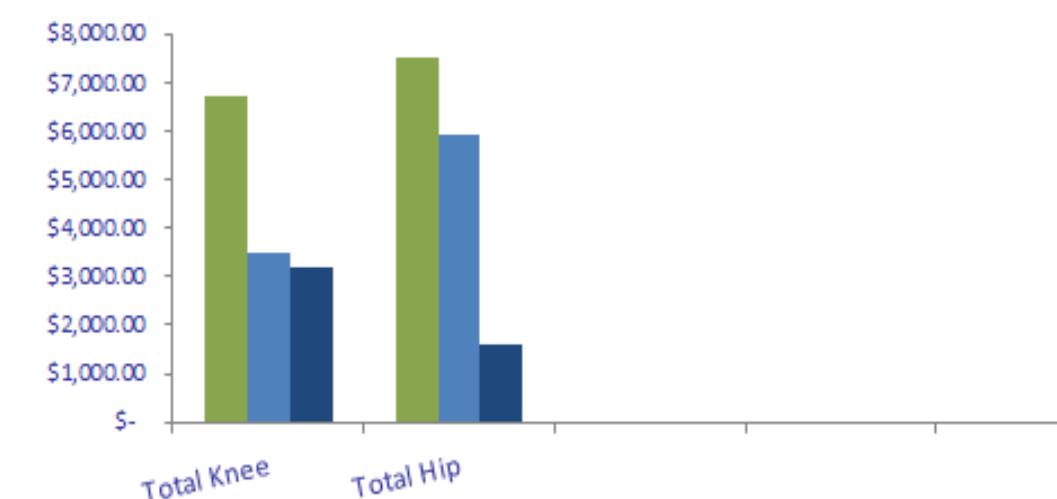
Quarter	Time Given	Time Used	Indicator
1	14440	6790	●
2	13278	7222	●
3	12003	10258	●
4	9687	5000	●



Cost Per Case

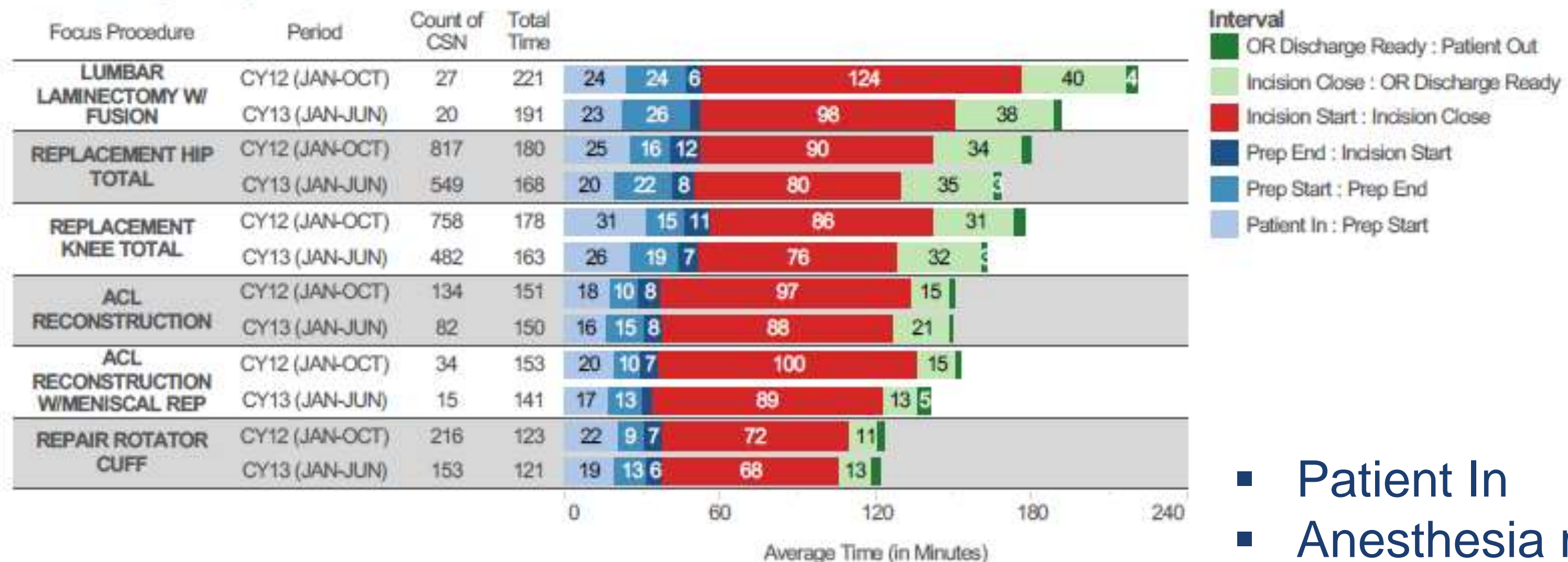
Procedure	Cost Per Case	Peer Cost Per Case	Difference
Total Knee	\$ 6,700.00	\$ 3,500.00	\$ 3,200.00
Total Hip	\$ 7,500.00	\$ 5,900.00	\$ 1,600.00
			\$ -
			\$ -
			\$ -

■ Cost Per Case
 ■ Peer Cost Per Case
 ■ Difference



Case Time Data Driving Organizational Change

OR Case Time Variance by Procedure
Orthopaedic Surgery Service Line
CY12 (JAN-OCT) & CY13 (JAN-JUN) Period Comparison
HJD Discharges Only



NOTES:

PROCEDURE sorted in descending order by average of TOTAL CASE TIME.

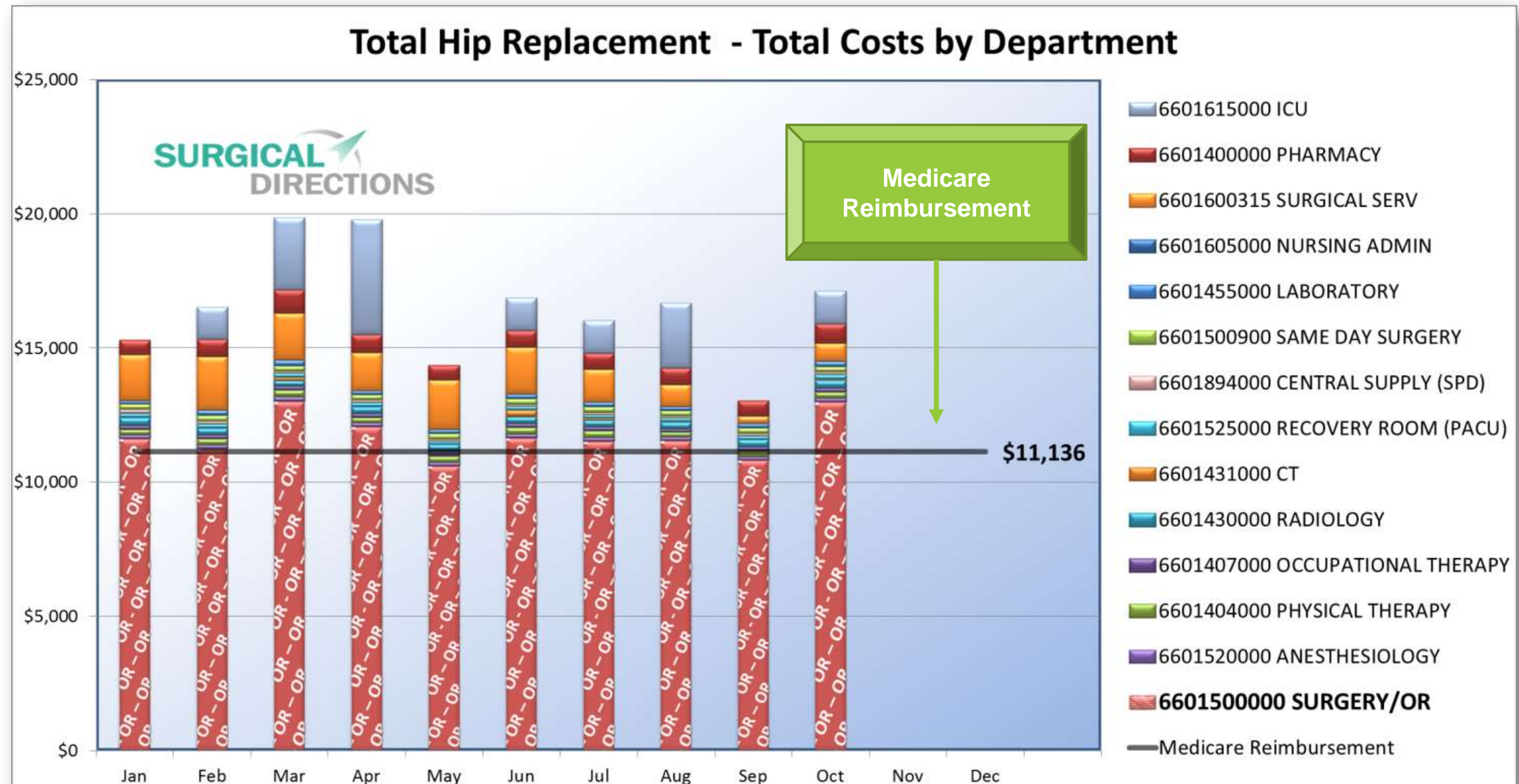
Average of MINUTES for each PROCEDURE broken down by PERIOD.

Color shows details about INTERVAL. The marks are labeled by average of MINUTES.

The data exclude cases that have been canceled, terminated in OR, or have timestamp errors.

- Patient In
- Anesthesia ready
- Cut
- Close
- Patient out

Cost Transparency



Cost Transparency

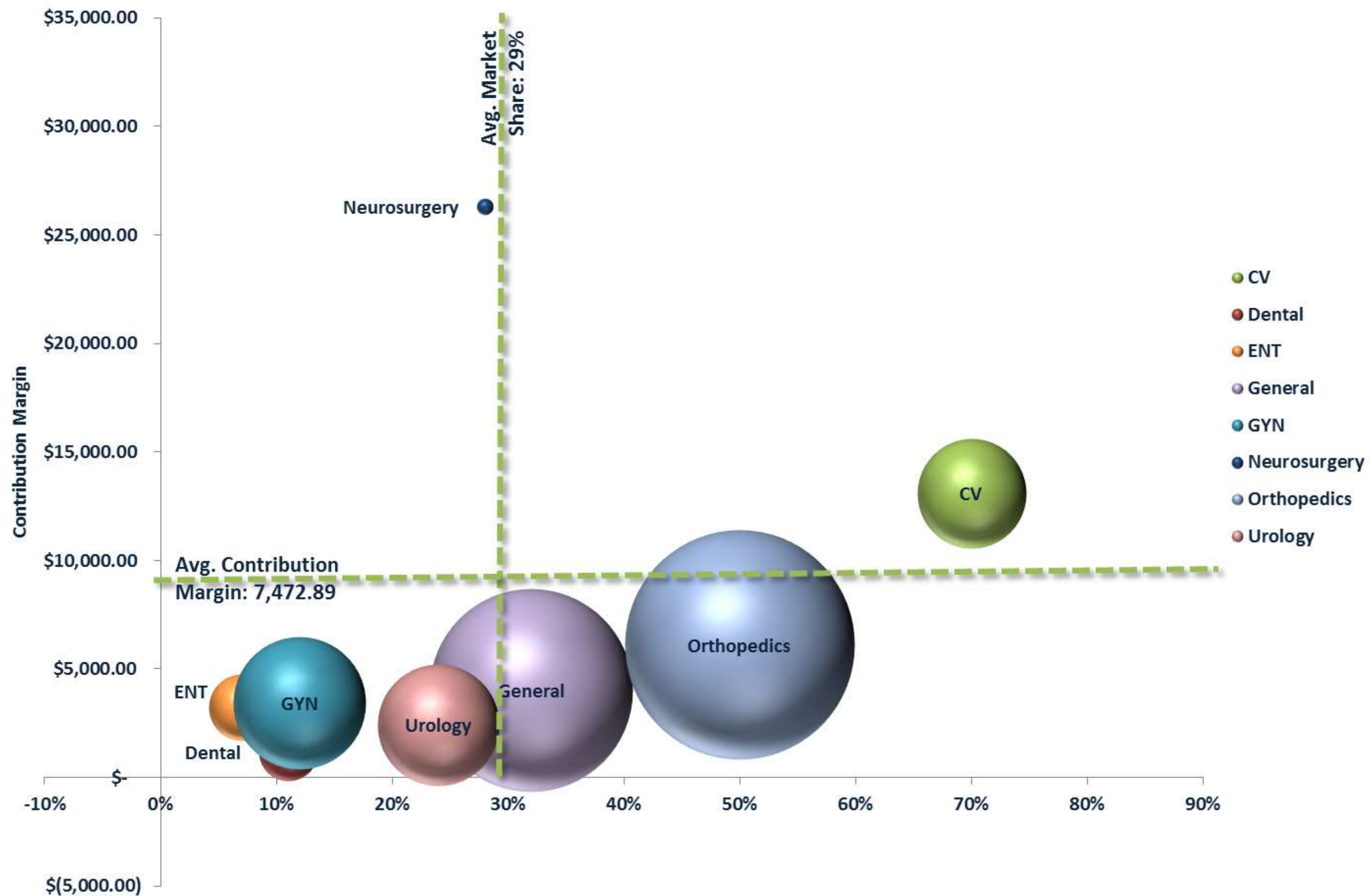
Supply Cost Detail Dashboard

Procedure: Total Knee Replacement - YTD 2012



Strategic Growth

Market Share & Perioperative Growth Strategy Analysis



Where to Start Whether You're the Director or Business Manager

- Establish elective, urgent and emergent definitions with a consistent retrospective case review process
- Decide upon primetime utilization, the drawdown outside of primetime and weekend scheduling rules/definitions
- Agree upon the number of rooms running per day of week and time of day to determine the necessary staffing to match the block
- Establish block utilization standards for maintenance of blocks and on-going quarterly monitoring and re-adjustment

Where to Start Whether You're the Director or Business Manager

Step Two

Align Nursing and Anesthesia Staffing, as well as facility support services (i.e., Lab and Pathology, Radiology, Admitting, Registration, Case Management, etc.) to support and execute the block redesign.

- Utilize an appropriate staffing and productivity tool that determines the number of staff needed per day and per time of day that ensures that first case on time starts, case length and turnover times are improved
- Ensure the appropriate support staff are in place to achieve goals:
 - Service Line Coordinators
 - ORA's
 - Anesthesia Techs
 - EVA's
 - Material support
 - Inner core support

Competing Priorities – A Balancing Act

- Providing high quality patient care
- Providing convenient access for surgeon (revenue generation)
- Providing health work environments for staff (work-life balance)
- Functioning at or below budget
- Additional factors to consider:
 - Market recruitment opportunities
 - Lead cycles for on-boarding



Common Productivity Metrics for OR's

- “History”
- Hours per patient Day
- RVU's
- Man hours per Stat
 - Surgical Minutes
 - Surgical Cases



Staffing to Demand

Operating Room Staffing Plan

Productive Time

Step 1: Total Hours Staffed per Week

SCHEDULE:

OR	# Rooms Open	Hour Open	Hour Close	Hours Open	Hours Open/Day	Days/Week	Total Hours Staffed/Week	Notes	Comments
Mon-Fri	6.0	7:00 AM	3:00 PM	8	48	5	240		
Mon-Fri	3.0	3:00 PM	7:00 PM	4	12	5	60		
Mon-Fri	1.0	7:00 PM	11:00 PM	4	4	5	20		
Sat-Sun				0	0	2	0		
Total				16	64	17	320		

Step 2: Total Hours staffed per week x the number of FTEs per room=working hrs per week=FTE

Total Hours Staffed/Week	FTEs/Rm	Working Hrs/Week	Working Hrs/Year
320	2.5	800	41,714

FTEs/Rm = 8 RNs/4 ORs

37.5 work week
6
holid
ays
2 CE
days

Step 3: Working hrs per week divided by 40 hrs worked per week= FTEs

21.3

Non-Productive Time

Step 4: Actual Vacation + Holiday annualized (Sep 08 - Mar 09) =

Total Direct Care Staff
25.5 Total direct care staff required
13.3 RNs
10.2 Surgical Technicians
23.5

Ratio
RNs
Techs

Non-Productive Hours/Year	Annualized Relief FTE	Driver for Relief:
381	4.2	Non Productive Hours/ FTE
		PTO
		Lunch and break coverage
		Total
		Input Ratio
		60.00%
		40.00%

Hours	Input
160 Average 4 week/year/FTE	4
221 221 working days 2-15 min breaks and 1-30 min lunch	
381	
1699 Total Annualized Hours	
8,128 Total non-productive hours multiplied by worked hours per week	
4.2 (38,384/1650 - Annual FTE Hrs at 37.5)	

Indirect Care Staff	
Director	1
Business Manager	1
OR Desk Coordinator	1
Team Leader	2
Scheduler	2
Nurse Educator	1
Data Entry/Charge	2
Anesthesia Aide	2
Operating Room Assistant	3
OR Materials	1
Total	18
Total Staff Required	43.5

Current FTE's MOR:	36
Current FTE's ASC:	17
Total:	33
Variance:	-9.5

Inputs

- Number of rooms running per day of week and time of day
- The number of FTE's/Room
- 2.5 (AORN)
- Can range from 2.0 to 3.0 depending upon the facility (note: 3.0 is only recommended in complex cases, i.e., CV, Neuro and some Ortho and Robotic procedures)
- Average amount of vacation, lunch and break time per FTE
- RN/ST Ratio (70%/30% - AORN)
- Number of not direct care staff (management and support staff – AORN recommends 1 indirect for every 2 direct care givers or 33%)

Department	Average % Indirect Labor	Average % Education	Average % Orientation	Total % of Indirect to T. Worked Hrs.
Perioperative Services	17%	1.5 - 2.0%	1.5 – 2.0%	20% - 21%

FTE's (Full Time Equivalents)

- 1 FTE: 40 hrs/wk X 52 weeks = 2,080 total paid hours/year
 - Important Note: Some facilities consider 37.5 hrs/wk X 52 weeks = 1,950 total hours/year
- Based upon 5 day work week: 0.2 FTE's per day
 - 6 Days/wk = 1.2 FTE's
 - 7 Days/wk = 1.4 FTE's
- 7 Day per week Operational Rule:
 - In a 7 day schedule, every 1 FTE needs an additional 0.4 FTE to staff days off
 - For example – 10 RN FTE's every day X 1.4 = 14 FTE's

Demonstration of Tool #1

Staffing to demand demonstration



How to Translate FTE's Into an Effective Staff Schedule

- While FTE's are very important and are an essential part of the budgeting and staffing formula, measuring productivity and room utilization per time of day is essential to effectively staff the OR

- We can determine the number of FTE's per operating room, but how do we know?
 - How many 8 hour shifts will work?
 - How many 10 hour shifts do we need?
 - Will 12 hour shifts work in my OR?
 - How many shifts do we need in our OR?
 - When should the 1st shift arrive and the last shift end?
 - How many rooms are running?
 - Most important, how do I justify and defend these positions and requests to administration?

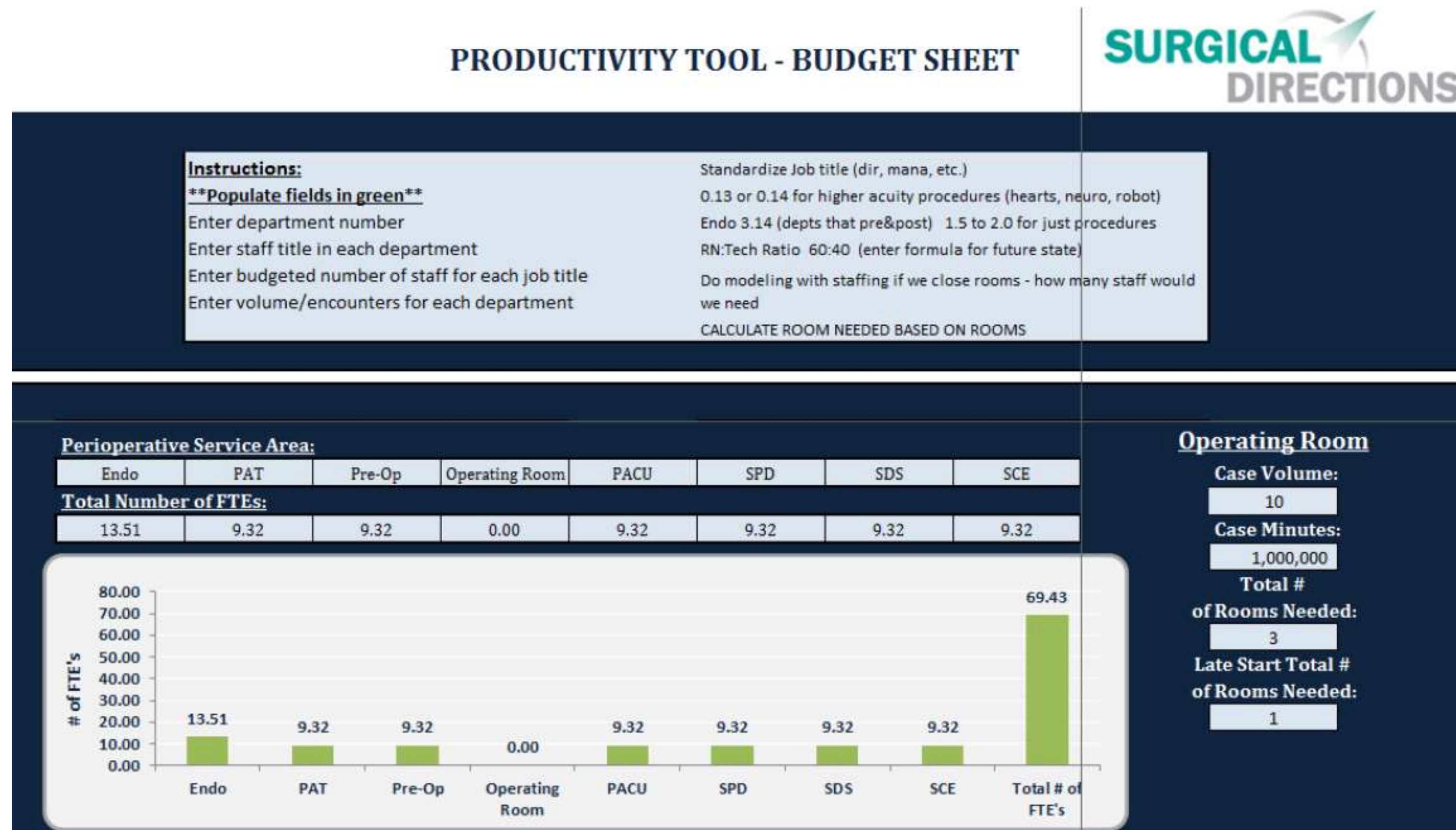
- This is why current methodologies have not met the needs of OR Business Manager and Perioperative Leadership

Productivity Based Staffing Tool

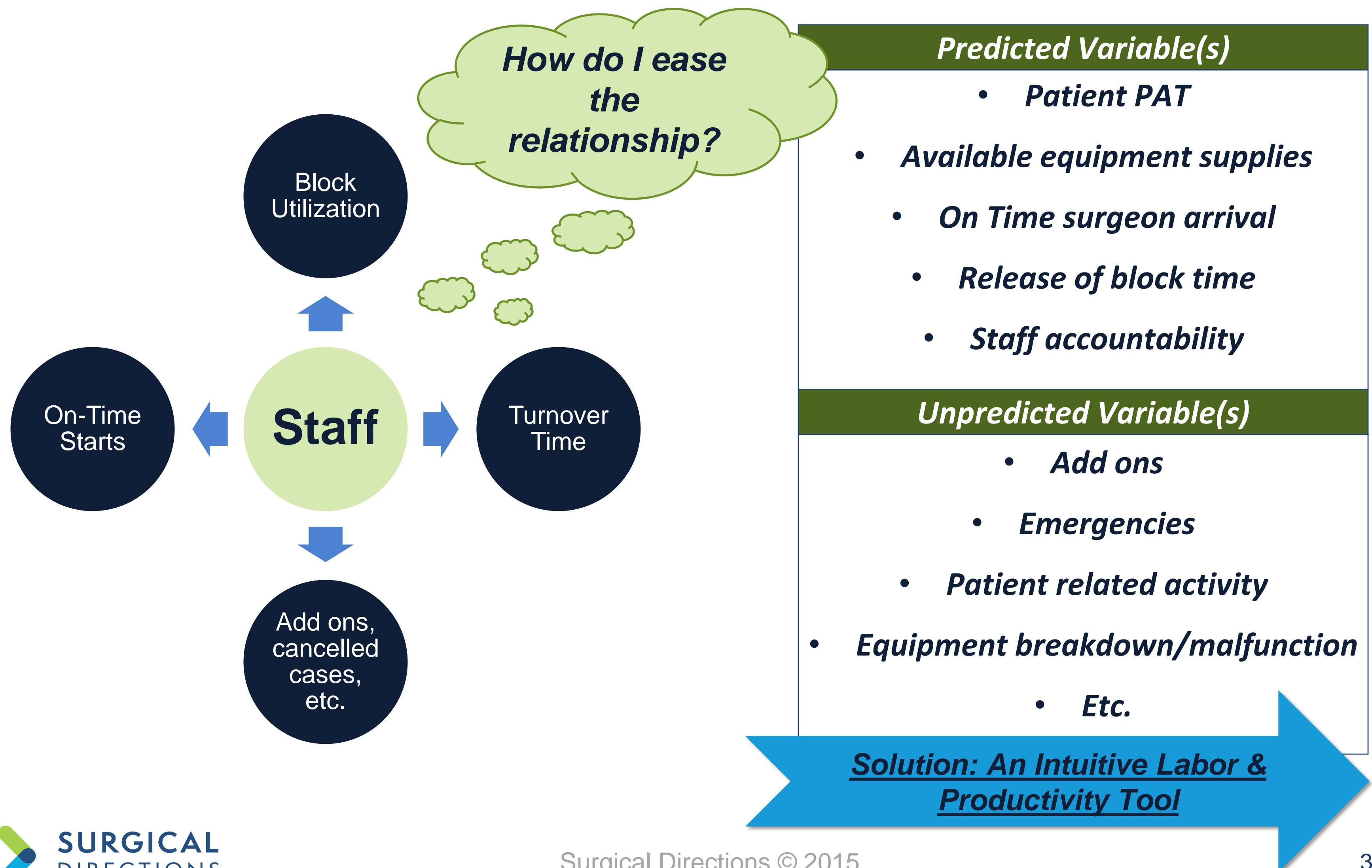
- A productivity based staffing tool that can predict and identify both number of FTE's define skill mix and defend FTE consumption is what has been missing in current perioperative staffing models
- A tool that can provide these metrics requires extensive data access and retrieval along with analytical review
- This requires high level analytical capabilities from OR Business Managers

Performance Optimization - Example

Review OR productivity through data analytics



Labor & Productivity



Labor and Productivity


Solution: An Intuitive Labor & Productivity Tool

Brilliant!

Production per DOW (M-F)

DOW	FSYTD Volume	Minutes	Avg. OR Suite Utilization
Monday	297	1000	78%
Tuesday	332	11000	67%
Wednesday	235	10500	59%
Thursday	199	10806	78%
Friday	212	985	73%

FTE Summary

 Dept Name	Actual Worked Hours		Budgeted FTEs		Productivity Benchmark		Benchmark		Utilization Adjusted Productivity	FTEs Productivity Benchmark vs Budget	FTE's Productivity Benchmark vs Actual	Utilization Adjusted FTE's Required
	Actual Worked Hours	Actual Worked FTEs	Budgeted FTEs	Actual/Bud Variance	Prod Hours	Prod FTEs	Hours per Stat		Increase/Decreased on Actual vs. Prod	Variance	Variance	FTE's
Endoscopy	42,000	20.2	10.77	9.42	34,111	16.40	3.24	Visits or Procedures	23%	5.63	(3.79)	18.30
PACU	33,000	15.9	15.22	0.65	28,636	13.77	2.82	Visits	15%	(1.45)	(2.10)	14.82
Central Sterile Supply & Supply Processing	28,563	13.7	27.91	-14.18	25,368	12.20	0.50	OR Cases, L&D, Pacers	13%	(15.71)	(1.54)	12.96
Operating Rooms MOR	146,004	70.2	45.68	24.51	134,863	64.84	0.13	OR Case Hours + TAT	8%	19.16	(5.36)	67.52
Ambulatory Surgery Department	36,000	17.3	19.00	-1.69	28,000	13.46	3.34	Visits	29%	(5.54)	(3.85)	15.38

Predictive Modeling

- On the horizon is the capability to develop predictive modeling tools that can tell us day by day, how many staff are needed to effectively run a productive perioperative service
- Vanderbilt already has a tool in place for determining the number of rooms that need to be run by day of the week
- Until technology catches up in healthcare, particularly in perioperative services, what can we do with the tools that we currently have available?

Implementation



Step Three

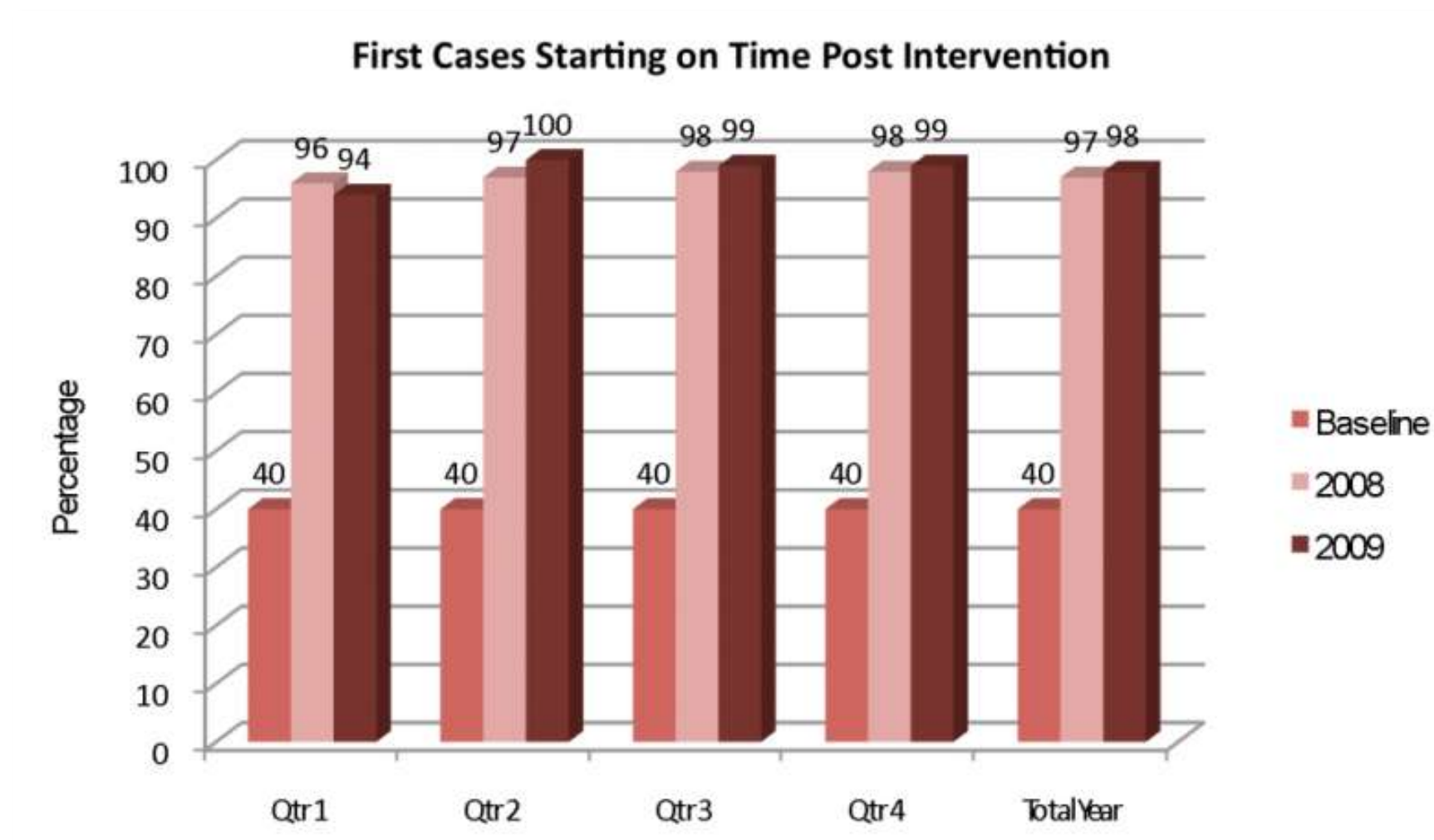
Establish dashboards with thresholds to monitor and display results in a consistent methodology and report to the governance entity monthly, quarterly and annually.

- Evaluate the plan and results no less than quarterly
- Publish transparent information to surgeons, nursing and anesthesia

Defending Your Work



AORN Position Statement on Perioperative Safe Staffing and On-Call Practices



Displaying Data

- Implement LDM boards and metrics to monitor daily performance that includes staffing metrics
- Consider salaried staffing models and alternative shifts to meet the needs of the surgeons accessing the department:
 - Salary
 - 10-hour shifts
 - Weekend Staffing
 - Off-shifts (i.e., 9-5, 10-7, short shifts on weekends, etc.)
- Prove through results from data collection that on-time starts, case length and turnover times improve by surgeon
- Collect data on late starts and post by surgeon and by reason

Data Management

LDM (Lean Daily Management) Board:

- Determine 2-4 areas of focused process improvement activity
- Develop multi-disciplinary performance improvement teams
- Publish data daily and review each morning
- Performance must be audited daily
- Once performance objectives are consistently maintained, remove and add an additional metric



Staff Buy-In

Identify incentives for high performance/ productivity:

- First lunch
- Vacation priority
- Bonuses
- First choice for work schedules/shifts
- Other means of recognition, reward, etc.

Hard-Wiring Success

Celebrate successes to hard-wire transformation and culture change and monitor performance:

- Surgeon sponsored breakfasts/lunches
- Anesthesia sponsored breakfasts/lunches
- Hospital sponsored breakfasts/lunches

- Productivity and staffing tool must be monitored to make adjustments as situations change.
 - Highlight the elements of your tool.
 - Provide bottom line labor and non-labor cost savings
 - Provide talking points to sell this methodology to Sr. Leadership

Surgical Directions Information

For questions or comments, please contact:

Surgical Directions
541 N. Fairbanks Court
Suite 2740
Chicago, IL 60611
T 312.870.5600 F 312.870.5601

www.surgicaldirections.com

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