In Search of Excellence: A Program, Protocols and Software For a Total Joint Center With Outcomes

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Medical Director
October 2015

MemorialCare® Joint Replacement Center
Long Beach Memorial

What We'll Cover

MemorialCare Joint Replacement Center
Long Beach Memorial

- How did Long Beach Memorial Joint Replacement Center move from two distinct levels of care?
- How are measurement, outcomes, and effective leadership used to change surgeons' practices?
- What's the latest in the JR literature and how does our study on surgeon volume and protocols enhance it?

Physician's Disclosure Statement

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I have no relevant financial or nonfinancial relationships in the outcomes, research, or services described, reviewed, evaluated or compared in this presentation. I have no financial arrangements with any medical companies to include : stocks, stock options, consulting fees or patents.

~Dr. Douglas E. Garland



Who We Are

MemorialCare® Joint Replacement Center
Long Beach Memorial

Long Beach Memorial, Long Beach, CA

- 462 licensed beds
- More than 20,000 discharges per year
- More than 990 board-certified physicians providing expert care
- One of the largest joint replacement centers in the west





Joint Replacement at LBM

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- Competitive analysis through 2012: Long Beach Memorial has a 27% market share, #1 amongst competitors.
- Long Beach performs more than 550 total joint replacements annually and continues to grow.
- Addition of MAKOplasty® Robotics has recruited additional surgeons.



So What is the Problem?

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Two Levels of Care

"We cannot become what we need to be by remaining who we are."

~Max DePree, Leadership Coach



Reasons for Surgeon Non-Performance

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- *"There are too many obstacles beyond my control."*
- *"There's no positive benefit for ME."*
- *"Efficiency is more work."*
- *"My way is better."*
- *"It won't work."*



"A captain of a large vessel with a large hole must learn to bail faster than the incoming water."

~Douglas E. Garland



Leadership

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"Larger-than-life celebrity leaders who ride in from the outside are negatively correlated with taking a company from good to great.

10 of 11 'good to great' CEOs came from inside the company, whereas the comparison companies tried outside CEOs six times more often."

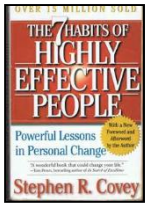
~Jim Collins, "Good to Great"



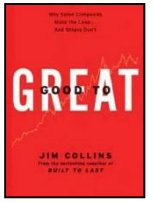
5 Critical Reads

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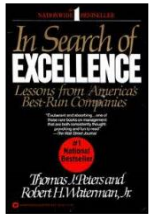
- **The 7 Habits of Highly Effective People** ~Stephen Covey



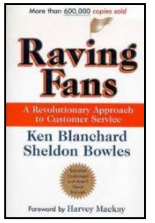
- **Good to Great** ~Jim Collins



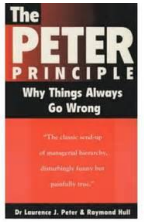
- **In Search of Excellence** ~Tom Peters



- **Raving Fans** ~Ken Blanchard



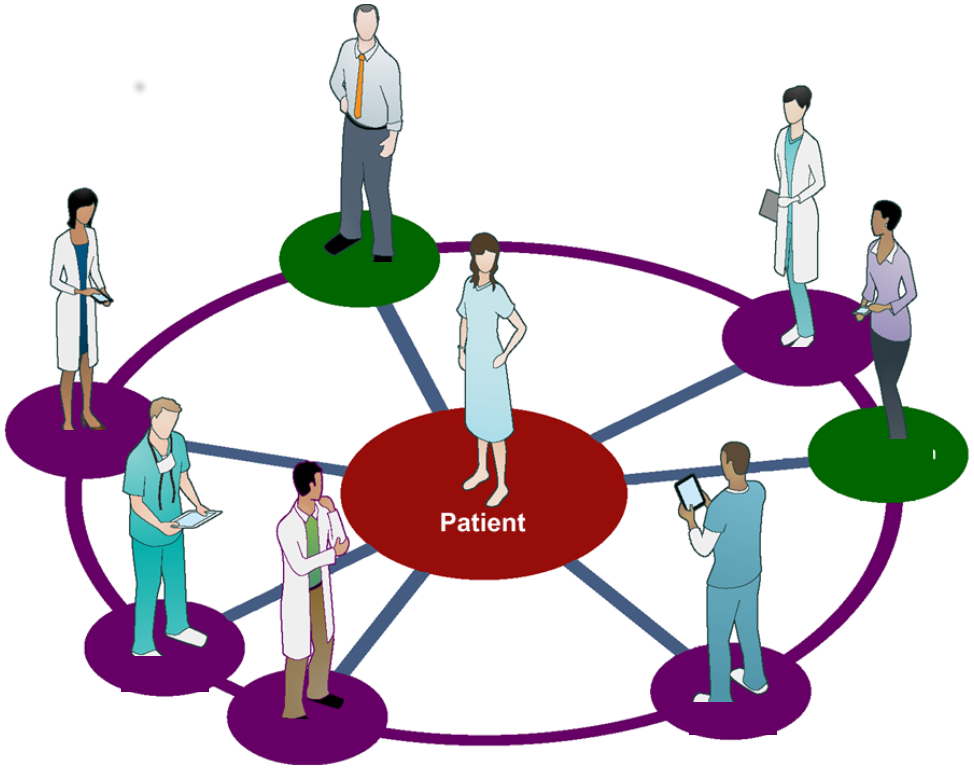
- **The Peter Principle** ~Lawrence J. Peter



Joint Replacement Center

MemorialCare® Joint Replacement Center
Long Beach Memorial

- Program launched September 2009
- Design based on Marshall Steele and Associates research/recommendations
- Offers a dedicated, multidisciplinary team



- Surgeon
- Anesthesiologist
- Joint Care Coordinator
- Admissions Staff
- Therapy Team (PT,OT)
- Specially Trained Nursing
- OR and PACU staff
- Dietician

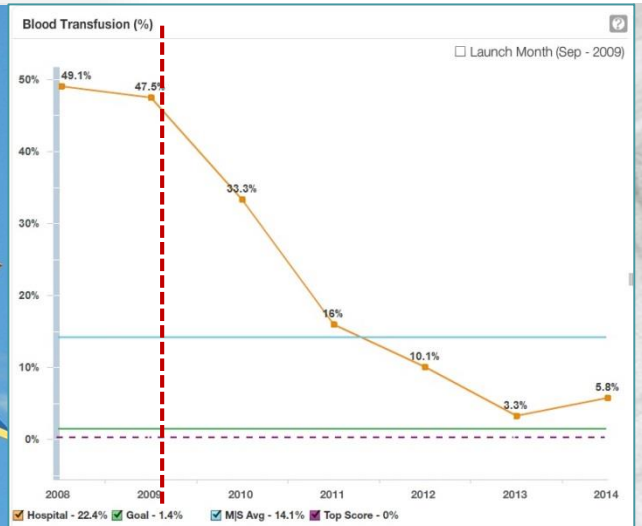
MemorialCare
Joint Replacement Center
Long Beach Memorial

Our Mission

Replacing arthritic joints with artificial joints using precision surgery with minimal complications in a wellness environment.



Launch





Journey of the JRC

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9/9/2009
PHASE I
Launch
of the JRC

1/1/2011
Dr. Douglas Garland Assumes
JRC Medical Director
"Begin with the end in mind"

11/16/2011
PHASE II
Focus on Rapid Rehab
(The whole is > than the sum of its parts)

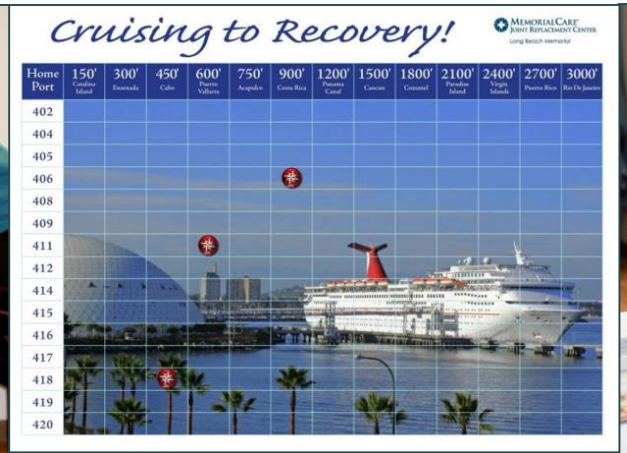
9/9/2013
Phase IV
Recruitment and Robotics

12/1/2010
Dr. Douglas Jackson retires
as JRC Medical Director

2/26/2012
PHASE III
Jill Roberston, PA hired

12/5/2014
MAKOplasty®
Robotics







Program Enhancements

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1/1/2011
Dr. Douglas Garland Assumes
JRC Medical Director
"Begin with the end in mind"

8/8/2011
1st Same-Day
Total Hip (Male)

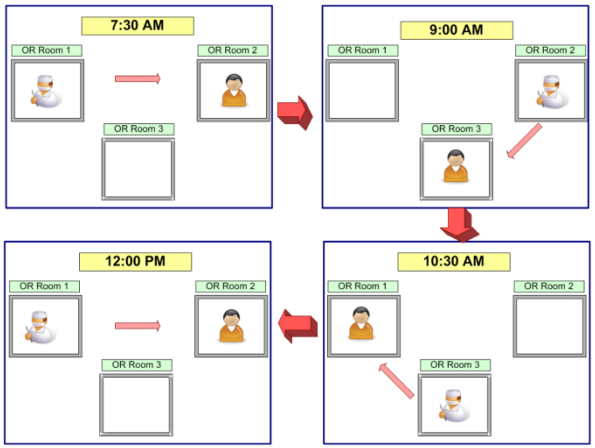
5/2/2012
Marketing Increases
Promotion of JRC

7/18/2013
First Outpatient
Total Hip

9/9/2013
First
Same-Day
Total Joint
(Female)

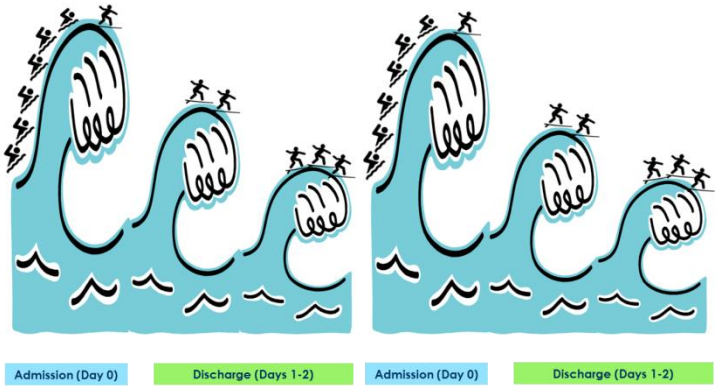
7/21/2014
Diabetes Service
Joins JRC

2/2/2011
OR Conversion to
3 Total Joint Rooms
Spinal Anesthesia Standard



4/24/2013
7 day "waves" for JRC
patient surgical
process flow
(Jump on the Wave
of Excellence)

12/9/2013
First Same-Day
Total Knee



Patient Experience

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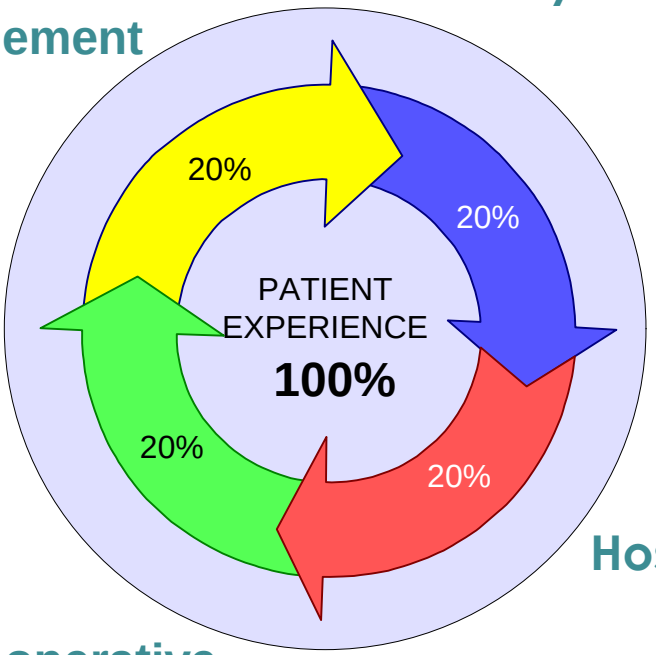
Patient Experience:
The whole is greater than the sum of its parts

Patient Engagement

- Pre-operative class
- Establish coach
- Understand pain management
- Feedback and reunion lunches

Physician

- Discuss options
- Check Hg
- Schedule Surgery
- Schedule Pre-Op Class
- Medical Clearance
- Consent
- Pre-Emptive Meds
- Minimally Invasive Surgery



Peri-operative Services

- OR
  - Anesthesia Tech
  - Dedicated Joint Team
  - Room Turnover Team
  - PACU
  - Designated Space and team
  - Anesthesia
  - Multimodal
  - Pre-emptive meds

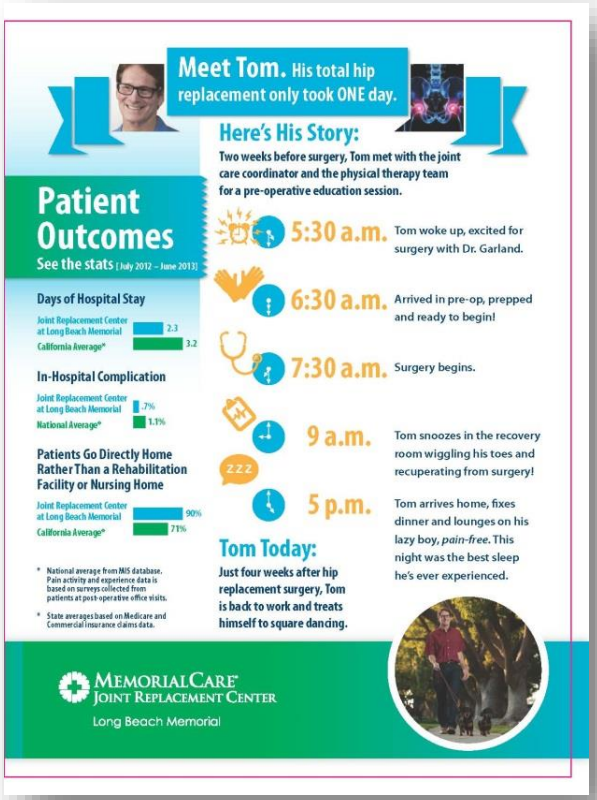
Hospital

- Pre-op class
- Pre-admission
  - MRSA and MSSA Screen
- Nursing
  - Out of bed most of day
  - Group lunches
- Therapies
  - Walk Day of Surgery
  - Twice Daily
  - Set Schedule
  - Group Sessions

Patient Spotlights

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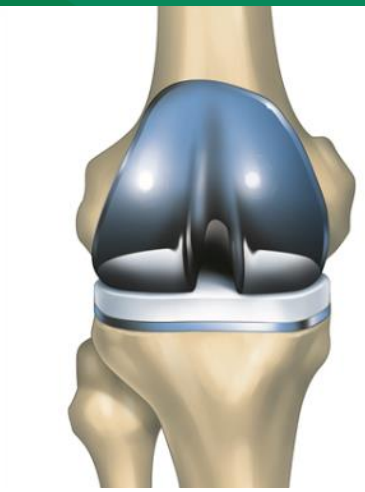






JRC Program

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Since Launch*

- 2301 hip/knee replacements
- Went from 8 to 21 participating surgeons
- 37% increase in volume
- 2.18 day stay in hospital (reduction of .71 days)
- Blood transfusion rate reduced from 33.3% to 5.7% estimating an overall savings of $582,818
- 5.6% reduction in direct costs
- Improved average margin by $2,831per patient (76% increase)
- Standardized protocols for all team members
- Incorporated best practice in anesthesia type selection

** Data summary from Marshall Steele Joint Replacement database from CY2010 through CY2014*

What We Measure

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Service Line: Joint Replacement | Reporting Period: Apr 2010 - Jun 2010 | About this Data

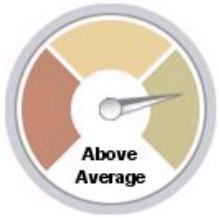


Clinical

51% Your Percentile

See details →

Metric	Current	Change	Goal
Complication Rate	1.0%	0.0%	0.0%
Blood Transfusions	28.4%	-11.8% ▼	10.0%
Readmission Rate	3.2%	0.0%	2.0%
Flexion	89°	1° ▲	90°
Extension	4°	0°	2°
Distance Walked	517ft.	87ft. ▲	500ft. ✓

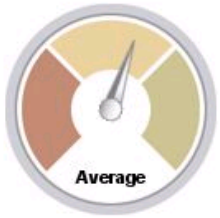


Operational

79% Your Percentile

See details →

Metric	Current	Change	Goal
Volume	95	3 ▲	140
Length of Stay	2.83	-0.20 ▼	3.00 ✓
% Home	85%	6% ▲	90%

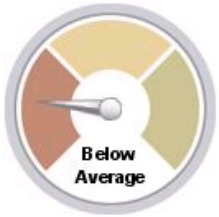


Financial

57% Your Percentile

See details →

Metric	Current	Change	Goal
Contribution Margin	$4,829	-$1,149 ▼	$5,660
Total Direct Cost	$12,263	-$224 ▼	$12,342 ✓
Implant Cost	$4,865	-$65 ▼	$4,296
Reimbursement	$17,092	-$1,374 ▼	$20,593
% Private Payor	42%	7% ▲	65%



OR

19% Your Percentile

See details →

Metric	Current	Change	Goal
Duration Accuracy	57 min	16 min ▲	10 min
Prep Time	35 min	0 min	25 min
Surgery Time	105 min	0 min	70 min
Exit Time	7 min	0 min	5 min
PACU Time	232 min	0 min	100 min



Functional

25% Your Percentile

See details →

Metric	Current	Change	Goal
SF-WOMAC (6 Wks)	15	2 ▲	18 ✓
Knee Society (6 Wks)	110	1 ▲	135
Harris Hip (6 Wks)	62	-9 ▼	80



Satisfaction

58% Your Percentile

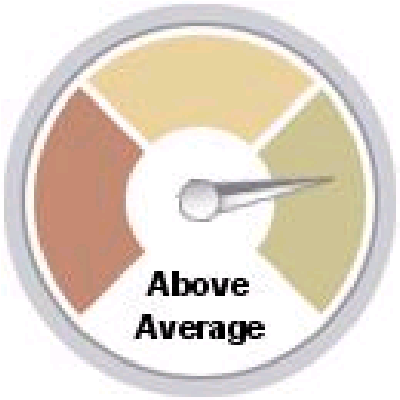
See details →

Metric	Current	Change	Goal
Overall Satisfaction	73%	-5% ▼	95%
Likely to Refer	82%	1% ▲	95%

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Select Key Metrics & Drilldown

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Clinical

80% Your Percentile

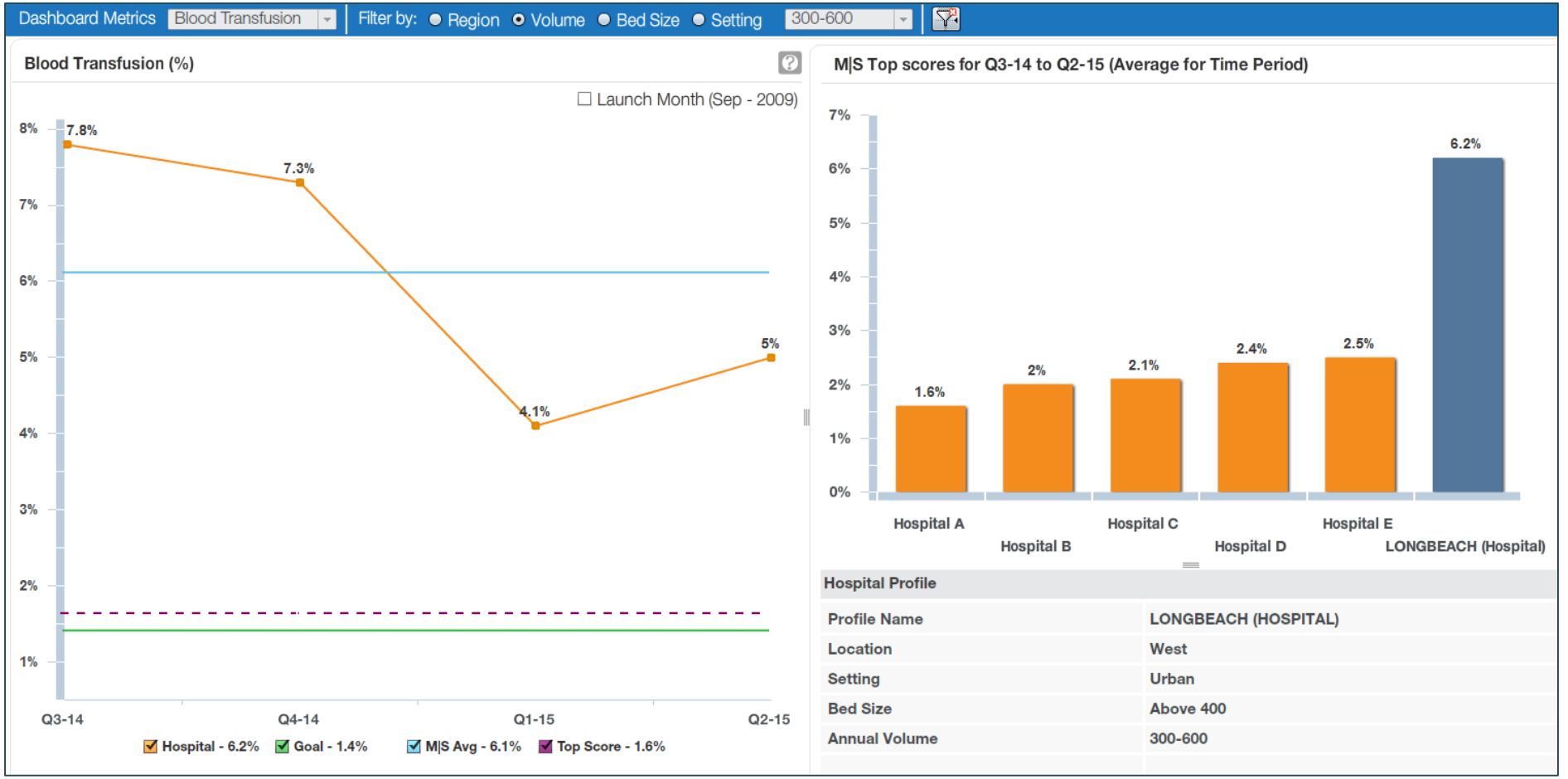
See details →

Metric	Current	Change	Goal
Complication Rate	1.1%	-1.7% ▼	0.0%
Blood Transfusions	8.8%	-1.1% ▼	10.0% ✓
Readmission Rate	1.1%	1.1% ▲	2.0% ✓
Flexion	96°	-4° ▼	90° ✓
Extension	5°	0°	2°
Distance Walked	306ft.	-1ft. ▼	250ft. ✓

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Drill Down Last 4 Quarters

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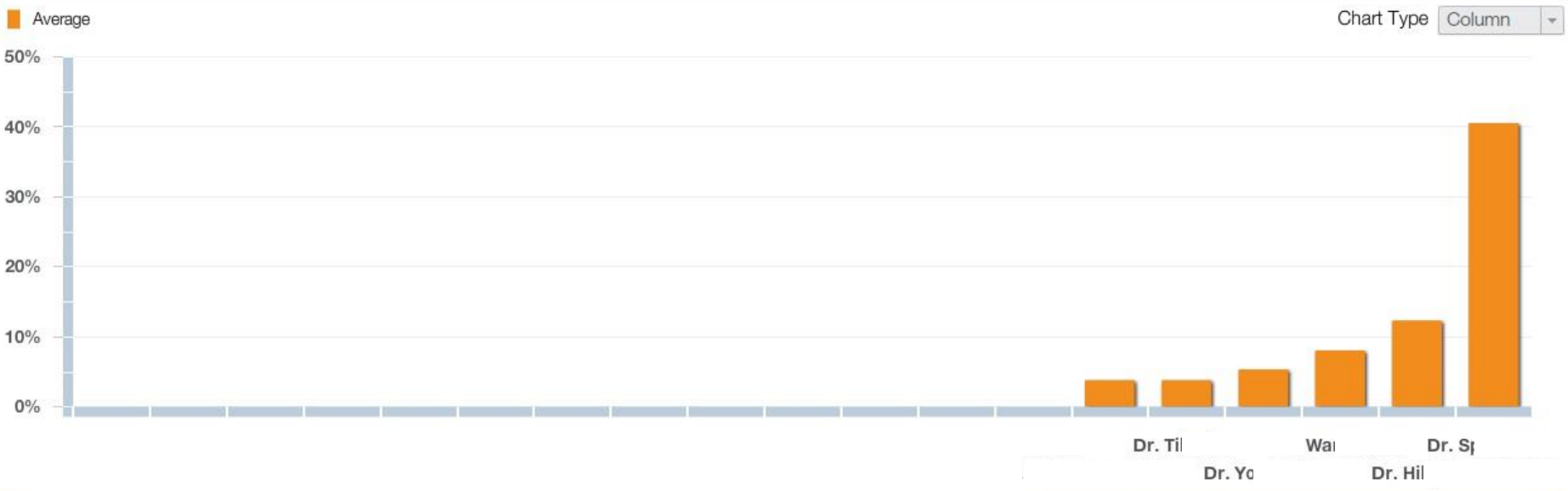


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Drill Down by Surgeon

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Blood Transfusion by Surgeon



Procedure All Comorbidity All

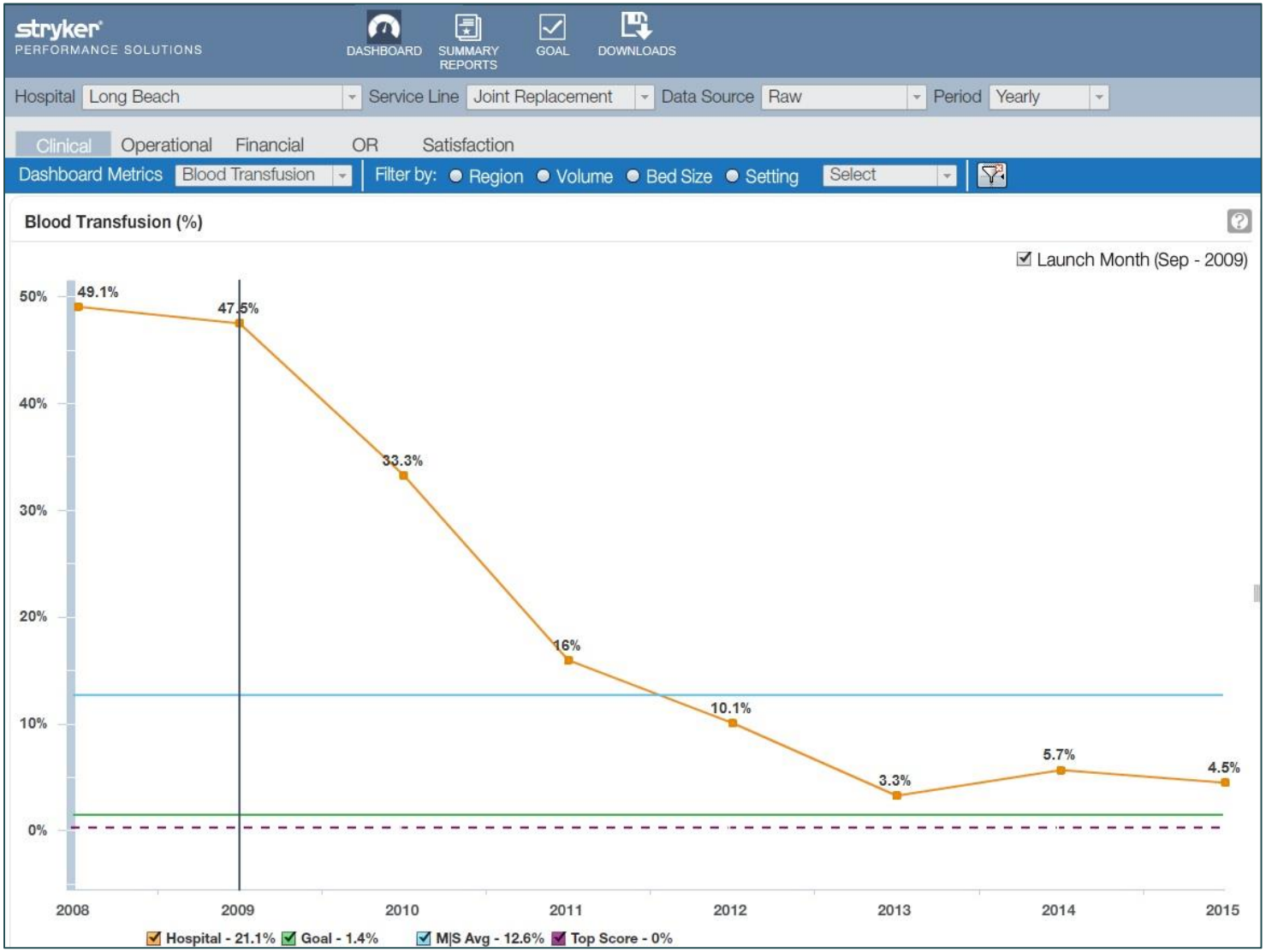
Surgeon	Case Volume	Q3-14	Q4-14	Q1-15	Q2-15	Average
Dr.	1	0.0%	-	-	-	0.0%
Dr.	80	6.4%	0.0%	-	-	3.8%
Dr.	26	-	-	0.0%	5.3%	3.8%
Dr.	19	33.3%	0.0%	0.0%	0.0%	5.3%
Dr.	50	0.0%	21.4%	6.7%	0.0%	8.0%
Dr.	57	13.3%	8.3%	0.0%	26.7%	12.3%
Dr. Sp	42	54.5%	60.0%	26.7%	16.7%	40.5%
Average	533	7.8%	7.3%	4.1%	5.0%	6.2%

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Data Yearly Since Launch

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Blood Transfusion Rate



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Review of Literature

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- Total Joint Arthroplasty is the single largest Medicare cost--$40.8 billing annually.[1]
- Higher volume surgeons (>50 surgeries annually) and hospitals with >100 surgeries annually have better outcomes with fewer adverse events.[2, 3]



Review of Literature

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- 52% of primary THA are done by surgeons doing 10 or fewer cases/year (n=58,212)[2]
- THA Revision and dislocation rates increase in surgeons doing <12 cases/year (n=57,488)[4]
- Hospitals with >100 THA cases/year had less adverse events that hospitals with fewer than 25 cases/year.[5]
- Surgeon volume is the most important determinant of orthopedic complications.[5]



Review of Literature

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- Bozic (2010)
  - Surgeons in the lowest quartile for THA had higher complication rates, readmission rates, re-operation rates, and longer hospital stays.[6]



Review of Literature

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- Katz: *"However, the data we have suggests that experience and developing systematized approaches….can lead to better patient outcomes."* [7]



Meta-Analysis

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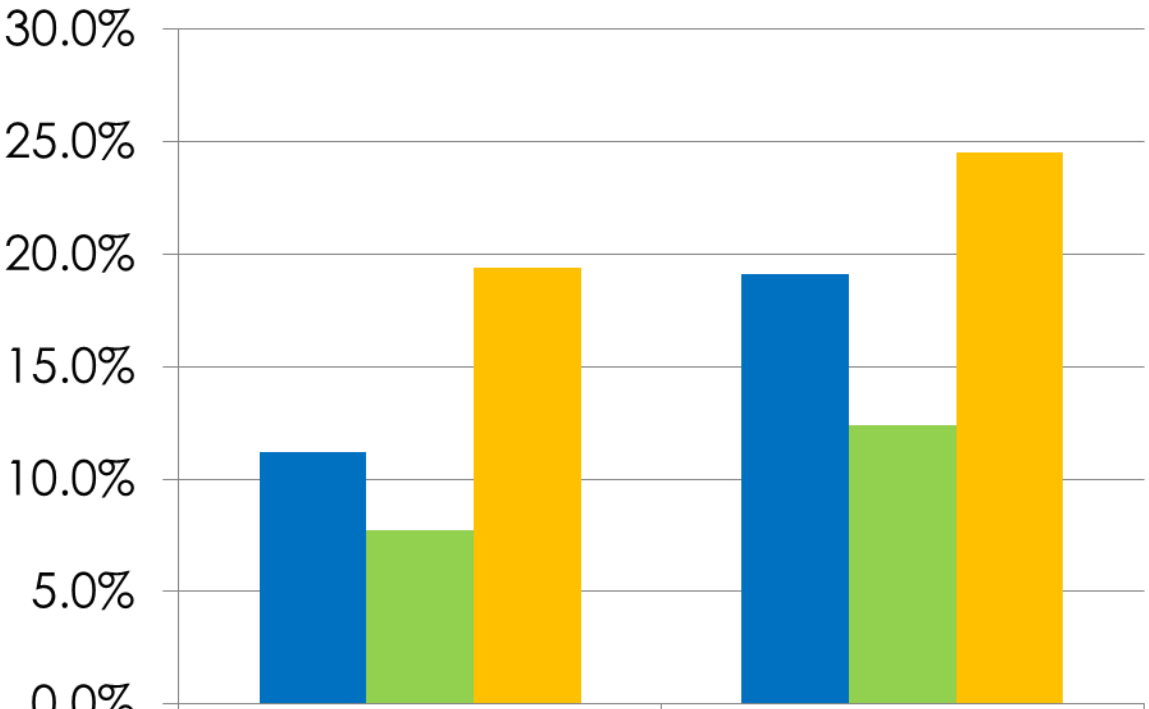
Readmission Rates[8]

THA	Readmission Rate
30 Days	5.6%
90 Days	7.7%
TKA	**Readmission Rate**
30 Days	3.3%
90 Days	9.7%

Meta-Analysis

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Transfusion Rate Trends[8]



	2000	2009
THA	11.2%	19.1%
TKA	7.7%	12.4%
All Joint Repl	19.4%	24.5%

Review of Current Study

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In Search of Excellence: A Program, Protocols and Software For a Total Joint Center With Outcomes



Beginning with the End in Mind

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- We agree with Katz to a point in that high volume surgeons and systematic approaches lead to better outcomes….. **BUT** effective leader implementation and data collection with continuous review improves performance for all, especially for the low volume surgeons.

Sharpen the Saw
(Stephen Covey's 7th habit)



Methods

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- During the 2012 calendar year, data of key outcomes for all total hip and knee arthroplasty cases performed at a large community hospital were collected and analyzed.

- The cases were performed by two groups of surgeons: Those participating in the JRC program (Group I) and those who declined to participate in the program (Group II).
  - Further analysis divided Group I cases into those performed by surgeons with greater or less than 50 annual cases

Methods – Measured Outcomes and Analysis

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- Key outcomes measured included *blood transfusion rate*, *complication rate*, *mortality rate*, *30-day readmission rate*, *discharge location*, *and length of hospital stay*.

- Statistics: These outcomes were compared across each of the groups.
  - For categorical data, a Chi-Squared Test was performed
  - For numerical data (length of stay), an independent samples t-test was performed
  - Significance was determined by a $p\text{-value}<0.05$

Materials

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- Group I (JRC Surgeons): 499 cases
  - Group IA (JRC Surgeons with > 50 annual cases): 341 cases
  - Group IB (JRC Surgeons with < 50 annual cases): 158 cases
- Group II (Non-JRC Surgeons): 96 cases

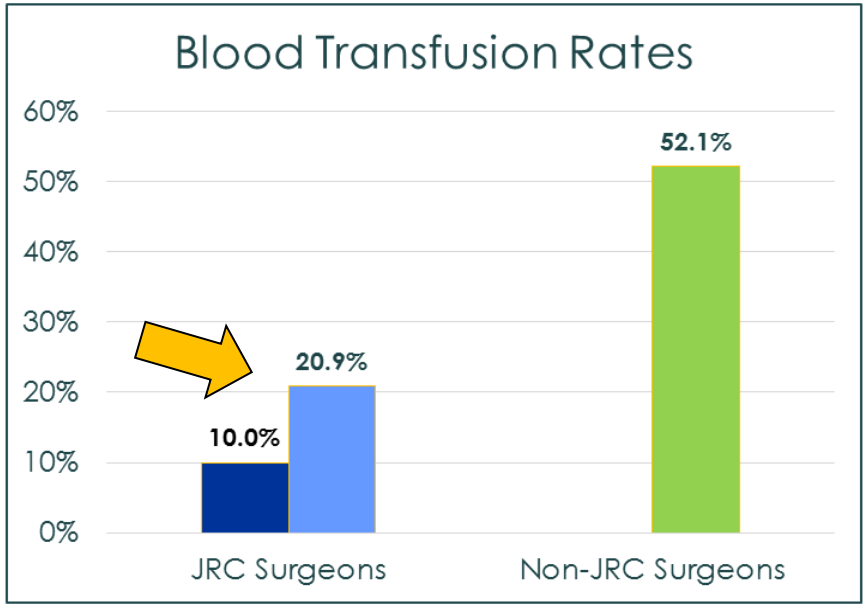


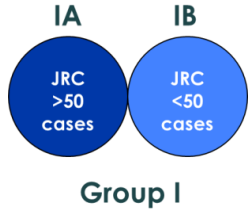
Results:
Blood Transfusion Rates

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- Group I (JRC Surgeons) vs. Group II (Non-JRC Surgeons): 13.4%(67) vs. 52.1%(50) (p<0.001, SS)
- Group IA vs. Group IB: 10.0%(5) vs. 20.9%(20) (p<0.001, SS)
- Significantly less transfusions in Group IB vs. Group II (p<0.001, SS)

Lower volume JRC surgeons performed better than NON-JRC surgeons



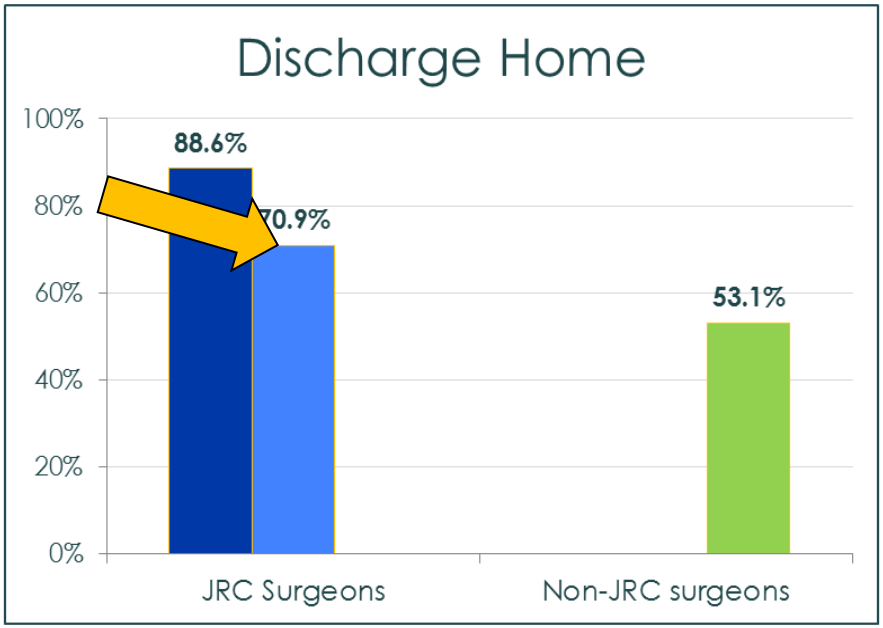


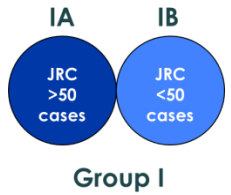
Results: Discharge to Home

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- Group I vs. Group II: 83.0%(439) vs. 53.1%(51) (p<0.001, SS)
- Group IA vs. Group IB: 88.6%(302) vs. 70.9%(112) (p<0.001, SS)
- Significantly more patients discharged to home in Group IB vs. Group II (p=0.004, SS)

Lower volume JRC surgeons performed better than NON-JRC surgeons



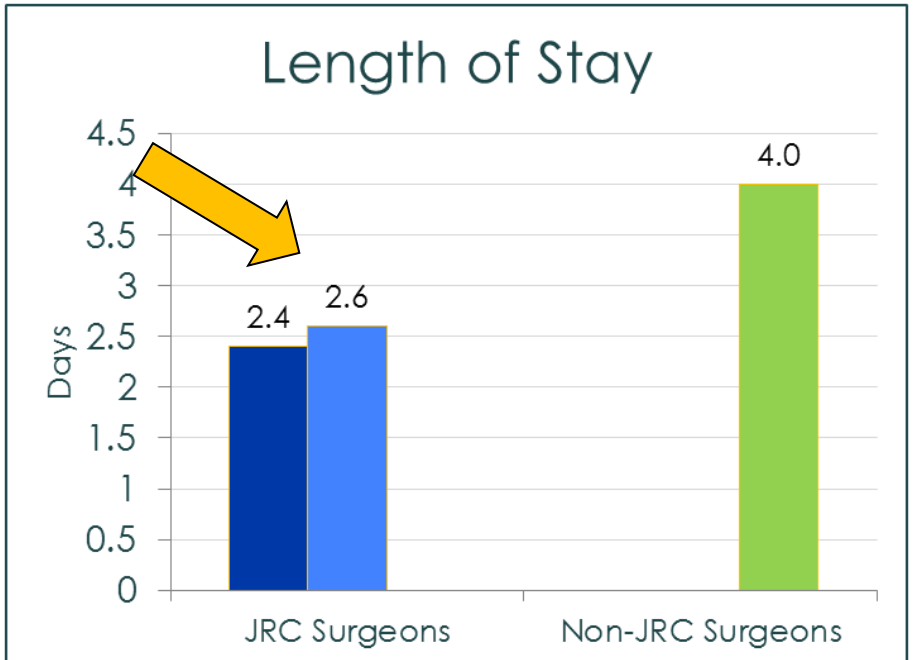


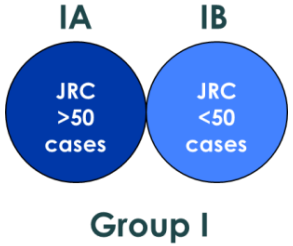
Results: Length of Stay

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- Group I vs. Group II: 2.4 vs. 4.0 (p<0.001, SS)
- Group IA vs. Group IB: 2.3 vs. 2.6 (p=0.005, SS)
- Significantly more patients discharged to home in Group IB vs. Group II (p<0.001, SS)

Lower volume JRC surgeons performed better than NON-JRC surgeons



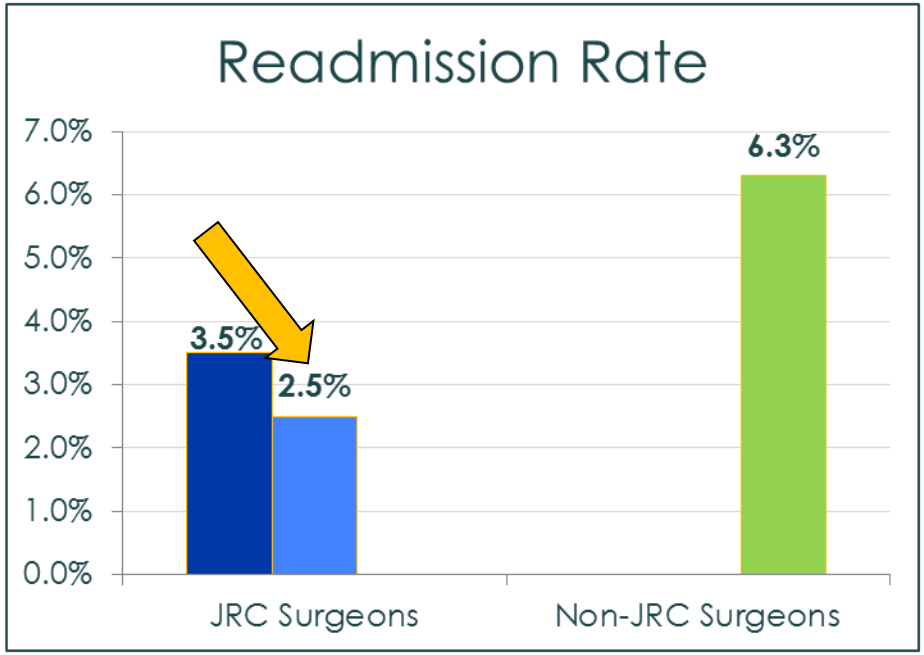


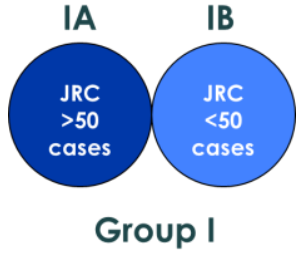
Results: Readmission Rate

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- Group I vs. Group II: 3.2%(16) vs. 6.3%(6) (p=0.148, NS)
- Group IA vs. Group IB: 3.5%(12) vs. 2.5%(4) (p=0.560, NS)

Lower volume JRC surgeons performed better than NON-JRC surgeons



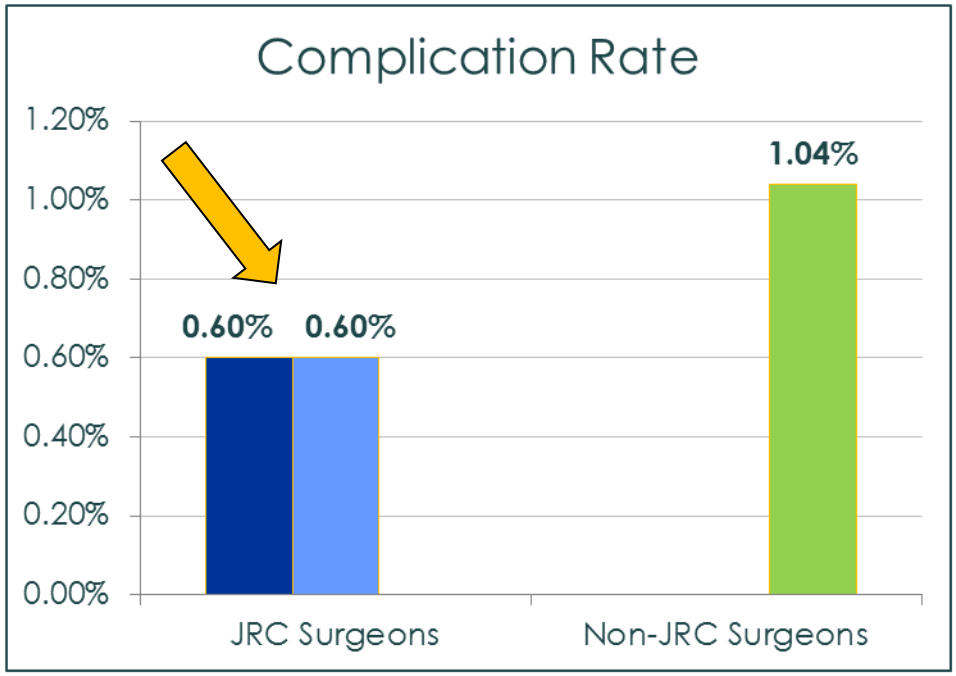


Results: Complication Rate

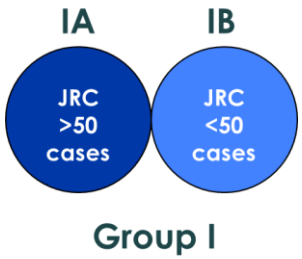
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- Group I vs. Group II: 0.60%(3) vs. 1.04%(1) (p=0.629, NS)
- Group IA vs. Group IB: 0.60%(1) vs. 0.60%(1) (p=0.950, NS)

Both JRC surgeon groups performed equally better than NON-JRC surgeons



In-house complications include:
- UTI
- SSI
- Hematoma
- DVT
- PE

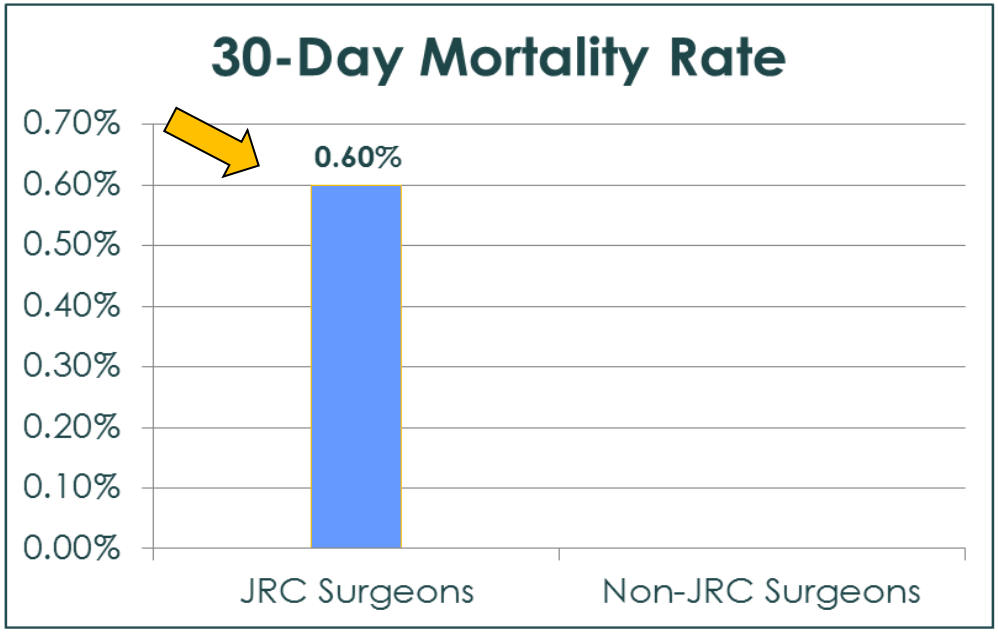


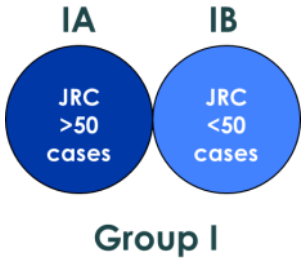
Results: 30-day Mortality

MemorialCare Joint Replacement Center
Long Beach Memorial

- Group I vs. Group II: 0.20% (1)vs. 0% (p=0.661, NS)
- Group IA vs. Group IB: 0% vs. 0.60% (1) (p=0.141, NS)

1 Patient expired within 30 days post-surgery in JRC Group 1B





Conclusion

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- Participation in JRC was the major determinant for positive patient outcomes
- Active/high volume JRC surgeons had the best outcomes.
- Low volume JRC surgeons far outperformed non-JRC surgeons.
- Low volume surgeons (who perform the majority of joint replacements in the U.S.) can significantly improve certain clinical outcomes and cost savings to the hospital by participating in a well-functioning JRC program.

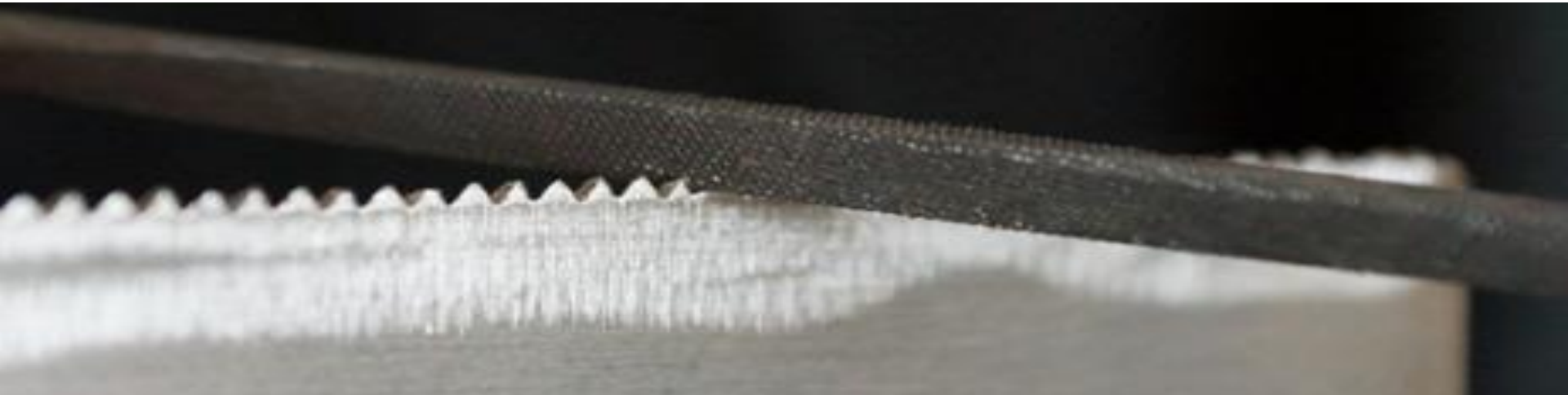


Summary

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We agree with Katz to a point in that high volume surgeons and systematic approaches lead to better outcomes….. **BUT** effective leader implementation and data collection with continuous review improves performance for all, especially the low volume surgeons.

Sharpen the Saw - Stephen Covey's 7th habit



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Thank You