

# Perioperative Surgical Home in Kaiser Permanente

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# Disclosure

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- I am a partner of Southern California Permanente Medical Group (SCPMG)
- No internal or external research funding for this project

# What we have done?

- Reduced LOS ( $1.9 \pm 0.6$  days)
- POD#1 discharge (43%)
- 94% SNF bypass rate
- *Potential saving > 1 million in 1 year*



Total Knee Arthroplasty (TKA)

# How we got there?

## BACKGROUND

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- Kaiser Permanente
- Kaiser Permanente Baldwin Park Medical Center
- Department of Anesthesiology

## PSH IMPLEMENTATION

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- Design
- Execution
- Steps
- Results
- What we learned?
- *Our views*

# KP Prototype(1933)

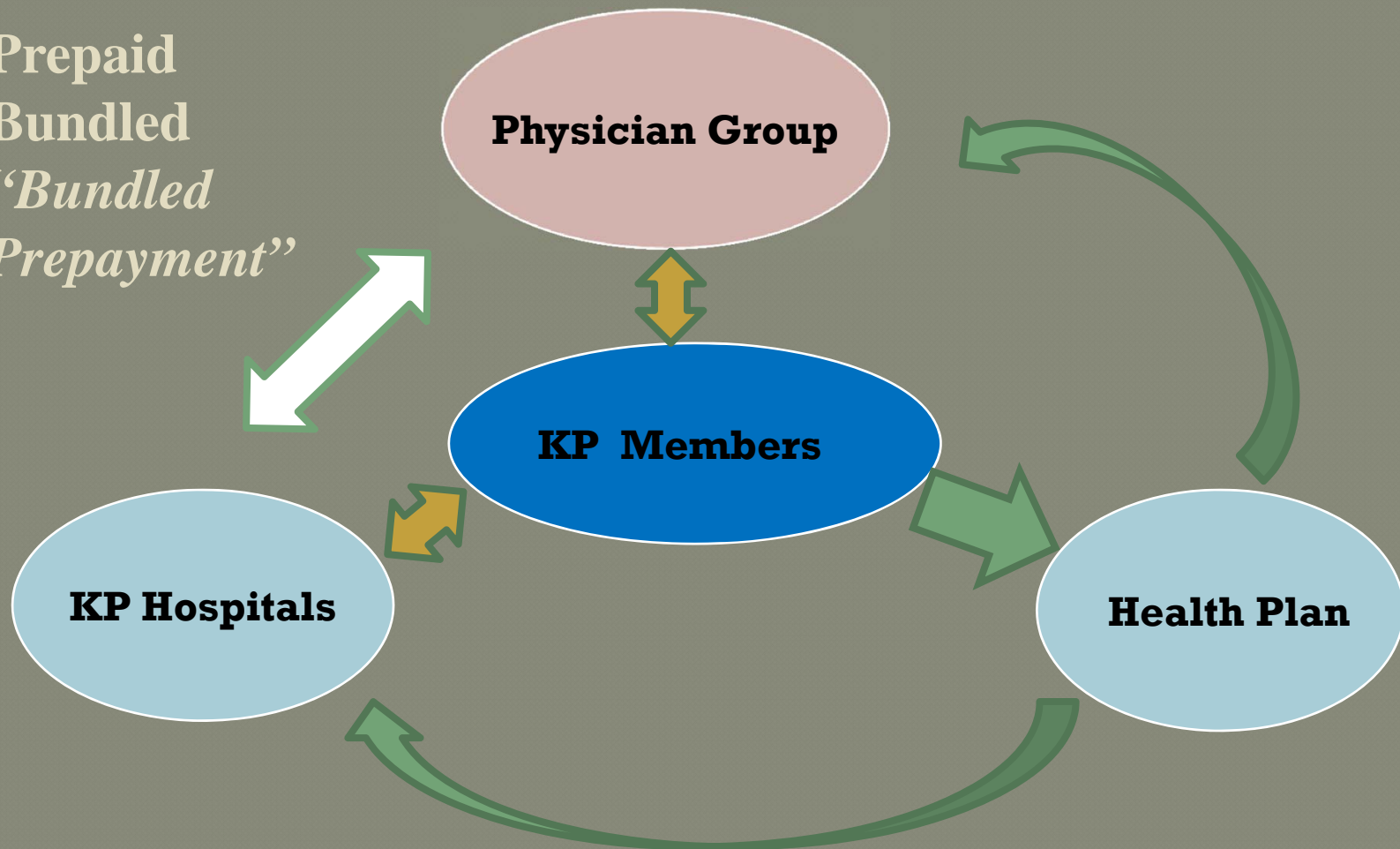


# KP Today in HB Vicinity



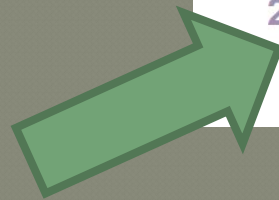
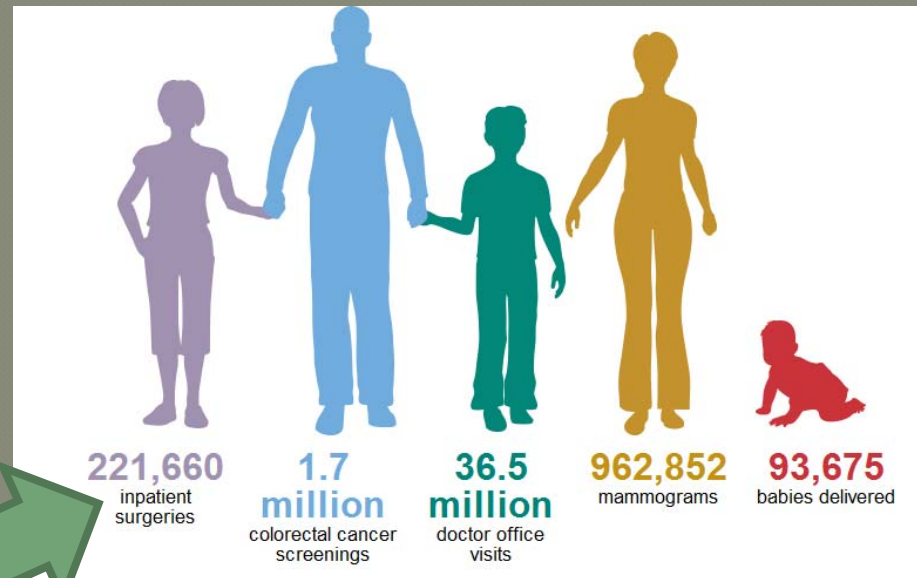
# KP Structure and Operation

- Prepaid
- Bundled
- “*Bundled Prepayment*”



# The KP Statistics (2014)

- 17,425 physicians
- 4,8285 Nurses
- 174,415 Employees
- 646 Hospitals, Clinics & other facilities
- 9.5 million members





# The KP Financials (2014)

Behind every number are lives made better.

**\$53.1 billion**

operating revenue

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**\$1.8 billion**

operating income

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**\$2.7 billion**

net income

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# Kaiser Permanente Baldwin Park



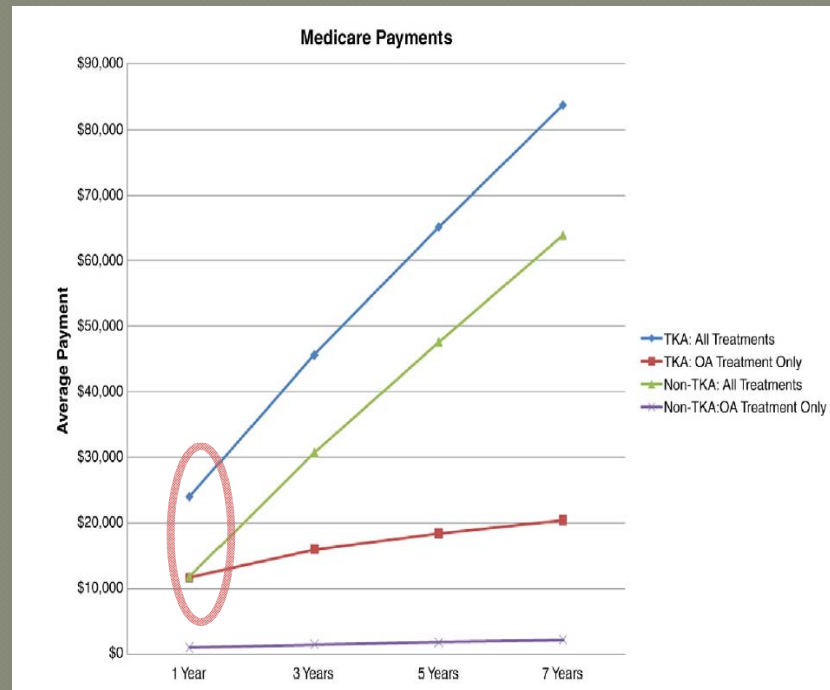
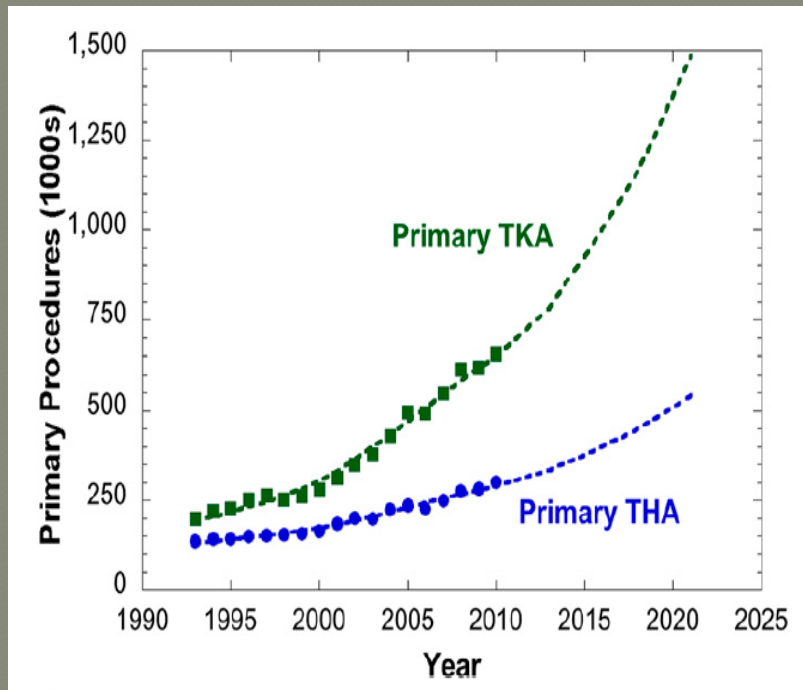
One of 12 Medical Center in Southern California

# Anesthesiology at KPBP

- 3,500 inpt. surgeries, 9,000 outpt. surgeries, 2,886 colonoscopy
- 11 ORs, 1 urol. and 2 L &D ORs
- 21 FT MD; 6 FT per diem MD; 4 PAs; 7 technicians*
- Anesthesia Preop Clinic
- Pain Service



# Why TKA?



# The Design

## Step 1,

- TKA Steering committee formation
- 50 representatives from all specialties and administrations
- Project champions from key services identified

## Step 2

- “Focus Patient Group” with history of TKA identified
- Interview conducted by anesthesiologist, surgeon and nurse
- Feedback on the perioperative care experience used for PSH design

## Step 3

- PSH-TKA pathway finalized and staff education initiated
- Simulation of the new process conducted.

## Step 4

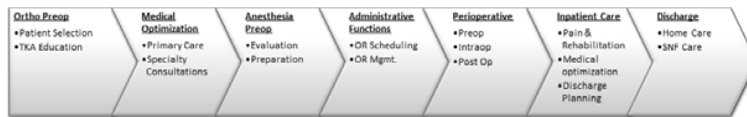
- PSH-TKA implemented
- Staff support for protocol implementation for the first 60 patients through individual department project champions

## Q & I

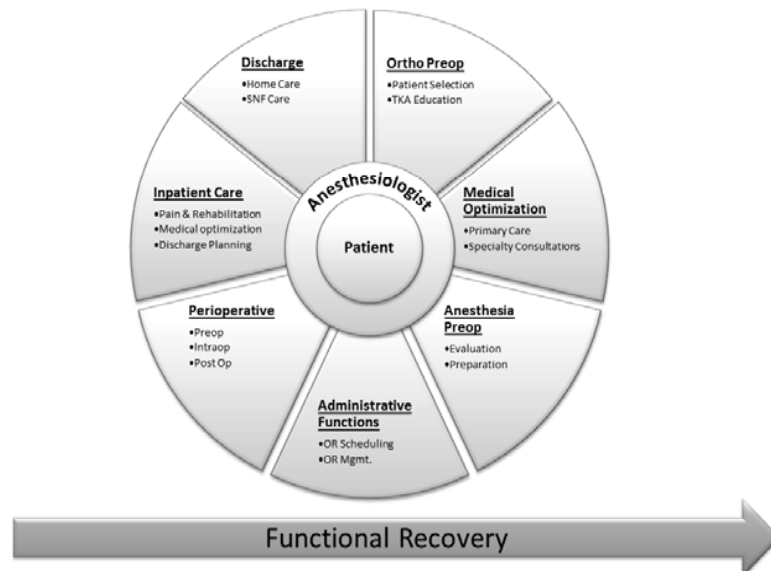
- Monthly committee meeting
- All data reviewed, issue presented and addressed

# The Features

T-Fast Pathway

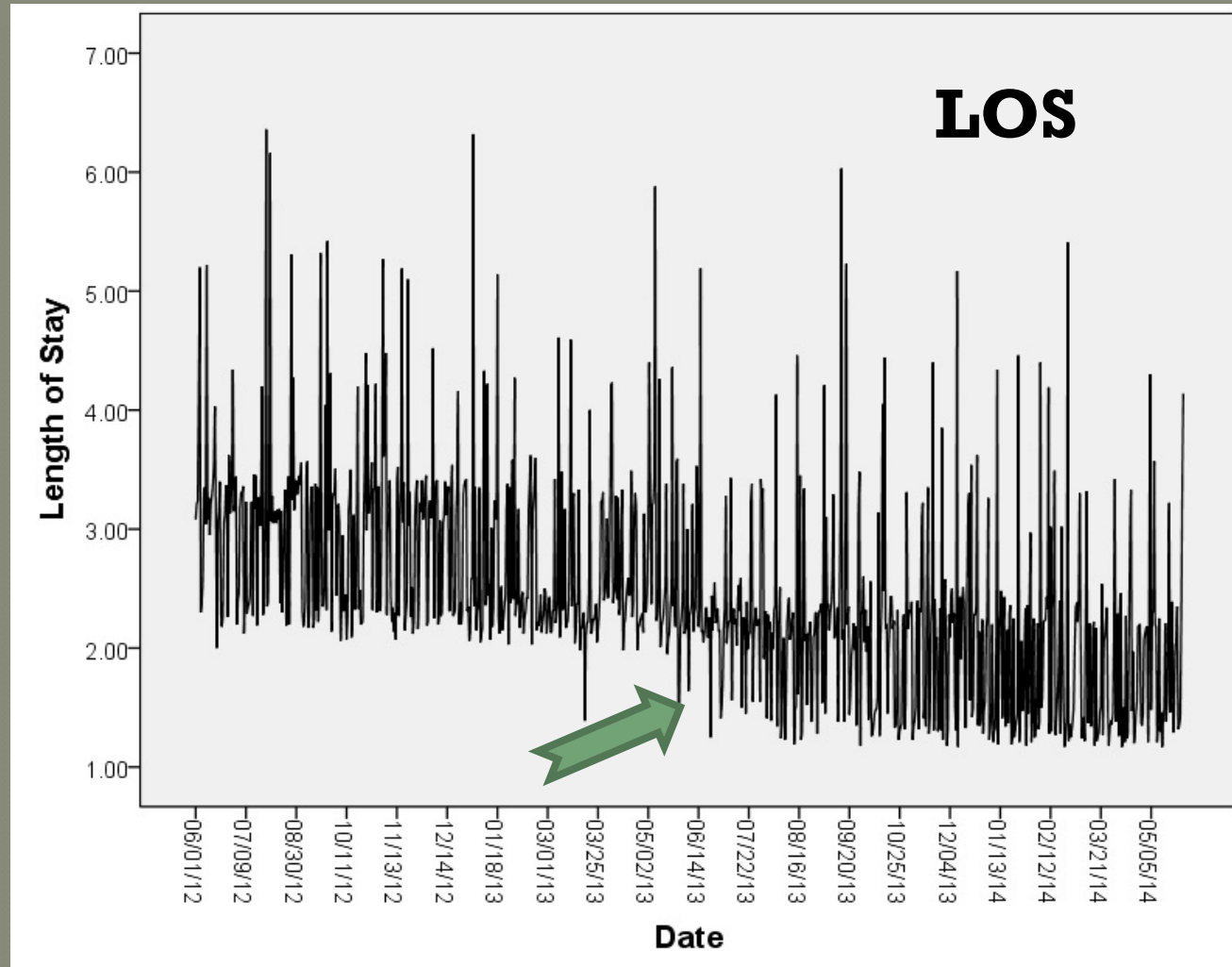


PSH Pathway

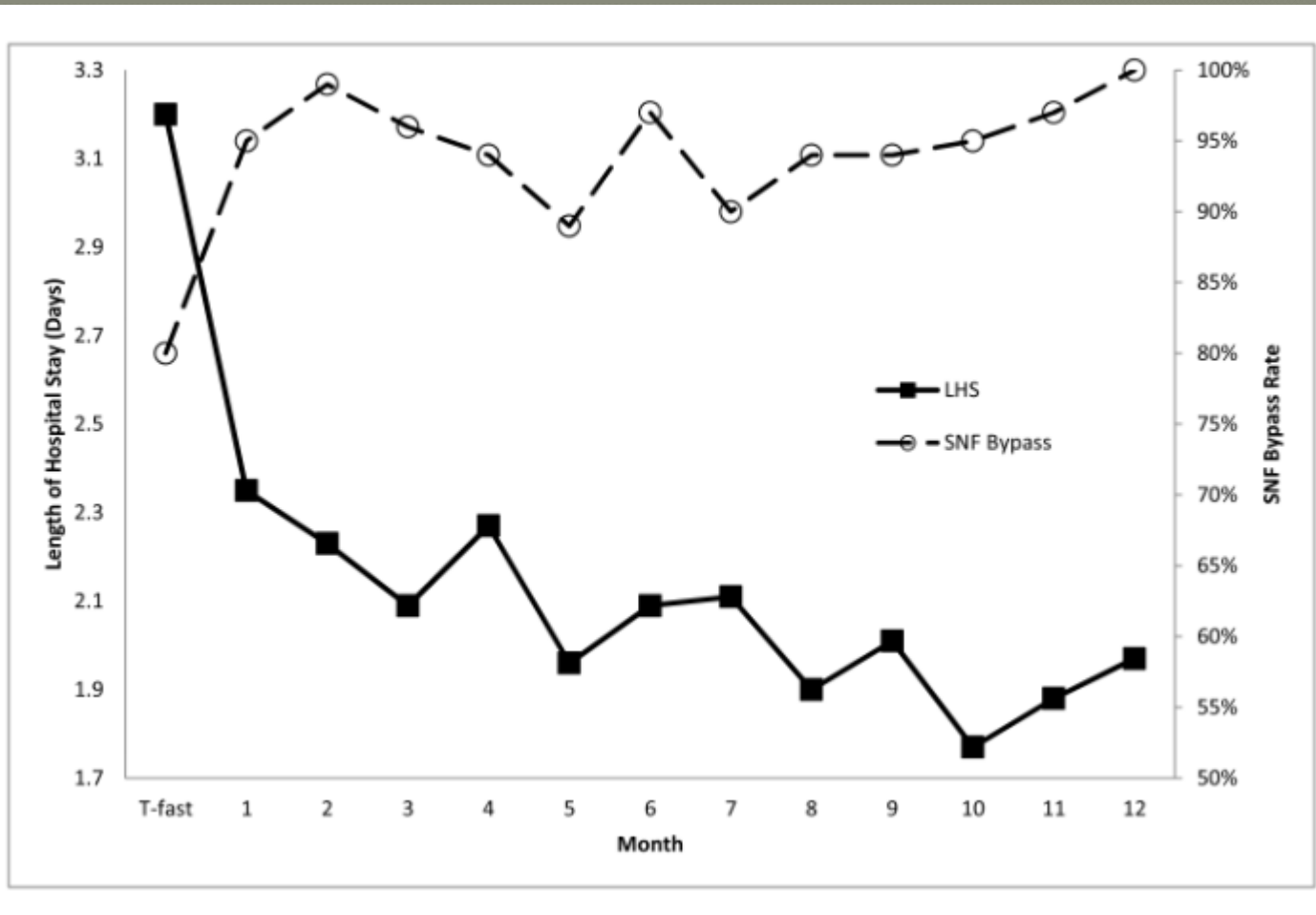


1. The Ownership
2. The Leadership
3. The Practice
  - Preop: optimization
  - Intraop: minimum invasive
  - Postop: Functional recover
  - Postdischarge: disability free survival

# The Immediate Impact (1)



# The Immediate Impact (2)





# The PSH Difference

	PSH	T-Fast	P value
<b>Number of patients</b>	518	546	N/A
<b>Male: Female</b>	1:1.9	1:1.7	N/A
<b>Age (mean <math>\pm</math>SD)</b>	66 $\pm$ 10.1	69 $\pm$ 16.9	NS
<b>Spinal anesthesia rate (%)</b>	74.3	43.7	<0.05
<b>Nerve block rate (%)</b>	99.9	50.1	<0.05
<b>POD#0 PT (%)</b>	78.7	0	<0.05
<b>LHS (mean <math>\pm</math>SD)</b>	1.9 $\pm$ 0.6	3.2 $\pm$ 1.3	<0.05
<b>All pain scores &lt;4 (%)</b>	64	68	>0.05
<b>POD#1 home discharge (%)</b>	43.1	0	<0.05
<b>30 day readmission (%)</b>	1.2	0.9	>0.05
<b>SNF bypass rate (%)</b>	94	80	<0.05

# Complications

	T-Fast (n=518)	PSH (n = 546)
<b>Major</b>		
Myocardial Infarction	1	0
Respiratory Distress	1	1
Surgical Site Infection	2	0
Syncope	1	0
<b>Minor</b>		
Anemia	2	3
Arrhythmia	2	3
DVT	1	2
Pain	11	15
PONV	2	2
Swelling	12	14
Urinary Retention/Infection	2	1

# Demographics

**Table 3. Demographic data of patients in the T-fast and PSH pathways**

		<b><u>T-FAST</u></b> <b><u>(n=518)</u></b>	<b><u>PSH</u></b> <b><u>(n=546)</u></b>
Age (yrs)		67 ± 9	67 ± 10
Body Mass Index		31.5 ± 6.0	31.5 ± 6.0
Gender			
	Male	303	324
	Female	175	180
ASA			
	1	1	2
	2	364	343
	3	105	157
	4	1	1
Procedure			
	Primary Knee	13	12
	Revision Knee	465	492
Primary Surgeon			
	A	40	80
	B	204	179
	C	115	121
	D	119	124

# Potential Savings

Reduced LHS: (518 patients)

673 days less than T-Fast

1088 days less than national Average

Less SNF admission: (518 patients)

72 fewer than T-Fast

279 fewer than National Average

**Potential Cost Savings: (518 patients)**

Cost/day (2012):  $\$1704 \times 673 = \$1,146,792$

SNF admission:  $\$4111 \times 72 = \$295,992$

Total = \$ 1,442,784

Cost/day (2014): \$2402

# 1 year later

<b>How did you feel about?</b>	<b>Excellent</b>	<b>Satisfactory</b>	<b>Unsatisfactory</b>
Preoperative preparation	82%	17%	2%
Experience of physical therapy	38%	58%	3%
Pain management after surgery	75%	22%	3%
Overall perioperative experience	71%	25%	4%
Adequacy of home recovery	95%	3%	2%

	<b>Adequate</b>	<b>Too Long</b>	<b>Too Short</b>
Length of stay in the hospital	85%	2%	13%

	<b>Better</b>	<b>Same</b>	<b>Worse</b>
30 day activity level after surgery	64%	10%	26%
Outlook on improving lifestyle after surgery	84%	9%	7%

**Functional Recovery**



# What we learned?

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- Tremendous (*hidden*) value for patients, healthcare professionals as well as organizations
- PSH practice is easy
- PSH practice is difficult
- *Leadership, ownership and the practice of complete perioperative medicine*
- The importance of entirety

# New Development

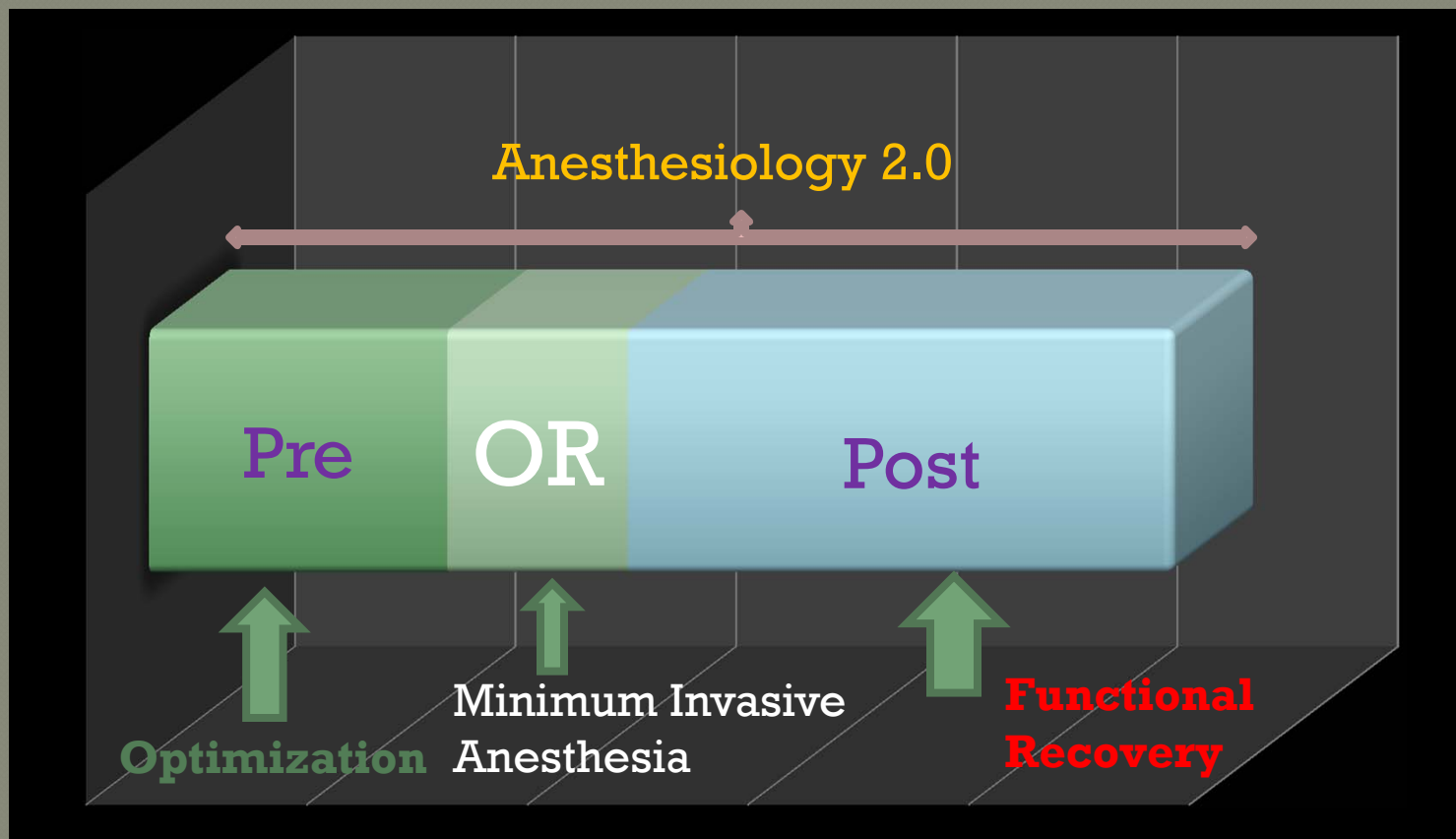


## Berwick's Triple Aims

- Patient care
- Cost
- Population Health

# Conclusion

## *Upgrade Anesthesiology Practice*





# Acknowledgement

- Anesthesiology at KPBP
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  - Maxime Cannesson
  - Joseph Rinehart
  - Zeev Kain



# The End

Thank you!

