

Cost Containment and the Business of Arthroplasty

UCSF/Hoag Orthopedic Institute Arthroplasty for the Modern Surgeon
Hoag Orthopedic Institute
Steven Barnett, MD – Chief Medical Officer
September 2025



Steven Barnett, MD

Chief Medical Officer

Hoag Orthopedic Institute

Hoag
Orthopedic
Institute.

Ownership Interest

 DePuy Synthes

Royalties, Consulting, Research Support

 ZIMMER BIOMET

Consulting, Research Support



6 Locations

1 Hospital, 5 Ambulatory Surgery Centers
Irvine, Newport Beach, Orange, Mission Viejo, Beverly Hills, Aliso Viejo



Orthopedic Specialty, Physician-Owned Enterprise

Focused on Full Spectrum of Orthopedic Conditions



300+ Specialty Physicians

100+ Orthopedic Surgeons

550+ Employees

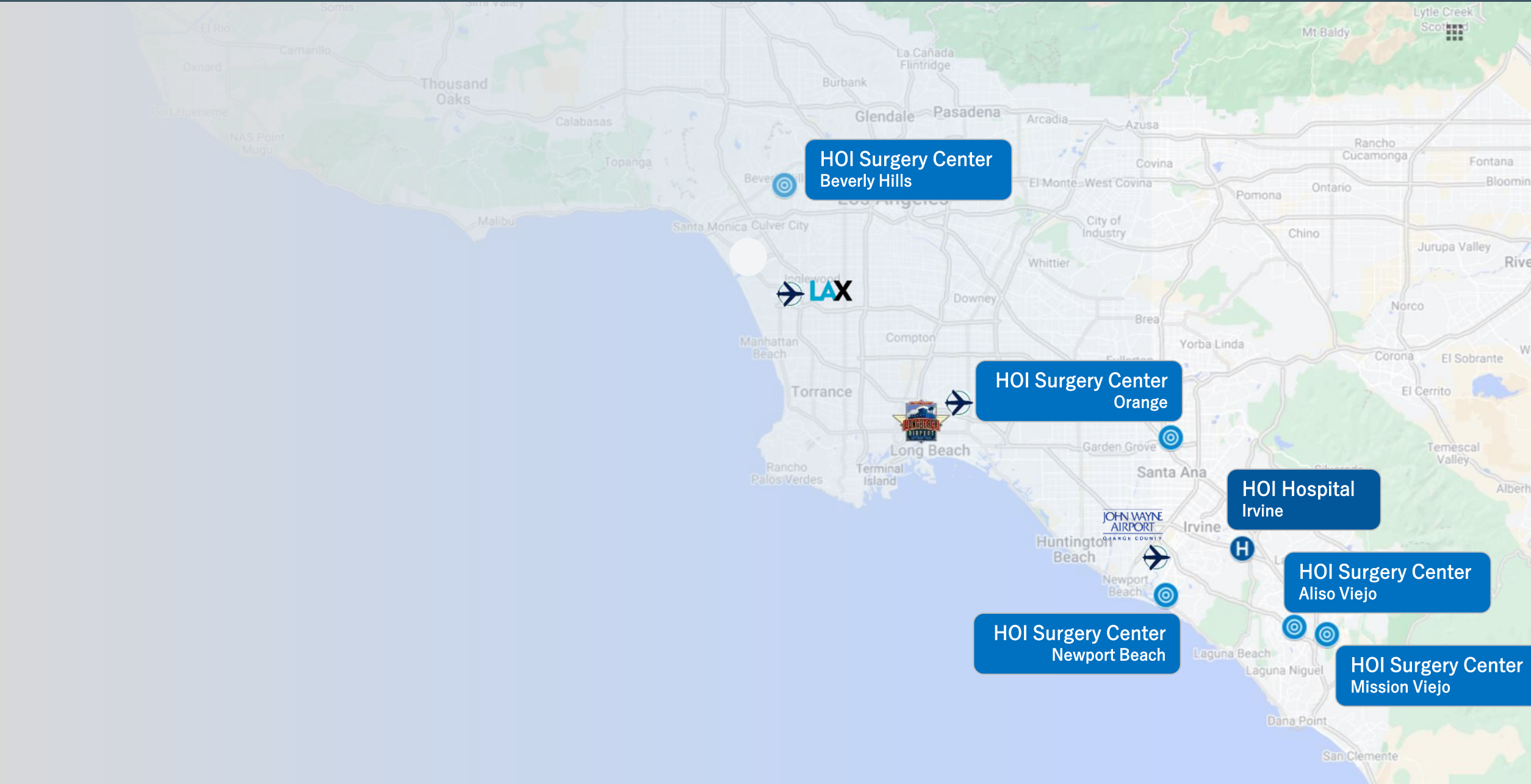


9 Hospital Operating Rooms

70 Hospital Private Rooms

18 Ambulatory Operating Rooms





HOI Surgery Center
Beverly Hills

HOI Surgery Center
Orange

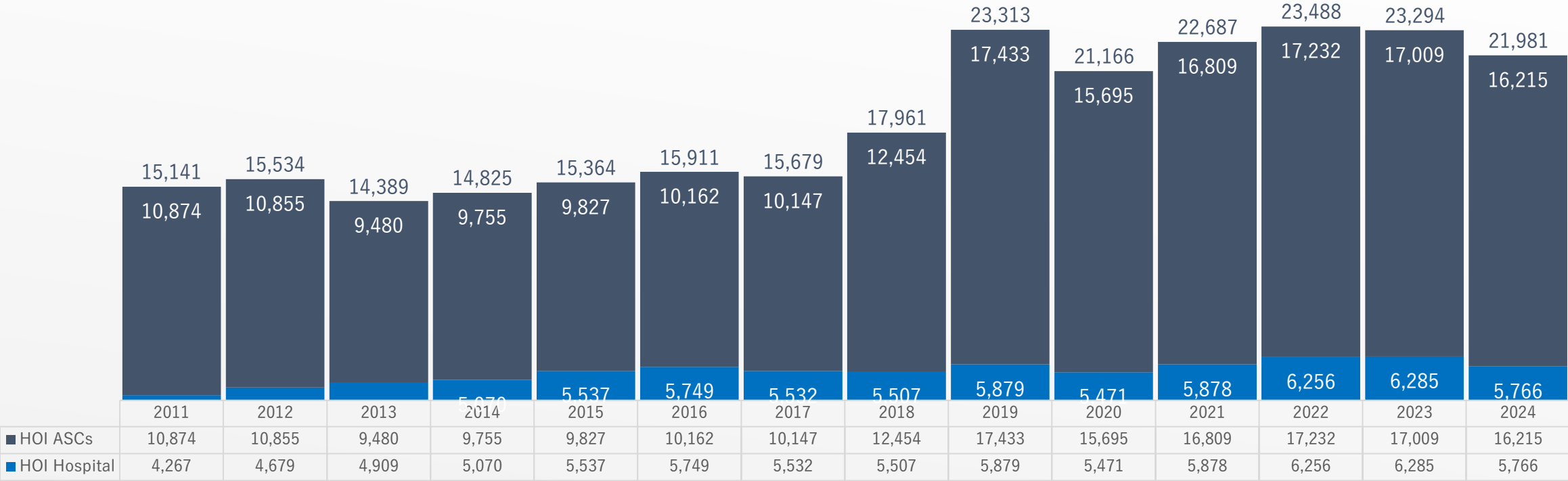
HOI Hospital
Irvine

HOI Surgery Center
Aliso Viejo

HOI Surgery Center
Newport Beach

HOI Surgery Center
Mission Viejo

HOI Enterprise Case Volume
CY2011 – CY2024





Physician-Staff-Administration Collaboration

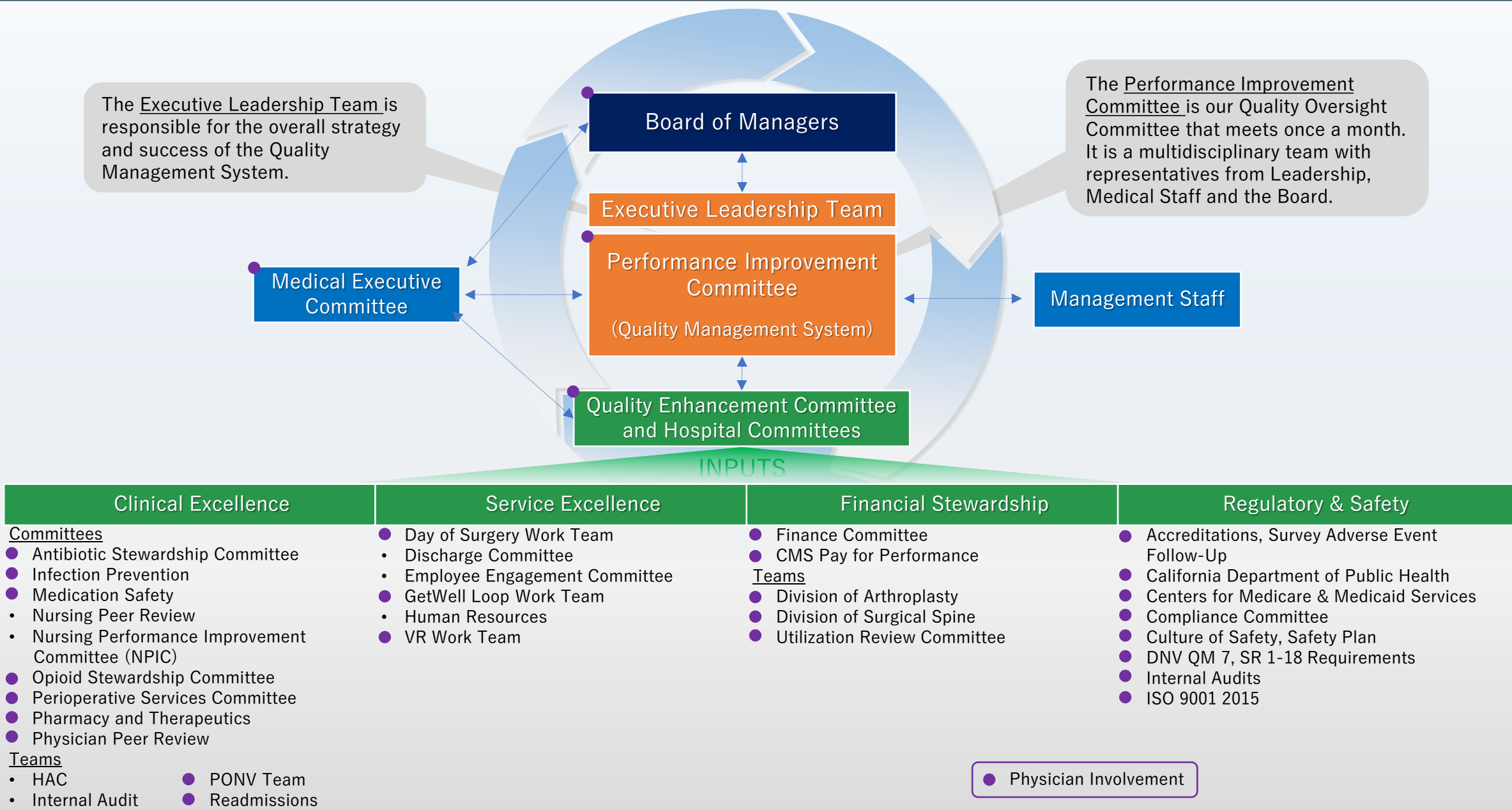
Hoag Orthopedic Institute (HOI) Enterprise

Spectrum of Alignment

Alignment + Transparency Drives Change



Burning Question: How to Align Physicians and the Hospital to Drive this process?



Our Task is to Deliver “Valuable Care” to our Patients

Unique Partnership

Shared Physician/Admin
driven enterprise

Shared Equity & Governance

50/50 partnership
“Skin in the game”
Eliminate friction

Align all Elements For Episode of Care

Hospital and Doctor
Preop -> Postop
Goal to eliminate waste
without sacrificing care



Be Transparent

Publish our outcomes

Best Practices for Best Outcomes

Evidence drives care
excellence and controls cost

Use Metrics to Create Performance Improvement

Clinical, Experience, Cost

Cultural Mantra

Patient Care #1 Priority

Know your data...

Robust Transparent data collection and analytics

Data Driven best practices maximize care while controlling cost

Get on the same page...

Physician/Nursing/Hospital Administration Alignment

Horizontal Integration

Staff Empowerment– “skin in the game”

Streamlined Decision-Making

Joint Payor Relationships/Bundled Care

Participate in training and education...

Education/Research/Teaching Affiliations

Physician/Nursing/Allied Health

Arthroplasty, Spine, and Sports Fellowships



What does a total joint cost...?

Time-Driven Activity-Based Costing (TDABC)

1

Determine
the Care
Process

- What activities are performed over the care cycle for a medical condition?
- Who is performing each activity?
- How long does each activity take?

2

Calculate
Cost Rates

- What is the cost per unit of time for each type of personnel?

3

Account for
Consumables

- What materials, supplies, and drugs are consumed during the care cycle?

4

Allocate
Indirect Costs

- What are the drivers that determine the workload for each indirect department/area?

Define Episode of Care

Start Trigger

End Points

Map Episode from Patient's
Perspective

Sources

Industry Programs

EMR Software

Detailed Accounting of
Patient Flow Throughout
Episode

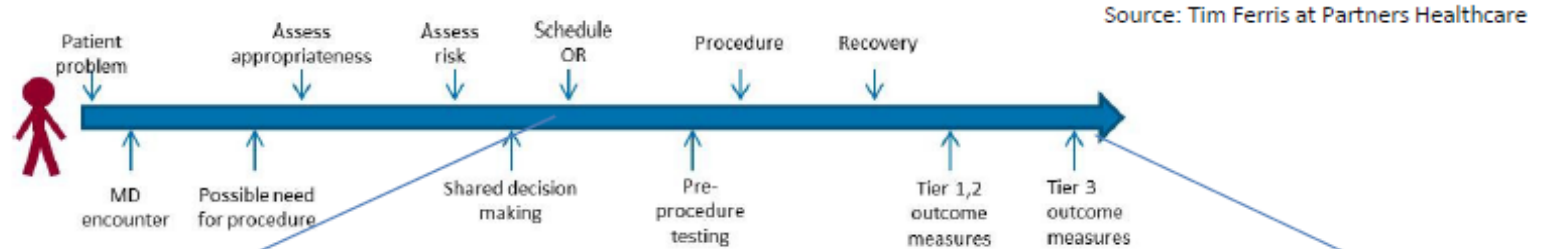
Time Spent

Practitioners Utilized

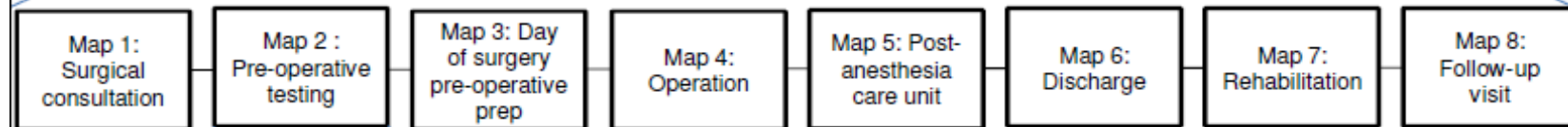
Resources Consumed

Determining the care processes over complete cycles of care

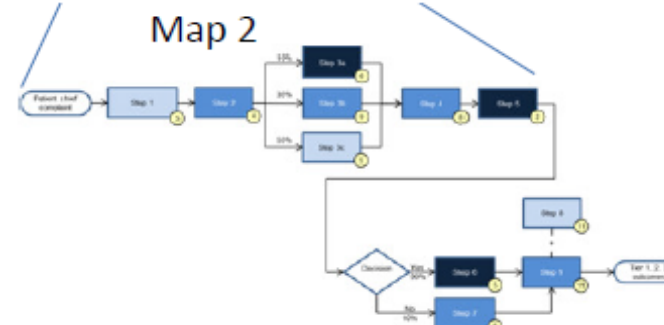
Level 1: Overall care cycle



Level 2: Study care cycle



Level 3: Process maps



Compute total patient care costs by multiplying resource capacity cost rate by process times & summing across each patient's cycle of care

Initial consultation



	Minutes	Cost/ minute	*Total
MD	X_1	Y_1	136.13
RN	X_2	Y_2	68.04
CA	X_3	Y_3	6.17
ASR	X_4	Y_4	15.74
			\$266.08

Surgical procedure



MD	X_1	Y_1	584.99
Anes.	X_2	Y_2	603.89
RN	X_3	Y_3	136.29
Tech	X_4	Y_4	97.82
OR	X_5	Y_5	329.16
			\$1752.15

Follow-up or post-operative visit



MD	X_1	Y_1	55.19
RN	X_2	Y_2	13.61
CA	X_3	Y_3	3.09
ASR	X_4	Y_4	1.77
			\$73.66

Source: Meg Abbott, MD & John Meara, MD Boston Children's Hospital

Itemize Each Segment of Care

Labor Costs

Surgeons

Anesthesia

RN's

PT's

Direct/Indirect Costs

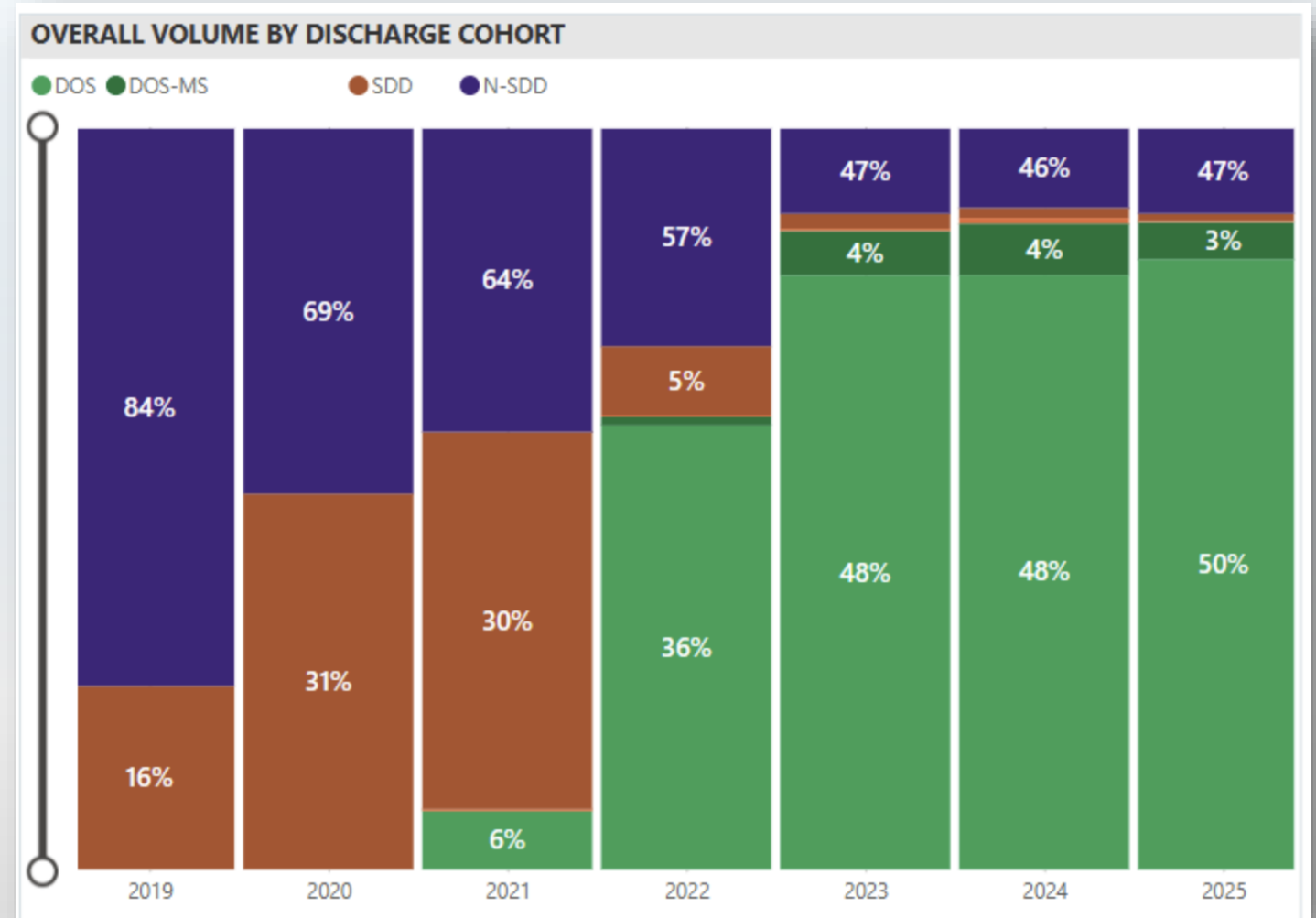
Implants

OR Time

Pharmacy

Problem: Limited number of MedSurg Beds relative to surgical volume

- Establish protocols to avoid admitting DOS patients to the floor
- Today, nearly half of all TJR patients are discharged same day from PACU
- Avoids transfer of same day discharge patients to MedSurg floor decreases consumption of supplies and labor
- Total cost of same day discharge THAs from DOS unit vs MedSurg: **-20.0%**
- Total cost of same day discharge TKAs from DOS unit vs MedSurg : **-21.7%**



Peri-Op Committee

- Implants
- New Technologies
- OR Block time

Not just the “Bottom Line”..
..Will it benefit the patient?

Implant Cost Transparency

- Favorable single/dual-source vendor implant agreements
- Implant constructs over line-item pricing
- Formulary/standardized pricing
- -11.4% reduction in THA implant average cost/case (2019 vs 2025 YTD)
- -2.2% reduction in TKA implant average cost/case (2019 vs 2025 YTD)

IMPLANT UTILIZATION BY SURGEON (LATEST QUARTER), ALL HIPS									
S-YYQQ	25Q2								
Surgeon	Cases	Cost/Case \$0	Tier 1		Tier 2		Tier 3		
	6	\$0	100%						
	5	\$0	100%						
	58	\$12	98%				2%		
	34	\$17	97%				3%		
	93	\$62	95%		5%				
	3	\$67	100%						
	2	\$100	100%						
	53	\$134	98%				2%		
	48	\$173	92%		2%		6%		
	29	\$216	97%				3%		
	26	\$300	85%				15%		
	357		95%	95%	2%		2%	3%	3%

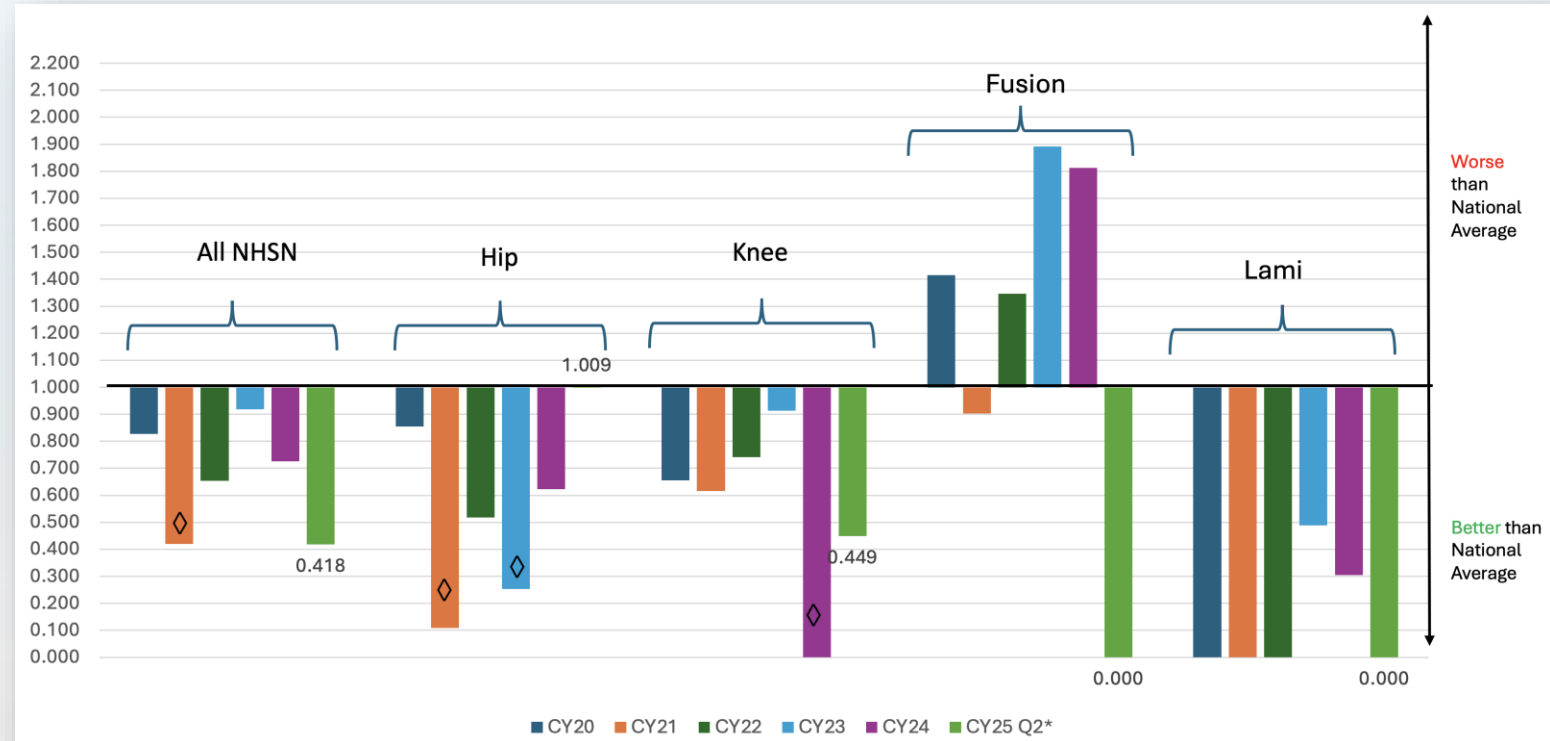
HIP CONSTRUCT GROUP TREND												
Tier	Cost	Construct Group	2019	2020	2021	2022	2023	2024	2025	Total		
Tier 1		UOC H			1					1		
		DePuy		6						6		
		S. Nep						4	42	46		
		DePuy	763	759	810	945	989	1001	482	5749		
		DePuy	528	430	483	488	524	381		2834		
		DJO Hi	38	28	30	33	69	2		200		
		UOC H				2				2		
		UOC H			1					1		
		Corin H	140	51	36					227		
		Exacte	3	11	10	3	20	11		58		
Tier 3		Zimme	230	213	157	160	133	109	66	1068		
								59	156	215		
		Corin H		1		3				4		
		DePuy			2	2	8	9		21		
		Stryker						2		2		
		Stryker								1		
		Zimme	13	27	13	22	4	3		82		
		DePuy		1						1		

Surgical Site Infections

On average, THA/TKA infections add
>\$100K+ in additional total cost (2024)

SSI Workgroup

- Universal decolonization (CLEAR)
- Evidence-based OR audits
- Sage wipes
- Sylke dressing
- OR cleaning assignments
- Chlorhexidine gluconate cleanser
- MRSA testing
- Particulate monitoring/air scrubbing



Surgeon Report Cards

PHYSICIAN QUALITY PROFILE

2021

Procedure Volume

317
19
19
173
13
78

FX
HIP
HIP REV
KNEE
KNEE REV
OTHER
SHOULDER
SHOULDER REV

Total Cases

621

Extended H...
371
Hospital A...
20
Inpatient
218
Observation
12

Overall ALOS

68.5

2.3%

31.4%

2.3

63.0

1.0

20.8

ASA Class

65.0%

ASA 2 3 4

Overall Procedure Volume

48
56
61
59
55
44
64
47
52

Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

Discharge Disposition

D/C Sort
HOME
HOME w/ HH
OTHER
REHAB
SNF
Transfer

D/C %
7.4%
82.3%
0.2%
0.6%
9.3%
0.2%

HOI %
20.1%
72.5%
0.2%
1.8%
5.1%
0.4%

Total Joint Discharge Efficiency

HIP
KNEE

21.8%
22.5%

43.8%
54.9%

34.4%
22.5%

2+ Nights
Overnight
Same Day

Hospitalist Utilization by ASA & Procedure

PROC
FX
HIP
HIP REV
KNEE
KNEE REV
OTHER
SHOULDER
SHOULDER REV
Total

0
0%
0%
0%
0%
0%
0%
0%
0%
0%
0%

1
0%
0%
0%
0%
0%
0%
0%
0%
0%
0%

2
100%
0%
0%
33%
0%
21%
0%
0%
0%
12%

3
71%
37%
86%
31%
67%
57%
0%
0%
0%
35%

4
100%
100%
100%
72%
100%
0%
0%
0%
0%
76%

HOI %
74%
47%
94%
56%
92%
37%
85%
67%
54%

Quality Metrics (SR.3, SR.6, SR.8, SR.11, SR.1, SR.4)

30 Day Readmits
IP ED Visits 72 Hrs
IP ED Visits 30 Days
OP w/in 72 Hrs
OP w/in 7 Days
Unplanned RTO
Mortality
Transfer to Higher Level

MD%
5.0%
2.3%
6.9%
0.7%
1.5%
0.0%
0.0%
0.2%

MD#
11
5
15
3
6
0
0
1

JOINT
3.9%
1.8%
4.9%
1.1%
2.2%
0.1%
0.0%
0.4%

HOI
4.4%
1.5%
4.9%
1.2%
2.5%
0.2%
0.0%
0.5%

MD TREND

Surgical Site Infections (SR.3)

SIR

1
0

Pred SIR
2.989
0.795

MD SIR
0.335
.

HOI SIR
0.420
0.271

Infections by Type

Year
2021
2020

Superficial
0
2

Complex
1
1

Non-Report
0
1

Case Reviews (SR.9)

QEC
0

NO REF
0

PEER
0

Medical Records (SR.10)

621
139

LATE
10
83

MISS
0
66

MD%
98.4%
40.3%

JOINT
98.1%
79.5%

HOI
96.6%
82.4%

Verbal Order Delinquency
VO PT #
19

VO Total
43

Medical Record Suspension
Suspensions
0

Total Days
0

Hoag
Orthopedic
Institute

CONFIDENTIAL

DO NOT SHARE OR REPLICATION

Quality Metrics (SR.3, SR.6, SR.8, SR.11, SR.1, SR.4)

MD%
5.0%
2.3%
6.9%
0.7%
1.5%
0.0%
0.0%
0.2%

MD#
11
5
15
3
6
0
0
1

JOINT
3.9%
1.8%
4.9%
1.1%
2.2%
0.1%
0.0%
0.4%

HOI
4.4%
1.5%
4.9%
1.2%
2.5%
0.2%
0.0%
0.5%

MD TREND

IP Medical Complications
LOS > 7 Days
Cancelled Cases
Blood Transfusions
PSIS Retained Surg Item
PSIS Periop Hematoma
Intraop Fractures
Foot Drop %

MD%
3.2%
3.2%
0.6%
6.8%
0.0%
0.0%
0.6%
0.0%

MD#
7
7
4
39
0
0
4
0

JOINT
3.0%
2.1%
0.9%
2.7%
0.2%
0.0%
0.1%
0.1%

HOI
3.4%
2.5%
0.9%
3.3%
0.2%
0.0%
0.2%
.

MD TREND

Surgical Site Infections (SR.3)

SIR

1
0

Pred SIR
2.989
0.795

MD SIR
0.335
.

HOI SIR
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0.271

Infections by Type

Year
2021
2020

Superficial
0
2

Complex
1
1

Non-Report
0
1

Case Reviews (SR.9)

QEC
0

NO REF
0

PEER
0

Discharge Disposition

D/C Sort
HOME
HOME w/ HH
OTHER
REHAB
SNF
Transfer

D/C %
7.4%
82.3%
0.2%
0.6%
9.3%
0.2%

HOI %
20.1%
72.5%
0.2%
1.8%
5.1%
0.4%

Total Joint Discharge Efficiency

HIP
KNEE

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22.5%

43.8%
54.9%

34.4%
22.5%

2+ Nights
Overnight
Same Day

Hospitalist Utilization by ASA & Procedure

PROC
FX
HIP
HIP REV
KNEE
KNEE REV
OTHER
SHOULDER
SHOULDER REV
Total

0
0%
0%
0%
0%
0%
0%
0%
0%
0%

1
0%
0%
0%
0%
0%
0%
0%
0%
0%

2
100%
0%
0%
33%
0%
21%
0%
0%
12%

3
71%
37%
86%
31%
67%
57%
0%
0%
35%

4
100%
100%
100%
72%
100%
0%
0%
0%
76%

HOI %
74%
47%
94%
56%
92%
37%
85%
67%
54%

Performance Improvement Committee (PIC)

multi-disciplinary, horizontally-organized committee
surgeons, physicians, clinicians, administration and staff members.

Goal: **enhance communication** between teams and prevent formation of treatment "silos"

Quarterly Updates (clinical and service)

Readmission Rates
Infection Rates
Compliance
Patient Satisfaction
Risk Management
Human Resources
Medication Errors
Etc.

Sub-workgroups are created to analyze and respond to any quality-related initiatives and trends

Work is distributed among all stakeholders to minimize burden and keep change processes nimble

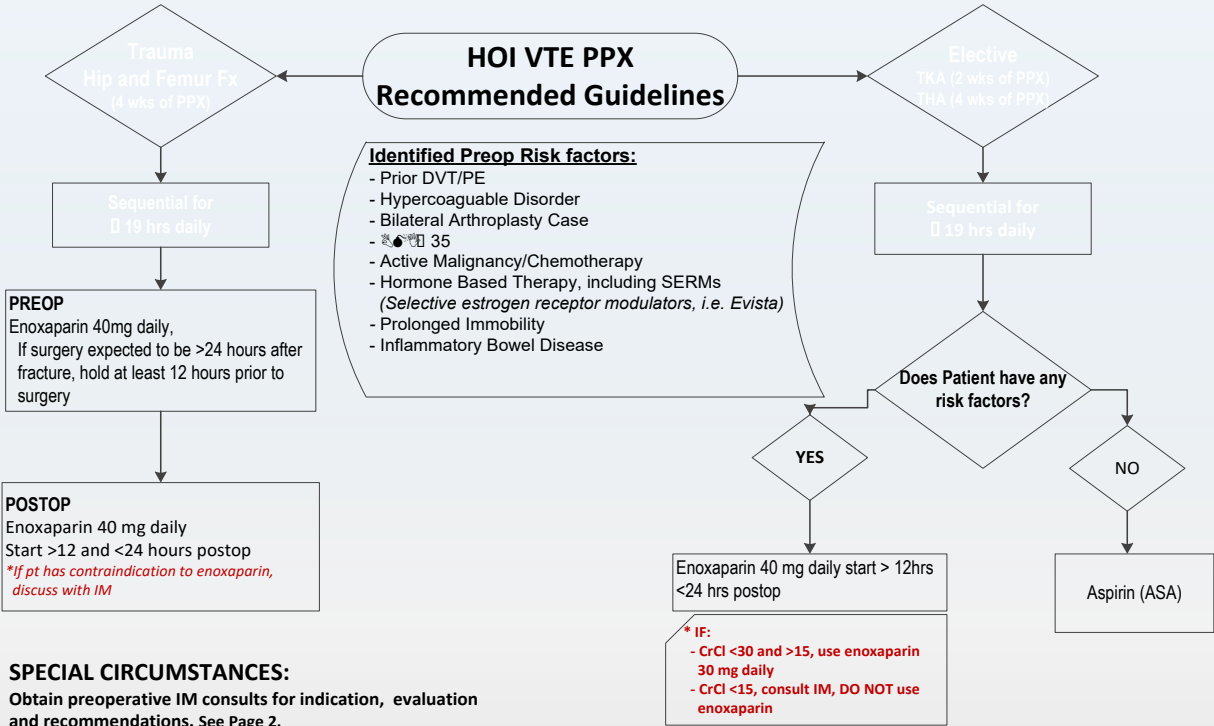
AGENDA

Sample Agenda

1. Open Forum/Organizational Update: Committee Members to Identify Concerns/Risk/Input for Process Improvement
2. May 2025 Minutes
3. Quality Management Policy Annual Review
4. Compliance with Oversight of Contract Services
5. Infection Prevention
6. Patient Satisfaction
7. 2025 Code Blue, RRT, Transfer to Higher Level of Care
8. Risk Management Update – Event Reporting
9. 2025 Safety Culture Survey Results
10. Medication Error Reduction Plan (MERP)
11. Dietary Services
12. Human Resources: Staffing



VTE PPX Guidelines



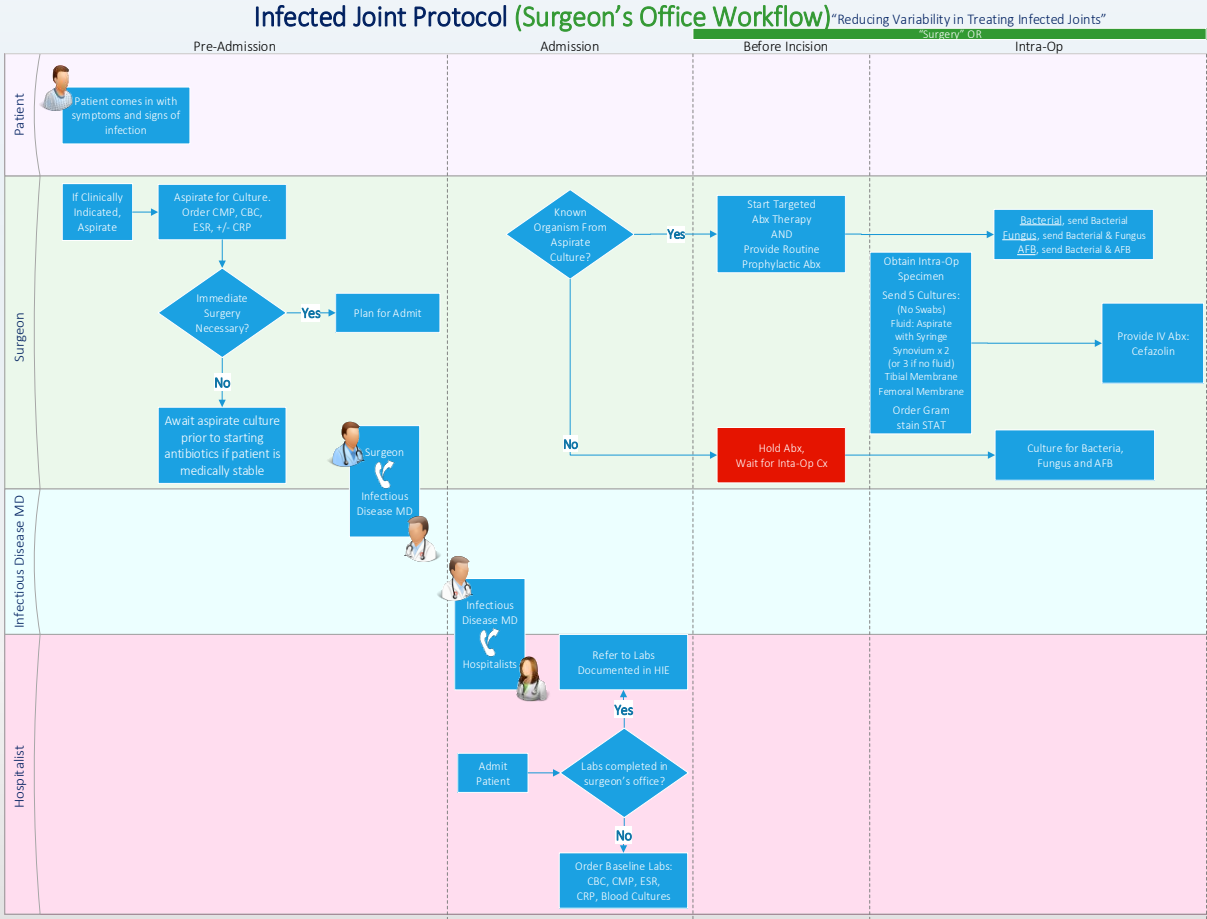
SPECIAL CIRCUMSTANCES:
Obtain preoperative IM consults for indication, evaluation
and recommendations. See Page 2.

References:

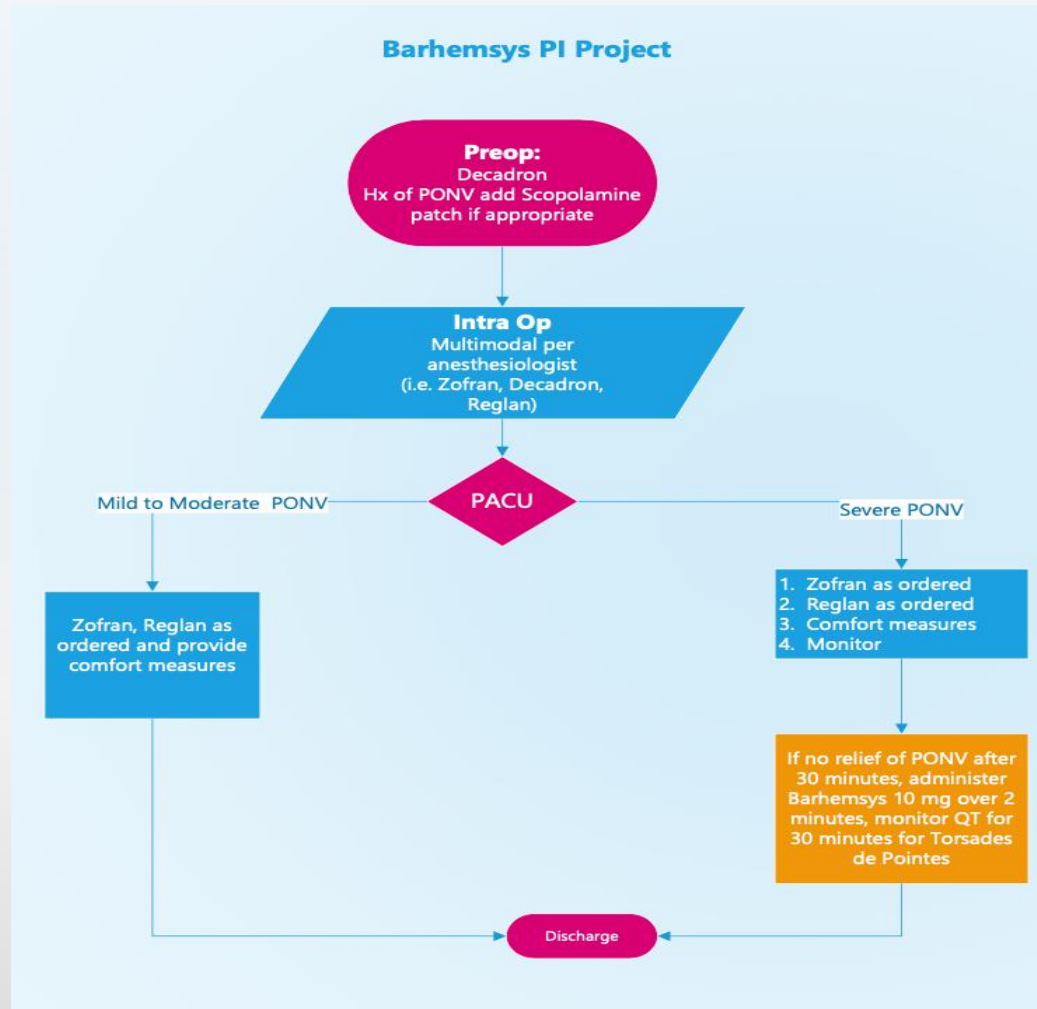
1. AAOS Guideline in Preventing Thromboembolic Disease in Patients Undergoing Total Hip or Total Knee Arthroplasty
2. Prevention of VTE in orthopedic surgery patients: antithrombotic therapy and prevention of thrombosis, 9th ed: American College of Chest physicians evidence-based clinical practice guidelines
3. SCIP core measures
4. HOI Retrospective Chart Review of PE/DVT diagnoses from Nov. 2010 to Sept. 2013.
5. Venous Thromboemboli Following Total Joint Arthroplasty: SCIP Measures Move Us Closer to an Agreement. Journal of Arthroplasty 29 (2014), 651-652. The Journal of Arthroplasty Editorial Board.



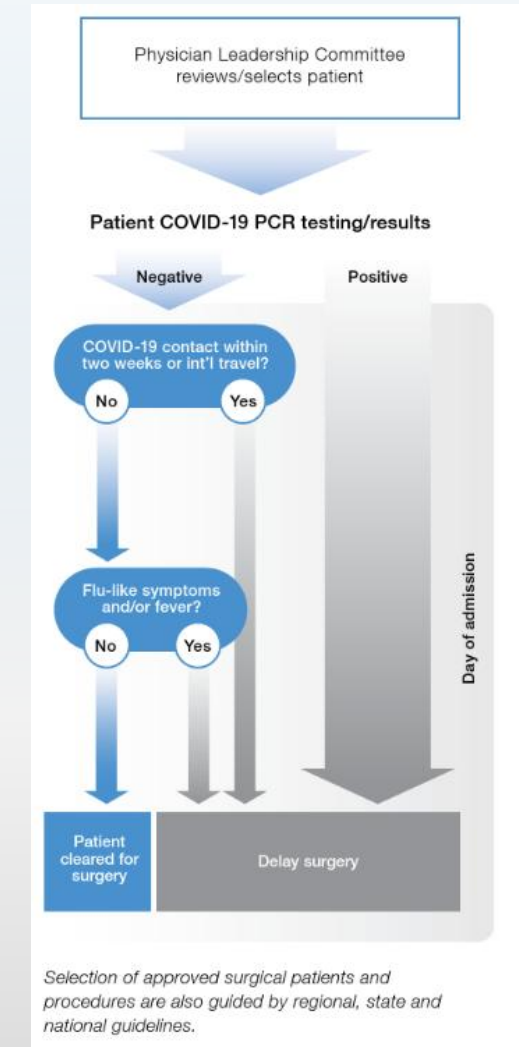
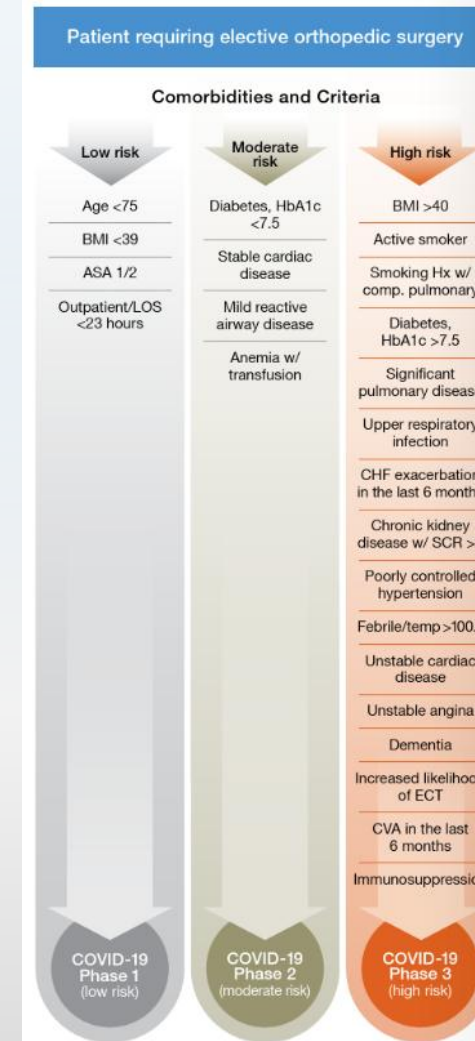
Infected Joint Protocol



Barhemsys Protocol for PONV



COVID-19 Protocol



Outpatient readmission rate within three days

2020 Results: 1.5%
Target Goal: <1.7%
Stretch Goal: <1.5%

10%

Q1	Q2	Q3	Q4	YTD
0.6*				

Opioid stewardship: pain mgmt.

Process Metric

Q1: Develop taskforce. Complete self assessment.
Q2: Identify/implement stewardship initiatives.
Q3: Successfully submit Cal Hosp Compare app.
Q4: Develop MAT policy.
Trgt: Meet requirements. Stretch: Designation

15%

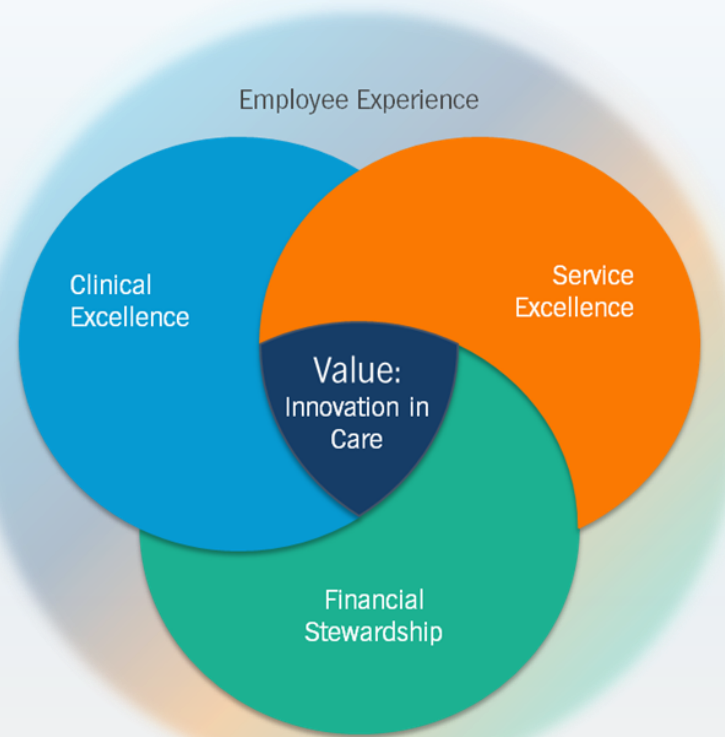
Q1	Q2	Q3	Q4	YTD
Met				

Infections (SIR): deep and organ

2020 Result: 1.33 (Q1-Q3)
Target Goal: <1.00
Stretch Goal: <0.90

10%

Q1	Q2	Q3	Q4	YTD
0.0 *				



HCAHPS, overall rating, top box

Baseline: 91.4%
Target Goal: 92.2%
Stretch Goal: 92.5%

10%

Q1	Q2	Q3	Q4	YTD
93.7*				

OASCAHPS, overall rating, top box

Baseline: 94.1%
Target Goal: 92.9%
Stretch Goal: 93.5%

10%

Q1	Q2	Q3	Q4	YTD
96.6*				

Signature experience: GYBTY

5 stage process and compliance

Baseline: 94.8%
Target Goal: 96.0%
Stretch Goal: 98.0%

10%

Q1	Q2	Q3	Q4	YTD
97.6				

Operating Margin

Target Goal: Budget Met

10%

Q1	Q2	Q3	Q4	YTD
Met				

Productivity (%)

Baseline: 100%
Target Goal: 101%
Stretch Goal: 105%

10%

Q1	Q2	Q3	Q4	YTD
106%				

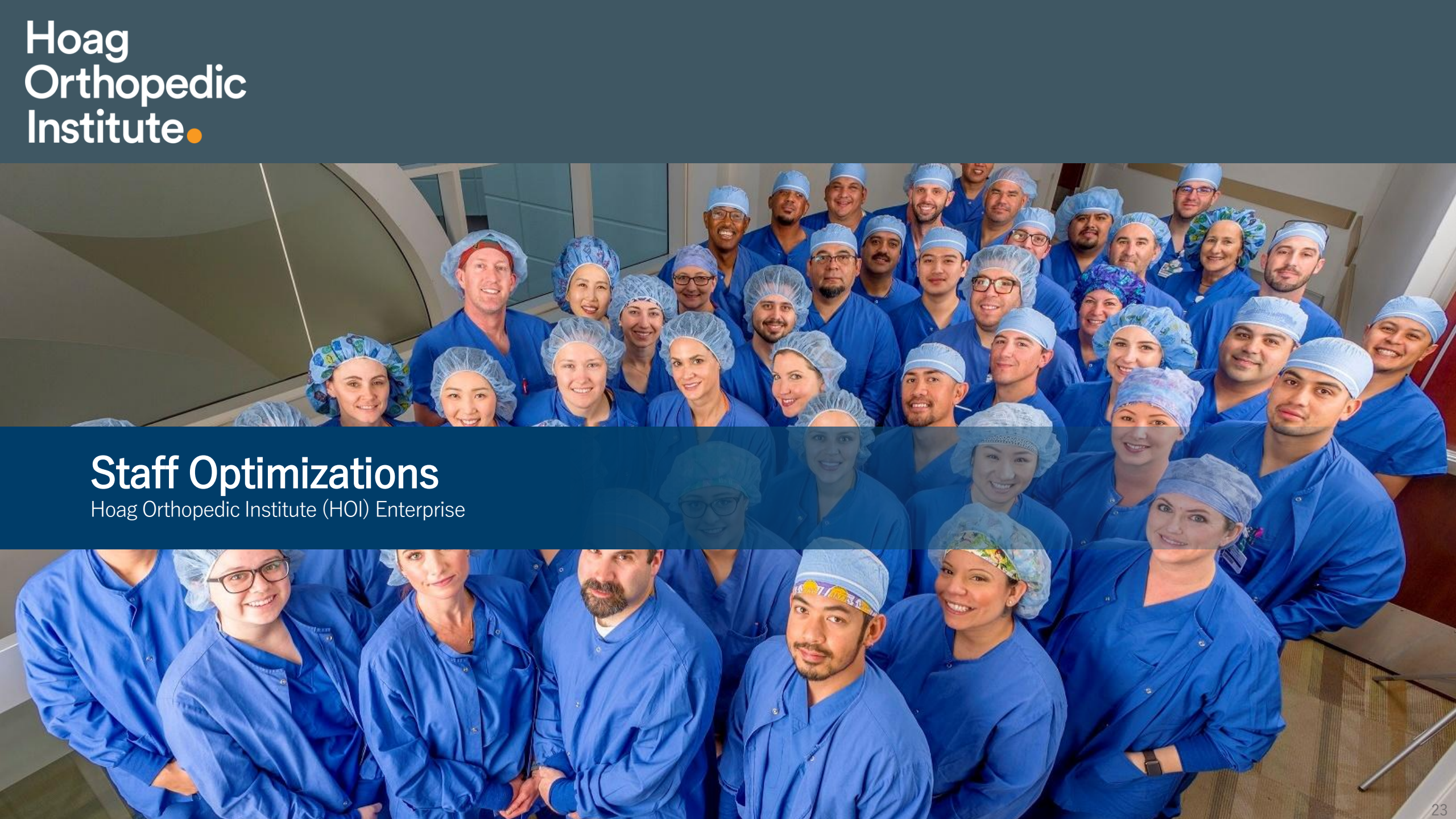
Virtual reality implementation

Process metric

Q1: Develop taskforce; explore opportunities
Q2: Develop virtual reality policy, procedure, protocol
Q3: Begin use of VR and measure data
Q4: Analyze VR data to solidify protocol

15%

Q1	Q2	Q3	Q4	YTD
Met				

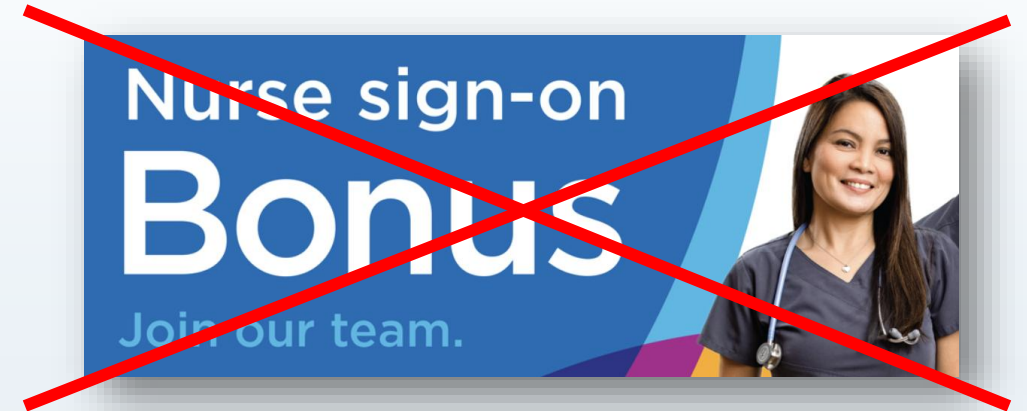


Staff Optimizations

Hoag Orthopedic Institute (HOI) Enterprise

Team Approach

- Lean Organizational Horizontal Structure
- Multidisciplinary Team
- Common Goal of Providing Excellent Patient Outcomes
- Relationships Med Staff and Admin Leaders



Partner with Training Programs – (Scrub, Nursing, PT)

- Students Rotate Through Hospital
- Target top graduating students for hire
- First-hand experience

Employee Referral Bonus

- Bonus employee rather than new hire
- Incentivizes quality in referral





BONES (Building Orthopedic Nurses Education and Skills)

Patient Experience
Communication
Infection Prevention
Accountability/Responsibility

Requirements

AORN Perioperative Training Classes
Didactic and Hands-on

Post-Pandemic Graduates

“OR Lab”
Hands on demos, lectures, quizzes
Staff Preceptors financial comp.

Cross-Training

Nurses – Scrub Techs
XR Techs



Hoag Orthopedic Institute

Implementation of a Safe Medication Disposal Program to Reduce the Risk of Opioid Misuse After Discharge

Jessie Wang, MSN, RN, Amy Jennings, RN, Emily O'Boyle, BSN, RN, Tanya Spates-Fluman, BSN, RN

Background

According to the CDC, there were more than 70,000 opioid-related deaths in 2017, the highest number for any year in U.S. history. The ongoing opioid crisis has cost the U.S. economy \$1 trillion from 2001 to 2017 and was projected to cost the nation an additional \$500 billion by the end of 2020.

Our facility decided to focus on implementation of a safe medication disposal program for patients upon discharge.

Methodology

In 2019, a nursing team was engaged to create a safe medication disposal program for patients upon discharge.

Surveys of bedside nursing staff and discharged patients were conducted to ascertain patient knowledge of how to properly dispose of unused opioids.

66% of surveyed nurses reported an increase in patient concerns/questions regarding safe opioid use/disposal postoperatively.

Audit of routine discharge phone calls demonstrated 54% of patients had unused opioids that they had not disposed of.

A trial consisting of 100 total joint replacement patients was conducted to determine if patients would exonerate.

Results

After the 100 participants were called and the data was collected, we found the trial to be successful.

70% of the participants did choose to utilize the safe medication disposal pouches, and successfully disposed of their opiates safely.

Only 18% of the participants did not use the deactivation kits. When identifying the reasoning, we found that 66% of the participants did not use the kit because they used all their pills.

These participants were also asked how they would have disposed of their medications if the disposal packets were not distributed. Only 10% stated that they would have disposed of the drugs safely. 54% stated that they were unsure what they would have done with the medications. 76% admitted that they would have disposed of the drugs unsafely and many stated that they would have flushed the drugs down the toilet or left them in the cupboard.

Figure 1: Safe medication disposal product currently being distributed at Hoag Orthopedic Institute

Figure 2: Drug disposal instructions on use

Figure 3: Drug disposal packets distributed for the trial

Figure 4: Drug deactivation kit completed survey results

Figure 5: Trial results for when participants were asked what they would do given a drug disposal pouch

Conclusion

With the increases of opioid death in the U.S., nurses at Institute wanted to become one of the first hospitals in have a safe medication disposal program.

Providing safe medication disposal packets to patients disposing medications easily. Patients will be able to do in a timely manner in their own home.

All surgical centers should follow suit to help aid in the destroying unused medications, it can alleviate the risk of abuse, addiction, and help prevent accidental or intentional overdose.

References

1. National Center for Substance Abuse Treatment. (2018). Opioid addiction treatment: A guide for health care providers. Retrieved from <https://www.samhsa.gov/2k18/opioid-addiction-treatment>

2. National Center for Substance Abuse Treatment. (2018). Opioid addiction treatment: A guide for health care providers. Retrieved from <https://www.samhsa.gov/2k18/opioid-addiction-treatment>

3. National Center for Substance Abuse Treatment. (2018). Opioid addiction treatment: A guide for health care providers. Retrieved from <https://www.samhsa.gov/2k18/opioid-addiction-treatment>

4. National Center for Substance Abuse Treatment. (2018). Opioid addiction treatment: A guide for health care providers. Retrieved from <https://www.samhsa.gov/2k18/opioid-addiction-treatment>

5. National Center for Substance Abuse Treatment. (2018). Opioid addiction treatment: A guide for health care providers. Retrieved from <https://www.samhsa.gov/2k18/opioid-addiction-treatment>

- Clinical Ladder Programs
- Encourages Participation in Research/Education/Projects
- Nurses, RNFAs, Scrub, Sterile Processing, PT
- Increase in Merit Pay
- Annual Bonus Incentives
- Organizational Goals Attainment
- Quality Goal/CJR Bonus
- Distributed based on hours worked
- Tuition Reimbursement and Scholarship Opportunities

Hoag Orthopedic Institute

Postoperative Urinary Incontinence In Total Joint Patients: Using a Bladder Scanner to Improve Patient Outcomes

Allison Gerrard BSN, RN, Sopida Andronaco MSN, RN, PHN, CPHQ, Hannah Bagot, MHA

Background:

In Q2 of 2018, Hoag Orthopedic Institute stopped the practice of inserting foley catheters for Total Joint Replacement Surgeries (TJRS).

Staff reported multiple incidences of incontinence after TJRS.

Data analysis reflected that high rates of incontinence occurred 4-6hrs after surgery AET (Fig. 1)

Previous bladder scanning protocol was to scan patients 6 hours from Anesthesia End Time (AET) and straight catheterize if volume is >600mls (Fig. 2)

Methodology:

Corrective Action from Jan 2021:

Bladder scanning trial was proposed to Performance Improvement Committee (PIC) and approved.

Data collected for 6 weeks (April 12-May 21, 2021)

Patient bladder scanned upon arrival to the floor or within 4hrs (Fig. 3).

Results:

196 patients were scanned

Average bladder volume was 828mls at 4 hours. (Avg. bladder capacity is 350mls-550mls).

8% of those patients were unable to void and needed straight catheterization.

Figure 1: Time from Last Void to Incontinence (Jan-Dec 2020)

Figure 2: Previous Bladder Scanning Protocol

Figure 3: Average Bladder Volume By Hour

Conclusion:

Rates of incontinence decreased, resulting in the adoption of the process of bladder scanning the patient 4hrs post AET, and straight catheterization if bladder scan is >600mls.

2020 Incontinence (YTD) 4.6%

Incontinence: 158

Total Lower Joint Volume: 3,452

2021 Incontinence (YTD) 0.5%

Incontinence: 3

Total Lower Joint Volume: 639

References:

Lawrie, C.M., Ong, A.C., Hernandez, V.H., Ross, S., Post, Z.D., & Orozco, F.R. (2017) Incidence and risk factors for postoperative urinary retention in total hip arthroplasty performed under spinal anesthesia. The Journal of Arthroplasty, 32, 3748-3753.

Schotten, R., Krenn, L., Van de Griend, S., Sonford, D., & Koster, S. (2018) Incidence and risk factors for postoperative urinary retention and bladder catheterization in patients undergoing fast-track total joint arthroplasty: a prospective observational study on 371 patients. The Journal of Arthroplasty, 33, 1546-1551.

Wishart, S.M. (2019) Decreasing the incidence of postoperative urinary retention and incontinence with total joint replacement patients after spinal anesthesia in the post anesthetic care unit: a quality improvement project. Journal of Perioperative Nursing 34(4), 1040-1046.

Hoag Orthopedic Institute

Opioid Stewardship Initiative and Narcan Distribution Program

Sopida Andronaco MSN, RN, PHN, CPHQ, Elizabeth Kovacs, MSN, PHN, FNP-C, & Robert Cho, MD, FACP, SFHM

Background:

Drug overdoses have dramatically increased over the last two decades with more than 800,000 people dying from drug overdoses. In 2019, over 70% of these drug overdoses involved an opioid, making it a leading cause of injury-related death in the United States. 1 out of 4 patients receiving long term opioid therapy are struggling with opioid addiction (CDC, 2021). To address the opioid epidemic, the CDC has developed a set of 16 clinical QI measures for improving opioid prescribing practices for healthcare professionals (CDC, 2021).

Method for Developing Opioid Stewardship:

Identify stakeholders in the organization and create a multidisciplinary team to oversee opioid prescribing and pain management practices.

Identify champions of the work being done.

Create a charter to identify purpose and goals.

Complete the Cal Hospital Compare Opioid Management Hospital Self Assessment to identify gaps in practice and procedures.

Physician Champion for Narcan Standing Order with the state.

Complete Narcan Distribution requirements for staff training, Narcan storage, and patient tracking.

Learning Objective:

Assist in developing an organization wide Opioid Stewardship Program.

Recognizing educational opportunities around opioid use.

Developing a Narcan Distribution Program.

Purpose:

Hoag Orthopedic Institute (HOI) created an Opioid Stewardship Committee to identify existing process gaps and developing a culture of safe opioid prescribing through implementing processes that meet guidelines while monitoring for, detecting, and appropriately responding to opioid misuse utilizing a self-assessment tool from Cal Hospital Compare (2021).

The Committee also has oversight of patient and caregiver information on opioid use after surgery, use of opioid antagonists in the event of an opioid overdose and engaging emergency medical services if an overdose should occur. One of the initiatives of the committee was to participate in a statewide Narcan distribution program to give our patients another tool in preventing opioid related death.

Narcan Distribution Program:

Gap Identified:

During our self-assessment, we discovered an opportunity to provide education on Narcan and it's potential to save lives. HOI had sparse educational information on Naloxone and the risk of opioid OD. We also identified the cost of Naloxone as being prohibitive to filling scripts. The price of Narcan can vary from \$35 - \$130 depending on insurance. HOI saw a need to provide Narcan to patients who could not fill their prescriptions due to financial constraints or were at high risk for opioid overdose.

Solution:

We researched ways to provide Narcan and identified a statewide program called Naloxone Distribution Project funded by Substance Abuse and Mental Health Services Administration (SAMHSA). We created robust educational library using audio and visual media. We also developed staff training and competencies for Naloxone distribution.

Develop Tools:

Conclusion:

Using the Cal Hospital Compare Self Assessment Tool is a way for organizations to identify areas for improvement and provides guidelines on what programs and processes to focus on in the development of adequate infrastructure in the effort to fight opioid addiction.

References:

Cal Hospital Compare. (May 2021). 2021 Opioid management hospital self assessment. Retrieved from https://calhospitalcompare.org/wp-content/uploads/2021/05/2021-Opioid-Management-Hospital-Self-Assessment_2021_FINAL.pdf

Centers for Disease Control and Prevention. (February 10, 2021). Understanding the epidemic. Retrieved from <https://www.cdc.gov/drugoverdose/epidemic/index.html>

Centers for Disease Control and Prevention. (February 10, 2021). Opioid addiction treatment: A guide for health care providers. Retrieved from <https://www.samhsa.gov/2k18/opioid-addiction-treatment>

Department of Health Care Services. (2015). Naloxone Distribution Project. Retrieved from <https://www.cdph.ca/Programs/OPA/Pages/N150404.aspx>



Frequent (Daily) Rounding of Leadership with Staff

Prevents “Out of Touch” Complaints

Address issues quickly and efficiently

OR Managers fill in when short-staffed

Education

Encourage Staff to further their training

Educational Scholarships

Tuition Reimbursement

Certification Bonuses

Morale – Relationships with Medical Staff

Avoid Registry Nurses

Extra-curricular Activities



Transparent Outcomes Reporting

- Surgical Volume
- Hospital & ASC Procedures
- Clinical Outcomes
- Infection Prevention & Safety
- Patient Experience
- Value
- Education & Research
- Community Service & Wellness Outreach



www.hoioutcomes.com

USNews
2021-22
HIP REPLACEMENT

USNews
2021-22
HIP FRACTURE

USNews
2021-22
KNEE REPLACEMENT

USNews
2021-22
SPINAL FUSION

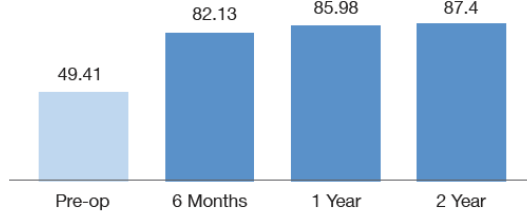
HOI HOSPITAL PROCEDURES

	2018	2019	2020
Hip	2,020	2,160	2,046
Hip Replacement	1,790	1,963	1,847
Hip Revision	182	149	164
Hip Other	48	48	35
Knee	2,297	2,461	2,097
Knee Replacement	1,979	2,105	1,771
Knee Revision	143	158	130
Knee Other	175	198	196
Spine	3,513	3,575	4,123
Spine Cervical Fusion	566	654	680
Spine Lumbar Fusion	1,048	925	1,098
Spine Lumbosacral Fusion	441	456	540
Spine Thoracic Fusion	166	160	190
Spine Disc Excision	865	862	945
Spine Other	427	518	670
Shoulder	373	420	326
Shoulder Joint Replacement	242	273	222
Shoulder Other	131	147	104
Hand/Upper Extremity	134	138	110
Foot/Ankle	77	27	20
Fracture	263	264	322
Musculoskeletal Oncology	25	31	17
Other	686	747	1,164
Grand Total	9,388	9,823	10,225

HOI internal strategic analytic platform, data pulled August 2021.

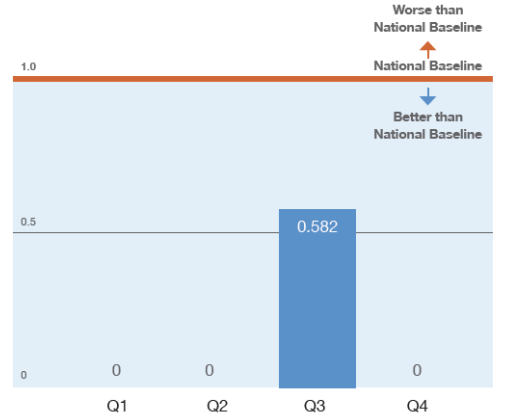


Hip Osteoarthritis Outcome Score (HOOS, Jr.)
(Higher is better)

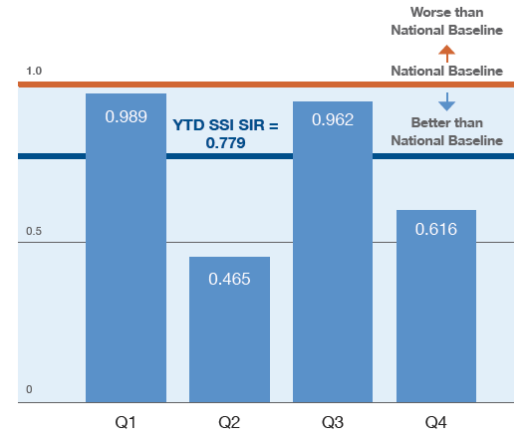


Source: Data pulled August 9, 2020 From phiDB_Ortech Data System

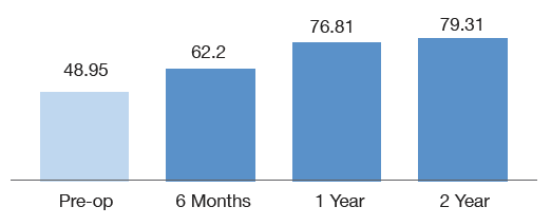
Outpatient SSI SIR by Quarter 2020



Inpatient SSI SIR by Quarter 2020



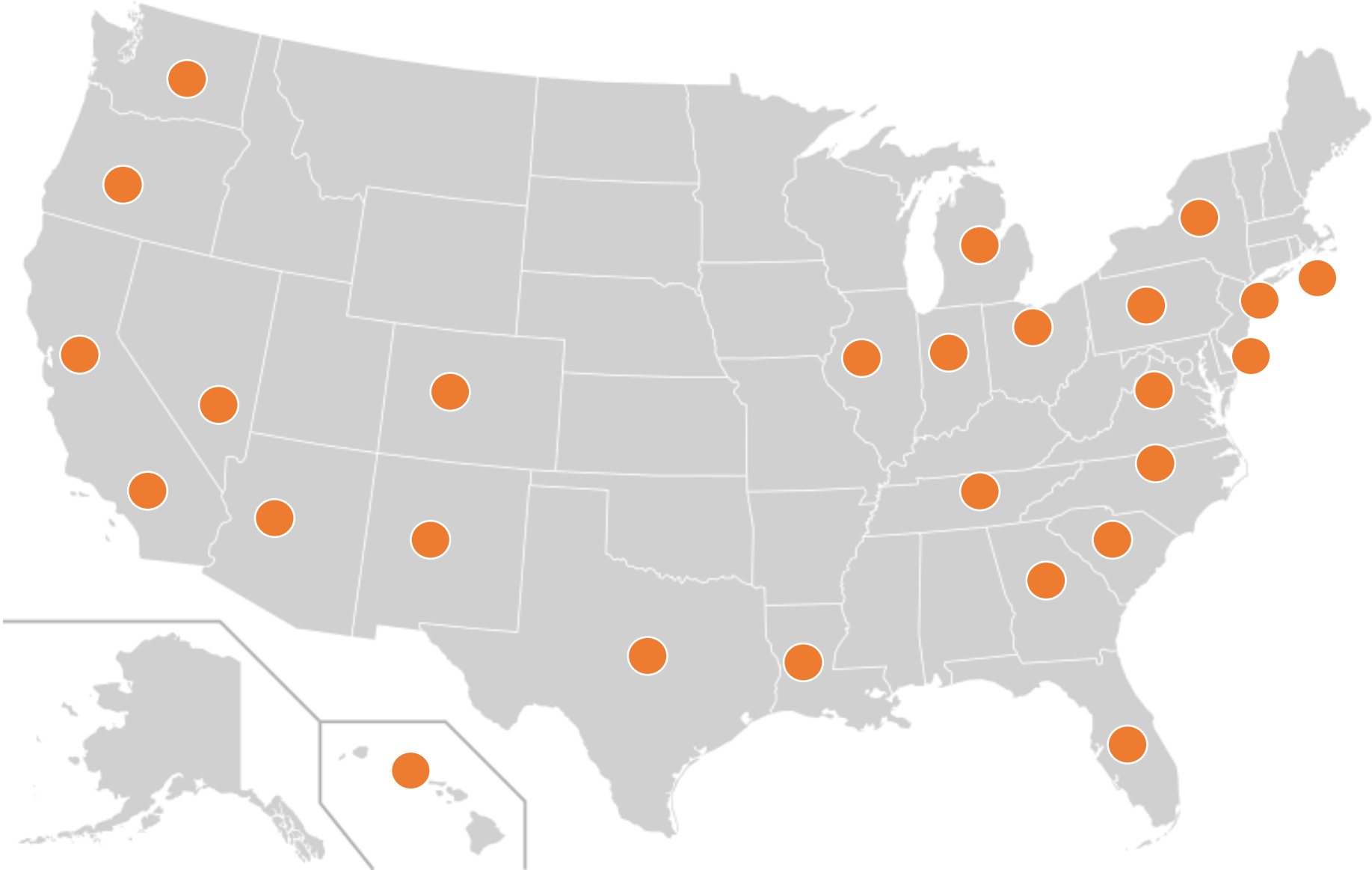
Knee Osteoarthritis Outcome Score (KOOS, Jr.)
(Higher is better)



	2 Orthopedic Sports Medicine	
2 Arthroplasty		1 Ortho Spine

- Share Knowledge and Experience
- Remain “State of the Art”
- Community
- HOI Name Recognition







Ranked 47th (Top 1%)
in the Nation for Orthopedic Hospitals
U.S. News & World Report



**High Performing in
Hip Replacement & Hip Fracture**
U.S. News & World Report



**High Performing in
Knee Replacement**
U.S. News & World Report



**High Performing in
Spinal Fusion**
U.S. News & World Report



5-Star Recognition
Hospital Patient Survey Rating
CMS



**Best Hospital for Outpatient
Joint Repl. & Orthopedic Surgery**
Healthgrades



Pinnacle of Excellence
for Patient Experience HCAHPS (x7)
Press Ganey



Guardian of Excellence
for Patient Experience (x8)
Press Ganey



Orthopedic Program Excellence
Women's Choice Award



Patient & Outpatient Experience
Women's Choice Award



**Antimicrobial Stewardship
Honor Roll, Gold Status**
California Department of Public Health



**Top 100 Hospitals with
Great Orthopedic Programs**
Becker's Hospital Review



**One of the World's Best
Specialized Hospitals**
Newsweek



Joint Fellowship Recognition
American Association of
Hip and Knee Surgeons



Opioid Care Honor Roll
Cal Hospitals



“..Physician/Hospital alignment creates a powerful collaboration that leverages the deep knowledge of both entities to enhance care delivery and maximize efficiencies in today’s healthcare environment..”



Hoag
Orthopedic
Institute



Q & A

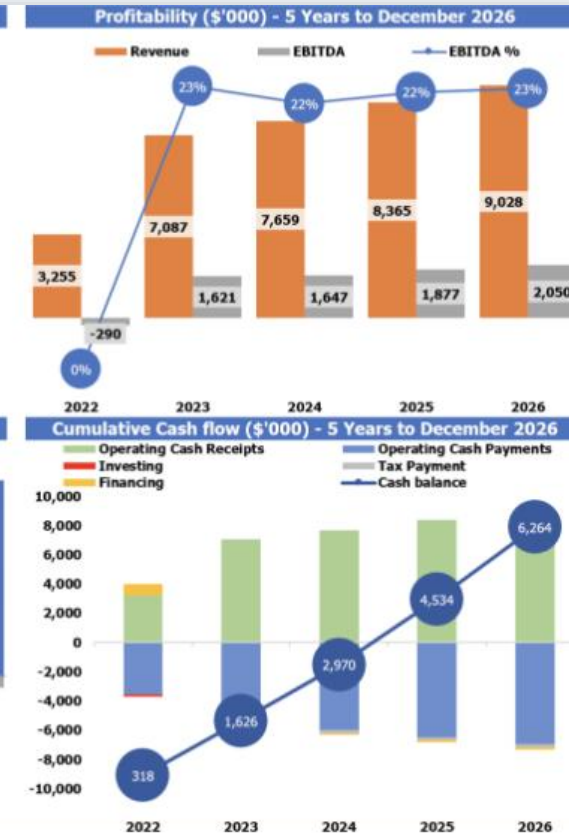
UCSF/Hoag Orthopedic Institute Arthroplasty for the Modern Surgeon
Hoag Orthopedic Institute
Steven Barnett, MD – Chief Medical Officer
September 2025



Historical ASC Ownership Model

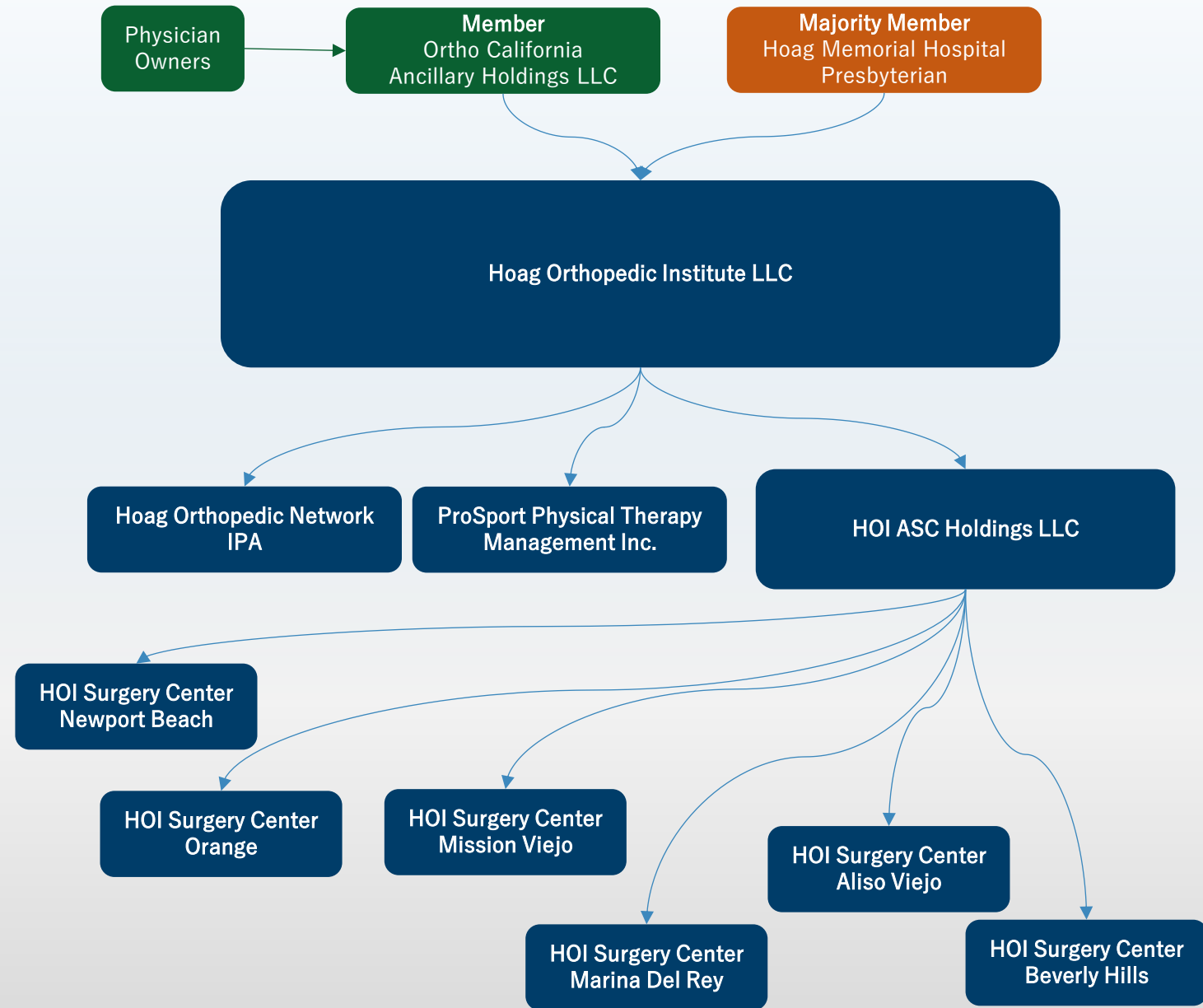
- Problem: ASC financial success becomes impediment to new surgeon investors with significant increase in share price.
- New investors: Student Loan Debt, Ortho Group capital buy-in, Home Purchase, **ASC Ownership Purchase**
- Imperative to regularly engage young surgeons or enterprise suffers over time with retirements.
- Avoid decreased participation with retirements
- Mandatory to maintain high quality standards of all physician owners.
- Clinical protocols, Quality Metrics, Case Volume for Proficiency, Medical Staff Standing, Participation in Research, Education, and Hospital Committees

Core Inputs					
Patient base assumptions					
Treatments names	Treatment, %		Patients, %		
Diagnostic services	3.00%		27.00%		
Wellness services	5.00%		35.00%		
Rehabilitation	4.00%		21.00%		
Chemotherapy	6.00%		35.00%		
Surgery	5.00%		40.00%		
Annual visits					
	2022	2023	2024	2025	2026
# of visits per Diagnostic services patient	40	40	40	40	40
# of visits per Wellness services patient	30	30	30	30	30
# of visits per Rehabilitation patient	25	25	25	25	25
# of visits per Chemotherapy patient	40	40	40	40	40
# of visits per Surgery patient	15	15	15	15	15
Price per visit, \$					
	2022	2023	2024	2025	2026
Diagnostic services	35	40	40	40	40
Wellness services	35	40	40	40	40
Rehabilitation	40	50	50	50	50
Chemotherapy	25	30	30	30	30
Surgery	45	50	50	50	50
CORE FINANCIALS (\$'000)					
Financial Year	2022	2023	2024	2025	2026
Revenue	3,255	7,087	7,659	8,365	9,028
Variable Expenses	(2,062)	(3,890)	(4,212)	(4,601)	(4,965)
GROSS MARGIN	1,192	3,198	3,447	3,764	4,064
GROSS MARGIN %	37%	45%	45%	45%	45%
Salaries & Wages	(499)	(583)	(795)	(873)	(990)
Fixed Expenditure	(984)	(994)	(1,004)	(1,014)	(1,024)
EBITDA	(290)	1,621	1,647	1,877	2,050
EBITDA %	0%	23%	22%	22%	23%
Depreciation & Amortization	(26.1)	(26.1)	(26.1)	(26.1)	(26.1)
EBIT	(316)	1,595	1,621	1,851	2,024
Net Interest Expense	(55)	(48)	(35)	(21)	(8)
Net Profit Before Tax	(372)	1,547	1,587	1,830	2,016
Tax Expense	-	(155)	(159)	(183)	(202)
Net Profit After Tax	(372)	1,392	1,428	1,647	1,814
Net Profit After Tax %	0%	20%	19%	20%	20%
Operating Cash Flows	(346)	1,419	1,454	1,673	1,840
Cash	318	1,626	2,970	4,534	6,264



Current HOI Ownership Model

- **Hoag Memorial Hospital Presbyterian** must remain at least 51% owner
- **Ortho California Ancillary Holdings** holds physician ownership. Buy-in for new physicians is based on current HOI valuation
- New members are offered shares based their commitment to the enterprise (Participation on committees, admin, research, education, and use of the facility)
- Current members must meet volume and quality criteria annually
- At retirement, owners redeem shares in exchange for 2 years of distributions
- Retired shares are divided amongst remaining owners *pro rata*. Younger surgeons to accrue shares throughout their career
- Share ownership is capped at 4.0% of OCAH. These surgeons no longer receive retirement shares



Orthopedic Specialty Joint Venture



Orthopedic Specialty – Standardization, Efficiencies and Cost Savings achieved in the ASC settings are present in hospital setting



Patient outcomes and experience optimized secondary to specialized orthopedic experience across the entire episode of care



Physician owners hold each other accountable



Multi-disciplinary team approach – all team members have a voice



Strong physician and staff relationships



Physician Leader Succession Planning



HOI Value-Based
Delivery Model



Physician, Staff & Administration
Alignment and Collaboration



Successes & Failures with
Joint Ventures with the Hospital



Q & A

Benefits of Surgeon Collaboration:



Favorable single-source hip implant construct pricing (>70%)

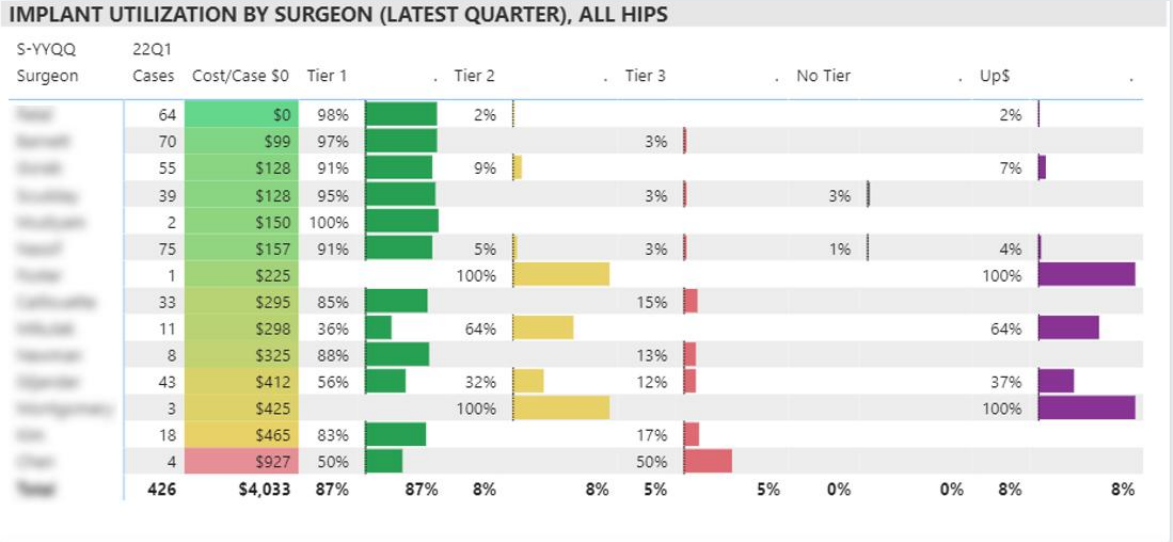


Favorable dual-source knee implant construct pricing (>80%)



Formulary/standardized pricing across the board for spine implants

- 20% reduction in implant costs
- Vendor consolidation





Top 1%

of Orthopedic Hospitals in the Nation by U.S. News & World Report's 2022-2023 Best Hospitals List



#1 Orthopedic Hospital

in Orange County and recognized as "High Performing" in Spinal Fusion, Hip Fracture, Hip Replacement, and Knee Replacement



Highest Volume of Joint Replacement Procedures in CA

For the 9th consecutive year, HOI performed the highest volume of Joint Replacement procedures in the State of California



Highest Volume of Joint Replacement Procedures in the Western United States

HOI performed the highest volume of Joint Replacement in the Western United States per Clarify Health





2022 Patient Safety Honor Roll Award

HOI was identified as having a high safety profile in comparison to other hospitals in California.



2021 Press Ganey Guardian & Pinnacle of Excellence Awards

HOI received these awards for Patient Experience for the seventh consecutive year.



2021 Opioid Honor Roll, Superior Performance

HOI implemented innovative opioid stewardship strategies for the purpose of continuous quality improvement.



2021 America's 100 Best Hospitals for Orthopedic Surgery

Healthgrades acknowledged HOI as having superior clinical outcomes.



2021 Antimicrobial Stewardship Program Honor Roll

CDPH's HAI program recognized HOI as having a top performing antimicrobial stewardship program in California.



Lowest Hip/Knee Readmission Rate in California, 3rd in the Nation

HOI has the lowest hip and knee readmission rate in California and the 3rd lowest in the nation.



2022/23 Own the Bone Star Performer

HOI has been recognized for its commitment to helping patients understand their risk for future fractures.

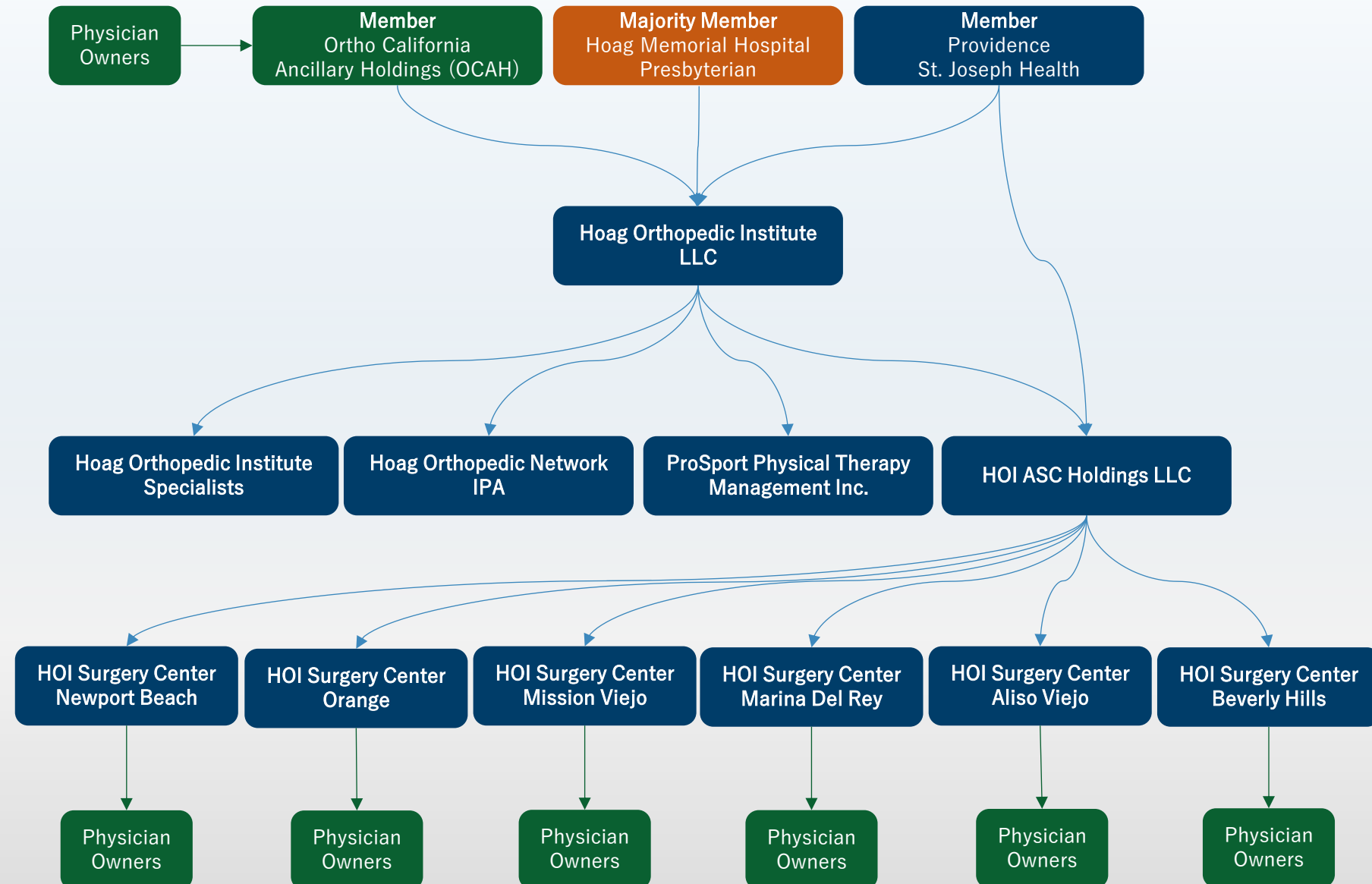


Leader in Patient Safety

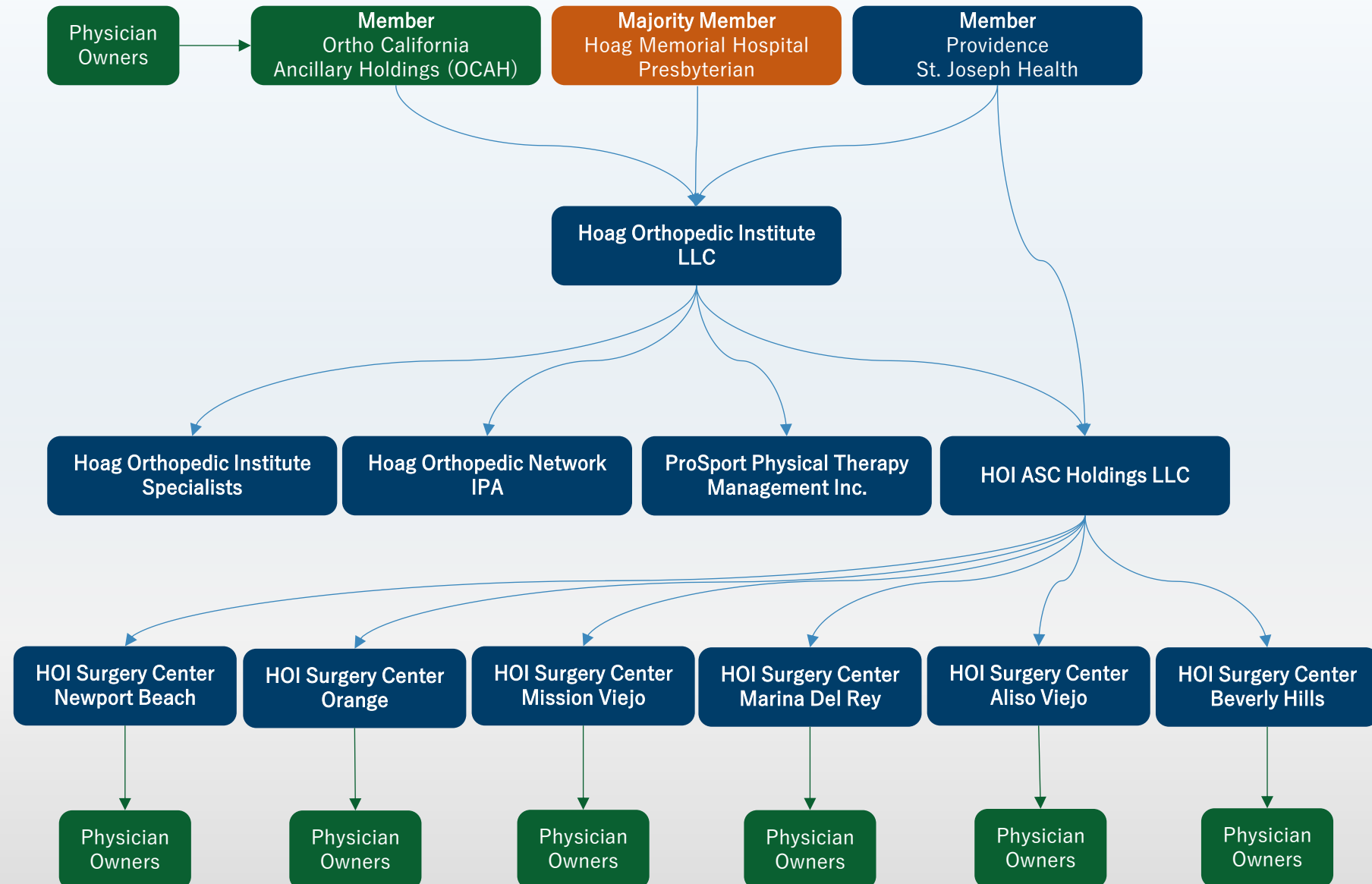
HOI is in the Top 5% and one of two hospitals in California and one of 43 hospitals in the U.S. with high performing Patient Safety and Adverse Events Composite rates.

Prior to formation

- The problem with this model is that if the ASC is successful financially it becomes very difficult to get new investors because the price of admission is so high.
- Hard to ask a new physician who is looking to buy a house and deal with student loans to shell out \$1M for the joint venture.
- It is imperative to consistently engage young surgeons otherwise the enterprise will suffer over time with retirements. Our current system is not perfect and is still pricey for young investors despite the retirement rules.
- Also – owners need to maintain high quality which includes case volume minimum of 35 per year as well as adhering to established protocols and best practice initiatives. Surgeons cannot retain ownership if they are not in good standing and active staff with the hospital.



- **Hoag Memorial Hospital Presbyterian** must remain at least 51% owner.
- **Ortho California Ancillary Holdings (OCAH)** holds physician ownership. Buy-in for new physicians is based on current HOI valuation.
- Members receive distributions quarterly for the duration of their ownership.
- At retirement, owners redeem their shares for 2 years of distribution. These shares are then divided amongst current owners based on their ownership percentage which allows younger surgeons to accrue shares throughout their career.
- Once someone reaches a cap of 4.0% of OCAH they no longer accumulate shares from retiring members.
- New members are offered shares based on invitation only relative to their commitment to the enterprise (ie. Participation on committees, admin, research, education, and use of the facility).



						
 2022 USNWR Orthopedics Ranking	28 th Top 1%	1 st Top 1%	2 nd Top 1%	3 rd Top 1%	4 th Top 1%	5 th Top 1%
Patient survey rating Higher is better	 5 stars starting 11/2022					
Rate of complications for hip/knee replacement patients Lower is better	1.6% Better than the national rate (2.4%)	1.8% Better than the national rate (2.4%)	2.1% No different than the national rate (2.4%)	2.5% No different than the national rate (2.4%)	2.8% No different than the national rate (2.4%)	2.3% No different than the national rate (2.4%)
Rate of readmission after hip/knee replacement Lower is better	2.8% Better than the national rate (4.1%)	2.6% Better than the national rate (4.1%)	4.7% No different than the national rate (4.1%)	4.3% No different than the national rate (4.1%)	4.2% No different than the national rate (4.1%)	3.6% No different than the national rate (4.1%)

Source: Medicare.gov, CMS Hospital Care Compare as of 8/29/2022.



28th
Top 1%

High Performer
Did not rank in Top 50

High Performer
Did not rank in Top 50

34th
Top 1%

Did Not Rank

High Performer
Did not rank in Top 50

Patient survey
rating
Higher is better



5 stars starting 11/2022



Rate of
complications
for hip/knee
replacement
patients
Lower is better

1.6%
Better than the
national rate (2.4%)

3.8%
No different than the
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Rate of
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Lower is better

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