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COST QUALITY OUTCOMES

CQO: The Future of Healthcare Supply Chain

The Evolution of the CQO Movement: Redefining Clinical Supply Chain Integration with Supply Chain in a data-driven, value-based healthcare system

Jimmy Chung, MD, MBA, FACS
Associate VP, Perioperative Portfolio
Providence St. Joseph Health

Disclosures

- None

Thankless Jobs

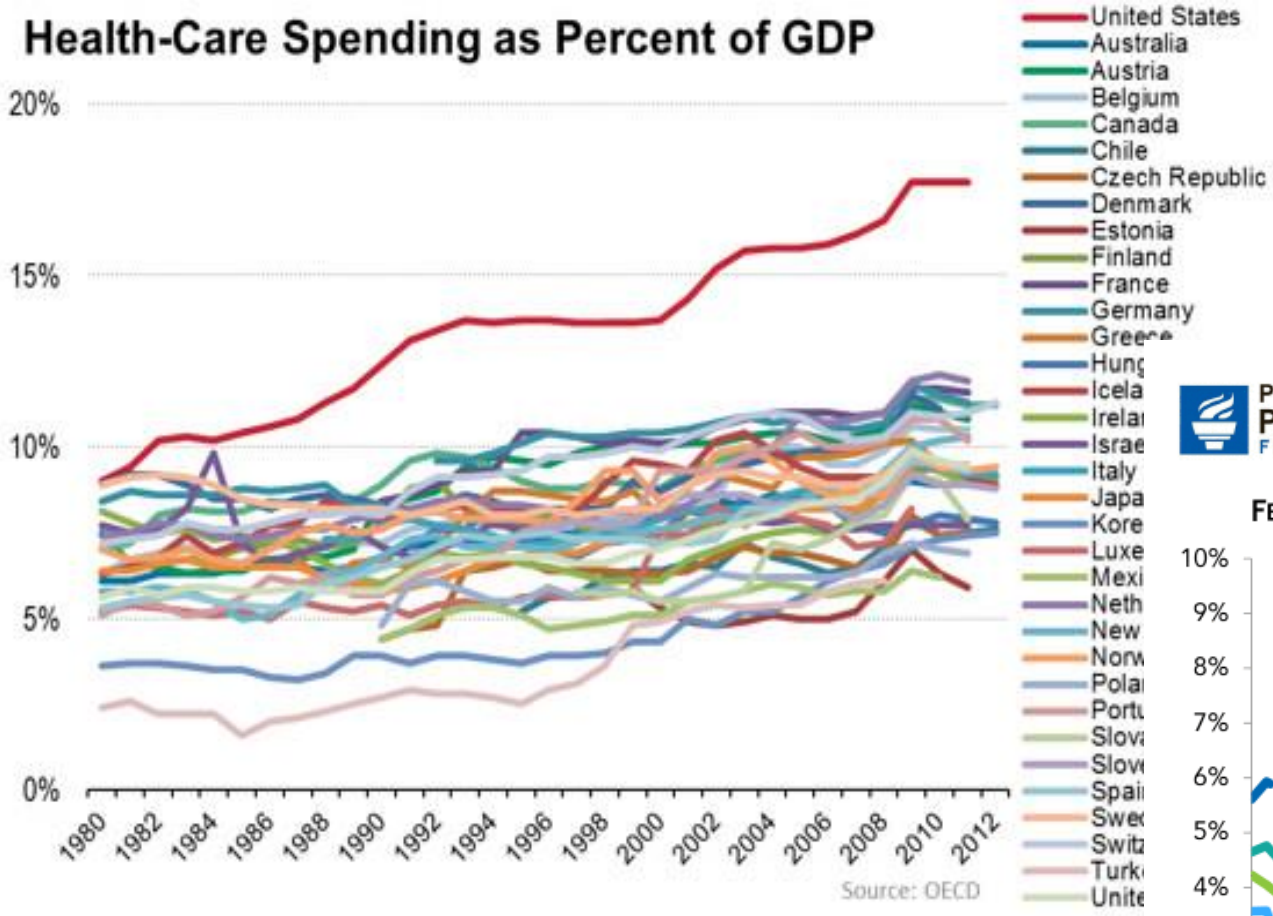
- Supply Chain Professional
  - We know we've done a good job if no one notices we exist

"I'd thank you Harrison, but, as you well know, yours is a thankless job."

Getting to the point

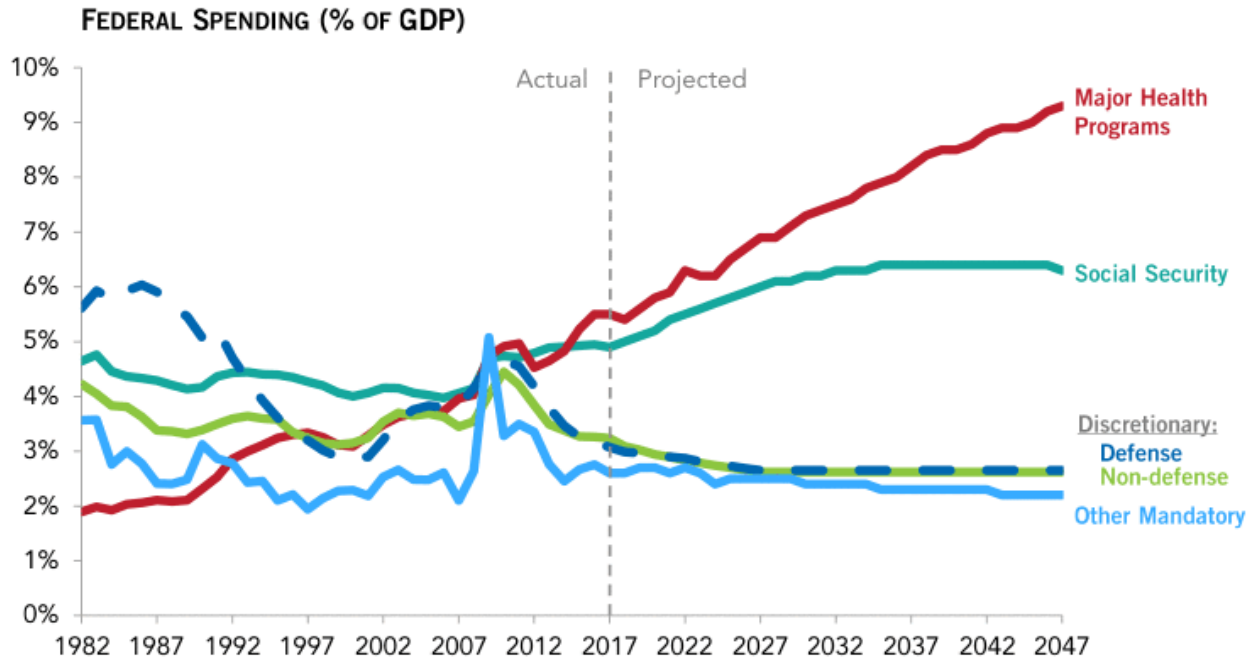
- What is CQO (and why do we need it)?
- What is AHRMM's definition of Clinical Integration?
- How is CI implemented?
- How do we use data to accelerate CI?
- How can we engage physicians for CI?

Health-Care Spending as Percent of GDP



Healthcare is the major driver of the projected growth in federal spending over the long term

PETER G. PETERSON FOUNDATION



SOURCE: Congressional Budget Office, *The 2017 Long-Term Budget Outlook*, March 2017 and *The Budget and Economic Outlook: 2017 to 2027*, January 2017, and PGPF projections based on CBO data.
NOTE: Major health programs include Medicare (net), Medicaid, Children's Health Insurance Program (CHIP), and the health exchanges.

PGPF.ORG

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Exhibit ES-1. Overall Ranking

Country Rankings	
	1.00–2.33
	2.34–4.66
	4.67–7.00

	AUS	CAN	GER	NETH	NZ	UK	US
OVERALL RANKING (2010)	3	6	4	1	5	2	7
Quality Care	4	7	5	2	1	3	6
Effective Care	2	7	6	3	5	1	4
Safe Care	6	5	3	1	4	2	7
Coordinated Care	4	5	7	2	1	3	6
Patient-Centered Care	2	5	3	6	1	7	4
Access	6.5	5	3	1	4	2	6.5
Cost-Related Problem	6	3.5	3.5	2	5	1	7
Timeliness of Care	6	7	2	1	3	4	5
Efficiency	2	6	5	3	4	1	7
Equity	4	5	3	1	6	2	7
Long, Healthy, Productive Lives	1	2	3	4	5	6	7
Health Expenditures/Capita, 2007	$3,357	$3,895	$3,588	$3,837*	$2,454	$2,992	$7,290

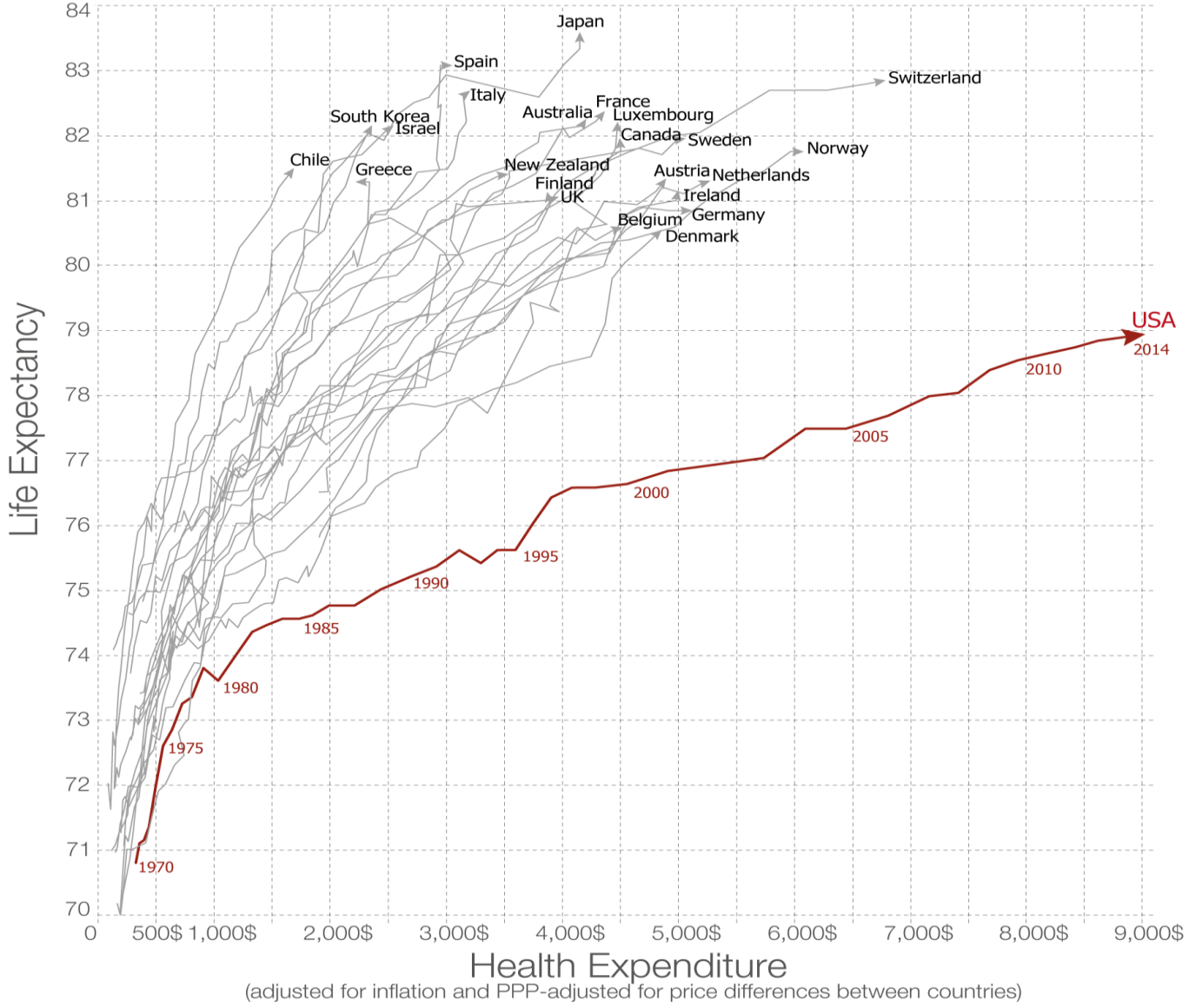
Note: * Estimate. Expenditures shown in $US PPP (purchasing power parity).
Source: Calculated by The Commonwealth Fund based on 2007 International Health Policy Survey; 2008 International Health Policy Survey of Sicker Adults; 2009 International Health Policy Survey of Primary Care Physicians; Commonwealth Fund Commission on a High Performance Health System National Scorecard; and Organization for Economic Cooperation and Development, OECD Health Data, 2009 (Paris: OECD, Nov. 2009).

Commonwealth Fund 2010

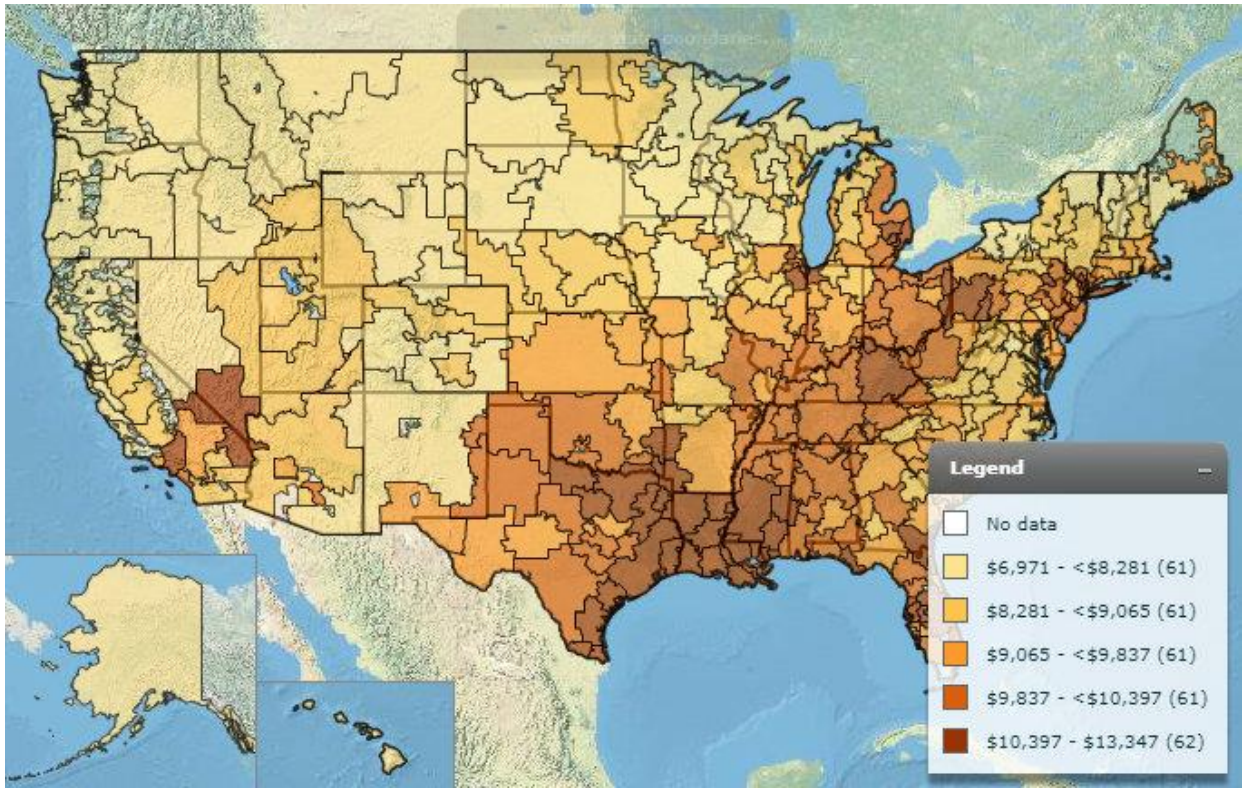
Life expectancy vs. health expenditure over time (1970-2014)

Our World in Data

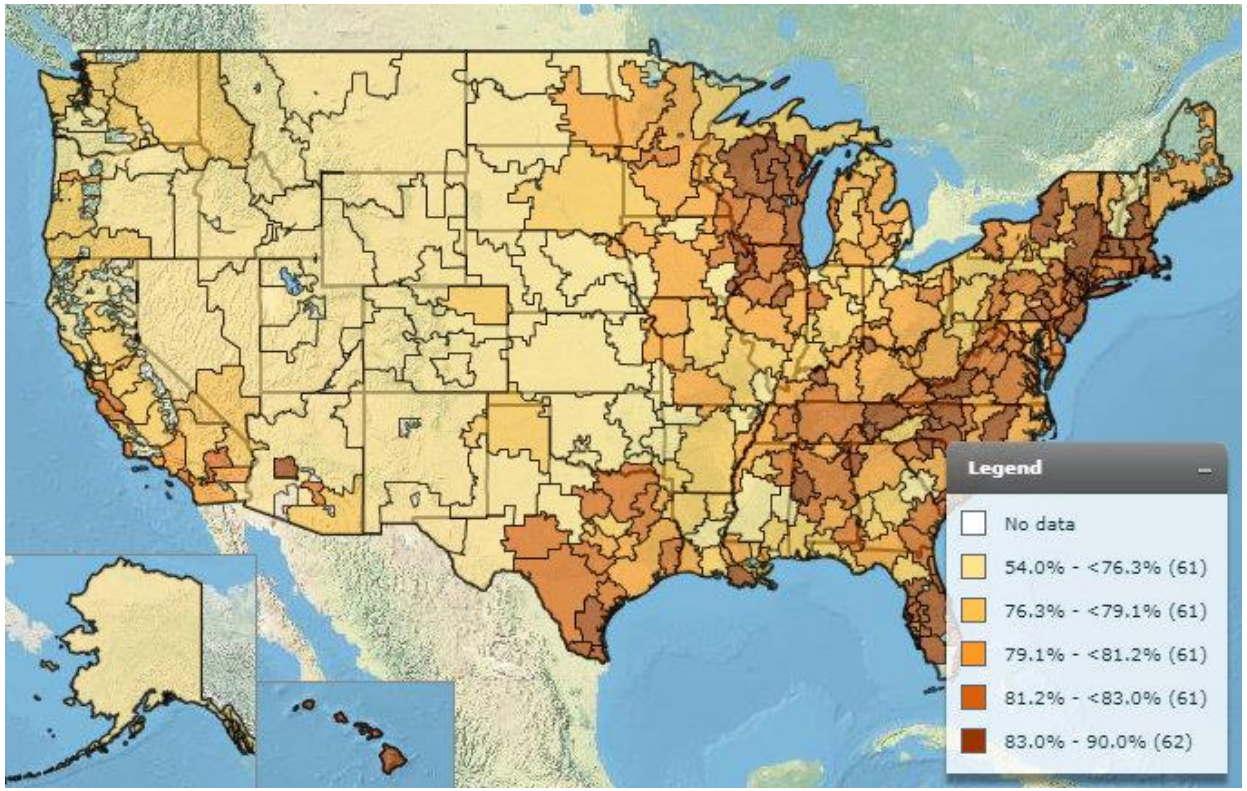
Health spending measures the consumption of health care goods and services, including personal health care (curative care, rehabilitative care, long-term care, ancillary services and medical goods) and collective services (prevention and public health services as well as health administration), but excluding spending on investments. Shown is total health expenditure (financed by public and private sources).



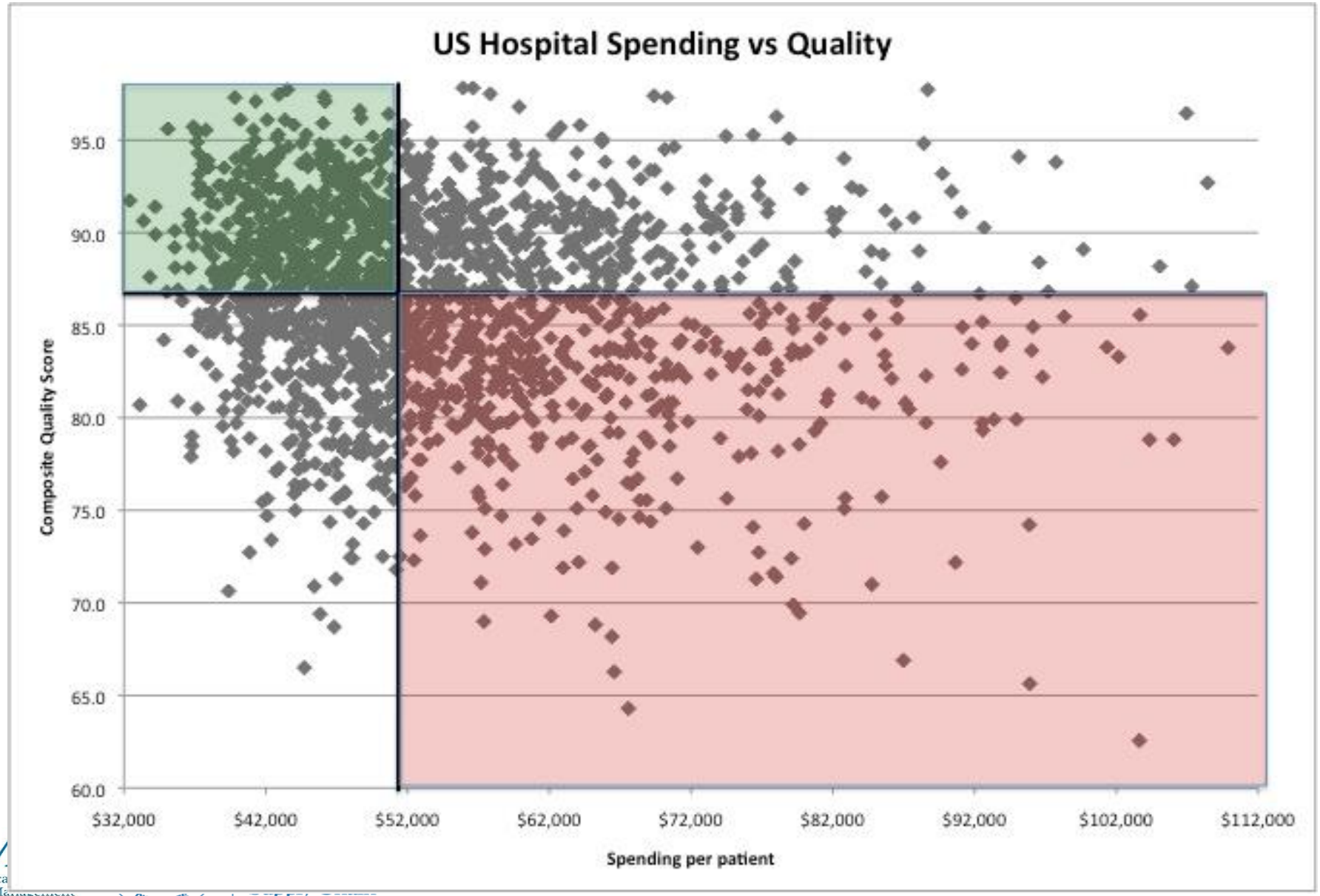
Data source: Health expenditure from the OECD; Life expectancy from the World Bank
The interactive data visualization is available at OurWorldinData.org. There you find the raw data and more visualizations on this topic.



Total Medicare Reimbursements per Enrollee, 2014



Percent of Diabetic Medicare Enrollees Receiving Appropriate Management, 2014



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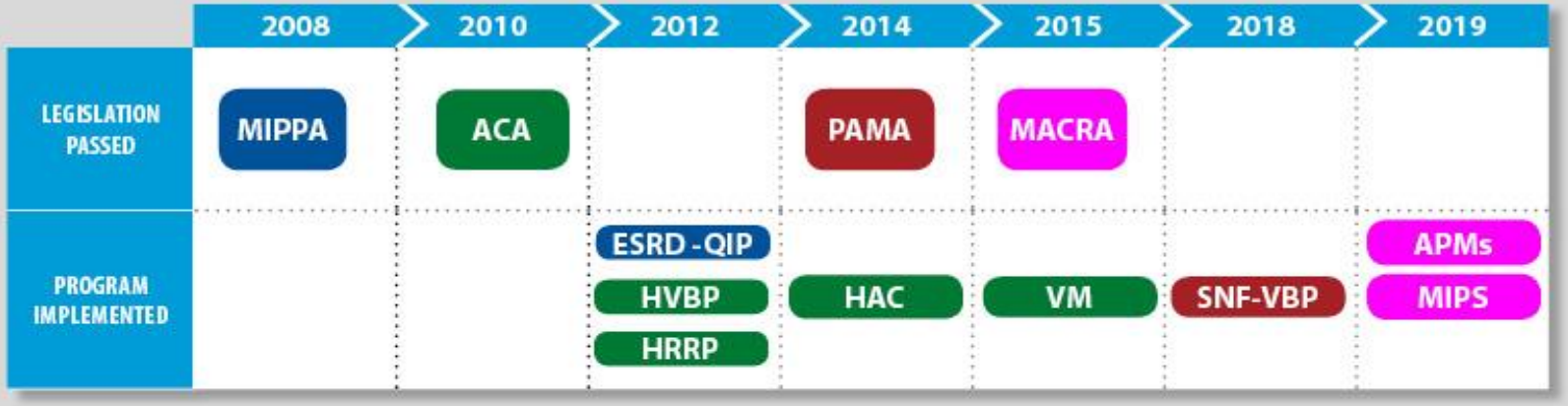
Medicinethink.com 2009

VALUE-BASED PROGRAMS



LEGISLATION

ACA: Affordable Care Act
MACRA: the Medicare Access & CHIP Reauthorization Act of 2015
MIPPA: Medicare Improvements for Patients & Providers Act
PAMA: Protecting Access to Medicare Act

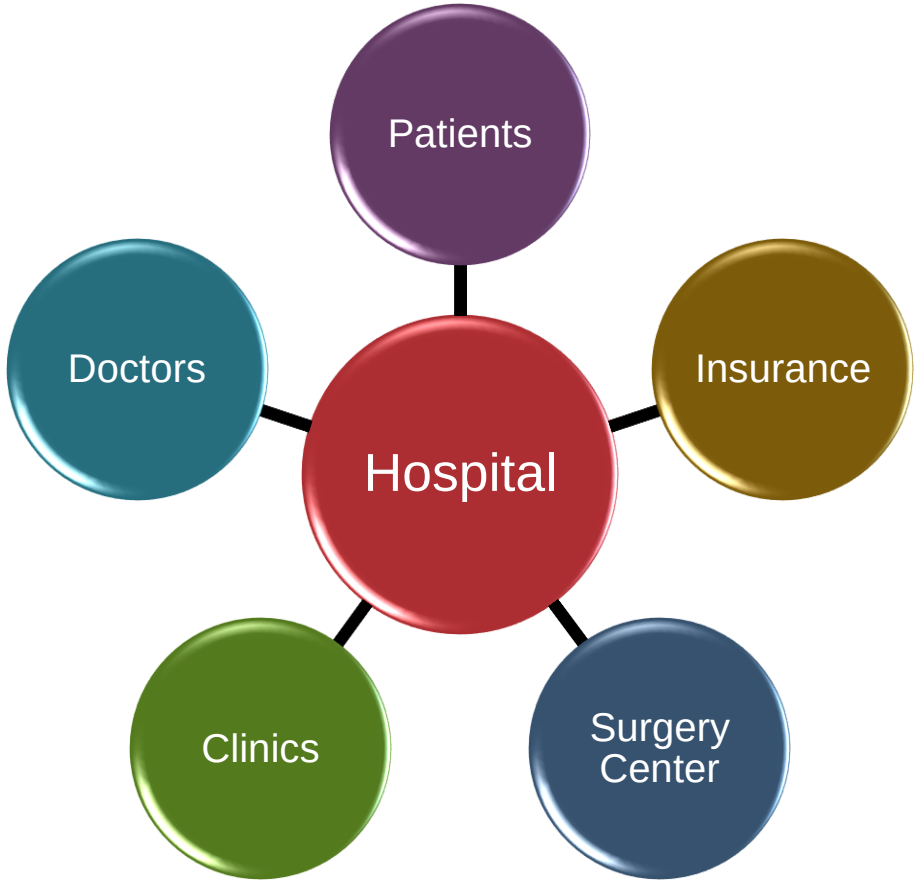
PROGRAM

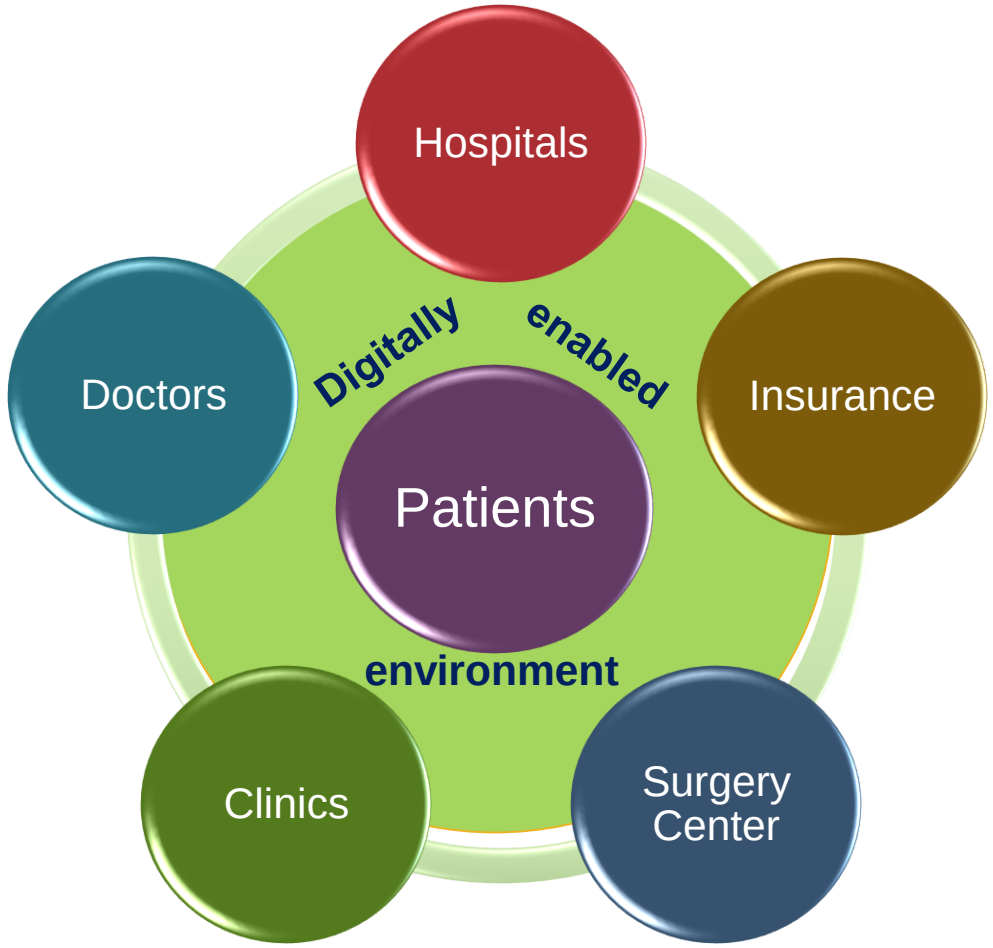
APMs: Alternative Payment Models
ESRD-QIP: End-Stage Renal Disease Quality Incentive Program
HACRP: Hospital-Acquired Condition Reduction Program
HRRP: Hospital Readmissions Reduction Program
HVBP: Hospital Value-Based Purchasing Program
MIPS: Merit-Based Incentive Payment System
VM: Value Modifier or Physician Value-Based Modifier (PVBM)
SNFVBP: Skilled Nursing Facility Value-Based Purchasing Program

CMS.gov

Patient-centered health system transformation

Traditional model: hospital as hub	New model: centered around patient experience





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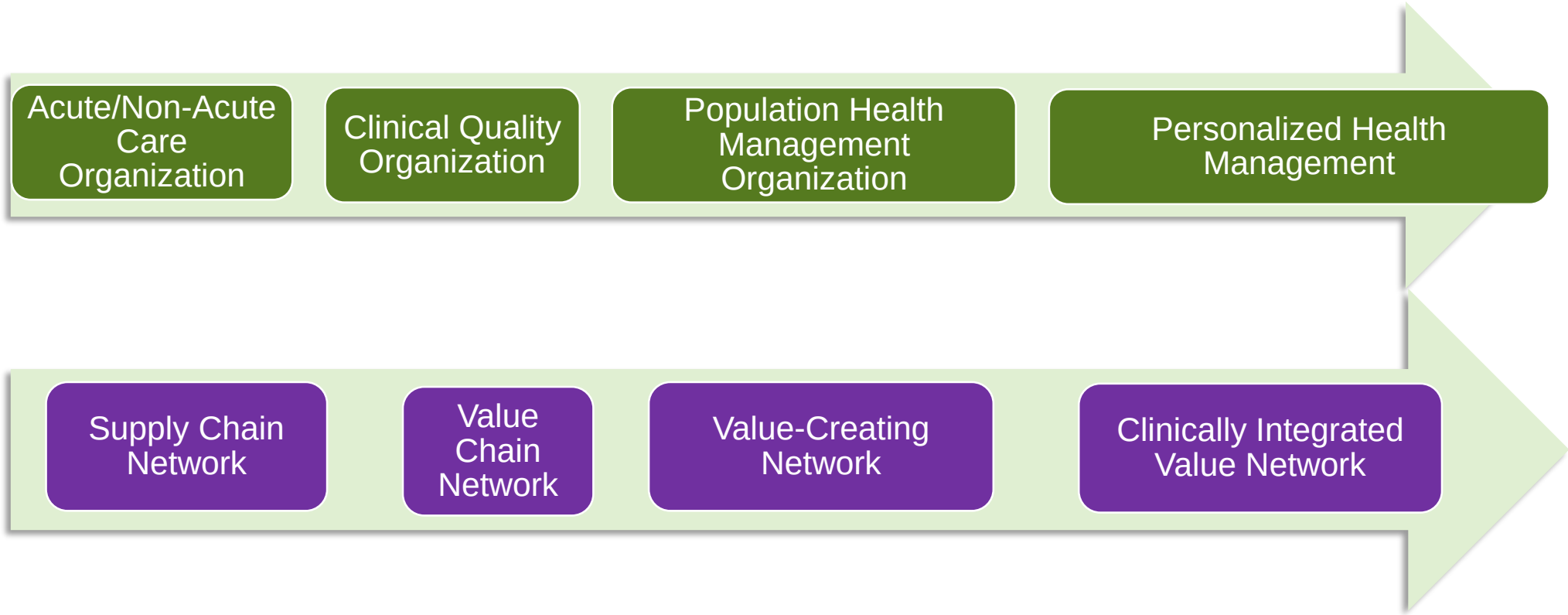
CQO: The Future of Healthcare Supply Chain

The Future of Health Care Supply Chain

The Evolution of Health Care



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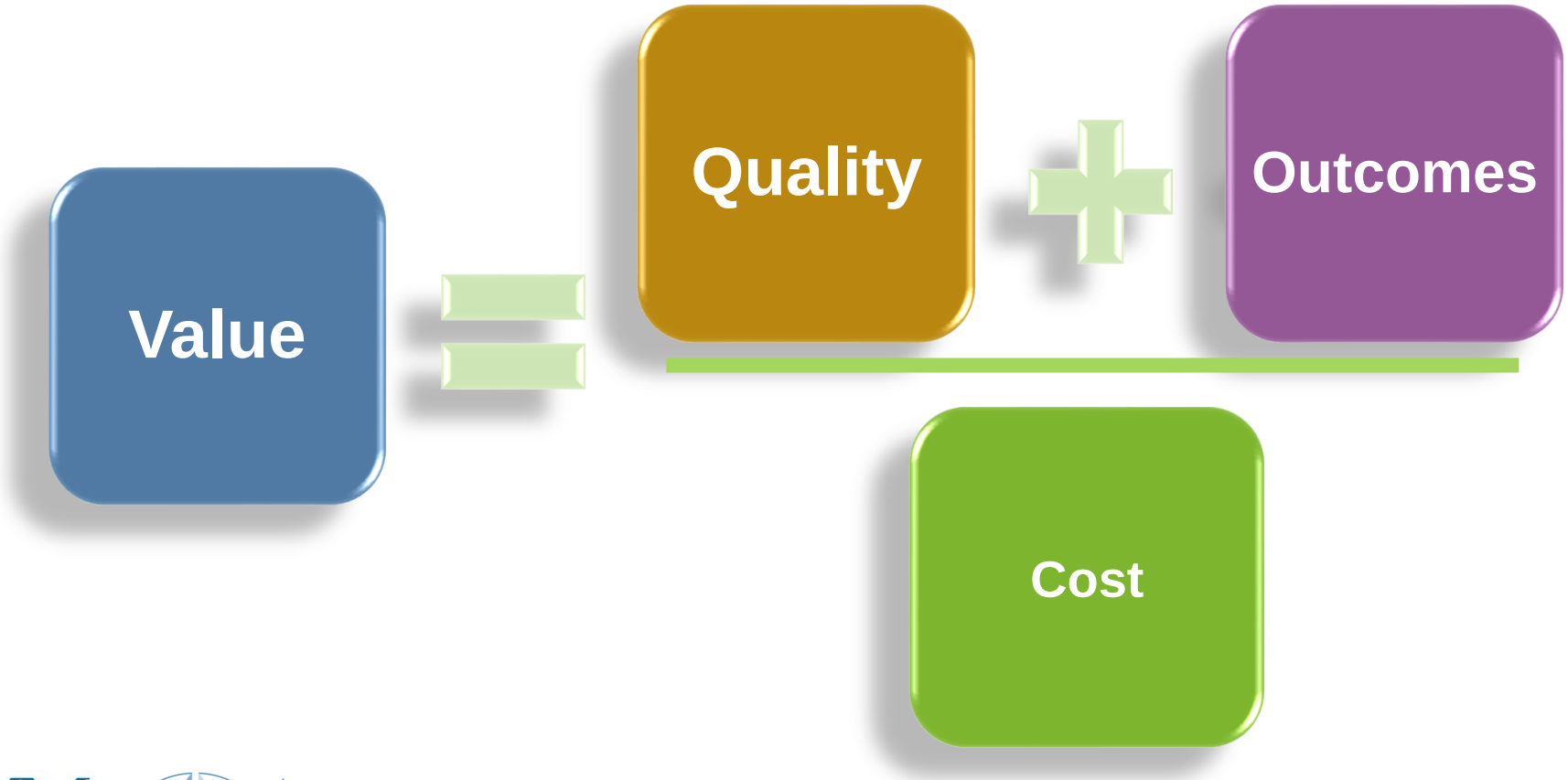
COST QUALITY OUTCOMES

CQO: The Future of Healthcare Supply Chain

The Cost, Quality, and Outcomes (CQO) Movement

- Holistic view of the correlation between **COST** (all costs associated with delivering patient care and supporting the care environment), *quality* (patient-centered care aimed at achieving the best possible clinical outcomes), and **outcomes** (financial reimbursement driven by outstanding clinical care at the appropriate costs) as *opposed to viewing each independently*.

Defining Value



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Components of Value:(Quality + Outcomes)/Cost

- Quality: "doing the right thing"
  - Preop antibiotics given within 1 hour of incision
  - Number of postop days before a urinary catheter was removed
  - Percentage of patients who received smoking cessation education

- Outcomes: "how things turned out"
  - Rate of surgical site infections
  - Urinary tract infection rate
  - Amount of pain medications used by the patient
  - Rate of unexpected readmissions

- Cost: Total cost of care
  - Supplies, lab, pharmacy, R&B, OR time, etc.
  - Must consider pre- and post-acute costs
  - What is the cost of quality?

Clinical Integration: a definition

Clinical integration with respect to healthcare supply chain is an interdisciplinary partnership to deliver patient care with the highest value (high quality, best outcomes, and minimal waste resulting in the lowest total cost of care); this is achieved through assimilation and coordination of clinical and supply chain knowledge, data, and leadership across the care continuum to deliver care that is safe, timely, evidence-based, efficient, equitable and patient-focused.

Value Strategy 2.0:
a clinically integrated approach

- Focus on quality and outcomes data
- Episode-based total cost across the continuum
- Separate cost drivers into clinical buckets
- Local accountability
- Quality leads to cost reduction

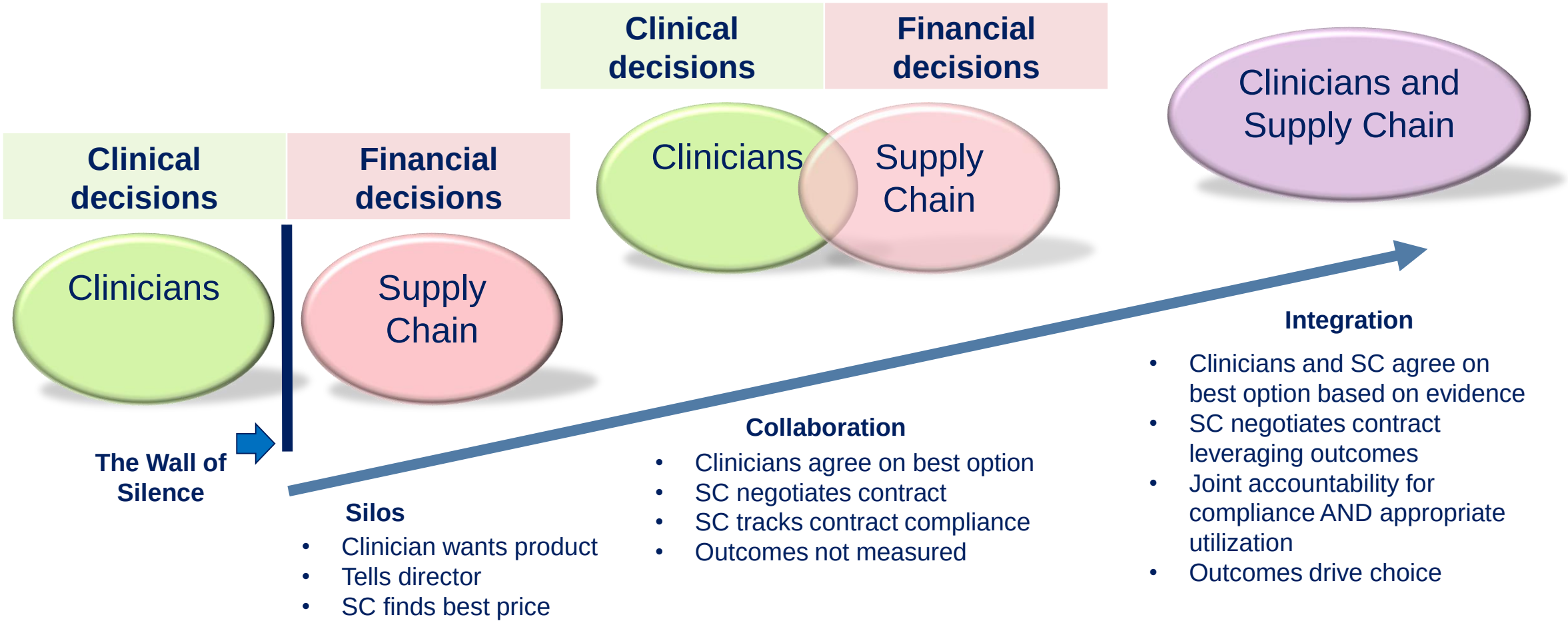
Clinical integration primarily supports a quality improvement strategy, not a cost reduction strategy.

i.e. CI is a health care solution, not a supply chain solution

"Most of what you do in your life is better today and less expensive because we have figured out a better way to do it. The same applies in healthcare."

Donald Berwick, MD, Former CMS Administrator

What it could look like…



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CQO: The Future of Healthcare Supply Chain

Is it possible?...

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Clinical Integration: Why? (or why not?)

Pros/drivers

- Aligned with value-based payment models (MACRA, APMs, BPCI, etc.)
- Sets quality as a financial metric
- “Workaround” substitute for physician employment
- Joint risk sharing for contracting
- Accepts accountability for population health

Cons/challenges

- Misconception that supply chain’s role is (or should be) purely transactional
- Lack of quality and outcomes evidence
- Cultural barriers
- Stakeholders not clear on the concept
- Traditional misalignment between hospitals and physicians

Measuring Clinical Integration for Value

- What metrics do we need to measure?
- Where do we get the data?
- Who owns the data?
- Who are the key stakeholders?
- How should the data be used?

Key Data Stakeholders

- Patients
- Physicians
- Administrators
- Payers
- Suppliers
- Finance
- Information Services
- Data analytics strategists (?)

Sources of Data

- Quality:
  - EHR
  - Registries
- Outcomes:
  - EHR
  - Registries
  - Patients
- Cost (total):
  - Claims?
  - ABC?
  - All costs within global (bundled) period?

Using Data Effectively

Good	Bad (or not so good)
Identify quality improvement opportunities	Point out outliers
Physician credentialing	Physician credentialing
Improve earnings	Cost shifting
Patient education	Selective transparency
Organize teams and set goals	Identify good and bad performers
Set the burning platform	Prove a point

Physician-Aligned Clinical Integration Strategy

- Focus on quality and outcomes data
- Episode-based total cost across the continuum
- Separate cost drivers into clinical buckets
- Local accountability
- Quality leads to cost reduction

Where Physician Leadership is Needed in Supply Chain

- Standardize vendor selection
- Contract compliance
- Savings within contracts
- Appropriate utilization
- Appropriate care
- New product value assessment

Leadership vs. Engagement

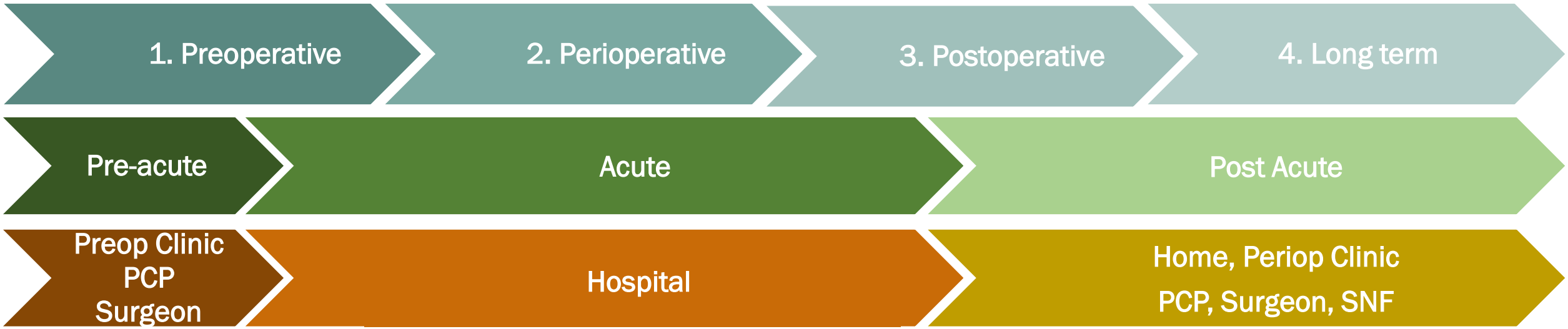
- Strategic vs. transactional
- All-in vs. As-needed
- Aligned vs. Collaboration

Examples

"Engagement"	"Leadership"	How
SC asks physicians to help negotiate for lower cost	Physicians and SC dyad have joint accountability for better outcomes and lower cost	Shared goals Bundled payment Gain sharing Quality-based incentives Service-line medical leaders
SC asks physicians to use a lower-priced alternative	Physicians and SC jointly oversee total cost of care reduction	Cross-continuum financials Single source of data (e.g. EHR) EHR and ERP marriage
SC convenes physician SMEs for "clinical value analysis"	Physicians and SC jointly set clinical strategies and appropriate utilization	Local decision rights Medical staff buy-in Data transparency
SC identifies high-volume physician to serve as champion	Physicians and SC jointly exert influence at appropriate levels with all physicians	Culture reset Data transparency Fearless executive leadership

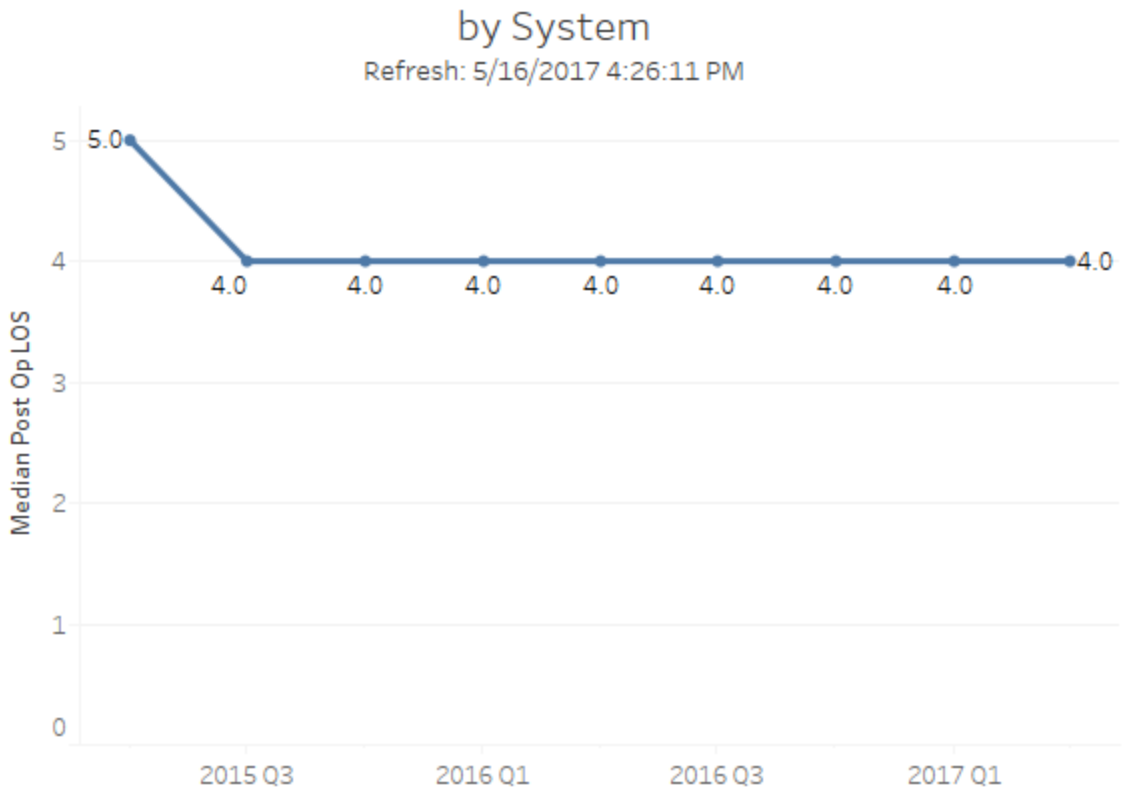
CI example:
Adding Value to Clinical Initiatives With Data

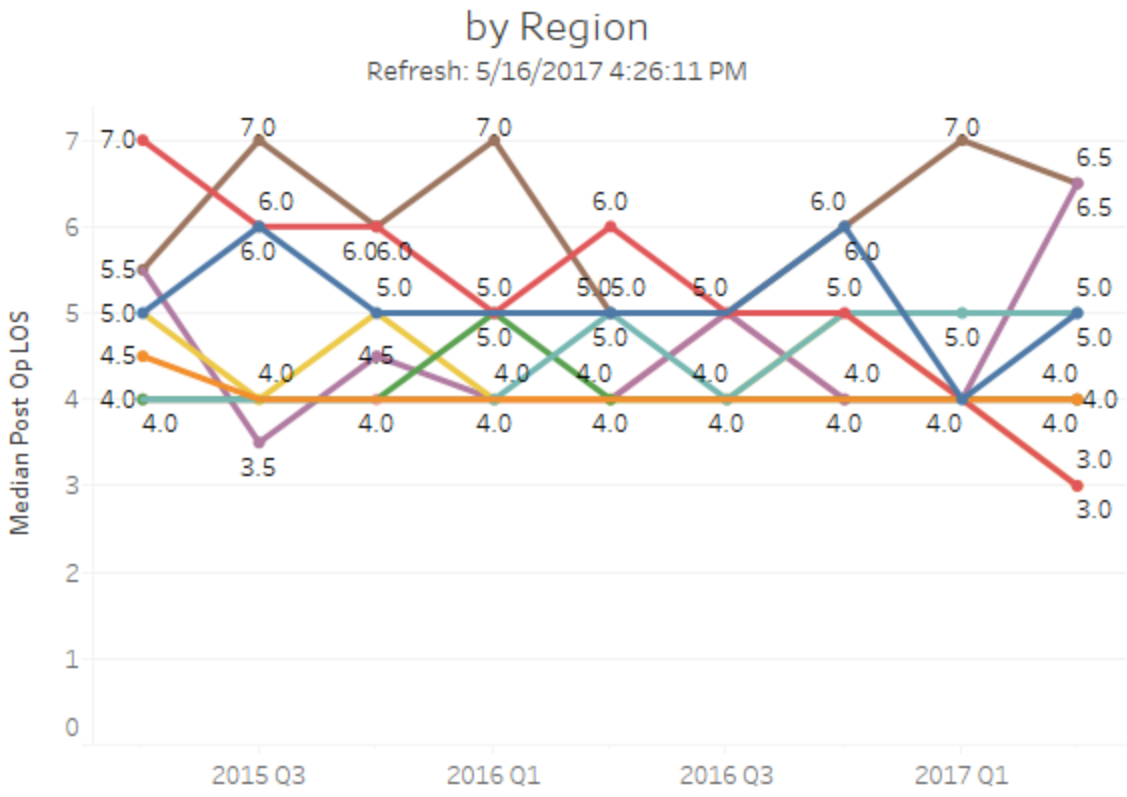
The Enhanced Recovery Elements (partial list)



Preoperative	Perioperative	Postoperative	Long term
Planning	Normothermia	Pain management	Follow up
Education: patient and family	Glucose management	Activity	Rehabilitation
Risk assessments	Fluid management	Diet	Wellness maintenance
Optimization/Prehabilitation	Pain management	PONV management	
Glucose/pain/abx	Abx	Infection prevention	
	VTE Prevention	VTE Prevention	

Colorectal Surgeries Median Post Op LOS





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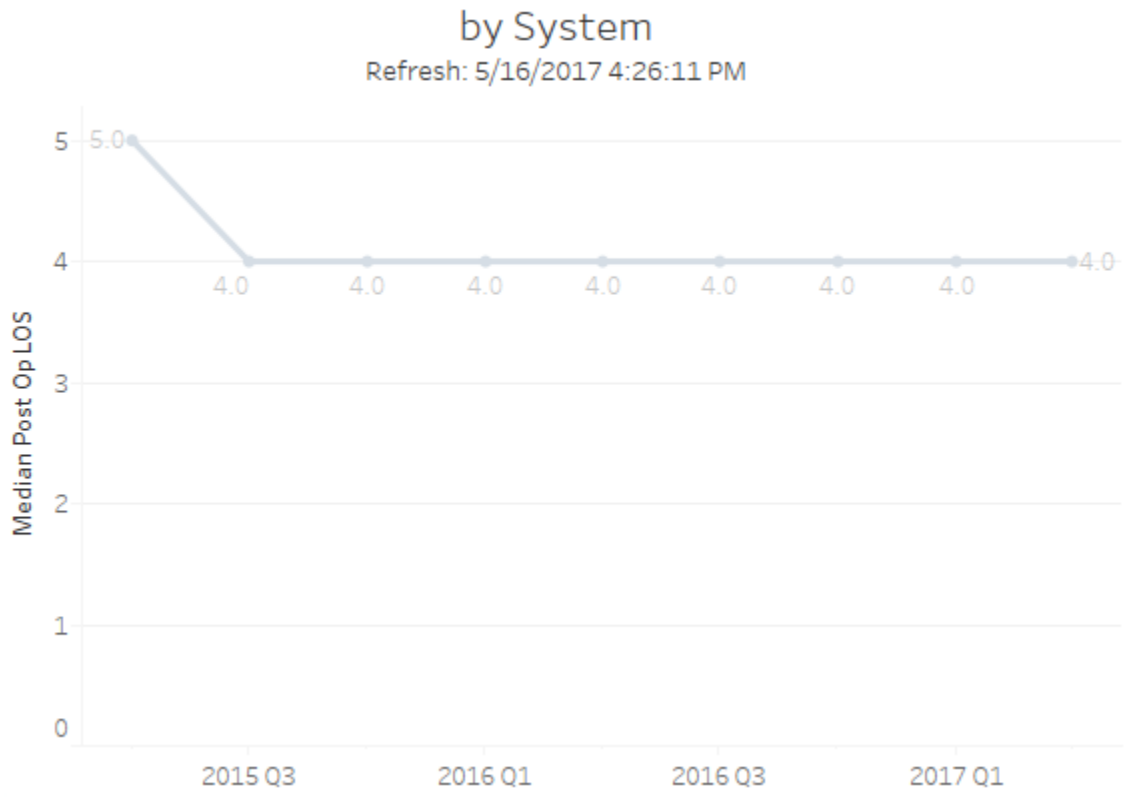
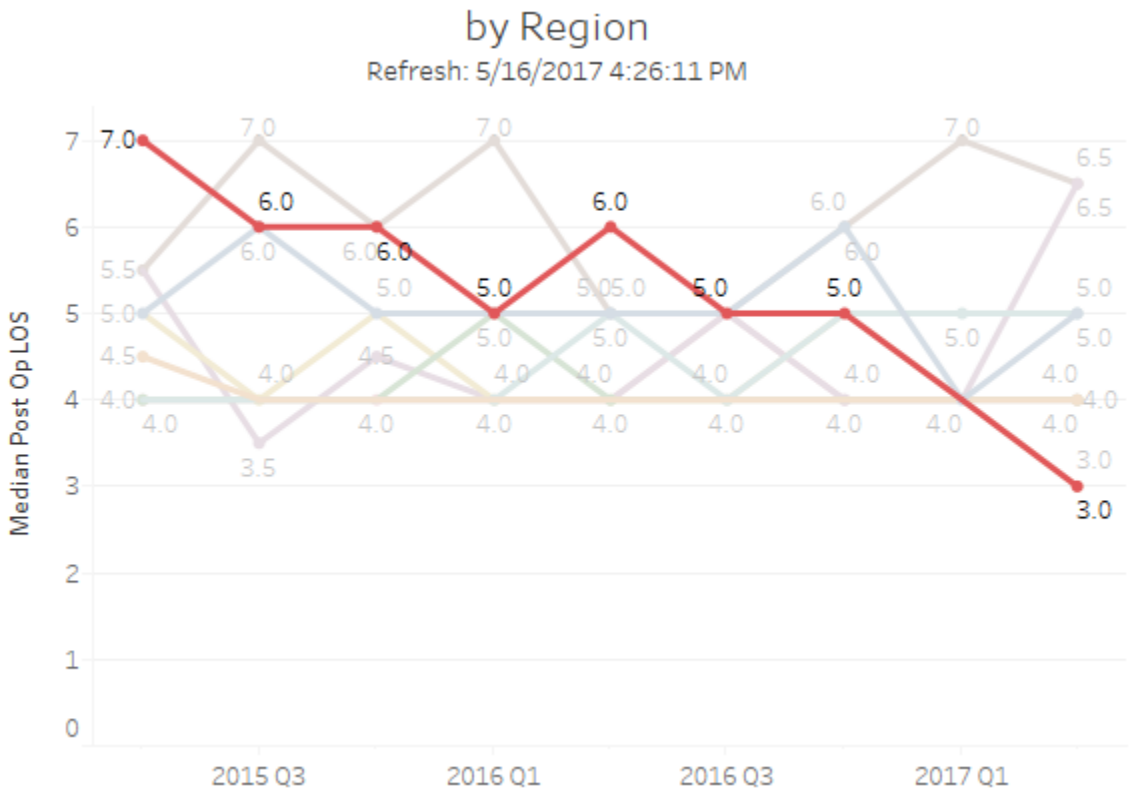
Colorectal Surgeries Median Post Op LOS: with ERAS





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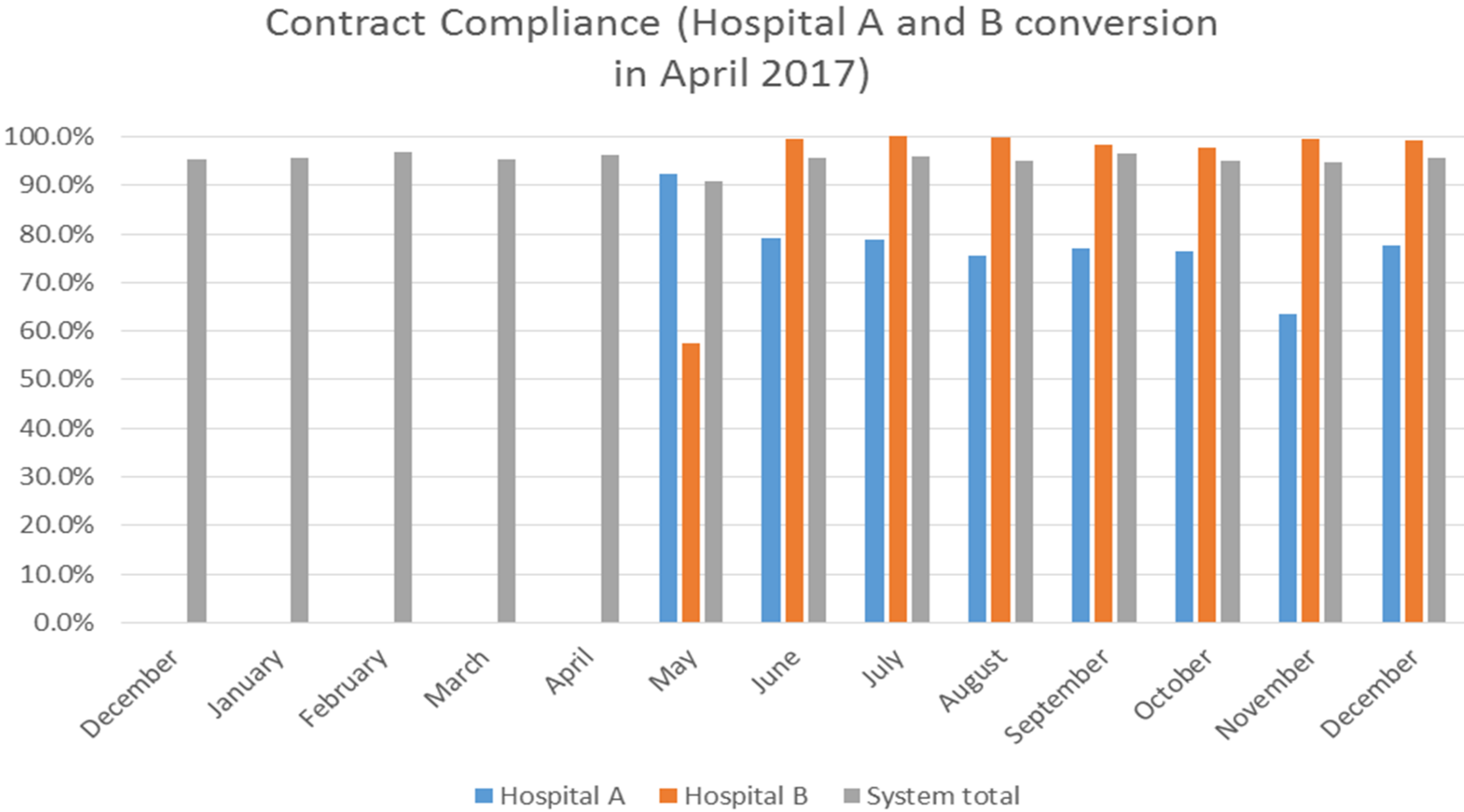
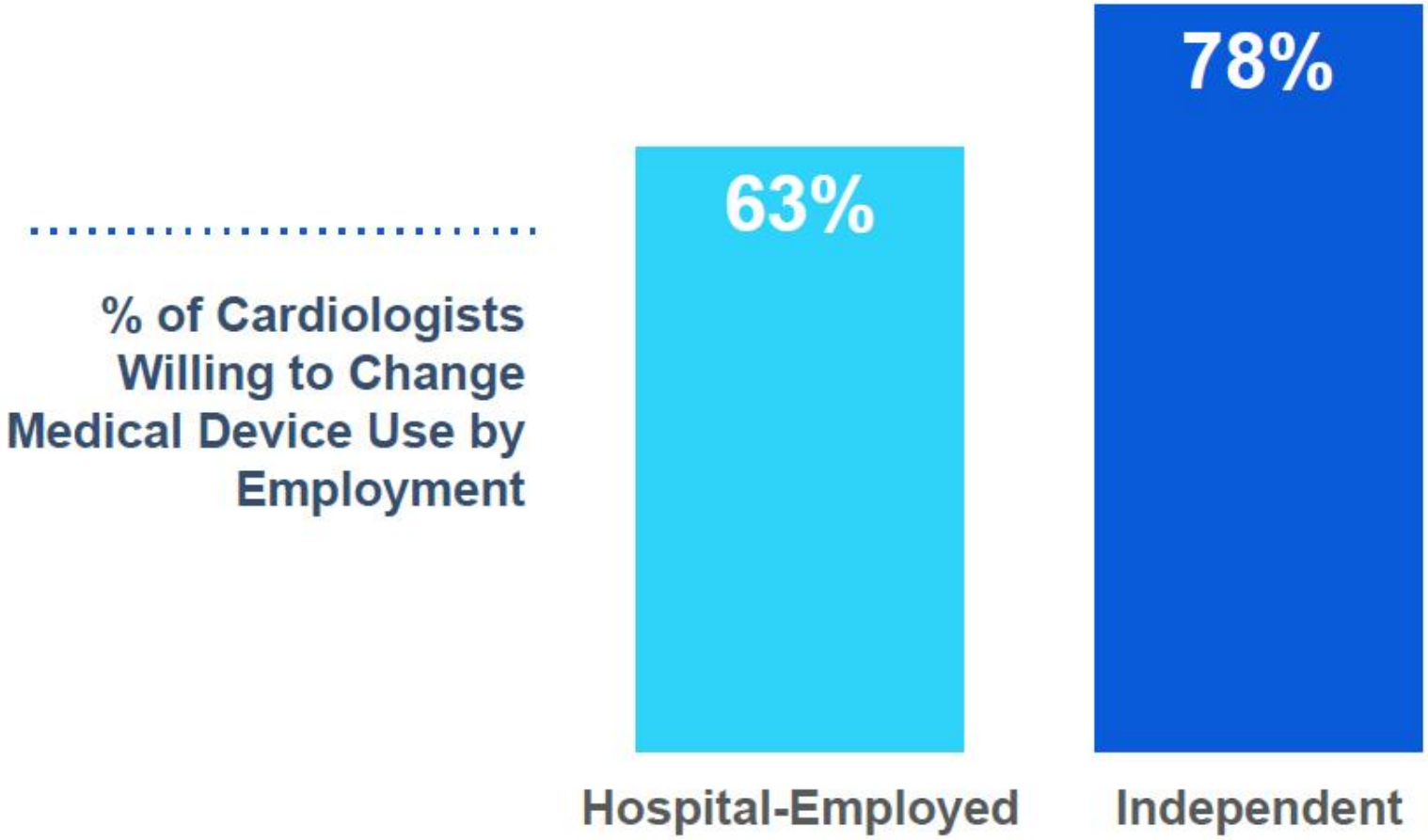
GQO: The Future of Healthcare Supply Chain


Contract Compliance (Hospital A and B conversion in April 2017)
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
December
January
February
March
April
May
June
July
August
September
October
November
December
Hospital A
Hospital B
System total

No Effect on Outcomes After Product Conversion

	Hosp A		Hosp B		System	
	Index period	Post conv	Index period	Post conv	Index period	Post conv
Case volume	52	56	65	64	1456	1368
Reoperation	5.8%	0.0%	6.2%	1.6%	5.4%	3.4%
Mortality	0.0%	0.0%	0.0%	1.6%	0.5%	0.4%
Deep abscess	7.7%	1.8%	6.2%	3.1%	5.6%	4.2%
LOS (Median days)	4.1	3.4	4.2	3.8	4.2	4.0

Hospital Employment does not necessarily lead to engagement or willingness to change



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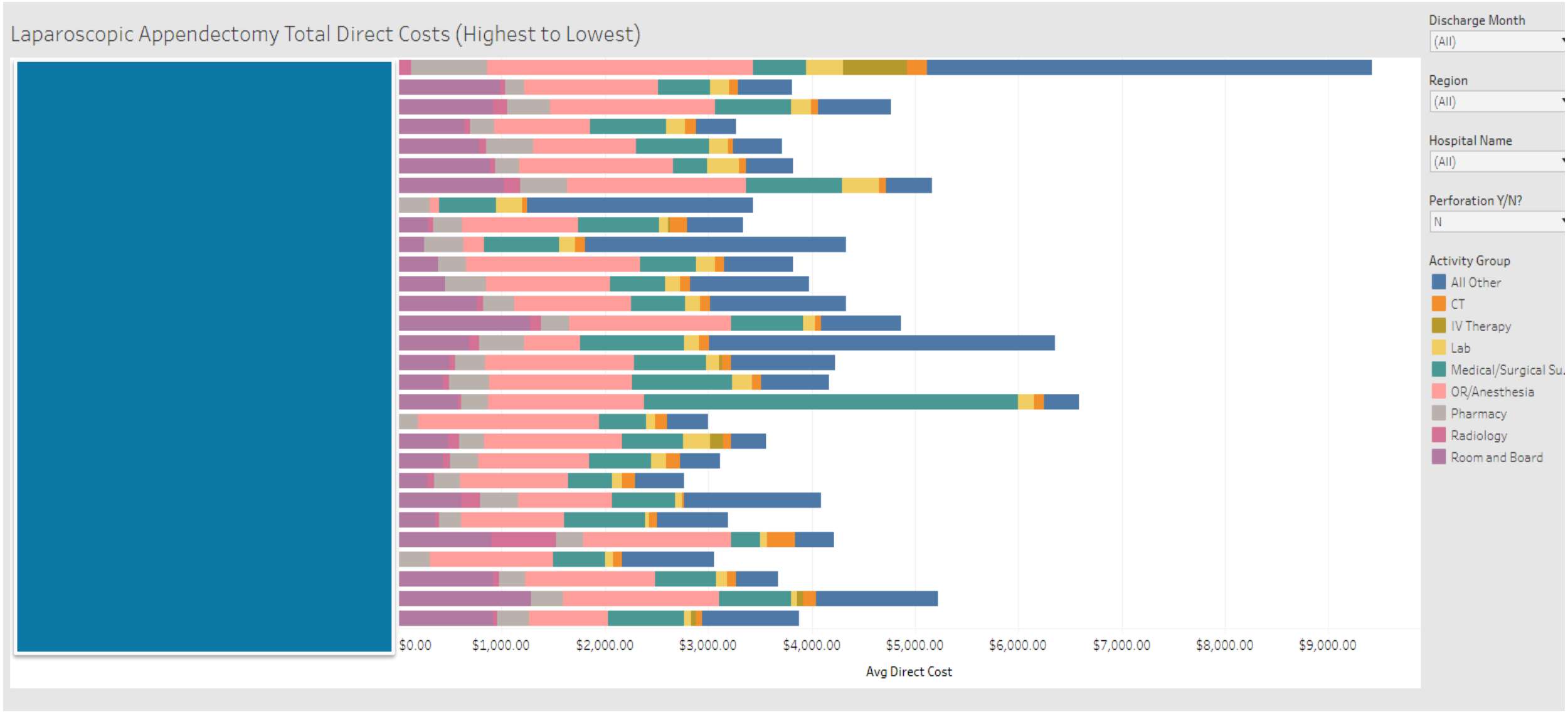
Source: 2011 McKinsey Physician Survey.

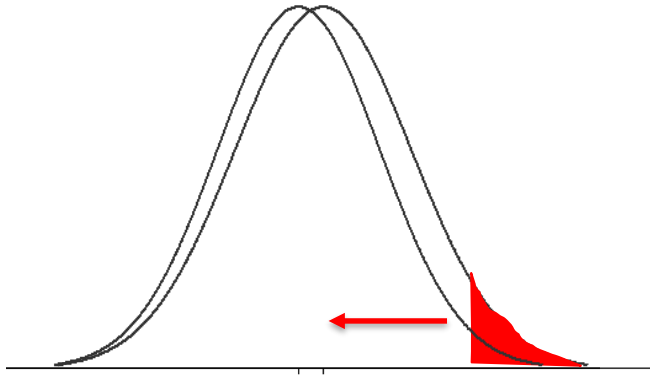
Total Cost of Care Model

Variation in average direct cost of lap appendectomies by hospital

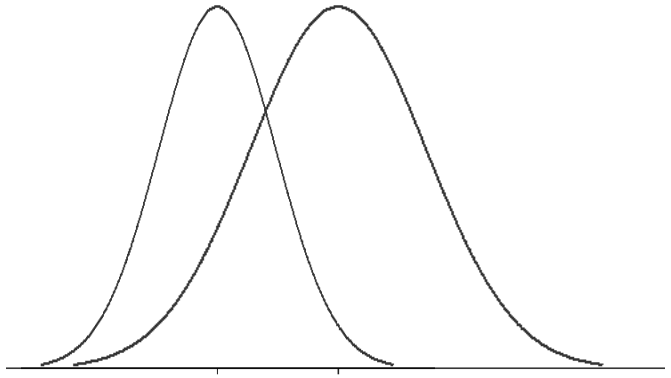


CI example:
Physician data analytics

Targeting outliers versus all physicians



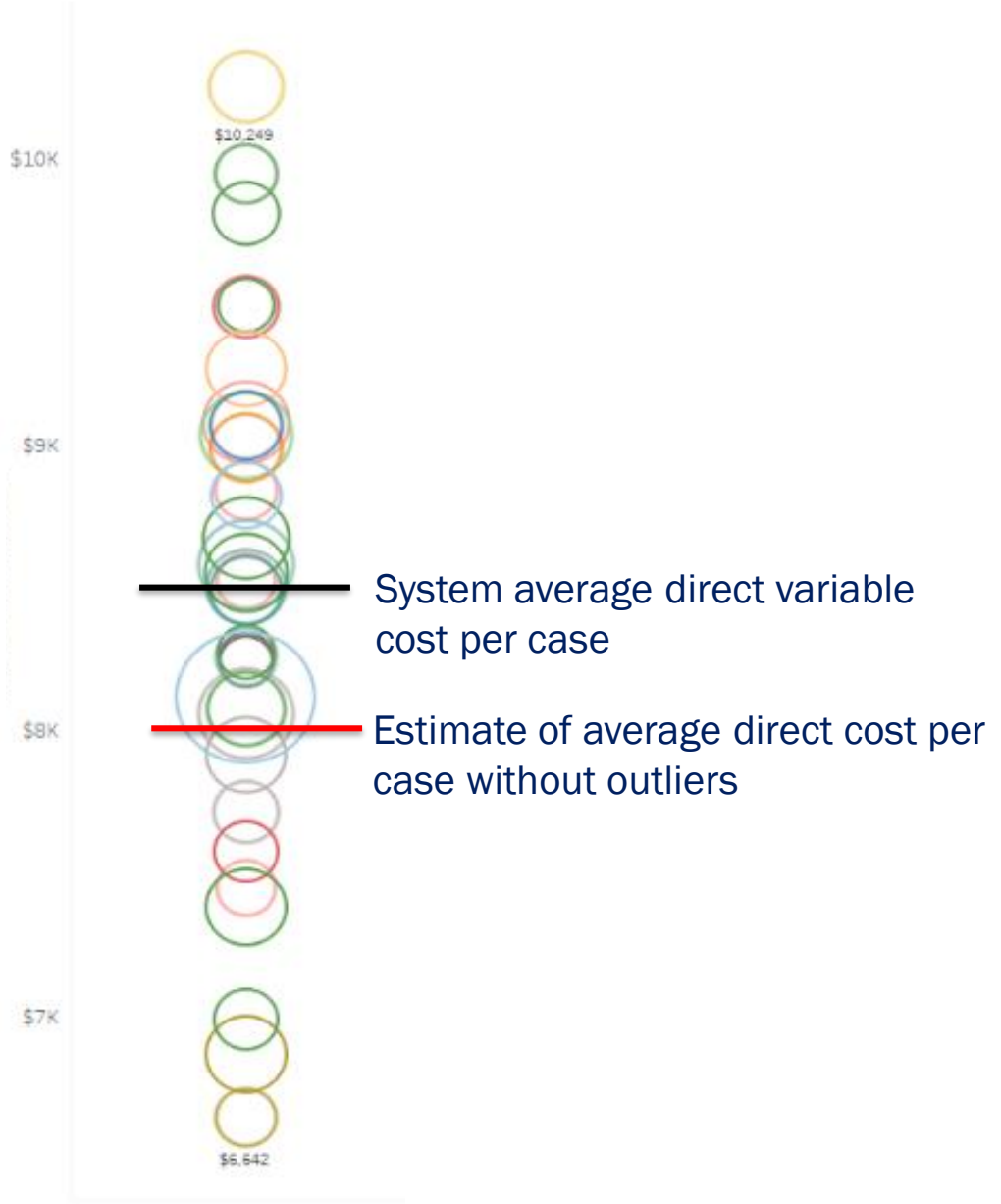
Outlier reduction

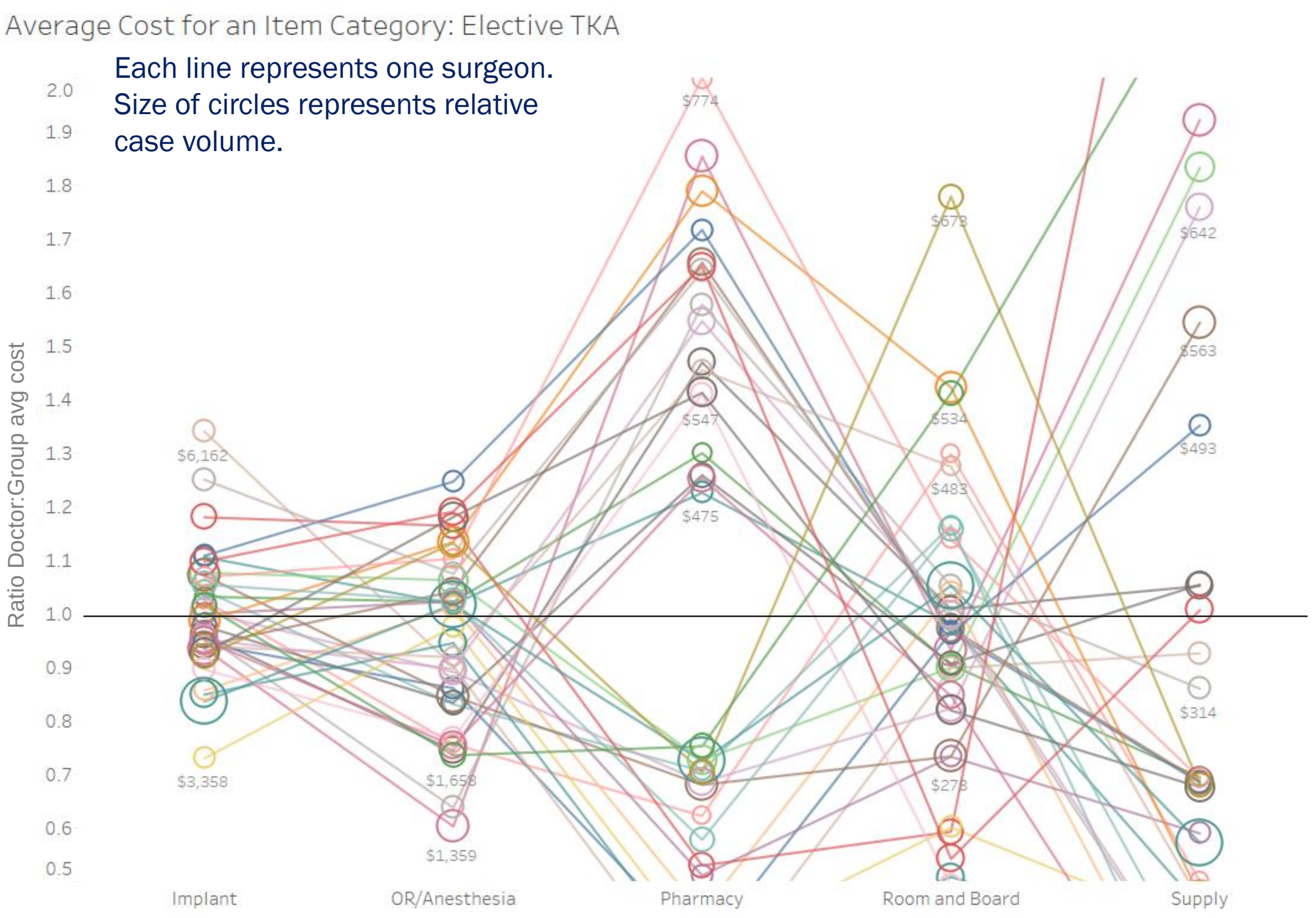


Total cost reduction

Typical cost outlier analysis example

Average total direct variable cost
Primary unilateral total knee replacement
for surgeons with >75 cases per year
(size of circle reflects relative case volume)

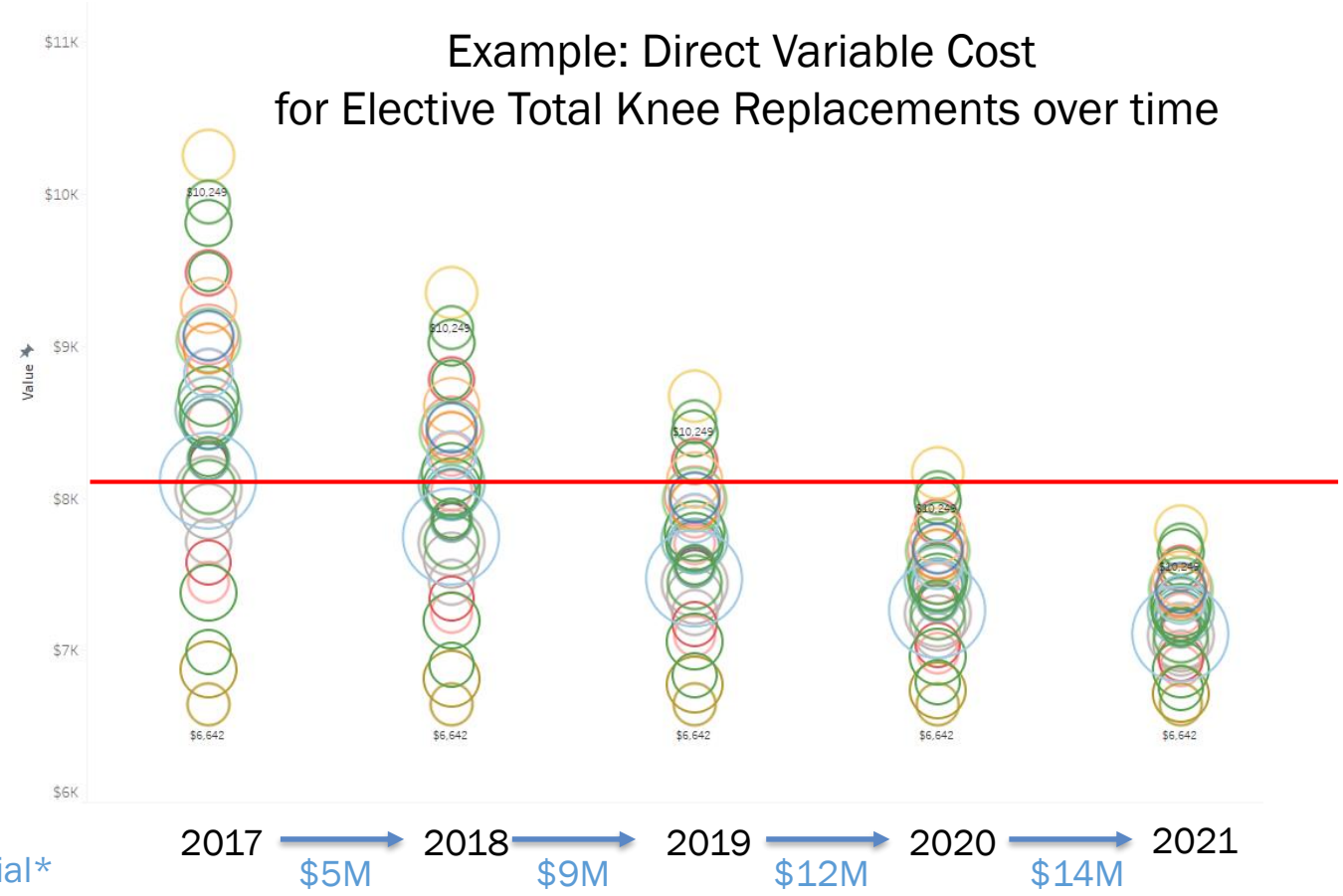



Average Cost for an Item Category: Elective TKA
Each line represents one surgeon.
Size of circles represents relative case volume.
Ratio Doctor:Group avg cost
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
$6,162
$3,358
$1,658
$1,359
$774
$547
$475
$673
$534
$483
$278
$642
$563
$493
$314
Implant
OR/Anesthesia
Pharmacy
Room and Board
Supply

Driving sustained margin improvement over time

At right:

Average cost per case distribution if each provider moved 25% closer to the most cost-effective practice each year



Cost Overview - OSM

Select what to display:

Level of Detail
Provider

Cost Type
Normalized Cost

Cost Bucket
Supply

Outcome
VOA Composite

Data Filters:

Surgery Type
Knee

MSDRG
All

Fracture
All

Year
Last 4 quarters

Region
(All)

Ministry
(All)

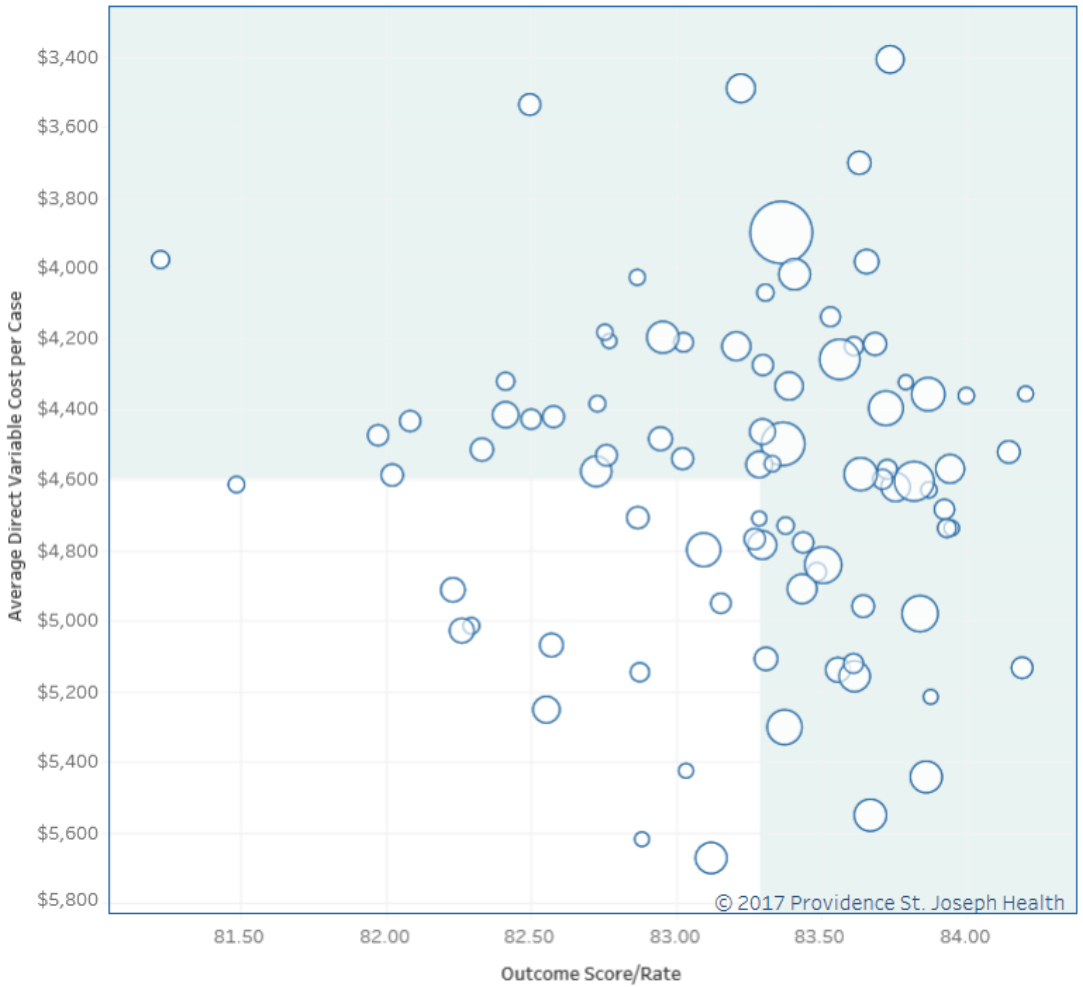
Provider Name
(All)

Min. Number of Cases
30

Max. Number of Cases

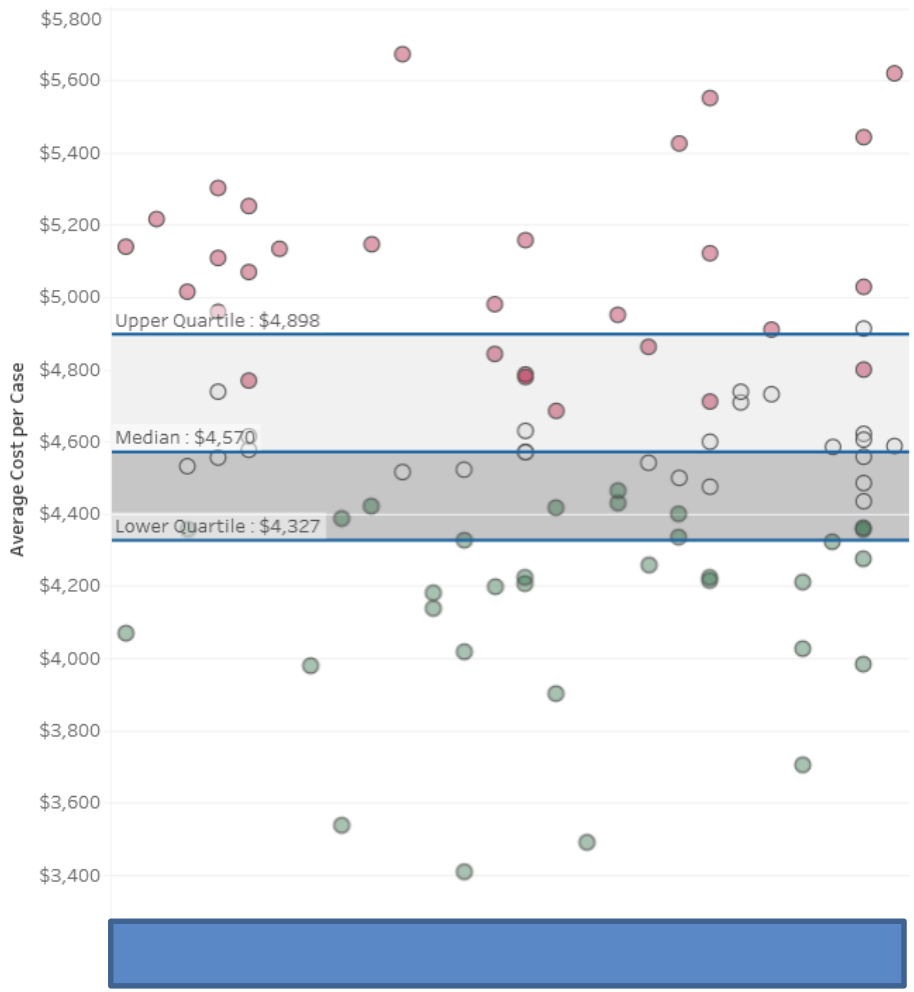
Value Plot

VOA Composite & Normalized Cost of Supply by Provider



Cost Plot

Normalized Cost of Supply by Provider



A Few Words About Hospitals vs. Systems

Hidden misalignments

Hospitals

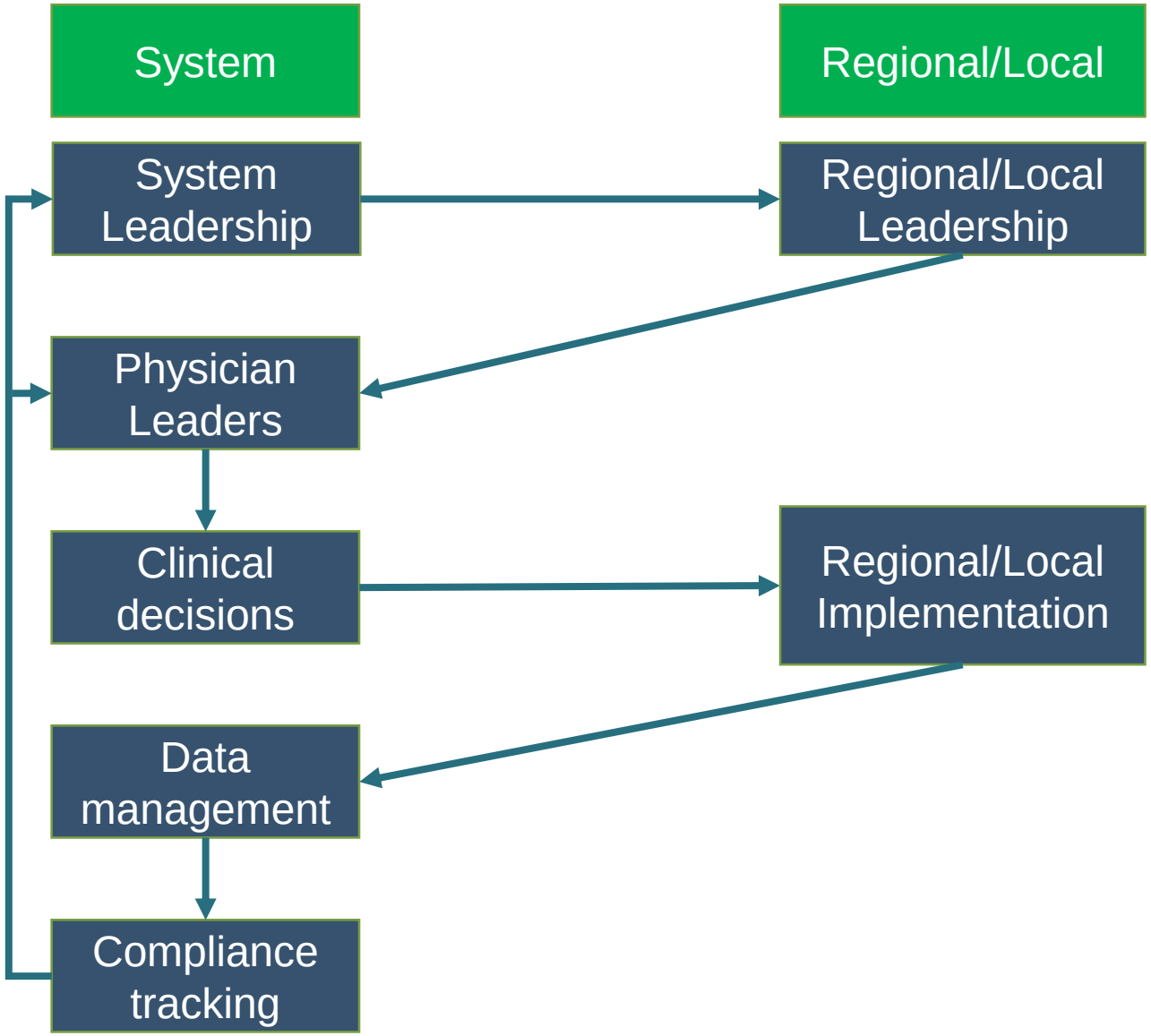
- Grow service lines (beat the competition)
- Want surgeons with high productivity
- Volume-driven operations model (for now)
- Try to lower complications

Systems

- Look for cost-cutting opportunities (leverage size, economies of scale)
- Want surgeons who are efficient
- Value-driven operations model
- Try to lower complication rates

Challenge

- Finding a physician leader whom both the hospital and system can trust and align with their goals and priorities
- Much easier if the hospital and system can first define aligned goals and strategies



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Summary for CQO success with CI

- Driving forces
- Clinically relevant data
- Physician-led data analytics
- Data architecture
- Unified CQO
- Joint accountability

What is AHRMM Doing Now

- CQO Summit
  - Held during the AHRMM Annual Conference
  - Forum for Healthcare Executives to come together and discuss the emerging healthcare landscape and explore collaboration opportunities
- Gathering CQO Case Studies
- Providing education in multiple formats
- Created a Clinical Integration Task Force
  - Defining Clinical Integration
  - Creating partnerships with clinical organizations

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Thank you

Contact me at:

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Appendix

Summary for CQO success with CI

- Understand the forces driving the need for Clinical Integration will help you define the right goals
- Start with data that is reliable and accurate, AND meaningful (i.e. clinically relevant)
- Physician leadership driving clinically oriented data analytics strategy
- Data architecture that can be drilled down to physician level and individual cost drivers
- Unified CQO approach to prevent isolating individuals as outliers, segregating “right” from “wrong”, and missing significant opportunities for cost savings and quality improvement.
- Joint accountability for cost, quality and outcomes

Every hospital should follow every patient it treats, long enough to determine whether or not the treatment has been successful, and then to inquire, "if not, why not" with a view to preventing similar failures in future.

Ernest A. Codman, MD

1912