The CEOs Role in Reducing Variation & Improving Quality

Becker's Annual Meeting
Jeremy Fotheringham, RN, MHSA, JD
Twitter @jmfother

Disclosures:

- None (sadly)

MU Health Care Overview

UNIVERSITY HOSPITAL

MISSOURI ORTHOPAEDIC INSTITUTE

ELLIS FISCHEL CANCER CENTER

WOMEN'S AND CHILDREN'S HOSPITAL

MISSOURI PSYCHIATRIC CENTER

AMBULATORY SERVICES (50+ CLINICS)

www.MUHealth.org • Facebook/MUHealthCare • Twitter.com/MUHealth • Instagram.com/MUHealth

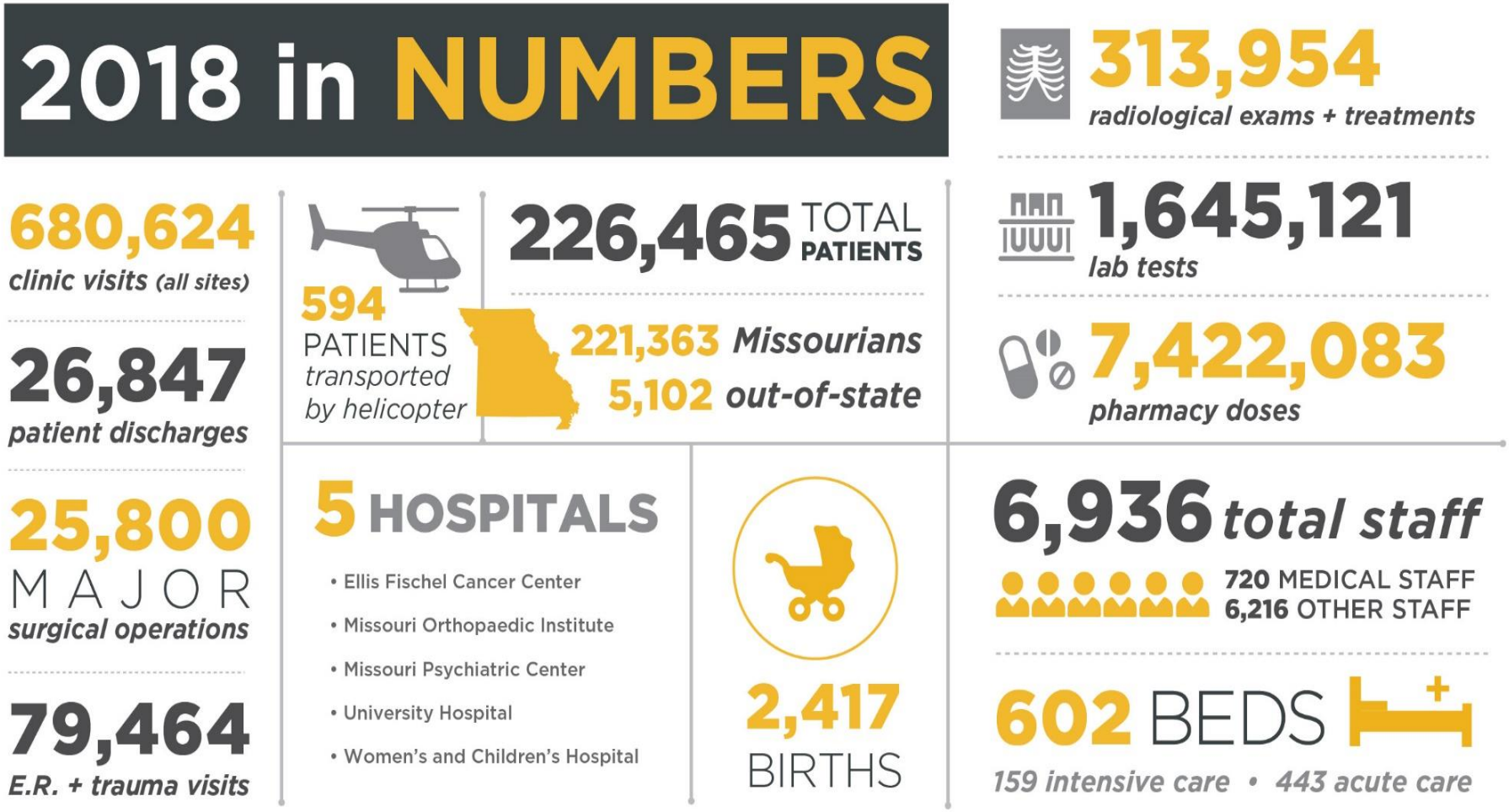
MISSION

To save and improve lives.

VISION

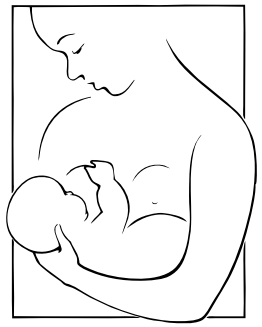
We will be Missouri's premier academic health system.

MU Health Care By The Numbers



*Based on FY 2018 statistics (July 1, 2017-June 30, 2018).

Designations



MU Women's and Children's Hospital
Baby-Friendly Designation

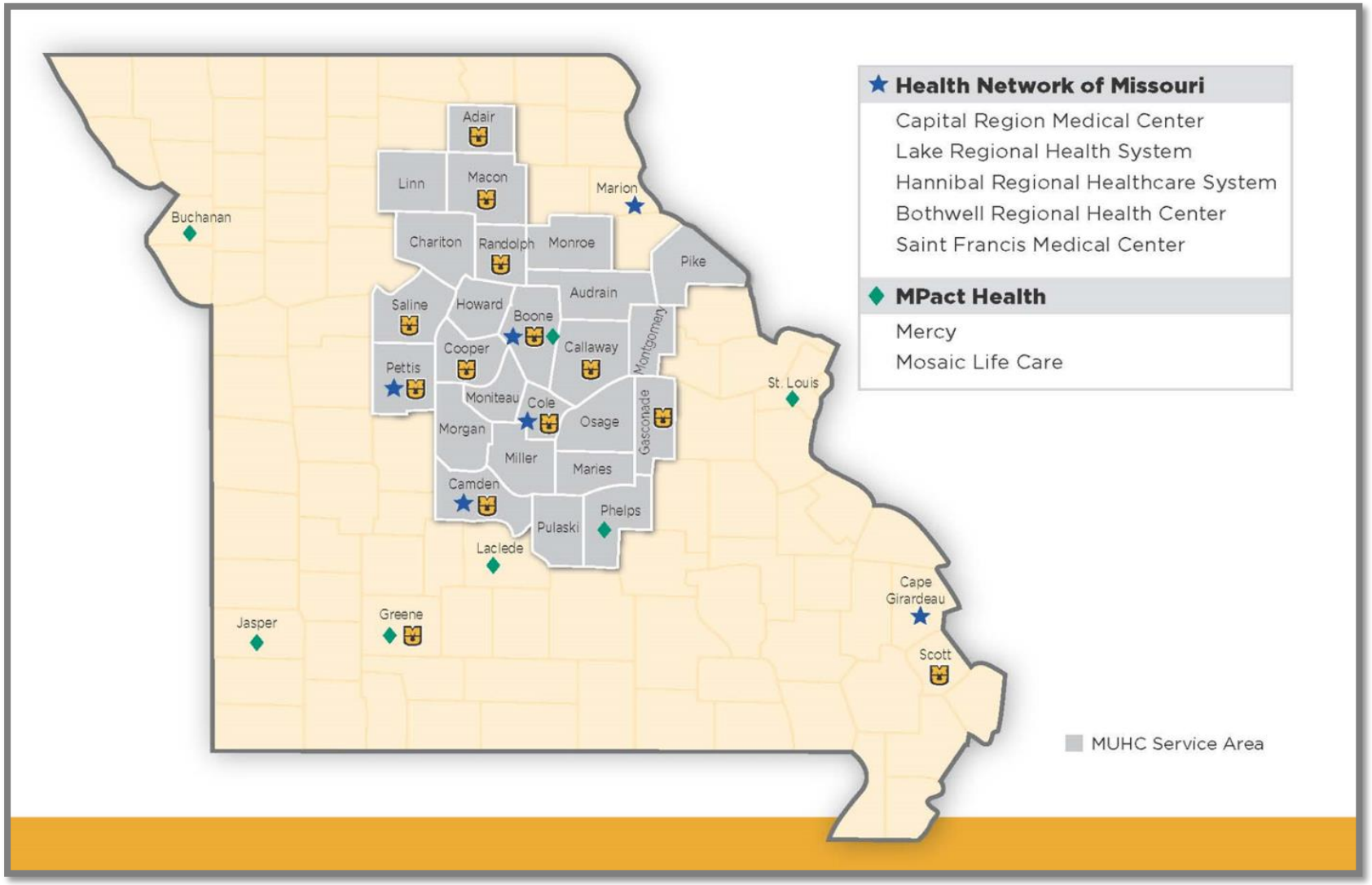
HIMSS Davies Award
NICHOLAS E. DAVIES

Level I
STEMI Center
Stroke Center
Trauma Center

Missouri DHSS
Department of Health and Senior Services

HealthCare's most wired

Health Network of Missouri and MPact



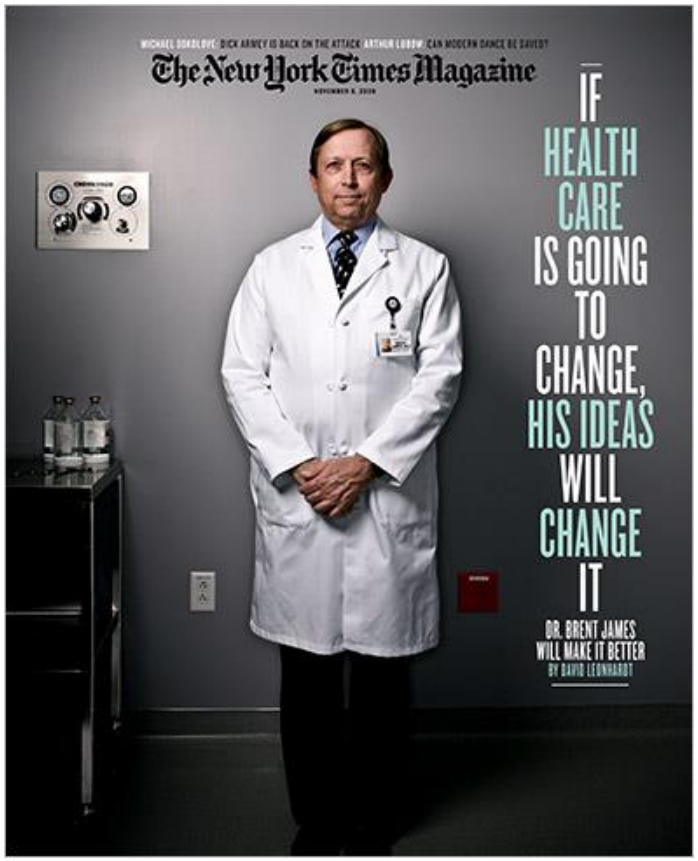
Where I Am From:

A Little Inspiration From Chicago:

5 Principles for Success

1. Define the “Why” & Awareness of Need
2. Identify Greatest Areas of Impact-Short & Long-Term
3. Resource & Build Infrastructure to Change Performance
4. Build Transparency & Trust
5. Lead & De-Centralize Ownership

A Pioneer In His Field



- https://static.healthcare.siemens.com/siemens_hwem-hwem_ssxa_websites-context-root/wcm/idc/groups/public/@global/documents/download/mda4/oday/~edisp/insights-series-issue1_wp-james_reduce-unwarranted-variations-05983449.pdf

Defining the “Why” & Awareness of Need

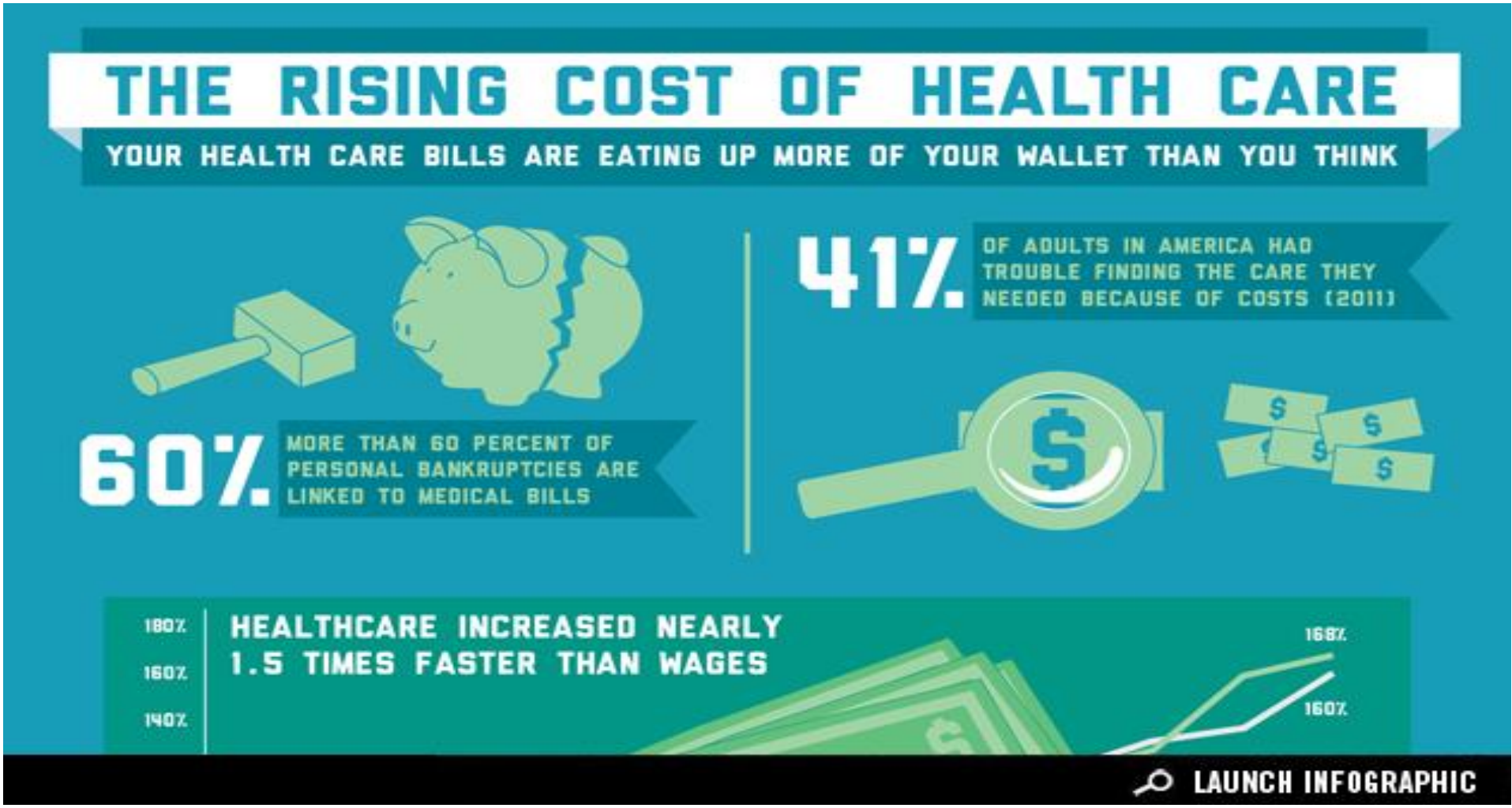
MISSION

To save and improve lives.

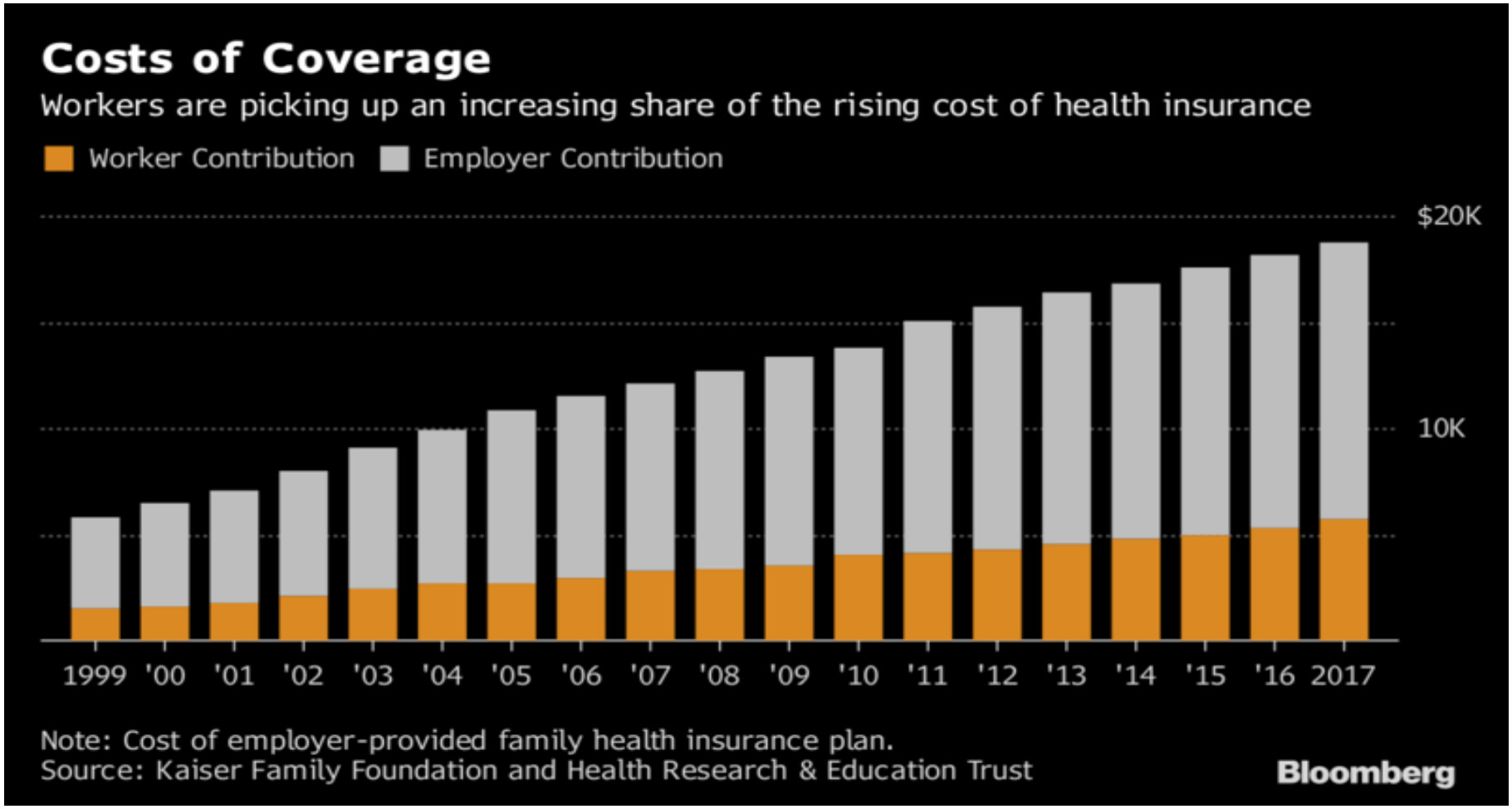
Reducing Variation=Improves Quality and Reduces Cost

Lower Cost & Improved Quality=More Opportunity to Achieve Our Mission

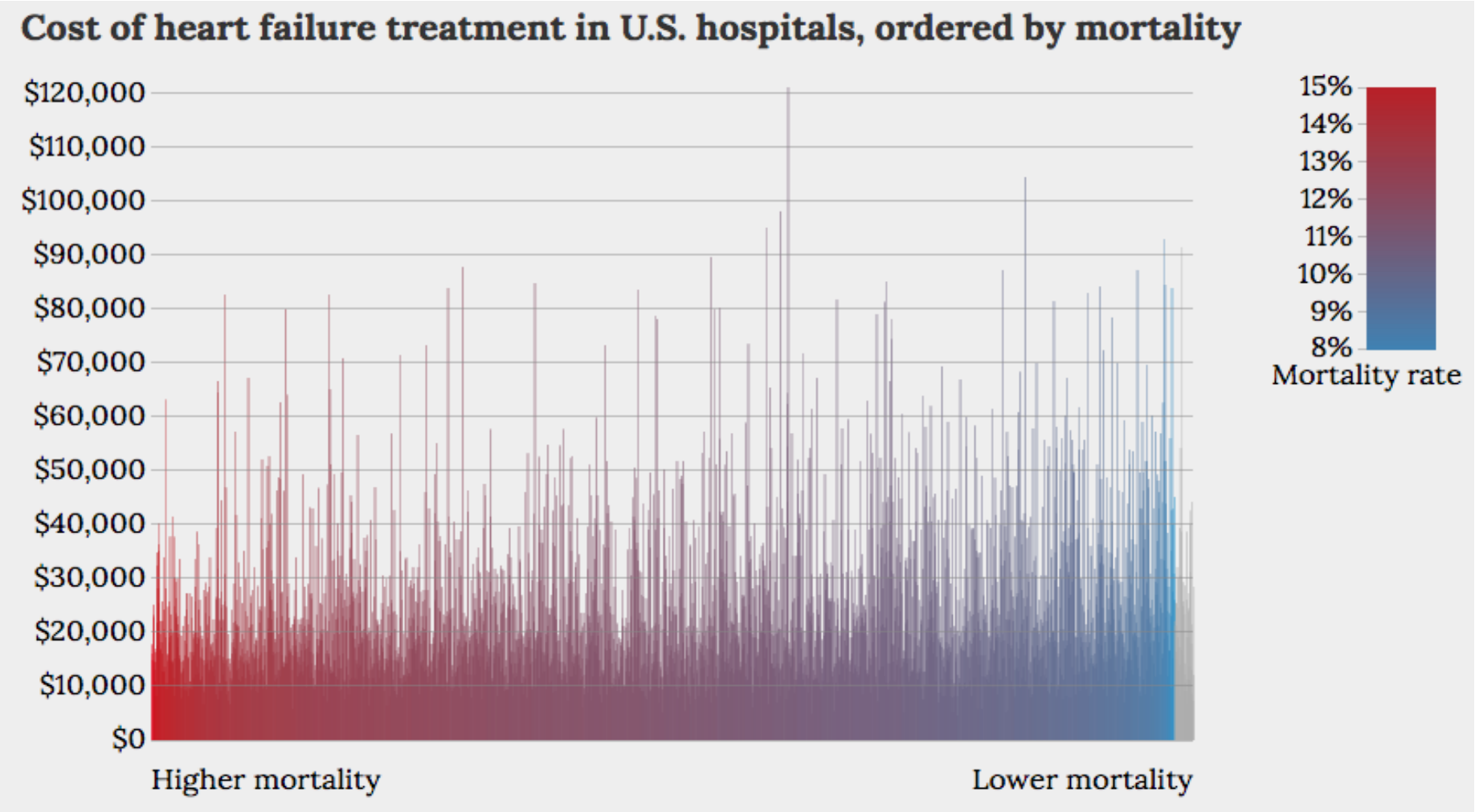
The Problem: We Cost Too Much



The Problem: Rising Costs of Health Care Coverage

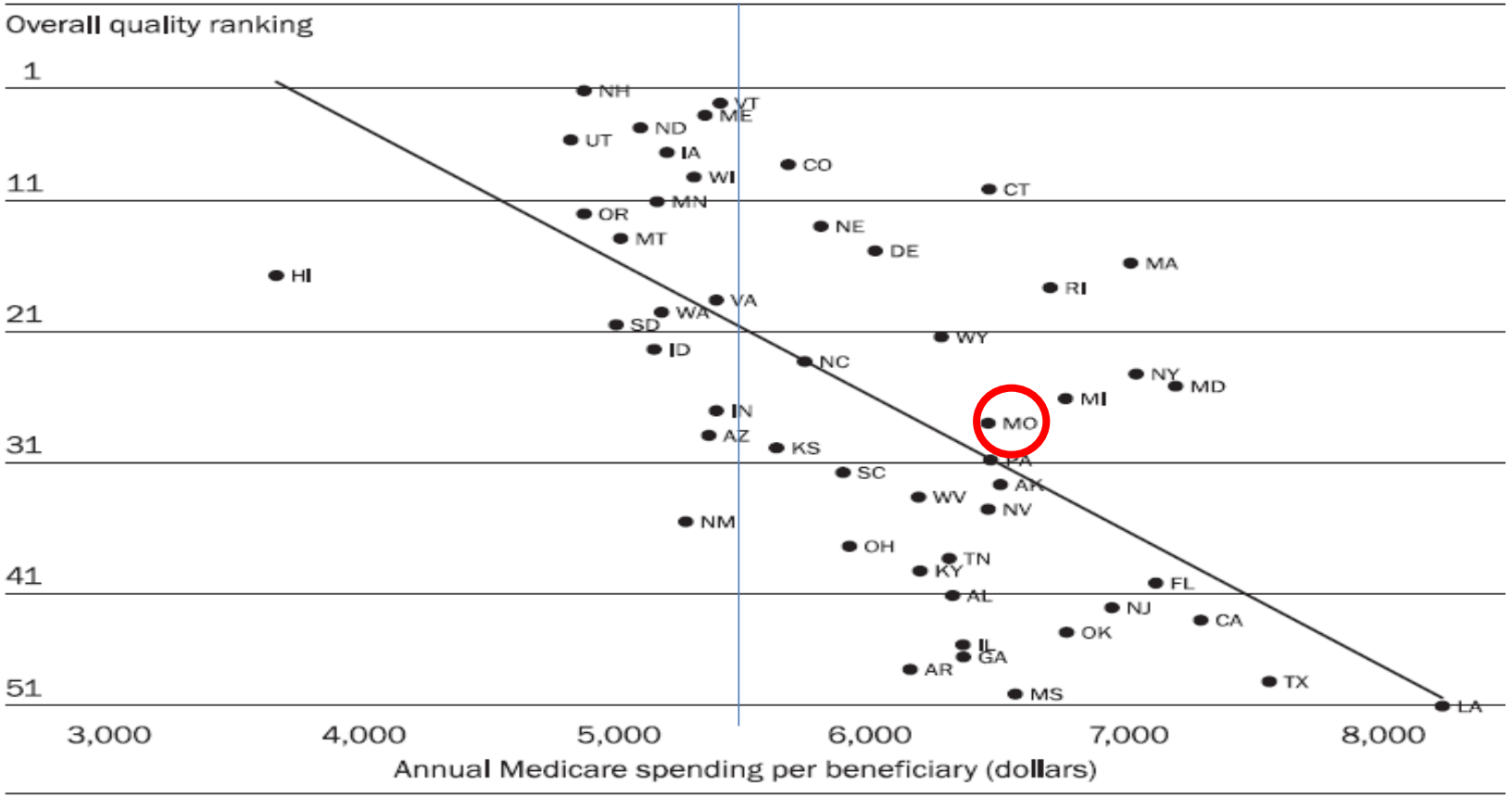


Wide Variation: Increased Costs # Increased Quality



When More is Less

Relationship Between Quality And Medicare Spending, As Expressed By Overall Quality Ranking, 2000–2001



SOURCES: Medicare claims data; and S.F. Jencks et al., "Change in the Quality of Care Delivered to Medicare Beneficiaries, 1998–1999 to 2000–2001," *Journal of the American Medical Association* 289, no. 3 (2003): 305–312.
NOTE: For quality ranking, smaller values equal higher quality.

$450B in Non-Value Added Care, $1295/person in waste

https://www.fedhealthit.com/2016/11/institutionalizing-healthcare-cost-analysis-and-control/

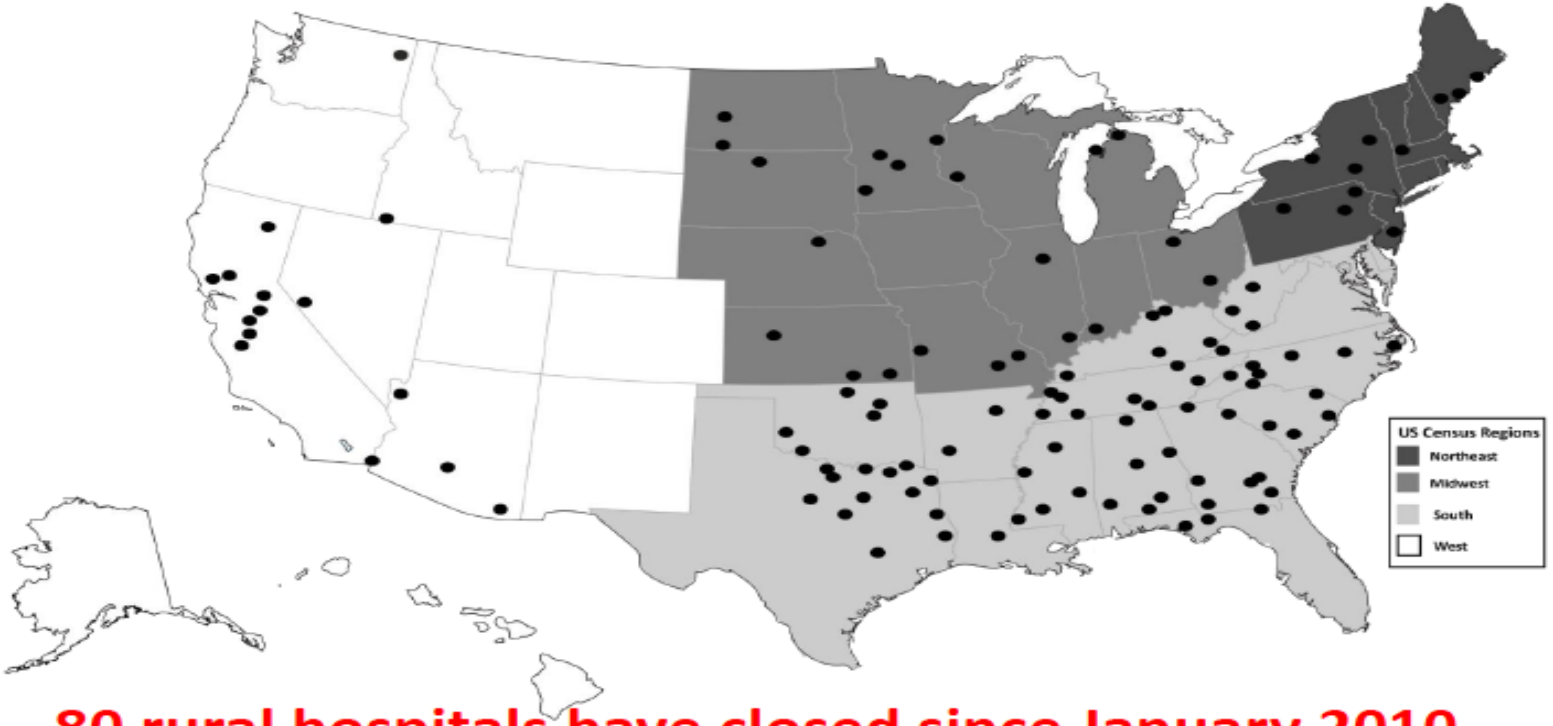
The bill is due: In the last 18 months…

- MD Anderson Cancer Center Lost $266M
- Prestigious Partners (Boston) lost $108M
- Cleveland Clinic lost 71% in operating income from previous year (non-investment related)
- CHI (Pacific Coast) $512M in lost operating income
- Sutter, NorthWell Health, UnityPoint Health all reported significant losses
- Hospitals Closing (rural and suburban)

Source: https://hbr.org/2017/10/how-u-s-hospitals-and-health-systems-can-reverse-their-sliding-financial-performance

Rural Hospitals Closing: Could They Have Been Saved?

2005-17 rural hospital closures: Where were they?

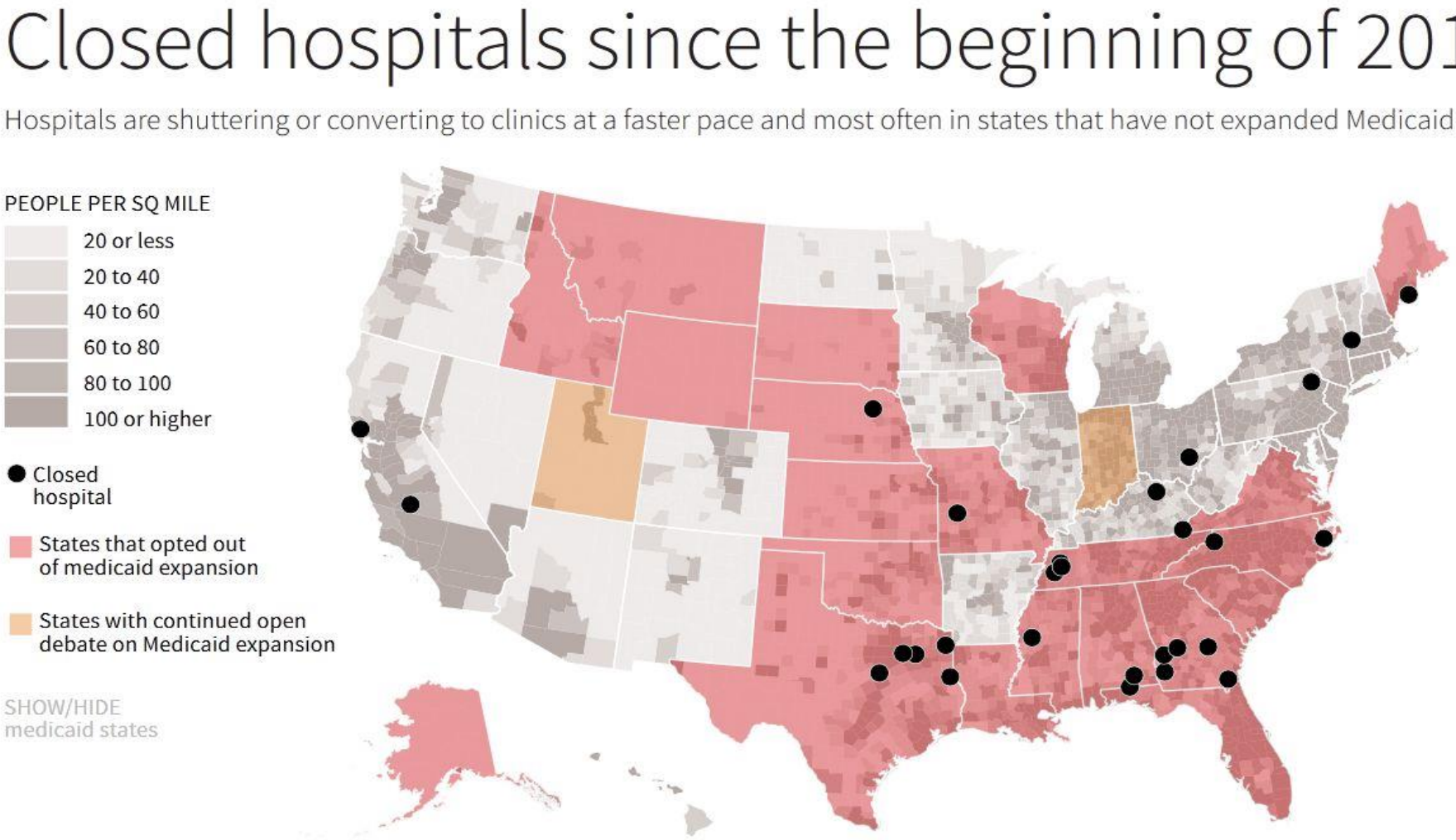


80 rural hospitals have closed since January 2010

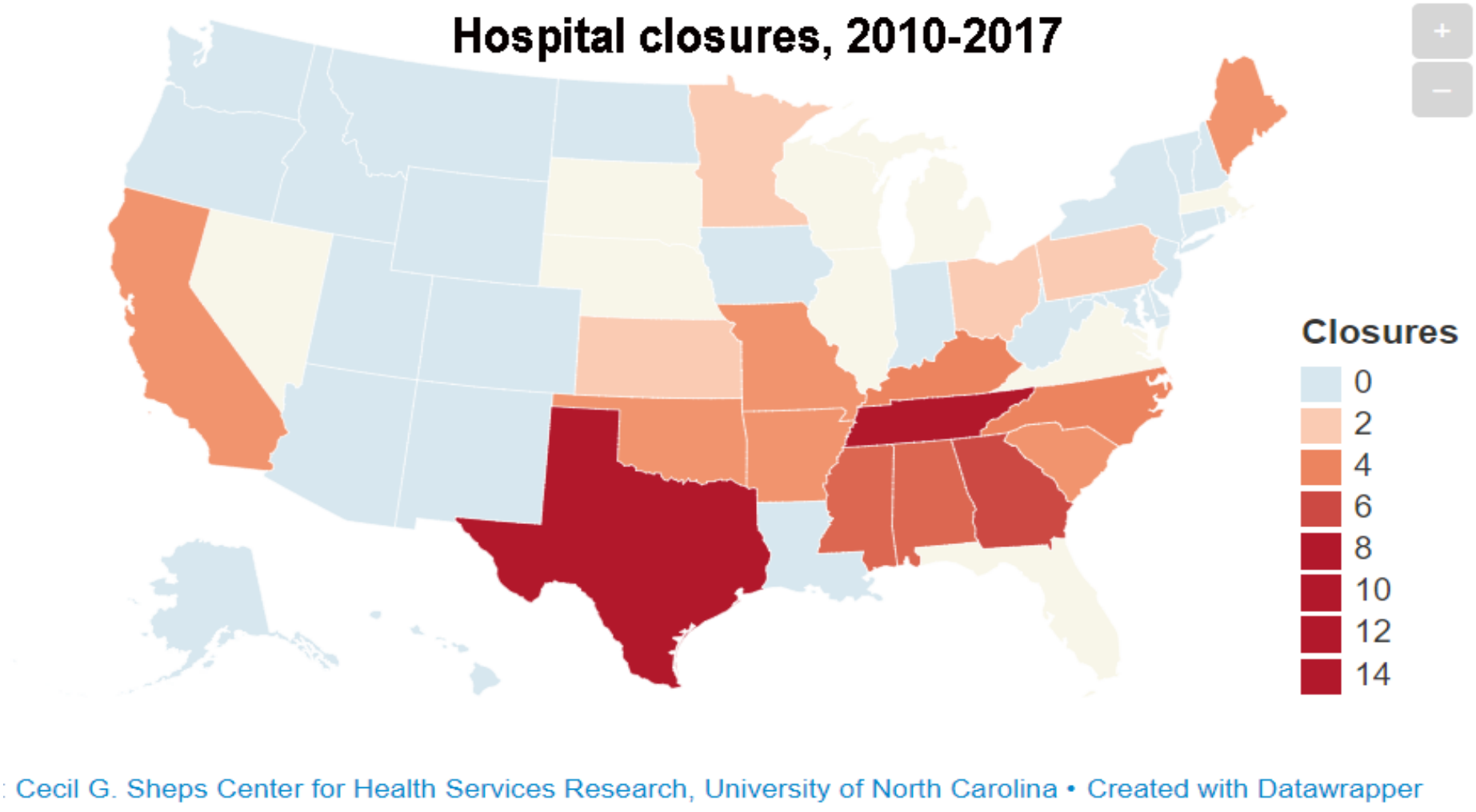
122 rural hospitals have closed since January 2005

Source; https://www.ncbi.nlm.nih.gov/pubmed/27500663

Disproportionate Impact on Rural Hospitals in Non-Medicaid Expansion States



Higher Costs=Fewer Hospitals?

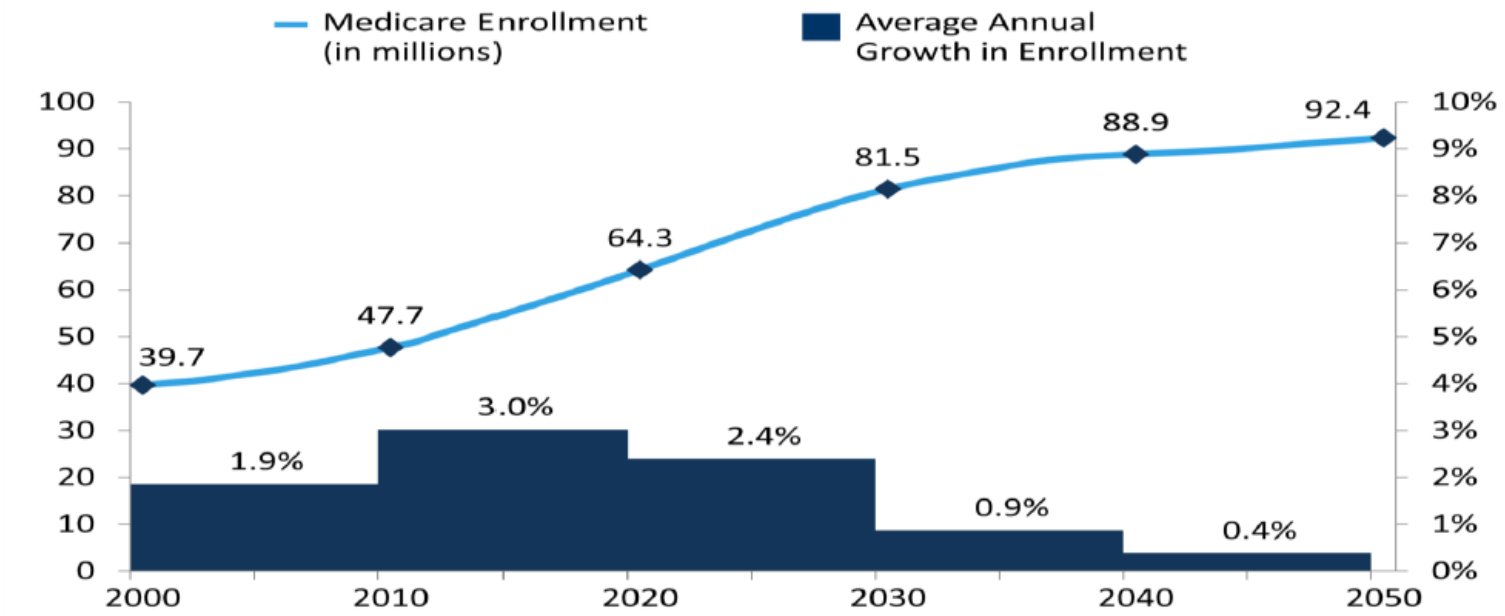


Source: https://www.shepscenter.unc.edu/programs-projects/rural-health/infographics/

Rapid Expansion of Medicare

Providers must closely manage costs as more of the U.S. population ages into Medicare eligibility

Projected Change in Medicare Enrollment, 2000 - 2050



Increased Role of Government

- Government will absorb a significant portion of healthcare costs as **more of the population ages into Medicare and utilization continues to rise**
- Rise in Medicare population and utilization will **increase margin pressures** requiring providers to improve efficiency and reduce cost of care delivery

The CEO Dilemma-Why So Much Waste?

The collision of two forces with underlying perverse incentives

Continued Reliance on the Craft of Medicine

Clinical Uncertainty

Payment System that Encourages Utilization

Identifying Greatest Areas of Impact

The Risks of Bad Data

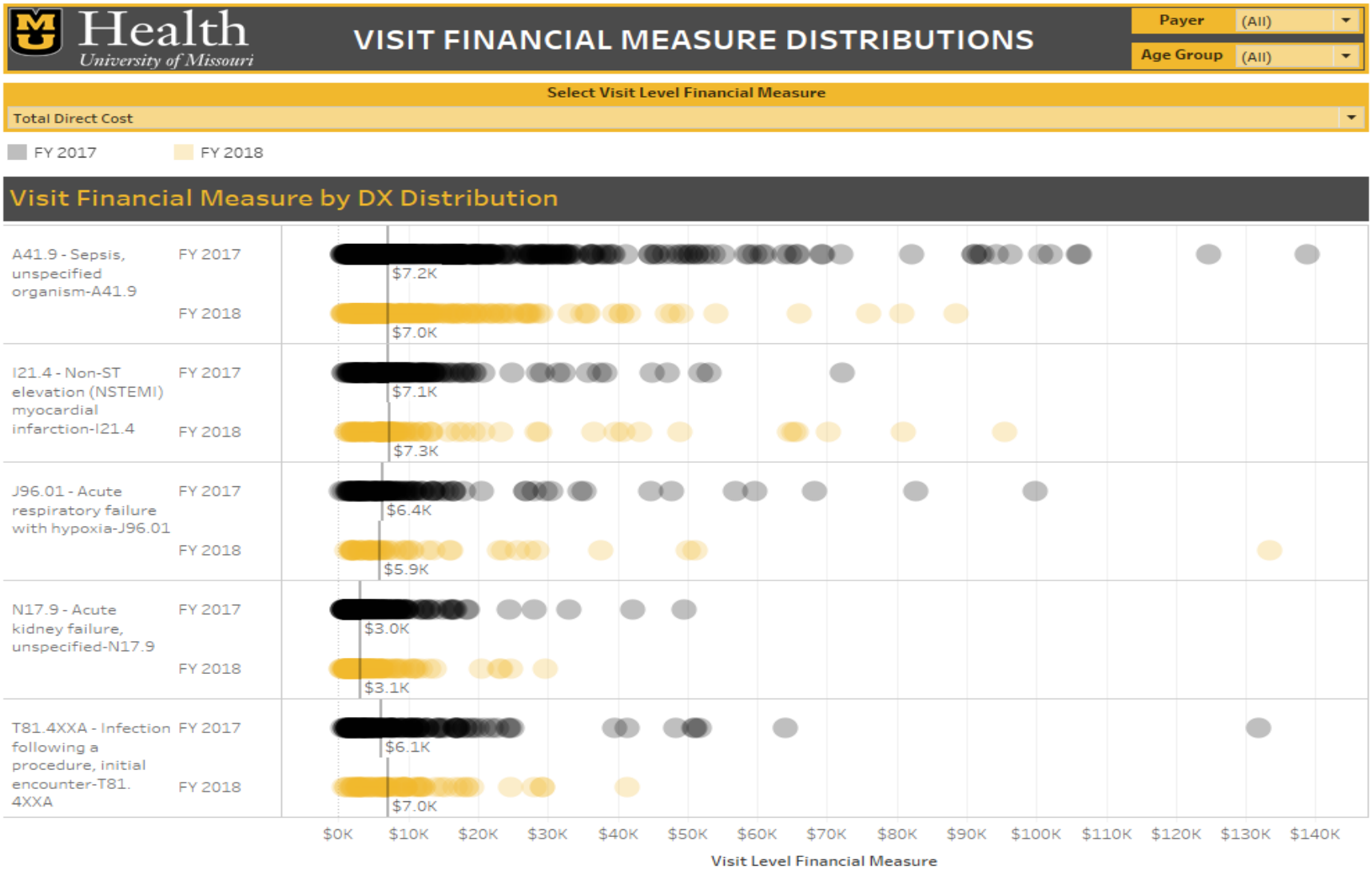
Reducing Care Variation at University Hospital

Top 20 Primary Diagnoses – UH Inpatients

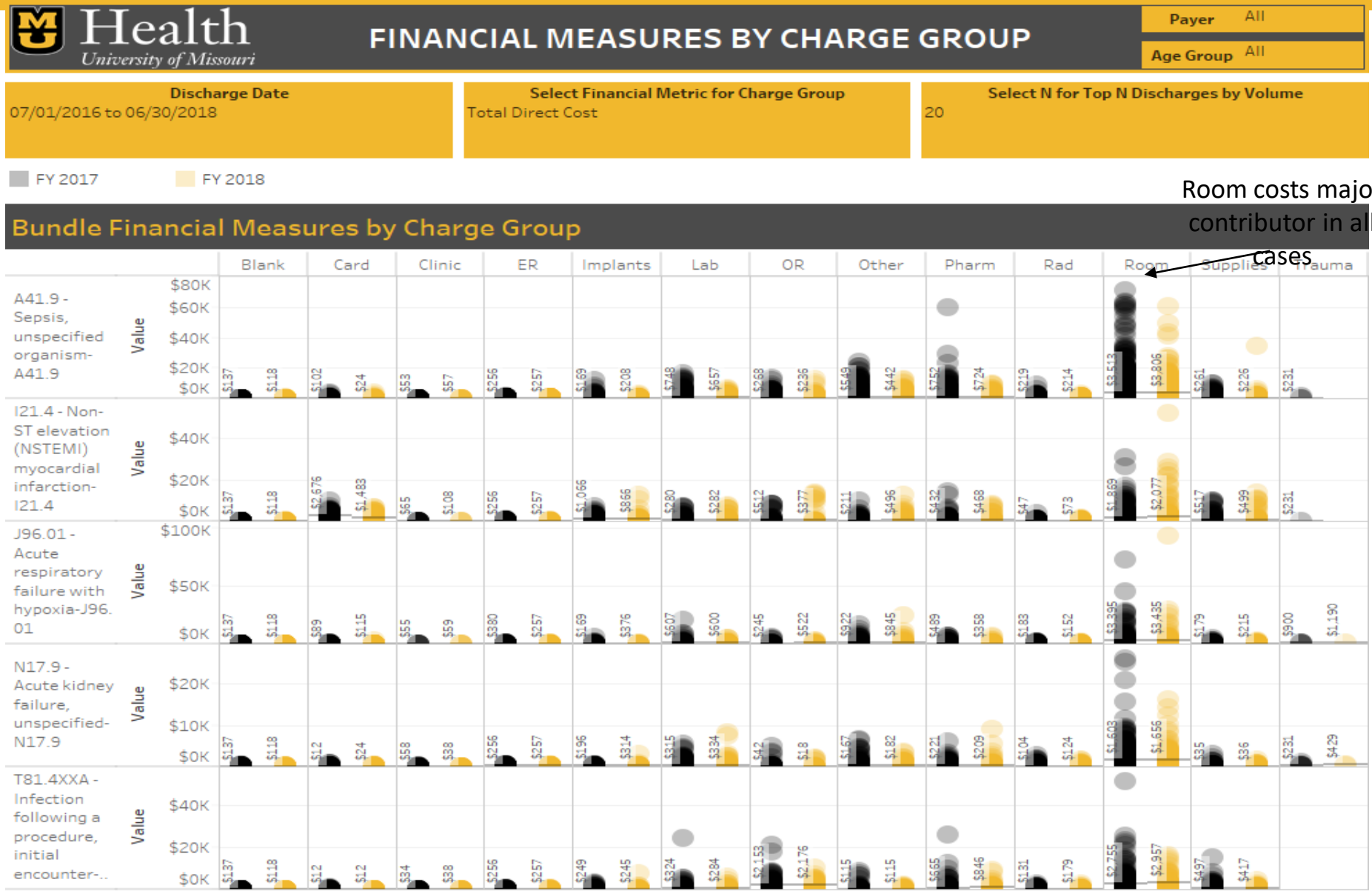
- Focus conditions selected from top discharge diagnoses from UH inpatient discharges
- Five identified with highest cost variability

Discharge DX 1 Code Description	Discharge Date FY 2017
A41.9 - Sepsis, unspecified organism-A41.9	782
N17.9 - Acute kidney failure, unspecified-N17.9	316
E66.01 - Morbid (severe) obesity due to excess calories-E66.01	315
I63.9 - Cerebral infarction, unspecified-I63.9	287
J44.1 - Chronic obstructive pulmonary disease w (acute) exacerbation-J44.1	237
I21.4 - Non-ST elevation (NSTEMI) myocardial infarction-I21.4	227
F10.239 - Alcohol dependence with withdrawal, unspecified-F10.239	211
E10.10 - Type 1 diabetes mellitus with ketoacidosis w/out coma-E10.10	182
J18.9 - Pneumonia, unspecified organism-J18.9	167
T81.4XXA - Infection following a procedure, initial encounter-T81.4XXA	156
I11.0 - Hypertensive heart disease with heart failure-I11.0	136
N39.0 - Urinary tract infection, site not specified-N39.0	128
J96.01 - Acute respiratory failure with hypoxia-J96.01	120
J96.21 - Acute and chronic respiratory failure with hypoxia-J96.21	120
I13.0 - Hyp hrt & chr kdny dis w hrt fail and stg 1-4/unsp chr kdny-I13.0	119
I26.99 - Other pulmonary embolism w/out acute cor pulmonale-I26.99	108
K85.90 - Acute pancreatitis w/out necrosis or infection, unspecified-K85.90	108
I25.110 - Athscl heart disease of native cor art w unstable ang pctrs-I25.110	103
K92.1 - Melena-K92.1	102
I48.91 - Unspecified atrial fibrillation-I48.91	99

Variability by Condition

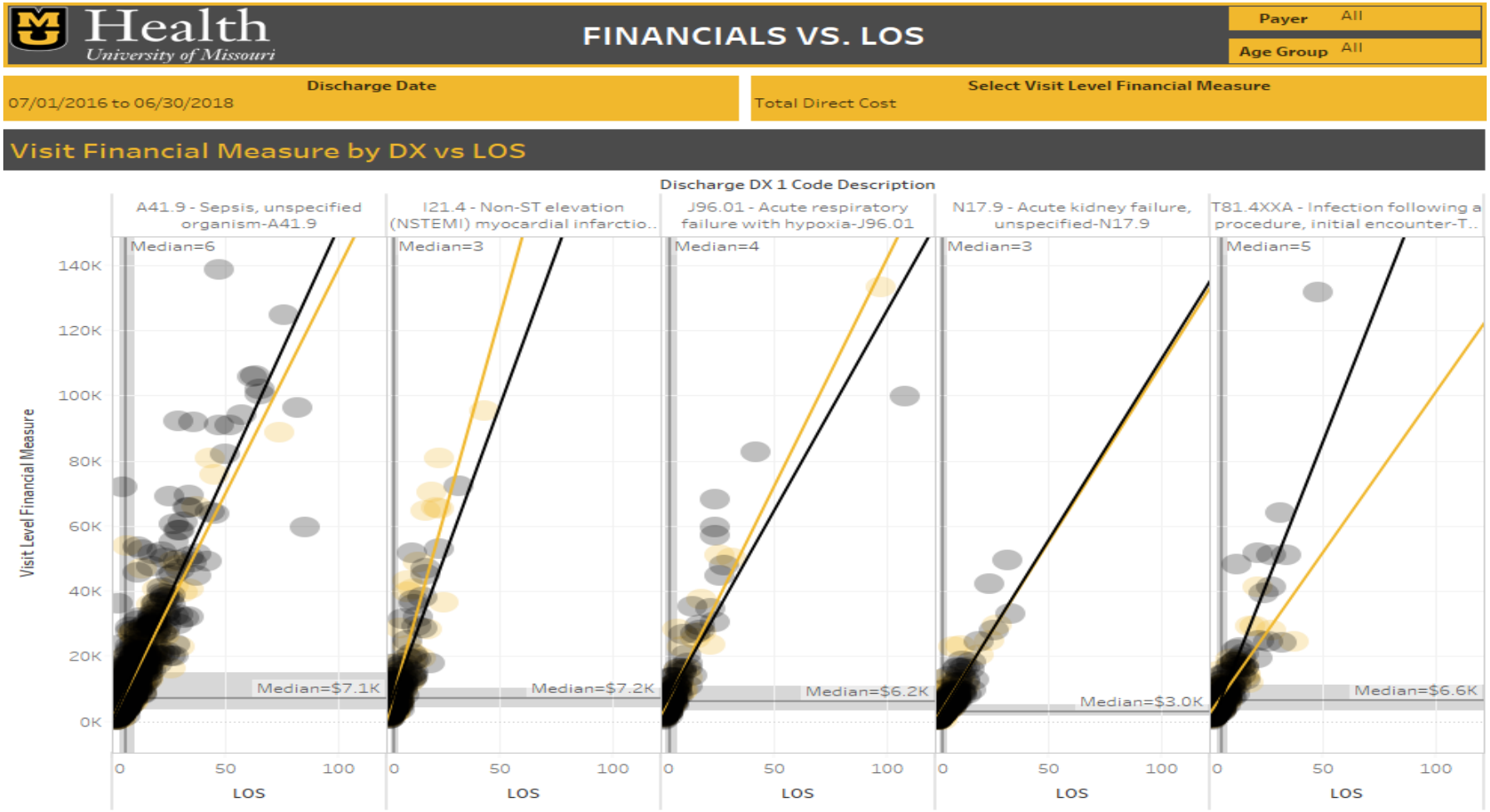


Costs by Charge Grouping



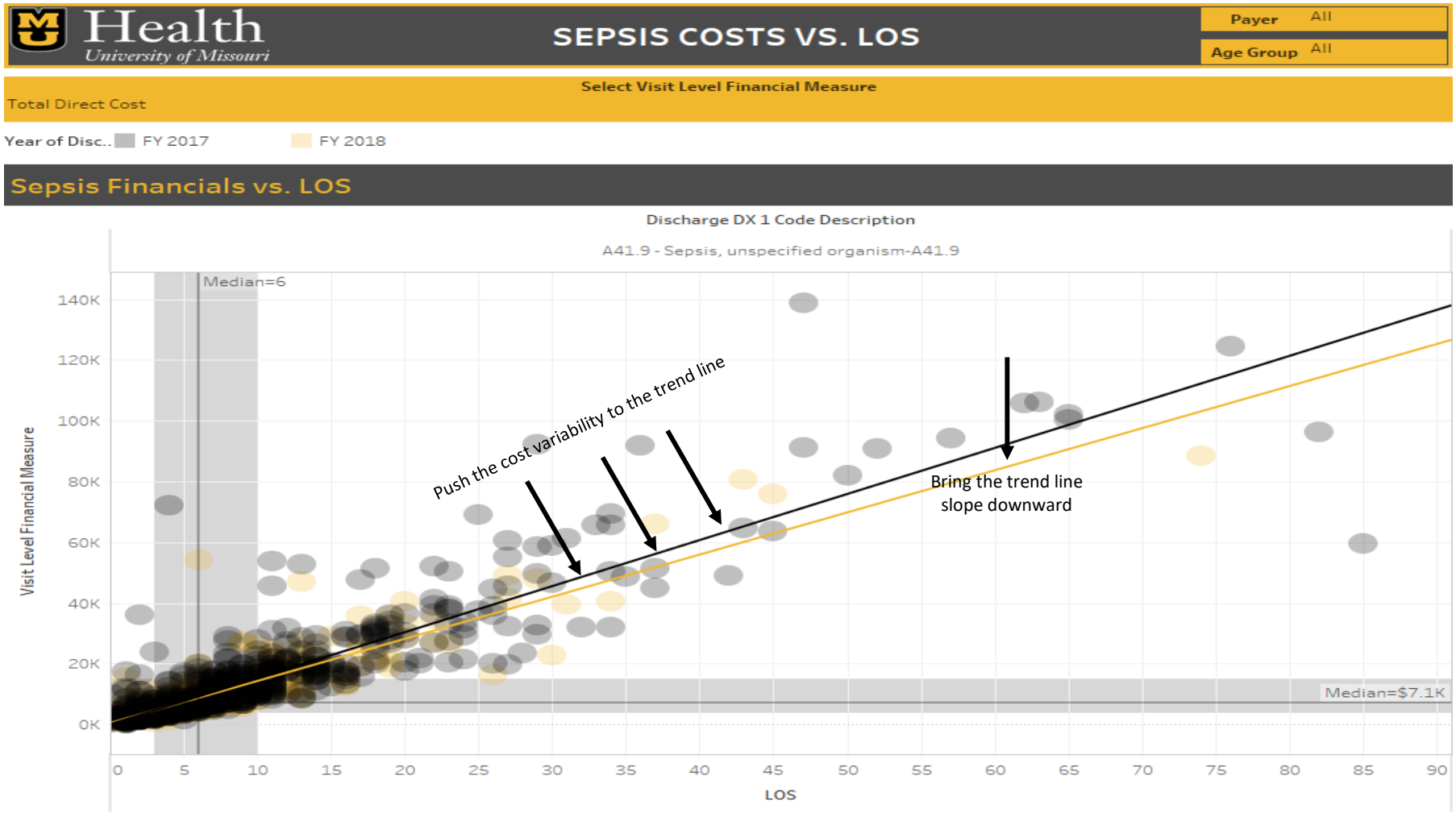
Room costs major contributor in all cases

Variability vs. LOS by Condition

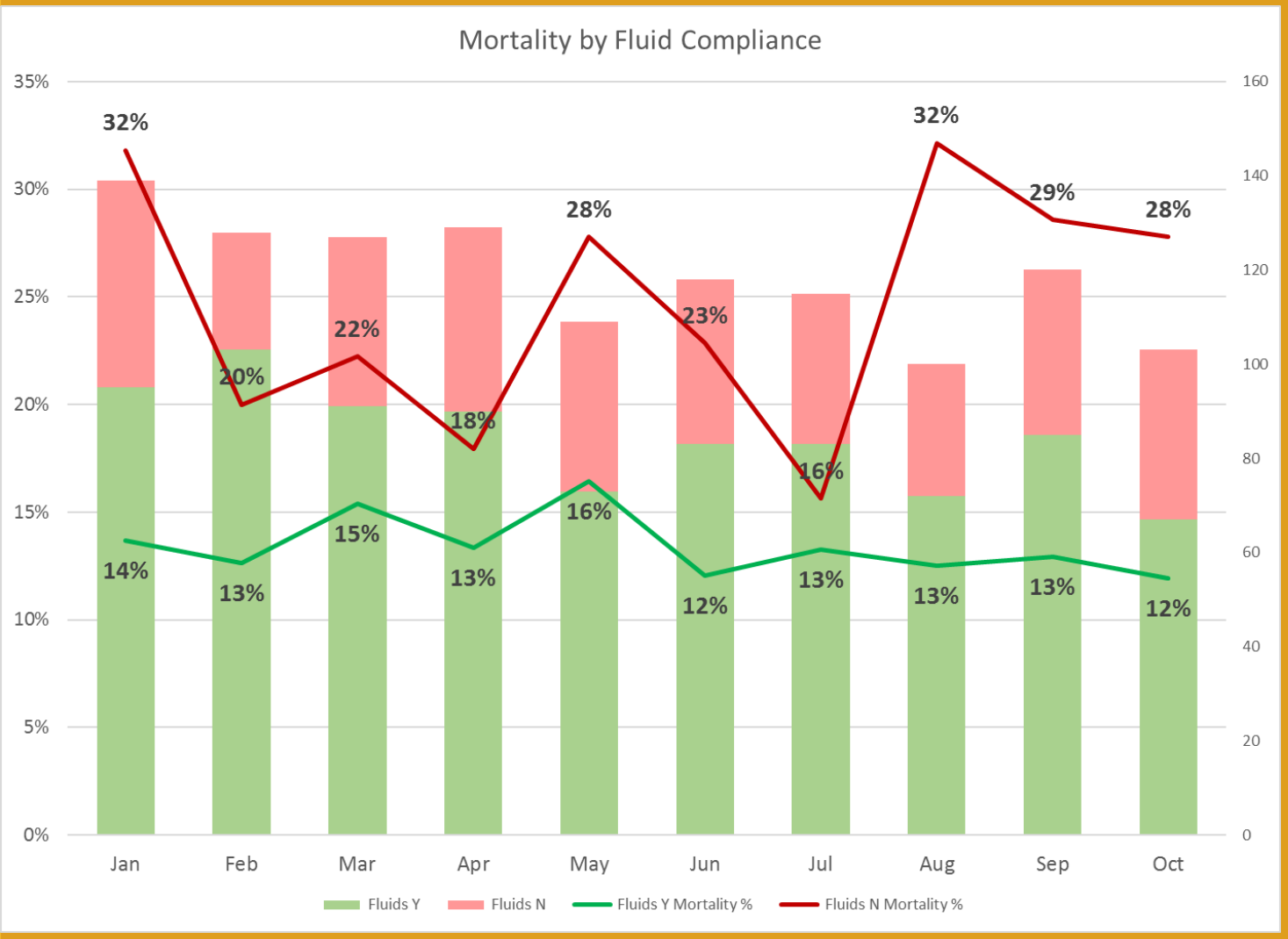


- LOS and Room Costs are significant component of the variability

Sepsis Variability vs LOS



- LOS variability is highly case dependent



Regardless of transfer/non-transfer or Sepsis type, not meeting fluids compliance results in significantly higher mortality

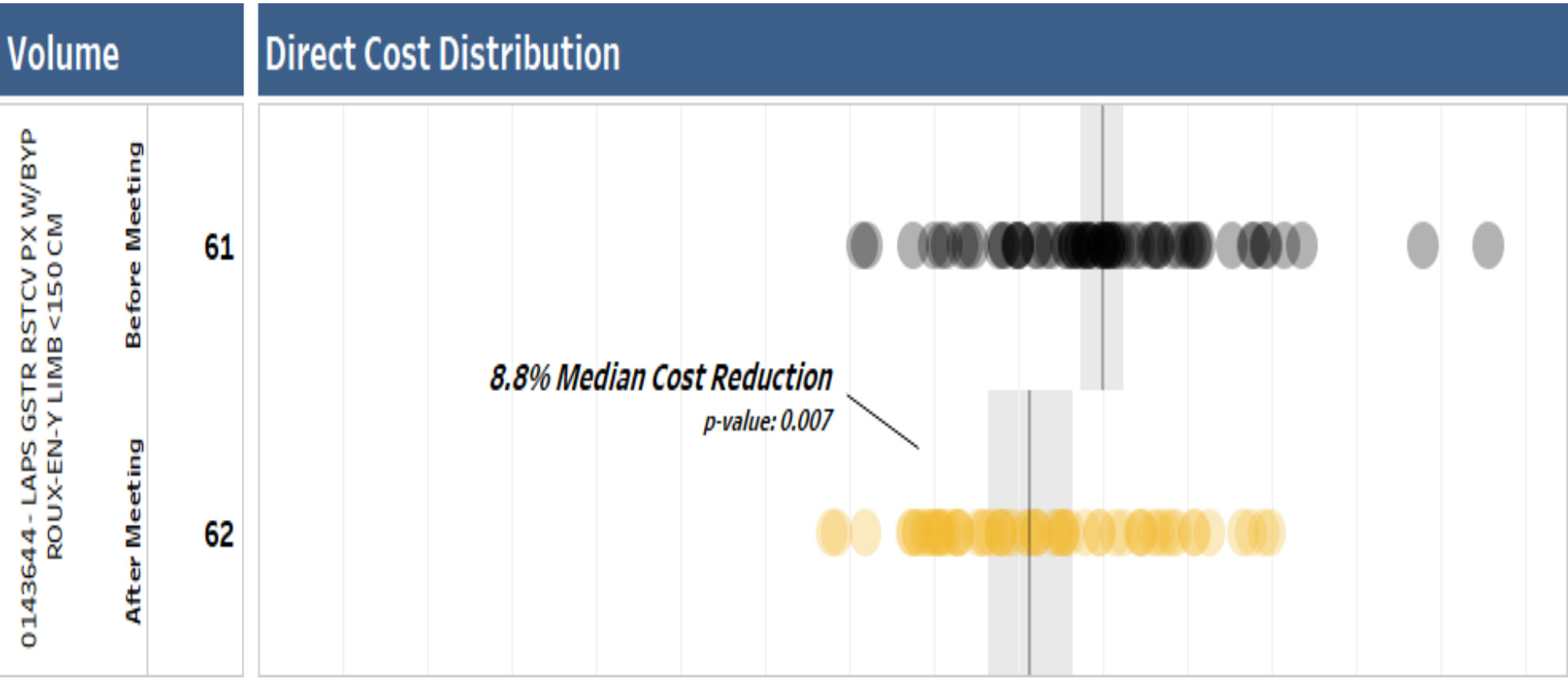
Bundle Compliance=Lower Direct Cost

Sepsis Class	Mortality Index		Median Direct Cost		CMI	
	No*	Yes*	No*	Yes*	No*	Yes*
Sepsis	0.65	0.58	$5,530	$4,666	2.00	1.92
Severe	1.22	0.55	$6,688	$7,392	2.28	2.56
Shock	0.94	0.81	$16,883	$17,925	3.75	3.85

***Compliant with 3 Hr Bundles**

Data combined from Vizient, IDX, ADS, and Sepsis HealtheIntent Bundle Model sources
Encounters with a primary Vizient Adult Sepsis Diagnosis codes as POA and associated Bundle Model Data from Jan-Nov 2017
Further Exclusions Include Encounters with a Disposition of Left AMA, Non-Transfers, and an Observed LOS of < 2 Days to minimize impact of Early Deaths
Additionally Median Direct Costs Exclude Expired Patients

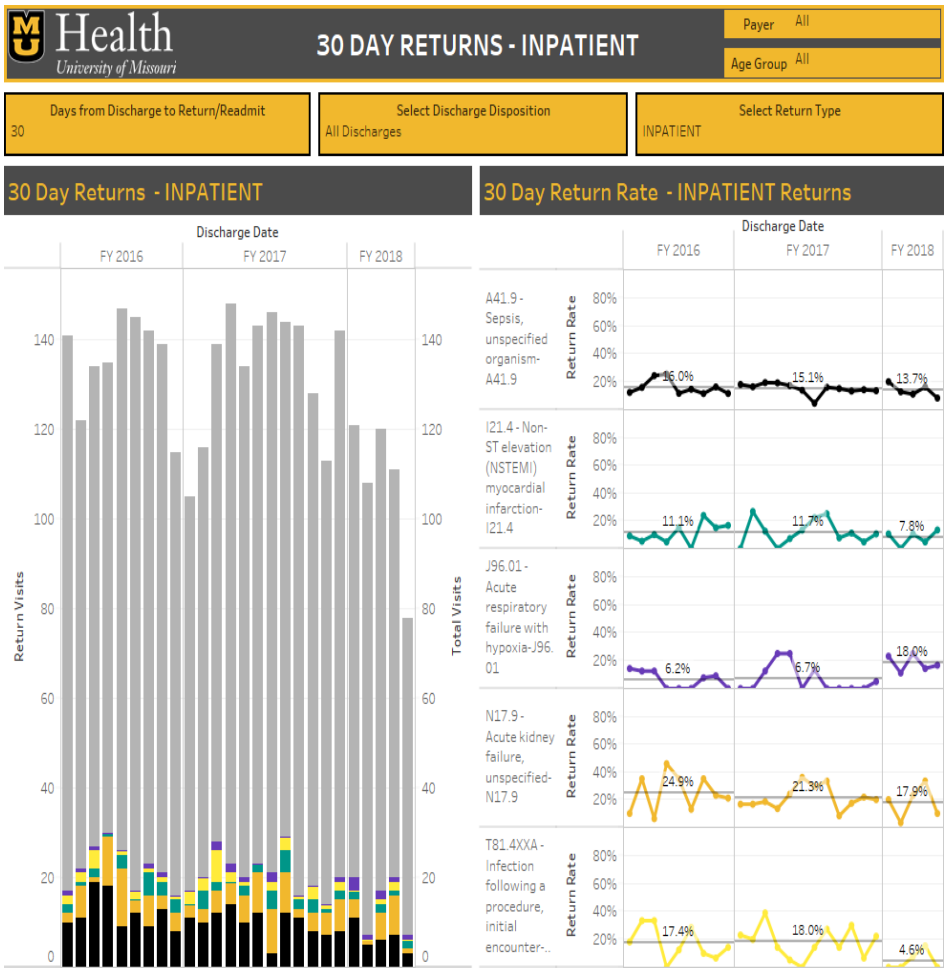
Order Sets Used and Outcomes: Bariatric Surgery Results



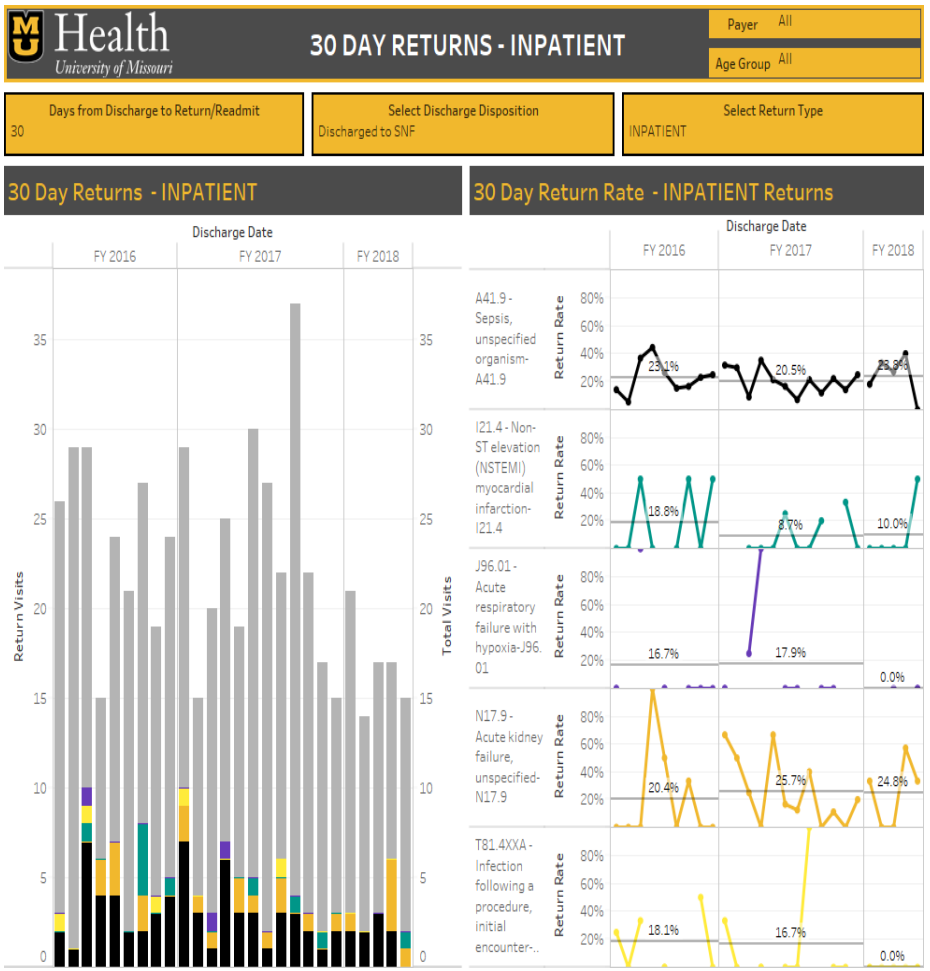
Readmissions – All vs SNF Discharges

Readmissions from SNFs comparable or greater than all discharges overall

All Discharges

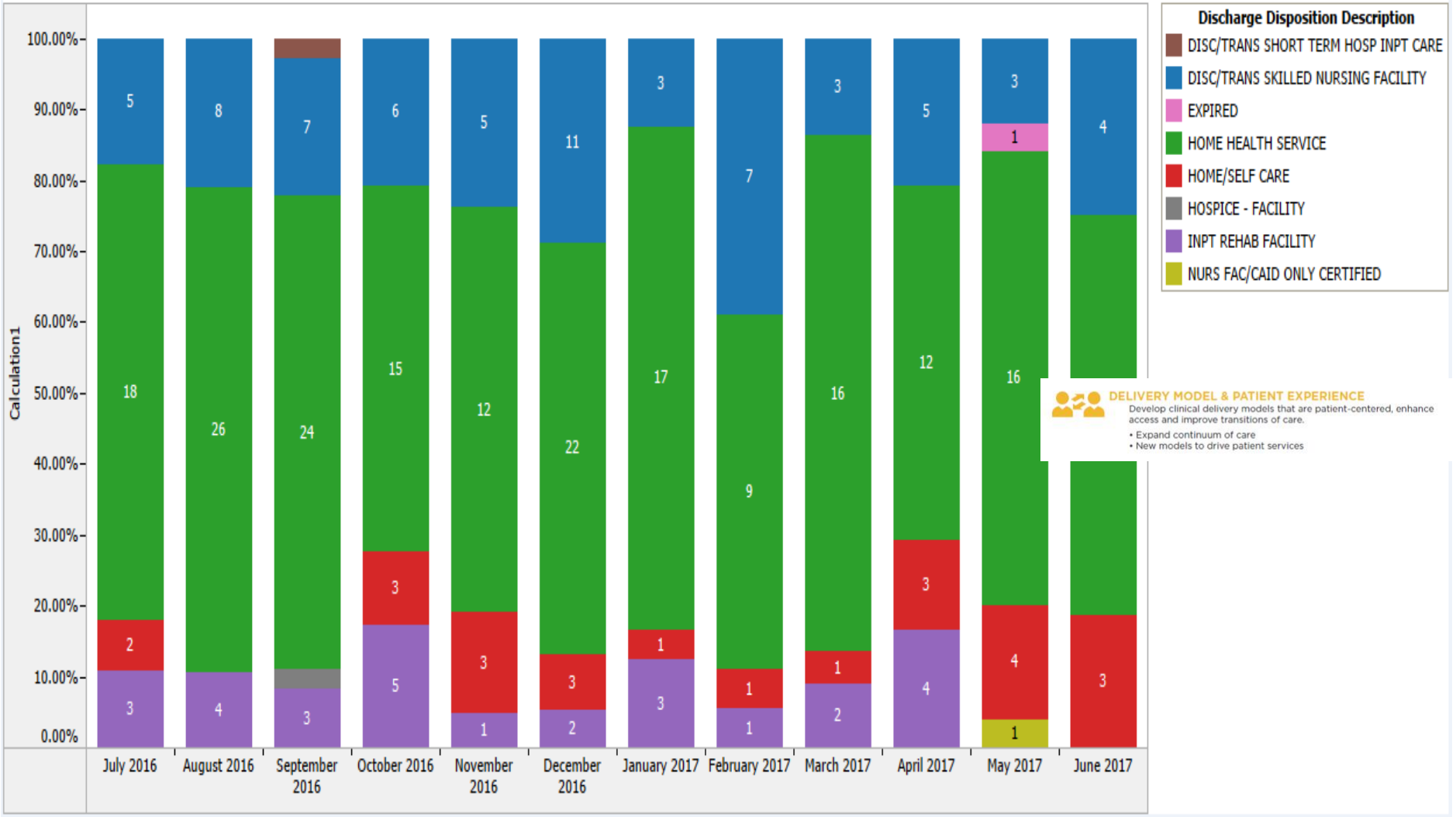


SNF Discharges



Care Across the Continuum:

CJR Physician Scorecard Analytics – Discharge Disposition by Encounter (FY17)



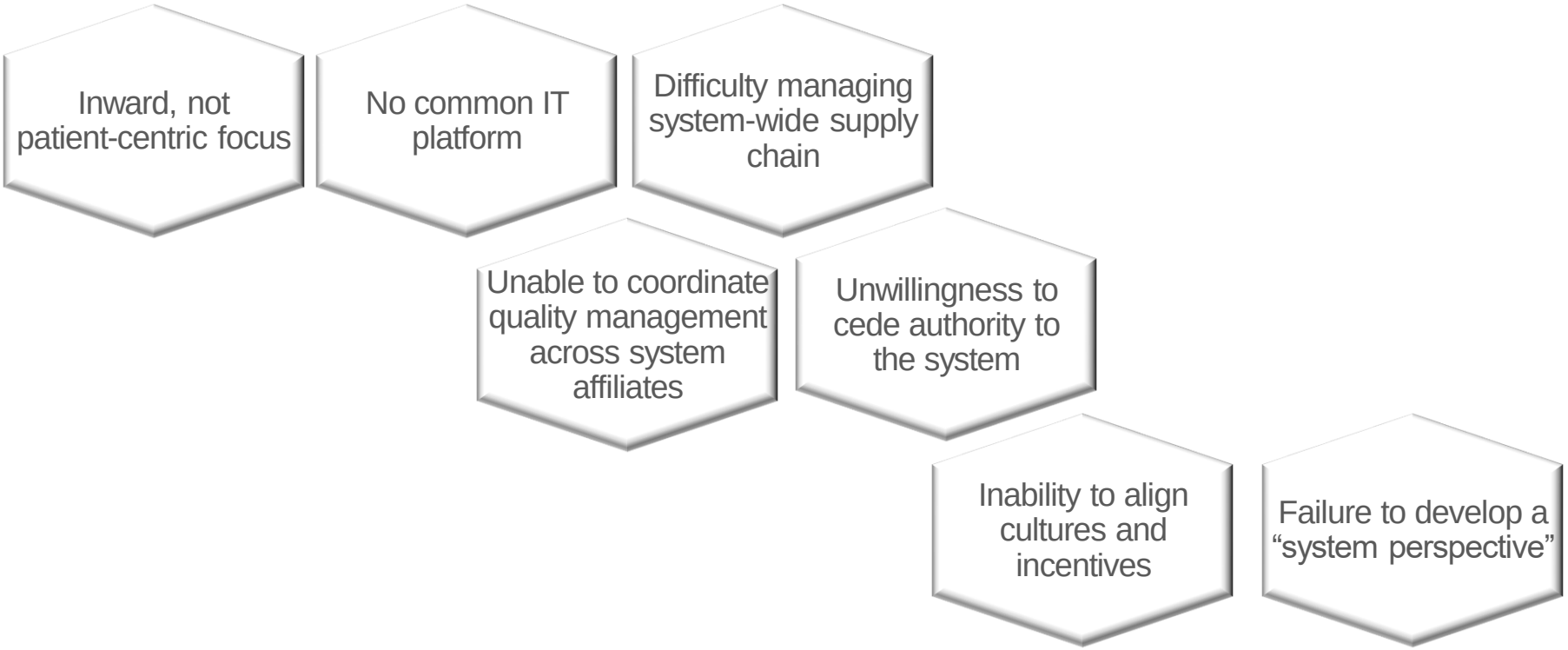
Resource & Build Infrastructure to Change Performance

Unhealthy Disconnect

"I am truly concerned about the quality of care and health of the patients. The executives are only concerned about profit maximization and cutting costs."

"I am truly concerned about the quality of care provided. Physicians don't understand there are limited resources available or what it takes to run a hospital."

Most systems have failed to crack internal/governance nut



Sources: Burns, L. R., McCullough, J. S., Wholey, D. R., Kruse, G., Kralovec, P., & Muller, R. (2015). Is the system really the solution? Operating costs in hospital systems. *Medical Care Research and Review*, *72*(3), 247-272.

Fundamentals of Infrastructure

- Data, Data, Data,
- Resource the Needed Teams
- Focus on Rapid & Sustained Improvement
- Establish or Join a Clinical Training Improvement Program
- Performance Tie-In Back to the Bottom Line

Build Transparency & Trust

You Need A Partner (usually a Physician)

Physician Leadership is Key

Department of Medicine
Grand Rounds

"Say 'NO' to 'Low Value Care'"

S. Hasan Naqvi, MD
Division Director, Hospital Medicine
Associate Professor of Clinical Medicine
Associate Chief Medical Officer, MU Health Care
University of Missouri, Columbia

Introduced By:
Dr. Edward TH Yeh, MD, Chairman, Dept. of Medicine

Thursday, March 21st, 2019
MA217 Acuff Auditorium, 12 pm to 1 pm

Speaker Disclosure: S. Hasan Naqvi has indicated the following conflict of interest: None

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Equal Opportunity/ADA Institution

Dyad Partners to Build Analytics to Drive Value:

Number of Cases Above and Below Expected LOS

ICU	EPM	Yes	No	Grand Total
Grand Total		55	144	199
No	Total	15	72	87
	AMI	8	46	54
	PCI	7	26	33
Yes	Total	40	72	112
	AMI	9	21	30
	CABG	12	23	35
	PCI	19	28	47

40 cases where patients received care in the ICU and the total length of stay was above the expected length of stay.

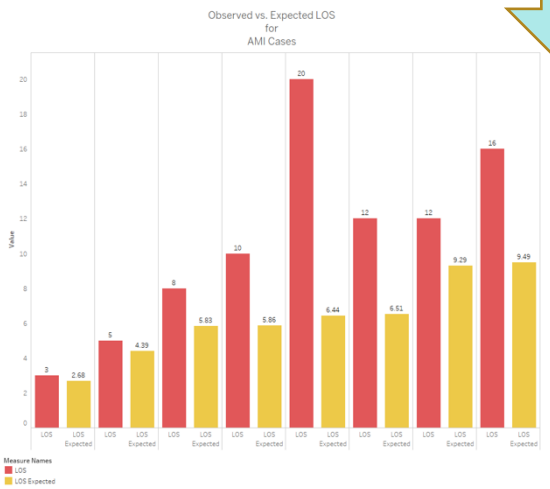
QUALITY & INNOVATION

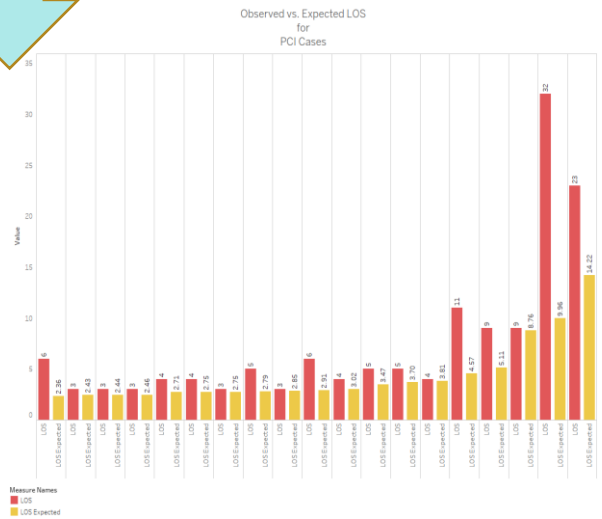
Continuously improve quality and pursue innovations that enhance the care we provide to patients and position us for value-based payment models.

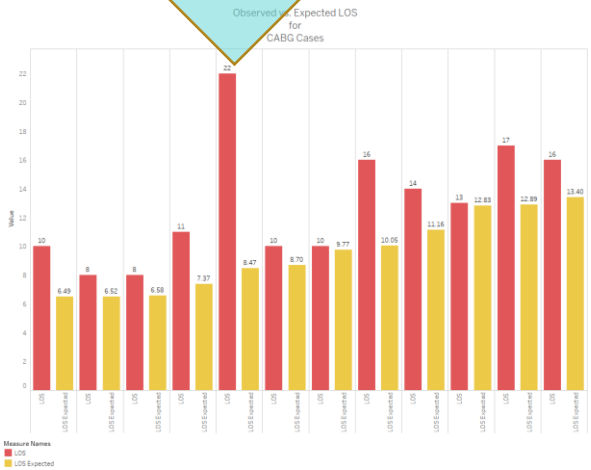
- Enhanced continuous improvement
- Tiger Institute for Health Innovation

AMI and PCI cases: the longer the expected length of stay, the longer the patient stays beyond the expected length of stay.

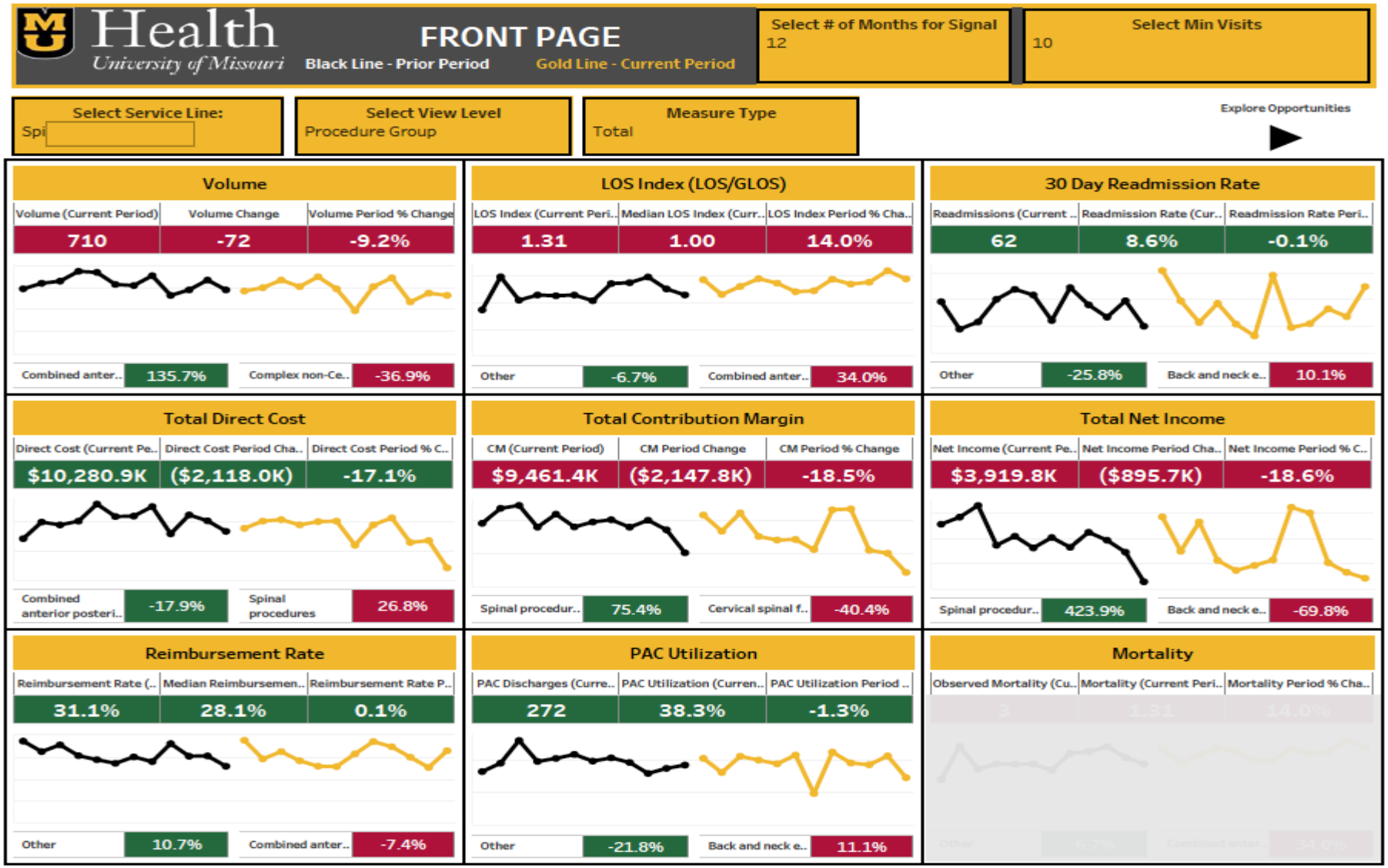
CABG patients: with the exception of the extreme outlier, most patients stay on average less than 3 days longer than expected.







Creating A Real-Time, Actionable Dashboard



Scoring Sorting by Physician

Health Care

Enterprise Analytics

CJR - Internal Data (ADS, EMR, Vizient)

Patient Type Mnemonic	DRG	Fracture (Yes/No)	Prim Surgeon Name	Discharge DX 1 Code Description	Discharge Procedure 1 Code and Description	Discharge Procedure 2 Code and Description
(All)	(All)	(All)	(All)	(All)	(All)	(All)

Prim Surgeon Name		July 2016	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017	February 2017	March 2017	April 2017	May 2017	June 2017	Grand Total
Grand Total	Encounters	28	38	36	29	21	38	24	18	22	24	25	16	319
	% Age 75 and older	28.57%	39.47%	52.78%	65.52%	42.86%	47.37%	45.83%	50.00%	31.82%	33.33%	40.00%	43.75%	43.89%
	% SNF	21.43%	21.05%	19.44%	41.38%	23.81%	34.21%	12.50%	38.89%	13.64%	20.83%	12.00%	25.00%	23.82%
	% IRF	10.71%	10.53%	8.33%	17.24%	4.76%	7.89%	12.50%	5.56%	9.09%	16.67%	0.00%	0.00%	9.09%
	% Home Health	64.29%	68.42%	66.67%	51.72%	57.14%	57.89%	75.00%	50.00%	72.73%	50.00%	64.00%	56.25%	61.76%
	% Readmissions (30 Day)	0.00%	2.63%	2.78%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.25%	0.94%
	% Readmissions (90 days)	7.14%	23.68%	13.89%	37.93%	23.81%	13.16%	20.83%	16.67%	13.64%	0.00%	0.00%	6.25%	15.36%
	% Fractures	14.29%	15.79%	11.11%	41.38%	19.05%	26.32%	16.67%	27.78%	9.09%	12.50%	12.00%	18.75%	18.81%
	% Diabetes	7.14%	21.05%	5.56%	3.45%	4.76%	5.26%	4.17%	11.11%	22.73%	16.67%	8.00%		9.40%
	% BMI >=40	10.71%	21.05%	11.11%	24.14%	9.52%	21.05%	12.50%	22.22%	13.64%	16.67%	12.00%		15.36%
	CMI	2.16	2.27	2.17	2.21	2.07	2.16	2.21	2.13	2.12	2.07	2.26	2.22	2.18
	SOI (AVG)	1.45	1.76	1.63	1.77	1.43	1.34	1.84	1.67	1.55	1.71	1.92	1.69	1.64
	Risk of Mortality (AVG)	1.17	1.58	1.41	1.71	1.19	1.20	1.40	1.78	1.36	1.25	1.56	1.69	1.43

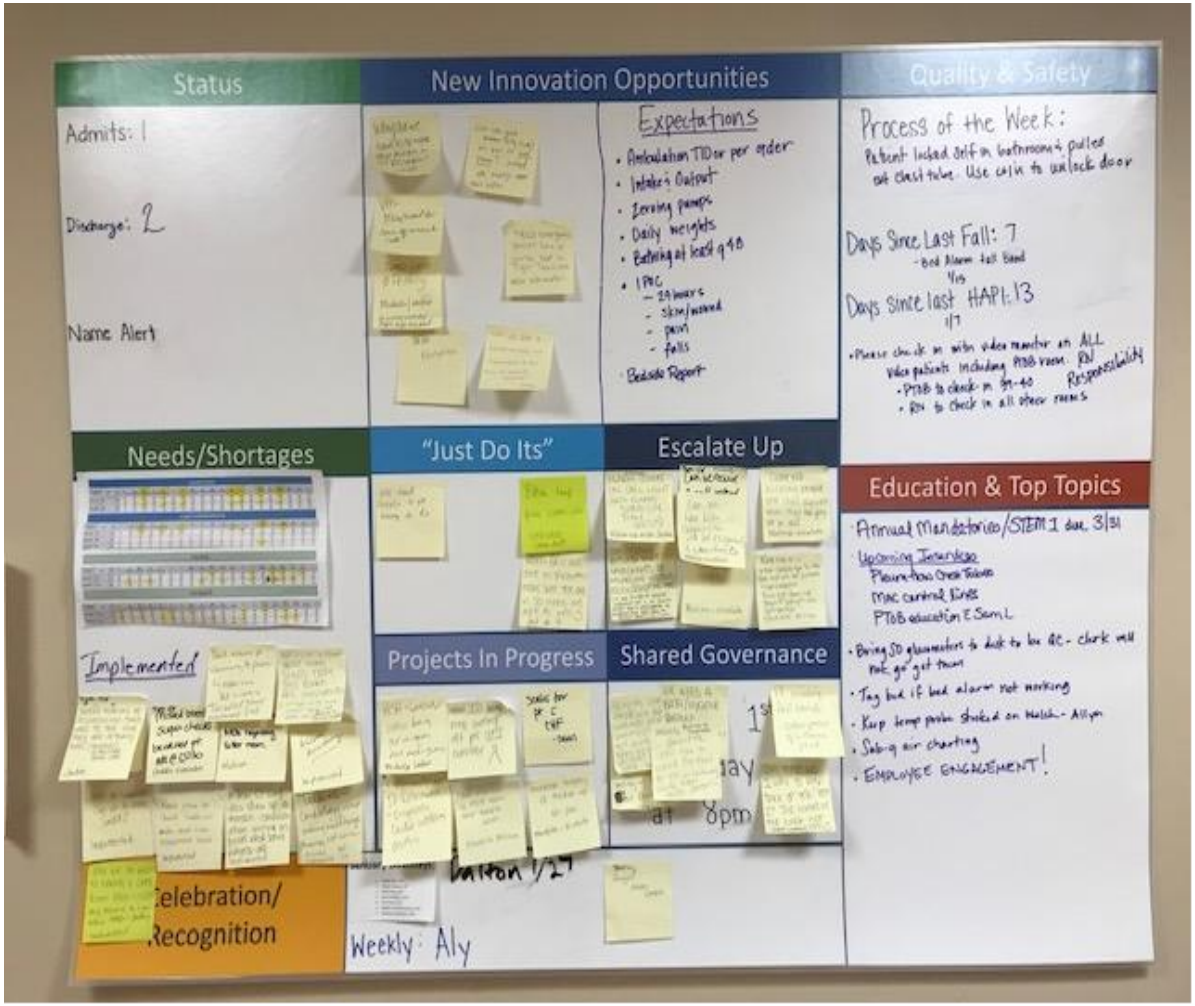
Lead & De-Centralize Ownership

Lead & De-Centralize Ownership Principles to Build Transparency & Trust

- Reward & Recognize Success
- Consistent & Reliable Systems of Communication
- Everyone Understands What is Expected of Them
- Continuous Feedback Loop & Expectations for Continuous Improvement

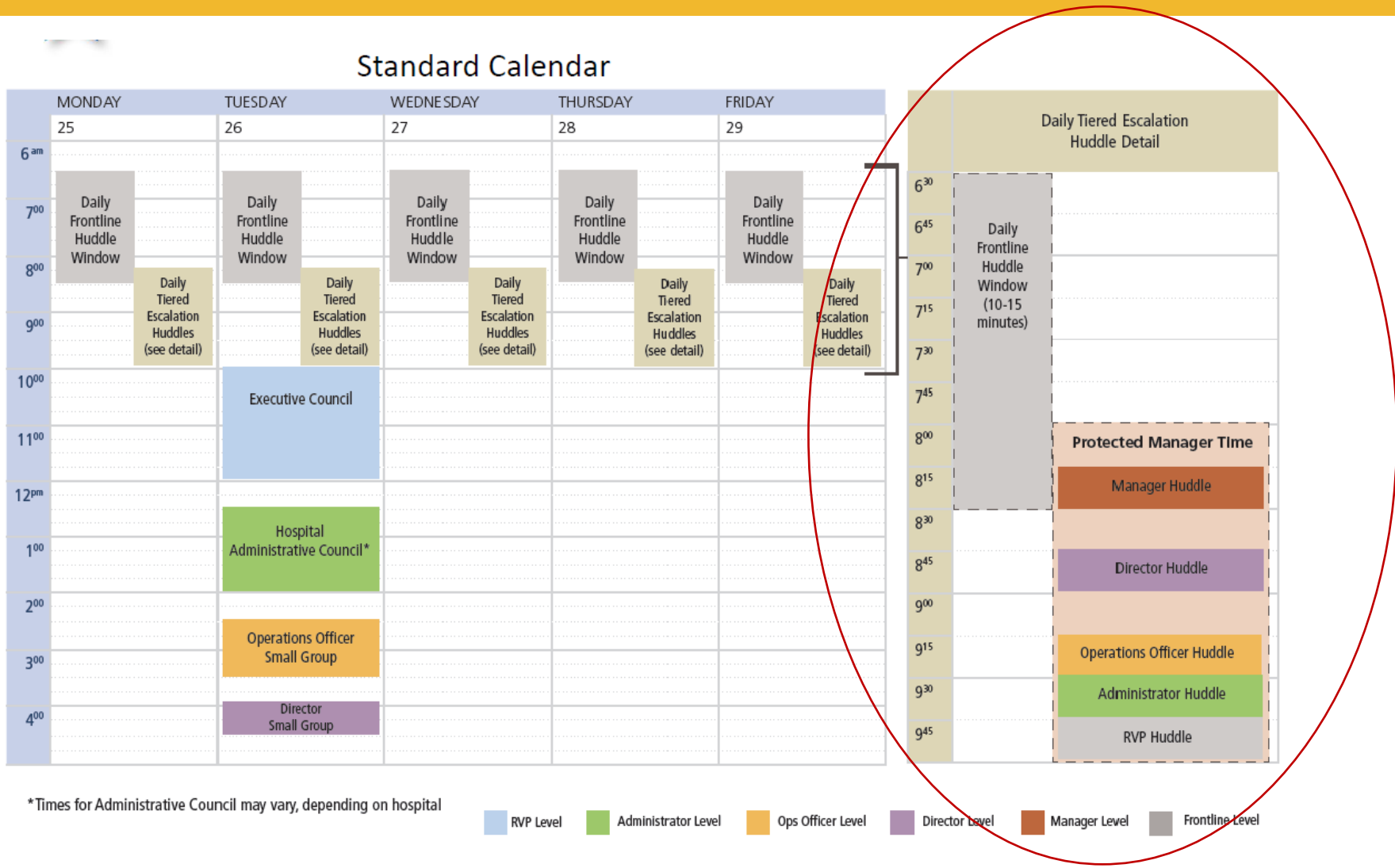
Daily management huddle

1. Status updates - 5 min
   Throughput and Criticality
2. Safety/ Improvement - 5 min
3. Announcements/ Education - 5 min
4. Run the Metric Board for Zero Harm focus areas

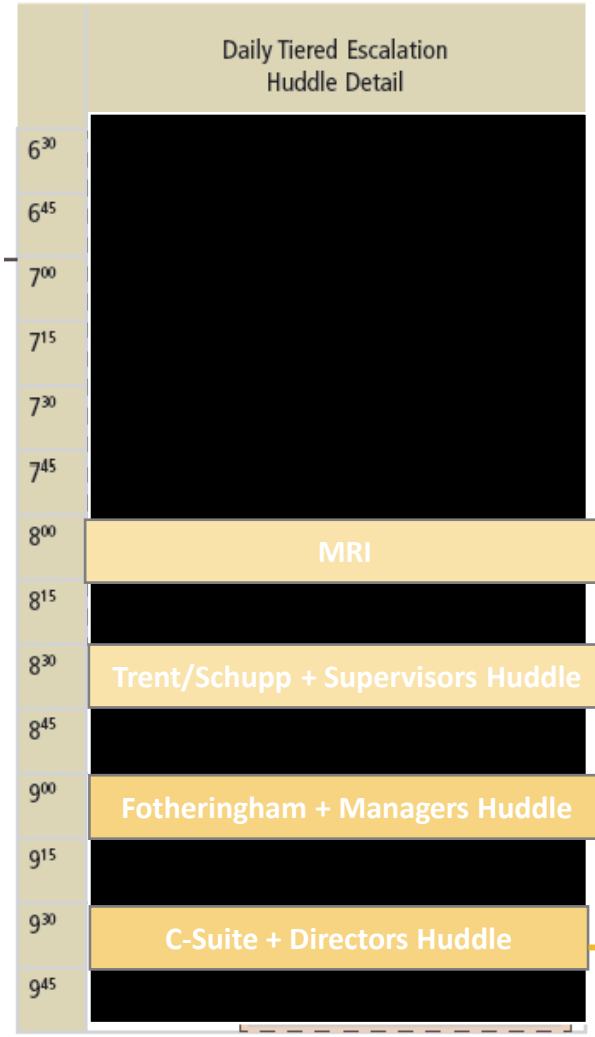


Cardiovascular Tier 1 Huddle Board (1/22/19)

Example of Tiered Huddle System: Intermountain Healthcare



Example at MUHC



Problem with magnet involving downtime, may affect inpatient exams; ***Escalate to next Tier***

Action: Group assigned to look into problems with magnet and create action plan for fix; ***Escalate to next Tier***

Action: Inform units of down magnet; identify patients in need of MRI; plan patient's day given new info; **Escalate to next Tier**

Communicate down magnet to impacted areas

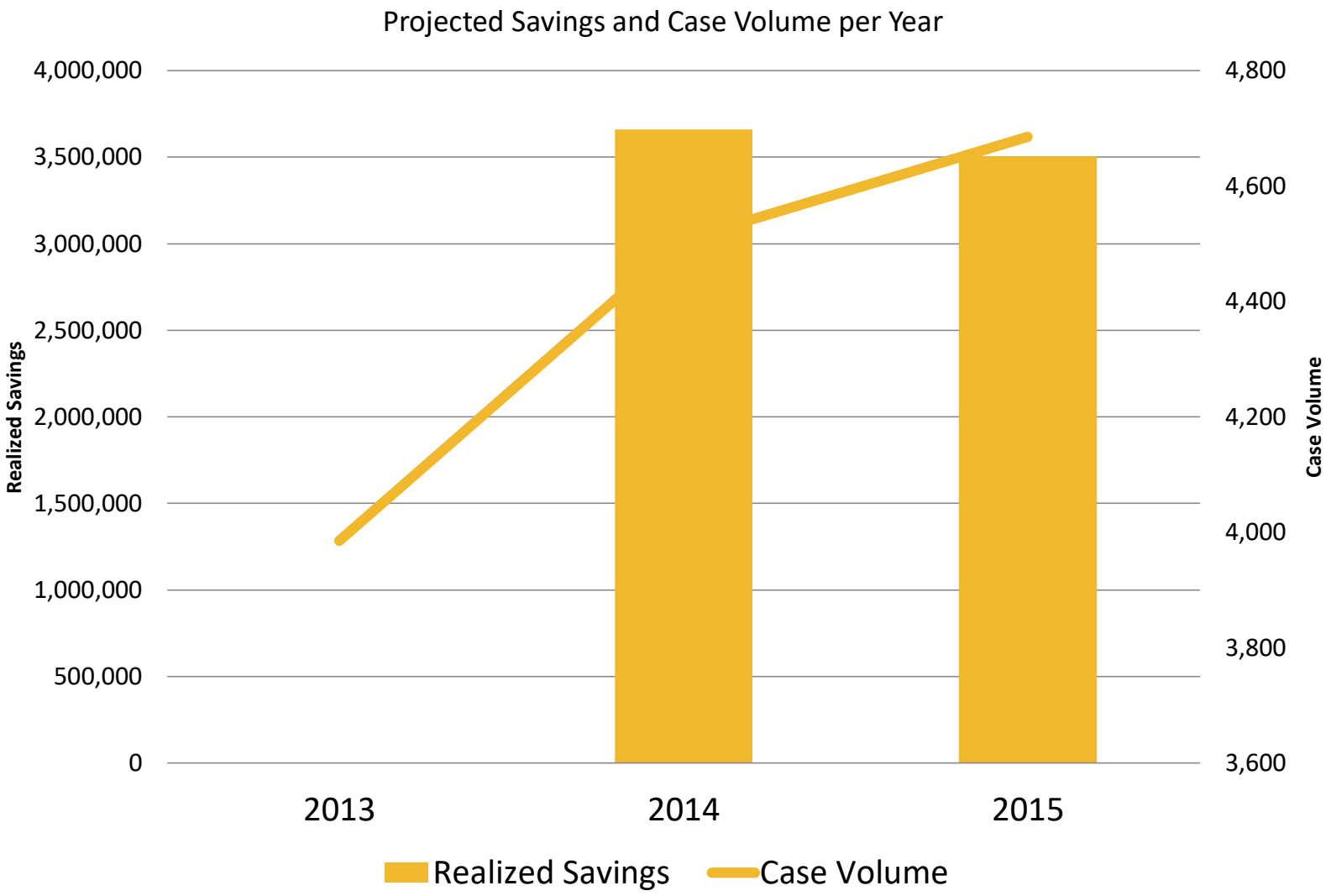
Spinal Surgery & Implants Project

- Drive Standardization in Implants and OR Care Process
- Prior to project Intermountain had 37 spine implant suppliers.
    - Open Supplier process.
- Major operational and quality control complexity
    - Inventory management
    - Staff training
    - Contract oversight
    - Rep management

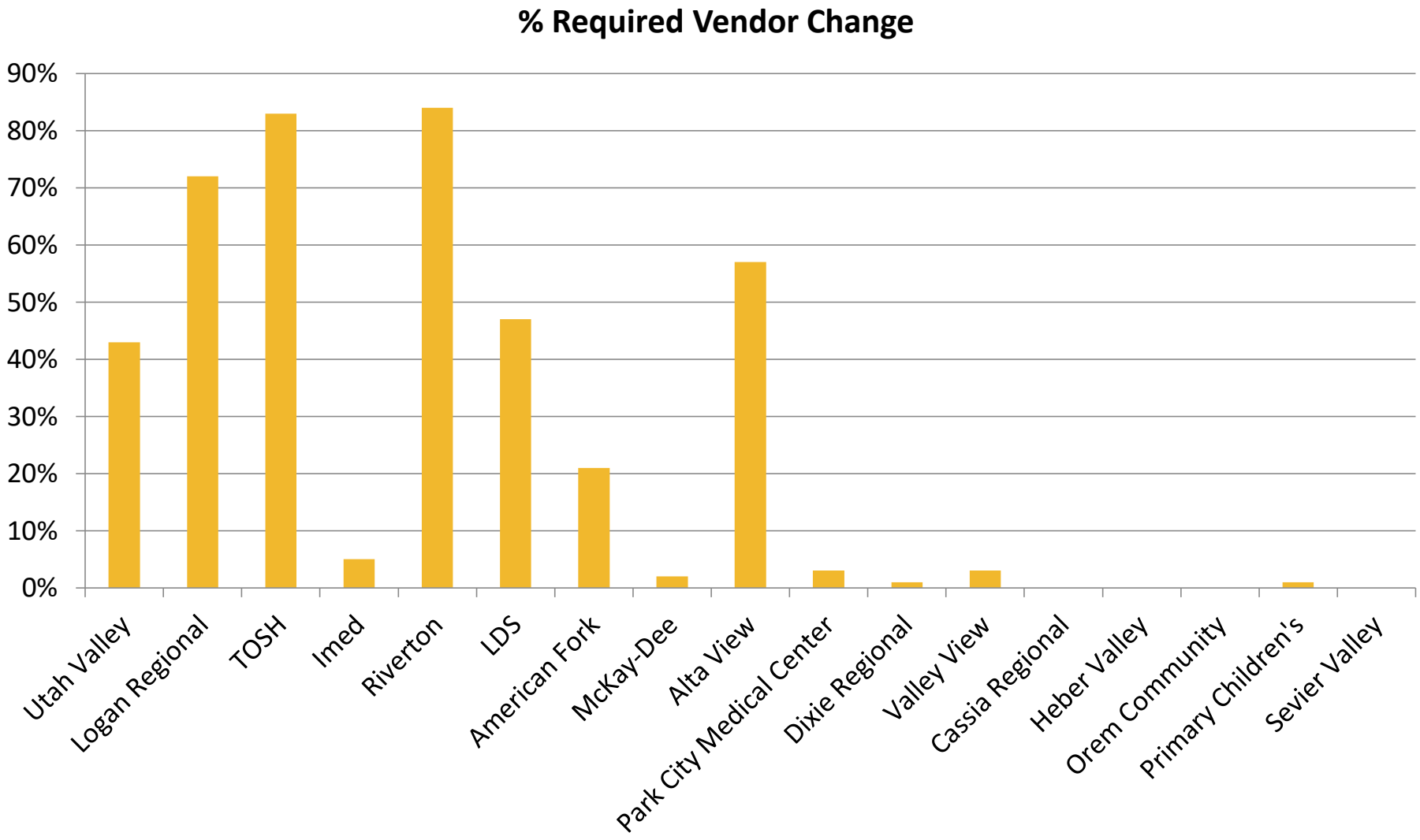
Identify Key Principles & Get Out of the Way:

- Patients are why we are here-Mission Driven
- Unnecessary variability drives increased in costs
- Affordability= Increased Patient Access
- Tracking and Transparency in quality and cost metrics is paramount
- Focus on the brutal facts-data driven decisions

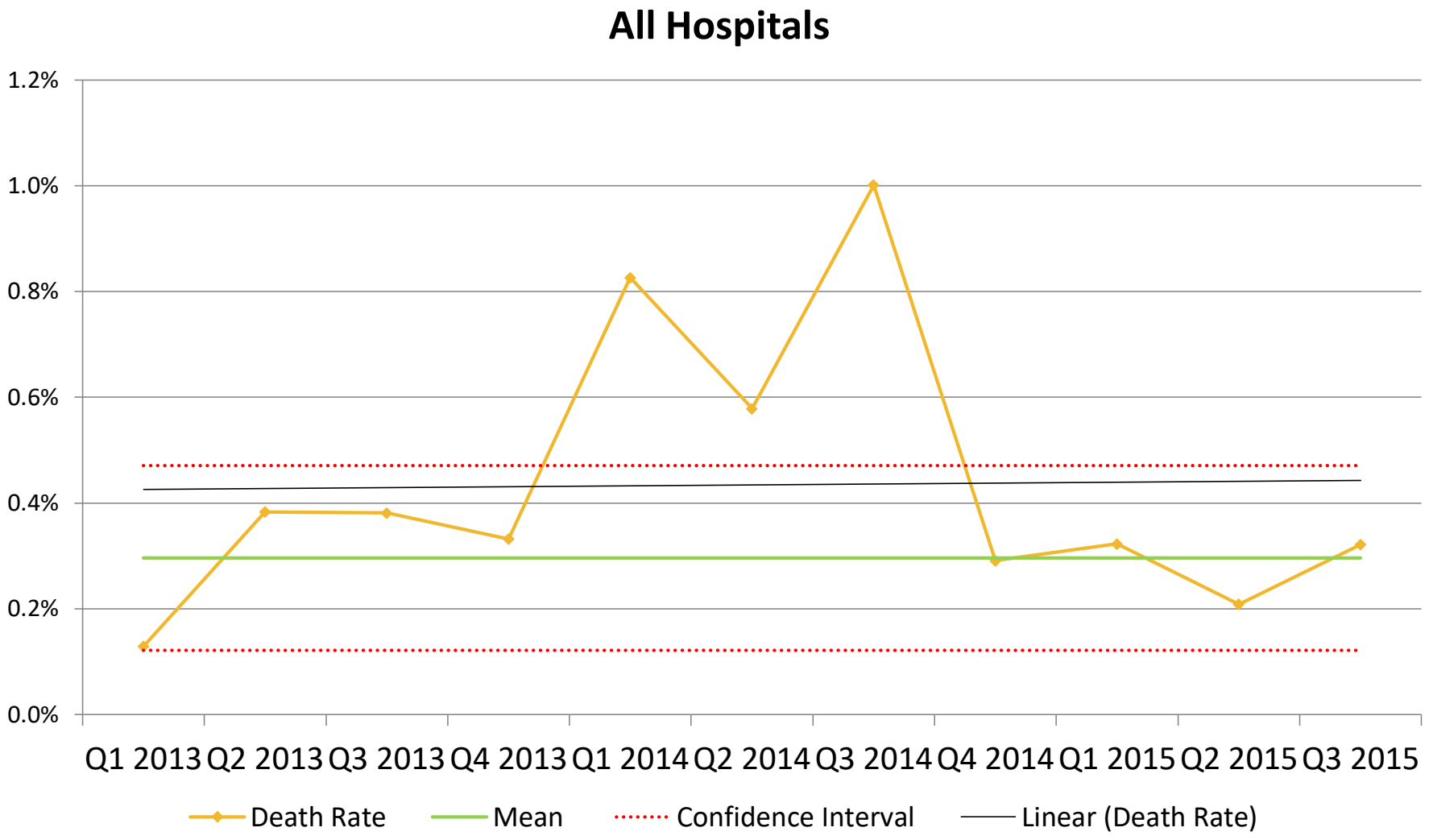
Implants Savings and Case Volume



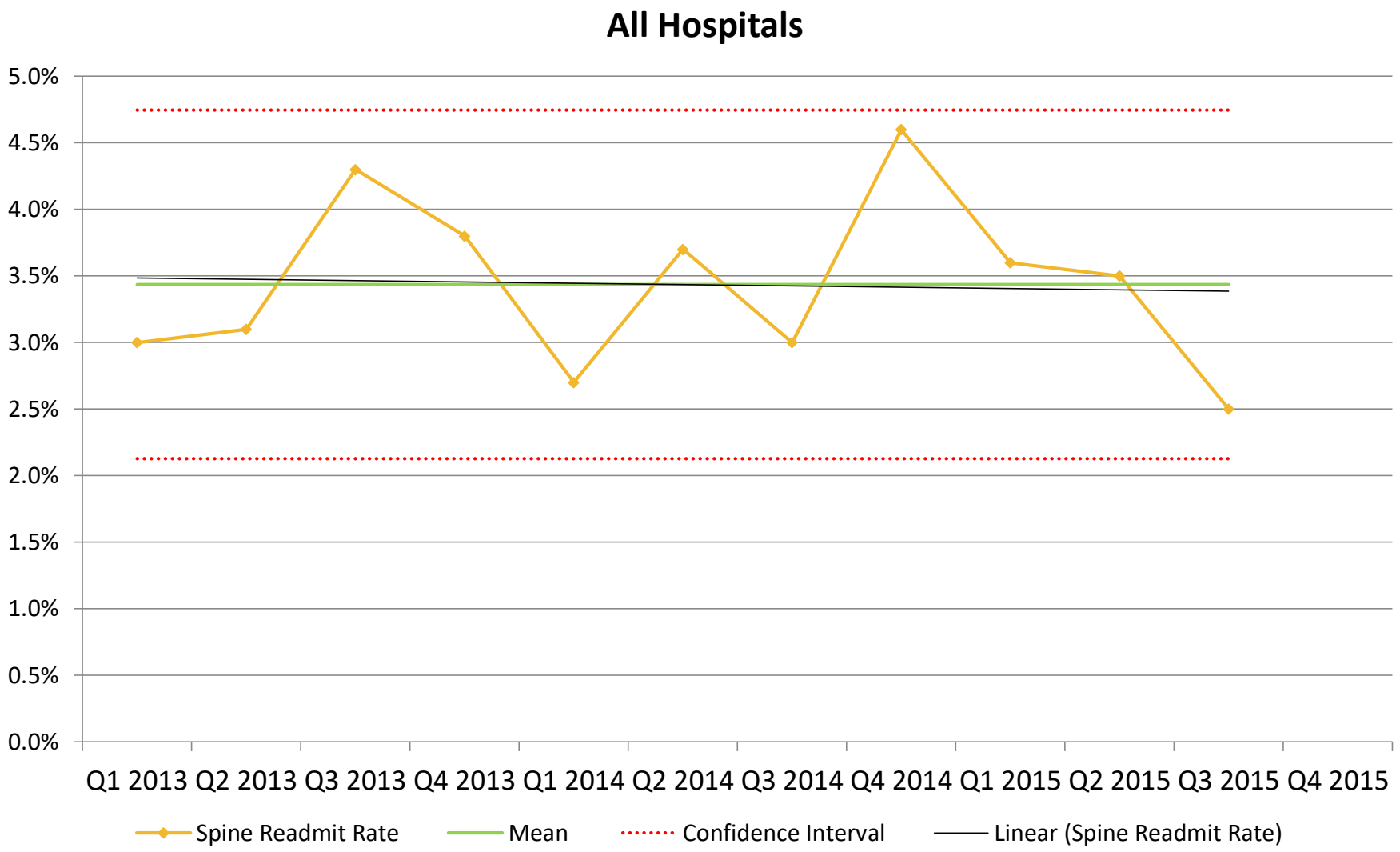
Changing Processes at Individual Hospitals



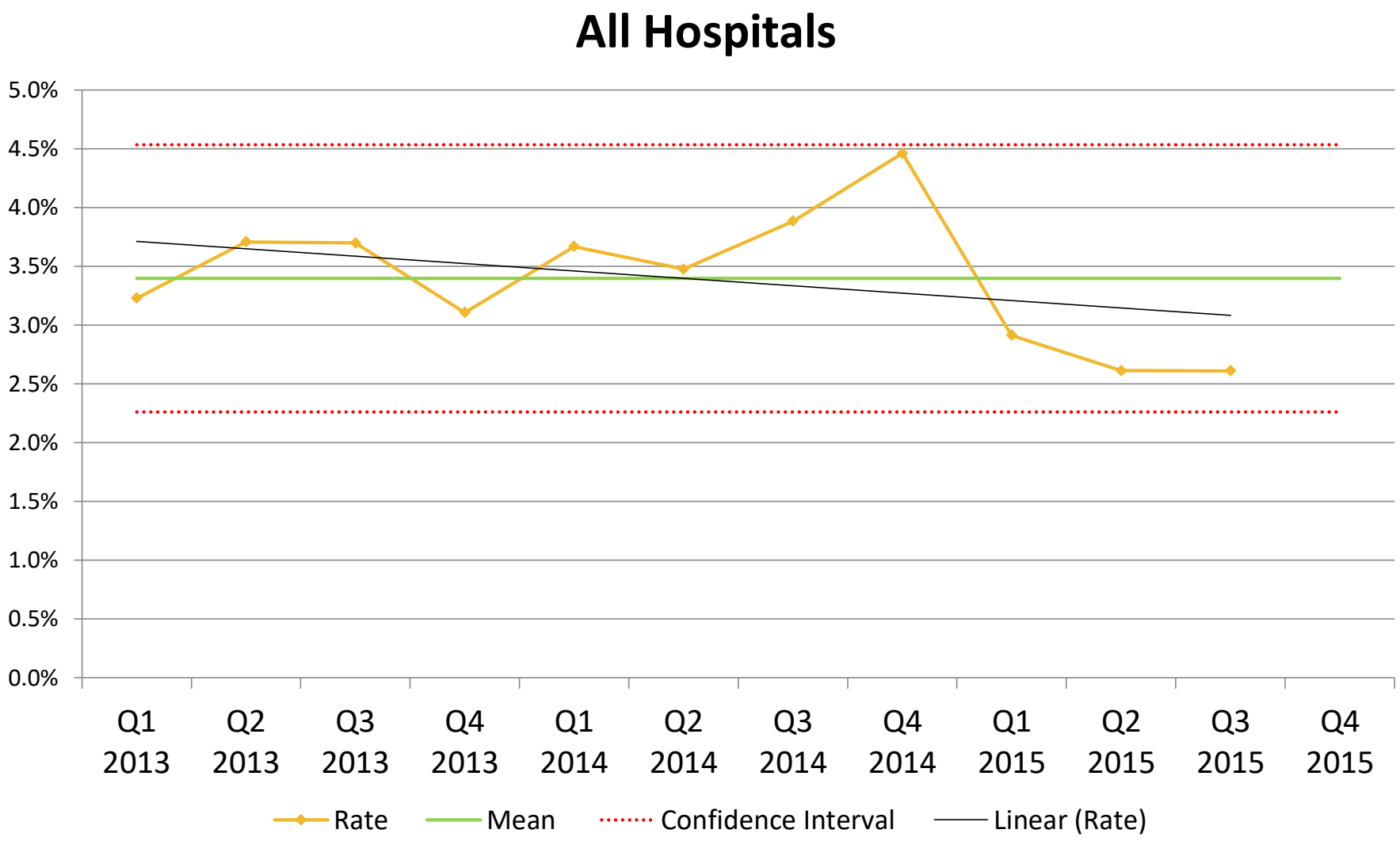
Mortality Rates



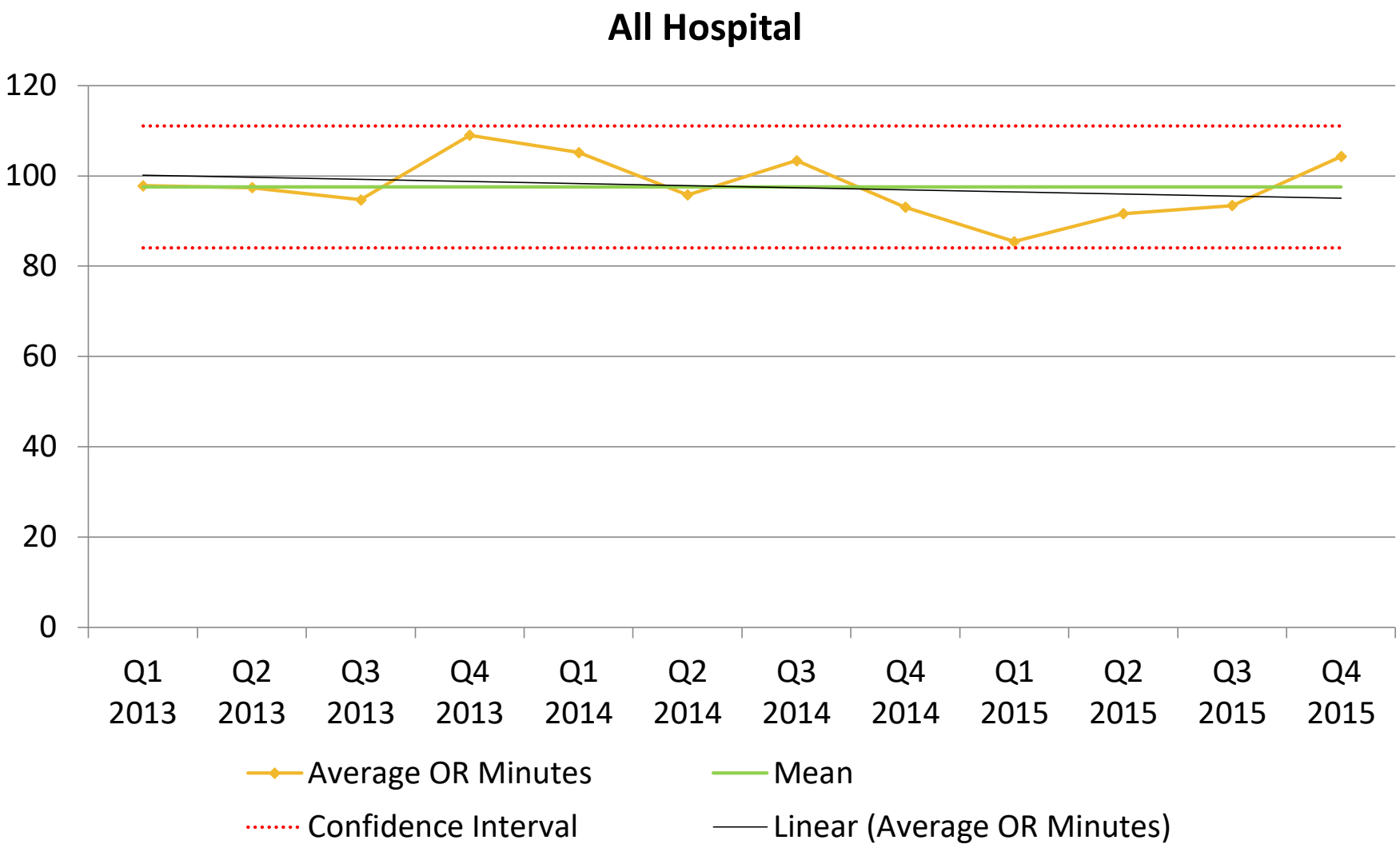
Readmission Rates:



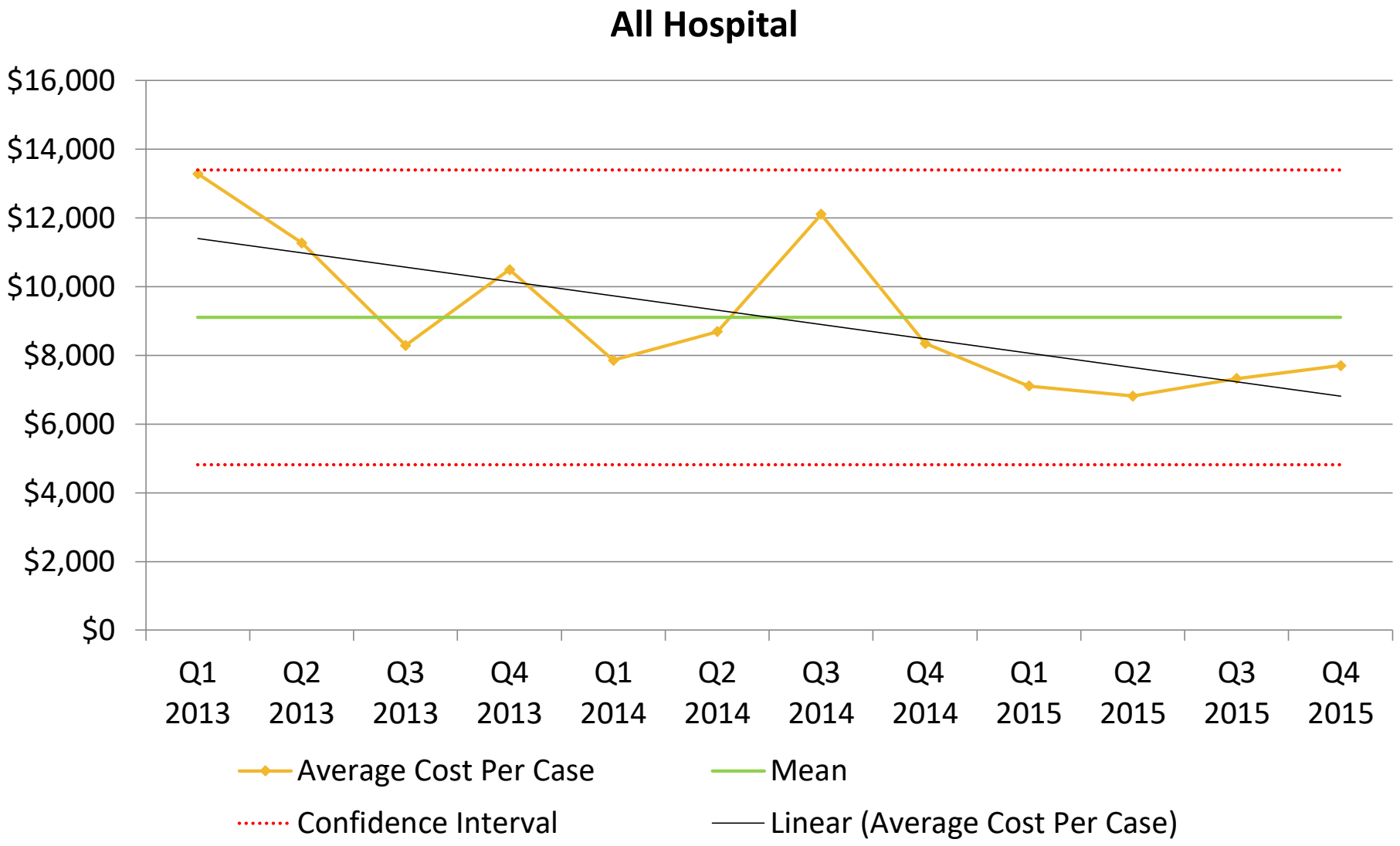
Complications:



OR Minutes:


All Hospital
120
100
80
60
40
20
0
Q1 2013
Q2 2013
Q3 2013
Q4 2013
Q1 2014
Q2 2014
Q3 2014
Q4 2014
Q1 2015
Q2 2015
Q3 2015
Q4 2015
Average OR Minutes
Mean
Confidence Interval
Linear (Average OR Minutes)

Cost Per Case:



5 Principles for Success

1. Define the “Why” & Awareness of Need
2. Identify Greatest Areas of Impact-Short & Long-Term
3. Resource & Build Infrastructure to Change Performance
4. Build Transparency & Trust
5. Lead & De-Centralize Ownership

When You All Are Singing the Same Song

Thank you.