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Using Market Data to Move the Needle on Performance

Session 177, March 7, 2018

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Hopkins Health System

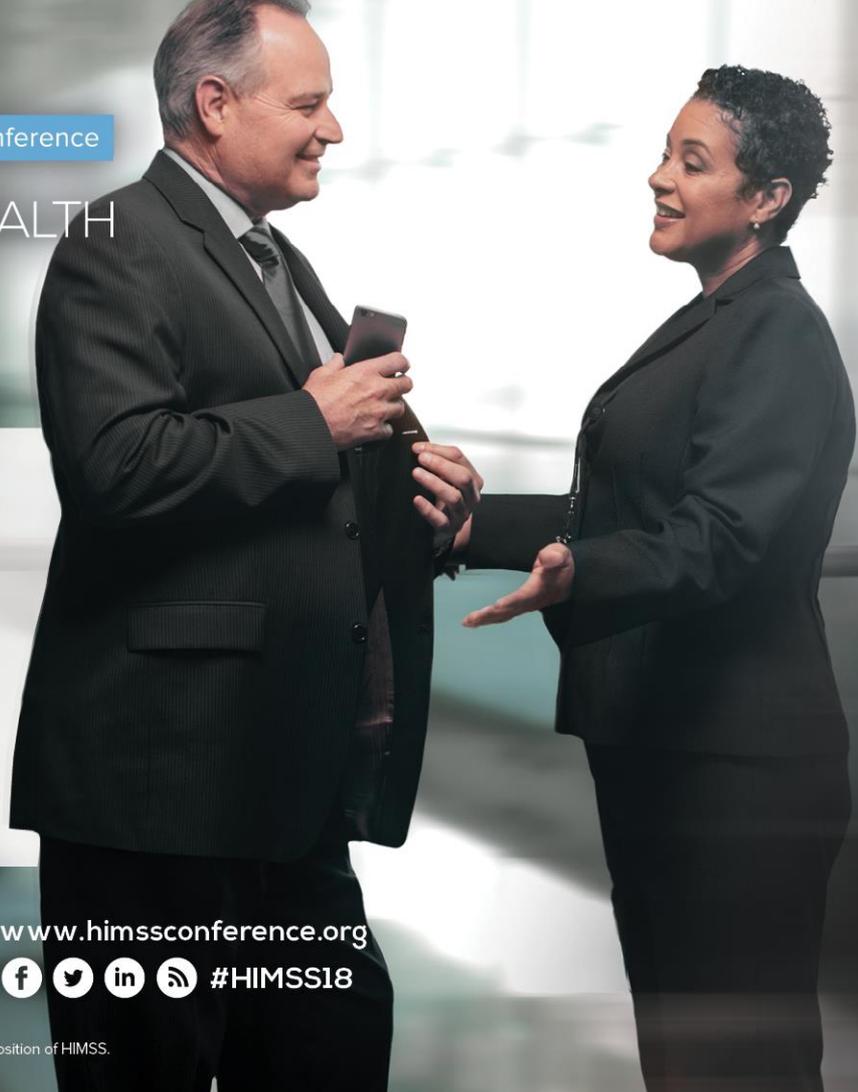
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COMMITMENT

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Conflict of Interest

Ed Beranek

- Has no real or apparent conflicts of interest to report.

James Case

- Has no real or apparent conflicts of interest to report.

Agenda

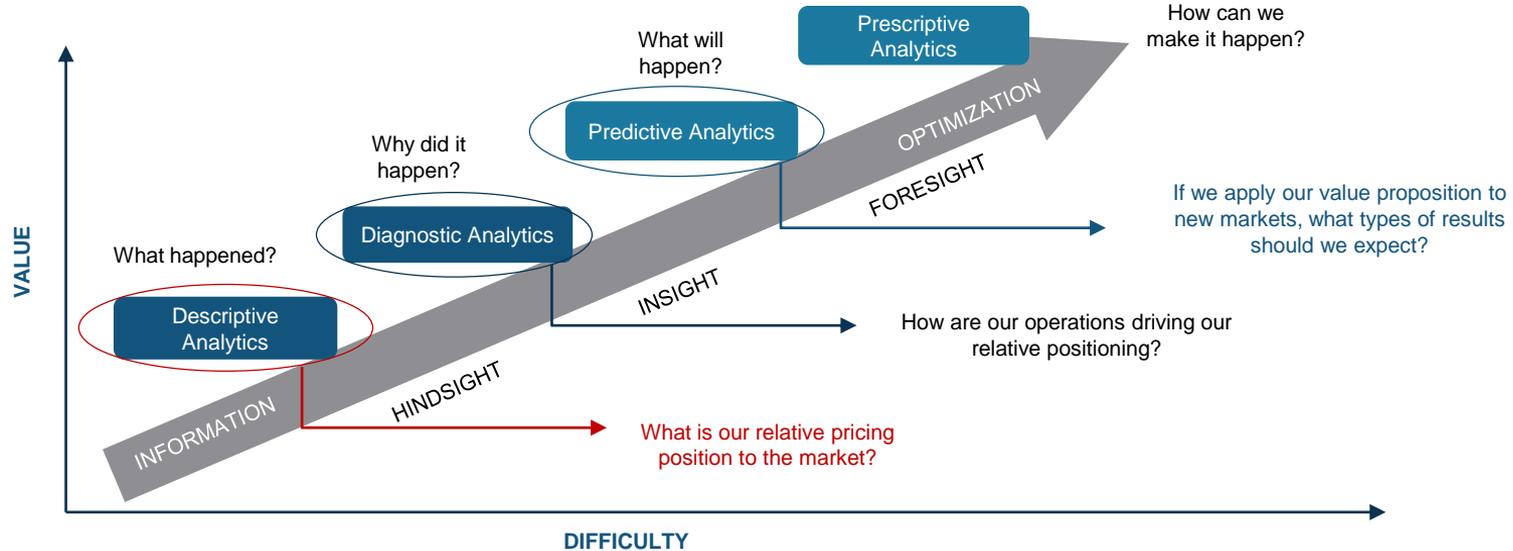
- The Problem
- Building the Plan
- Outcomes
- Lessons learned

Learning Objectives

- Learn how to use claims data to analyze and impact the Total Cost of Care
- Understand the concept of market growth in a value based care model
- Leverage your data to enhance your negotiating position during rate discussions
- Understand how to take a longitudinal view on pricing discussions

The Problem

We Wanted to use Market Data to Drive our Planning



The Scope Included Two Populations



Commercial Patients

Why: To generate profitable growth for the hospitals while generating savings for the Commercial payers



Medicare Patients

Why: To generate Medicare savings and cost efficiencies

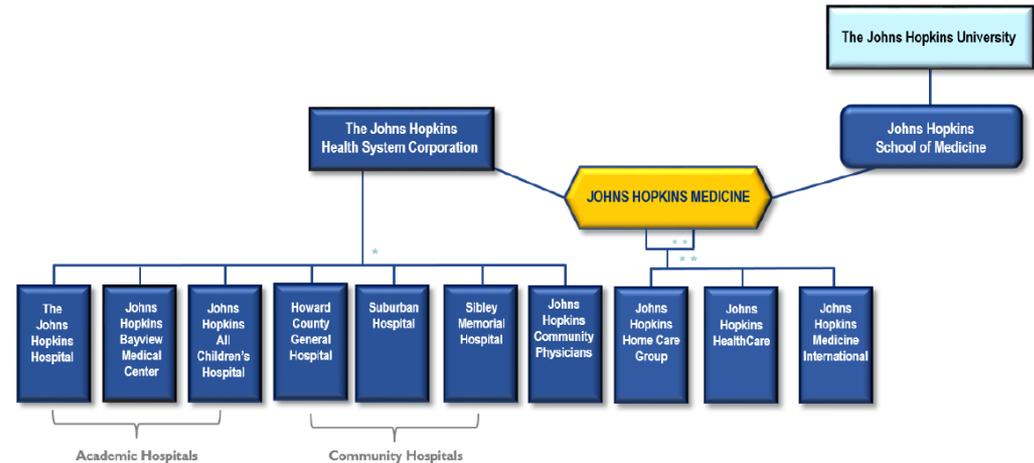
History & Structure of the Health System

- The Johns Hopkins Hospital opened in 1889, and the Johns Hopkins University School of Medicine opened four years later.
- In 1986, the hospital trustees created The Johns Hopkins Health System Corporation to serve as the parent of the hospital and future subsidiary entities.
- In 1996, the health system and the school of medicine joined together to become Johns Hopkins Medicine.



History & Structure of the Health System

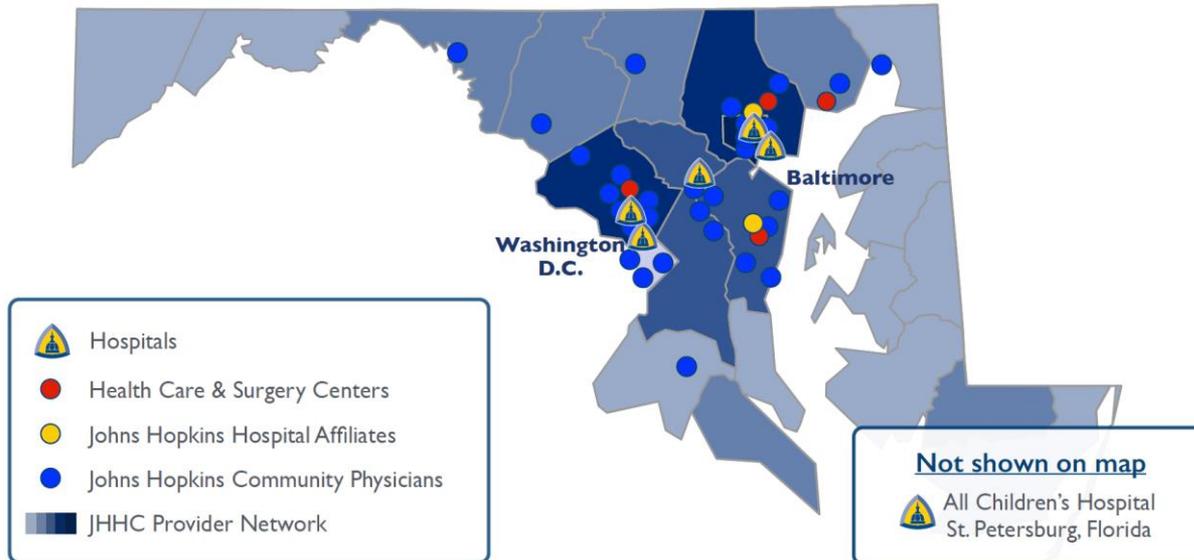
- \$8 billion in operating revenues
- 40,000-plus full-time equivalent employees; among largest private employers in Maryland
- 2.8 million-plus annual outpatient visits
- 360,000-plus annual emergency department visits
- 115,000-plus annual hospital admissions
- At over \$2 billion, The Johns Hopkins University is, for the 37th straight year, the leading U.S. academic institution in total research and development spending, according to the National Science Foundation's rankings.



* These entities are 100 percent owned by The Johns Hopkins Health System Corporation

** These entities are 50 percent/50 percent joint ventures between The Johns Hopkins Health System Corporation and The Johns Hopkins University

OUR INTEGRATED HEALTHCARE DELIVERY NETWORK



Maryland Model in a Minute



The “All Payor” System

1. All payers pay the same rates for the same services at the same hospital
 - Medicare/Medicaid pays hospitals based on HSCRC rates, not IPPS/OPPS
 - No shifting to private insurance
- 2 Since 1977 Medicare “Waiver”

The Waiver

An agreement between the Federal government and the State of Maryland based on a test

Original waiver test: compared Maryland growth in Medicare payment per admission to national growth rate

Changes to:

New waiver test: All payer, per capita, Maryland residents hospital in- and outpatient less than 3.58%

Aggregate Medicare savings of \$330 M over 5 years below national per capita trend

Maryland Model in a Minute



Needed to transform hospital payment models to manage to test



Global Budget Revenue (GBR) Agreements executed with each hospital and health system



Fixed revenue base for 12 month period with annual adjustments



Hospitals change their prices +/- 5.0% to charge for their budget with fluctuations in volume



If a hospital reduces potentially avoidable utilization, they retain savings



Annual adjustments for medical inflation, population growth, market shifts, and additional quality incentives

The Health System is Facing Similar Challenges that Many Health Systems Across the Nation Face Today

Deliver profitable growth

Consumer expectations and emerging technologies are changing the business of healthcare. The high cost of care is driving a greater focus on consumer-directed priorities and suggesting that consumer-driven health care will continue to thrive and mature.

Innovate to new heights

Competition is reducing margins and increasing pressure on organizations to differentiate their services while also improving operational efficiency and quality of care. New regulatory burdens will present challenges and increased costs demanding innovative solutions.

Harness disruptive technology to your advantage

Every business problem is now a technology problem. You have to know how to use IT to deliver against your strategy. New channels and business models raise complexity issues and implications.

Pave the path to patient loyalty

How do you retain existing patients and win new ones against a background of rising consumer expectations and greater choice in health services and delivery options.

The Pursuit of Profitable Growth: Four Problems Worth Solving



Develop new and innovative business relationships to drive growth at The Johns Hopkins Hospital and the Health System



Increase the value of service at the Johns Hopkins Health System to generate **savings for the Medicare program**



Identify new markets where the Johns Hopkins Health System provided a differentiated value proposition



Change the way the Health System approached **business planning**

Develop new and innovative business relationships



Foster Personal Relationships

Executives within the health system had personal relationships with payers, providers, and others in new markets



Approach it as Collaboration versus Negotiation

Traditionally, both parties worked independently but not collaboratively yet

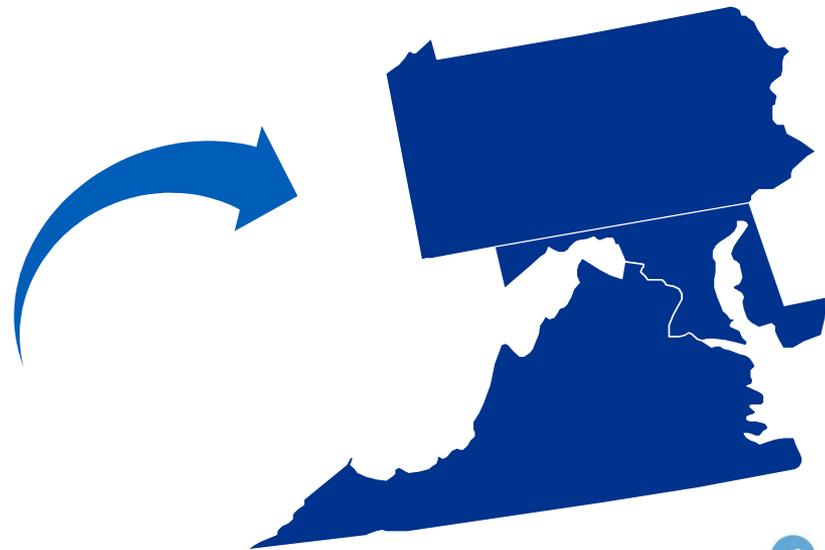
Identify New Markets

Within our existing market with new services



- Physician and Freestanding Ambulatory Centers
- Post Acute
- Ancillary Providers
- Hospital

In new markets with our existing services



Savings for the Medicare Program



Focus on high Medicare services

- 1 If we can prove that we are low cost, we can generate additional volume

Implement episode-based payment and population health strategy

- 2 We've been successful in employer-based contracts which we would like to leverage to a broader audience

Change Planning to Align with our Value Proposition



Measuring value at the encounter level largely blinds payers and patients from the value we create

The Hitch in our Plan:

What the Market Thought about JHHS

The commonly held belief from payers and other business partners was that the cost of care at The Johns Hopkins Hospital was too high relative to other hospitals in the market



= Academic
Medical Center =



High Cost
of Care

Building the Plan

Our Project had Four Primary Objectives to Address the Problems at Hand

Use Descriptive Analytics

To understand the total cost of care of patients of the Johns Hopkins Health System compared to the market to be able to articulate to potential business partners

Use Diagnostic Analytics

To identify actionable opportunities to reduce utilization and lower total cost of care

Use Predictive Analytics

To identify new markets for growth and strategies to enter into those new markets

Socialize internally using total cost of care in business planning for the Health System

Going with our Gut: How did we get started?

Driver of decision

Recognized high value service line in the local market



Service Line

Tertiary pediatrics

Total joint replacements

Upcoming renegotiation/ existing payer contracting



Whipple procedures

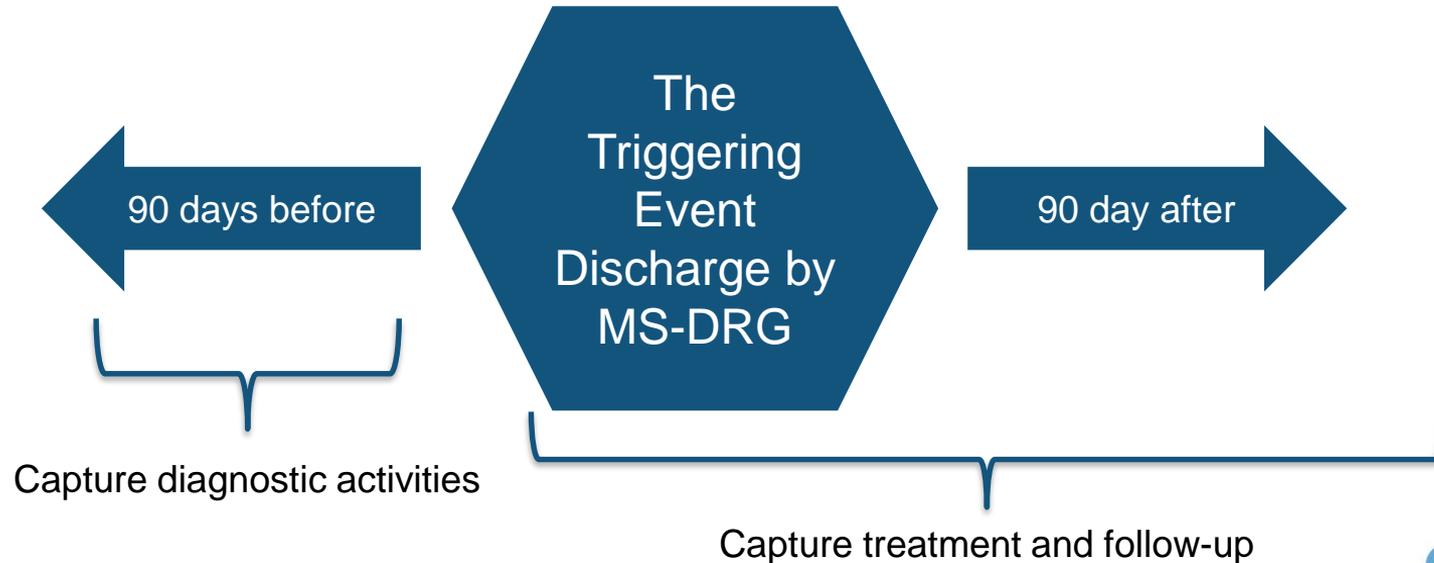
Spinal procedures

Internal service line performance improvement initiatives

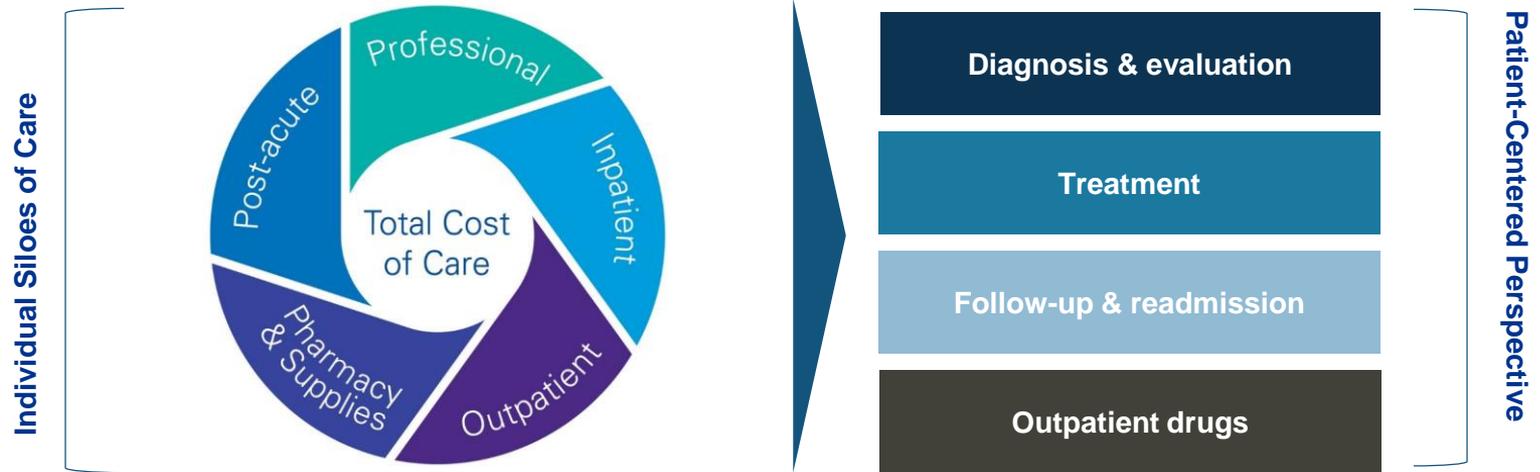


Neurosurgery

Building a Unit of Measurement that Aligned with our Value



Using claims data to understand external perception and realign on our value



The Hard Work: Creating Episodes from Claims Data

Three new field types identifying

- Individual beneficiaries
- Individual claims
- Linked encounters (hospital and physician in same stay)

memb_id	claim_id	stay_id	a
29491	694979833	NULL	
29491	695004618	NULL	
29491	695028454	11863213	
29491	694958050	11863213	
29491	694951033	11863213	
29491	694951033	11863213	
29491	694928343	NULL	
29491	694958050	11863213	
29491	694958050	11863213	
29491	694996534	NULL	
29491	695225497	NULL	
29491	695225497	NULL	
29491	695239562	NULL	
29491	695408459	NULL	
29491	695408461	NULL	
44395	695583571	9568704	
44395	695569296	9568704	
44395	694641192	9568703	
44395	694630233	9568703	
44395	694637052	9568703	
44395	694709780	NULL	
44395	694670304	NULL	
44395	683296852	NULL	
44395	683296852	NULL	
44395	695053754	9568703	
44395	695053754	9568703	
44395	695549996	9568703	
44395	184336292	9568703	
44395	184336292	9568703	
44395	184336292	9568703	
44395	184336292	9568703	
44395	184336292	9568703	
44395	184336292	9568703	
44395	184336292	9568703	

A mixture of claim types

- MS-DRGs for Inpatient Provider
- CPT codes for Professional claims insides and outside the hospital

dig_code	mdc_code	revenue_code	Revenue Code Description	cpt_code	CPT Code Description
NULL	NULL	NULL	NULL	99253	Inpatient consultation for a new or established patient, whi
NULL	NULL	NULL	NULL	99284	Emergency department visit for the evaluation and manage
NULL	NULL	NULL	NULL	95951	Monitoring for localization of cerebral seizure focus by cable
NULL	NULL	NULL	NULL	99223	Initial hospital care, per day, for the evaluation and manage
NULL	NULL	NULL	NULL	A0427	Ambulance service, advanced life support, emergency transp
NULL	NULL	NULL	NULL	A0427	Ambulance service, advanced life support, emergency transp
NULL	NULL	NULL	NULL	99285	Emergency department visit for the evaluation and manage
NULL	NULL	NULL	NULL	99233	Subsequent hospital care, per day, for the evaluation and m
NULL	NULL	NULL	NULL	99238	Hospital discharge day management; 30 minutes or less
NULL	NULL	NULL	NULL	88293	Cytogenetics and molecular cytogenetics, interpretation anc
NULL	NULL	NULL	NULL	99213	Office or other outpatient visit for the evaluation and mana
NULL	NULL	NULL	NULL	99212	Office or other outpatient visit for the evaluation and mana
NULL	NULL	NULL	NULL	99214	Office or other outpatient visit for the evaluation and mana
NULL	NULL	NULL	NULL	90461	Immunization administration through 18 years of age via an
NULL	NULL	NULL	NULL	90710	Measles, mumps, rubella, and varicella vaccine (MMRV), live
NULL	NULL	NULL	NULL	90460	Immunization administration through 18 years of age via an
NULL	NULL	NULL	NULL	90398	Diphtheria, tetanus toxoids, acellular pertussis vaccine and i
NULL	NULL	NULL	NULL	98392	Periodic comprehensive preventive medicine reevaluation a
NULL	NULL	NULL	NULL	70450	Computed tomography, head or brain; without contrast maf
NULL	NULL	NULL	NULL	99285	Emergency department visit for the evaluation and manage
NULL	NULL	NULL	NULL	99223	Initial hospital care, per day, for the evaluation and manage
NULL	NULL	NULL	NULL	95812	Electroencephalogram (EEG) extended monitoring; 41-60 m
NULL	NULL	NULL	NULL	70553	Magnetic resonance (eg, proton) imaging, brain (including b
NULL	NULL	NULL	NULL	99285	Emergency department visit for the evaluation and manage
NULL	NULL	NULL	NULL	70450	Computed tomography, head or brain; without contrast maf
NULL	NULL	NULL	NULL	A0425	Ground mileage, per statute mile
NULL	NULL	NULL	NULL	A0427	Ambulance service, advanced life support, emergency transp
NULL	NULL	NULL	NULL	A0425	Ground mileage, per statute mile
NULL	NULL	NULL	NULL	A0427	Ambulance service, advanced life support, emergency transp
NULL	NULL	NULL	NULL	99223	Initial hospital care, per day, for the evaluation and manage
101	1	636	DRUGS REQUIRING DETAILED CODING	NA	#N/A
101	1	351	HEAD SCAN	NA	#N/A
101	1	305	HEMATOLOGY	NA	#N/A
101	1	450	EMERGENCY ROOM, GENERAL	NA	#N/A
101	1	214	INTERMEDIATE CCU	NA	#N/A
101	1	250	PHARMACY, GENERAL	NA	#N/A



What was our Relative Pricing Position in the Market?

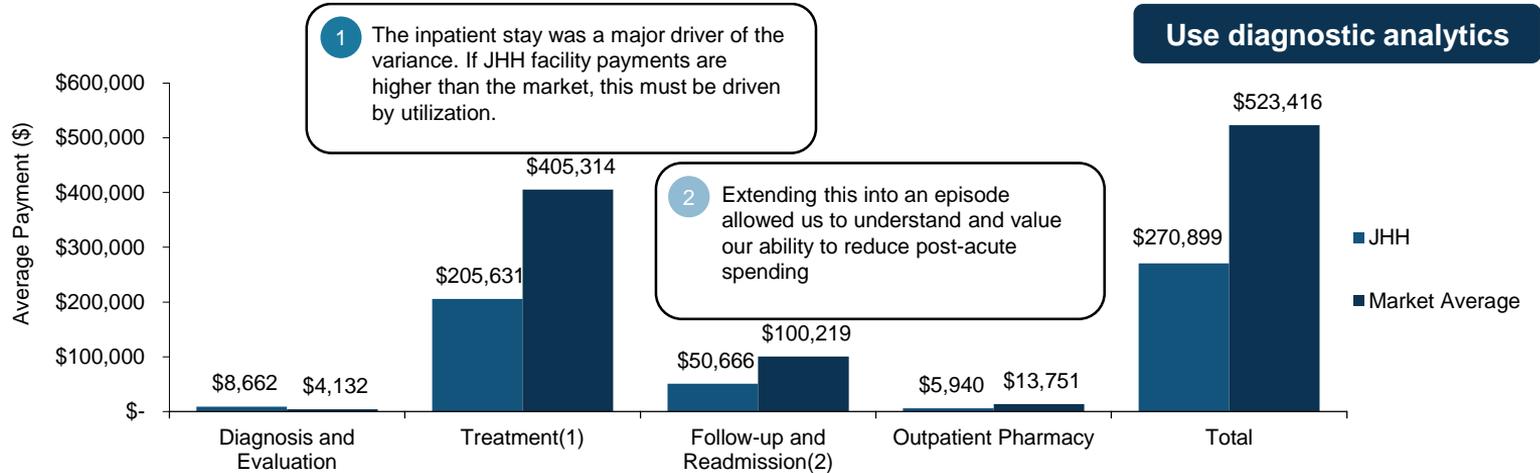
It's important to risk-adjust

Use descriptive analytics

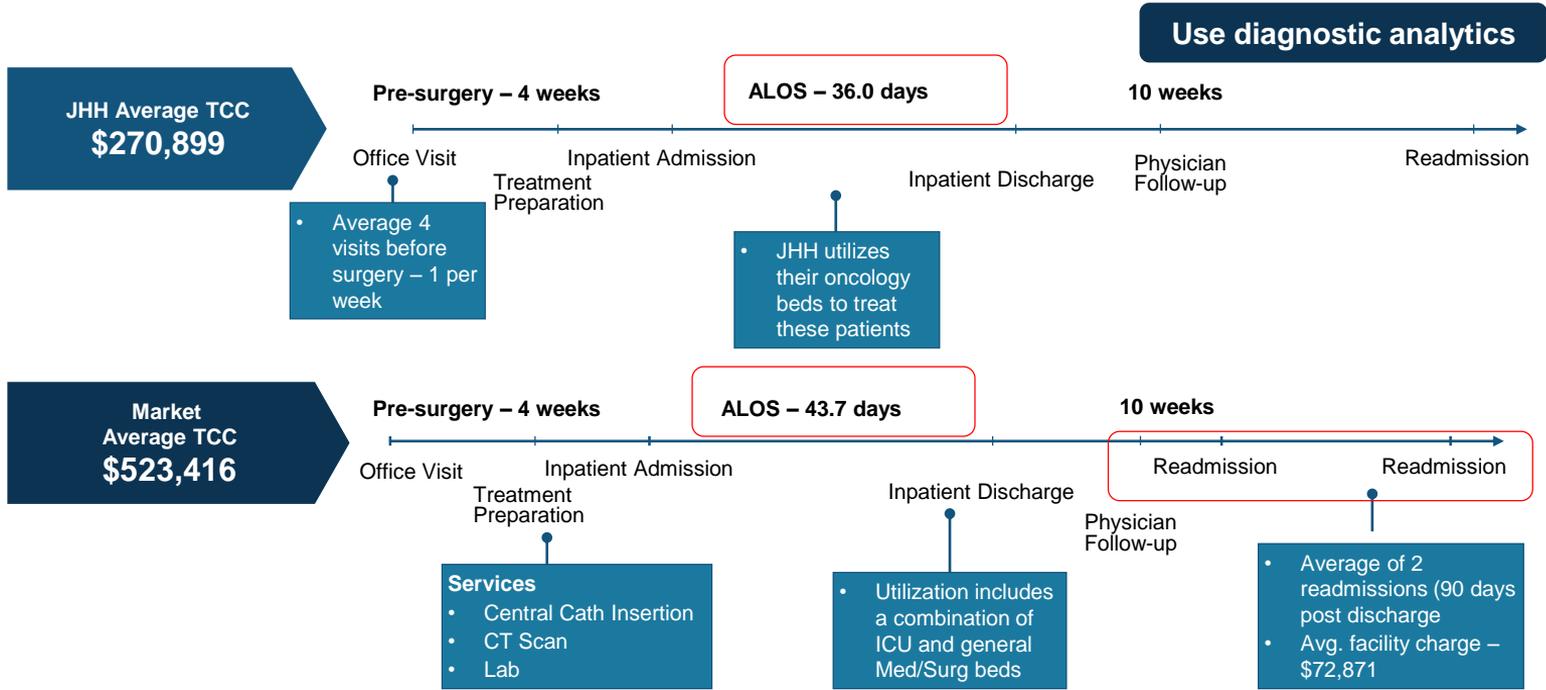
Why?

MS-DRG	MS-DRG Description	JHH	Market	Variance
101	Seizures w/o MCC	\$59,690	\$40,121	JHH's total cost of care is <u>\$19,569 higher per episode</u> than the market average episode
14	Allogeneic Bone Marrow Transplant	\$270,899	\$523,416	JHH's total cost of care is <u>\$252,517 lower per episode</u> than the market average episode

How are our Operations Driving our Relative Positioning?



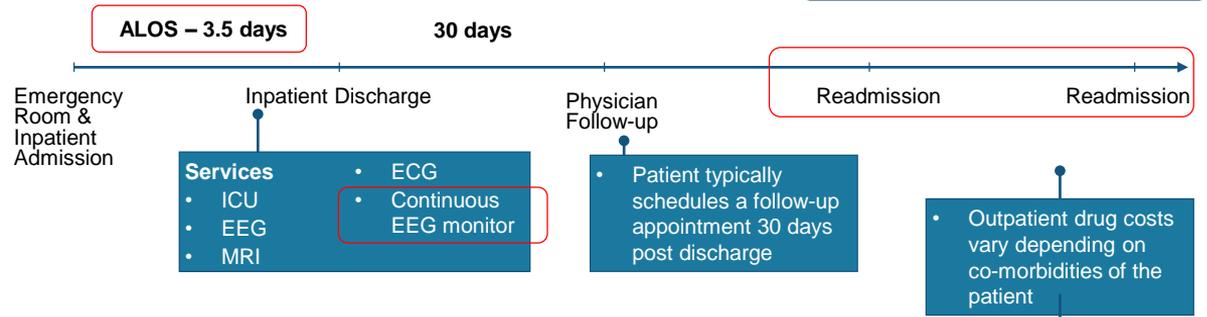
Source: KPMG Commercial Claims Database for Pennsylvania and Delaware – Averages computed over multiple commercial plans over these two states Note: (1): Data based on all JHH commercial patients in CY 2013 & CY 2014. Source is HSCRC Inpatient abstract data (2): Based on claims from all JHH patients in the KPMG Commercial Claims Database



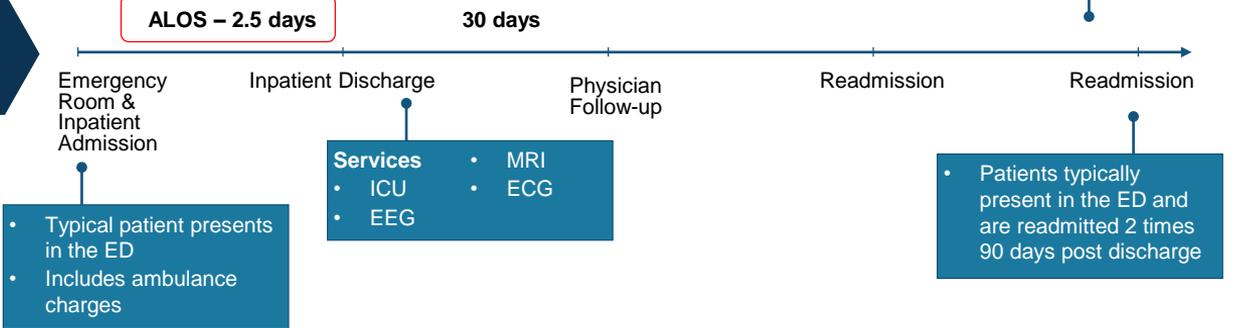
Source: KPMG Commercial Claims Database for Pennsylvania and Delaware – Averages computed over multiple commercial plans over these two states

Use diagnostic analytics

JHH Average TCC
\$59,690

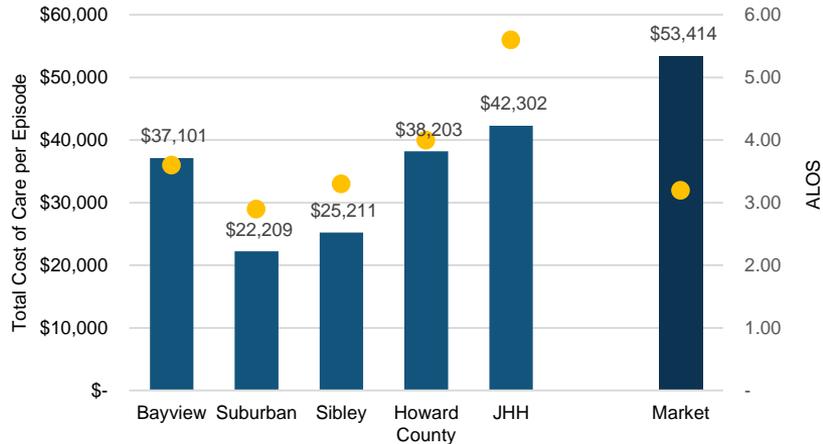


Market Average TCC
\$40,121



Where are Opportunities to Generate Medicare Savings?

Comparison of cost of care & ALOS by hospital



Use descriptive analytics

- 1 There was wide variation in the ALOS and total cost of care per episode within the Health System with the ALOS ranging from 2.9 – 5.6 days.
- 2 The JHHS hospitals were well below the market in total cost of care per episode.
- 3 The JHHS hospital with the most volume (Suburban Hospital), had much lower payments and ALOS than any other hospital, even though Hopkins-Bayview had a total joint center of excellence.

How could we realize the Medicare Savings?

Use diagnostic analytics

1

Variation in ALOS and Supply Expense

Reducing utilization variation in ALOS and average supply cost, to get all hospitals to the best performing hospital (2.9 days), would **save Medicare \$6.4 million annually** and JHHS hospitals would be at a significant competitive advantage to the market overall.

Standardization of cost of care @ 2.9 ALOS



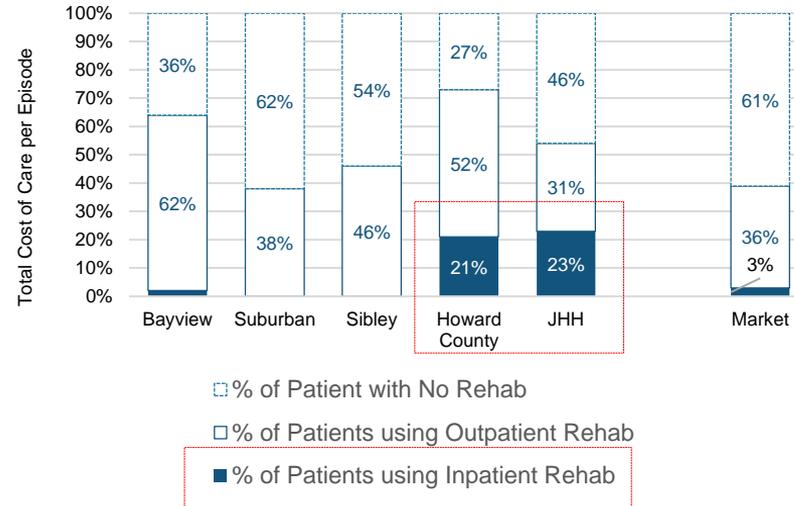
How could we realize the Medicare Savings?

2

Variation in site of service

Two of JHHS's highest total cost of care hospitals had significantly higher total cost of care than the rest. This was due to these hospitals using inpatient rehabilitation providers in the 90 days post discharge

Use diagnostic analytics



Outcomes

Market Growth Through Expanded Total Joints Contract to Suburban Hospital

What we thought from prior experience:

The initial direct-to-employers were operationalized through Hopkins-Bayview because of the total joints center of excellence

What we now know:

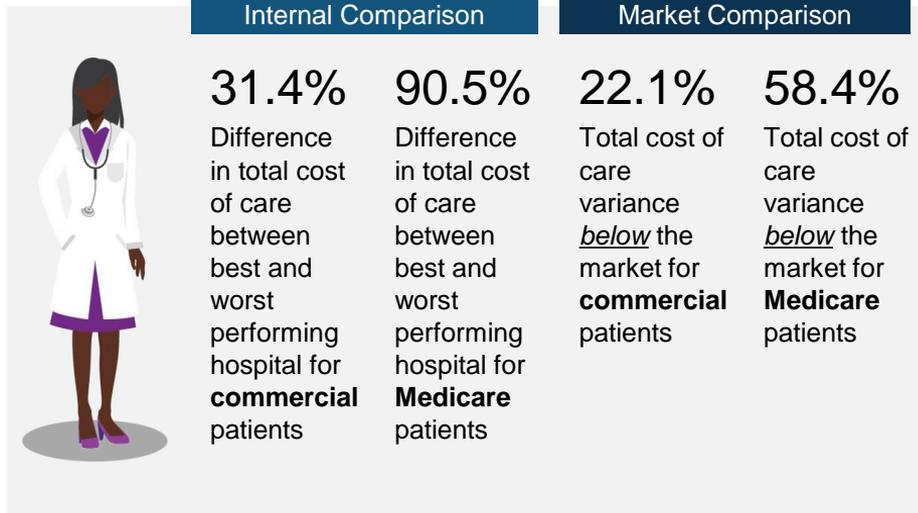
Being able to predict utilization impact on ROI for direct-to-employer groups was important

Volume was a significant driver of utilization efficiency which made JHHS consider including Suburban Hospital in future contracts

Use predictive analytics



Standardization in the Supply Chain for Total Joints in Medicare Patients



Use predictive analytics

What we thought from experience:

Managing supply chain expenses effectively was important for overall cost controls for the system.

What we now know:

Superior efficiency in operations would allow us to predict our ability to execute on value-based contracts and become a core capability to drive future growth

Change in the Narrative in Rate/Pricing Discussions

What we thought from experience:

The Johns Hopkins Hospital's prices were reasonable compared to the market and the quality was of the highest-levels.

What we now know:

Looking at internal pricing information on an encounter level masked the value proposition of being diagnosed and treated at The Johns Hopkins Hospital.

Applying a longitudinal view in commercial rate negotiations proved the value that we knew existed in business terms

Use predictive analytics



\$435M

In commercial market payments



< 1%

JHHS market share in a stable market



20%

Enter the market as a low total cost of care provider which was significantly below the market competitors at a reasonable margin

Identifying New Market Growth Opportunities and a Differentiated Value Proposition

Use predictive analytics



We could estimate a sizable market with growth potential

Our service line presented a differentiated value proposition

We could make a positive margin on the service

Lessons Learned from our Experiences

The theme	The situation	The issue	Our recommendation
Taking a data-driven approach to planning	The move to value-based care necessitates that health systems begin to think about, plan for, and implement changes in the operations to enhance value to the patient.	Building those capabilities across the enterprise may be thought to be too significant of an investment for health systems that are skeptical about the movement to value-based care.	Organizations should approach the discussion at the service line level to allow health systems to build value-based care capabilities that align with producing outcomes favorable to the organization in the near-term, while also positioning the organization for long-term success as the movement towards value-based care continues to progress.
The need for competitive market data	It's difficult to make assertions on relative value without data on competitors	While the Health System has some claims data assets, those assets did not cover populations where the bulk of provider operations took place.	We would recommend researching and acquiring claims data assets that cover significant populations in the market. Claims data, because of its ability to shed light on operations at each health system affiliate and each hospital/physician office/post-acute provider in the market, is a key resource in redesigning operating models for value-based care.
Thinking strategically like a health system	Many health system affiliates do not operate in a coordinated fashion	Discussions around systemness are difficult as it may be perceived as taking autonomy from affiliate hospitals.	We would recommend early and often communication/buy-in from system and hospital-level leaders.
Planning and implementation takes time	Analytics helps to speed that assessment because it provides an objective lens on performance.	Significant changes to operating models take significant time and energy to assess.	However, there is still significant time that must be spent on socializing ideas and results of the analytics.

Questions



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