



Governor's Office of
Health Transformation

Transforming Payment for a Healthier Ohio

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Governor's Office of Health Transformation

Health Policy Institute of Ohio

December 8, 2014

www.HealthTransformation.Ohio.gov



- Governor Kasich created the Office of Health Transformation to improve overall health system performance
- Pay for health care value instead of volume across Medicaid, state employee, and commercial populations
 - Launch episode based payments in Q1 2015
 - Take Comprehensive Primary Care to scale in 2015
- Partners include Anthem, Aetna, CareSource, Medical Mutual, and UnitedHealthcare, covering ten million Ohioans
- Build on momentum from extending Medicaid coverage, Medicare-Medicaid Enrollee project, etc.
- Comprehensive, complementary strategies for health sector workforce development and health information technology
- Active stakeholder participation: 150+ stakeholder experts, 50+ organizations, 60+ workshops, 20 months and counting ...



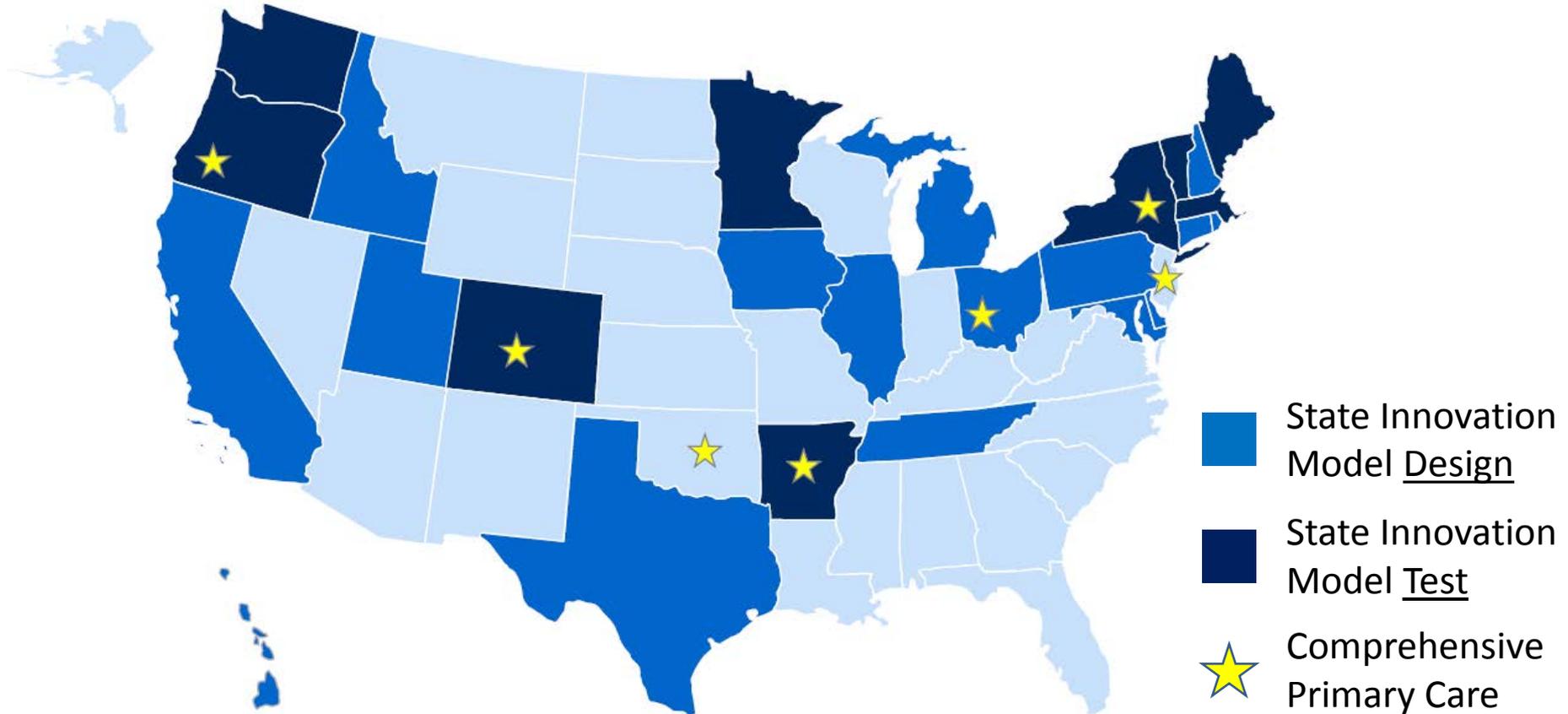
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1. Ohio Approach to Paying for Value Instead of Volume
2. Patient-Centered Medical Home Model
3. Episode-Based Payment Model
4. Episode Example

In fee-for-service, we get what we pay for

- **More volume** – to the extent fee-for-service payments exceed costs of additional services, they encourage providers to deliver more services and more expensive services
- **More fragmentation** – paying separate fees for each individual service to different providers perpetuates uncoordinated care
- **More variation** – separate fees also accommodate wide variation in treatment patterns for patients with the same condition – variations that are not evidence-based
- **No assurance of quality** – fees are typically the same regardless of the quality of care, and in some cases (e.g., avoidable hospital readmissions) total payments are greater for lower-quality care

27 states are designing and testing payment innovation programs



Shift to population-based and episode-based payment

Payment approach

Population-based
(PCMH, ACOs, capitation)

Episode-based

Fee-for-service

(including pay for performance)

Most applicable

- Primary prevention for healthy population
- Care for chronically ill (e.g., managing obesity, CHF)
-
- Acute procedures (e.g., CABG, hips, stent)
- Most inpatient stays including post-acute care, readmissions
- Acute outpatient care (e.g., broken arm)
-
- Discrete services correlated with favorable outcomes or lower cost



5-Year Goal for Payment Innovation

Goal

80-90 percent of Ohio's population in some value-based payment model (combination of episodes- and population-based payment) within five years

State's Role

- Shift rapidly to PCMH and episode model in Medicaid fee-for-service
- Require Medicaid MCO partners to participate and implement
- Incorporate into contracts of MCOs for state employee benefit program

Patient-centered medical homes

Episode-based payments

Year 1

- In 2014 focus on Comprehensive Primary Care Initiative (CPCi)
- Payers agree to participate in design for elements where standardization and/or alignment is critical
- Multi-payer group begins enrollment strategy for one additional market

- State leads design of five episodes: asthma acute exacerbation, perinatal, COPD exacerbation, PCI, and joint replacement
- Payers agree to participate in design process, launch reporting on at least 3 of 5 episodes in 2014 and tie to payment within year

Year 3

- Model rolled out to all major markets
- 50% of patients are enrolled

- 20 episodes defined and launched across payers

Year 5

- Scale achieved state-wide
- 80% of patients are enrolled

- 50+ episodes defined and launched across payers

Ohio's Health Care Payment Innovation Partners:





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Ohio already has various PCMH projects underway

-  Major focus of pilots
-  Some focus
-  Minimal or no focus

HB 198 Education Pilot Sites

- 42 pilot sites target underserved areas
- Potential to add 50 pediatric pilots

NCQA, AAAHC, Joint Commission

- 455 NCQA-recognized sites
- 51 Joint Commission accredited sites
- 7 AAAHC-accredited

Cincinnati/Dayton CPCi

- 61 sites in OH (14 in KY), incl. Tri-Health, Christ Hospital, PriMed, Providence, St. Elizabeth (KY)

Private Payer Pilots

- Vary in scope by pilot, but tend to focus on larger independent or system-led practices

	HB 198 Education Pilot Sites	NCQA, AAAHC, Joint Commission	Cincinnati/Dayton CPCi	Private Payer Pilots
Care delivery model				
Payment model				
Infrastructure				
Scale-up and practice performance improvement				



Comprehensive Primary Care Initiative

- Dayton/Cincinnati is one of only seven CPC sites nationally
- Bonus payments to primary care doctors who better coordinate care
- Multi-payer: Medicare, Medicaid, nine commercial insurance plans
- 75 primary care practices (261 providers) serving 44,500 Medicare enrollees in 14 Ohio and 4 Kentucky counties
- Practices were selected based on their use of HIT, advanced primary care recognition, and participation in practice improvement activities
- Supported by a unique regional collaborative: The Greater Cincinnati Health Council, the Health Collaborative, and HealthBridge

The goal is to learn from CPC in developing an approach to roll out PCMH statewide



Regional Health Improvement Collaboratives



Elements of a Patient-Centered Medical Home Strategy

<p>Care delivery model</p>	<p>Target patients and scope</p> <p>Care delivery improvements e.g.,</p> <ul style="list-style-type: none"> ▪ Improved access ▪ Patient engagement ▪ Population management ▪ Team-based care, care coordination <p>Target sources of value</p>	<p>Vision for a PCMH’s role in the healthcare eco system, including who they should target, how care should be delivered (including differences from today), and which sources of value to prioritize over time.</p>
<p>Payment model</p>	<p>Technical requirements for PCMH</p> <p>Attribution / assignment</p> <p>Quality measures</p> <p>Payment streams/ incentives</p> <p>Patient incentives</p>	<p>Holistic approach to use payment (from payers) to encourage the creation of PCMHs, ensure adequate resources to fund transformation from today’s model, and reward PCMH’s for improving in outcomes and total cost of care over time</p>
<p>Infrastructure</p>	<p>PCMH infrastructure</p> <p>Payer infrastructure</p> <p>Payer / PCMH infrastructure</p> <p>PCMH/ Provider infrastructure</p> <p>System infrastructure</p>	<p>Technology, data, systems, and people required to enable creation of PCMH, administer new payment models, and support PCMHs in making desired changes in care delivery</p>
<p>Scale-up and practice performance improvement</p>	<p>Clinical leadership / support</p> <p>Practice transformation support</p> <p>Workforce / human capital</p> <p>Legal / regulatory environment</p> <p>Network / contracting to increase participation</p> <p>ASO contracting/participation</p> <p>Performance transparency</p> <p>Ongoing PCMH support</p> <p>Evidence, pathways, & research</p> <p>Multi-payer collaboration</p>	<p>Support, resources, or activities to enable practices to adopt the PCMH delivery model, sustain transformation and maximize impact</p>

Elements of a Patient-Centered Medical Home Strategy

Care delivery model	Target patients and scope
	Care delivery improvements e.g., <ul style="list-style-type: none"> ▪ Improved access ▪ Patient engagement ▪ Population management ▪ Team-based care, care coordination
Payment model	Target sources of value
	Technical requirements for PCMH
	Attribution / assignment
	Quality measures
	Payment streams/ incentives
Infrastructure	Patient incentives
	PCMH infrastructure
	Payer infrastructure
	Payer / PCMH infrastructure
	PCMH/ Provider infrastructure
Scale-up and practice performance improvement	System infrastructure
	Clinical leadership / support
	Practice transformation support
	Workforce / human capital
	Legal / regulatory environment
	Network / contracting to increase participation
	ASO contracting/participation
	Performance transparency
	Ongoing PCMH support
Evidence, pathways, & research	
Multi-payer collaboration	

- Payers agree to provide resources to support business model transformation for a finite period of time, particularly for small, less capitalized practices
 - Agree to provide resources to compensate PCMH for activities not fully covered by existing fee schedules (care coordination, non-traditional visits like telemedicine, population health)
 - Agree to reward PCMHs for favorably affecting risk-adjusted total cost of care over time by offering bonus payments, shared savings, capitation, or sub-capitation.
- Source: [Ohio PCMH Multi-Payer Charter \(2013\)](#)



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Elements of an Episode-Based Payment Strategy

Program-level design decisions

Participation	<ul style="list-style-type: none"> Provider participation Payer participation 	} Related to 'scale-up' plan for episodes
Accountability	<ul style="list-style-type: none"> Providers at risk – Number Providers at risk – Type of provider(s) Providers at risk – Unique providers Cost normalization approach 	
Payment model mechanics	<ul style="list-style-type: none"> Prospective or retrospective model Risk-sharing agreement – types of incentives Approach to small case volume Role of quality metrics Provider stop-loss Absolute vs. relative performance rewards 	
Performance management	<ul style="list-style-type: none"> Absolute performance rewards – Gain sharing limit Approach to risk adjustment Exclusions 	
Payment model timing	<ul style="list-style-type: none"> Preparatory/"reporting-only" period Length of "performance" period Synchronization of performance periods 	
Payment model thresholds	<ul style="list-style-type: none"> Approach to thresholds How thresholds change over time Specific threshold levels Degree of gain / risk sharing Cost outliers 	

Episode-specific design decisions

Core Episode definition	<ul style="list-style-type: none"> Quarterback selection Triggers Episode timeframe – Type/length of pre-procedure/event window Claims in- or excluded: pre-procedure/event window Claims in- or excluded: during procedure/event Claims in- or excluded: post procedure/event (incl. readmission policy)
	Episode cost adjustment
Quality metric selection	<ul style="list-style-type: none"> Risk adjustors Unit cost normalization - Inpatient Unit cost normalization - Other Adjustments for provider access Approach to cost-based providers Clinical exclusions
	<ul style="list-style-type: none"> Approach to non-claims-based quality metrics Quality metric sampling Quality metrics linked to payment Quality metrics for reporting only

Retrospective episode model mechanics

Patients and providers continue to deliver care as they do today



1

Patients seek care and select providers as they do today

2



Providers submit claims as they do today

3



Payers reimburse for all services as they do today

Calculate incentive payments based on outcomes after close of 12 month performance period

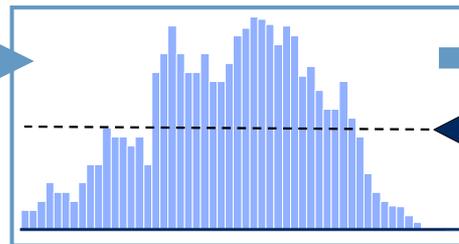
4



Review claims from the performance period to identify a **'Principal Accountable Provider'** (PAP) for each episode

5

Payers calculate **average cost per episode** for each PAP



Compare average costs to predetermined "commendable" and "acceptable" levels

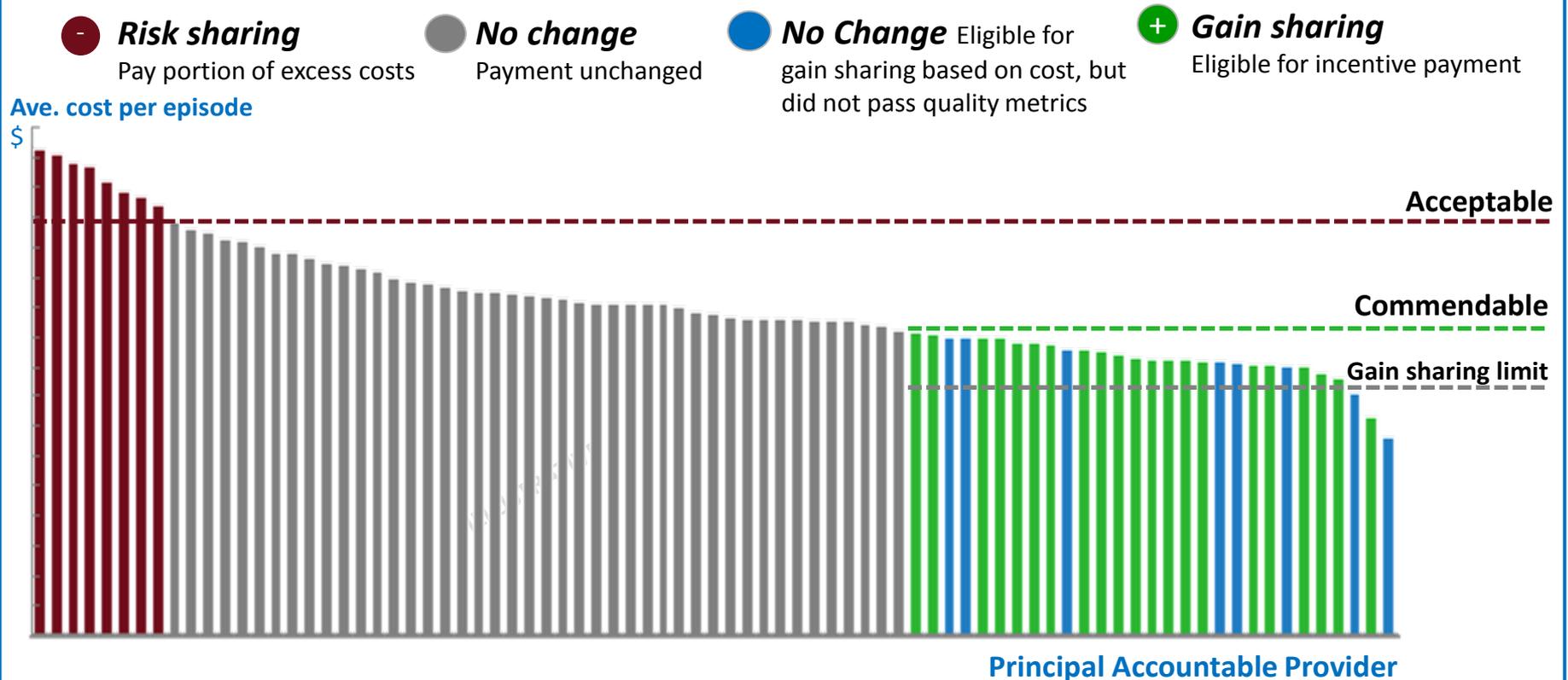
6

Providers may:

- **Share savings:** if average costs below commendable levels and quality targets are met
- **Pay part of excess cost:** if average costs are above acceptable level
- **See no change in pay:** if average costs are between commendable and acceptable levels

Retrospective thresholds reward cost-efficient, high-quality care

Provider cost distribution (average episode cost per provider)



Selection of episodes in the first year

Guiding principles for selection:

- Leverage episodes in use elsewhere to **reduce time to launch**
- Prioritize meaningful **spend across payer populations**
- Look for opportunities with **clear sources of value** (e.g., high variance in care)
- Select episodes that incorporate a **diverse mix** of accountable **providers** (e.g., facility, specialists)
- Cover a **diverse set of “patient journeys”** (e.g., acute inpatient, acute procedural)
- Consider **alignment with current priorities** (e.g., perinatal for Medicaid, asthma acute exacerbation for youth)

First six episodes selected:

Episode	Principal Accountable Provider (PAP)
▪ Perinatal	Physician/group delivering the baby
▪ Asthma acute exacerbation	Facility where trigger event occurs
▪ COPD exacerbation	Facility where trigger event occurs
▪ Percutaneous coronary intervention (PCI)	Facility where PCI performed (acute) OR physician (non-acute)
▪ Total joint replacement	Orthopedic surgeon performing the total joint replacement procedure



This is a sample report; actual reports will be released in 2015

EPISODE of CARE PAYMENT REPORT

PERINATAL

Jul 1, 2013 to Jun 30, 2014

Reporting period covering episodes that ended between July 1, 2013 and June 30, 2014

PAYER NAME: Ohio - Medicaid FFS

PROVIDER CODE: 1234567

PROVIDER NAME: XYZ Women's Health Center

You would be eligible for gain or risk sharing of **N/A¹**

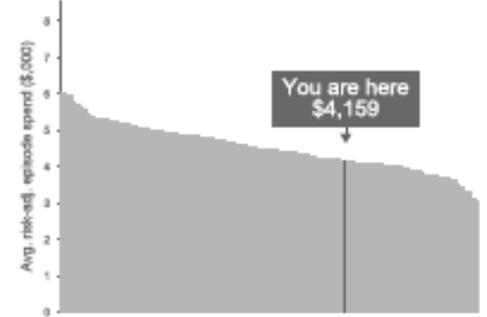
Episodes inclusion and exclusion

Total episodes: 154



Risk adjusted average spend per episode

Distribution of provider average episode spend (risk adj.)



Episodes risk adjustment

95% of your episodes have been risk adjusted

Quality metrics

Your performance on quality metrics that will be ultimately linked to gain sharing

HIV screening	53%
GBS screening	71%
C-section	31%
Follow-up visit	30%

Potential gain/risk share

N/A¹

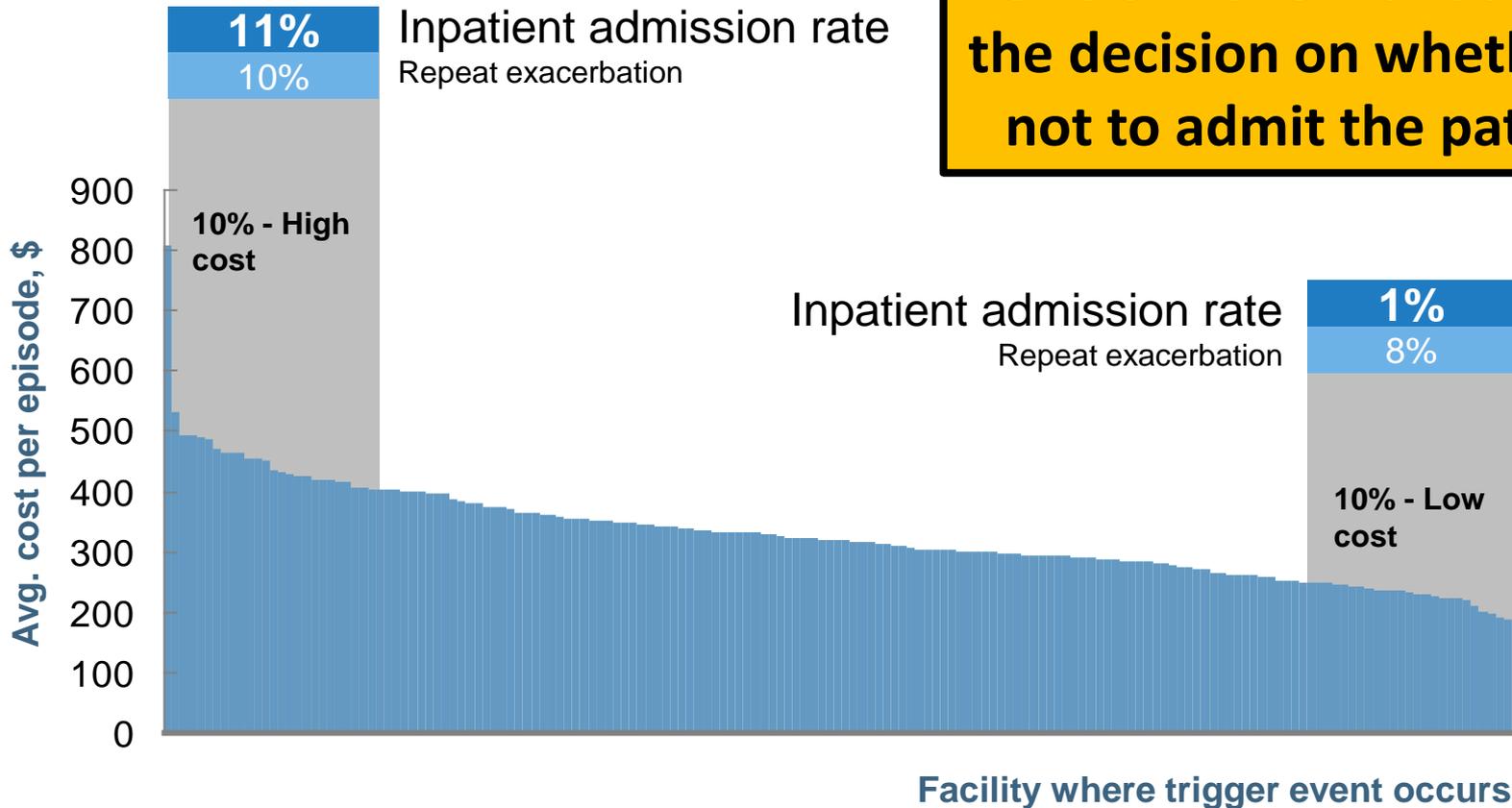
¹ Not applicable during reporting-only period



Variation across the Asthma Acute Exacerbation episode

Distribution of provider average episode cost

\$

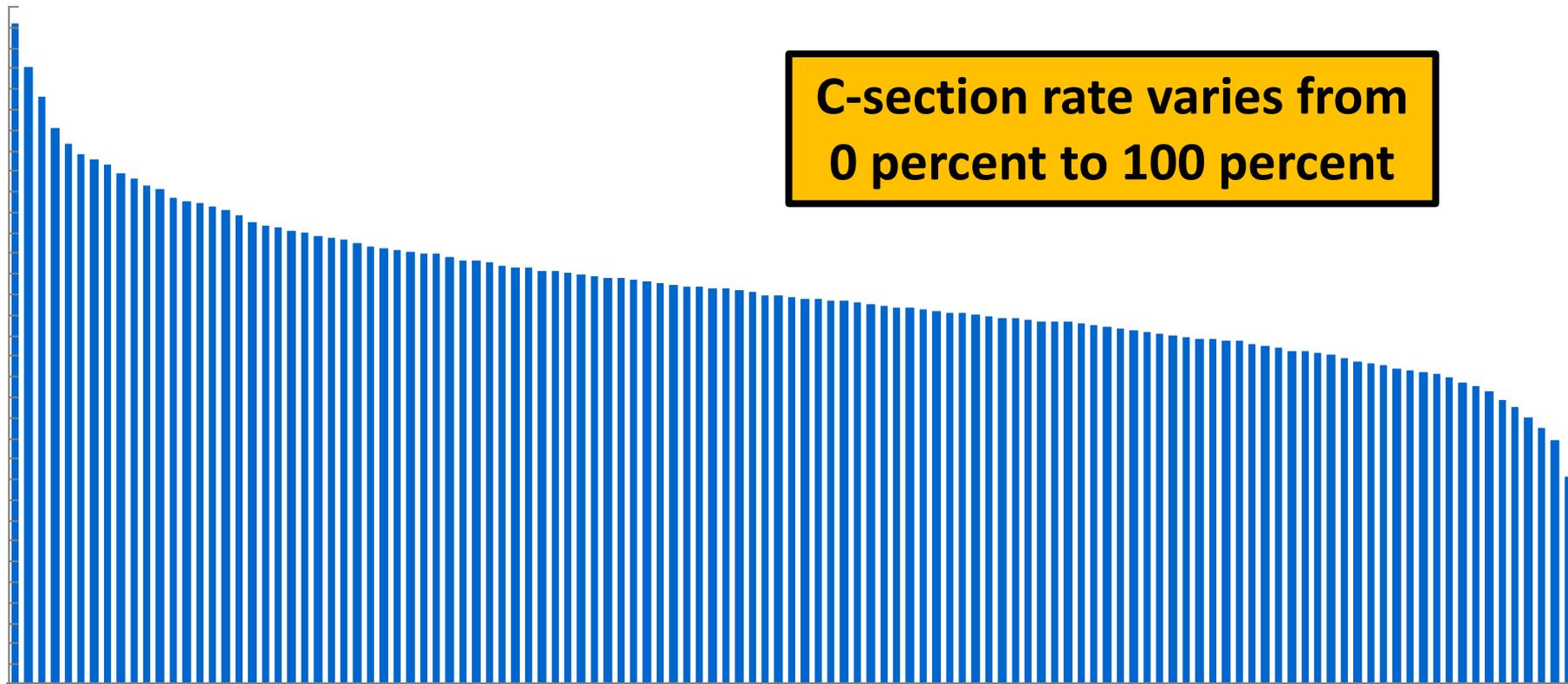


One driver of variation is the decision on whether or not to admit the patient

Variation across the perinatal episode

Average cost per episode, risk adjusted, excluding outliers

\$



C-section rate varies from 0 percent to 100 percent

Physician or physician group delivering the baby

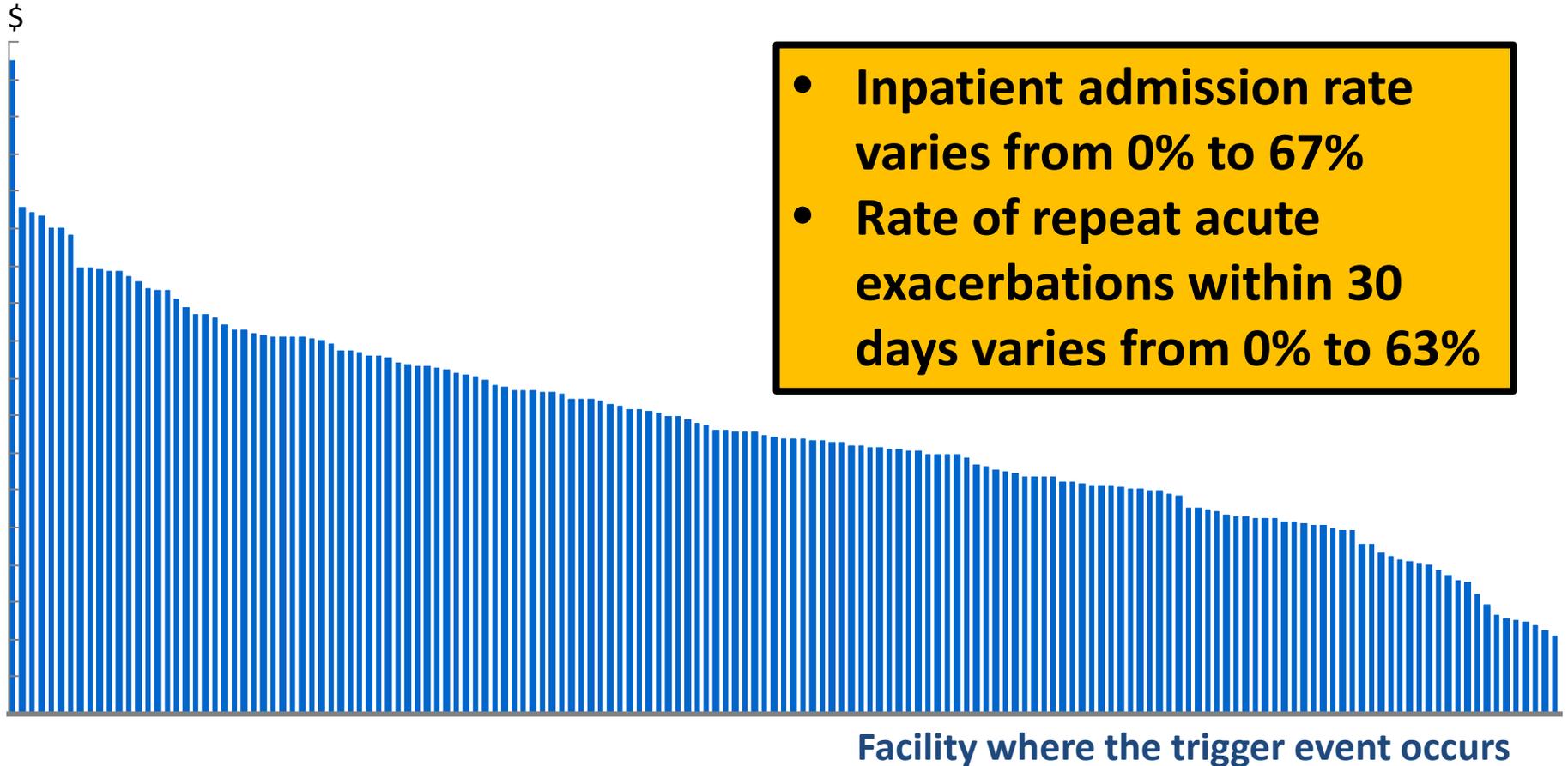


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NOTES: Average episode spend distribution for PAPs with five or more episodes; each vertical bar represents the average spend for one PAP.
SOURCE: Analysis of Ohio Medicaid claims data, 2011-12.

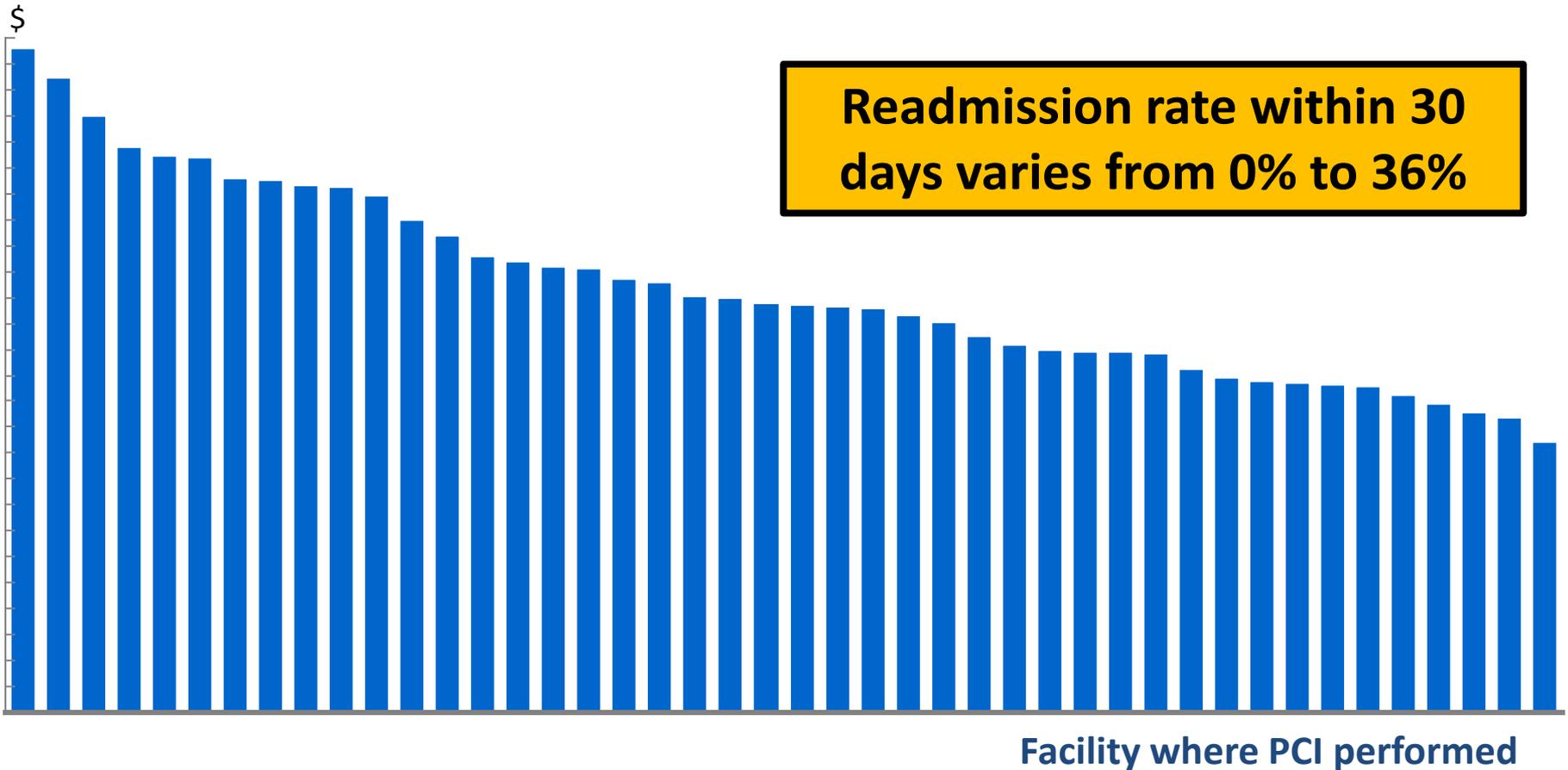
Variation across the COPD Acute Exacerbation episode

Average cost per episode, risk adjusted, excluding outliers



Variation across the Acute PCI episode

Average cost per episode, risk adjusted, excluding outliers

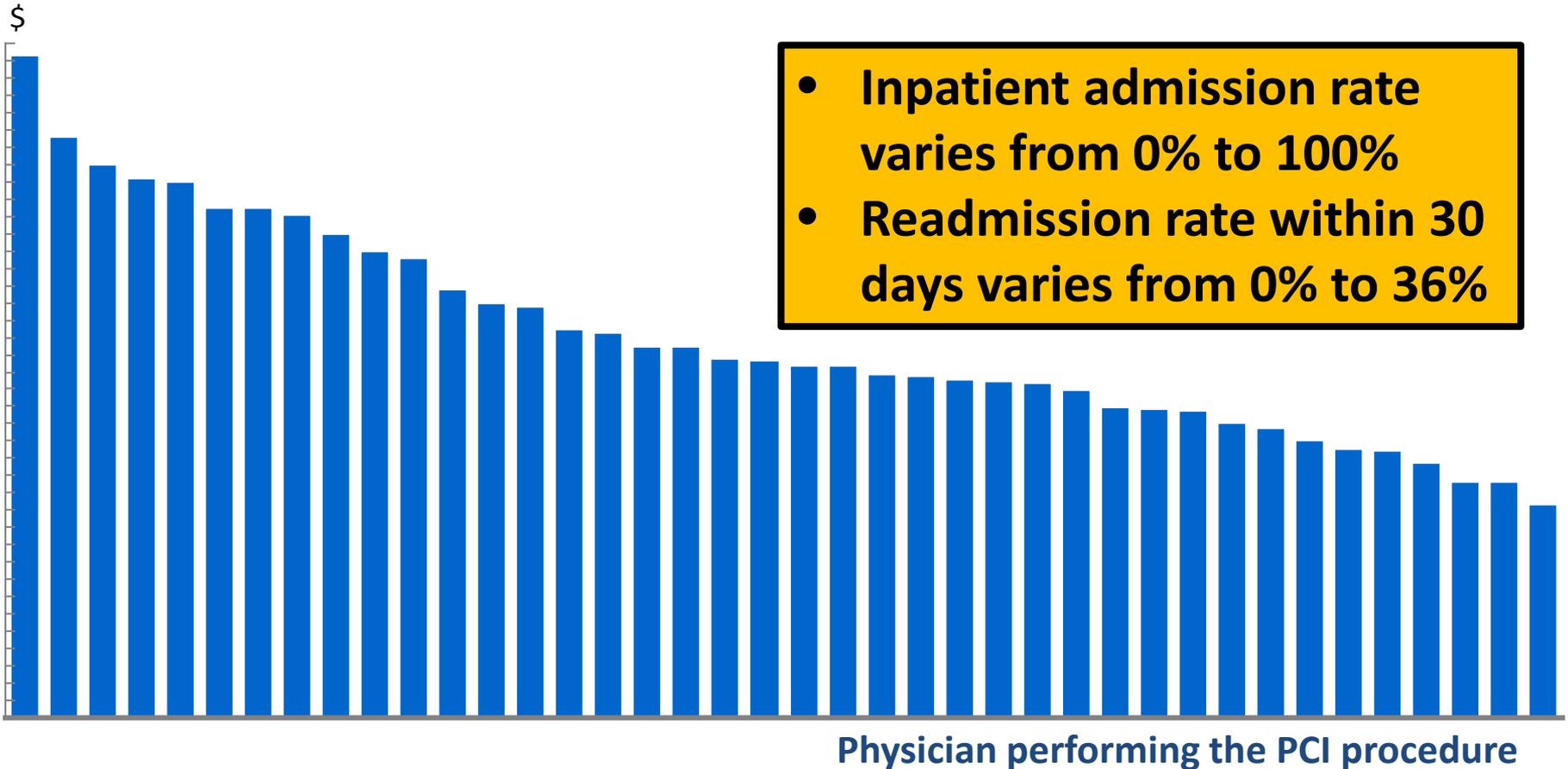


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NOTES: Average episode spend distribution for PAPs with five or more episodes; each vertical bar represents the average spend for one PAP.
SOURCE: Analysis of Ohio Medicaid claims data, 2011-12.

Variation across the Non-Acute PCI episode

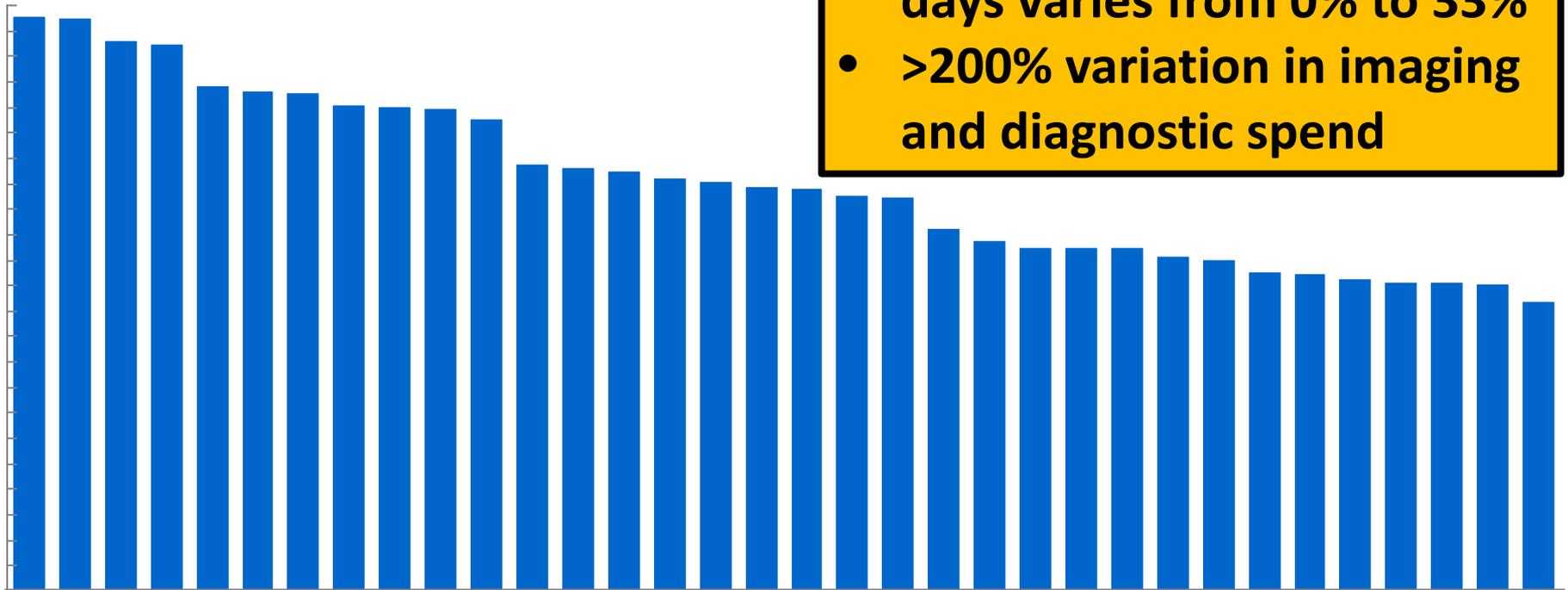
Average cost per episode, risk adjusted, excluding outliers



Variation across the Total Joint Replacement episode

Average cost per episode, risk adjusted, excluding outliers

\$



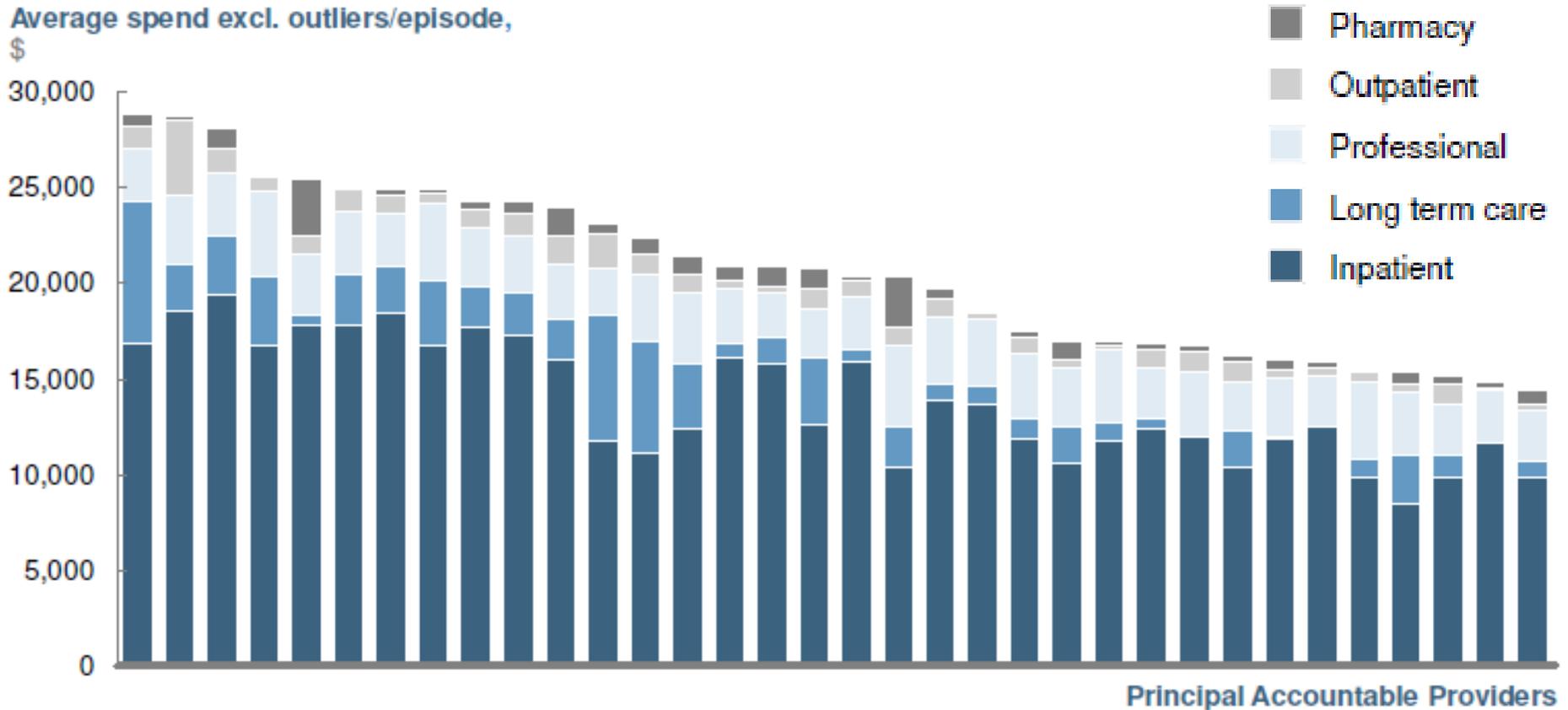
Orthopedic surgeon performing the TJR procedure



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NOTES: Average episode spend distribution for PAPs with five or more episodes; each vertical bar represents the average spend for one PAP.
SOURCE: Analysis of Ohio Medicaid claims data, 2011-12.

Total Joint Replacement Episode Distribution by Claim Type



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NOTES: Average episode spend distribution by claim type for PAPs with five or more episodes; each vertical bar represents the average spend for a PAP.
SOURCE: Analysis of Ohio Medicaid claims data, 2011-2012.

Health Transformation Next Steps

- Communicate next steps on payment innovation to health care provider associations and all stakeholders (Dec 5)
- Expect Ohio to receive federal SIM Test Award (Nov/Dec)
- Announce the official release date for episode reports
- Coordinate Ohio's Provider Transformation Network federal grant application (Jan 6)
- SIM Test Award activities (Jan 2015 – Dec 2018)
- Launch reporting for first six episodes (Q1 2015)



Current Initiatives

Modernize Medicaid

- Extend Medicaid coverage to more low-income Ohioans
- Reform nursing facility reimbursement
- Integrate Medicare and Medicaid benefits
- Prioritize home and community based services
- Create health homes for people with mental illness
- Rebuild community behavioral health system capacity
- Enhance community developmental disabilities services
- Improve Medicaid managed care plan performance

Streamline Health and Human Services

- Implement a new Medicaid claims payment system
- Create a cabinet-level Medicaid department
- Consolidate mental health and addiction services
- Simplify and integrate eligibility determination
- Coordinate programs for children
- Share services across local jurisdictions

Pay for Value

- Engage partners to align payment innovation
- Provide access to patient-centered medical home
- Implement episode-based payments
- Coordinate health information technology infrastructure
- Coordinate health sector workforce programs
- Support regional payment reform initiatives
- Federal Health Insurance Exchange

Ohio's State Innovation Model (SIM) Test Grant Application:

- Population Health Plan
- Delivery System Plan
- Payment Models
- Regulatory Plan
- HIT Plan
- Stakeholder Engagement
- Quality Measurement

Payment Models:

- PCMH Charter
- Episode Charter
- Overview Presentation



Department of Medicaid

John R. Kasich, Governor

John B. McCarthy, Director

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Payment Innovation

The Ohio Department of Medicaid has joined the Governor's Office of Health Transformation to engage public and private sector partners in designing a new health care delivery payment system that rewards the value of services – not the volume.

In early 2013, the Governor's Advisory Council for Payment Reform was convened to seek input and set clear expectations for better health, better care, and cost savings through improved payment. As part of the effort, Ohio applied and received a State Innovation Model (SIM) design grant from the Center for Medicare and Medicaid Innovation (CMMI). The State of Ohio's proposal centers around design payment models that increase access to patient-centered medical homes and support retrospective episode-based payments for acute medical events.

[Transforming Payment for a Healthier Ohio](#)

Information for Providers

Episode Definitions:

Detailed definitions for perinatal, asthma, chronic obstructive pulmonary disease, total joint replacement, and percutaneous coronary intervention episodes.

Detailed Business Requirements - Detailed definitions of and associated coding algorithms

- [Perinatal](#)
- [Asthma and Chronic Obstructive Pulmonary Disease](#)
- [Total Joint Replacement](#)
- [Percutaneous coronary intervention \(acute and non-acute\) episodes](#)

Code Tables - Excel spreadsheets of code detail for:

- [Perinatal](#)
- [Asthma](#)
- [Chronic Obstructive Pulmonary Disease](#)
- [Total Joint Replacement](#)
- [Percutaneous Coronary Intervention \(acute and non-acute\) episodes](#)

Risk Adjustment Document

Detailed description of principles and process of risk adjustment for episode-based payment model.

Episode Frequently Asked Questions

Details for Providers:

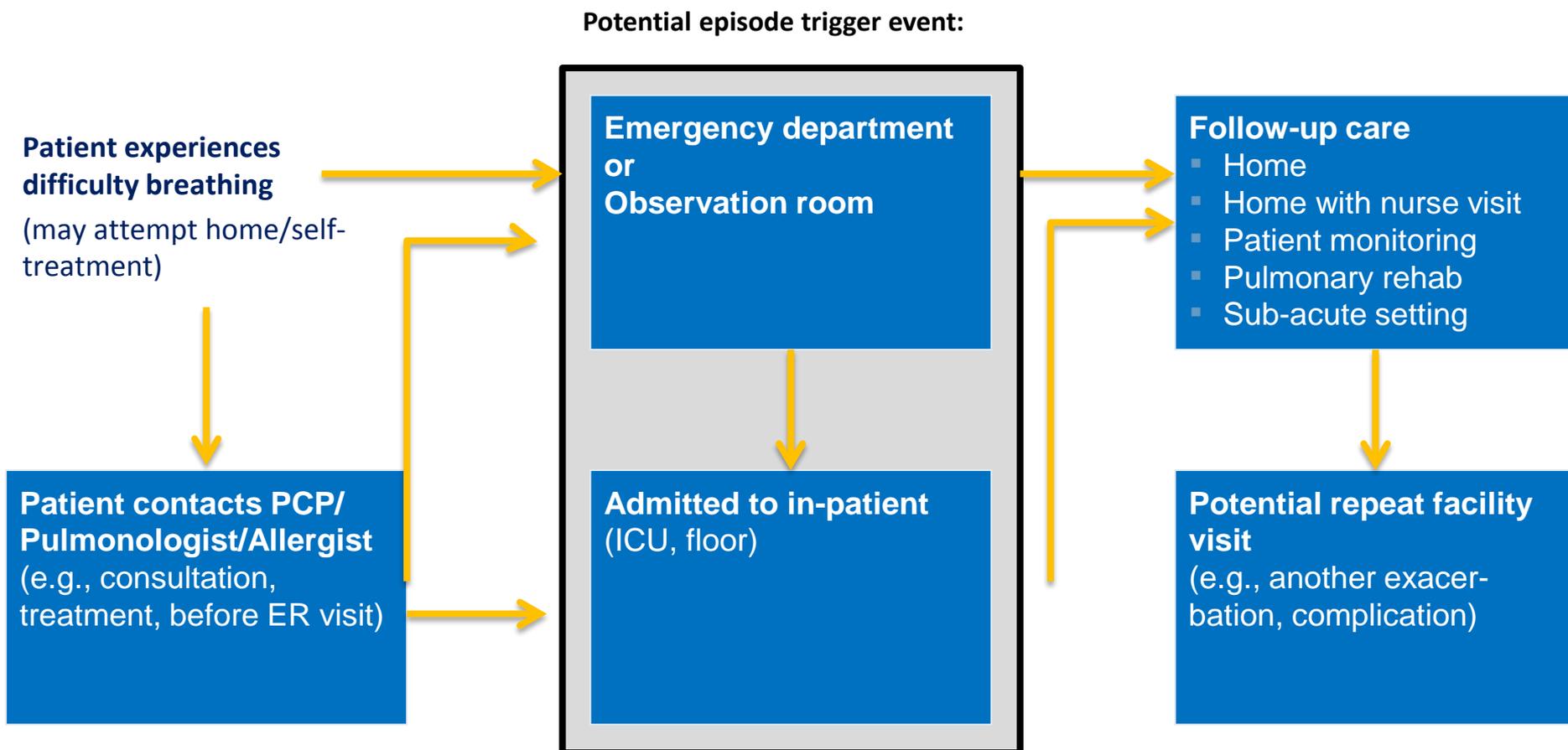
- **Episode Definitions**
- **Business Requirements**
- **Code Tables**
- **Risk Adjustment**



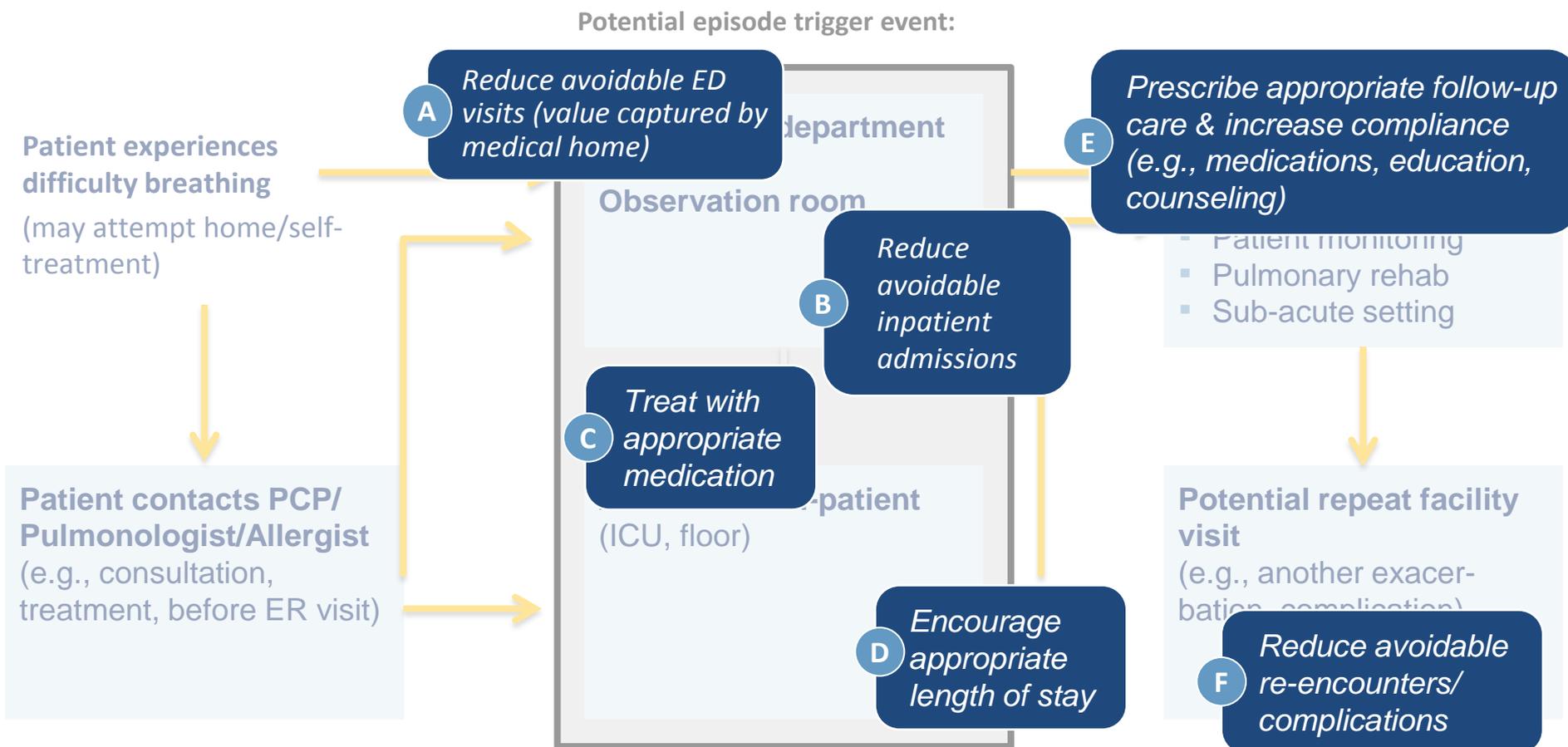
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1. Ohio Approach to Paying for Value Instead of Volume
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- 4. Episode Detail: Asthma Acute Exacerbation**

Asthma Acute Exacerbation: Patient Journey



Asthma Acute Exacerbation: Sources of Value



Elements of the episode definition

Category	Description
1 Episode trigger	<ul style="list-style-type: none">Diagnoses or procedures and corresponding claim types and/or care settings that characterize a potential episode
2 Episode window	<ul style="list-style-type: none">Pre-trigger window: Time period prior to the trigger event; relevant care for the patient is included in the episodeTrigger window: Duration of the potential trigger event (e.g., from date of inpatient admission to date of discharge); all care is includedPost-trigger window: Time period following trigger event; relevant care and complications are included in the episode
3 Claims included	
4 Principal accountable provider	<ul style="list-style-type: none">Provider who may be in the best position to assume principal accountability in the episode based on factors such as decision making responsibilities, influence over other providers, and portion of the episode spend
5 Quality metrics	<ul style="list-style-type: none">Measures to evaluate quality of care delivered during a specific episode
6 Potential risk factors	<ul style="list-style-type: none">Patient characteristics, comorbidities, diagnoses or procedures that may potentially indicate an increased level of risk for a given patient in a specific episode
7 Episode-level exclusions	<ul style="list-style-type: none">Patient characteristics, comorbidities, diagnoses or procedures that may potentially indicate a type of risk that, due to its complexity, cost, or other factors, should be excluded entirely rather than adjusted

Asthma Acute Exacerbation: Definitions (1/5)

Category

Episode base definition

An inpatient, outpatient ED visit (revenue codes 045x) or outpatient observation room visit (revenue codes 076x) with a diagnosis from the following list:

ICD-9 Dx asthma-specific trigger codes:

- 493.00-493.02 – Extrinsic asthma, unspecified, with status asthmaticus and with (acute) exacerbation, respectively
- 493.10-493.12 – Intrinsic asthma, unspecified, with status asthmaticus and with (acute) exacerbation, respectively
- 493.20-493.22 – Chronic obstructive asthma, unspecified, with status asthmaticus and with (acute) exacerbation, respectively
- 493.81 – Exercise induced bronchospasm
- 493.82 – Cough variant asthma
- 493.90-493.92 – Asthma, unspecified type, unspecified, with status asthmaticus and with (acute) exacerbation, respectively
- 519.11 – Acute bronchospasm

ICD-9 Dx contingent trigger codes:

- 786.00 – Respiratory abnormality, unspecified
- 786.05 – Shortness of breath
- 786.07 – Wheezing
- 786.09 – Dyspnea and respiratory abnormalities; other
- 786.90 – Other symptoms involving resp. system and chest
- 519.8,9 – Respiratory disease NEC
- Respiratory failure – 518.8

1 Episode trigger

2 Episode window

The start of the trigger window through 30 days after the end of the trigger window

- *Trigger window:* the day of admission for the trigger through the day of discharge from the trigger facility. When the trigger doesn't occur in an inpatient setting, the trigger window begins and ends on the day of the trigger
- *Post-trigger window:* 1 day after the end of the trigger window through 30 days after the end of the trigger window

Contingent trigger codes only act as a trigger if the patient had an asthma-specific trigger code on any claim within 365 days prior to or up to 30 days after the trigger claim

SOURCE: Ohio Episode-Based Payment Model Clinical Design Team definitions.

Asthma Acute Exacerbation: Definitions (2/5)

Category

Episode base definition

Included claims vary by time window

Trigger window: All claims

Post-trigger window¹:

- Relevant diagnoses
 - Examples include pneumonia, acute sinusitis, laryngitis, hyperventilation, apnea, cough, throat pain, acute respiratory failure, emphysema
- Relevant labs
 - Examples include chest x-rays, chest CT, chest MRI, lung function tests
- Relevant DME
 - Examples include oxygen delivery systems, nebulizers, ventilators, humidifiers, spirometers
- Relevant pharmacy
 - Examples include decongestants, antihistamines, smoking deterrents, analgesics, narcotics, glucocorticoids, proton-pump inhibitors
- Hospitalizations, except exclusions
 - Exclusion list includes cardiovascular, pulmonary, dermatological, ophthalmological, orthopedic, otolaryngological, digestive, renal, i.e., diagnoses and procedures not directly related to the asthma acute exacerbation or common complications thereof

3

Claims included

4

Principal accountable provider

Facility where the trigger event occurs

- In case of a transfer, the first facility (i.e., the one from which the patient is transferred) is the PAP

SOURCE: Ohio Episode-Based Payment Model Clinical Design Team definitions.

Asthma Acute Exacerbation: Definitions (3/5)

Category

Episode base definition

Linked to gain sharing:

- Percent of episodes with a follow-up visit within 30 days
- Percent of episodes with a filled prescription for controller medication (based on HEDIS list)

For reporting only:

- Percent of episodes with a repeat exacerbation within 30 days
 - Same codes as trigger
- Percent of episodes in IP vs. ED/Obs treatment setting
 - IP identified by bill types
 - ED/Obs identified by revenue codes and bill types
- Percent of episodes with smoking cessation counseling
- X-ray utilization rate¹
- Percent of episodes with a follow-up visit within 7 days

Potential quality metrics for v2

- Asthma action plan
- Reporting on utilization of spacers and peak flow meters
- Link to PCP / PCMH

5

Quality metrics

Asthma Acute Exacerbation: Definitions (4/5)

Category	Episode base definition
<p data-bbox="28 629 241 696">6 Potential risk factors</p>	<p data-bbox="295 287 1282 325">Model to be consistent across all Medicaid plans, may vary for commercial</p> <ul data-bbox="295 344 1335 1025" style="list-style-type: none"><li data-bbox="295 344 587 382">▪ Age less than 10<li data-bbox="295 401 823 439">▪ Age between 10 and 19 (inclusive)<li data-bbox="295 458 823 496">▪ Age between 40 and 49 (inclusive)<li data-bbox="295 515 823 554">▪ Age between 50 and 59 (inclusive)<li data-bbox="295 572 629 611">▪ Age greater than 59<li data-bbox="295 629 513 668">▪ Atelectasis<li data-bbox="295 686 736 725">▪ Blood disorders and anemia<li data-bbox="295 743 653 782">▪ Cardiac dysrhythmias<li data-bbox="295 801 780 858">▪ Developmental and intellectual disabilities<li data-bbox="295 876 484 915">▪ Diabetes<li data-bbox="295 933 479 972">▪ Epilepsy<li data-bbox="295 991 649 1029">▪ Esophageal disorders<li data-bbox="826 344 1083 382">▪ Heart disease<li data-bbox="826 401 1070 439">▪ Heart failure<li data-bbox="826 458 1213 496">▪ Malignant hypertension<li data-bbox="826 515 1000 554">▪ Obesity<li data-bbox="826 572 1051 611">▪ Pneumonia<li data-bbox="826 629 1224 668">▪ Pulmonary heart disease<li data-bbox="826 686 1263 725">▪ Respiratory failure (specific)<li data-bbox="826 743 1325 801">▪ Respiratory failure, insufficiency, and arrest<li data-bbox="826 819 1132 858">▪ Sickle cell anemia<li data-bbox="826 876 1122 915">▪ Substance abuse<li data-bbox="826 933 1335 972">▪ Suicide and intentional self-harm

Asthma Acute Exacerbation: Definitions (5/5)

Category

Episode base definition

Clinical exclusions:

- Death
- Left against medical advice
- Age < 2 ; age > 64
- Comorbidities¹
 - Cancer under active management
 - End stage renal disease
 - HIV
 - Organ transplant
 - Bronchiectasis
 - Cancer of respiratory system
 - Cystic fibrosis
 - ICU stay >72hrs
 - Intubation
 - Multiple sclerosis
 - Other lung disease
 - Oxygen during post-trigger window
 - Paralysis
 - Tracheostomy
 - Tuberculosis
 - Multiple other comorbidities

Business exclusions:

- Inconsistent enrollment
- Third party liability
- Dual eligibility
- Exempt PAP
- PAP out of state
- No PAP
- Long hospitalization (>30 days)
- Long-term care
- Missing APR-DRG
- Incomplete episodes (non-risk-adjusted spend is less than the low cost threshold)

Outliers:

- High outlier (risk-adjusted spend is greater than the high outlier threshold)

7

Episode
level
exclusions

1 Comorbidities are identified in claims during the episodes and up to 365 prior to the episode start

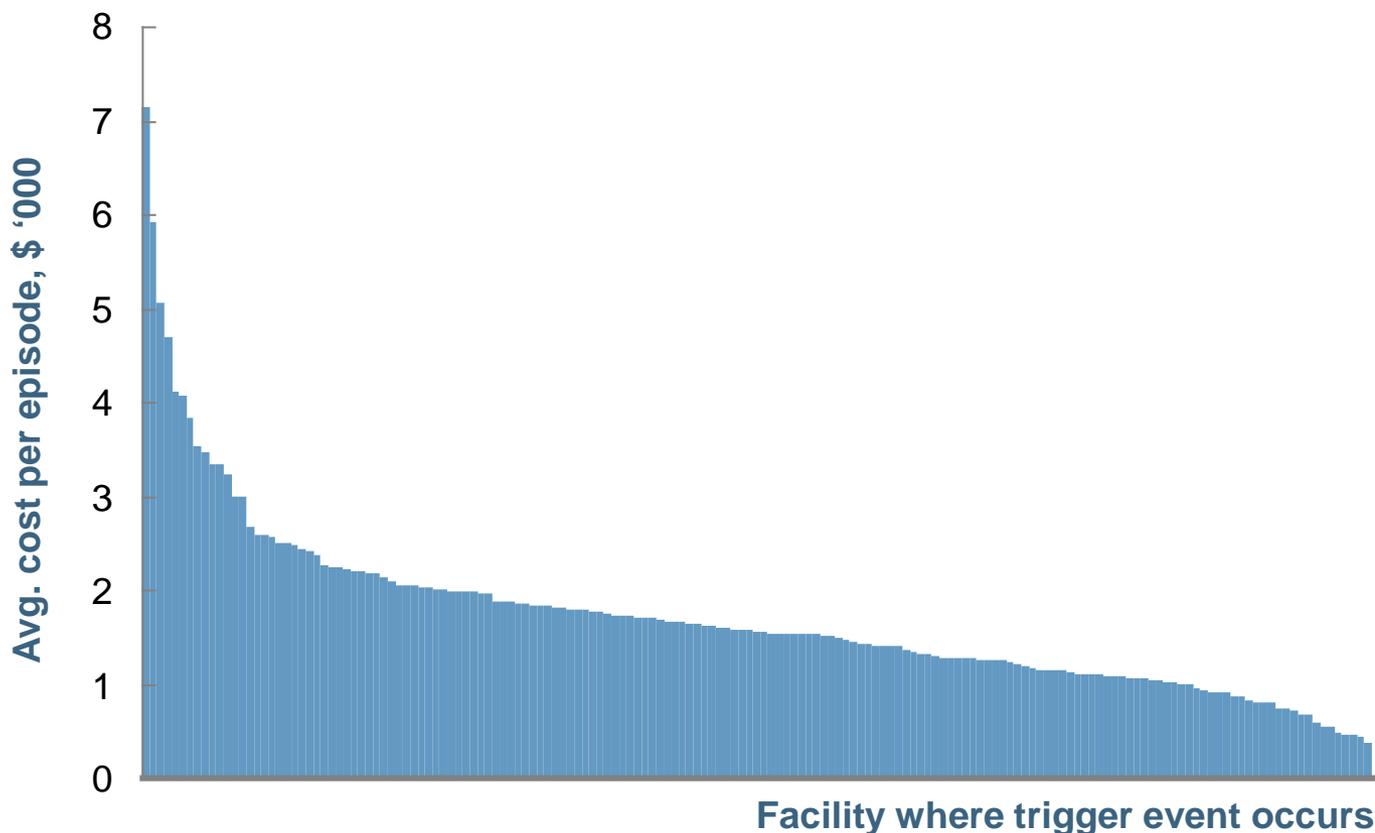
2 Intubation and ICU stay are only an exclusion if occurring during the trigger window

3 Oxygen is only an exclusion in the post-trigger window

Asthma Acute Exacerbation: Provider Performance

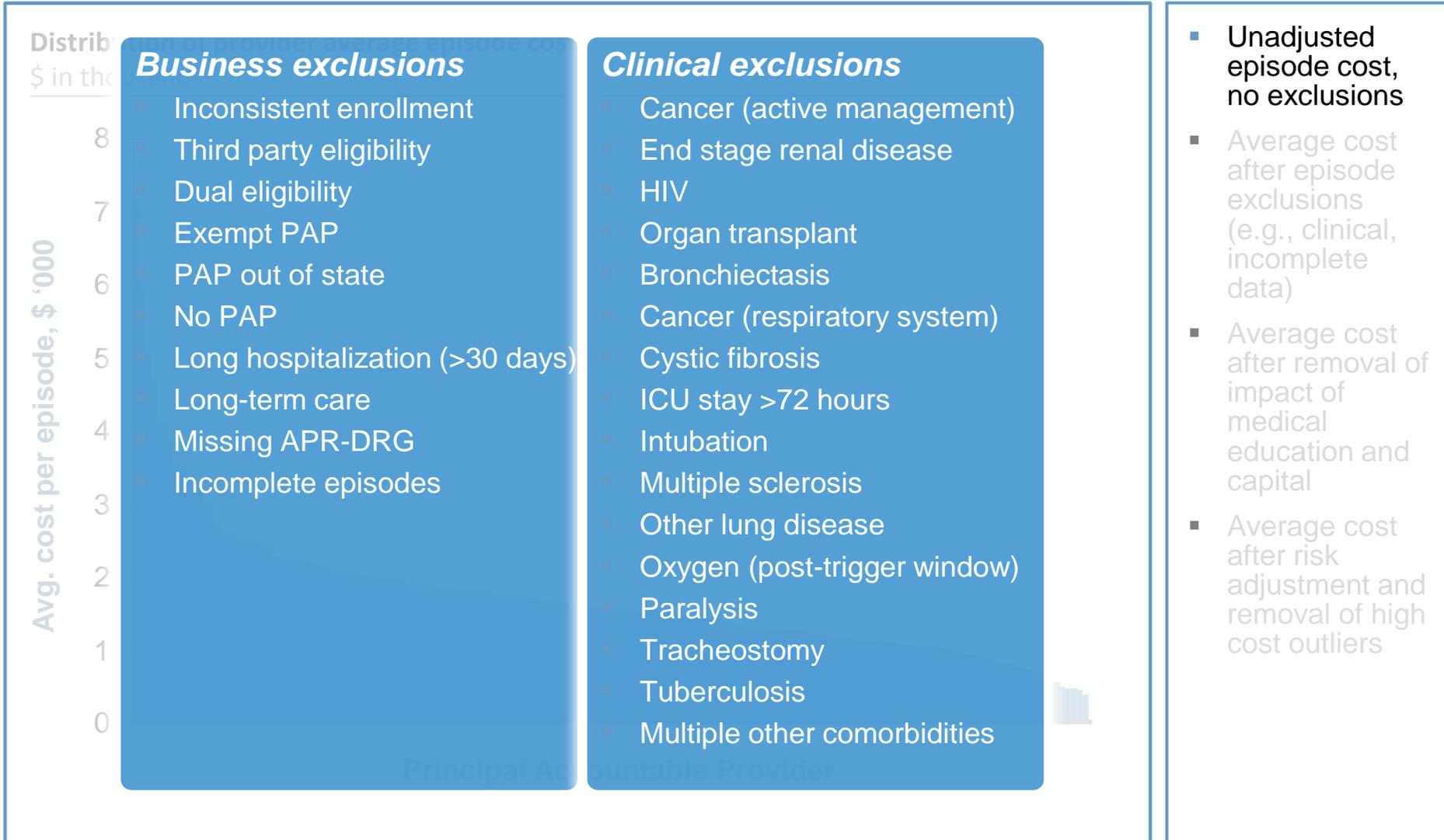
Distribution of provider average episode cost

\$ in thousands



- **Unadjusted episode cost, no exclusions**
- Average cost after episode exclusions (e.g., clinical, incomplete data)
- Average cost after removal of impact of medical education and capital
- Average cost after risk adjustment and removal of high cost outliers

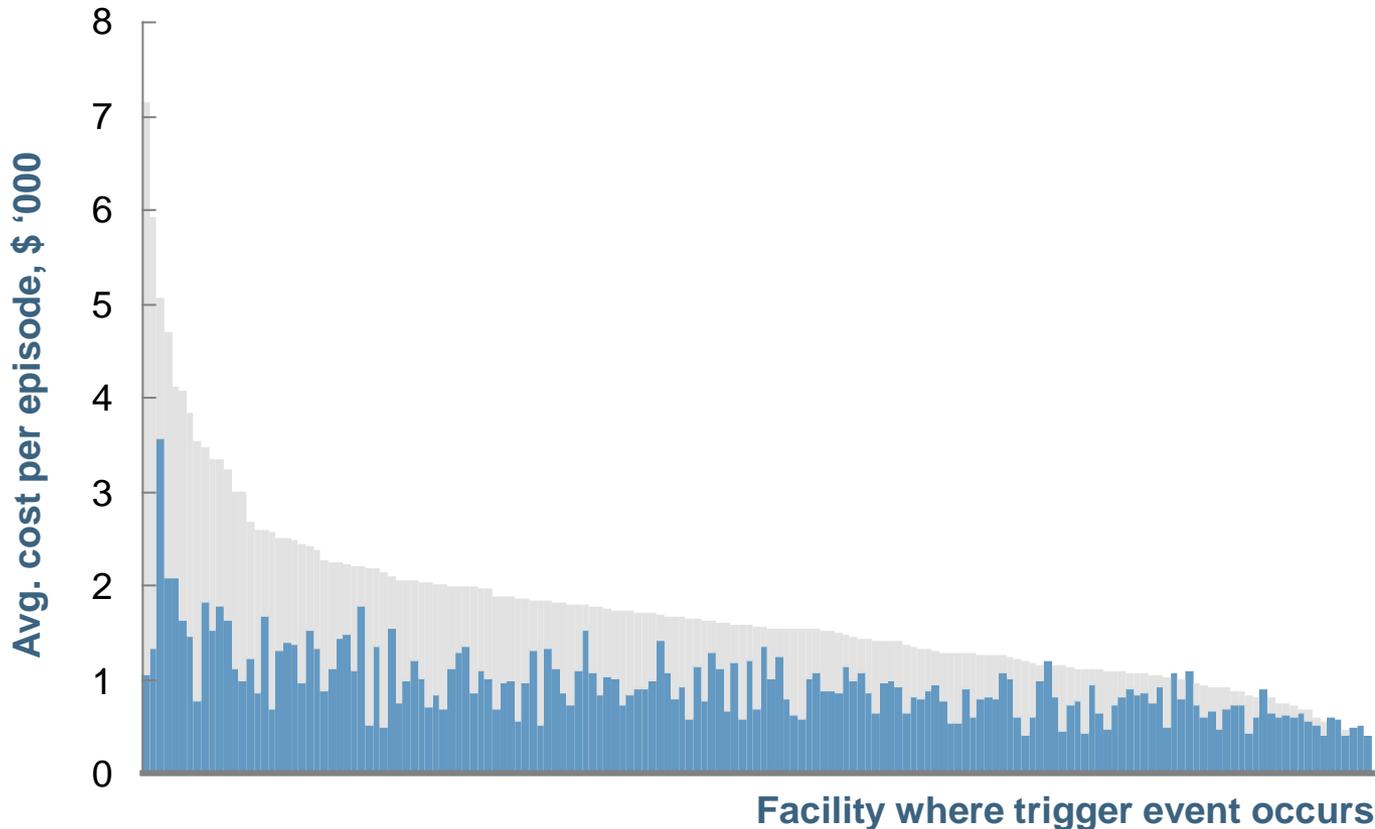
Asthma Acute Exacerbation: Provider Performance



Asthma Acute Exacerbation: Provider Performance

Distribution of provider average episode cost

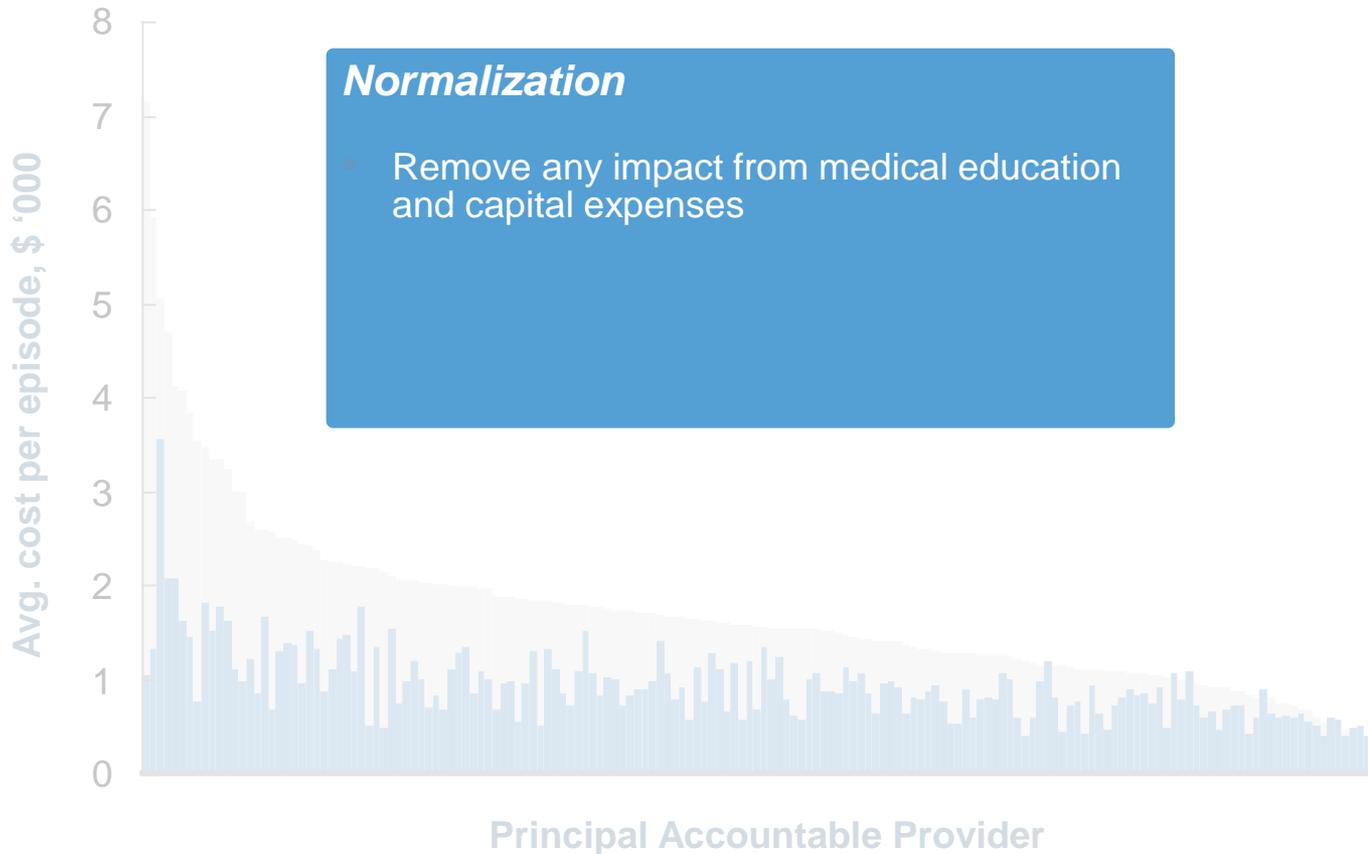
\$ in thousands



- Unadjusted episode cost – no exclusions
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Asthma Acute Exacerbation: Provider Performance

Distribution of provider average episode cost
\$ in thousands

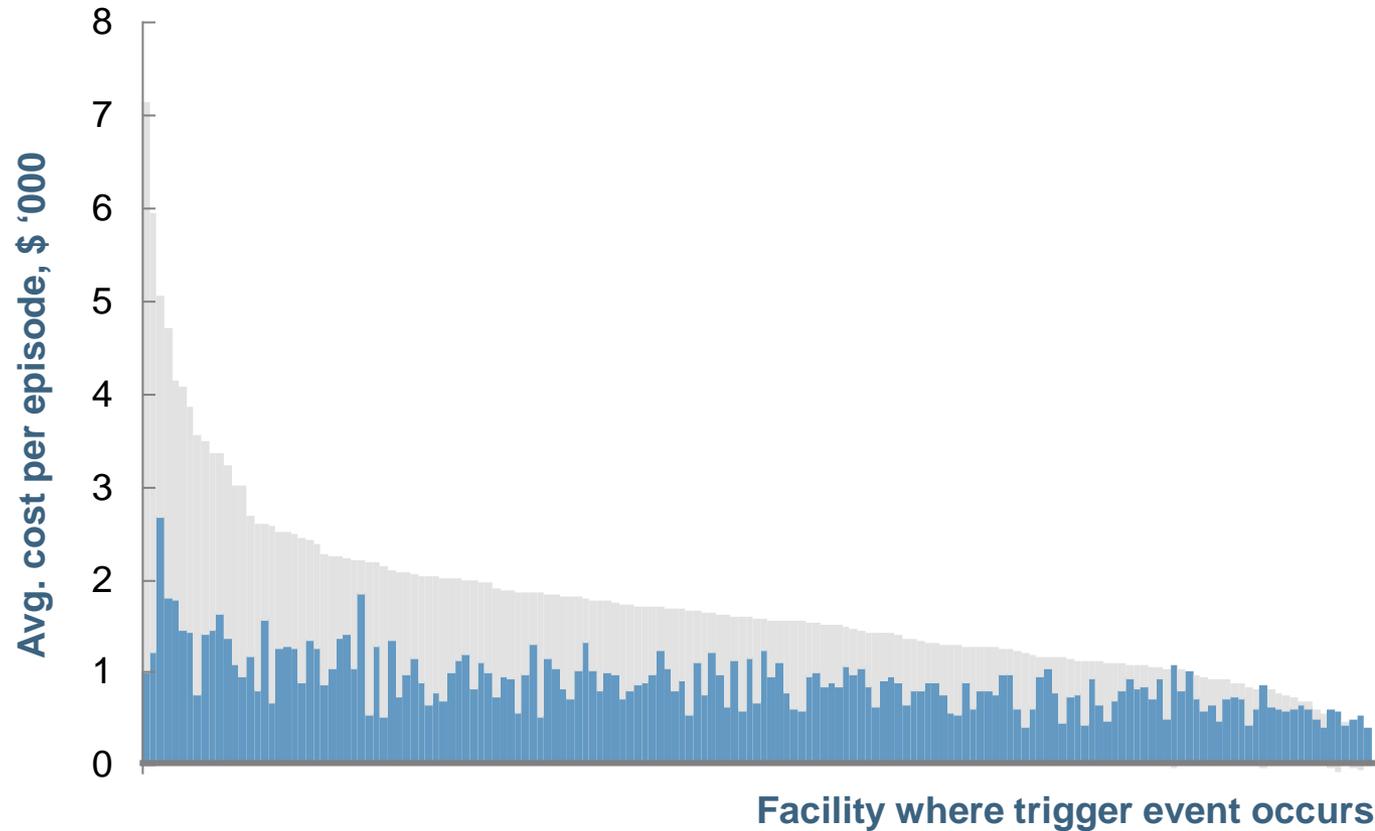


- Unadjusted episode cost, no exclusions
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Asthma Acute Exacerbation: Provider Performance

Distribution of provider average episode cost

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Asthma Acute Exacerbation: Provider Performance

Risk adjustment

- Adjust average episode cost down based on presence of clinical risk factors including:
 - Heart disease
 - Heart failure
 - Malignant hypertension
 - Obesity
 - Pneumonia
 - Pulmonary heart disease
 - Respiratory failure (specific)
 - Respiratory failure, insufficiency, and arrest
 - Sickly cell anemia
 - Substance abuse

High cost outliers

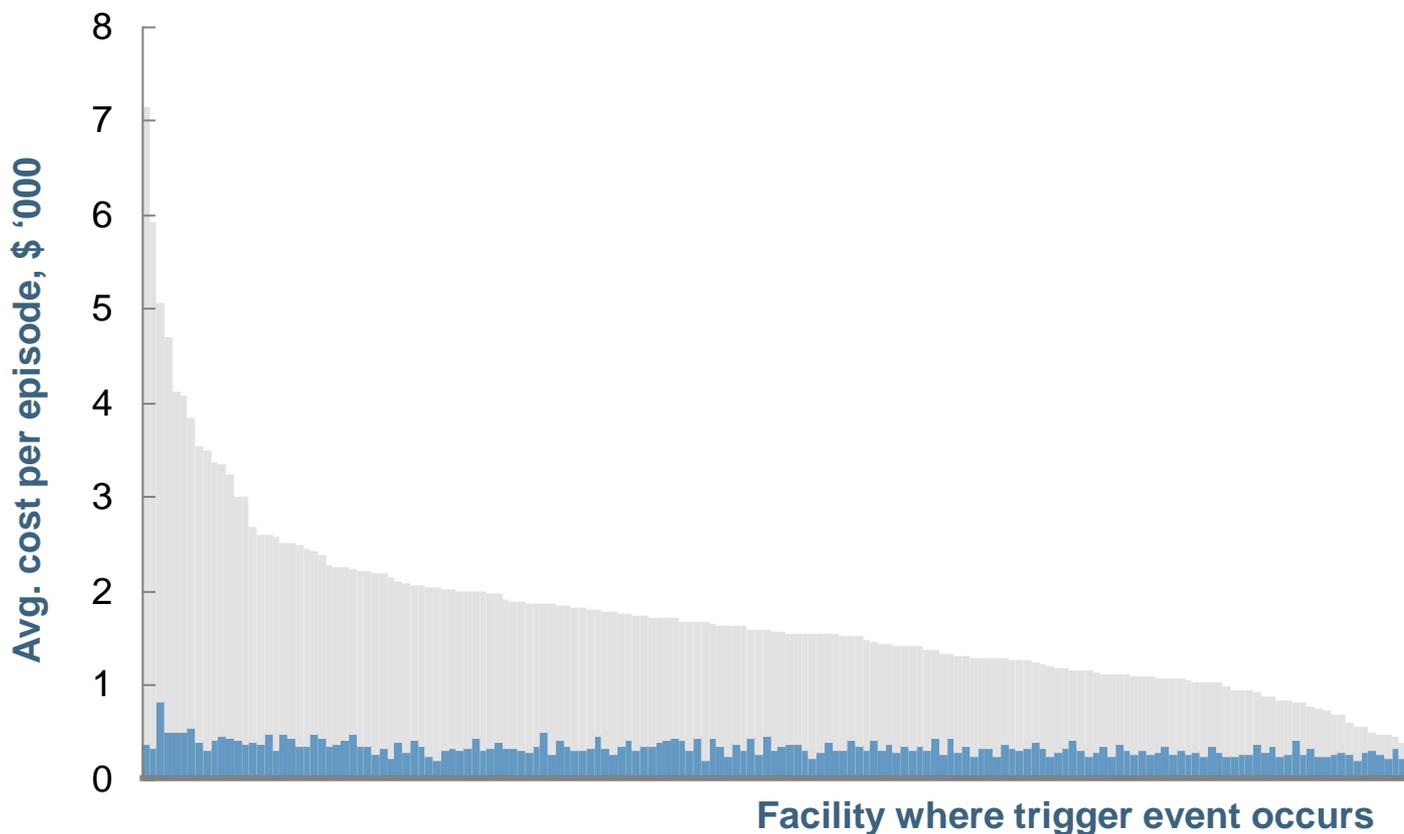
- Removal of any individual episodes that are more than three standard deviations above the *risk-adjusted* mean

- Unadjusted episode cost – no exclusions
- Average cost after episode exclusions (e.g., clinical, incomplete data)
- Average cost after removal of impact of medical education and capital
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Asthma Acute Exacerbation: Provider Performance

Distribution of provider average episode cost

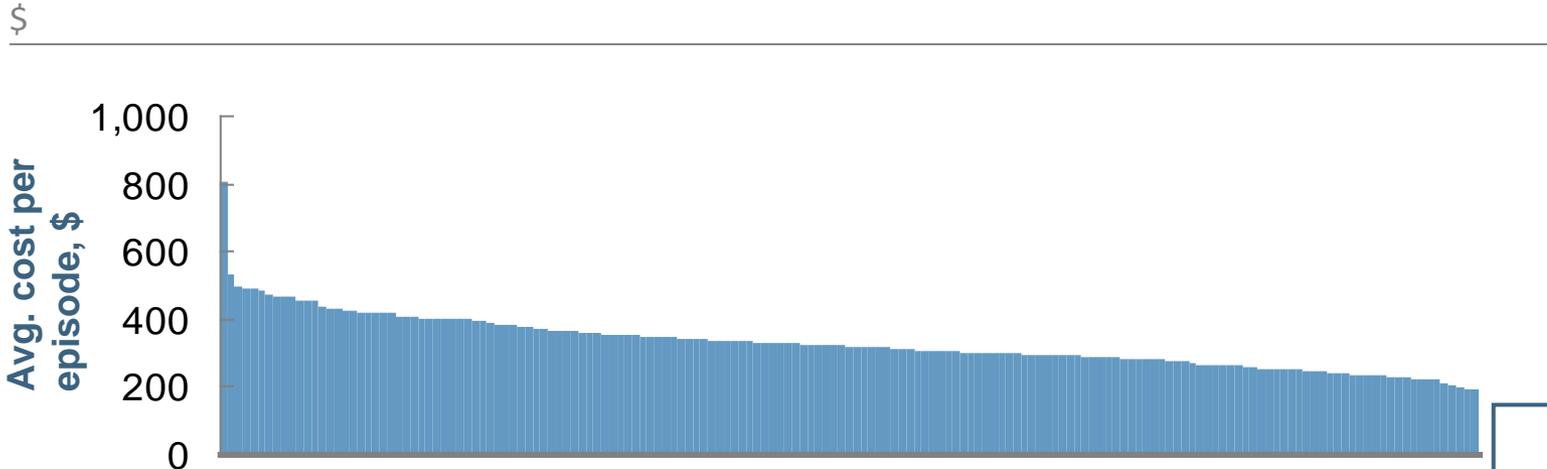
\$ in thousands



- Unadjusted episode cost, no exclusions
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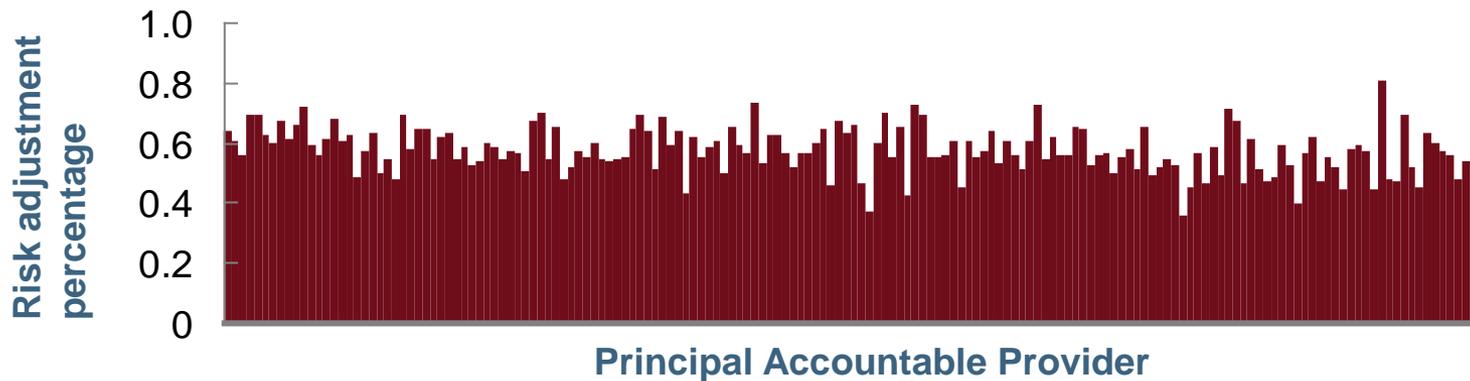
Asthma Acute Exacerbation: Provider Performance

Distribution of provider average episode cost



Degree of risk adjustment distribution

Percent of risk adjustment per provider

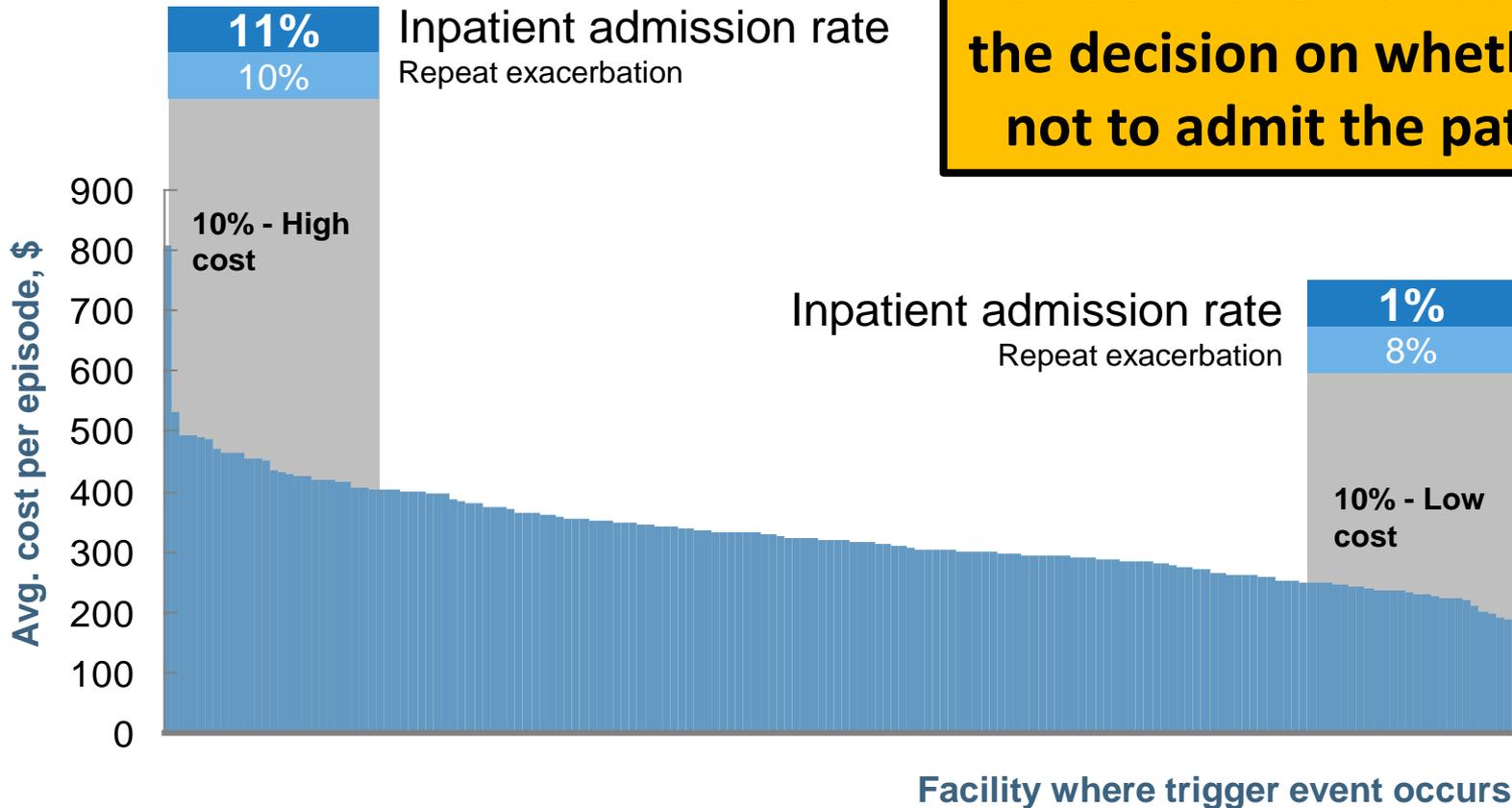


There is no correlation between average episode cost and level of risk

Variation across the Asthma Acute Exacerbation episode

Distribution of provider average episode cost

\$



One driver of variation is the decision on whether or not to admit the patient