



maryland
health services
cost review commission

Performance Measurement Workgroup

May 17, 2023

HSCRC Quality Team

PMWG Members

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Kelly	Arthur	Qlarant QIO	Elinor	Petrocelli	Mercy Medical Center
Ed	Beranek	Johns Hopkins Health System	Mindy	Pierce	Primary Care Coalition of Montgomery County
Barbara	Brocato	Barbara Marx Brocato & Associates	Tricia	Roddy	Maryland Department of Health
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Tim	Chizmar	MIEMSS	Nitza	Santiago	Lifebridge Health
Linda	Costa	University of Maryland School of Nursing	Dale	Schumacher	MedChi, Maryland State Medical Society
Ted	Delbridge	MIEMSS	Jodi	Segal	Johns Hopkins University
Lori	Doyle	Community Behavioral Health Association of Maryland	Madeleine "Maddy"	Shea	Health Management Associates
Laura	Goodman	MD Medicaid	Brian	Sims	Maryland Hospital Association
Toby	Gordon	Johns Hopkins Carey Business School	Mike	Sokolow	University of Maryland Medical Systems
Theressa	Lee	Maryland Health Care Commission	Geetika "Geeta"	Sood	JHU SOM, Division of Infectious Diseases.
Staci	Lofton	Families USA	April	Taylor	Johns Hopkins Health System
Patsy	Mcneil	Adventist Health	Bruce	VanDerver	Maryland Physicians Care
Stephen	Michaels	MedStar Southern Maryland Hospital	Jamie	White	Frederick Health

Workgroup Ground Rules

- Be prepared: please read materials before the meeting
- Be brief
- Share the floor: please monitor your contributions to make sure others have an opportunity to engage in the discussion
- No interruptions (except for the time-keeper)
- Stay on topic
- Questions are welcome
- Respect deadlines for written comments

REMINDER: These workgroup meetings are recorded.

Timeline of Deliverables (See PMWG Workplan document)

Month	Commission Meetings	CMMI	HSCRC/Other
October 2022	Draft QBR		
November	Final QBR Draft MHAC Hospital Population Health Policy Discussion		RY2023 Revenue Adjustments
December	Final MHAC	Annual report including Year 3 SIHIS Update	
January 2023	RRIP Policy Extension PAU Measurement Report on Avoidable ED Hospital Population Health Policy Discussion		
February			
March/April			Internal TCOC Model Expansion Recommendations
May	Draft PAU Savings RY 2024 report (in Draft Update Factor Policy)		RY 2024 Revenue Adjustments
June	Final PAU Savings RY 2024 report (in Final Update Factor Policy)	Exemption Request	

Meeting Agenda

- Model Progression Plan Recommendations
 - Health Equity
 - Hospital Quality Programs
 - Hospital Accountability for Population Health
 - Statewide Population Health
- RY 2024 Revenue Adjustments
- ED Wait Time eCQM
- Update on monitoring measures
- Emerging Fall Priorities
 - Introduction to Bayesian smoothing in the complications program



Progression Plan Recommendations

Post-TCOC Model Progression Plan and Staff Recommendations

- Draft recommendations to HSCRC and MDH leadership who will consider the document in its entirety
- Other workgroups are also wrapping up their recommendations
- Final Public Comment Period on full document of all post-TCOC model recommendations in July*
- Final document will be finalized in August*
- Eventually final document will be submitted to CMMI for consideration for next model

Progression Plan: Health Equity Recommendation

Health Equity Measurement Timeline

RY23/CY21	RY25/CY23	RY26/CY24	RY27/CY25	RY28/CY26	Post- TCOC Model
RRIP Disparity Gap measure	<p>Assess application of existing PAI measure on additional HE measures</p> <p>Medicaid TFU in QBR Program</p> <p>Workgroup to improve SDoH Data Collection and Documentation</p>	TFU Disparity Measure in QBR Payment Program		Continuation of RRIP, TFU, and Avoidable Admissions Disparity Measures, and consider HCAHPS	Implementation of PHEIP
		Avoidable Admissions Disparity Measure in PAU Payment Program			


- Staff will modify the RRIP PAI methodology for the TFU and Avoidable Admissions measures
- These measures (RRIP, TFU, and Avoidable Admissions) are being prioritized due to their drastic disparities and their indication of issues with access to outpatient services

Recommendation: Develop Population Health and Equity Incentive Program (PHEIP)

Staff are recommending the development of a population health and health equity incentive program that will incentivize hospitals to improve population health and advance health equity in Maryland. This program will initially be upside only and will grant hospitals the opportunity to earn funds for reducing health disparities and improving population health, in addition to the 6% that can be earned in the core quality program(s). Potential measures of this program will include stratified measures of the Statewide Integrated Health Improvement Strategy (SIHIS), population health, and quality.

Hospital Quality Progression Plan

Hospital Quality Program Updates (MedPAC, Universal Foundation, CMMI, HSCRC)

RY23/CY21 and Prior	RY24/CY 22	RY 25/CY 23	RY 26/CY 24	RY27/CY25	RY 28/CY26	New TCOC Model
<ul style="list-style-type: none"> -Use absolute performance standards** -Use prospective targets** -Use all-condition measures** -Distribute rewards based on a continuous scale of points** 	<ul style="list-style-type: none"> -Develop 30-day all condition mortality measure*** -Begin state collection of digital measures/eCQMs*** 	<ul style="list-style-type: none"> -Engage stakeholders in digital measures WG**** -Add perinatal eCQMs**** -Collaborate with MHA and on HCAHPS improvement*** -Implement TFU Medicaid*** -Implement 30 day mortality, TFU Beh Hlth, EDAC Monitoring Reports**** -Consider plan for all-payer patient reported outcome measures (PROMs)* -Develop progression plan recommendations* 	<ul style="list-style-type: none"> -Develop new targets for RRIP* -Include ED wait times in payment policy* -Consider adding perinatal or other eCQMs in payment policy* -Develop infrastructure for PROMs* 	<ul style="list-style-type: none"> -Assess safety measure portfolio (PPCs, PSI, NHSN) -Evaluate QBR domains and measures -Assess risk-adjustment across programs 	<ul style="list-style-type: none"> -Model and develop monitoring reports for streamlined quality program -Reassess revenue at-risk across quality programs 	<p style="text-align: center;">Implement Refined Hospital Quality Program/s</p>
<p style="text-align: center;">Consider options for streamlining Hospital quality programs*** Imbed payment incentives for Equity in Hospital Quality Programs***</p>						

Recommendation

- Continue all-payer hospital quality and performance based payment programs/program components (QPP) that recognize:
 - Quality improvements that reinforce the incentives of the global budget system
 - Declining quality of care that may be an unintended consequence of a system that is constraining hospital expenditures
 - The significant opportunity hospitals in Maryland have to recoup funding through a GBR by improving the health and quality of care of the population
- The QPP program will allocate, at a minimum, the percent of revenue held at risk for the performance-based payments that equals the federal revenue at risk for similar programs (currently 6%).
- In addition, the programs/components should be designed to provide the state with flexibilities for innovation to:
 - Address state specific priorities
 - Maintain and advance a patient-centered focus of measurement within the programs/components
 - Leverage advancements in digital measurement to minimize burden of assessing performance, and
 - Streamline/simplify hospital assessment of quality/performance based payment while maximizing fairness.
- Continue all-payer hospital quality and performance based payment programs/program components (QPP)

The QPP program will allocate, at a minimum, the percent of revenue held at risk for the performance-based payments that equals the federal revenue at risk for similar programs (currently 6%). In addition, the programs/components should be designed to provide the state with flexibilities for innovation to address state specific priorities, maintain and advance a patient-centered focus of measurement within the programs/components, leverage advancements in digital measurement to minimize burden of assessing performance, and streamline/simplify hospital assessment of quality/performance based payment while maximizing fairness.

Progression Plan: Population Health

Recommendations: Statewide Population Health

- Continue and expand upon Statewide Integrated Health Improvement Strategy measures within the domains of:
 - Hospital Quality
 - Chronic Condition Management
 - Health Equity
 - Behavioral Health
- Outcomes Based Credits
 - Continue current credits
 - Explore expansion under future model

Recommendations: Hospital Incentives for Population Health

- Work with stakeholders to develop measures that reflect progress on SIHIS-relevant population health processes and/or outcomes at the hospital level
- Develop payment policies that incentivize hospitals to improve performance on those measures
 - Consider linking with outcome credit performance
- Implement data collection program to support measurement requirements



R.Y. 2024 Revenue Adjustments

RX 2024 Revenue Adjustments

CY 2022 Performance Period

Revenue adjustments will be implemented in July 2023

- Final for all programs except QBR
- Preliminary QBR adjustments will go into effect in July and final adjustments in January 2024

Payment PPCs by Quarter



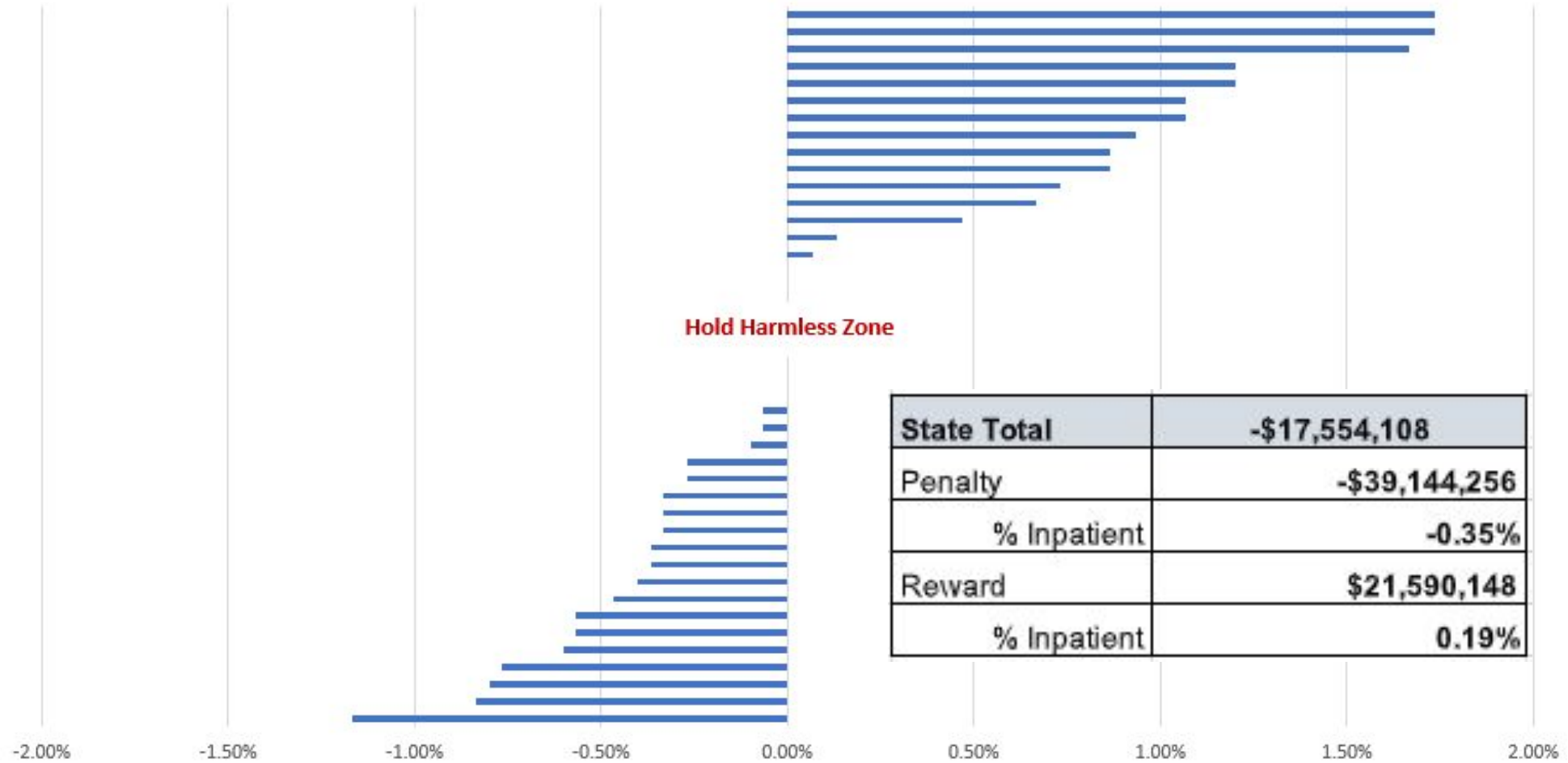
This shows that statewide MD has improved since 2018 (model test requirement)

All-Payer Case Mix Adjusted PPC Rate	
CY18	1.180
CY22	0.930
% Change	-21.19%

Note: Based on V39 final data through December 2022

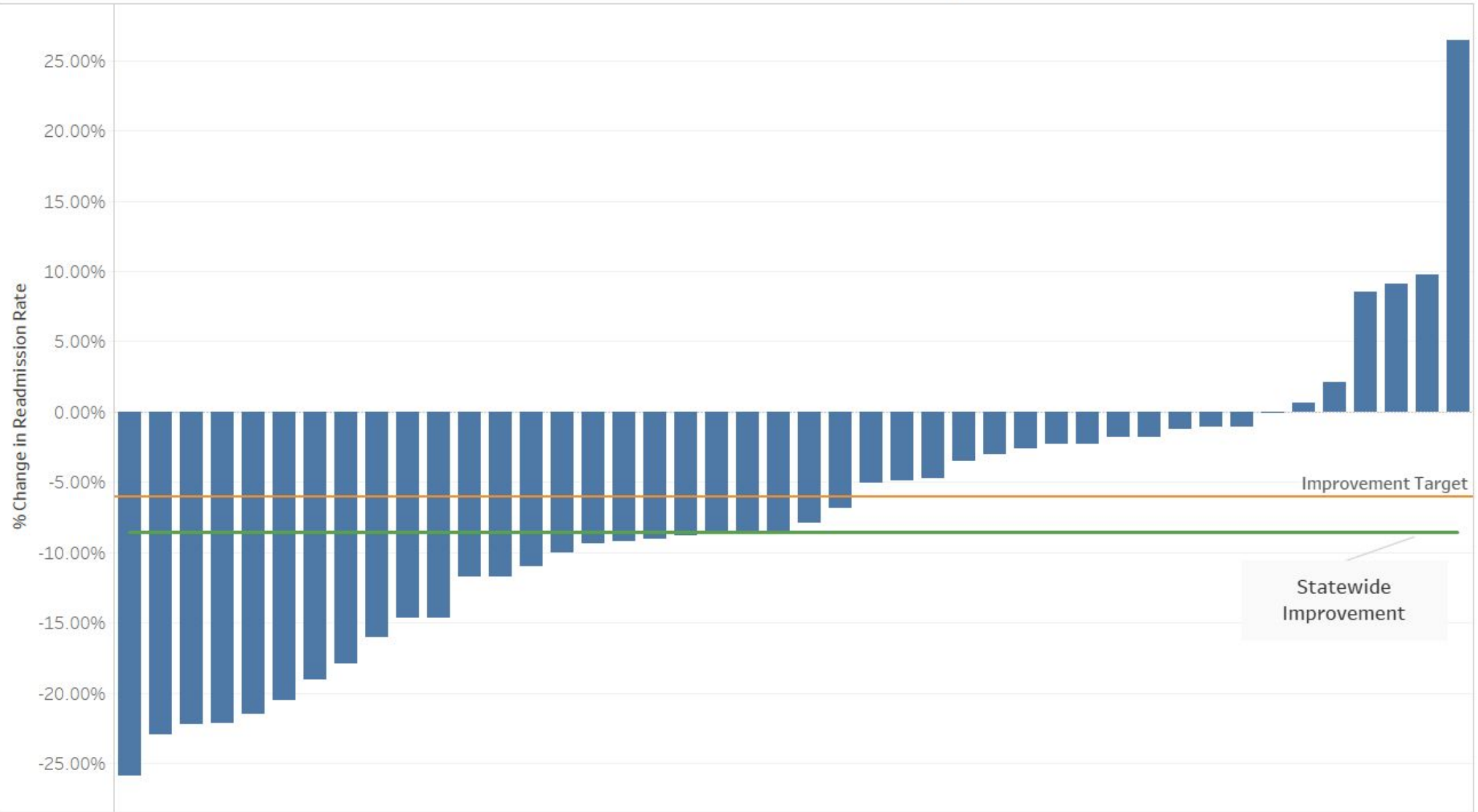
Final results to be implemented July 2023- MHAC

RY 2024 MHAC Revenue Adjustments by Hospital



- 19 hospitals to receive penalties; 8 hospitals in hold harmless zone; 15 hospitals to receive rewards

Change in All-Payer Case-Mix Adjusted Readmission Rate by Hospital from 2018 to December 2022



Final results to be implemented July 2023- RRIP

RRIP

- 15 hospitals to receive penalties
- 29 hospitals to receive rewards

RRIP State Total		\$55,794,596
Penalty	\$	(12,722,767.91)
% Penalty		-0.11%
Reward	\$	68,517,363.52
% Reward		0.61%

Disparity Gap

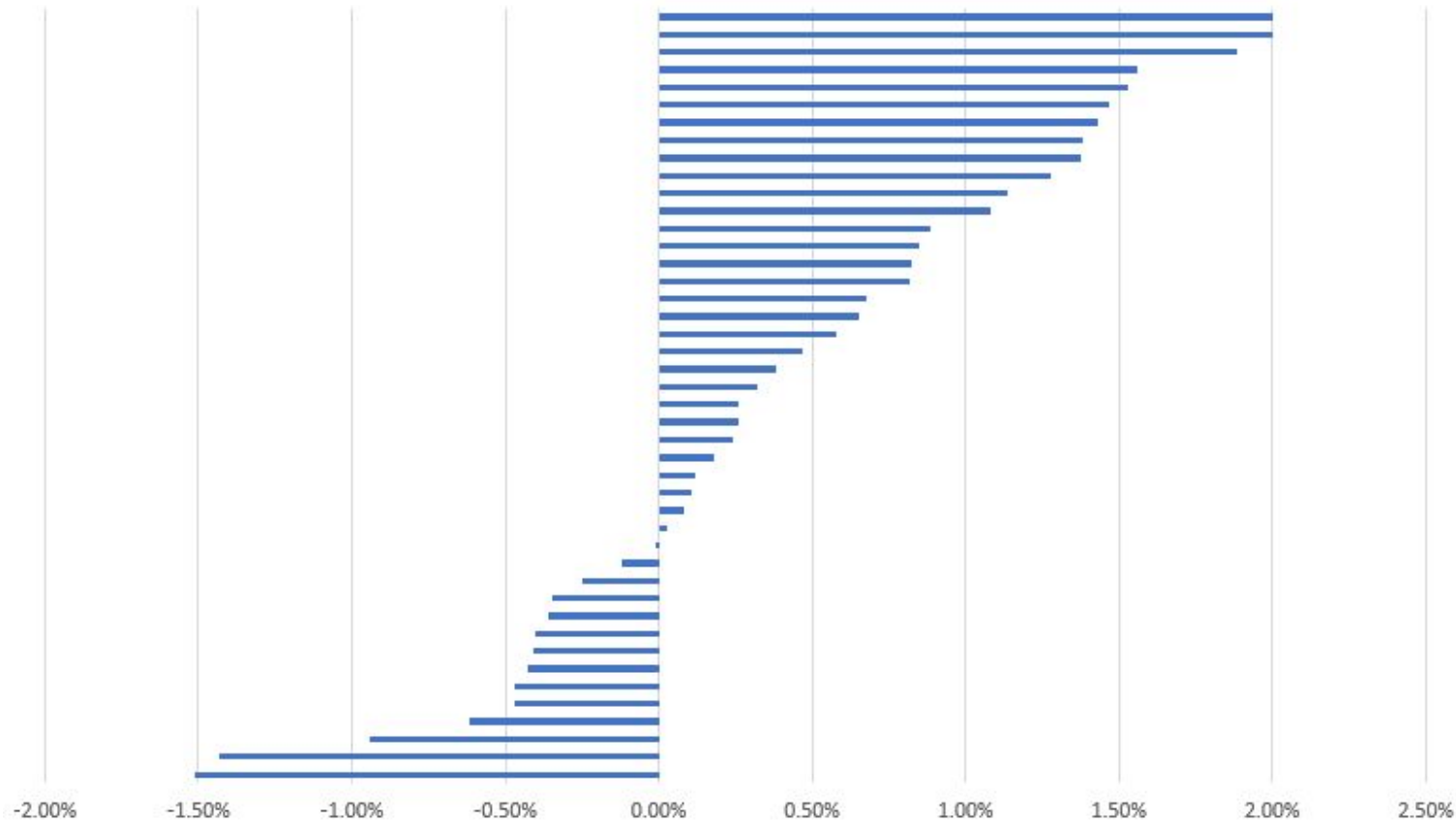
- 11 hospitals to receive rewards

PAI State Total		\$7,731,788
Penalty		
% Penalty		
Reward		\$7,731,788
% Reward		0.07%

Final results to be implemented July 2023- RRIP

RRIP + Disparity Gap

Total RRIP & Disparity Gap Revenue Adjustment

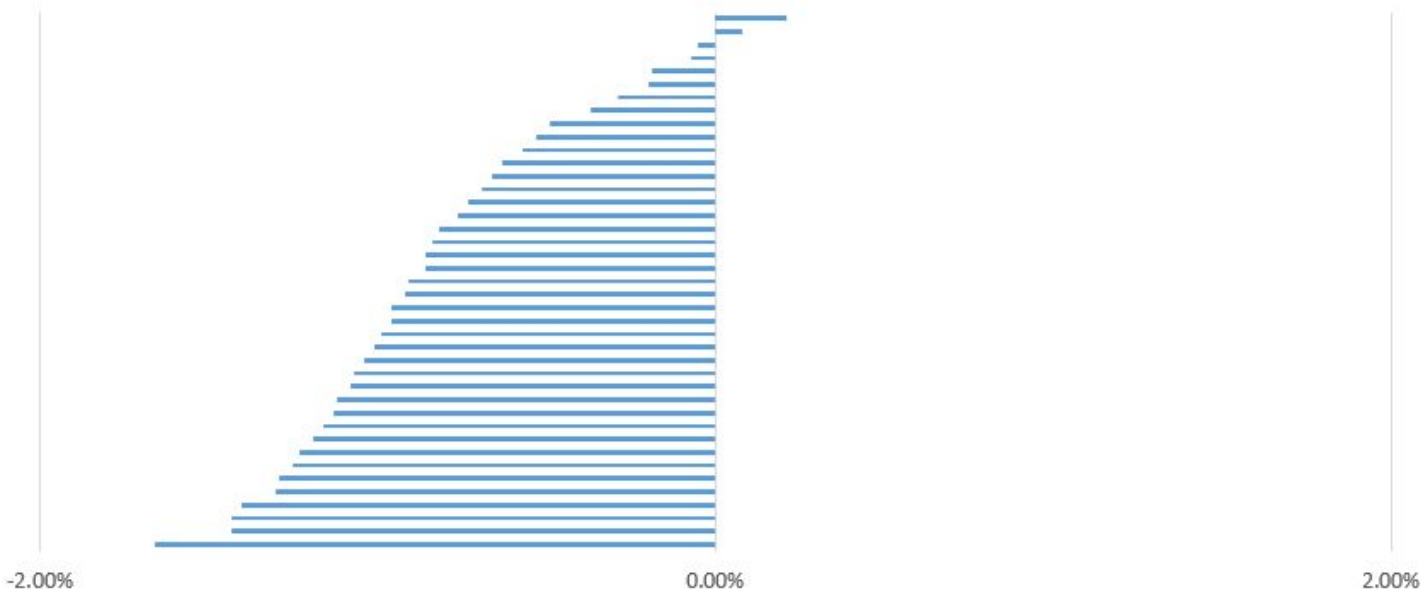


- 14 hospitals to receive penalties
- 30 hospitals to receive rewards

Total Revenue Adjustment	\$63,526,384
Penalty	\$(12,185,224.96)
% Penalty	-0.11%
Reward	\$ 75,711,608.57
% Reward	0.67%

Prelim* results to be implemented July 2023- QBR

RY 2024 Prelim QBR Revenue Adjustments



- 39 hospitals to receive penalties
- 2 hospitals to receive rewards

Total Penalties	-90,929,567
% Inpatient Revenue	-0.81%
Total rewards	275,909
% Inpatient revenue	0.0025%

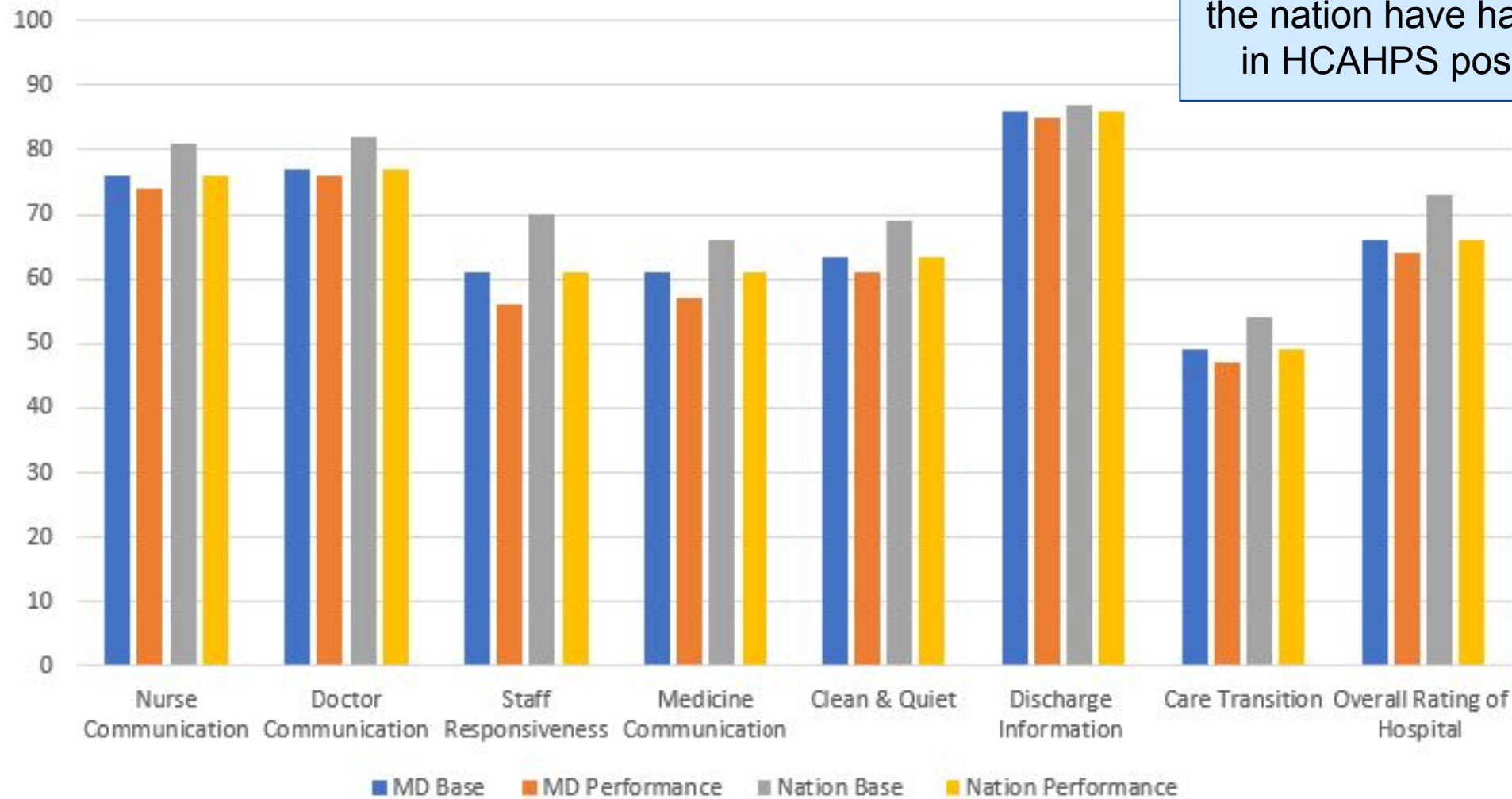
*Using final Mortality, PSI90, TFU; prelim HCAHPS, NHSN safety measures (01/2023 Care Compare release)

QBR Time Periods for Final Revenue Adjustments

Measure	Base Period	Performance Period (Final)	Data Portal
Mortality	FY 2021	CY 2022	CRS Portal
PSI 90	FY 2021	CY 2022	CRS Portal
Timely Follow-Up (Medicare)	FY 2021	CY 2022	CRS Portal
HCAHPS (top-box and linear)	CY 2019	CY 2021 Q4- CY 2022 Q3	CMS Care Compare
NSHN Safety Measures	CY 2019	CY 2021 Q4- CY 2022 Q3	CMS Care Compare
THA/TKA	CY 2019	Apr 2019- Mar 2022	CMS Care Compare

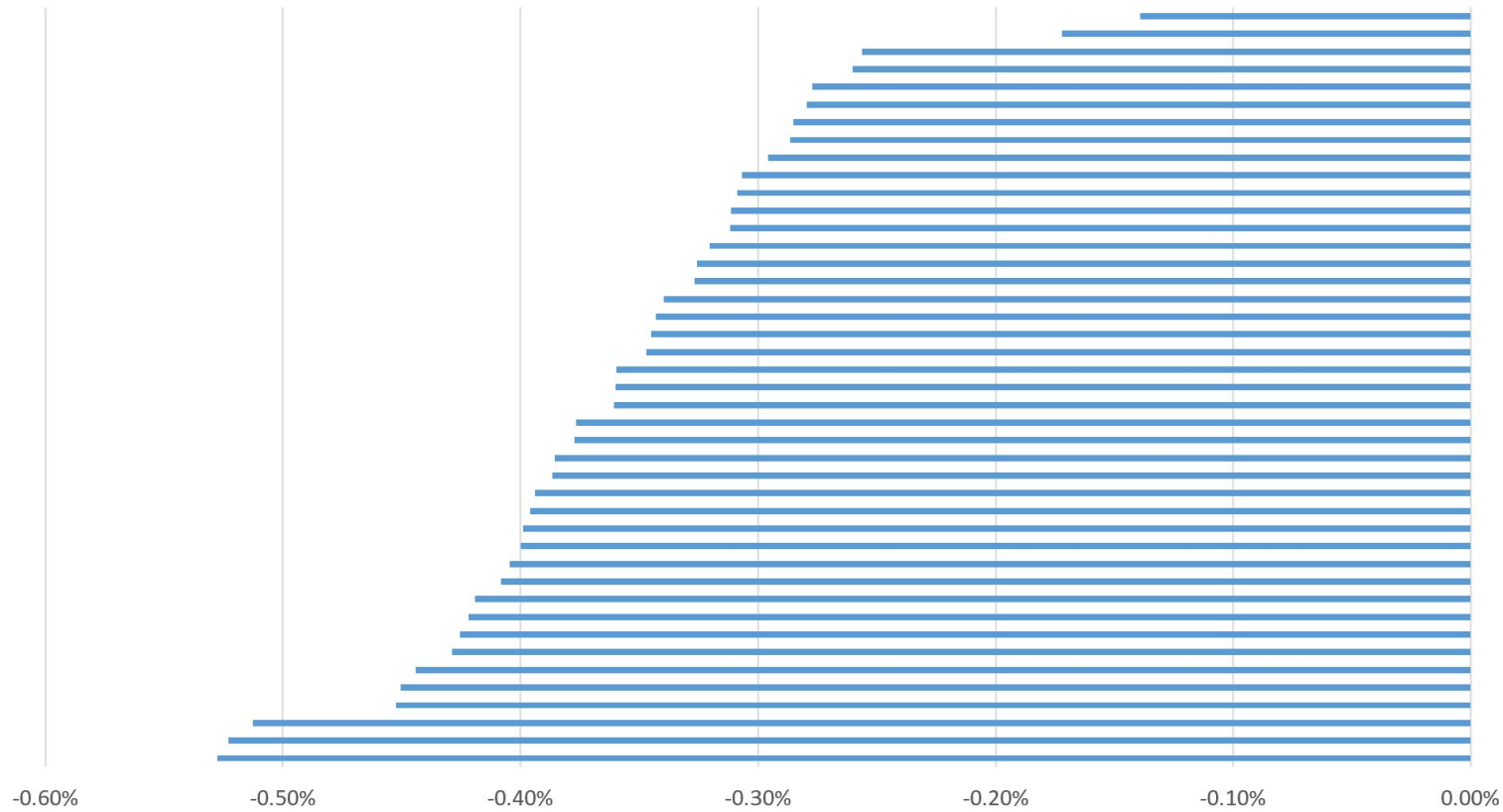
HCAHPS MD vs Nation (most recent release)*

This shows that both MD and the nation have had declines in HCAHPS post-COVID



*Due to Care Compare data lags, performance period data is based on Q4 2021- Q2 2022

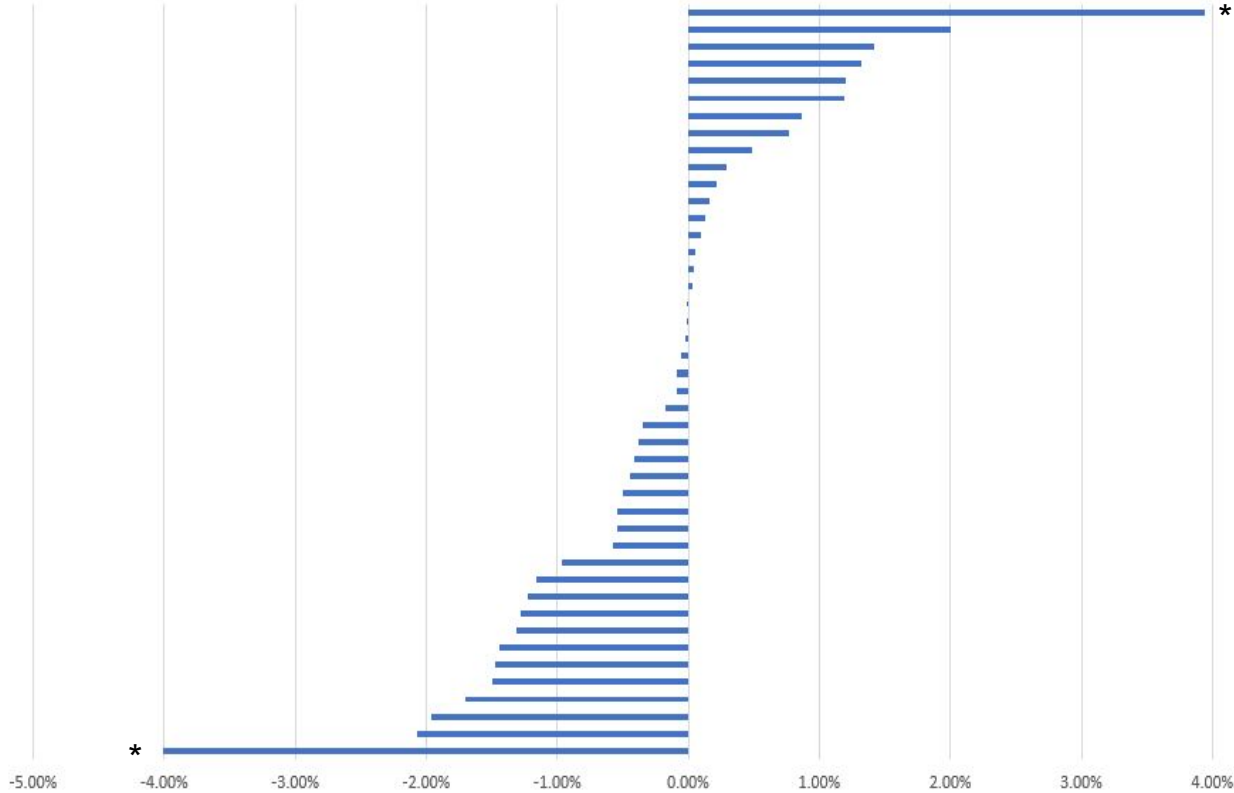
PAU Revenue Adjustment



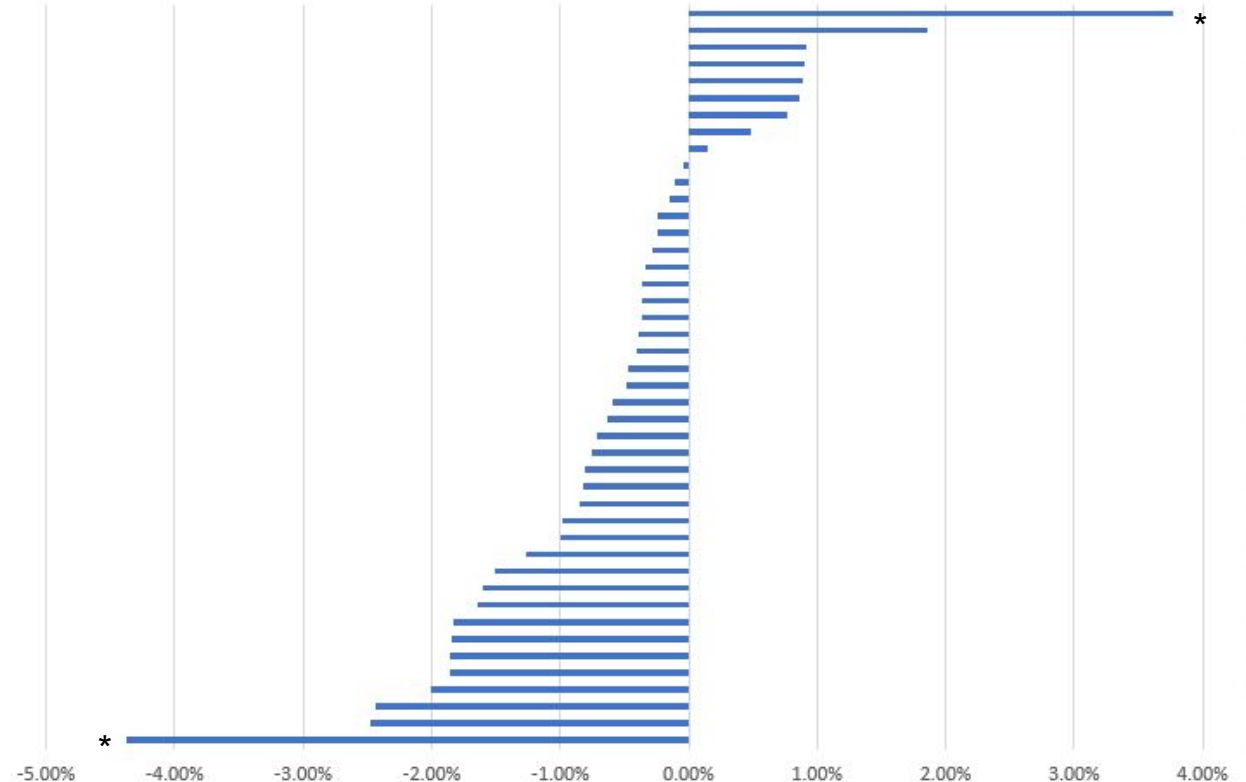
Total Penalties	-\$72,466,925
% Permanent Revenue	-0.37%

Total RY 2024 Revenue Adjustments with and without PAU

Total Revenue Adjustments w/o PAU



Total Revenue Adjustments w/ PAU



*See next slide on max guardrail

Maximum Revenue Guardrail Policy for Quality

Each year the staff calculate the max penalty that one hospital can receive for MHAC, QBR, RRIP, and PAU

- RY 2024 3.54% is maximum penalty
- RY 2024 is first year a hospital has exceeded max guardrail and will have penalties capped

RECOMMENDATION

1. For RY 2021 and beyond, the maximum penalty guardrail should be set using the following formula:

Percent of Medicare revenue at-risk for quality multiplied by the percent of Maryland revenue attributable to inpatient services⁵

2. Each fiscal year staff will provide the Commissioners in a formal report the calculated maximum penalty guardrail based on the calculation described above. For RY 2021, the maximum guardrail value will be set at 3.42 percent.

For RY 2026, staff plan to revisit policy to address two questions:

1. Should cap be placed on rewards? In RY 2024 one hospital (Garrett) had rewards that exceeded the 3.54%.
2. Should proposed Health Equity and Population Health rewards be included in the calculation of hospital quality revenue adjustments?

Electronic Clinical Quality Measure (eCQM)/ Digital Measures

eCQM Reporting for CYs 2022 and 2023

URL: <https://www.crisphealth.org/learning-system/ecqms/>

Reporting Period/ payment determination	CMS Measures	Maryland Measures
CY 2022/ FY 2024	Three self-selected eCQMs plus -Safe Use Opioids	Four eCQMs: Two self-selected eCQMs Two required measures: -Safe Opioids -ED-2
CY 2023/ FY 2025	Three self-selected eCQMs plus Safe Use Opioids Concurrent Prescribing Clinical data elements for two hybrid measures (beginning July 2023) -30-day mortality -30-day readmissions	Six required eCQMs: -Safe Opioids -ED-2 -hyperglycemia -hypoglycemia -Cesarean Birth -Severe Obstetric complications Clinical data elements for two hybrid measures (beginning July 2023) -30-day mortality -30-day readmissions

About the ED-2 Measure

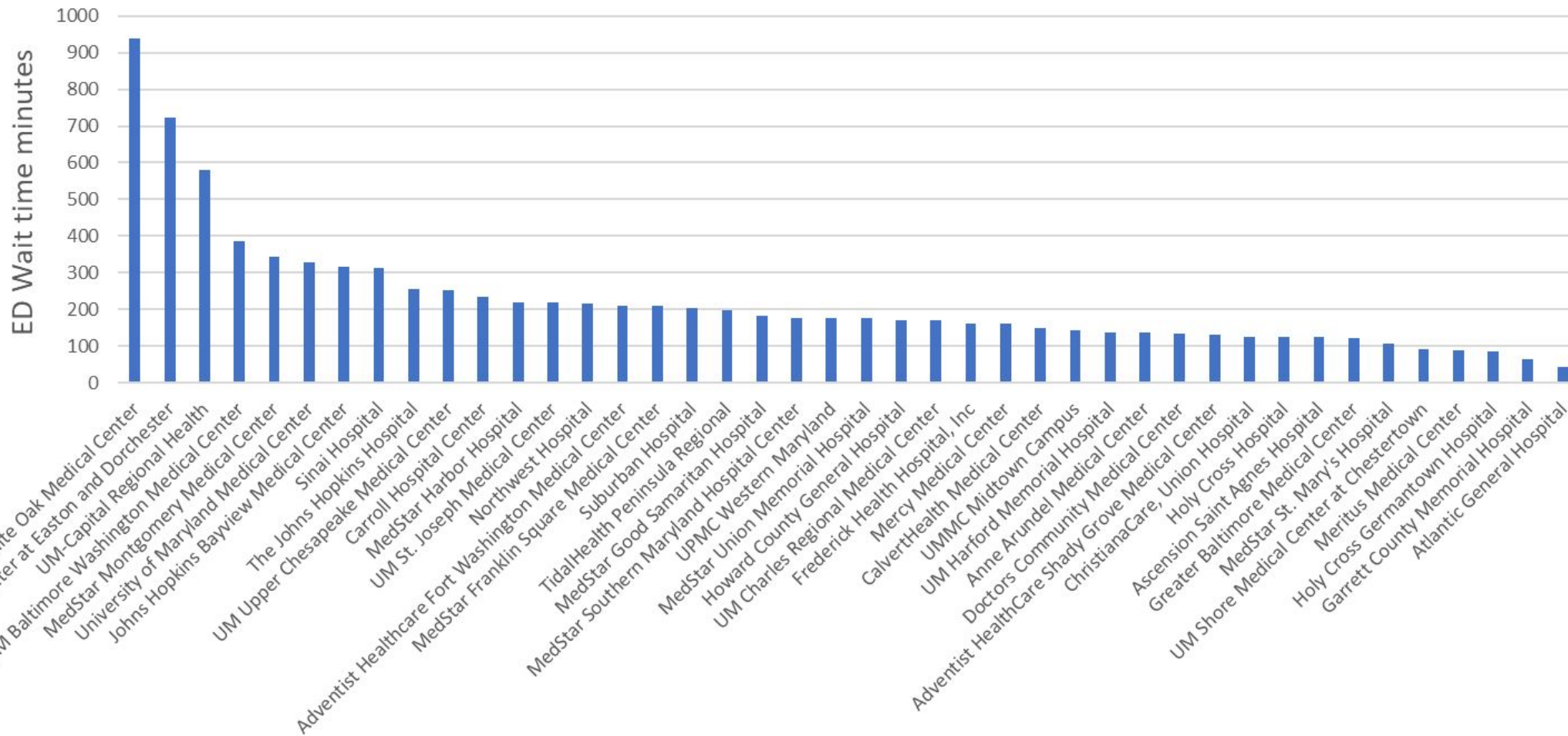
eCQM Title	Median Admit Decision Time to ED Departure Time for Admitted Patients		
eCQM Identifier (Measure Authoring Tool)	111	eCQM Version Number	11.1.000
Measurement Period	January 1, 20XX through December 31, 20XX		
Measure Steward	Centers for Medicare & Medicaid Services (CMS)		
Measure Developer	Oklahoma Foundation for Medical Quality		
Endorsed By	None		
Description	Median time (in minutes) from admit decision time to time of departure from the emergency department (ED) for emergency department patients admitted to inpatient status		
Measure Scoring	Continuous Variable		
Measure Type	Process		
Stratification	<p>Report total score and the following strata:</p> <p>Stratification 1 - all patients seen in the ED and admitted as an inpatient who do not have an inpatient encounter principal diagnosis (rank = 1) consistent with psychiatric/mental health disorders</p> <p>Stratification 2 - all patients seen in the ED and admitted as an inpatient who have an inpatient encounter principal diagnosis (rank = 1) consistent with psychiatric/mental health disorders</p>		
Risk Adjustment	None		
Rate Aggregation	Calculate the duration in minutes between the Decision to Admit time and the departure time for each ED encounter in the measure population; report the median time for all calculations performed. The specification provides elements from the clinical electronic record required to calculate for each ED encounter, i.e., the duration the patient was in the Emergency Department after the decision to admit, also stated as: the Datetime difference between the Emergency Department facility location departure date/time and the Decision to Admit date/time. The calculation requires the median across all ED encounter durations.		
Rationale	Reducing the time patients remain in the emergency department (ED) can improve access to treatment and quality of care (Morley et al., 2018). Morley's study indicates that ED overcrowding contributes to poor patient outcomes, increased mortality, delayed assessment and care, increased inpatient length of stay, risk of readmission, reduced satisfaction, and exposure to error. A review by Boudi et al. (2020) noted that ED boarding time (defined as the time between the decision to admit to inpatient and physical departure from the ED) is associated with adverse patient outcomes, such as delays in antibiotic administration, delays in pain medication administration, lower patient satisfaction, prolonged times to disposition among patients with acute asthma, and higher complication rates for cardiovascular events. Addressing critical gaps in patient throughput effectively and efficiently will shorten the length of stay and improve the delivery of safe, high-quality and patient-centered care.		

About the ED-2 Measure

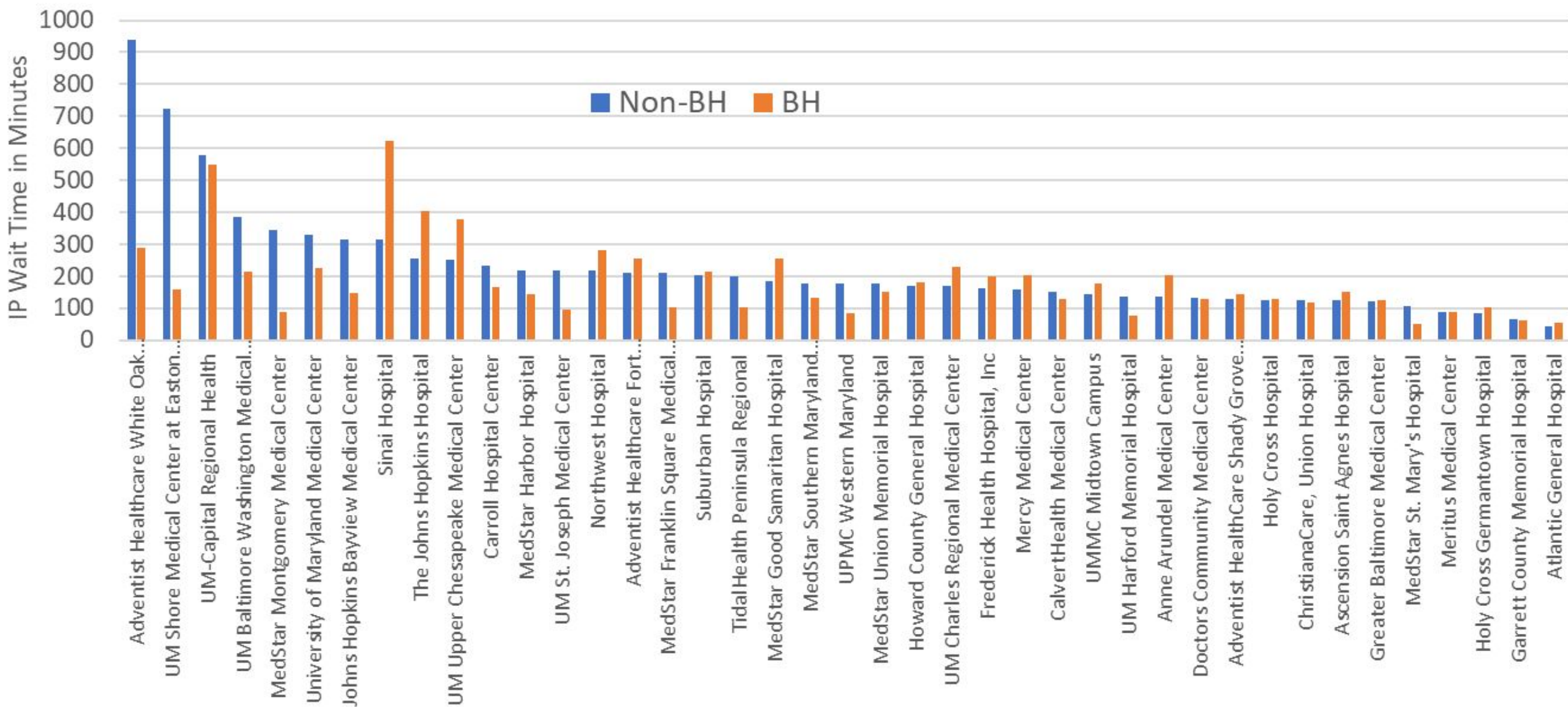
<p>Clinical Recommendation Statement</p>	<p>Length of stay (LOS) in the emergency department is an important indicator and a tool to monitor emergency care. Increased LOS has been associated with delays in treatment, adverse outcomes, and decreased patient satisfaction (Mentzonie et al., 2019). Empirical evidence shows that shorter lengths of stay in the ED lead to improved clinical outcomes. Quality improvement efforts aimed at reducing length of ED stay and overcrowding have been associated with an increase in ED patient volume, decrease in number of patients who leave without being seen, reduction in costs, and increase in patient satisfaction (Bucci et al., 2016; Chang et al., 2017; Zocchi et al., 2015).</p>
<p>Guidance</p>	<p>This measure specification delineates how to calculate the duration from the Decision to Admit to the departure from an Emergency Department (ED) visit.</p> <p>Decision to Admit: Documentation of the decision to admit the patient from the ED that is closest to the inpatient admission and since admission processes vary at different hospitals this can use either of the following:</p> <ol style="list-style-type: none"> 1. An Order- A) admission order (this may be an operational order rather than the hospital admission to inpatient status order), B) disposition order (must explicitly state to admit), C) documented bed request, or D) documented acceptance from admitting physician. This is not the "bed assignment time" or "report called time". Or 2. An Assessment- an ED evaluation that results in a decision to "Admit Inpatient" <p>The decision to admit inpatient must be performed during the ED visit that is within one hour of the inpatient admission and prior to the patient departing the ED.</p> <p>The specification provides elements from the clinical electronic record required to calculate the median time, i.e., the duration from the decision to admit to the time the patient physically departed the ED.</p> <p>Patients with behavioral health emergencies are stratified because often these situations are confounded by policies and practices in the community that are beyond the control of any individual hospital and present the hospital with quality and safety circumstances different from those of the acute medical patients (Joint Commission, 2012). Recent peer-reviewed studies also demonstrate the need for dedicated emergency mental health services, supplying evidence that the clinical needs for these patients substantively differ from the non-psychiatric population (American College of Emergency Physicians (ACEP), 2017; Lester, 2018).</p> <p>The measure population includes patients with inpatient hospitalizations and patients from Acute Hospital Care at Home programs, who are treated and billed as inpatients but receive care in their home.</p> <p>This eCQM is an episode-based measure. An episode is defined as each inpatient hospitalization or encounter that ends during the measurement period.</p> <p>This version of the eCQM uses QDM version 5.6. Please refer to the eCQI resource center (https://ecqi.healthit.gov/qdm) for more information on the QDM.</p>
<p>Initial Population</p>	<p>Inpatient hospitalizations ending during the measurement period with length of stay less than or equal to 120 days, where the patient received services during the preceding emergency department (ED) visit at the facility when a decision to admit inpatient was made prior to departing the ED</p>
<p>Measure Population</p>	<p>Initial Population</p>

ED-2b Performance for CY 2022 (unaudited)

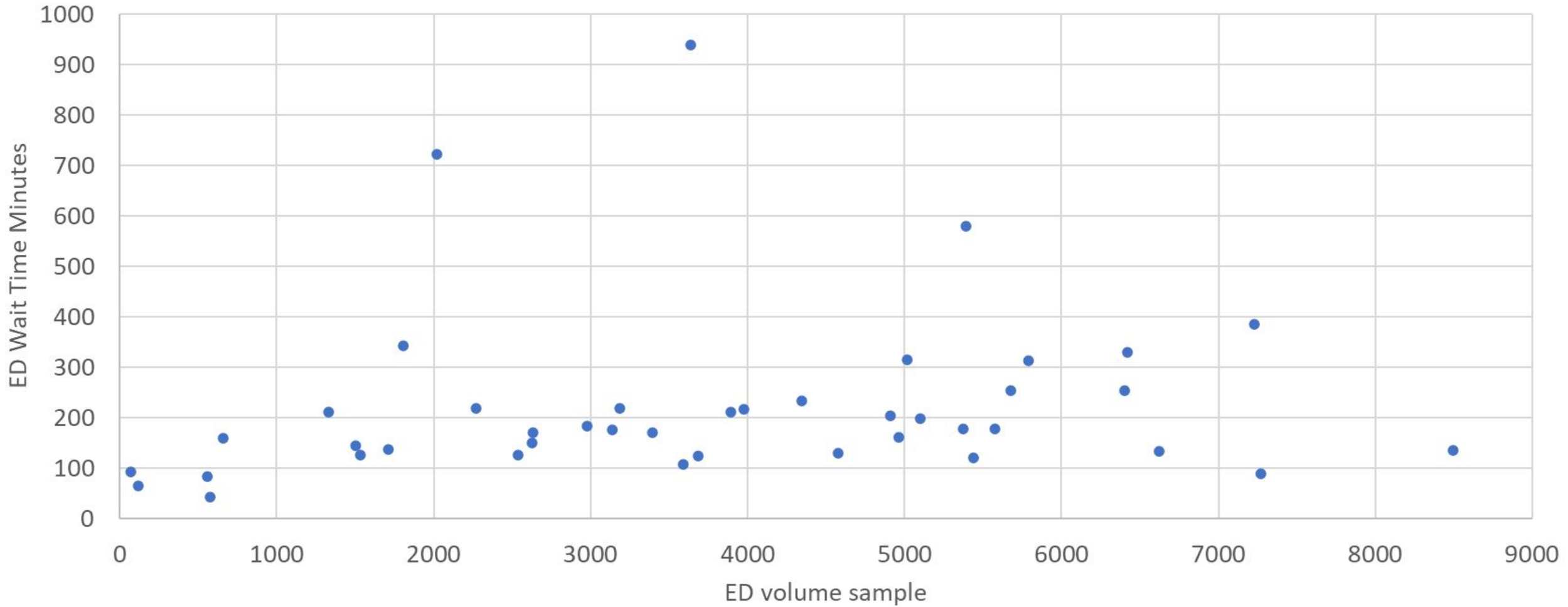
Inpatient ED wait time (ED2b) CY 2022 eQCM



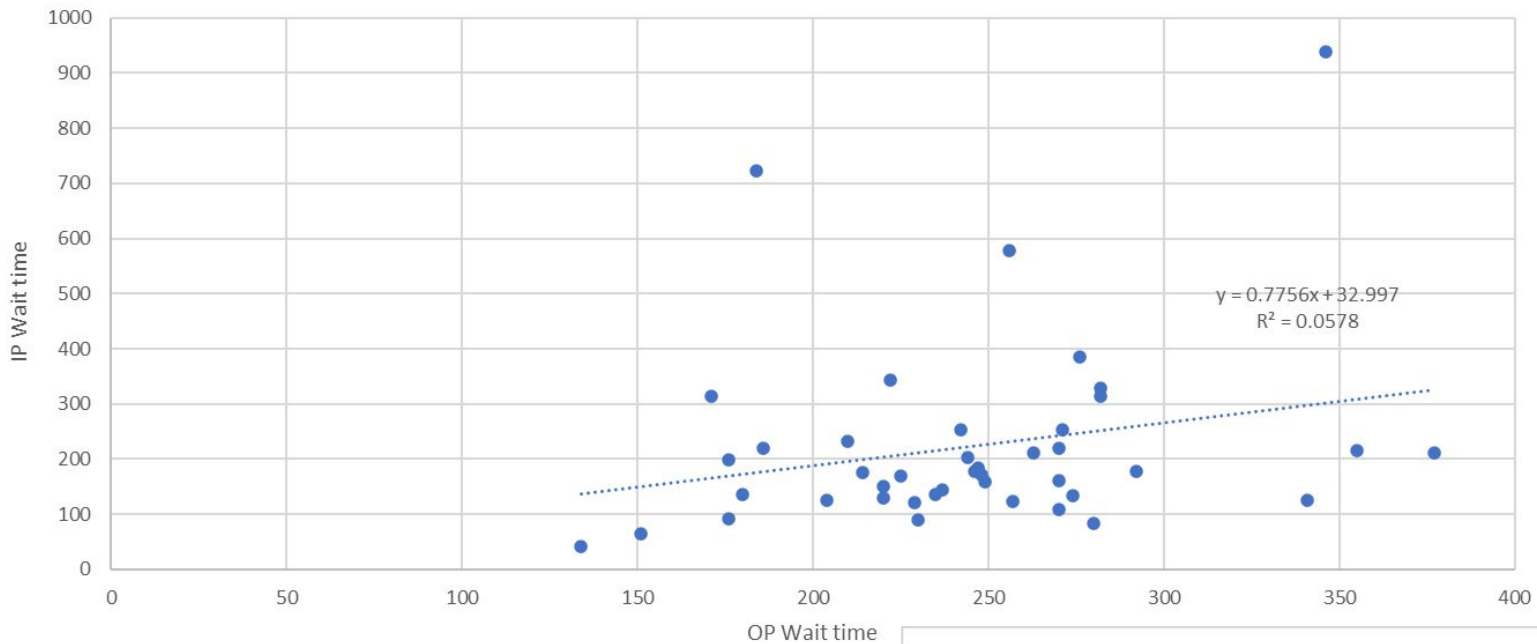
ED 2 eCQM CY 2022: IP Wait Times with and without Behavioral Health (BH)



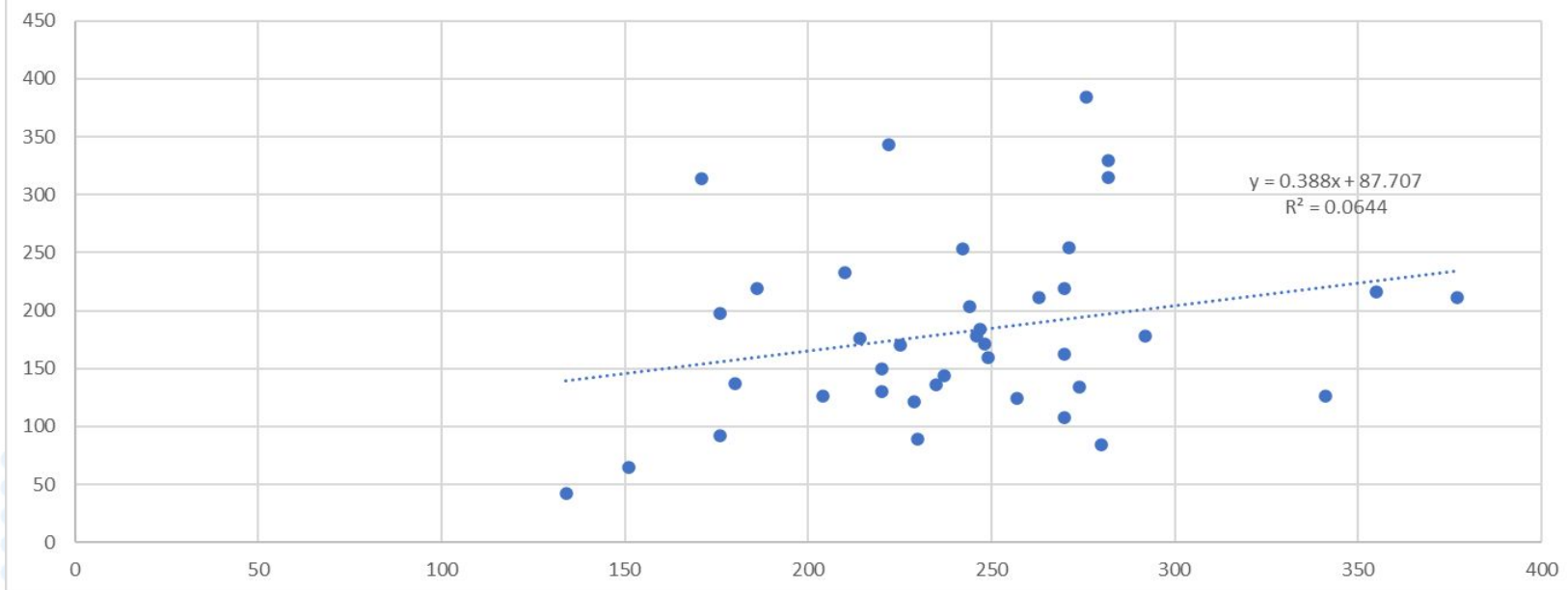
Inpatient ED wait time (ED2b) eCQM vs. Volume Submitted



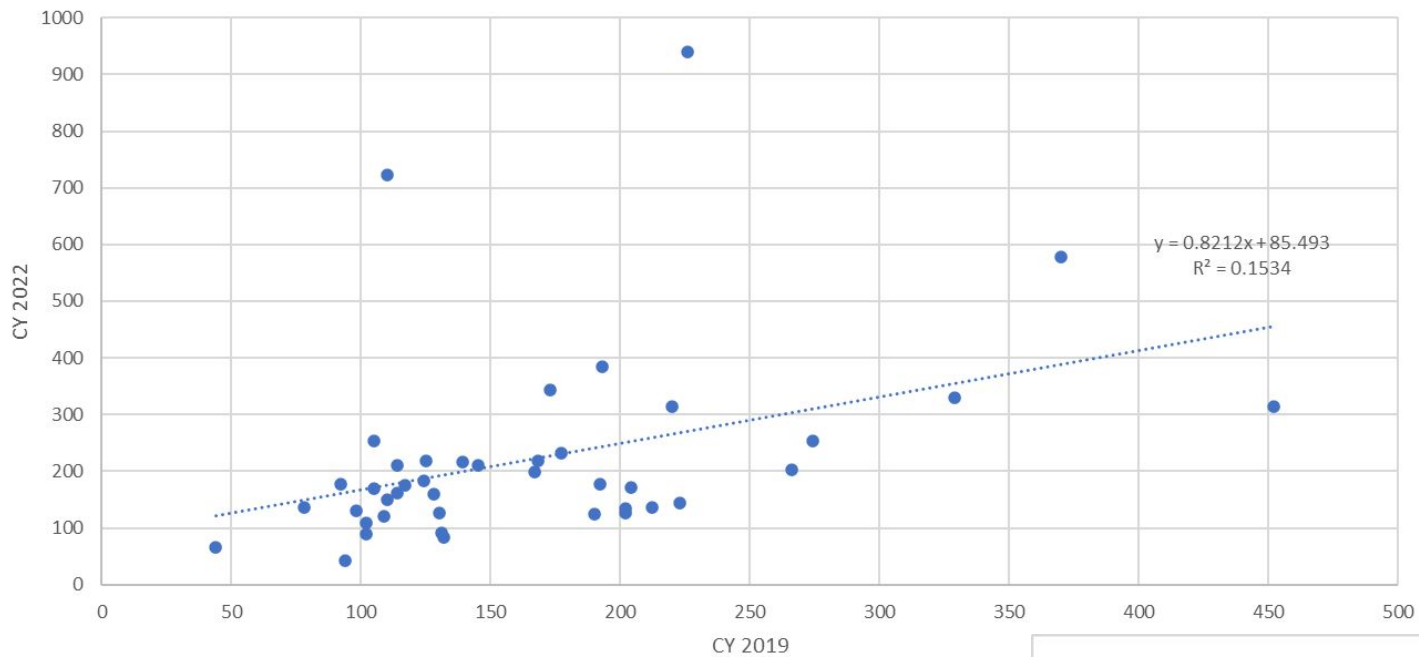
Inpatient eCQM CY 2022 vs. OP18b 7/21-6/22



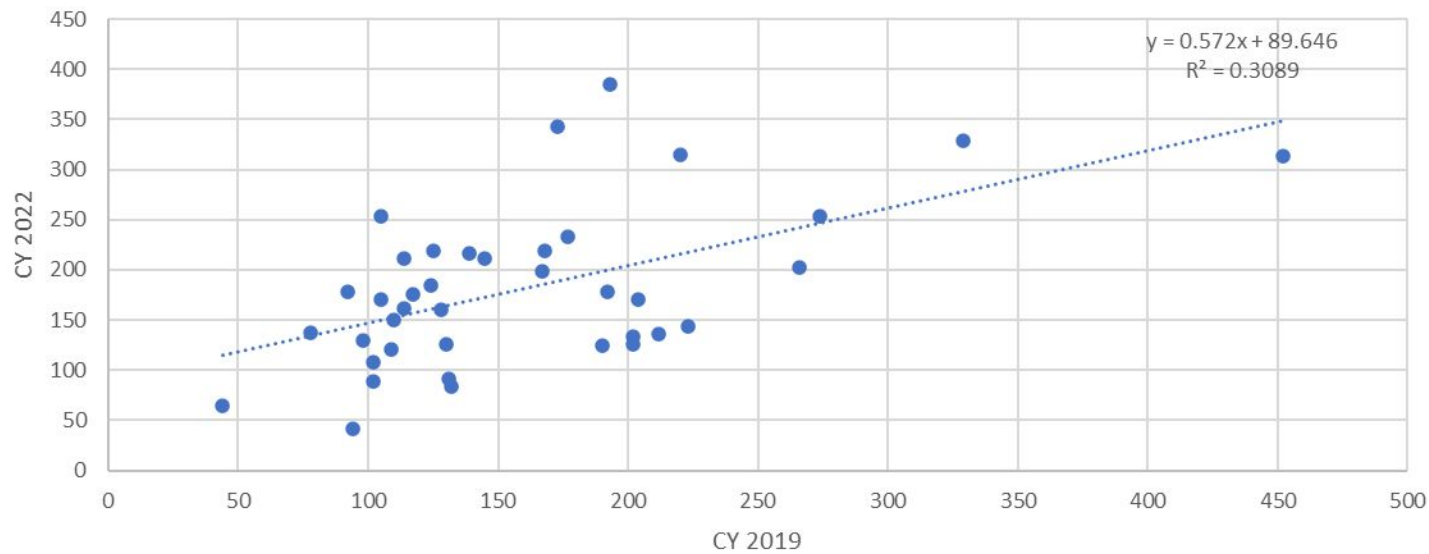
Inpatient eCQM CY 2022 vs. OP18b 7/21-6/22
Top Three Outliers Removed



ED2b 2019 vs 2022 (eCQM)



ED2b 2019 vs 2022 (eCQM)
Top Three Outliers Removed





Update on Monitoring Measures

Monitoring Measures Update

- Draft ED-MVP hospital summary report is complete
- Working with CRISP to post in upcoming cycles
- Sharing code with hMetrix to facilitate regular updates through CRISP portal

- Received A1c testing data from CRISP
- Addressing some initial data questions, aiming to provide draft report within 30 days

Sample Report

hospid	name	Visit Count, All ED Patients, 12 months ending 03/31/2023	Visit Count, MVPs, 12 months ending 03/31/2023	% Visits by MVPs, 12 months ending 03/31/2023	Percent Change from Base
210000	Statewide	2054629	524714	25.54	0.63
210001	Meritus	66178	16967	25.64	1.75
210002	UMMC	50574	22137	43.77	0.9
210003	UM-Capital Region Medical Center	37497	6798	18.13	-1.15
210004	Holy Cross	64260	11309	17.6	3.53
210005	Frederick	70242	13938	19.84	1.54
210006	UM-Harford	20435	5675	27.77	1.83
210008	Mercy	37646	14732	39.13	-1.61
210009	Johns Hopkins	89502	32898	36.76	0.49
210010	UM-Dorchester	14265	4245	29.76	2.09

Monitoring Measures Update

- 30 Day All Cause Mortality- mortality up to 30 days post hospital discharge
- Excess Days in Acute Care (EDAC)- excess days that a hospital's patients spent in acute care within 30 days after discharge (ED visits, Obs stays, unplanned readmissions)
- Medicare TFU disparity gap measure- applying PAI to Medicare TFU measure
- Develop timely follow up for behavioral health measure



Fall Priorities

Fall Priorities

MHAC

- Evaluate payment PPCs
- Test application of Bayesian smoothing

RRIP + Disparity Gap

- Develop readmission improvement goal for remainder of TCOC model
- Evaluate disparity gap methodology and develop tools to assist hospitals

QBR

- Evaluate monitoring and eCQM measures for payment
- Evaluate HCAHPS incentives and learning collaborative
- Implement disparity gap for Medicare timely follow up

PAU

- Evaluate ED MVP measure

Population Health

- Evaluate A1c monitoring measure

Other

- Finalize progression plan recommendations
- Consider options for Patient Reported Outcome Measures for future
- Evaluate additional disparities data
- Review SIHIS progress

Introduction to Bayesian Smoothing

Intro to Bayesian Smoothing

- Hospitals have raised concerns about small hospitals setting the benchmarks and thresholds
- Bayesian smoothing is used for several CMS measures
- MPR is currently exploring Bayesian smoothing options for the MHAC program



Bayesian Smoothing

// Adjusts hospitals scores based on reliability of PPC measure at given hospital

/ For a given PPC, the reliability of the PPC tends to increase as the number of at risk discharges increases

/ The reliability for PPC i for hospital j can be calculated as follows:

- $\frac{\text{Variance between hospital}_i}{\text{Variance between hospital}_i + \text{Variance within hospital}_{ij}}$
- This is referred to as the signal to noise ratio

/ Alternative methods exist for calculating reliability



Bayesian Smoothing for MHAC Scoring

//The equation below illustrates how hospital j 's smoothed rate for PPC measure i is based on the hospital's risk-adjusted rate (RAR), the statewide RAR, and PPC measure i 's reliability for hospital j :

$$\text{Smoothed rate}_{ij} = (\text{Hospital RAR}_{ij} \times \text{Reliability}_{ij}) + (\text{Statewide RAR}_i \times (1 - \text{Reliability}_{ij}))$$

- The hospital's smoothed rate equals the hospital's RAR when the reliability is 1 for the measure at the hospital.
- The hospitals' smoothed rate equals the state RAR when the reliability is 0 for the measure at the given hospital
- Similar to AHRQ's PSI 90 reliability adjustment used to calculate CMS PSI 90 results for CMS payment programs (e.g., HAC Reduction Program).



Bayesian Smoothing Example

PPC	Reliability for Hospital A	PPC RAR for Hospital A	Statewide Mean RAR	Smoothed PPC rate for Hospital A
3	0.954	1.009	1.403	1.027
4	0.151	1.028	1.593	1.508

Note: This table contains hypothetical data

PPC 3 Reliability for Hospital A = 0.954



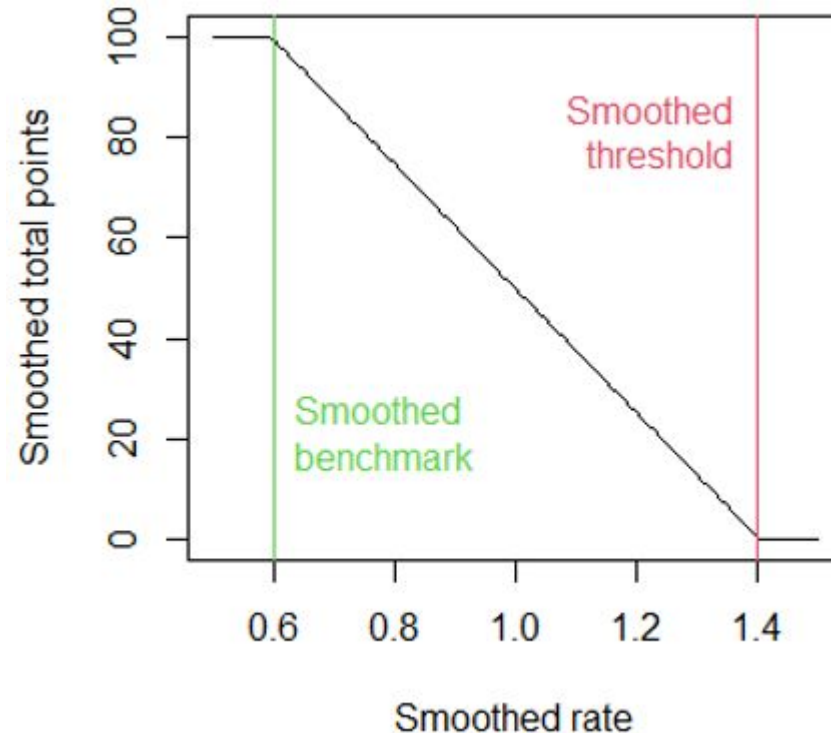
PPC 4 Reliability for Hospital A = 0.151





MHAC scores using smoothed rates

- For each PPC, calculate the smoothed threshold for the given PPC as the 90th percentile of hospital smoothed rates for the given PPC
- For each PPC, calculate the smoothed benchmark for the given PPC as the 10th percentile of hospital smoothed rates for the given PPC
- Calculate each hospital's smoothed total points for each PPC based on the smoothed benchmark and smoothed threshold



Next Steps

- Review results from different Bayesian smoothing methods to decide on approach
- Model RY 2024 MHAC results using Bayesian smoothing
- Review results with PMWG in fall for potential implementation in CY 2024 performance period



THANK YOU!

Next Meeting Scheduled for: Wednesday, June 21, 2023

