maryland
health services
cost review commission

Performance Measurement Workgroup

December 15, 2021

HSCRC Quality Team

Agenda

- RY 2024 MHAC Policy
- RRIP RY 2024 draft policy discussion
- Patient Adversity Index (PAI) and SIHIS goal discussion
- COVID Update
- eCQM Update

MHAC RY 2024 Policy

MHAC RY 2024 Draft Recommendations

1. Continue to use 3M Potentially Preventable Complications (PPCs) to assess hospital acquired complications.
    a. Maintain a focused list of PPCs in the payment program that are clinically recommended and that generally have higher statewide rates and variation across hospitals.
    b. Assess monitoring PPCs based on clinical recommendations, statistical characteristics, and recent trends to prioritize those for future consideration for updating the measures in the payment program.
        i. Engage hospitals on specific PPC increases to understand trends and discuss potential quality concerns
2. Use more than one year of performance data for small hospitals (i.e., less than 20,000 at-risk discharges and/or 20 expected PPCs). The performance period for small hospitals will be CY 2021 and 2022.
3. Continue to assess hospital performance on attainment only.
4. Continue to weigh the PPCs in the payment program by 3M cost weights as a proxy for patient harm.
5. Maintain a prospective revenue adjustment scale with a maximum penalty at 2 percent and maximum reward at 2 percent and continuous linear scaling with a hold harmless zone between 60 and 70 percent.
6. Adjust retrospectively the RY 2024 MHAC pay-for-performance program methodology as needed due to COVID-19 Public Health Emergency and report any changes to Commissioners.

MHAC Re-Design PPC Selection Guidelines Used to Consider Monitoring PPCs

- PPC Data Analysis/Statistics
  - Rate generally 0.5 or above
  - Volume of observed events 100 or above
  - Significant variation across hospitals
  - At least half of the hospitals are eligible for the PPC
- Additional Considerations
  - PSI overlap
  - Clinical significance
  - Opportunity for improvement
  - All-payer

Tier 1

PPC #	PPC Desc	CY21/18 % Change	CY21 Rate per 1000 at risk	Observed Counts CY19& CY20	3M Cost Weights	CY18-19 Reliability	CY18-19 Predictive Validity	Qualifying Hospitals CY18-19	Variation Among Hospitals	3M Group	3M Level
31*	Decubitus Ulcer	177.75%	1.199	159	2.733	Strong	Very Weak	46	82.61%	8	2
51	GI Ostomy Complications	143.68%	0.739	363	1.536	Strong	Moderate	40	80%	6	1
47	Encephalopathy	95.30%	1.088	428	0.735	Strong	Moderate	39	86.62%	8	2
26	Diabetic Ketoacidosis & Coma	90.48%	0.158	71	0.530	Moderate	N/A	19	94.74%	8	1
50*	Mechanical Complication of Device, Implant & Graft	83.29%	1.083	669	1.162	Strong	Moderate	40	72.5%	6	1
45*	Post Procedure Foreign Body	68.36%	0.029	22	0.599	Very Low	Very Weak	46	95.65%	4	2

*Indicates similar SRE reported to OHCQ.

Tier 2

PPC #	PPC Desc	CY21/18 % Change	CY21 Rate per 1000 at risk	Observed Counts CY19& CY20	3M Cost Weights	CY18-19 Reliability	CY 18-19 Predictive Validity	Qualifying Hospitals CY18-19	Variation Among Hospitals	3M Group	3M Level
15	Peripheral Vascular Complications except Venous Thrombosis	104.91%	0.549	261	1.509	Moderate	Weak	29	68.97%	2	2
23	GU Complications Except UTI	85.21%	0.417	241	0.593	Moderate	Moderate	33	81.82%	8	1
34	Moderate Infectious	77.22%	1.339	233	1.320	Strong	Strong	33	78.79%	5	1
18	Major GI Complications w/ Transfusion	70.32%	0.606	340	1.532	Moderate	Weak	38	78.95%	3	2
13	Other Cardiac Complications	51.50%	0.397	252	0.371	Strong	Moderate	35	88.57%	2	1
17	Major GI Complications w/o Transfusion	48.50%	0.674	397	1.244	Strong	Weak	39	89.74%	3	2

Additional V39 Considerations

- 3M Summary of Change Document
  - No ROM/SOI changes due to risk of COVID, as anticipated
- hMetrix currently analyzing PPC impact of V38 → V39 updates, and reduction in PPCs being flagged

RRIP RY 2024: Program, Design Considerations

Readmissions Reduction Incentive Program (RRIP)

Purpose

To incentivize hospitals to reduce avoidable readmissions by linking payment to (1) improvements in readmissions rates, (2) attainment of relatively low readmission rates, and (3) reduce disparities.

- **What is a readmission?** A readmission occurs when a patient is discharged from a hospital and is subsequently re-admitted to any hospital within 30 days of the discharge.
- **Why focus on readmissions?** Preventable hospitals readmissions may result from index admission quality of care or inadequate care coordination following discharge and can result in substandard care quality for patients and unnecessary costs.

How it Works: Revenue-at-Risk

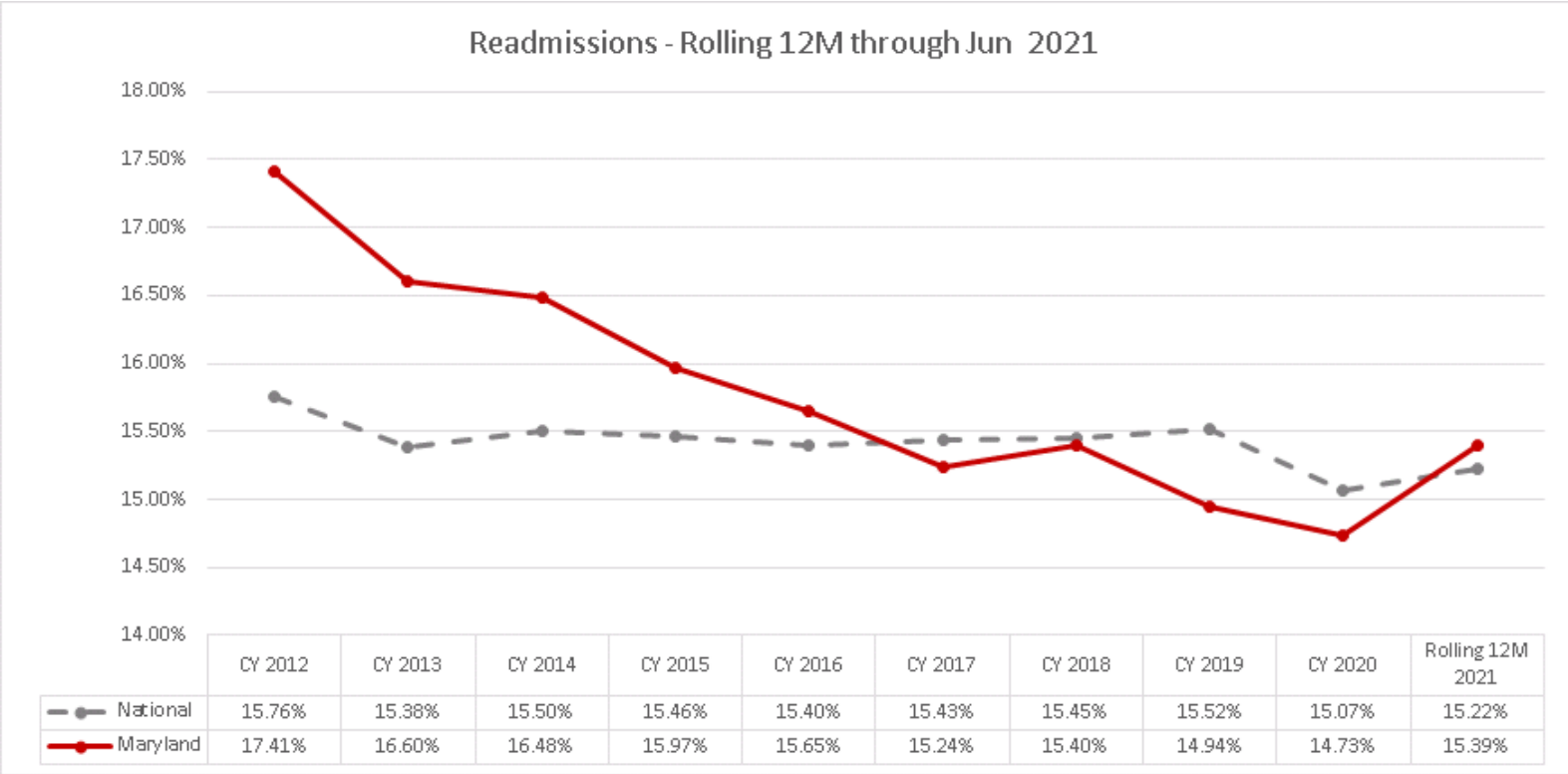
The program puts **2 percent** of inpatient hospital revenue at risk (maximum penalty/reward) + 0.5 percent max disparity gap reward

Methodology

The RRIP is **similar to the Medicare Hospital Readmissions Reduction Program (HRRP)**, but has an all-payer focus. The RRIP is also the only statewide program with an incentive for reducing disparities in all-payer readmission rates.

	Readmission Reduction Incentive Program (RRIP)	Hospital Readmissions Reduction Program (HRRP)
Measures	•Measures performance in **all-payer, all-cause** unplanned 30-day readmissions •**Predetermined base and performance period** to calculate improvement rates •Readmission rates are **adjusted for severity of illness and out-of-state ratios** •Measures readmissions **across hospitals** in Maryland •Exclusion logic includes planned readmissions and **Maryland-specific adjustments**	•Measures performance on **6 condition or procedure-specific** unplanned 30-day readmissions •Hospitals are assessed **relative to the peer group median Excess Readmission Ratio** •**Rolling 3-year Performance Period** that is updated annually •Excludes planned readmissions
Revenue Adjustment	•Adjusts **hospitals' global budgets** based on performance •Maximum **reward** and penalty is **2%** •Reduces and rewards hospitals' global budgets **based on preset scale** •Hospitals are assessed on the **better of improvement or attainment**	•Adjusts all **Medicare FFS MS-DRG payments** based on performance •Penalty-only program; maximum penalty is **3%** •Sliding scale payment adjustment based on **payment adjustment factor**
Reporting Timelines	•Provides hospitals with **monthly** and annual reports •Allows hospitals to submit questions and request corrections to measure logic **prior to implementation of revenue adjustments**	•Provides hospitals with **annual** reports; rolling 12-month measure performance updated **quarterly** •Allows hospitals to submit questions and request corrections during **30-day Review and Correction Period**

CMMI Readmission Rates - Data current through June 2021

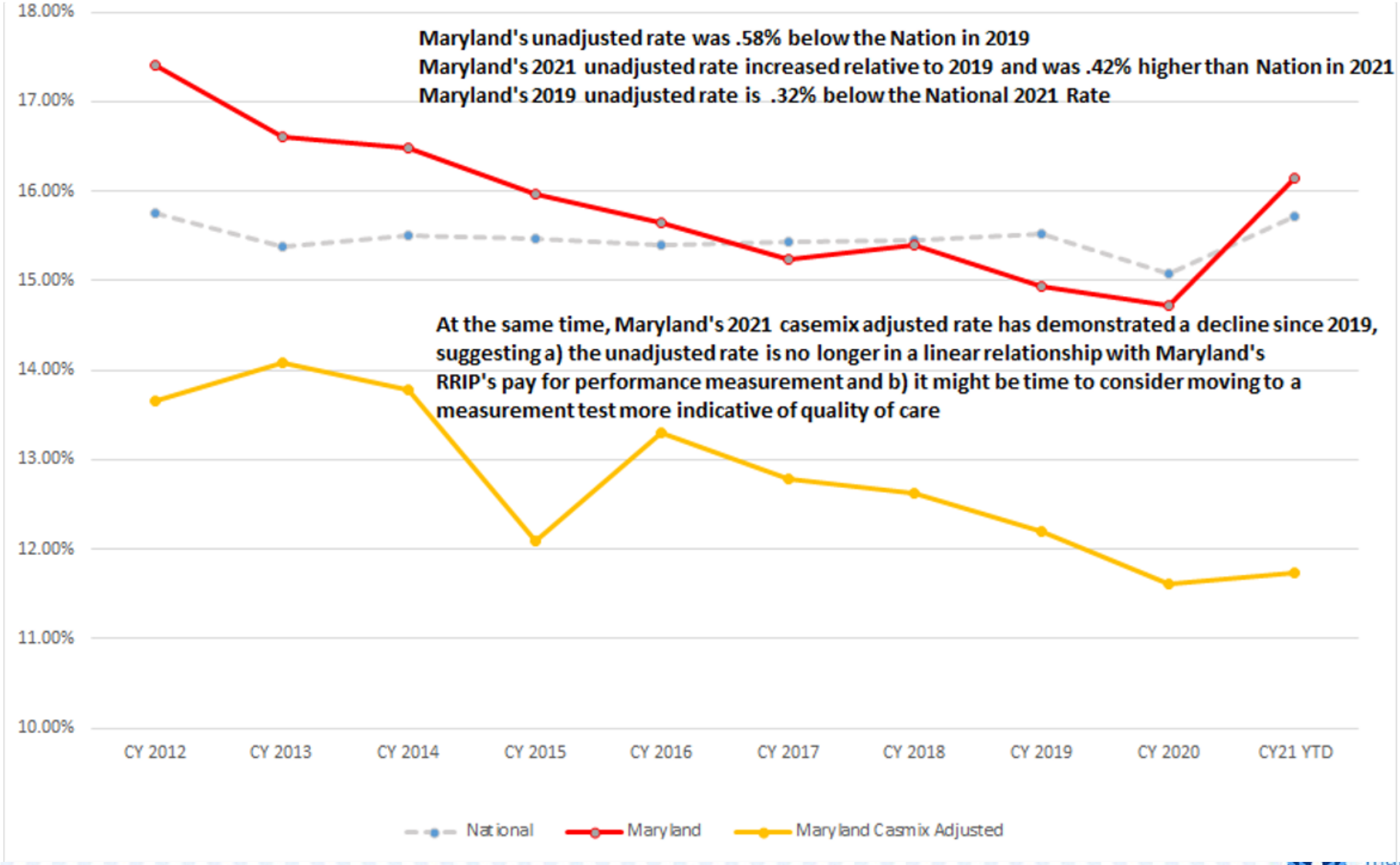


	CY 2012	CY 2013	CY 2014	CY 2015	CY 2016	CY 2017	CY 2018	CY 2019	CY 2020	Rolling 12M 2021
National	15.76%	15.38%	15.50%	15.46%	15.40%	15.43%	15.45%	15.52%	15.07%	15.22%
Maryland	17.41%	16.60%	16.48%	15.97%	15.65%	15.24%	15.40%	14.94%	14.73%	15.39%

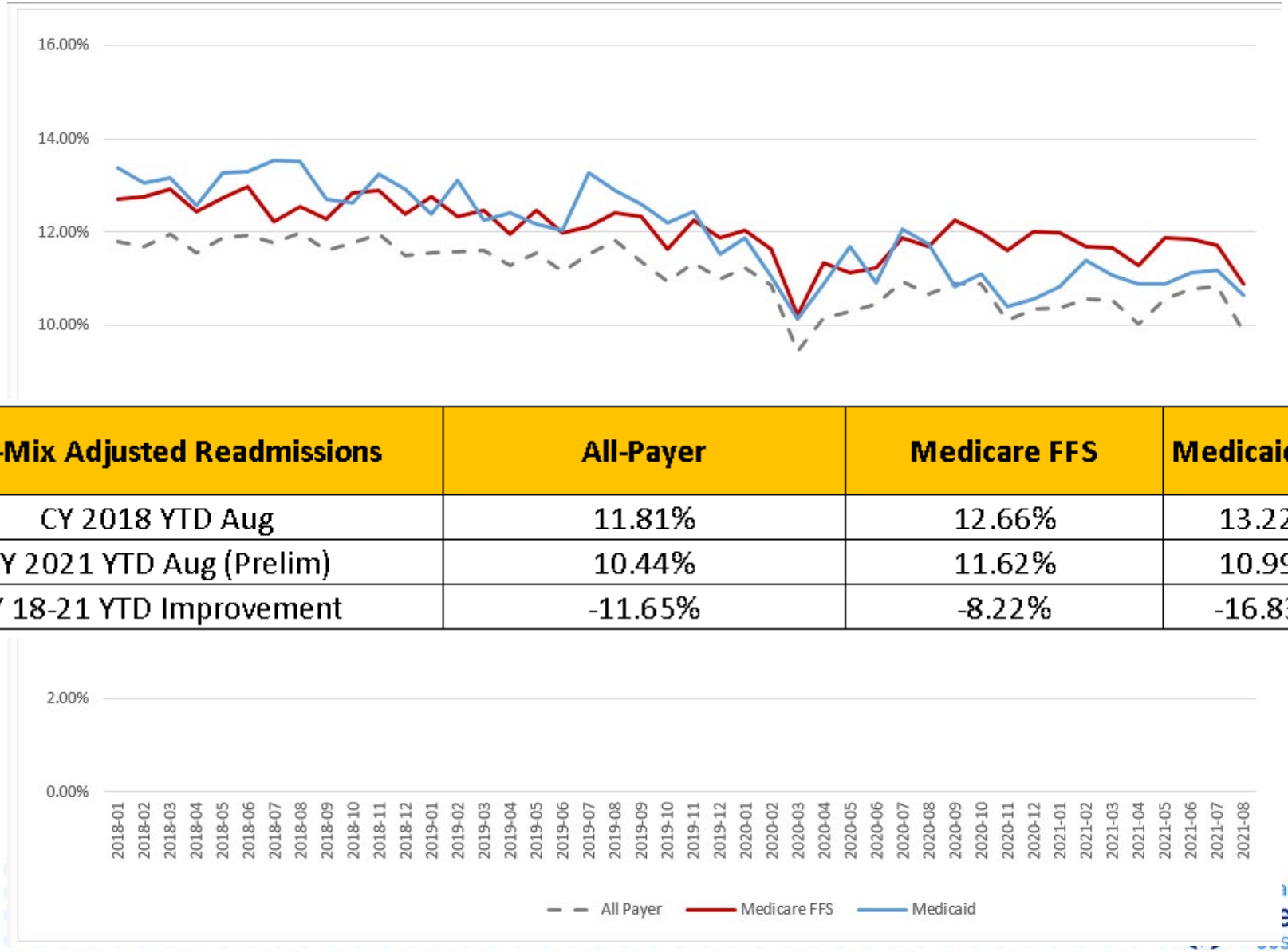
A few notes regarding the current (shown) unfavorable trend:

- COVID has impacted national hospital utilization: Nationally FY 21 saw a 22% decline in Monthly Admissions and 23% decline in Readmissions; within Maryland, those trends are divergent at 19% decline in admissions with 16% decline in readmissions
- As this measure of readmissions is unadjusted, HSCRC has anticipated that our Model's success in moving patients to the correct care setting might have outsize impact on an unadjusted measure; i.e. case-mix adjustment may be more germane given MD Model incentives and successes
- Next Steps: Maryland will continue to monitor these trends and to communicate with CMMI

More Context on Unadjusted Medicare FFS Readm Rates

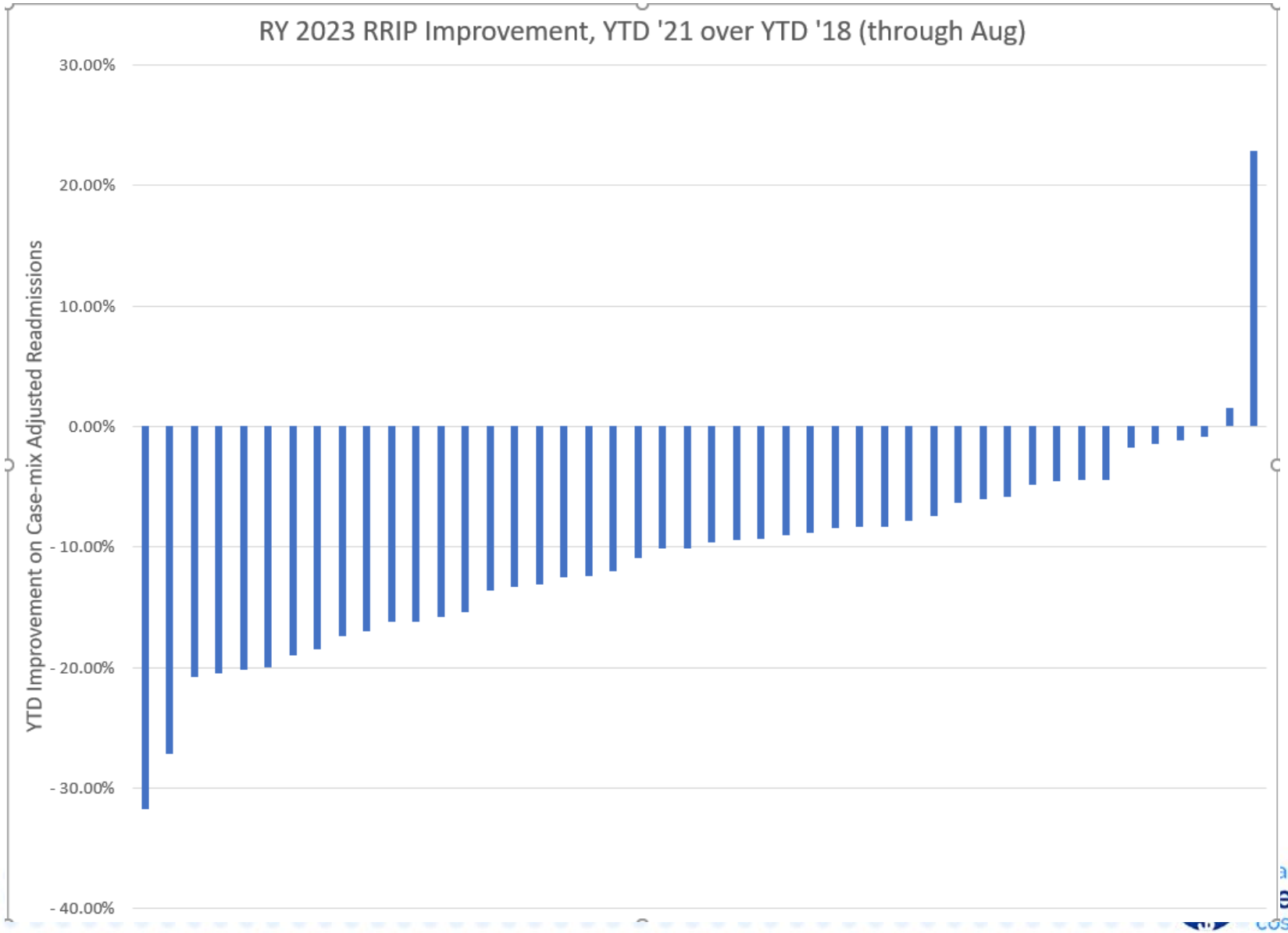


Readmissions by-Payer YTD CY 2021



Case-Mix Adjusted Readmissions	All-Payer	Medicare FFS	Medicaid (All)	Commercial
CY 2018 YTD Aug	11.81%	12.66%	13.22%	9.00%
CY 2021 YTD Aug (Prelim)	10.44%	11.62%	10.99%	7.81%
CY 18-21 YTD Improvement	-11.65%	-8.22%	-16.83%	-13.19%

Readmissions in the RRIP/Case-mix



CMS Excess Days in Acute Care Measures

Background: CMS has 3 condition-specific measures of **Excess Days of Acute Care (EDAC)**: AMI, Heart Failure, and Pneumonia

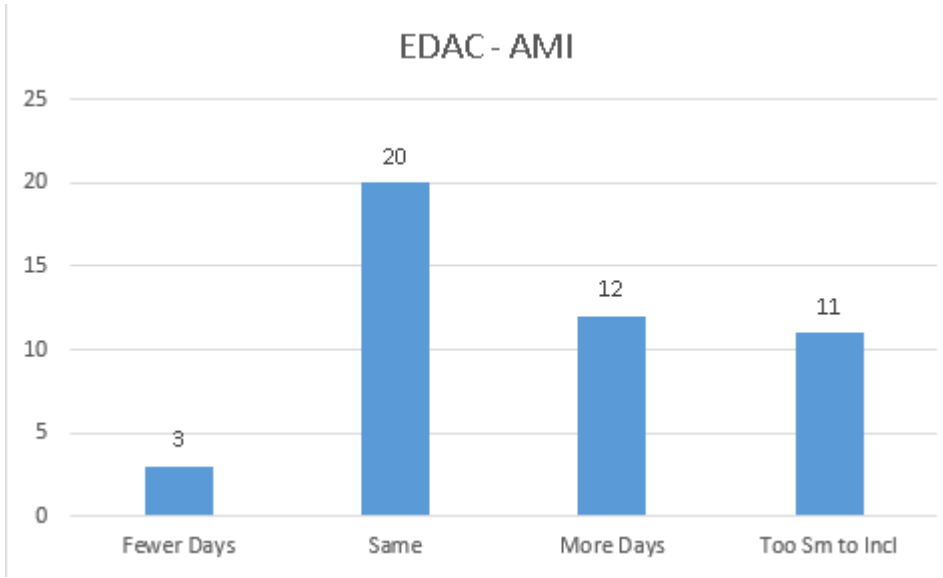
- EDAC defined as: sum of **Readmissions** (length of stay of readmissions); **Observation Stays**; and **Emergency Department Visits**
- Conceptually this will provide a **more comprehensive/nuanced view of post-discharge hospital utilization** than binary readmission (yes/no)
- Excess days are sum of:
  - LOS for IP Readmission
  - Sum of Observation Stay hours, rounded to half-days
  - ED visit = 0.5 days (half day)

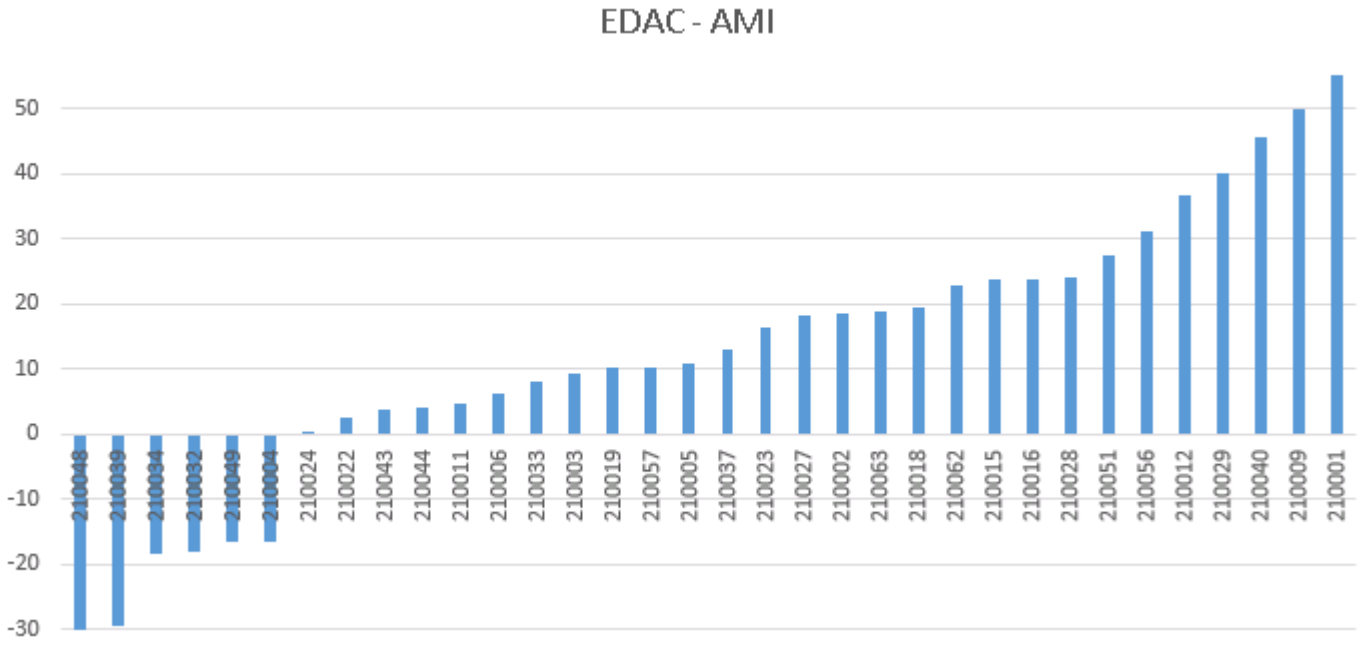
EDAC measure offers two advantages over a dichotomous readmission measure: 1) it accounts for more forms of post-discharge care, and 2) it accounts for the intensity of post-discharge care.

EDAC Results: Heart Attack (7/1/17-12/1/19)

National weighted average: 6.58 excess days per 100 discharges*

Maryland weighted average: 8.68 excess days per 100 discharges*



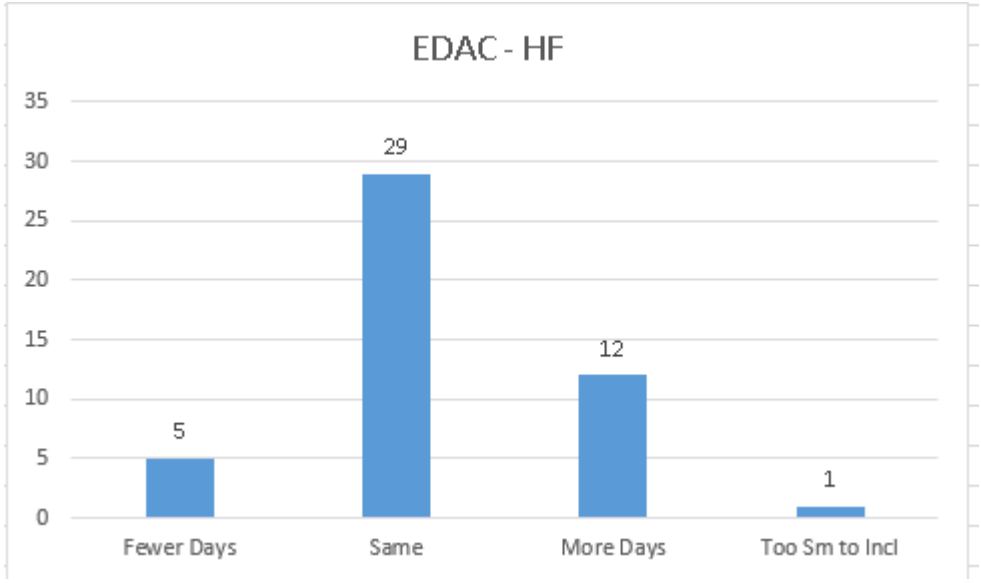


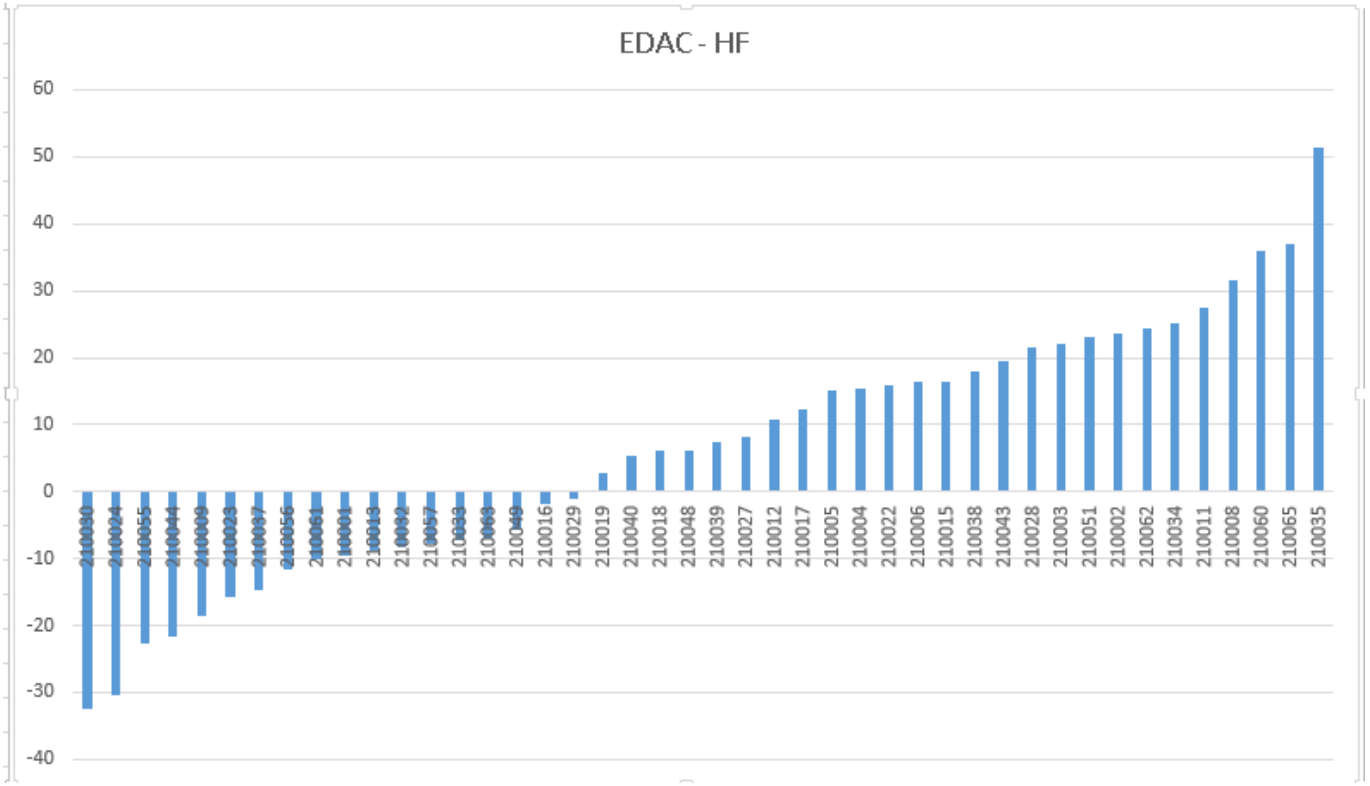
* Weighted averages are calculated using Jul 2014 - Jun 2017 data

EDAC Results: Heart Failure (7/1/17-12/1/19)

National weighted average: 10.17 excess days per 100 discharges*

Maryland weighted average: 13.31 excess days per 100 discharges*



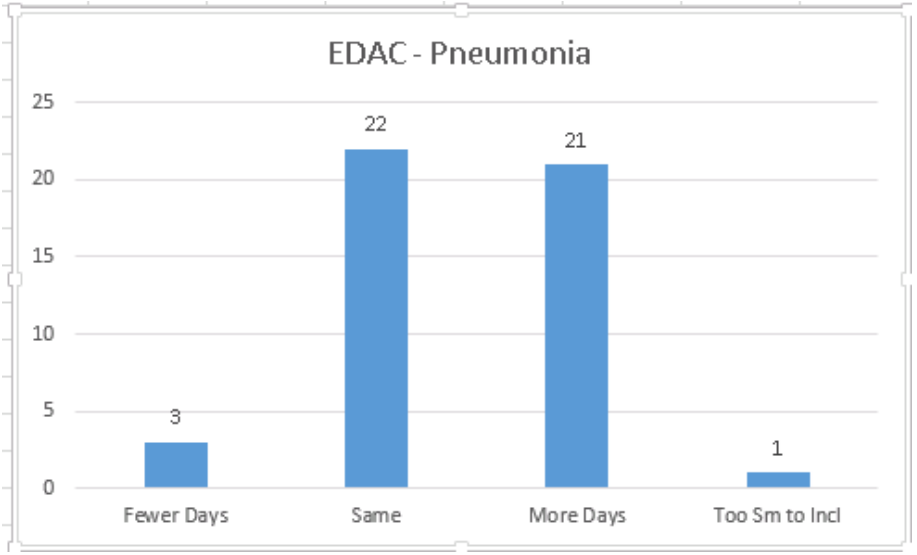


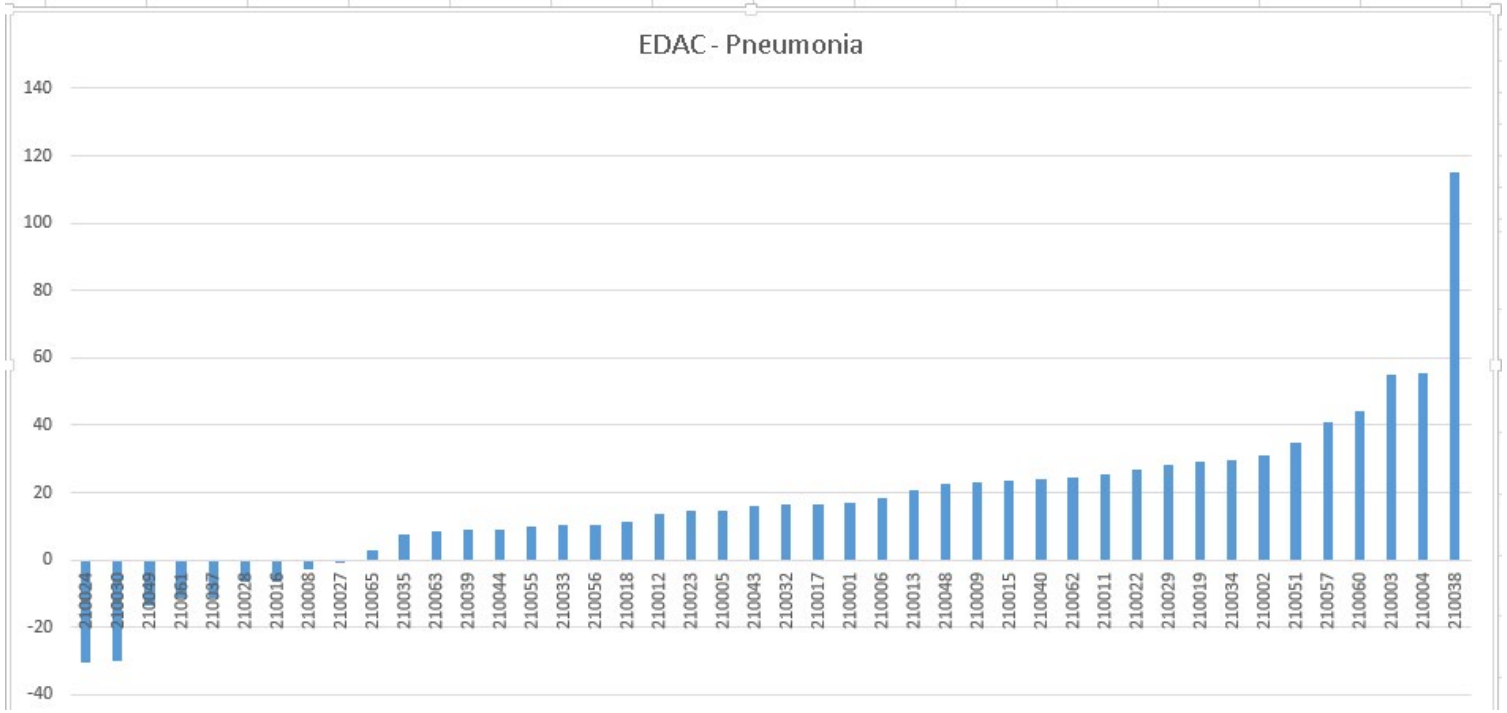
* Weighted averages are calculated using Jul 2014 - Jun 2017 data

EDAC Results: Pneumonia (7/1/17-12/1/19)

National weighted average: 11.43 excess days per 100 discharges*

Maryland weighted average: 15.61 excess days per 100 discharges*





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EDAC Risk Adjustment and Statistical Models

- Condition-specific EDAC measures use similar risk factors to readmissions
  - CMS uses diagnosis-based risk factors from the index visit, as well as a 12-month lookback
  - CMS generates expected values for EDAC using a hurdle model
    - Level 1: Risk of occurrence of any post-acute care
    - Level 2: # of days of post-acute care, via zero-truncated Poisson Model
  - Mathematica reviewed four models of risk-adjustment for an all-cause EDAC model, including the hurdle model, concluding that the hurdle model and linear models were viable
- Since HSCRC is considering an **all-cause** EDAC measurement, and using APR-DRG SOI norms, the indirect standardization method of case-mix adjustment used in readmissions could be adopted for consistency and simplicity

EDAC Specifications: CMS vs. HSCRC

	CMS	HSCRC-MPR
Cohort	• Condition-specific index admissions • Enrolled in Medicare FFS Part A and Part B for 12 months prior to admission • 65+ • Discharged alive, not transferred	Same criteria as HSCRC readmission measure • All-cause, all-payer admissions
Outcome	Number of days patient spends in acute care after discharge; acute care defined as ED visits (0.5 days), observation stays rounded to ½ day, and unplanned inpatient days	Same
Risk-Adjustment Variables	Same as CMS readmission model; uses all claims going back 12 months.	APR-DRG and SOI at discharge
Model Type	Random effects hurdle model* (adjusts for days to death in 2nd model)	Tested non-zero hurdle model and linear/ current indirect standardization; does not adjust for days to death

*The hurdle model is comprised of two parts: The occurrence of any post-acute care is modeled using logistic regression. The number of days of post-acute care is modeled using a zero-truncated Poisson regression. Zero-truncation means that the count of days must be greater than 0.

Measure Development

- MPR tested the HSCRC EDAC measure and the different modeling options using the following metrics:
  - Mean rates compared to Medicare
  - Properties of predicted values
  - Goodness of fit
  - Calibration
  - Reliability

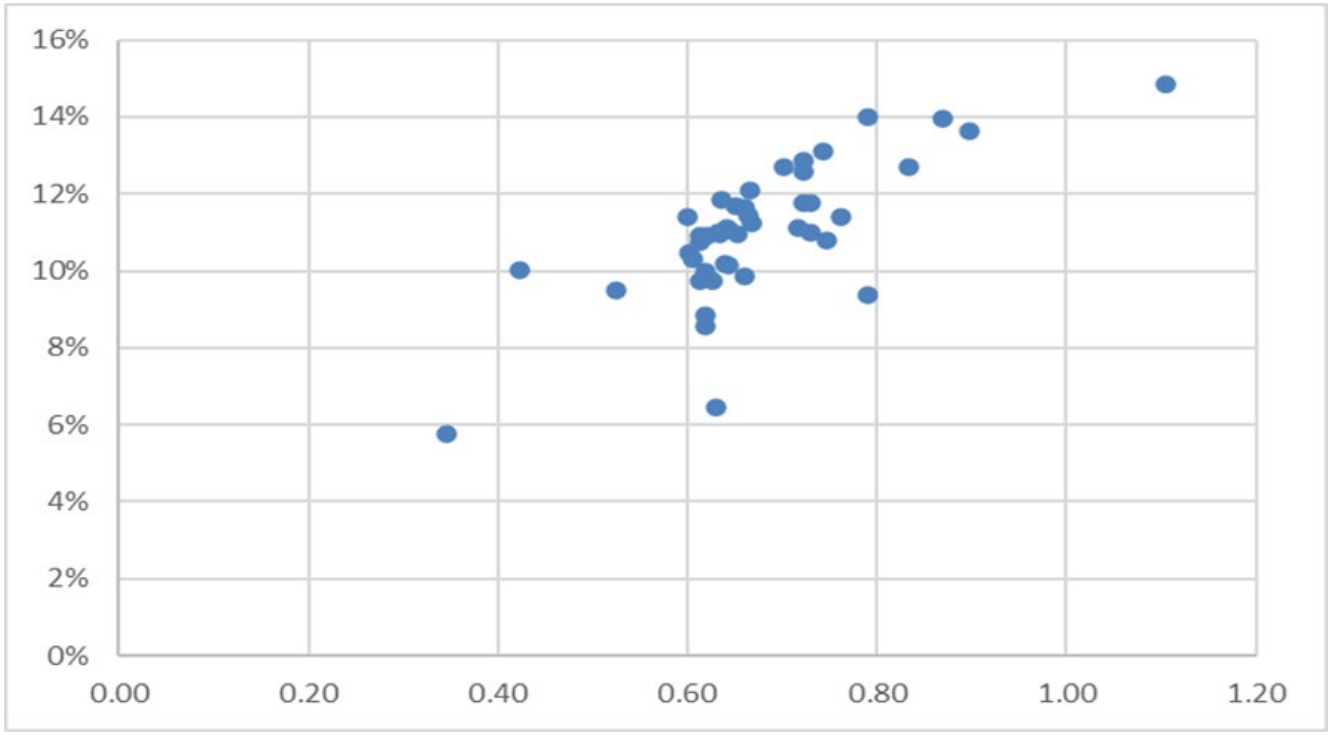
Table 1. Mean EDAC rates

Condition	CMS	HSCRC
AMI	0.997	0.897
Heart Failure	1.341	1.221
Pneumonia	1.016	0.865

HSCRC measure does not account for post-hospital death and uses APR-DRGs to identify conditions

Comparative analysis of Readmission-EDAC Trends, FY 2019

Readmission rate



Days of acute care

	Risk adjusted EDAC	Risk adjusted readmission rate	Mean ED days	Mean observation stay days	IP days/readmit
All hospitals	0.675	11.0%	0.078	0.029	5.711

PAI and SIHIS

Road Map

- Health disparities refresher
- ADI update
- Current performance
- SIHIS goal
- Next steps

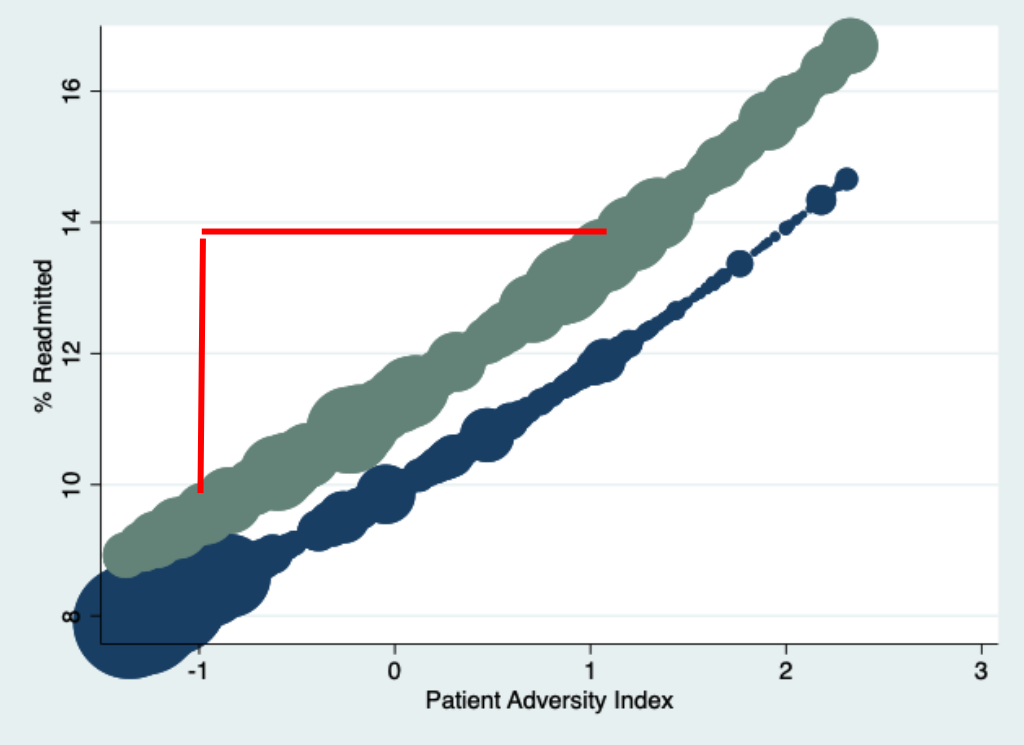
Key Components of Disparity Methodology

- Measure patient-level social exposures
  - Patient Adversity Index (PAI) = race, Medicaid coverage, ADI
- Estimate association between social exposures and readmission risk at hospital level for baseline (2018)
  - Adjust for patient acuity and hospital average of social exposures
- Estimate the association for each performance year
- Difference between performance and baseline is disparity improvement
- Scale improvement to calculate reward

Calculating the Patient Adversity Index (PAI)

- Estimate the association of readmission with ADI, Medicaid, Black race
  - Using 2018 inpatient case mix data
- Model includes interactions (e.g., combined effect of race, Medicaid)
- PAI = Predicted readmission risk from social factors
  - Estimate of the joint effect of ADI/Medicaid/race
  - Larger value = higher adversity
- PAI Score is then normalized so that statewide mean is 0. Each 1-point change in the scale represents a change of one standard deviation.

Understanding the Disparity Measure



The multilevel model estimates the slope of the line connecting readmission rates at various levels of PAI within a hospital. A steeper slope means there is a larger disparity between rates for higher-PAI patients and rates for lower-PAI patients.

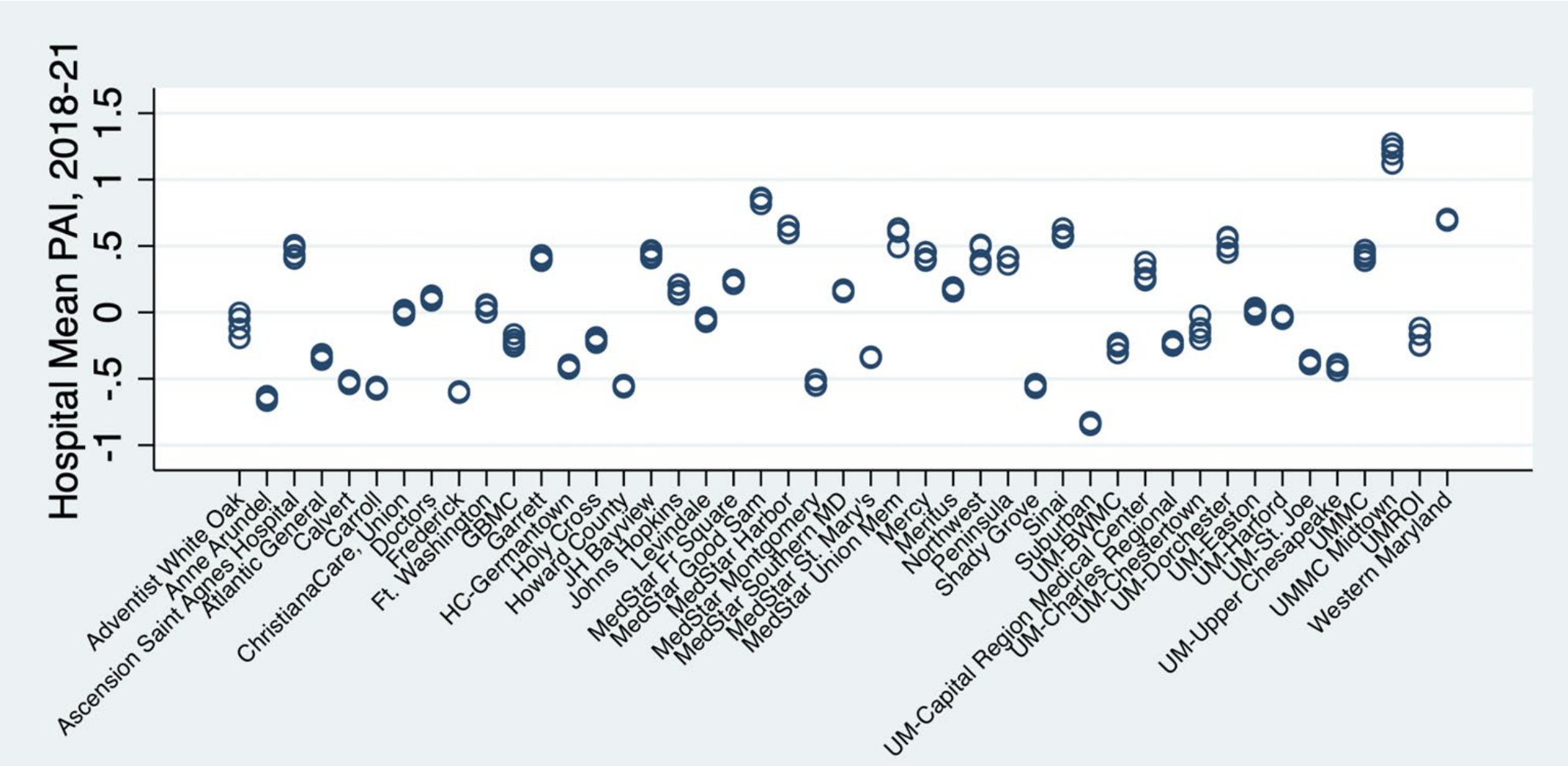
Pay for Performance

- Reward only
- Requires RRIP improvement for eligibility
- Scaling of rewards
  - Scale begins at 0.25% IP revenue for hospitals on track for 50 percent reduction in disparity gap measure over 8 years (>=15.91 percent
  - Capped at 0.50% of IP revenue for hospitals on pace for 75 percent or larger reduction in disparity gap measure over 8 years (>=29.29 percent
- RY 2022 improvement rewards suspended due to the COVID-19 public health emergency

ADI Update

- Initial measure created with 2015 ADI
- Subsequent ADI updates raised the question of whether to update PAI similarly
  - Creates challenges in separating out changes in hospital performance and changes in PAI/ADI
- Staff recently updated reporting using national percentiles from 2019 ADI, and plan to use this version of ADI for the remainder of the model contract
- Switched to Census block group linkage to avoid issues with changing zip code geography; use zip code linked ADI and imputation for missing CBG-ADI match

Annual Variation in Mean Hospital PAI



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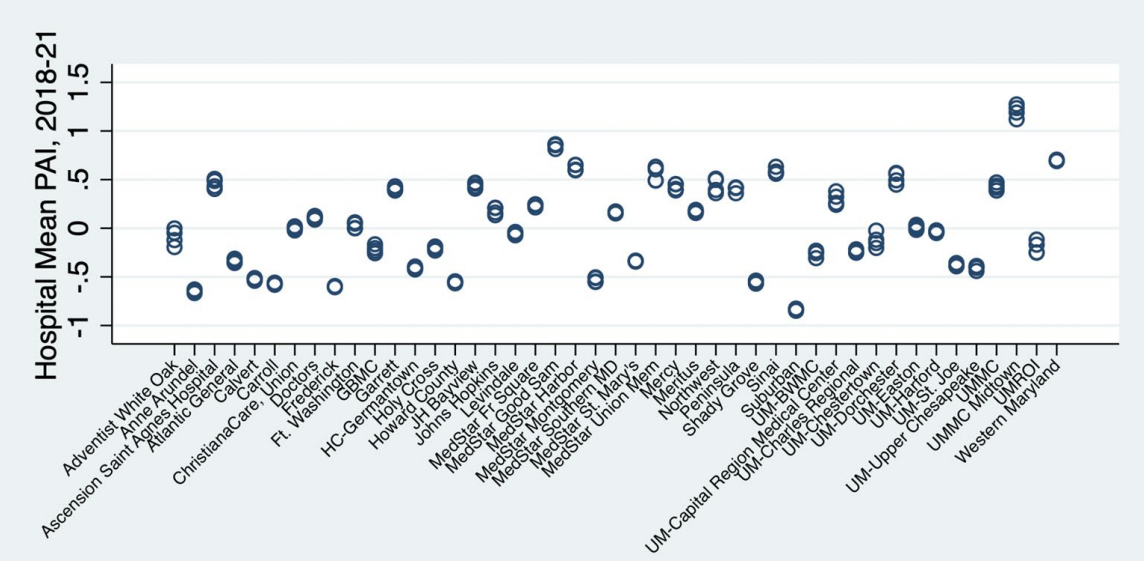
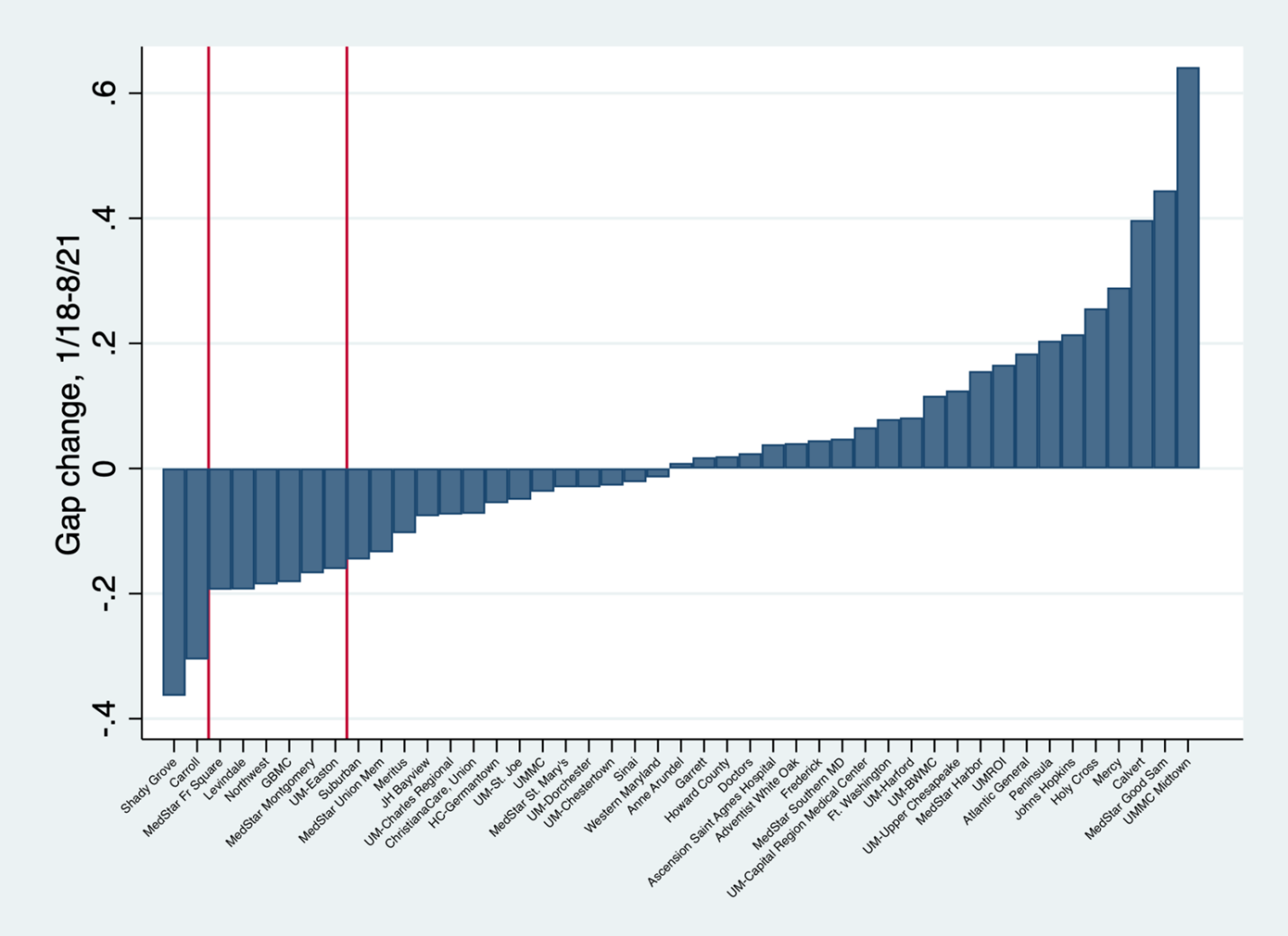
Annual Variation in Mean Hospital PAI



- Year over year change is negligible
- Fixing ADI at 2019 could result in mismeasurement of ADI if areas undergo rapid demographic change
- Changes over course of model are likely small
- Staff will monitor changes in new ADI releases

Annual Performance



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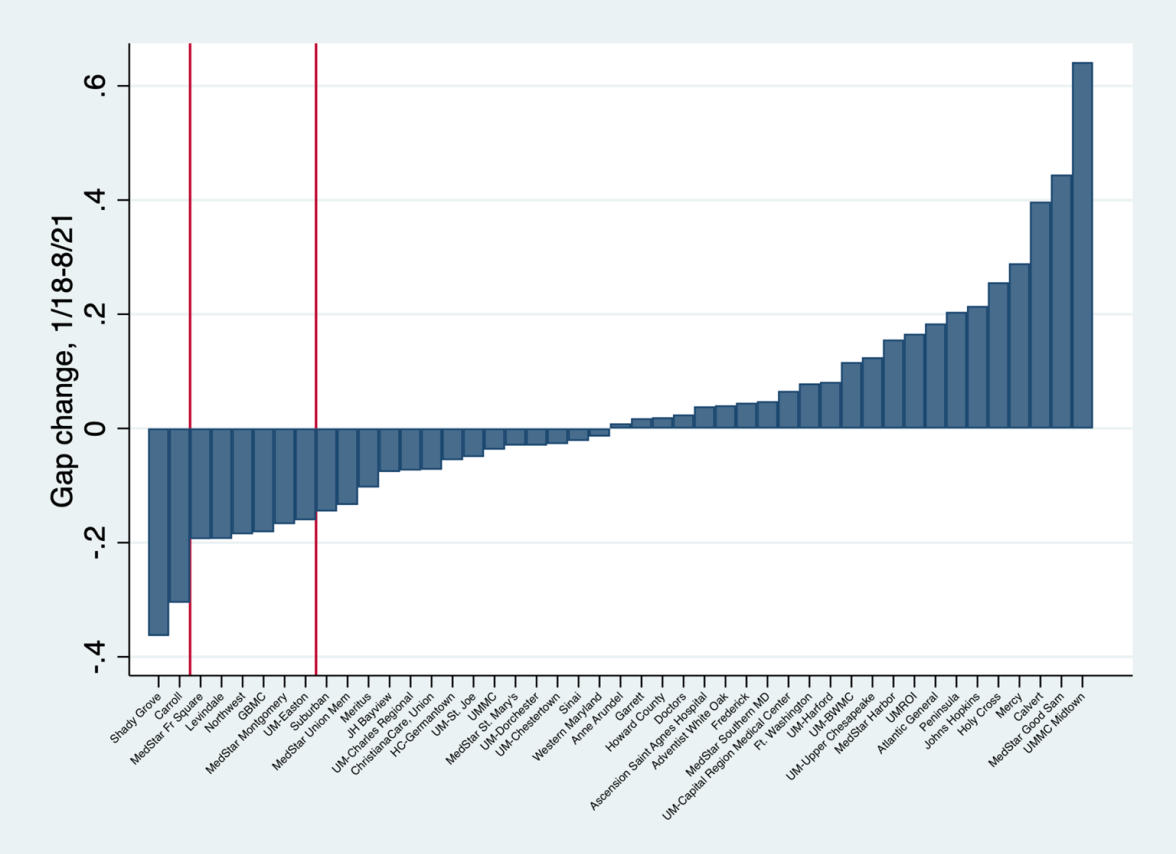
Annual Performance



- Average hospital disparity was 2.62% in CY18, 2.59% for year ending 8/21.
- Improvement in 2019 was followed by slippage during pandemic
- Most hospitals are not on track to meet the CY 2021 improvement target
- Staff will evaluate approaches to addressing of COVID-19 impact on improvement

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SIHIS Target

- The state is required to develop a target for disparity reduction as part of the Statewide Integrated Health Improvement Plan
- Prior to COVID, majority of hospitals were on track for 50-75% improvement
- Half of hospitals have improved over 2018 baseline
- Staff recommends a provisional target that >= 50% of hospitals achieve a 50% improvement over the model term
  - Subject to revision based on COVID findings, etc.

Next Steps

- Updated CRISP reporting
- Provide stakeholders with updated PAI coefficients and memo to assist in calculating patient PAI
- Evaluate impact of COVID
- Schedule stakeholder webinar

COVID Update

COVID Update for PSI Measure in RY23 and RY24 QBR

- HSCRC relies on AHRQ PSI software to calculate the PSI-90 composite measure
  - Starting with v2021 the software will only calculate risk-adjusted PSI-90, smoothed rates, and composites with COVID-19 discharges excluded; the software can still calculate observed (i.e. not risk-adjusted) rates with COVID included
- Staff propose the following:
  - RY 2023/PSI v2020: Manually exclude COVID discharges for CY2021 performance
    - Status: On Hold during Data Security Incident
  - RY 2024/PSI v2021: Default option will automatically remove COVID discharges for QBR program;
    - Staff may consider separately calculating PSI observed rates for COVID discharges
    - Status: On Hold during Data Security Incident
- COVID analyses for other quality measures that the HSCRC calculates will still follow the MPR analytic plan to test concurrent norms

eCQM Update

eCQM Update

1. HSCRC has reviewed and supports CRISP/Medisolv work plan
    a. Hospitals are strongly encouraged to participate in the Pilot reporting process if possible for your hospital/system
        i. Pilot hospitals will have longer opportunity for technical support
        ii. Pilot hospital feedback will help determine work plan updates or adjustments

1. CRISP/Medisolv reaching out with additional fact-finding (logistics/infrastructure) in the coming weeks with individual hospitals and systems

Implementation Update

- Initial technical infrastructure created for CRISP/Medisolv instance of cloud hosting
  - Organization provisioning
  - System initialization
- Single-Sign-On with CRISP infrastructure
  - 90% completed
  - Medisolv and CRISP IT are working on the last remaining issues with completing the sign-in using the existing Unified Landing Page
- QRDA-1 Ingestion of CY 2021 test data via existing import pipeline completed
  - CY 2021 actual QRDA I files imported into ENCOR eCQM application from 2 hospitals for testing
  - Data quality testing in process
- New import pipeline using Medisolv Submission Platform (MSP)
  - Initial build completed
  - Internal review/testing in process
  - External validation/testing pending after finishing Internal review/testing

eCQM Reporting Status Update,Schedule for CY 2022

- CY 2021 QRDA I “Test Run” Submission of Data- Hospitals to optionally submit to CRISP/Medisolv the same QRDA 1 files they submitted to CMS in Q 1 2022:
  - 4 eCQM’s with 2 quarters of CY 2021 performance period data during the following submission window: **1/15/2022 – 3/31/2022**
  - 7 Hospitals have signed up so far
  - Additional outreach to other hospitals underway
- CY 2022 Data Submission Requirements- Starting with Q 1, 2022 performance period, all hospitals submit to CRISP/Medisolv quarterly data: 2 required eCQM’s and 2 optional eCQM’s according to the following submission schedule:

Performance Period	Submission Windows
Q1 2022 data	Open: 7/15/2022 Close: 09/30/2022
Q2 2022 data	Open: 7/15/2022 Close: 09/30/2022
Q3 2022 data	Open: 10/15/2022 Close: 12/30/2022
Q4 2022 data	Open: 1/15/2023 Close: 3/31/2023

THANK YOU!

Next Meeting: Wednesday, January 19, 2022