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Performance Measurement Workgroup

November 18, 2020

HSCRC Quality Team

Meeting Agenda

1. COVID-19 Public Health Emergency Updates

2. SIHIS Update

3. Quality Based Reimbursement (QBR) Program RY 2023

4. QBR Re-Design Update

5. Readmission Reduction Incentive Program (RRIP) Program RY 2023

6. Other topics and public comment

COVID-19 PHE Update

Current COVID-19 Public Health Emergency

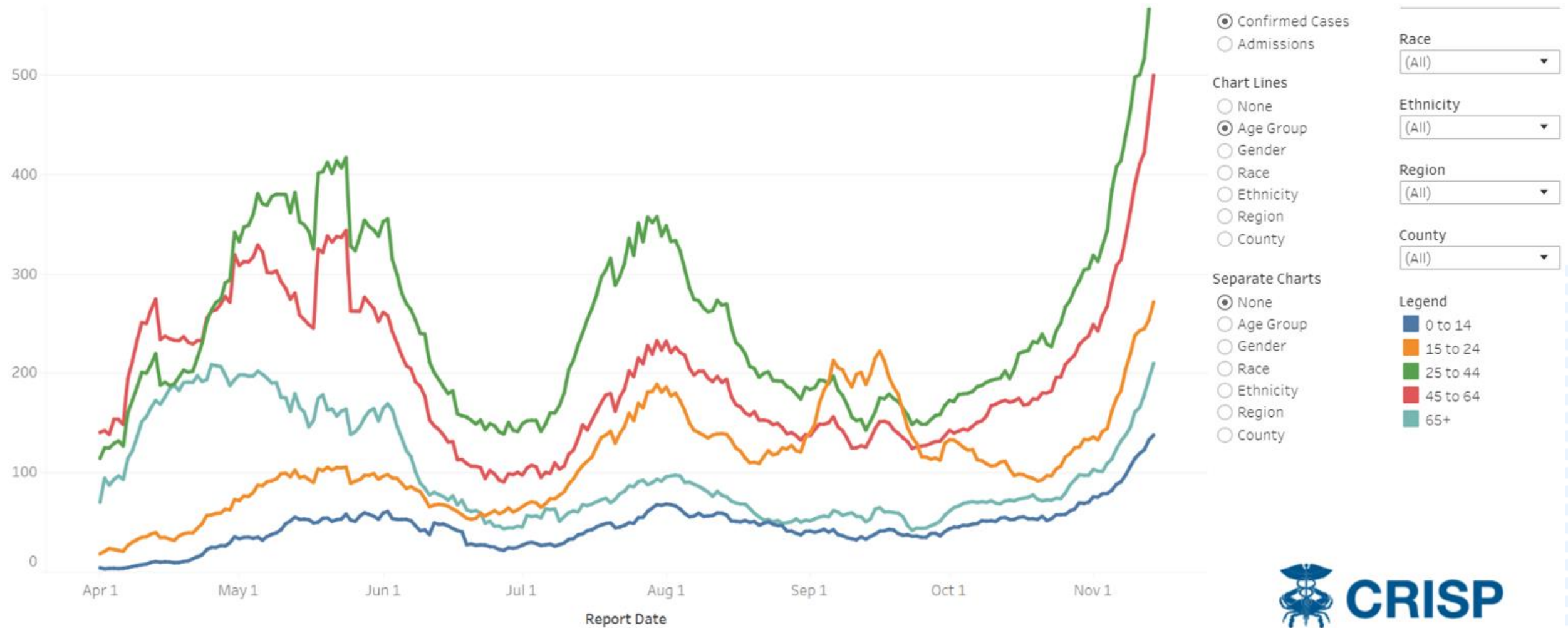## Currently amid unfavorable COVID-19 Surge

Admissions Trend
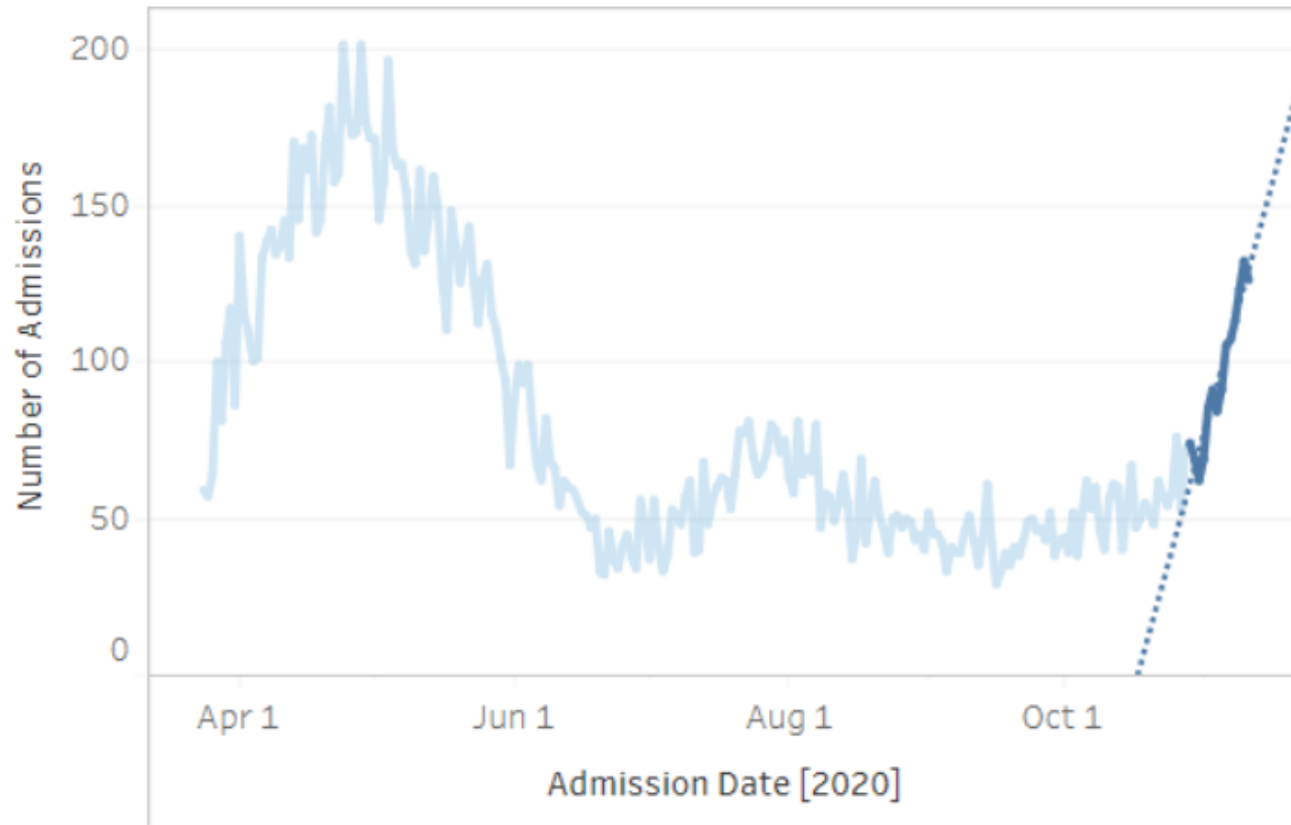
Testing % Positive

6.57%

24hr Change: 0.41

Source: CRISP Reporting Services (CRS) COVID-19 Dashboard (left); coronavirus.maryland.gov (right) as of 11/15/20

Current COVID-19 Confirmed Cases by Age

Source: CRISP Reporting Services (CRS) COVID-19 Dashboard, as of 11/15/20

CMS Quality Data Update

- On September 2, 2020, CMS published an Interim Final Rule (IFR) in response to the COVID-19 PHE. In this IFR, they announced that:
  - CMS will not use CY Q1 or CY Q2 of 2020 quality data for FFY 2022 pay-for-performance programs, even if submitted by hospitals.
  - CMS reserves the right to suspend application of revenue adjustments for FFY 2022 for all hospital pay for performance programs at a future date in CY 2021; changes will be communicated through memos ahead of IPPS rules.
- It is not known if Maryland has flexibility in suspending our RY 2022 pay-for-performance programs
- Maryland's decision must be made prior to CMS making their decision due to the prospective nature of our pay-for-performance programs.
- CMMI has strongly suggested that the State must have quality program adjustments, has suggested that the State pursue alternative strategies to achieve reliable and valid RY 2022 quality measurement, such as reusing some or all of CY 2019 data (as is being done for the Skilled Nursing Facility VBP program).
- **With current COVID-19 trends, we will need to retrospectively determine whether the Jul-Dec 2020 will be usable for the quality programs.**

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RY 2023 Final MHAC COVID-PHE Recommendations

Approved at November Commission Meeting

- Adjust the MHAC pay-for-performance program methodology as needed due to COVID-19 Public Health Emergency and report to Commissioners as follows:
    1. For RY 2022 (CY 2020 performance period)
        1. Exclude COVID-19 positive cases from the program.
        2. Exclude the data for January to June 2020 and evaluate the reliability and validity of the data for July-December 2020 to determine feasibility of its use and any needed changes for the RY 2022 payment adjustments.
        3. Evaluate case-mix adjustment and performance standards concerns arising from use of a pre-COVID time period to determine normative values.
    2. For RY 2023 (CY 2021 performance period)
        1. Update PPC Grouper to v38 and include COVID-19 positive cases consistent with the clinical updates to the grouper.
        2. Retrospectively evaluate case-mix adjustment and performance standards concerns arising from inclusion of COVID-19 patients and the use of a pre-COVID time period to determine normative values.

QBR COVID-19 PHE Data Concerns and Options, RY 2022

COVID Data Concern	Inpatient Mortality (source: HSCRC case mix data)	HCAHPS, CDC NHSN, Hip Knee Complic. (source: CMS Hospital Compare)
Only 6 months of data for CY 2020: ● Is 6-months data reliable? ● What about seasonality?	● Remove COVID patients from July-December 2020 ● Consider combining with 6 months of CY 2019 data.	● Consider using CY 2019 data, re-using 3 quarters of RY 2021 data and 1 quarter of RY 2022 data (HCAHPS, CDC NHSN) ● Consider suspending from the program (Hip Knee Complic.)
Clinical concerns over inclusion of COVID patients	● Use 6-months data, adjust base as needed for seasonality concerns ● Merge 2019 and 2020 data together to create a 12 month performance period ● Use 2019 data or revenue	● Consider using CY 2019 data, re-using 3 quarters of RY 2021 data and 1 quarter of RY 2022 data (HCAHPS, CDC NHSN) ● Consider suspending from the program (HIP KNEE COMPLIC.)
Case-mix adjustment and performance standard concerns: ● Inclusion of COVID patients when not in normative values ● Impacts on other DRG/SOI of COVID PHE	● Remove COVID patients from CY 2020 ● Develop concurrent norms and performance standards for comparison and possible use ● Use 2019 data or revenue adjustments	N/A

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RRIP COVID-19 Considerations

Similar to MHAC program in timeframe

Adjust the RRIP pay-for-performance program methodology as needed due to COVID-19 Public Health Emergency and report to Commissioners as follows:

For RY 2022 (CY 2020 performance period)

1. Exclude COVID-19 positive cases from the program
2. Exclude the data for January to June 2020
3. Evaluate the reliability and validity of the data for July-December 2020 to determine feasibility of its use and any needed changes for the RY 2022 payment adjustments.
   a. Take into consideration present COVID-19 surge.
4. Evaluate case-mix adjustment and performance standards concerns arising from use of a pre-COVID time period to determine normative values.

For RY 2023 (CY 2021 performance period)

1. Update APR-DRG Grouper to v38 and include COVID-19 positive cases
   a. Retrospectively evaluate case-mix adjustment and performance standards concerns arising from inclusion of COVID-19 patients and the use of a pre-COVID time period to determine normative values.

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SIHIS Update

Why does the Statewide Integrated Health Improvement Strategy Matter?

- The Maryland Total Cost of Care (TCOC) Model State Agreement indicates:

"Under this Model, CMS and the State will test whether statewide healthcare delivery transformation, in conjunction with Population-Based Payments, **improves population health and care outcomes for individuals**, while controlling the growth of Medicare Total Cost of Care."

TCOC Model Objective

- The TCOC Model aims to improve quality and population health while containing cost growth.

Policy Solution

- SIHIS is designed to engage State agencies and private-sector partners in enhancing hospital quality, fostering care transformation, and improving population health for Marylanders.
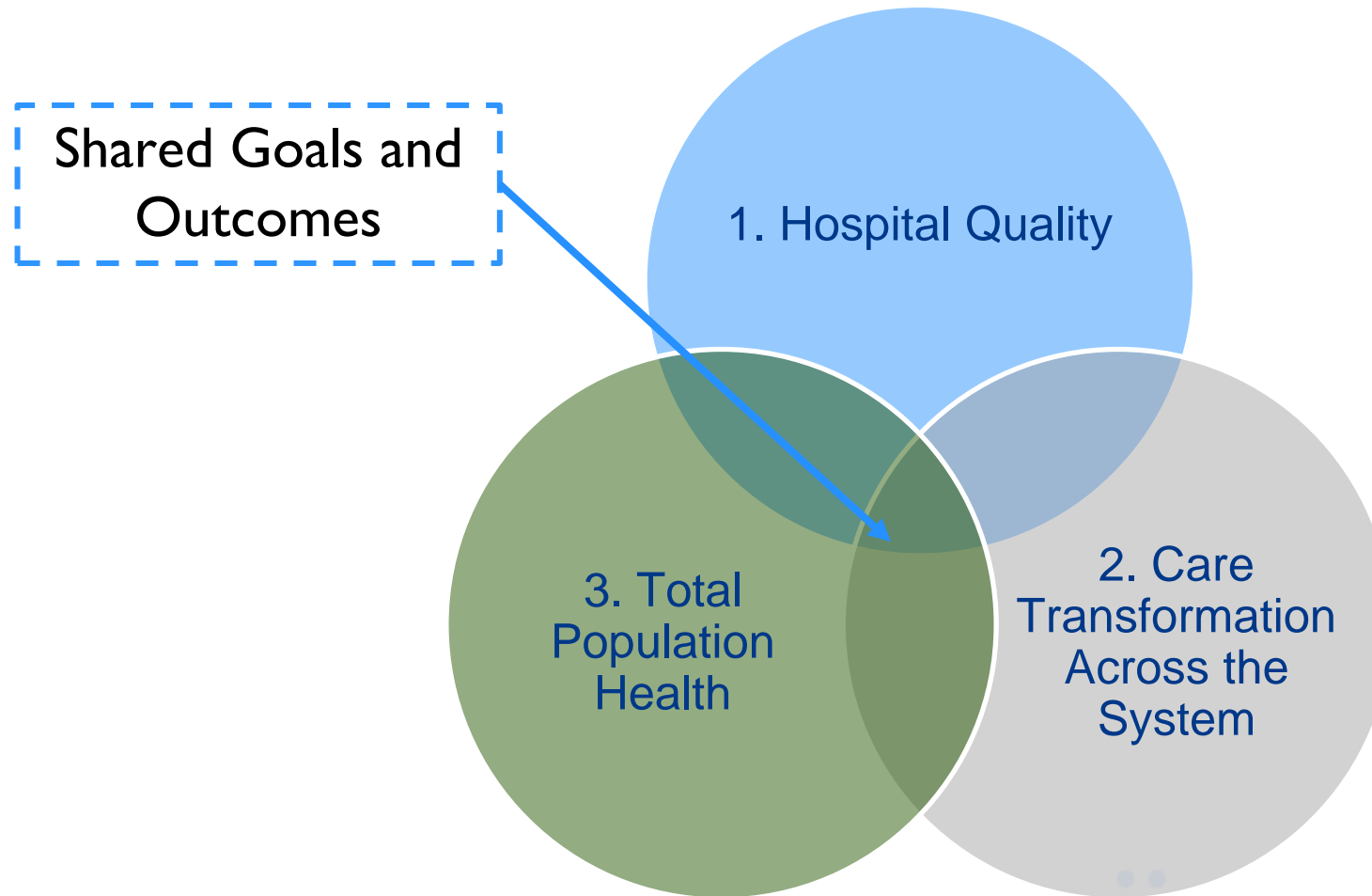
Implications

- SIHIS results will be used to demonstrate Maryland's ability to improve population health under the TCOC Model.

- Maryland's SIHIS performance will be an important consideration in CMMI's decision on the future of the Maryland Model.

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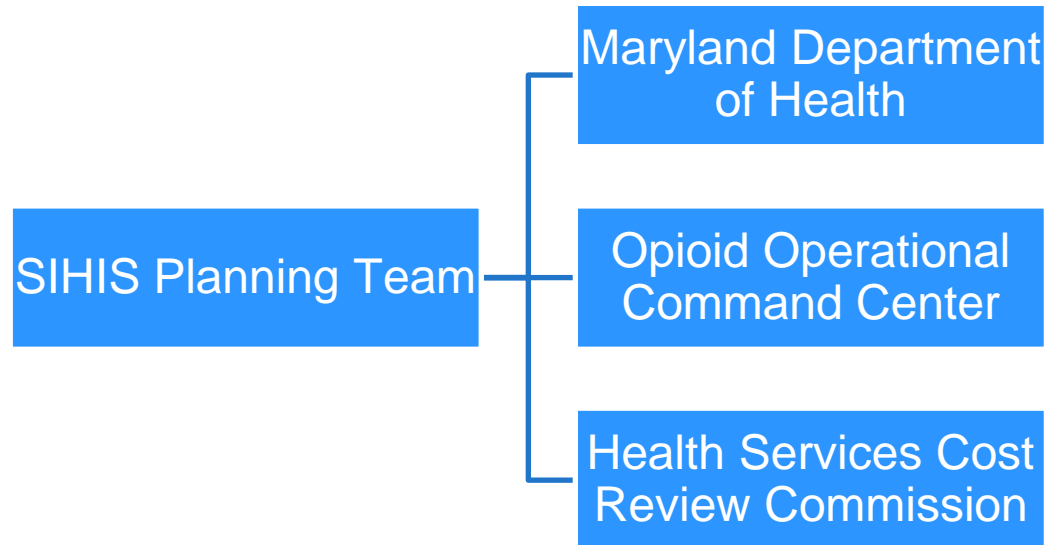health services
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Statewide Integrated Health Improvement Strategy

- In December 2019, Maryland & CMS signed a Memorandum of Understanding (MOU) agreeing to establish a Statewide Integrated Health Improvement Strategy.

- This initiative is designed to engage State agencies and private-sector partners to collaborate and invest in improving health, addressing disparities, and reducing costs for Marylanders.

- The MOU requires the State to propose goals, measures, milestones and targets in three domains by the end of 2020.

- The MOU must be signed by the Governor, MDH Secretary, and HSCRC Chair.

- CMMI insists that for the Maryland TCOC Model to be made permanent, the State must:
  - Sustain and improve high quality care under the hospital finance model
  - Achieve annual cost saving targets
  - Set goals, targets, milestones and achieve progress on the Statewide Integrated Health Improvement Strategy

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Domains of Maryland's Statewide Integrated Health Improvement Strategy

Shared Goals and Outcomes

1. Hospital Quality

2. Care Transformation Across the System

3. Total Population Health

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Broad work plan

```
                    ┌─ Maryland Department
                    │   of Health
                    │
SIHIS Planning Team ─┼─ Opioid Operational
                    │   Command Center
                    │
                    └─ Health Services Cost
                        Review Commission
```

- Domain 1 – Hospital Quality
  - HSCRC's Performance Measurement Work Group

- Domain 2 – Care Transformation Across the System
  - HSCRC's Performance Measurement Work Group
  - HSCRC's Total Cost of Care Work Group

- Domain 3 – Total Population Health
  - Diabetes: Maryland Department of Health (MDH) Diabetes Workgroup
  - Opioids: Maryland Opioid Operational Command Center (OOCC) Opioids Workgroup
  - Maternal & Child Health: Maryland Department of Health (MDH) MCH Expanded Task Force

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Domain 1: Hospital Quality

- Goal: Reduce avoidable admissions and readmissions*

Measure	2018 Baseline	2021 Year 3 Milestone	2023 Year 5 Interim Target	2026 Year 8 Final Target
AHRQ Risk-Adjusted PQIs	1335 admits per 100,000**	8 percent improvement	15 percent improvement	25 percent improvement
Readmission Disparity Gap	TBD	Establish and monitor a measurement methodology and payment incentive for reducing within hospital readmission disparities and set a 2023 and 2026 target	TBD	TBD

*Maryland will pursue expanding the definition of avoidable inpatient stays to the emergency department and may set targets for reductions in avoidable ED visits in the future.

**This all-payer baseline rate for MD residents was run using HSCRC case-mix data under PQI v2020. The baseline rate will be updated with new PQI versions to ensure measure accounts for new codes and changes in clinical logic overtime.

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Domain 2: Care Transformation Across the System

- Goal: Improve care coordination for patients with chronic conditions

Measure	2018 Baseline	2021 Year 3 Milestone(s)	2023 Year 5 Interim Target	2026 Year 8 Final Target
Timely Follow-up After Acute Exacerbations of Chronic Conditions^ **(NQF# 3455)**	71.59%	72.43% 1.17 percent improvement	73.28% 2.35 percent improvement	75.00% 4.76 percent improvement or 0.50 percent better than the national rate
New data without small hospitals	71.45%	72.32% 1.22 percent improvement	73.20% 2.46 percent improvement	75% 4.97 percent improvement
New data with small hospitals	71.36%	72.26% 1.25 percent improvement	73.16% 2.52 percent improvement	75% 5.10 percent improvement

UPDATED Data:

Revised measure specifications changed Maryland values slightly (i.e., reduced CY 2018 rate)

Should hospitals that are excluded from QBR be included in statewide goal?

Staff support statewide values without small hospital exclusion

^Medicare Only based on CCLF data. Maryland will pursue adding and setting goals for additional payers (e.g., Medicaid) and expanding the conditions evaluated (e.g., follow-up after mental health hospitalization).

Domain 2: Care Transformation Across the System

- Goal: Increase the amount of Medicare TCOC **OR** number of Medicare beneficiaries under Care Transformation Initiatives (CTIs), the Care Redesign Program (CRP), or successor payment models*

Measure	2018 Baseline	2021 Year 3 Milestone	2023 Year 5 Interim Target	2026 Year 8 Final Target
TCOC Under CTI	$0	25% of Medicare TCOC under a CTI or CRP or successor payment model	37% of Medicare under a CTI or CRP or successor payment model	50% of Medicare TCOC under a CTI or CRP or successor payment model
Benes Under CTI	0	15% of Medicare Beneficiaries covered under a CTI or CRP or successor payment model	22% of Medicare Beneficiaries covered under a CTI or CRP or successor payment model	30% of Medicare Beneficiaries covered under a CTI or CRP or successor payment model

*Maryland will pursue adding additional payers (e.g., Medicaid) as data becomes available about care transformation activities.

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Domain 3a: Total Population Health - Diabetes

- Goal: Reduce the mean BMI for adult Maryland residents

Measure		2018 Baseline	2021 Year 3 Milestone	2023 Year 5 Interim Target	2026 Year 8 Final Target
Mean BMI in the population of adult Maryland residents		State mean BMI for 2018	Identify the cohort of states that will serve as the control group to measure progress. Enter into DUAs if necessary. Launch the Diabetes Prevention and Management Programs track of the HSCRC Regional Partnership Catalyst Grant Program. Incorporate a quality measure for all MDPCP practices requiring BMI measurement for all patients, and for patients with an elevated BMI, requiring documentation of a follow-up plan (applying inclusion/exclusion criteria from MIPS measure 128). Expansion of CRISP Referral Tool to Regional Partnerships to increase patient referrals for Diabetes Prevention Programs	Achieve a more favorable change from baseline mean BMI than a group of control states	Achieve a more favorable change from baseline mean BMI than a group of control states

Mean BMI will be determined using the results of the Behavioral Risk Factor Surveillance System (BRFSS).

Domain 3b: Total Population Health - Opioids

- Goal: Improve overdose mortality in Maryland*

Measure	2018 Baseline	2021 Year 3 Milestone	2023 Year 5 Interim Target	2026 Year 8 Final Target
Annual change in overdose mortality as compared to a cohort of states with historically similar overdose mortality rates and demographics	Age-adjusted death rate of 37.2/100,000	Implement SBIRT in 200 MDPCP practices by the end of 2021 Increase the number of screenings and brief interventions performed by MDPCP practices from the baseline of 2019 (first year of the program) to 2021 Identify the cohort of states that will serve as our control group to measure progress. Enter into DUAs if necessary Launch Behavioral Health Crisis Programs track of the HSCRC Regional Partnership Catalyst Grant Program	Achieve a more favorable trend in overdose mortality rate as compared to the weighted average of control states	Achieve a more favorable trend in overdose mortality rate as compared to the weighted average of control states

*As compared to a cohort of states in the control group
Maryland will utilize Centers for Disease Control data that measures age-adjusted overdose rates based on ICD-10 codes

Domain 3c: Total Population Health – Maternal and Child Health
Still Under Review

- Goal: To decrease asthma-related emergency department (ED) visit rates for ages 2-17

Measure	2018 Baseline	2021 Year 3 Milestone	2023 Year 5 Interim Target	2026 Year 8 Final Target
Annual ED visit rate per 1,000 for ages 2-17	9.2 ED visit rate per 1,000 for ages 2-17	Obtain Population Projections; Development of Asthma Dashboard; Regional Partnership Catalyst Grant for MCH, if funding available; Asthma-related ED visit is a Title V State Performance Measure and shift some of the Title V funds for Asthma interventions	Aim for achieving a rate reduction from 9.2 in 2018 to 7.2 in 2023 for ages 2-17	Aim for achieving a rate reduction from the 9.2 in 2018 to 5.3 in 2026 for ages 2-17

Domain 3c: Total Population Health – Maternal and Child Health
Still Under Review

- Goal: To decrease severe maternal morbidity rate stratified by race and ethnicity

Measure	2018 Baseline	2021 Year 3 Milestone	2023 Year 5 Interim Target	2026 Year 8 Final Target
Severe Maternal Morbidity Rate per 10,000 delivery hospitalizations stratified by race and ethnicity	White NH SMM rate: 184 per 10,000 delivery hospitalizations Black NH SMM rate: 328 per 10,000 delivery hospitalization Other : 235 per 10,000 deliveries hospitalization	Re-Launch of the Perinatal Quality Collaborative Complete Maryland Maternal Strategic Plan Regional Partnership Catalyst Grant for MCH, if funding available	White NH SMM rate: 164 per 10,000 delivery hospitalizations Black NH SMM rate: 287 per 10,000 delivery hospitalization Other : 210 per 10,000 deliveries hospitalization	White NH SMM rate: 145 per 10,000 delivery hospitalizations Black NH SMM rate: 245 per 10,000 delivery hospitalization Other : 185 per 10,000 deliveries hospitalization

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Next Steps

- MDH, OOCC, HSCRC are accepting written comments from the public from through November 19th

    - Comments should be submitted electronically to hscrc.rfp-implement@maryland.gov

- In the December 9th Commission meeting, staff will review the final proposal details

- Maryland's SIHIS proposal is due to CMS by December 31st

Quality Based Reimbursement (QBR) Program

QBR RY 2023 Draft Recommendations

Comment Due Date UPDATE: Monday, 11/23/20

1. Continue **Domain Weighting** as follows for determining hospitals' overall performance scores: Person and Community Engagement (PCE) - 50 percent, Safety (NHSN measures) - 35 percent, Clinical Care - 15 percent.
2. Implement the following **measure updates**:
    a. Add an exclusion for academic hospitals or for hospitals with lower case volumes and higher Case Mix Index (CMI) for the hip/knee complication measure.
    b. Add follow-up after acute exacerbations for chronic conditions measure to the PCE Domain.
    c. Add PSI-90 measure to the Safety domain
3. Maintain the **pre-set scale** (0-80 percent with cut-point at 41 percent), and continue to hold 2 percent of inpatient revenue at-risk (rewards and penalties) for the QBR program.
4. Convene a QBR Redesign Work Group in the first half of 2021 that targets the CMS concerns and implements identified strategic priorities for quality.
5. Adjust retrospectively the RY 2022 and RY 2023 QBR pay-for-performance program methodology as needed due to COVID-19 Public Health Emergency and report changes to Commissioners.

RY 2023 QBR Proposed Base and Performance Periods

Rate Year (Maryland Fiscal Year)	Q3-18	Q4-18	Q1-19	Q2-19	Q3-19	Q4-19	Q1-20	Q2-20	Q3-20	Q4-20	Q1-21	Q2-21	Q3-21	Q4-21	Q1-22	Q2-22	Q3-22	Q4-22	Q1-23	Q2-23	Q3-23	Q4-23
Calendar Year	Q1-18	Q2-18	Q3-18	Q4-18	Q1-19	Q2-19	Q3-19	Q4-19	Q1-20	Q2-20	Q3-20	Q4-20	Q1-21	Q2-21	Q3-21	Q4-21	Q1-22	Q2-22	Q3-22	Q4-22	Q1-23	Q2-23

Quality Based Reimbursement (QBR) Base and Performance Periods

CMS Hospital Compare Base Period (HCAHPS measures, all CDC NHSN measures)

CMS Hospital Compare Performance Period (HCAHPS measures, all CDC NHSN measures)

Base Period Inpatient Mortality, PROPOSED PSI-90, Follow-up Chronic Conditions

Performance Period Inpatient Mortality, PROPOSED PSI-90, Follow-up Chronic Conditions

CMS Hospital Compare THA/TKA Performance Period *X

Rate Year Impacted by QBR Results

*Hospital Compare THA/TKA Complications Base Period April 1, 2013-March 31, 2016

X CMS announced they will not use data for CY Quarters 1 and 2 for the quality pay for performance programs due to COVID-19 PHE; staff will consider options as CMS publishes updated measure base period.

THA-TKA Measure

Low Case Count and High Complexity Exclusion

- Measure is for elective hip and knee surgeries
- Requires 25 cases to be evaluated in the measure
- Johns Hopkins currently does not meet minimum criteria; UMMS had 29 cases but several were miscoded and should have been excluded.
- **Update from last month:**
  - Remove Academic criteria
  - **Proposed new criteria:** Less than 50 discharges over three years and in the top 10th percentile of complexity as defined by average case-mix index in latest two years
  - Determine prospectively for RY 2023 using RY 2021 THA-TKA performance data and CY18/19 CMI

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Follow up After Discharge Measure(s)

Follow-Up Measure in QBR

1. Draft QBR recommendation proposed including follow-up measure in the PCE domain
   a. Base Period: CY19
   b. Performance Period: CY21
   c. Data Source: Medicare CCLF data for MD
   d. Performance standards (CY19--updated):
      i.   Threshold: State median 72.80%
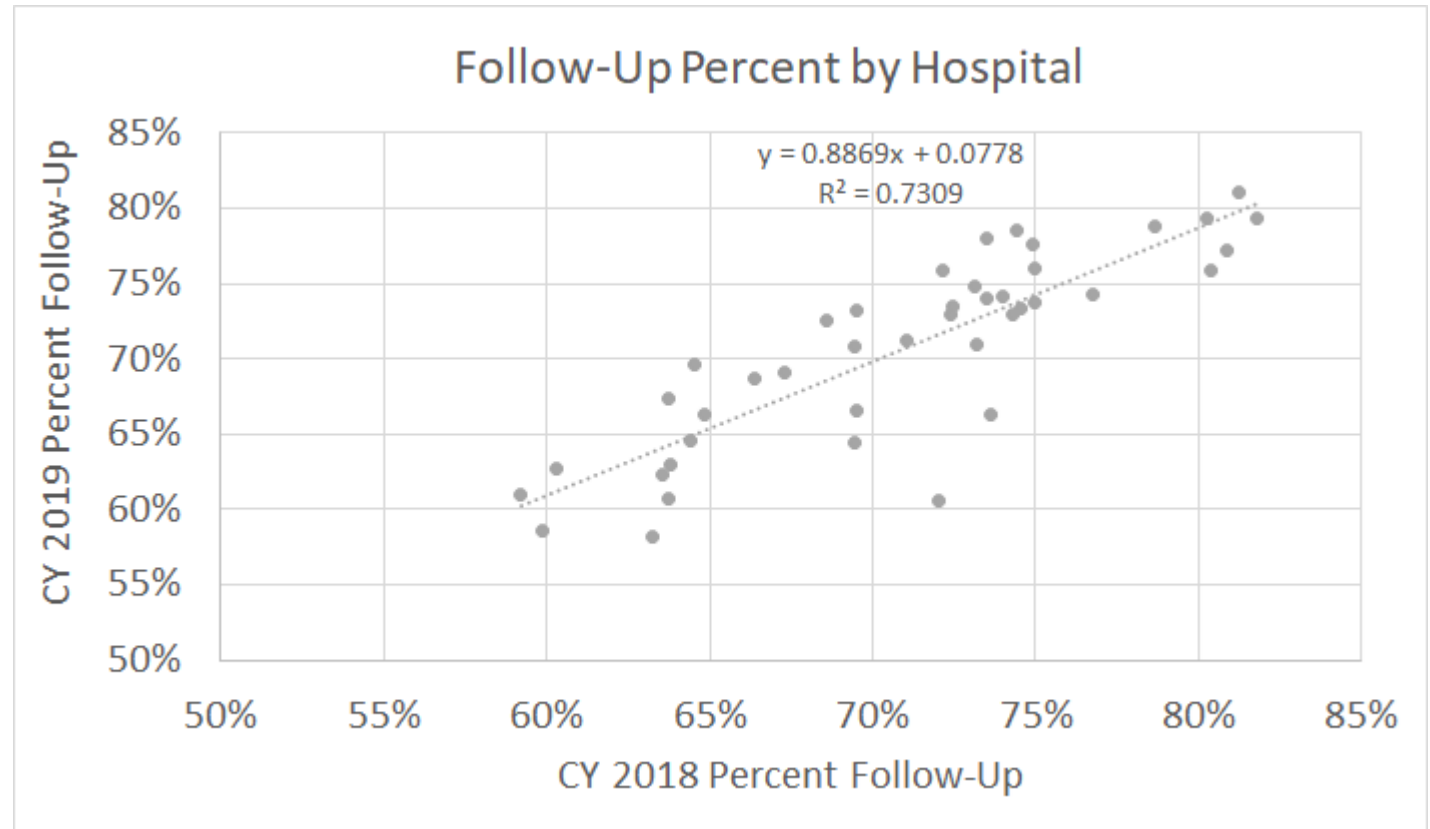   ii. Benchmark: Mean of top 10th percentile 79.64%

   See by Hospital Handout
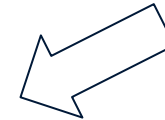
Updated with revised measure specifications

By Hospital Annual Correlation

Statewide high correlation year over year, with some hospital outliers

| By Hospital Follow-Up	Correlation Coefficient
2016 to 2017	0.90
2017 to 2018	0.88
2018 to 2019	0.85

Follow-Up Percent by Hospital

$y = 0.8869x + 0.0778$
$R^2 = 0.7309$

CY 2019 Percent Follow-Up

CY 2018 Percent Follow-Up

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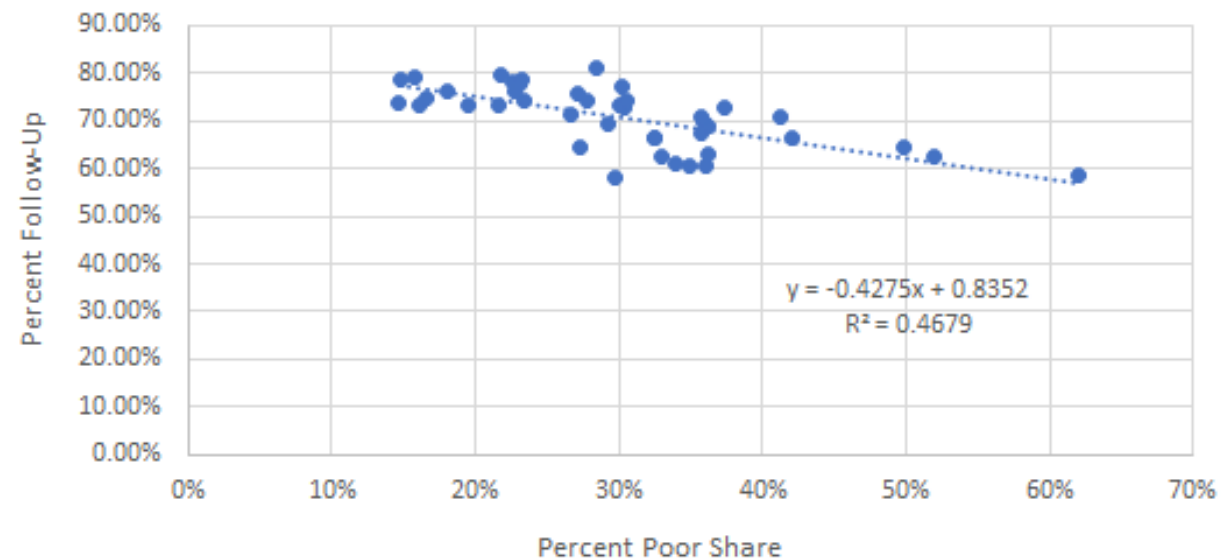health services
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By Hospital Follow-Up vs. SDOH

Moderate correlation between follow-up and SDOH; when added to the QBR program hospitals will be rewarded for improvement so all hospitals can be rewarded regardless of attainment
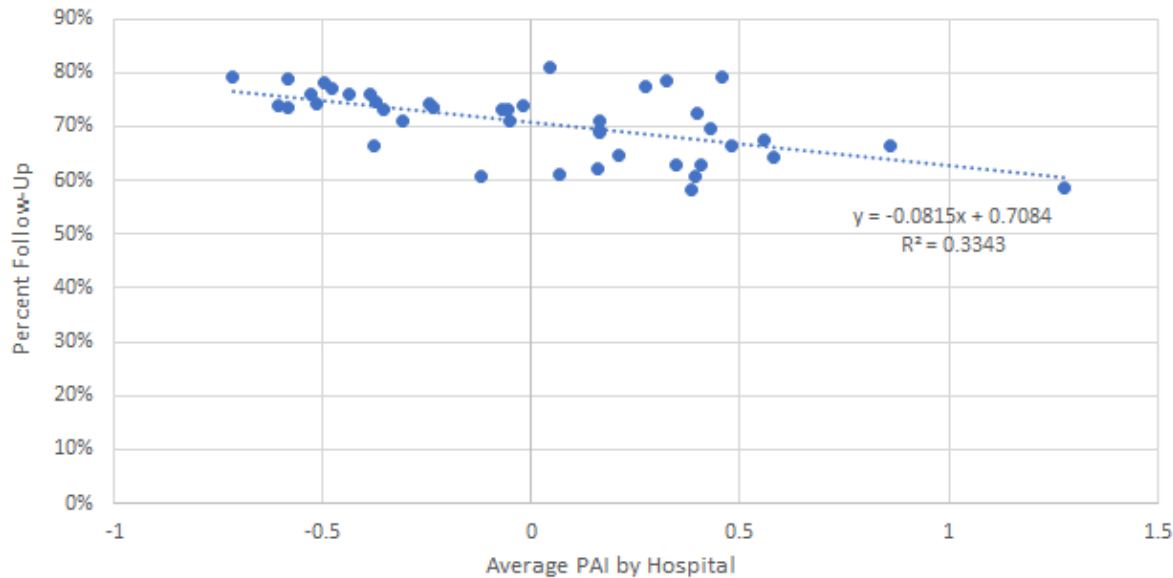
Next Steps

Follow-Up Measure

- Propose inclusion of follow-up measure in PCE domain
- Redo scores and revenue adjustment modeling with revised data
  - Do not expect large impact on current modeling
- Work with CRISP to set up reporting for hospitals

All-Payer PSI-90 into QBR

PSI modeling

- RY2021 QBR re-modeled to include PSI-90
  - FY2018 Base Period, used to determine statewide threshold and benchmark
  - CY2019 Performance Period
  - PSI-90 composite measure falls under Safety Domain, for a total of six possible measures weighted at 35 percent of total QBR score
- 28 hospitals decreased QBR score (average -2.2%), 12 increased QBR score (average 1.5%), 2 hospitals remained the same
- Staff proposes to include PSI in the QBR program again, in line with federal VBP

Modeling: Scores and Revenue Adjustments

Modeled Scores and Revenue Adjustments with Proposed Measure Changes

Descriptive Statistics	Model 1: RY 2021 - ED wait times	Model 2: RY 2021 - ED + PSI	Model 3: RY 21 - ED + PSI + Follow Up
Median	32.98%	30.96%	31.28%
Average	33.33%	32.54%	32.72%
Min	14.30%	12.08%	12.90%
Max	49.33%	50.17%	50.03%
25th Percentile	25.58%	26.79%	27.03%
75th Percentile	41.83%	39.33%	40.61%

Descriptive Statistics	Model 1: RY 2021 - ED wait times		Model 2: RY 2021 - ED + PSI		Model 3: RY 21 - ED + PSI + Follow Up	
	$	%	$	%	$	%
Net Adjustments	-$48,681,640	-0.49%	-$50,220,773	-0.50%	-$51,457,907	-0.51%
Penalties	-$50,932,110	-0.51%	-$52,265,008	-0.52%	-$53,468,408	-0.53%
Rewards	$2,250,470	0.02%	$2,044,235	0.02%	$2,010,501	0.02%
# Hospitals Penalized	30		33		32	
# Hospitals Rewarded/ Not Penalized	12		9		10	

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RY 2023 QBR Revenue Adjustment Scale

Final Draft to Propose No Change to Revenue Adjustment Scale

1. Staff does not support lower cut point for rewards due to CMS concern regarding MD performance
2. Addition of PSI and follow-up has small impact on scores and thus does not necessitate change in scale
3. New FFY2020 National VBP data with QBR weights has average hospital score as 40.24%

Cut Point Analysis	National Average	
	CMS VBP	QBR Weighted
FFY16	39.45	42.67
FFY17	35.56	39.93
FFY18	37.43	42.00
FFY19	38.12	40.90
FFY20	38.49	40.24
Average 16-20		41.15

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Mortality Measurement: Potential Future Transition from Inpatient to 30-Day Mortality Measure

Monitor for RY 2023

30-Day Mortality: Presentation of Analytic Findings

November 18, 2020

Overview

- **Goal: develop a 30-day all cause, all payer mortality measure**
  - Capture deaths that occur within 30 days of hospital admission, regardless of where death occurs

- **Use CMS 30-Day Hospital-Wide Mortality Measure as a guide**
  - Currently under development, and not used publicly yet
  - Make necessary adjustments to estimate model on Maryland all-payer data

- **Updates since last month:**
  - Removal of "80 percent rule"
  - Add in "Other" service line among Surgical cases

- **Today's agenda:**
  - Review new output and impact of updates
  - Discuss approach for how to reflect maternity cases
  - Review reliability and validity testing results

Mathematica

Step 1: Apply inclusion/exclusion criteria

- Apply exclusion criteria

Cases Excluded from Sample	
Transferred in from another acute care facility	Inconsistent vital status (e.g. death date precedes admission date)
Enrolled in hospice during index admission	Left against medical advice
Metastatic cancer	Crush, spinal, brain, or burn injury
Limited ability for survival (based on ICD-10 codes)	Non-Maryland resident (Vital Statistics data not reliable for non-Maryland residents)

- For patients with multiple admissions that qualify for measure inclusion, randomly select one admission for inclusion in sample

Mathematica

Distribution of stays by exclusion criteria (CY 2018)

Initial Sample	Dropped Cases	Resulting Sample
524,373		
Exclusion Criteria	**84,387**	**439,986**
Transferred in from another facility	11,614	
Age > 95	3,634	
Hospice enrollment at time of admission	1,174	
Metastatic cancer	27,316	
Limited ability to affect survival	405	
Inconsistent vital status	5	
AMA	8,189	
Crush, spinal, brain, or burn injury	3,488	
Non-Maryland resident	34,529	
Random Exclusion	**119,092**	**320,894**
Additional Dropped Cases	**62,424**	**258,470**
No service line assigned	59,159	
APR-DRG cell size < 20	3,265	
Final Sample for Model		**258,470**

Mathematica

Step 2: Assign stays to a service line

- **First, determine if a major surgical procedure was performed**
  - If yes, then assign stay to the "surgical" cohort
  - If no, then assign stay to the "non-surgical" cohort

- **Second, assign stays to a service line within non-surgical and surgical cohorts**
  - Non-surgical cohort: assignment based on principle diagnosis
  - Surgical cohort: assignment based on principle procedure

Non-surgical service lines	
Cancer	Orthopedics
Cardiac	Pulmonary
Gastrointestinal	Renal
Infectious disease	Other conditions
Neurology	

Surgical service lines
Cancer
Cardiothoracic
General
Neurosurgery
Orthopedic
Other

Distribution of stays by service line (CY 2018)

Non-Surgical	# of Stays	# of Deaths	Unadjusted Mortality Rate	CMS Unadjusted Mortality Rate*
Cancer	1,401	141	10.06%	14.60%
Cardiac	18,604	708	3.81%	6.50%
Gastrointestinal	18,901	412	2.18%	4.90%
Infectious Disease	31,490	2,655	8.43%	13.00%
Neurology	14,173	865	6.10%	8.00%
Orthopedics	5807	168	2.89%	4.90%
Pulmonary	25,332	1,365	5.39%	9.50%
Renal	17,440	857	4.91%	8.80%
Other Conditions	34,080	984	2.89%	5.60%
Subtotal	**167,228**	**8,155**	**4.88%**	**8.28%**

Surgical	# of Stays	# of Deaths	Unadjusted Mortality Rate	CMS Unadjusted Mortality Rate
Cancer	3,408	28	0.82%	2.30%
Cardiothoracic	4,215	196	4.65%	6.40%
General	16,175	264	1.63%	6.60%
Neurosurgery	1,469	89	6.06%	3.00%
Orthopedic	31,277	222	0.71%	1.50%
Other	34,698	204	0.59%	4.10%
Subtotal	**91,242**	**1,003**	**1.10%**	**3.22%**
GRAND TOTAL	**258,470**	**9,158**	**3.54%**	**6.77%**

Mathematica

*CMS numbers taken from 2019 QualityNet Conference presentation by Yale/CORE

How maternity stays are assigned in measure

Stays assigned to "Surgical – Other" service line (currently *included* in measure)

APR-DRG	Description	Number of Cases	Percent of Cases	Unadjusted Mortality Rate
560	Vaginal delivery	18,484	53.3%	0.0%
540	Cesarean delivery	4,931	14.2%	0.0%
519	Uterine & adnexa procedures for leiomyoma	1,349	3.9%	0.1%
24	Extracranial vascular procedures	1,178	3.4%	2.9%
181	Lower extremity arterial procedures	766	2.2%	3.8%
All others		7,990	23.0%	1.8%

Stays not assigned to a service line (currently *excluded* from measure)

APR-DRG	Description	Number of Cases	Percent of Cases	Unadjusted Mortality Rate
560	Vaginal delivery	20,796	35.2%	0.0%
540	Cesarean delivery	15,253	25.8%	0.0%
751	Major depressive disorders & other/unspecified psychoses	5,859	9.9%	0.3%
753	Bipolar disorders	5,329	9.0%	0.3%
750	Schizophrenia	3,725	6.3%	0.3%
All others		8,197	13.9%	0.8%

Mathematica

Overview of statistical properties of 30-day mortality measure

Measure Assessment: Three Categories of Criteria

Feasibility Criteria

Evidence that data needed for measurement is available

➡ Not a focus of today's presentation, but we expect measure to pass this step

Validity Criteria

Evidence that the measure is measuring what it is supposed to measure

➡ Multiple steps/checks, but today's presentation will focus on **convergent validity** and **predictive validity**

Reliability Criteria

Evidence that the measure consistently produces the same result, versus measure results being a product of statistical noise

➡ Implemented a **signal-to-noise test** for the 30-day measure

Mathematica

Validity and Reliability Analyses

- **Convergent validity: correlate 30-day measure results with other existing measures of quality**
  - CMS overall star rating
  - CMS diagnosis and procedure-specific 30-day mortality results (July 2015 – June 2018 results)
  - HSCRC Inpatient mortality results from QBR (FY19 Base results; Q32018 – Q22019)
  - Use rank correlations when comparing mortality measure results

- **Predictive validity: correlate 30-day measure results from 2018 with results from 2019**

- **Reliability analysis: calculate signal-to-noise test**
  - Calculated for overall measure reliability, and by hospital
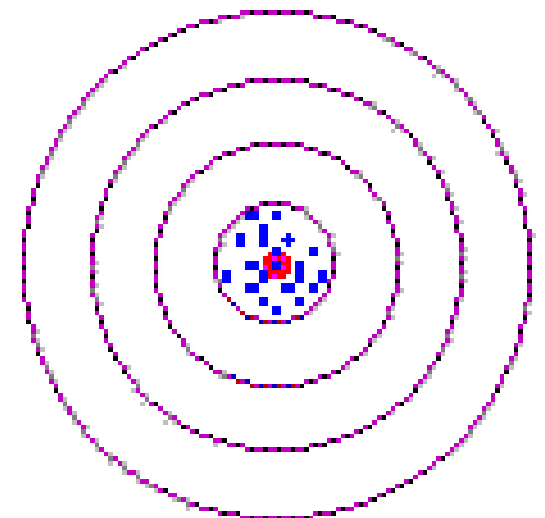
Mathematica

More on Validity and Reliability Analyses
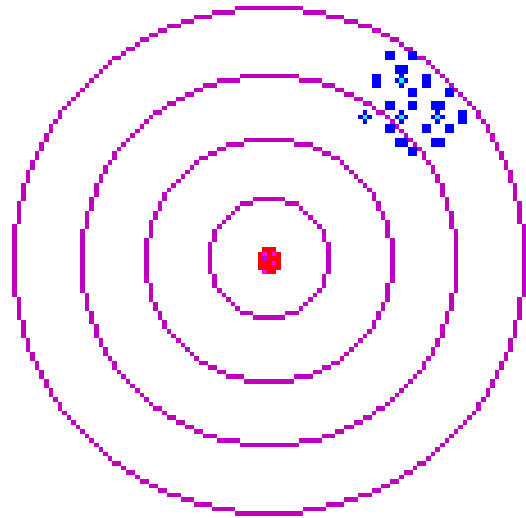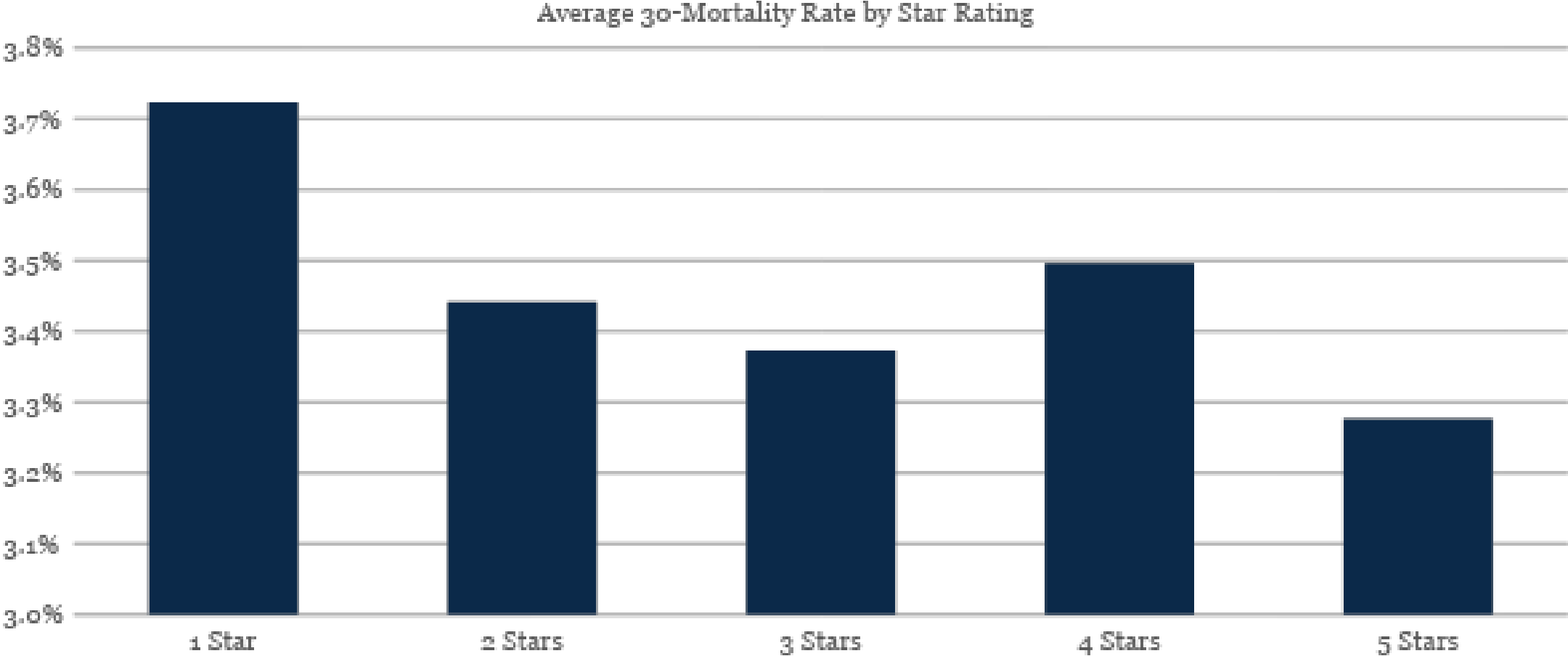

Reliable Not Valid
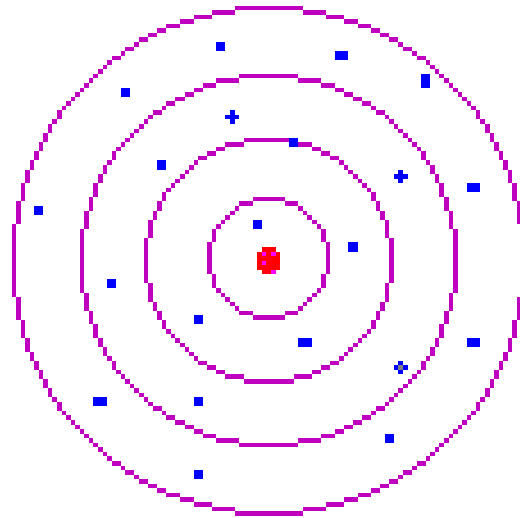
Valid Not Reliable
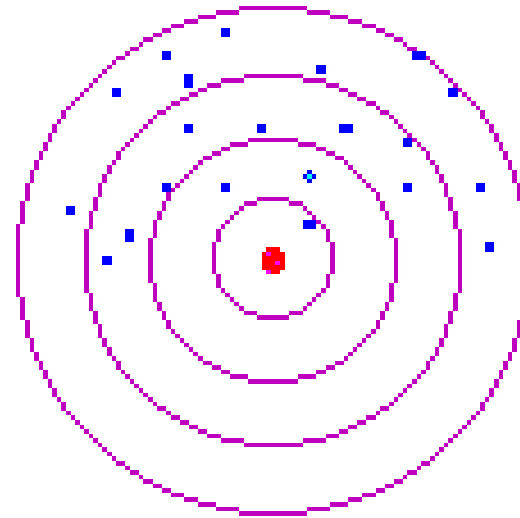
Neither Reliable Nor Valid

Both Reliable And Valid

# Convergent validity: comparison to CMS Star Ratings

Average 30-Mortality Rate by Star Rating

Convergent validity: comparison to CMS 30-day mortality results

CMS 30-Day Mortality Rate for…	Correlation Statistic	p-value
AMI	0.43	0.01
CABG	-0.12	0.75
COPD	-0.07	0.66
Heart Failure	0.25	0.10
Pneumonia	0.15	0.34
Stroke	0.09	0.56

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Convergent validity: comparison to HSCRC inpatient mortality results
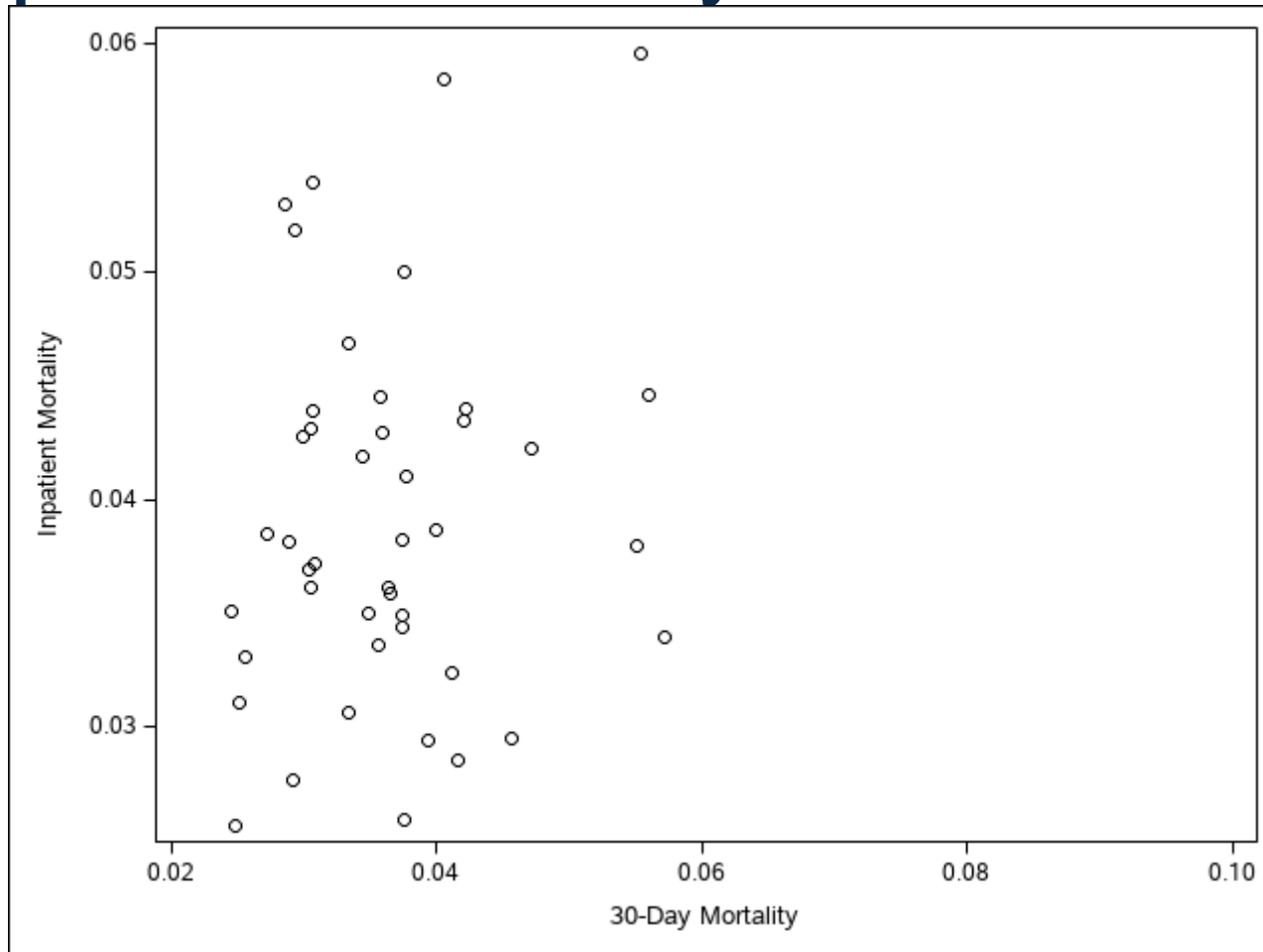
- Low rank correlation between All-Payer 30-day Mortality results and QBR Inpatient Mortality results

- 2018 correlation = .10 and 2019 correlation = .15

Note: Vertical axis is QBR inpatient mortality results. Horizonal axis is All-Payer 30-Day Mortality results

Predictive validity results

- **CY 2018 and CY 2019 All-Payer 30-Day Mortality results are positively correlated**
  - Correlation coefficient = 0.60 with p-value <.01

Mathematica

Reliability results

- **Strong reliability for All-Payer 30-Day Mortality Measure**

- **Overall reliability = 0.91**

- **Variation in hospital-level reliability estimates**
    - Minimum = .08; Maximum = .97

- **85% of hospitals have reliability of at least 0.70**

- **Hospitals with lower reliability estimates have smaller case sizes**

Mathematica

Questions and discussion

Mathematica

QBR Re-Design Update

QBR Re-Design is Identified as CMMI Priority for Maryland

CMS "used their discretion" to grant the State of Maryland's exemption on the basis of expected QBR performance improvement, favorable performance improvement under MHAC, and consistent performance under RRIP that has exceeded national outcomes.

For Quality Based Reimbursement (QBR):

1. Maryland's performance continues to lag behind the nation under the person and community engagement and safety measure domains.
2. CMS supports program redesign for implementation in RY 2024 using a focused subgroup.
3. In the interim, the State must integrate high level work plan to address CMS' concerns related to QBR and other program performance into the annual monitoring report (due December 2020), including
   a. redesign subgroup **objectives**,
   b. outline of the **actionable strategies** required to accomplish each objective, and
   c. an associated project milestone **timeline**.

CMS Feedback on QBR Re-Design Subbroup

CMS requests a **comprehensive report** detailing QBR redesign subgroup findings and formalized plans to improve quality performance (due June 2021).

1. Report and subsequent QBR policy changes will be heavily considered in evaluating the State's national hospital quality and P4P programs exemption request for FFY 2022.
2. CMS supports HSCRC's plans to consider ED Wait Time measure options as part of the QBR redesign during CY 2021 with potential re-adoption of measures; The State has had a longstanding issue with extended ED wait times compared to the nation.
3. CMS encourages the State to hold hospitals accountable for high quality obstetric care. The State may consider integrating maternal and child health clinical topic areas into the QBR program redesign to improve the patient care experience in Maryland hospitals.

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Readmission Reduction Incentive Program (RRIP)

Readmissions Reduction Incentive Program (RRIP): Overview

Purpose: Incentivize hospitals to reduce avoidable readmissions by linking payment to (1) improvements in readmissions rates, and (2) attainment of relatively low readmission rates.

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.
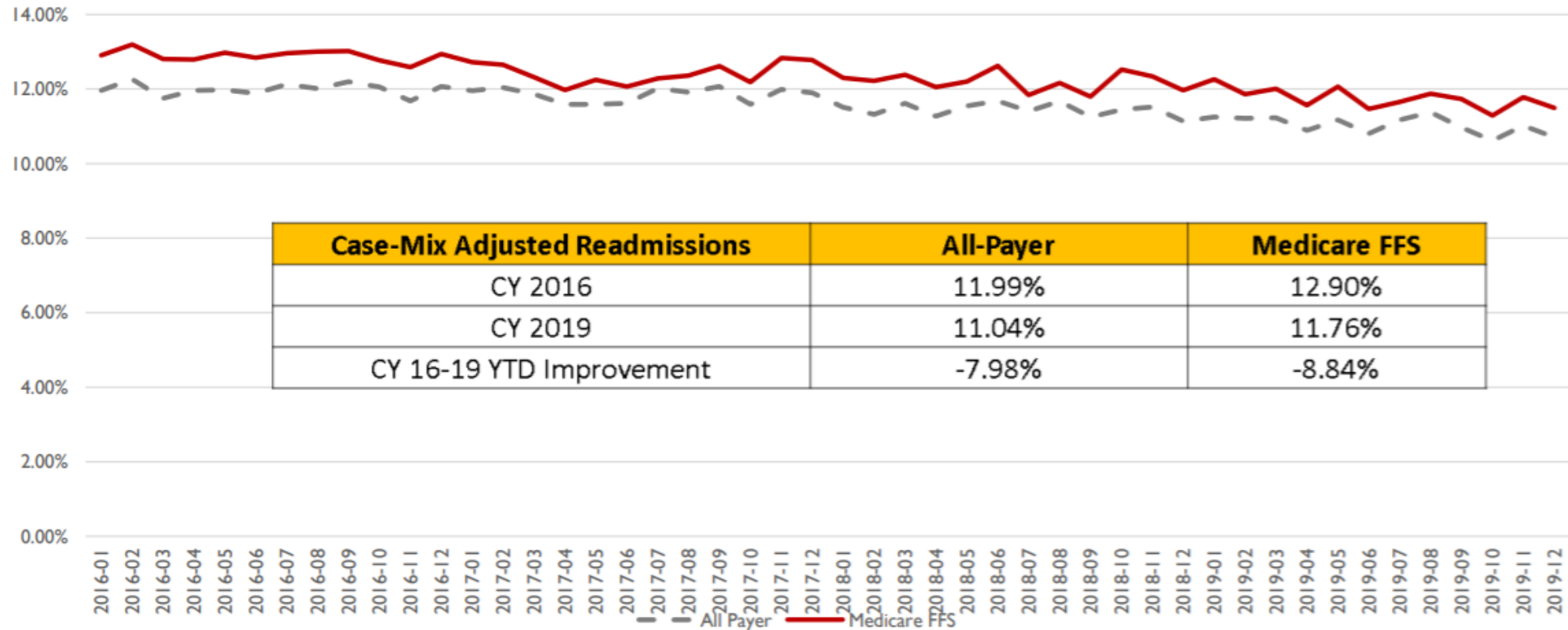
Why focus on readmissions? Preventable hospitals readmissions may result from index admission quality of care or inadequate care coordination following discharge, and can result in substandard care quality for patients and unnecessary costs.

The RRIP is similar to the Medicare Hospital Readmissions Reduction Program (HRRP), but has an All-Payer focus, and a newly approved focus on within-hospital disparities.
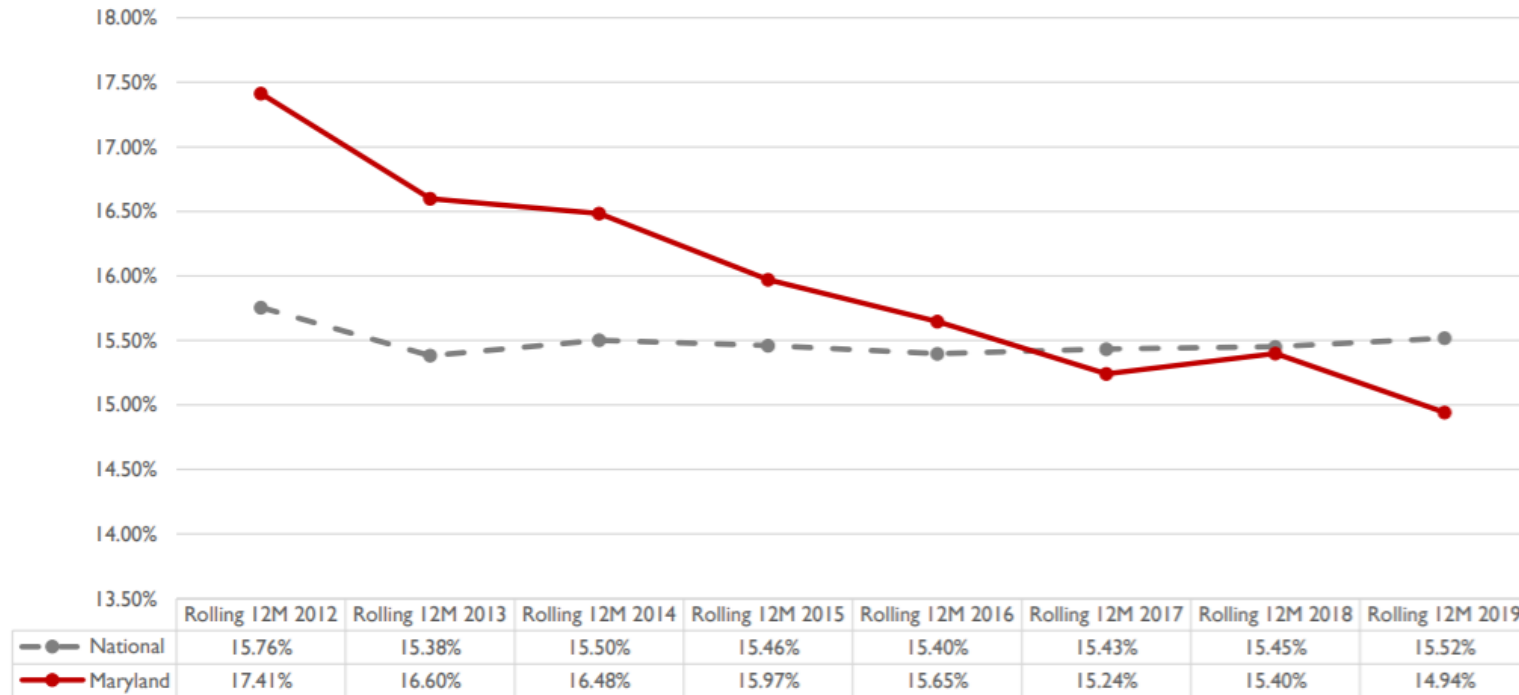
Monthly Case-Mix Adjusted Readmission Rates

Case-Mix Adjusted Readmissions	All-Payer	Medicare FFS
CY 2016	11.99%	12.90%
CY 2019	11.04%	11.76%
CY 16-19 YTD Improvement	-7.98%	-8.84%

CY 2019 - Medicare Test Readmissions

CMMI – MD and National Readm Rates through CY2019

Readmissions - Rolling 12M through Dec 2019

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

Sub-Group Topics and Status

- Analysis of **Case-mix Adjustment** and trends in **Eligible Discharges** over time to address concern of limited room for additional improvement;
  - Case-mix adjustment acknowledges increased severity of illness over time
  - Standard Deviation analysis of Eligible Discharges suggests that further reduction in readmission rates is possible
- **National Benchmarking of similar geographies** using Medicare and Commercial data;
  - Maryland Medicare and Commercial readmission rates and readmissions per capita are on par with the nation
- Updates to the existing **All-Cause Readmission Measure**;
  - Remove Eligible Discharges that left against medical advice (~7,500 discharges)
  - Include Oncology Discharges with more nuanced exclusion logic
  - Analyze out-of-state ratios for other payers as data become available

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Sub-Group Topics and Status Continued

- **Statewide Improvement and Attainment Targets** under the TCOC Model;
  - 7.5 percent Improvement over 5 years (2018-2023)
  - Ongoing evaluation of the attainment threshold at 65th percentile
- **Social Determinants of Health and Readmission Rates**;
  - Methodology developed to assess within-hospital readmission disparities
- **Alternative Measures of Readmissions**
  - Observation trends under the All-Payer Model to better understand performance given variations in hospital observation use; future development will focus on incorporation of Excess Days in Acute Care (EDAC) measure in lieu of including observations in RRIP policy
  - Electronic Clinical Quality Measure (eCQM) hybrid measure may be considered in future to improve risk adjustment

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RY 2023 RRIP - DRAFT Recommendations

1. Maintain 30-day, All-Cause Readmission Measure from RY 2022
2. Maintain **statewide 5-year Improvement target of -7.5 percent from 2018 base period**
   a. **2018-2021 Improvement Target: -3.41%**
3. **Attainment Target - maintain** attainment target methodology as currently exists, whereby hospitals **at or better than the 65th percentile** statewide receive scaled rewards for maintaining low readmission rates
4. For improvement and attainment, set the maximum reward hospitals can receive at 1 percent of inpatient revenue and the maximum penalty at 2 percent of inpatient revenue.
5. Explore **development of an all-payer Excess Days in Acute Care measure** for monitoring

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Disparities policy: Key components

- Measure social exposures
  - Patient Adversity Index (PAI)
  - Medicaid status, black race, Area Deprivation Index
- Measure within-hospital difference in readmission rate across levels of PAI
- Reward hospitals that narrow difference over time
  - 0.25% of IP revenue to hospitals with >=6.94% reduction 2018-2020 (RY 2022)
  - 0.50% of IP revenue to hospitals with >=15.91% reduction 2018-2020 (RY 2022)
  - To be eligible for reward, hospital must have improvement in overall case-mix adjusted readmission rate

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Calculating the Patient Adversity Index (PAI)

- Estimate the association of readmission with ADI, Medicaid, Black race
  - Using 2016-2018 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 ("Gap") Measure

- Each hospital's gap is estimated with a multilevel model that accounts for SOI, age, sex, and the hospital's mean PAI.

- The 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

- The model provides appropriate estimates even when a given hospital sees higher- or lower-PAI patients than other hospitals

- Performance = percentage change in gap from base to performance year

Disparity Performance, CY2019

Disparity improvement, CY2018 to CY2019
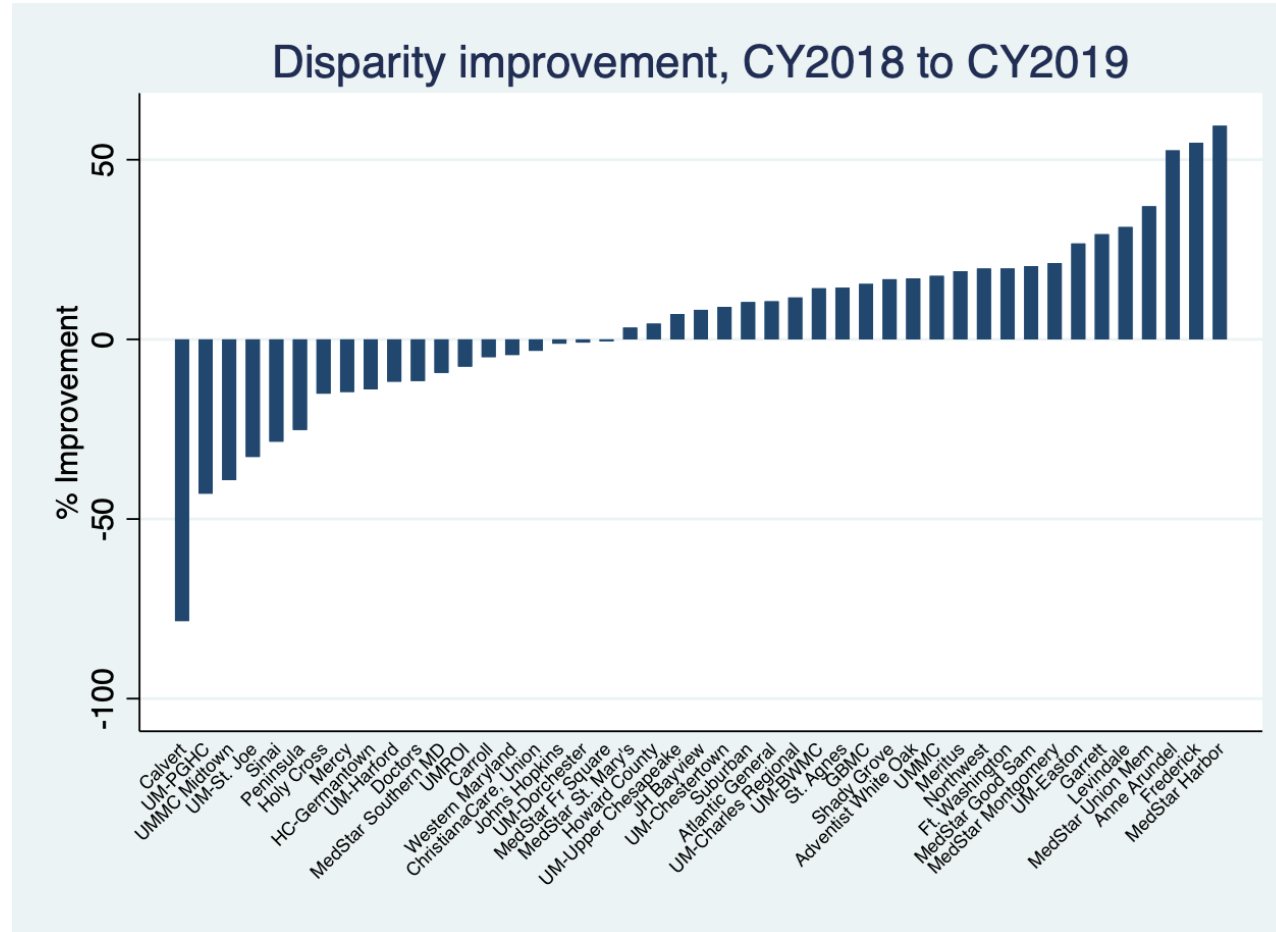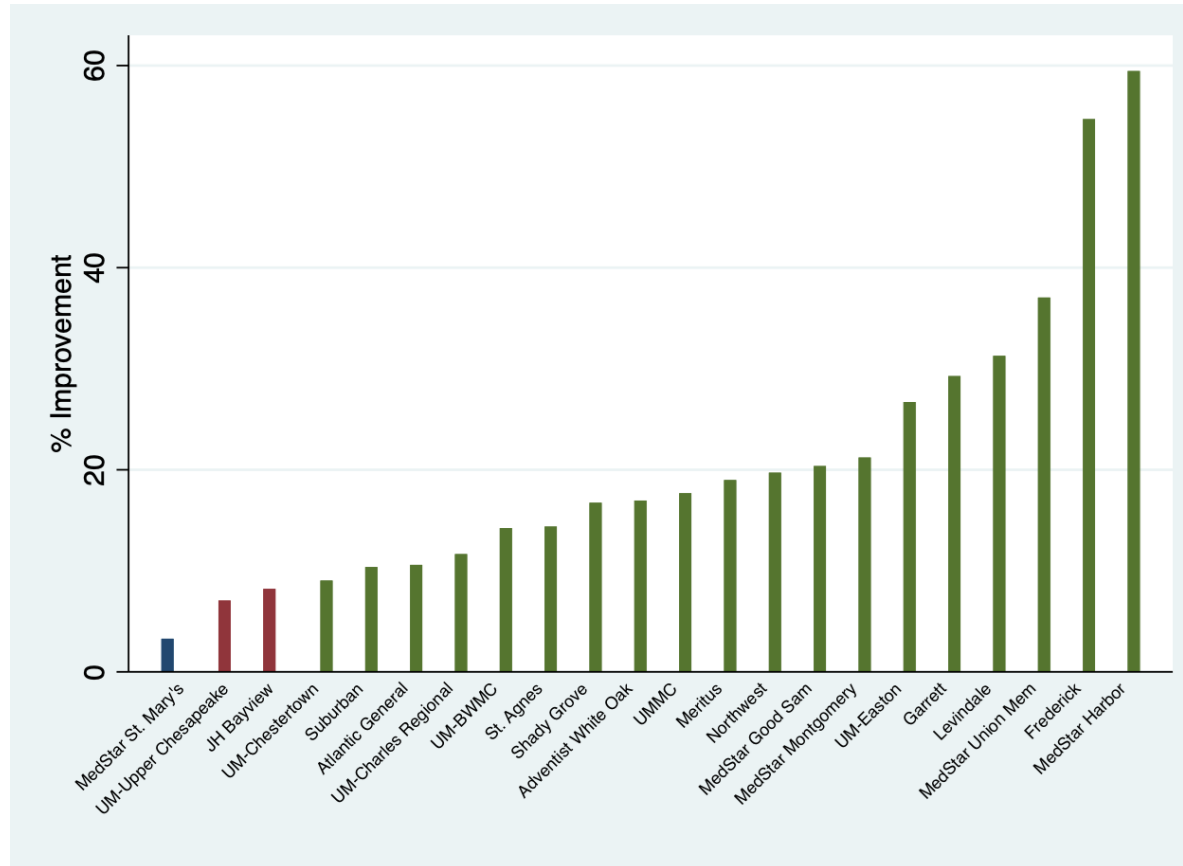
See by Hospital Handouts

26 of 45 hospitals improved in 2019

Improvement by RRIP eligibility
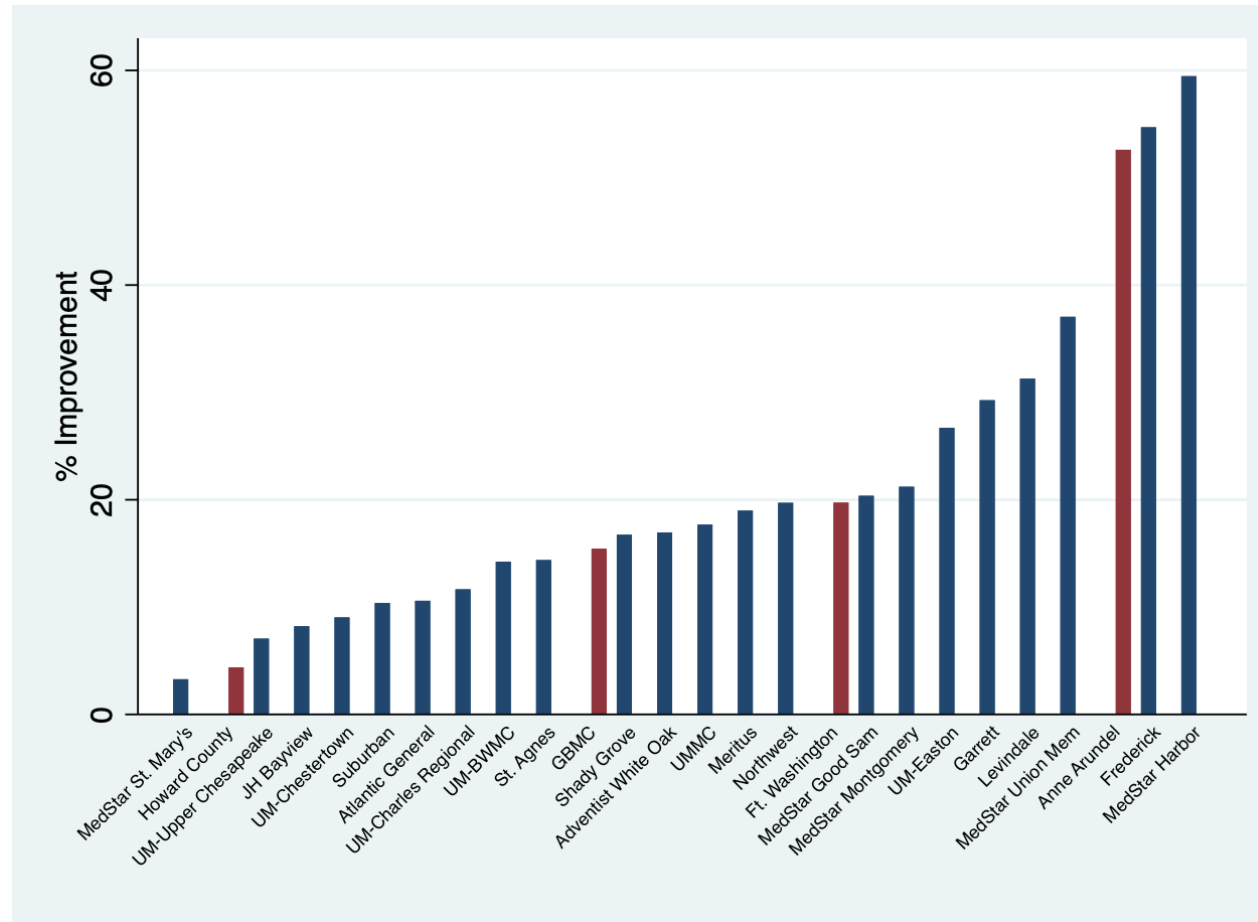
Of those that improved, four were ineligible for disparity reward due to overall RRIP performance requirement

Reward levels

Of the remaining 22, 1 did not hit improvement target. 2 are on track for a reward of 0.25% IP revenue and 19 are on track for a reward of 0.50% IP revenue.

Investigating Disparity Changes

- Initial analytics suggested previous changes in disparity were minimal

- Reimbursement level set in anticipation of small YoY changes

- Methodology adjustments led to larger than expected changes

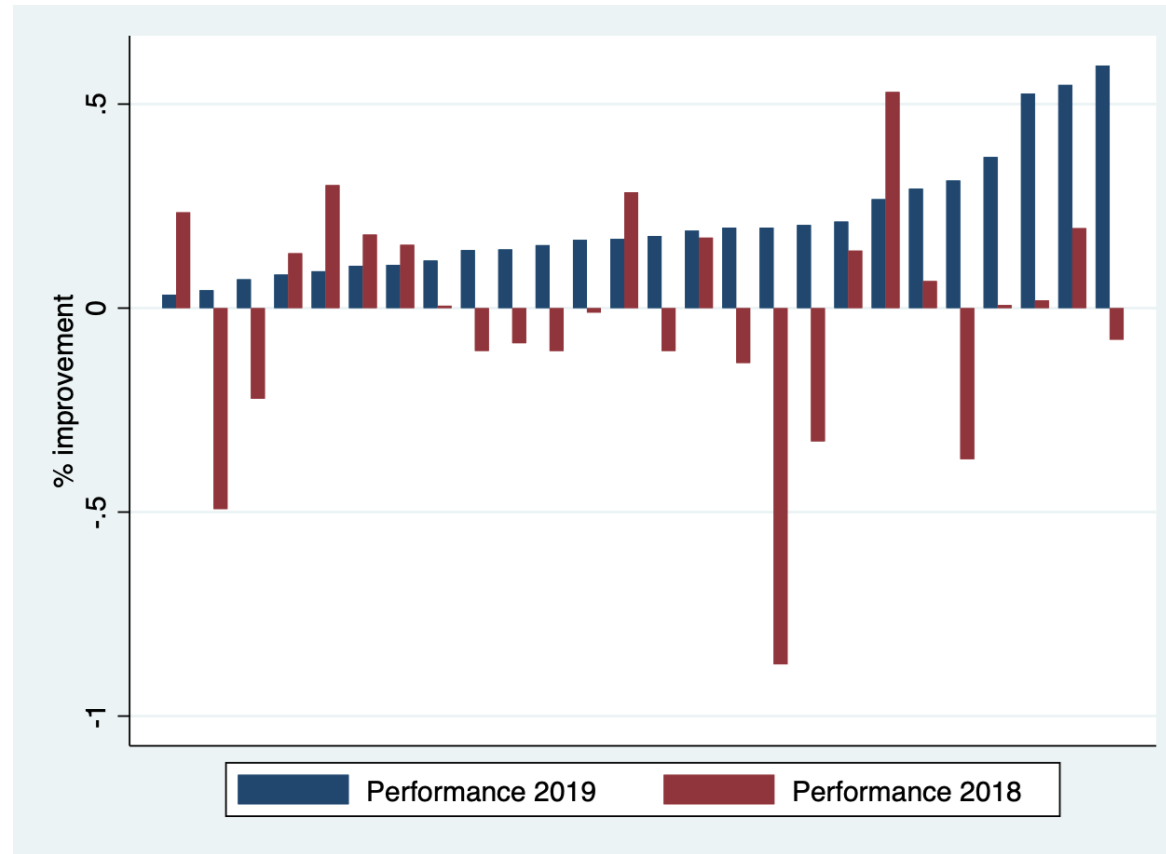- Are these due to legitimate improvement, or random variation in disparity metric?

Volume and Improvement
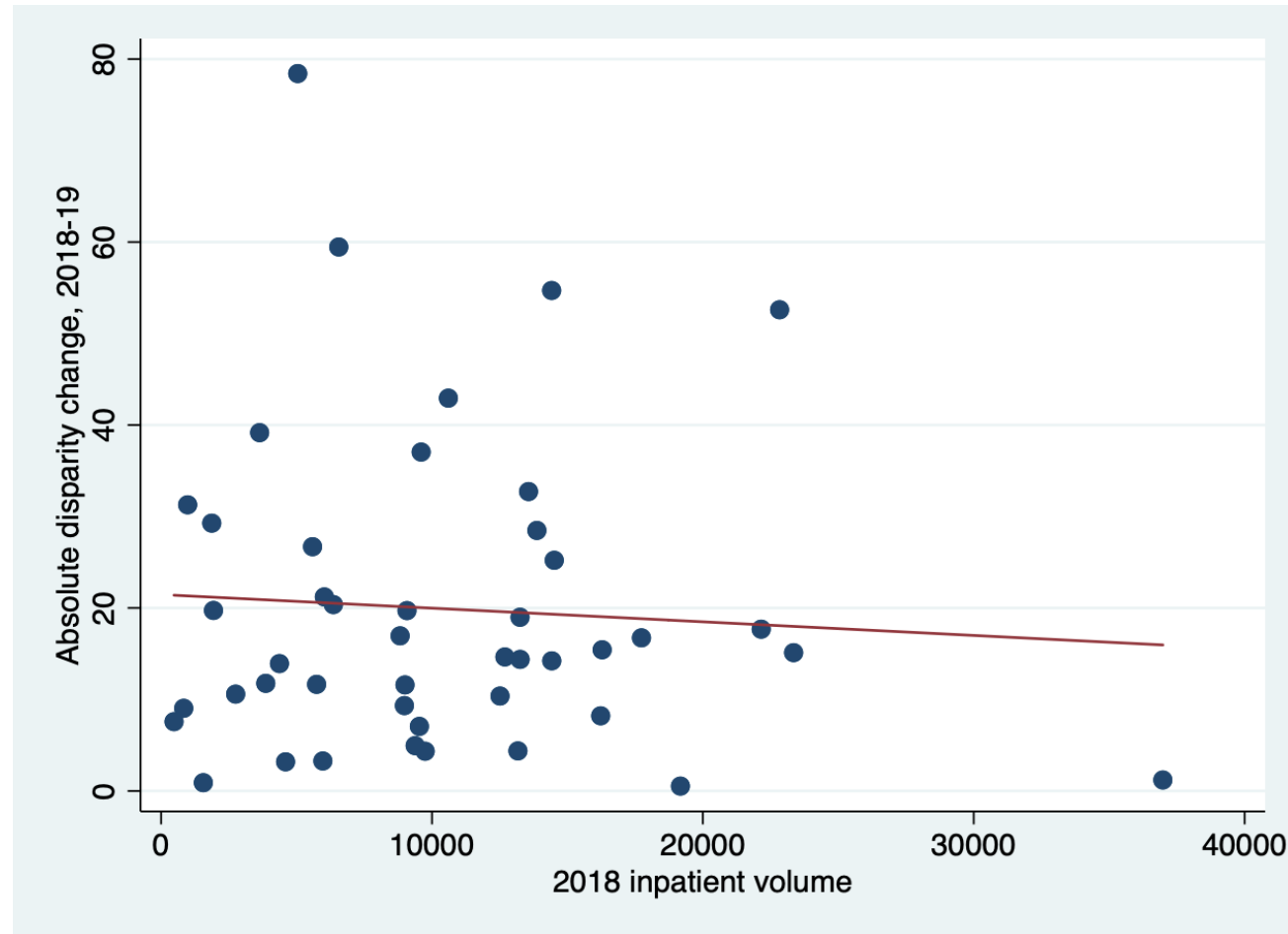
Correlation: -.06. Suggests change is not driven by small N.

Multi-year Improvement

Most hospitals improving in 2019 also improved in 2018. Overall within-hospital correlation (ICC) is moderate at ~.65.

Investigating Disparity Changes

- Analysis does not indicate YoY changes are primarily driven by random variation

- Hospitals have been able to reduce disparities

- Uncertain how focus on COVID will change the picture

- Need to revise incentives to reflect methodology change while continuing to reward improvement

Disparity Policy Recommendation: Target 1

- Current: 0.25% annual reward for those on track to achieve 25% reduction in disparities by model end

- Proposed: 0.25% annual reward for those on track to achieve **50%** reduction in disparities by model end

    - 22.89% improvement by end of CY21

    - In CY19, 6 hospitals on track to hit this target

Disparity Policy Recommendation: Target 2

- Current: 0.50% annual reward for hospitals on track to achieve 50% reduction in disparities over the model term

- Revised: 0.50% annual reward for hospitals on track to achieve **75%** reduction in disparities over the model term

  - 40.54% improvement by end of CY21

  - In CY19, 13 hospitals on track to hit target

- Consider scaling rewards for hospitals meeting the threshold?

Other Thoughts or Questions?

Next PMWG Meeting: December 16, 9:30 AM-12:00 PM