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Quality Based Reimbursement Redesign Subgroup to the Performance Measurement Workgroup

July 21, 2021

Agenda

1. Person and Community Engagement Domain (PCE)
   a. HCAHPS
      i. Linear Scores
      ii. Upfront Investment
   b. Follow-up after Discharge
   c. ED Wait Times
2. Safety Domain - NHSN Discussion
3. Clinical Care Domain
   a. 30-day Mortality
   b. Hip-Knee Arthroplasty Complications
4. Sub-group Decision Points for PMWG; Report Review Timeline
5. Thank you

Meeting Goal:
Finalize Subgroup Guidance to PMWG

Topic 1: PCE Person and Community Engagement Domain

HCAHPS Improvement

Two Main Ideas to Improve HCAHPS Scores:

1. **Addition of linear scores** to HCAHPS domain to encourage improvement across spectrum of scores

2. Provision to hospitals of **upfront funds to spur HCAHPS improvements**, which would be taken back in the subsequent year if improvements did not occur

Other ideas:

- Increase domain weight beyond 50 percent?
- Add complementary measures like ED wait times?
- Require more formal sharing of best practices?

Addition of Linear Scores

- QBR program must continue to incentivize improvement in Top Box Score to align with HVBP
- Stakeholders have suggested incentivizing linear score may encourage improvement across all levels of performance
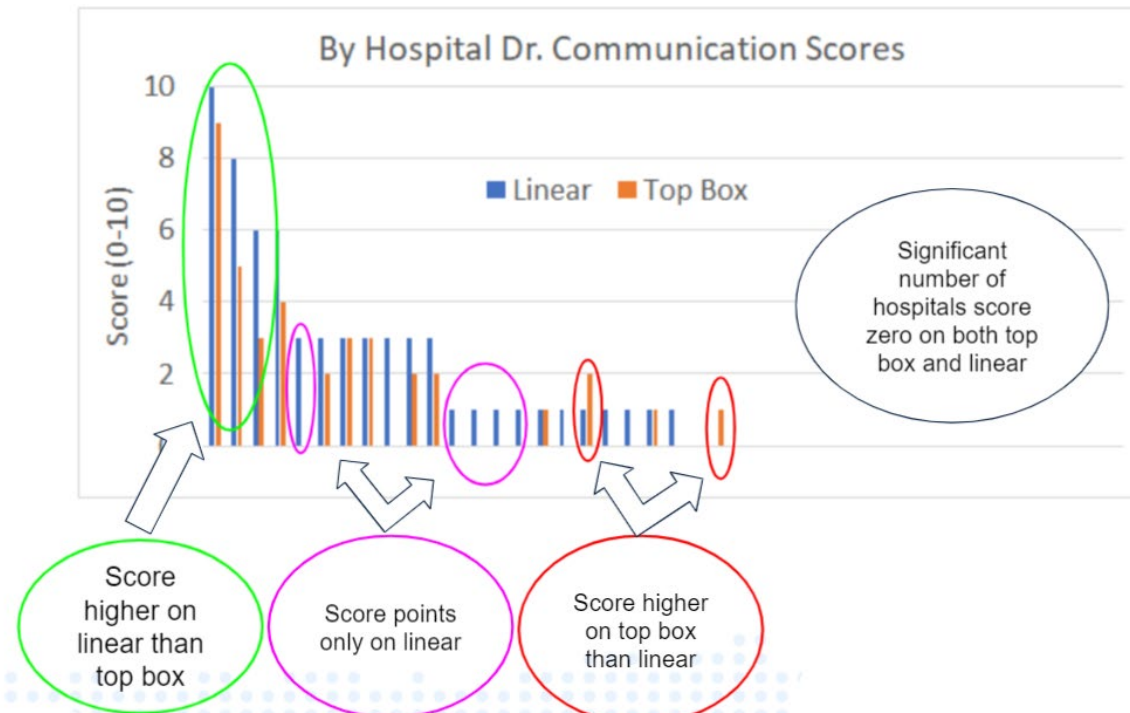
HCAHPS Linear Score Modeling

- Modeled three different sets of HCAHPS measures
  - All models weighted linear HCAHPS as 20 percent of PCE domain (10% of QBR), and specifically reduced the weight on the top box portion of the domain (i.e., consistency remained weighted at 20% of PCE Domain/10% of QBR score)
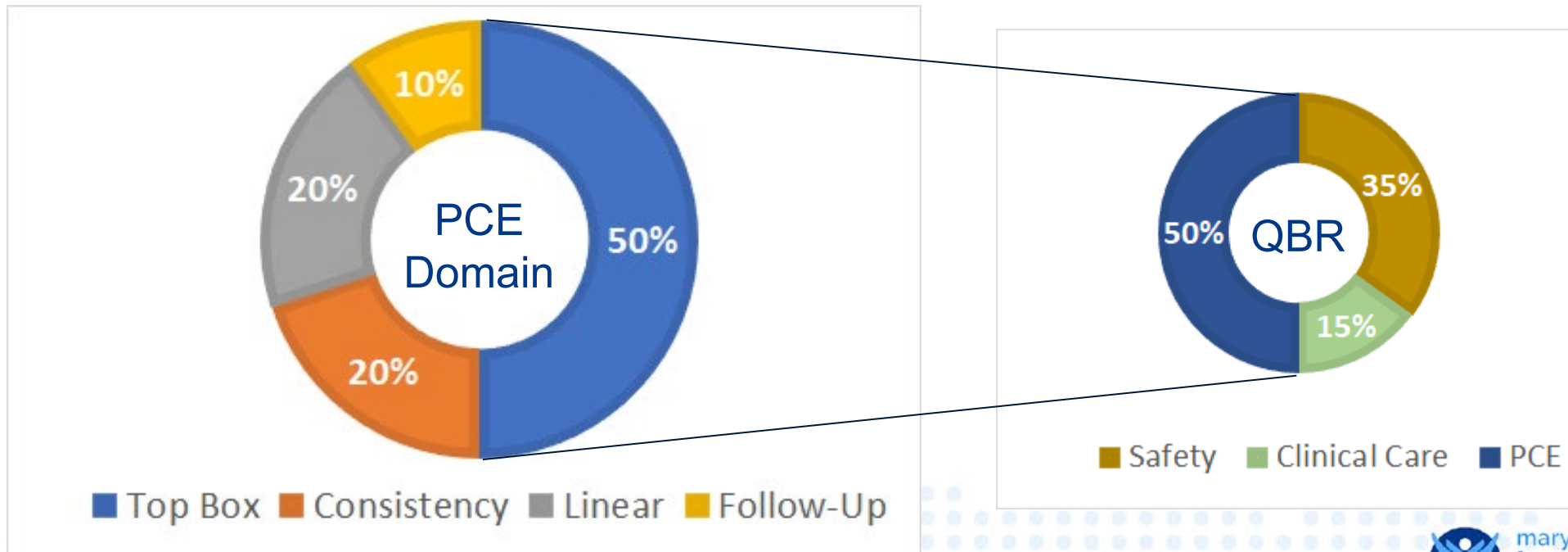
Measures Modeled at 10 Percent of total QBR Score

Subgroup discussion last month seemed to support a more focused approach to linear measures

Model 1
No Linear

Model 2
8 Measures

- Nurse Communication
- Doctor Communication
- Responsiveness
- Care Transitions
- Med Communication
- Discharge Info
- Overall Rating
- Clean and Quiet

Model 3
5 Measures

- Nurse Communication
- Doctor Communication
- Responsiveness
- Care Transitions
- Communication About Medicines

Model 4
4 Measures

- Nurse Communication
- Doctor Communication
- Responsiveness
- Care Transitions

Considerations for Narrowing Down Measures

Leapfrog alignment

Correlations with other quality outcomes

Comprehensiveness

Parsimony

Importance to TCOC model

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By Hospital Results

Statistic	Total QBR Score			
	Model1 RY23 Measures, No Linear	Model2 RY23 Measures + 8 Linear (all)	Model3 RY23 Measures + 5 Linear*	Model4 RY23 Measures + 4 Linear
Median	32.24%	33.11%	32.98%	33.01%
Average	32.96%	33.41%	33.42%	33.49%
25th Percentile	27.68%	27.81%	27.81%	27.75%
75th Percentile	38.94%	39.48%	39.60%	39.66%
Min	13.02%	13.02%	12.90%	12.90%
Max	51.23%	52.48%	52.55%	53.52%

Subgroup Discussion

Consensus on adding linear scores?

Which specific measures? All or more focused?

Weight of linear measures? 10 percent of total QBR score?

Draft guidance for PMWG:

Add the linear measures for [?] to the PCE domain weighted at [?] percent

Upfront Investment

- HSCRC quality team proposes a voluntary program where hospitals will receive upfront reward ahead of the performance year
  - Currently no hospitals have expressed interest
  - Upfront reward as currently construed will be paid back in subsequent year regardless of performance
  - Idea is to provide upfront funding to drive HCAHPS improvements

Upfront Investment Examples

		Hospital A	Hospital B	Hospital C
Attainment Score using Base Period Data	A	20.48%	41.73%	26.75%
Attainment Score with Anticipated Improvement*	B	25.80%	44.23%	31.75%
Attainment Revenue Adjustment $	C = A scaled	-$2,000,000	$80,000	-$1,380,000
Anticipated Improvement* $	D = B scaled	-$1,480,000	$340,000	-$900,000
Upfront Investment Opportunity $	E = C - D	$520,000	$260,000	$480,000
Final QBR Score	F	36.39%	53.58%	29.00%
Final QBR Revenue Adjustment $	H = F scaled	-$440,000	$1,280,000	-$1,180,000
Final QBR Revenue Adjustment + Payback	I = H + -E	-$960,000	$1,020,000	-$1,660,000

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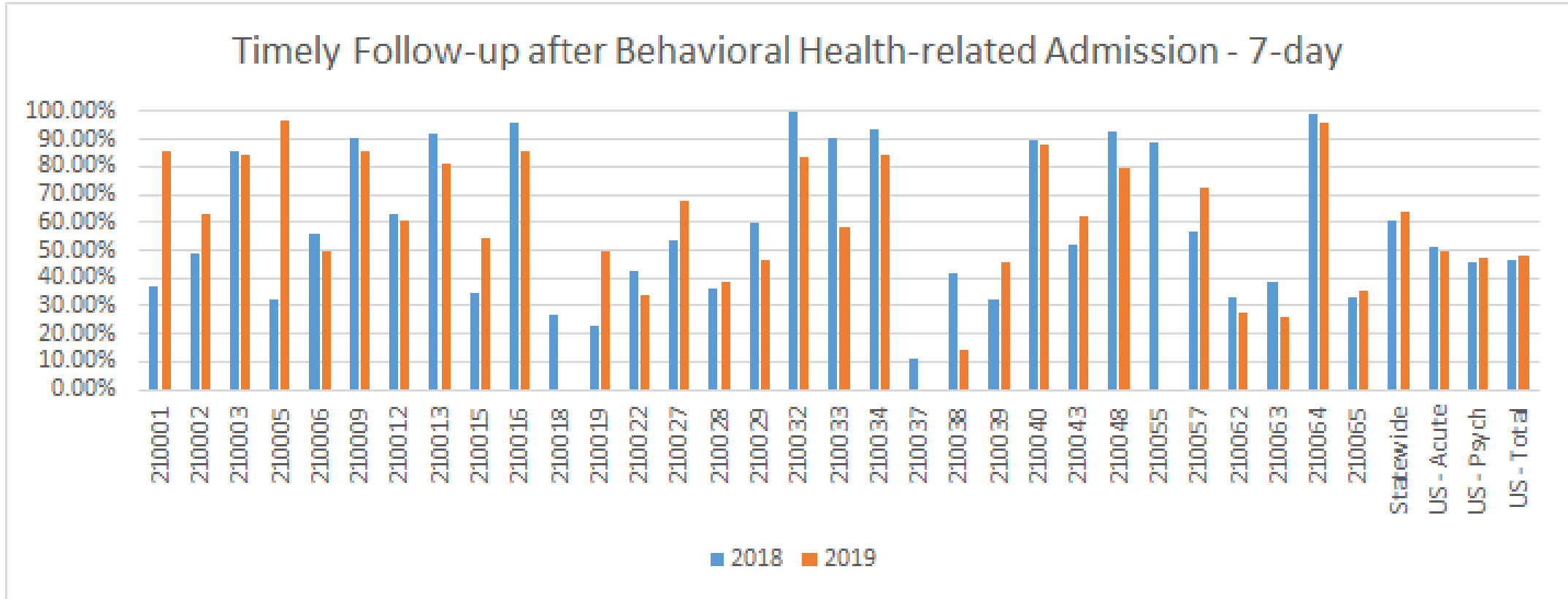
Follow Up Medicaid

- Updating both Medicare and Medicaid rates to make correction to logic
- Given all-payer system, would like to push to develop multi-payer follow-up measure using Medicaid data
  - Commercial payers interested in monitoring or putting measure into payment would need to contact quality team
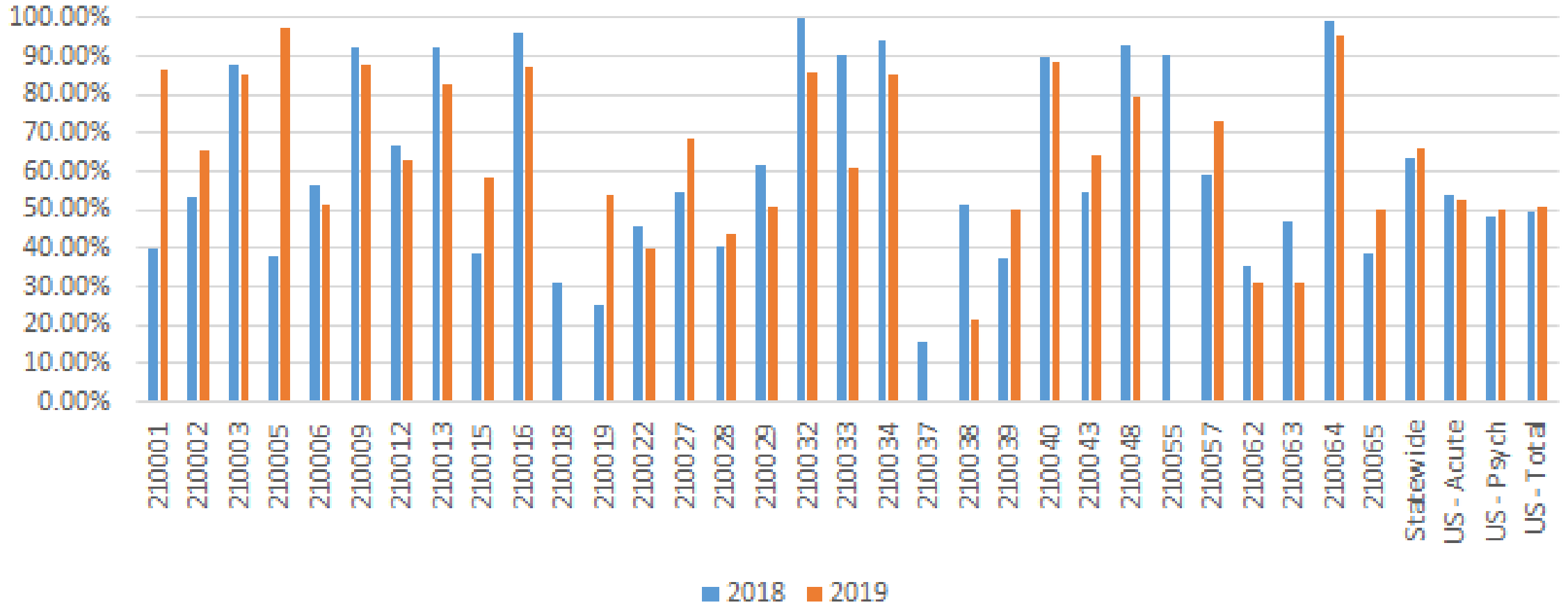
? Options for Medicaid:

1. Adopt for payment for CY 2024 performance
2. Develop monitoring reports for CY 2022 performance and adopt for payment for CY 2023 performance

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Timely Follow-up by Hospital, 7-day (Medicare FFS)

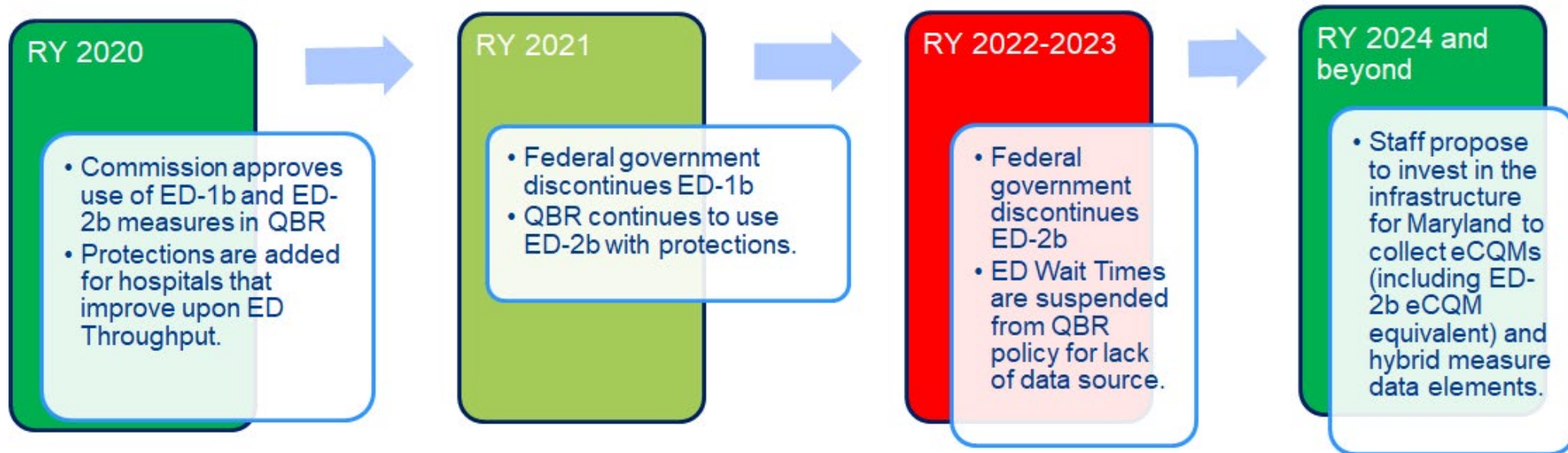Timely Follow-up after Behavioral Health-related Admission - 7-day

Timely Follow-up by Hospital, 30-day (Medicare FFS)

Timely Follow-up after Behavioral Health-rel Admission - 30-day

Timeline of ED Wait Times in QBR

RY 2020
- Commission approves use of ED-1b and ED-2b measures in QBR
- Protections are added for hospitals that improve upon ED Throughput.

RY 2021
- Federal government discontinues ED-1b
- QBR continues to use ED-2b with protections.

RY 2022-2023
- Federal government discontinues ED-2b
- ED Wait Times are suspended from QBR policy for lack of data source.

RY 2024 and beyond
- Staff propose to invest in the infrastructure for Maryland to collect eCQMs (including ED-2b eCQM equivalent) and hybrid measure data elements.

Given ED Wait Times' positive correlation with HCAHPS, Commissioners and Staff are interested in resuming inclusion of an ED Wait time measure for IP admissions

Topic 2: Safety Domain

Safety Domain: Maryland Performance on Par with Nation for NHSN Measures*

- In 2019, for five out of six NHSN measures, the median hospital in Maryland performed better (had lower SIRs) than the national median hospital; SSI hysterectomy is the exception
- Trend analysis from CY 2016-2019 shows most NHSN measures improved over time (except for SSI)
- Peer group analysis done using the K-nearest neighbor approach (assign a peer group of 15 similar national hospitals to each MD facility):
  - Maryland compared worse than its peers 50-60% of the time in CY 2016-2018,
  - The State improved performance and compared better than its peers just over 50% in CY 2019.
- The CDC 2019 National and State HAI Progress Report indicates:
  - 64-94 percent of Maryland hospitals have SIRs statistically similar to national rate
  - No statistically significant change on any NHSN measure between 2018 and 2019 for Maryland.

*Analysis included unweighted means, weighted means (weighted based on hospital volume), and medians using CMS Hospital Compare data.

NHSN Discussion

- Subgroup discussion:
    - Recognize surveillance bias for NHSN measures measures
    - Maintain level of comparability to the national VBP model and allow hospitals to focus on improvement of these measures rather than diluting focus with additional measures
    - Consider for future adding more innovative and less burdensome "digital" measures to QBR (e.g., Hospital Onset Bacteremia (HOB) early adoption statewide) that can replace current chart-abstracted measures if allowed by CMS
        - HSCRC has begun discussions with CDC on opportunities for collaboration, feasibility of early adoption of the HOB measure
    - Consider COVID impacts

Topic 3: Clinical Care Domain

30-Day Mortality Updates

- **Concept:** Use draft CMS claims based all condition mortality measure methodology with similar IP mortality measure risk-adjustment
  - Service lines and selection of random hospitalization are from CMS measure
  - Risk adjustment variables from HSCRC IP measure
  - Two-thirds of deaths occur in hospital, however HSCRC staff believe the post hospitalization deaths are important indicator of quality
- HSCRC working to match case-mix data with CCLF (medicare FFS) data to bring over hospice flag
  - Due to 4 month data run out the flag for hospice determined from CCLF will be delayed
- HSCRC working with MPR on additional validation results
  - See handout with preliminary hospital specific results

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Mortality Measure - Current State and Challenges/Concerns

Concerns with IP Mortality Measure:

	Threshold	Benchmark	Distance
RY 2018	97.5400%	98.7700%	1.23%
RY 2019 - PC Ex	98.1949%	99.2436%	1.05%
RY 2019 - PC In	95.5074%	97.1680%	1.66%
RY 2020	95.6169%	97.0807%	1.46%
RY 2021	95.4754%	96.9606%	1.49%
RY 2022	96.1926%	97.2555%	1.06%

- Staff believes the measure is somewhat "topped off"
  - Distance between benchmark and threshold continues to shrink
  - Majority of hospitals (34 of 44) are either:
    - Earning equal improvement and attainment credit (n=14)
    - Earning more attainment credit than improvement credit (n=20)
- Historical rationale for an "in-house" measure was the lack of data on post-discharge mortality
  - Rectified via Data Use Agreement with MD Vital Statistics Administration

Concerns with 30-day measure (collected from May Sub-group meeting):
- Lack of experience with measure
- Complexity of random exclusion for hospital monitoring/differs from current IP measure
- Concern over risk adjustment and "look back"
- Lack of correlation between IP and 30-day measures

Random Exclusion

CMS Rationale (Pros):

- The risk of mortality is not independent of the number of admissions (i.e., confounder), as a patient with multiple admissions can have at most one negative outcome (death)

- The overall mortality rate for patients admitted more than once is higher than for those patients with only one admission

- The percent of patients with multiple admissions that a hospital cares for varies

- Random selection better reflects that the results of hospitalizations can be death or survival when patients enter the hospital

- Consistent with other CMS 30-day mortality measures

Cons:

- More difficult for hospitals to monitor
- Analytic sample is not representative of full set of Maryland discharges

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Mortality Measure with and without Random Exclusion

	With Random Exclusion Applied	With Random Exclusion NOT applied
Total Number of Stays	168,987	322,004
Total Number of 30-day Deaths	4,976	8,252
State Average Unadjusted 30-day Mortality Rate	2.94%	2.56%
Average number of cases per hospital	3,754	7,153
Reliability	0.86	0.90
Rank correlation between both versions of 30-day mortality measure (comparing rank performance when random exclusion is applied vs when it is not)		0.89

By Hospital Mortality Results for 2019
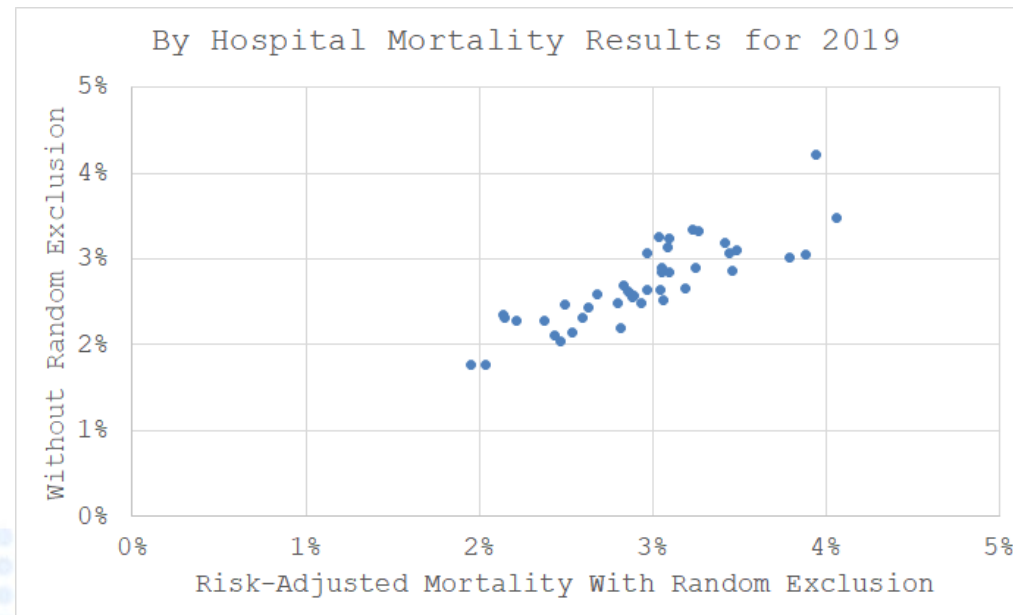
Lookback Period and Predictive Accuracy

- Few studies address value of lookback period for 30-day all-cause mortality in all-payer populations

- HSCRC lit review found mixed results for lookback periods as a whole

- 30-day mortality papers:

First Author	Journal	Population	Lookback period	Results
Dobbins	J. Clin. Epid.	Cancer surgery patients	0,1,2,3 years	No benefit of lookback period
Lee	Medical Care	Heart failure patients	1 year	Marginally improved prediction
Pritchard	J. Clin. Epid.	UK all payer, all cause	1 year	Improved model fit, uncertain clinical significance

Mortality Measure - options for RY 2024 and moving forward

Three Options for RY 2024:

1. Continue using IP Mortality measure
2. Use IP mortality in QBR and monitor 30-day measure
   - Adopt 30-day claims based measure for RY 2025
1. Use current IP Mortality measure for attainment and 30-day mortality measure for improvement
   - Similar to Palliative Care integration into the IP Mortality measure this would be one-year transition where in RY 2025 30-day measure would be exclusively used
   - Risk-adjustment may be less important when measuring improvement

HSCRC staff proposes that subgroup can suggest additional modeling and review of 30 day measure for PMWG input this fall

Note: As state develops infrastructure to collect hybrid data elements, HSCRC will consider transitioning to hybrid mortality measure

Hip Knee Arthroplasty Complications: Where Should We Focus?

	Inpatient	Inpatient and Outpatient
Medicare	Current Measure	Expand to Capture Care Moving Down Continuum?
All-Payer	Expand to All-Payer Outcomes?	Expand to Capture Care Moving Down Continuum? AND Expand to All-Payer Outcomes?

Hip Knee Arthroplasty Measures (see Appendix for more details)

Measure	Program
1)Inpatient risk standardized complications measure based on Medicare claims data	CMS IQR, VBP, CMS Comprehensive Care Joint Replacement (CJR) Program
2)Inpatient patient reported outcome measure (PROM) based on claims and surveys	CJR PRogram
3)Inpatient and outpatient complications measure based on electronic health records	CMS Measuring Outcomes in Orthopedics Routinely (MOOR) Project*
4)Inpatient and outpatient PROM measure based on electronic health records and survey (MOOR project)	CMS MOOR Project
5)Outpatient/ambulatory PROM, a process measure based on chart abstraction and survey	Joint Commission Certification for Hip and Knee Replacement

*The MOOR project is measured at physician level also includes development of two drug measures of opioid use and adverse drug events.

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Hip Knee Arthroplasty Complications: Measure Options

	Inpatient	**Inpatient and Outpatient**
Medi-care	1) CMS THA/TKA complications claims measure (IQR, VBP, CJR) 2) CMS inpatient PROM measure (CJR)	Measures 1) and 2) (**adapted for outpatient**)
All-Payer	Measures 1) and 2) (**adapted for all-payer**) 5) Joint Commission Outpatient/ambulatory PROM, a process measure based on chart abstraction and survey; the outcome is administration of the PROM survey, not the results.	3) CMS inpatient and outpatient complications measure based HR (**adapt for hospital**) 4) CMS's inpatient and outpatient PROM measure based on electronic health records and survey (**adapt for hospital**)

Topic 4: Subgroup Direction; Report to CMMI

Subgroup "Decision Points" to the PMWG

Person and Community Engagement

- HCAHPS
  - Add linear measures to incent incremental improvements
  - Offer up front investment opportunity
- Follow-Up
  - Add or monitor
  - Monitor Timely Follow-up for Behavioral Health in RY 2024
- ED Wait times
  - Develop eCQM infrastructure and re-introduce ED Wait Times beginning in RY 2024/25

Safety

- NHSN
  - Continue focus on current measures
  - Consider adding more innovative and less burdensome "digital" measures to QBR being developed by CDC

Subgroup "Decision Points" to the PMWG

Clinical Care

- Mortality
  - Continue development of 30-day mortality measure for PMWG consideration
- THA-TKA
  - Explore expanding current IP measure to all-payers as well as development of eCQM measure applicable to IP and OP adapted to hospitals

Report Review and Timeline

Report due to CMMI on Monday 8/16

- First drafts without today's final discussion have been reviewed in sections by HSCRC staff
- If interested, subgroup members are welcome to submit letters with written feedback to be acknowledged in the report by Friday 7/30
- MPR to compile sections and final discussion for second draft by Monday 8/2
- HSCRC quality team will incorporate feedback and send to leadership for final review
- HSCRC will share final report with subgroup when submitted to CMMI

Thank you for your Participation!

We could not have accomplished the progress we have achieved without this group's **discussion and engagement.** We appreciate the **open-mindedness**, the **constructive criticism**, the **suggested new directions,** the **general feedback,** and the **commitment to improving quality of care in Maryland.** To continue to evolve the QBR program, please join us for our **public meetings of the Performance Measurement Work Group in the fall**, and see the "Draft" and "Final" QBR policies presented to the Commission in late fall/early winter.

Appendix

Hip Knee Complication Measure Details

Measure	Index encounters	Outcome	Risk Factors
1) CMS's Inpatient risk standardized complications measure based on Medicare claims data	Identified by ICD-10 procedure codes from the initial encounter, exclusions are ICD-10 procedure and diagnosis codes. One encounter per calendar year is randomly selected for patients with multiple encounters. Specifications for inclusion and exclusion criteria are included in the methods report.	See Complication table. Outcomes are taken from ICD-10 diagnosis codes from the index encounter or from encounters occurring within the specified length of time from the index start date. Includes inpatient and outpatient claims for complications and mortality from CMS's vital statistics. Outcome definitions are provided in the methods report for the measure.	The source is diagnosis codes from claims records for the previous 12 months. Diagnosis codes are grouped into CCs and chosen by backward selection using split sample validation. Risk factors are specified in the methods report.

Complication Table	Time Frame (days)
Acute Myocardial Infarction	7
Pneumonia	7
Sepsis	7
Pulmonary embolism	30
Surgical site bleeding	30
Death	30
Wound infection/Periprosthetic joint infection	90
Mechanical Complication	90

Hip Knee Complication Measure Details

Measure*	Index encounters	Outcome	Risk Factors
2) CMS's Inpatient PROM measure based on claims and surveys*	ICD-10 procedure codes, exclusions are ICD10 procedure and diagnosis codes from the initial encounter. One encounter is randomly selected for patients with multiple encounters. Specifications for inclusion and exclusion criteria are included in the methods report.	Pre-admission and post-discharge Knee dysfunction and Osteoarthritis Outcomes Survey (KOOS) or KOOS Jr, Hip dysfunction and Osteoarthritis Outcomes Survey (HOOS) or HOOS Jr, Promis or VR-12 survey instruments are sources of outcomes.	The source is claims records from the previous 12 months, previous survey elements and census data. Diagnosis codes are grouped into CCs and risk factors are chosen by backwards selection. Risk factors are specified in the methods report.

*Used in CMS Comprehensive Joint Replacement program.
**FY 2022 Proposed Rule requesting comments on adoption in HIQR program.

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Hip Knee Complication Measure Details

Measure	Index encounters	Outcome	Risk Factors
3) CMS's inpatient and outpatient complications measure based on electronic health records	Procedures indicated on electronic medical record. Exclusions are procedures and diagnoses from the index encounter and encounters from the preceding 3 months. Value sets are identified in the measure information sheet.	See Complication table. Outcomes are taken from electronic health records for the index encounter or from encounters occurring within the specified length of time from the index start date, including only post discharge complications for outpatient surgeries, but index complications for inpatient surgeries. Value sets are identified in the measure information sheet.	Risk adjustment is based on an electronic health record model still under development.

Complication Table	Time Frame (days)
Acute Myocardial Infarction	7
Pneumonia	7
Sepsis	7
Pulmonary embolism	30
Surgical site bleeding	30
Death	30
Wound infection/Periprosthetic joint infection	90
Mechanical Complication	90

This effort is part of the Measuring Outcomes in Orthopedics Routinely (MOOR) project, which also includes a PROM and two post-discharge drug measures. These measures are calculated at the clinical practice level rather than the hospital level.

Hip Knee Complication Measure Details

Measure	Index encounters	Outcome	Risk Factors
4) CMS's inpatient and outpatient PROM measure based on electronic health records and survey	Procedures indicated on electronic medical record. Exclusions are procedures and diagnoses from the index encounter and encounters from the preceding 3 months. Value sets are identified in the measure information sheet.	Pre-admission and post-discharge Knee dysfunction and Osteoarthritis Outcomes Survey (KOOS) or KOOS Jr, Hip dysfunction and Osteoarthritis Outcomes Survey (HOOS) or HOOS Jr, Promis or VR-12 survey instruments are sources of outcomes.	Risk adjustment is based on an electronic health record model still under development.

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Hip Knee Complication Measure Details

Measure	Index encounters	Outcome	Risk Factors
5) JCR's Outpatient/ambulatory PROM, a process measure based on chart abstraction and survey	CPT codes from the medical record	Pre-admission and post-discharge Knee dysfunction and Osteoarthritis Outcomes Survey (KOOS) or KOOS Jr, Hip dysfunction and Osteoarthritis Outcomes Survey (HOOS) or HOOS Jr, Promis or VR-12 survey instruments are sources of outcomes. *Outcome is data collection.*	No risk adjustment is performed