maryland health services cost review commission

Final Recommendations for Updating the Quality-Based Reimbursement (QBR) Program for RY 2023

December 9, 2020

This is the final staff recommendation for the RY 2023 Quality Based Reimbursement Program.

Table of Contents

LIST OF ABBREVIATIONS

CDC   Centers for Disease Control & Prevention

CAUTI   Catheter-associated urinary tract infection

CDIFF   Clostridium Difficile Infection

CLABSI   Central Line-Associated Blood Stream Infection

CMS   Centers for Medicare & Medicaid Services

DRG   Diagnosis-Related Group

ED   Emergency Department

FFY   Federal Fiscal Year

HCAHPS   Hospital Consumer Assessment of Healthcare Providers and Systems

HSCRC   Health Services Cost Review Commission

MRSA   Methicillin-Resistant Staphylococcus Aureus

NHSN   National Health Safety Network

PQI   Prevention Quality Indicators

QBR   Quality-Based Reimbursement

RY   Maryland HSCRC Rate Year (Coincides with State Fiscal Year (SFY) July-Jun; signifies the timeframe in which the rewards and/or penalties would be assessed)

SIR   Standardized Infection Ratio

SSI   Surgical Site Infection

THA/TKA   Total Hip and Knee Arthroplasty Risk Standardized Complication Rate

VBP   Value-Based Purchasing

Policy Overview

Policy Objective	Policy Solution	Effect on Hospitals	Effect on Payers/ Consumers	Effect on Health Equity
The quality programs operated by the Health Services Cost Review Commission, including the Quality-Based Reimbursement (QBR) program, are intended to ensure that any incentives to constrain hospital expenditures under the Total Cost of Care Model do not result in declining quality of care. Thus, HSCRC's quality programs reward quality improvements and achievements that reinforce the incentives of the Total Cost of Care Model, while guarding against unintended consequences and penalizing poor performance.	The QBR program is one of several pay-for-performance quality initiatives that provide incentives for hospitals to improve and maintain high-quality patient care and value over time.	The QBR policy currently holds 2 percent of hospital revenue at-risk for Patient Experience of Care/Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey results, and in other measures in domains of Safety (Healthcare Associated Infections), and Clinical Care (inpatient morality, hip/knee arthroplasty complications).	This policy affects a hospital's overall GBR and so affects the rates paid by payers at that particular hospital. The HSCRC quality programs are all-payer in nature and so improve quality for all patients that receive care at the hospital.	The quality programs that assign hospitals credit for the better of attainment or improvement on the measures (QBR and RRIP) better allow the policies to target improvements in hospitals that serve patient populations impacted more by disparities in care. In the future, the QBR policy may provide direct hospital incentives for reducing disparities, similar to the approved readmission disparity gap improvement policy.

RECOMMENDATIONS

This document puts forth the RY 2023 Quality-Based Reimbursement (QBR) final policy recommendations that include maintaining the RY 2022 quality domains, scoring approach, and pre-set revenue adjustment scale. This final recommendation also proposes minimal changes to the program measures, as outlined below.

Recommendations for RY 2023 QBR Program:

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 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 composite 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 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.

INTRODUCTION

The Maryland Health Services Cost Review Commission's (HSCRC's or Commission's) Quality-Based Reimbursement (QBR) program is one of several pay-for-performance initiatives that provide incentives for hospitals to improve patient care and value over time. While the current Total Cost of Care (TCOC) Model Agreement between Maryland and the Centers for Medicare & Medicaid Services (CMS) does not have explicit performance requirements for Maryland's QBR program, the Commission has prioritized aligning the QBR program with the federal Value Based Purchasing (VBP) program, and has attempted to encourage improvement in areas where Maryland has exhibited poor performance relative to the nation.

Maryland has been working to update performance standards and targets in HSCRC's portfolio of quality and value-based payment programs with the onset of the Total Cost of Care (TCOC) Model Agreement with CMS. Per directives from HSCRC Commissioners[1] and upon approval of the TCOC Model, staff worked with stakeholders over the last two years to revise the Maryland Hospital Acquired Complications program, the Potentially Avoidable Utilization program[2], and the Readmissions Reduction Incentive Program for RY 2022 (Performance Period - CY 2020). It was the staff's intent to convene a subgroup to redesign the QBR program during CY 2020; however, HSCRC postponed convening the group due to the COVID-19 public health emergency (PHE) until next year. The QBR program will include minor updates this year, but will largely remain similar to prior iterations of the policy with the understanding that the program will be re-designed in CY 2021 for the RY 2024 policy.

Under the TCOC Model, the State must request exemptions from the CMS Hospital Acquired Conditions (HAC) program, Hospital Readmission Reduction program (HRRP), and Hospital Value-Based Purchasing (HVBP) program based on annual reports to CMS that demonstrate that Maryland's program results continue to be aggressive and progressive, meeting or surpassing those of the nation.   HSCRC submitted a report this year with its exemption request and received notification from CMS on September 29, 2020 that the exemptions were granted for Federal Fiscal Year 2021; the notification of exemption may be found in Appendix I.

Staff notes that, while the exemptions were granted, CMS raised concerns about Maryland's relatively poor performance in two of the VBP domains, specifically the HCAHPS measures in the Person and Community Engagement Domain and the CDC NHSN Infection measures in the Safety Domain.

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[1] In the fall of 2017, HSCRC Commissioners and staff support conducted several strategic planning sessions to outline priorities and guiding principles for the upcoming Total Cost of Care Model. Based on these sessions, the HSCRC developed a Critical Action Plan that delineates timelines for review and possible reform of financial and quality methodologies, as well as other staff operations.

[2] Maryland has implemented an efficiency measure in the Population-Based Revenue system, based on a calculation of potentially avoidable utilization (PAU), but it has not made efficiency part of its core quality programs as a domain because the revenue system itself incentivizes improved efficiency. PAU is currently defined as the costs of readmissions and a subset of admissions defined by the Agency for Healthcare Research and Quality Prevention Quality Indicators (PQIs).

Furthermore, as part of the exemption approval, CMS stipulated that a high-level work plan for the QBR Redesign needs to be submitted as part of the annual monitoring report (due December 31, 2020) and a QBR Redesign summary report is needed in 2021.

Maintaining Maryland's exemption from the national Value-based Purchasing program is important because it enables the state (via the HSCRC) to generate autonomous, quality-based measurement and payment initiatives that set consistent all-payer quality incentives.[3]   Furthermore, this exemption affords Maryland the flexibility to select performance measures and targets in areas where statewide improvement is needed, and allows Maryland to develop programs with greater potential for system transformation. For example, unlike the national VBP program, QBR does not relatively rank hospitals, but instead provides all hospitals the opportunity to earn rewards, which are determined using a prospective revenue adjustment scale.

The QBR program measures and domains are similar to those of the VBP program, but there are a few differences. Most notably, HSCRC has put higher weight on the Person and Community Engagement and Safety domains to encourage improvement on measures of patient experience, and QBR does not include an Efficiency domain. Staff recommends retaining this approach for the RY 2023 policy, while also targeting Maryland's underperforming areas with the QBR Redesign Subgroup.

Generally the HSCRC tries to align the QBR program to measures of national import, and where feasible, the Commission incorporates more comprehensive measurement relative to the VBP program,[4] most notably an all-cause, inpatient Maryland mortality measure versus VBP's condition-specific 30-day mortality measures. During the coming year, staff will work with contractor support to continue developing an all-cause, all-condition 30-day mortality measure applicable to all payers, expanding further the QBR mortality measure's potential to incentivize better outcomes outside the hospital walls, which is a central tenet of the TCOC Model.

This report provides final recommendations for updates to Maryland's QBR program for Rate Year (RY) 2023, with minimal updates from RY 2022. The QBR program has potential scaled penalties or rewards of up to 2 percent of inpatient revenue. Hospital performance is assessed relative to national standards for its Safety and Person and Community Engagement domains. For the Clinical Care domain, the program uses Maryland-specific standards for the inpatient mortality measure, and the program uses national standards for the hip and knee replacement (THA/TKA) complications measure.

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[3] For more information on the VBP Exemption (granted annually by CMMI), please see Appendix I.
[4] For more information on the VBP program, see https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/HVBP/Hospital-Value-Based-Purchasing.html, last accessed 10/28/19.

BACKGROUND

The Affordable Care Act established the hospital Medicare Value-Based Purchasing (VBP) program,[5] which requires CMS to reward hospitals with incentive payments for the quality of care provided to Medicare beneficiaries. Figure 1 below compares the RY 2022 QBR measures and domain weights to those used in the CMS VBP program.

Figure 1. RY 2022 QBR Measures and Domain Weights Compared with CMS VBP Program

	Maryland QBR Domain Weights and Measures	CMS VBP Domain Weights and Measures
Clinical Care	15 percent -2 measures: all cause inpatient Mortality, THA/TKA complications measure	25 percent -5 measures: 4 condition-specific Mortality, THA/TKA complications measure
Person and Community Engagement	50 percent-8 HCAHPS measures	25 percent- 8 HCAHPS measures
Safety	35 percent -5 measures: 6 CDC NHSN HAI measure categories (2 are combined)	25 percent 5 measures: CDC NHSN HAI measures
Efficiency	N/A	25 percent-Medicare Spending Per Beneficiary measure

With the selected measures from above, the QBR program assesses hospital performance based on the national average (threshold) and the top performance (benchmark) values for all measures, except the HSCRC calculated in-hospital mortality rate (which uses state data to calculate performance standards). Thus, a score of 0 percent means that performance on all measures is below the national average or not improved, while a score of 100 percent means performance on all measures is at or better than the top 5 percent best performing rates. This scoring methodology is the same as the national VBP program. However, unlike the VBP program that relatively ranks all hospitals, the QBR program uses a preset scale to determine each hospital's revenue adjustment, offering hospitals far more predictability.

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[5] Details of CMS VBP measures may be found at: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Measure-Methodology.html.

In the RY 2019 QBR recommendation, the Commission approved using a preset scale based on national performance to ensure that QBR revenue adjustments are linked to Maryland hospital performance relative to the nation. Prior to RY 2019, Maryland hospitals were evaluated by national thresholds and benchmarks, but their scores were then scaled in accordance with Maryland performance, resulting in Maryland hospitals receiving financial rewards despite falling behind the nation in performance. Consequently, the scale is now 0 to 80 percent regardless of the score of the highest performing hospital in the state, and the cut-point at which a hospital earns rewards in RYs 2021 and 2022 is 41 percent. This reward and penalty cut-point was based on an analysis of FFY16-FFY18 national Value-Based Purchasing scores, which indicated the average national score using Maryland domain weights (i.e., without the Efficiency domain) was around 41 percent (range 39.9 to 42.7). While staff originally proposed a 45 percent cut-point for RY 2021 to further ensure Maryland hospitals that received rewards were performing better than the nation, the Commission amended the recommendation to have the cut-point be at the national average of 41.

As a recap, the methodology for calculating hospital QBR scores and associated inpatient revenue adjustments has remained essentially unchanged since RY 2019, and involves:
 1) assessing performance on each measure in the domain;
 2) standardizing measure scores relative to performance standards;
 3) calculating the total points a hospital earned divided by the total possible points for each domain;
 4) finalizing the total hospital QBR score (0-100 percent) by weighting the domains based on the overall percentage or importance the Commission has placed on each domain; and
 5) converting the total hospital QBR scores into revenue adjustments using the preset scale that ranges from 0 to 80 percent.

The methodology is illustrated in Figure 2 below.

Figure 2. Process for Calculating RY 2022 QBR Scores

Figure 2. Process for Calculating RY 2022 QBR Scores
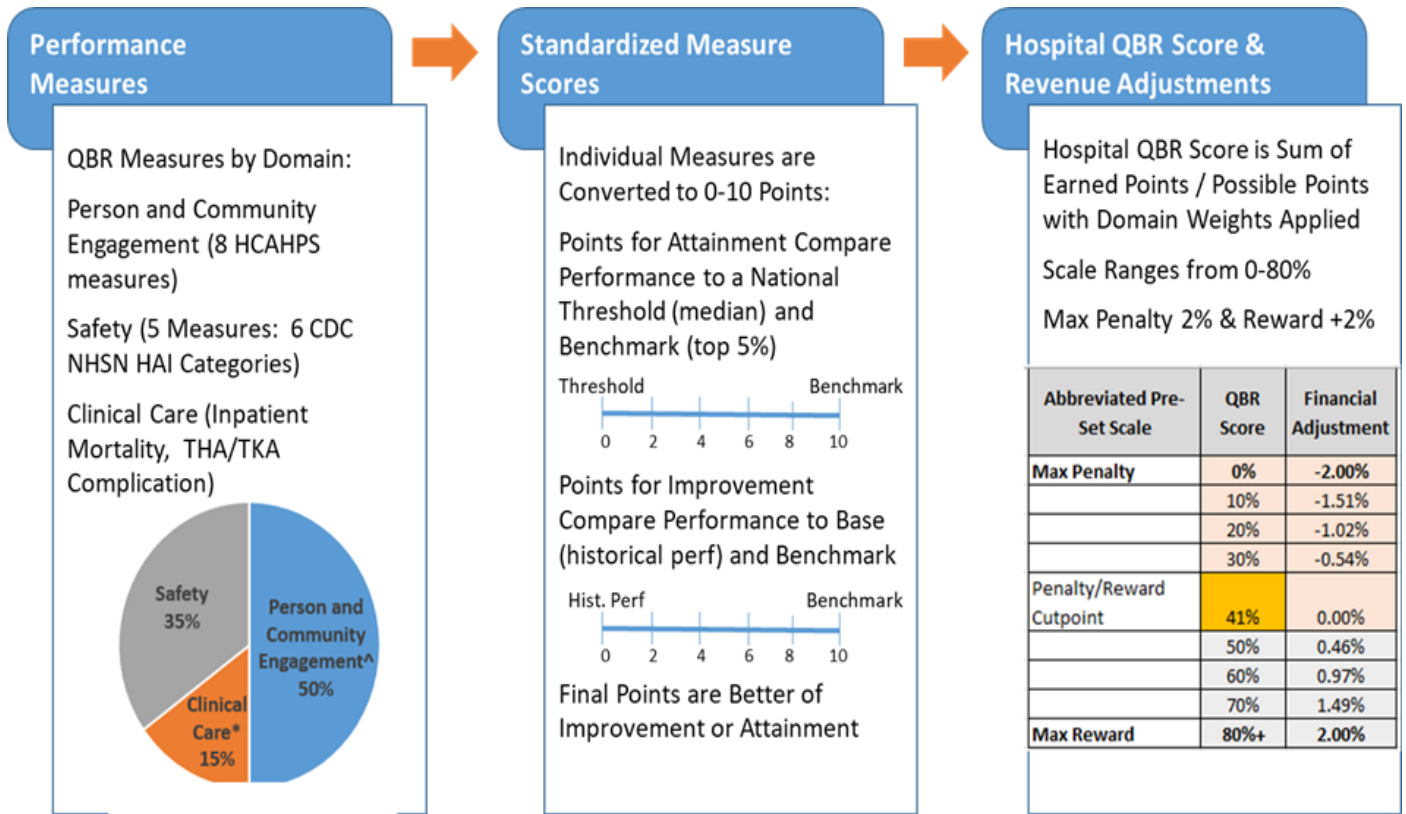
Appendix II contains further background and technical details about the QBR and VBP programs.

ASSESSMENT

The purpose of this section is to present an assessment, using the most current data available, of Maryland's performance on measures used in QBR as well as other measures where national comparisons are available. The assessment together with the deliberations of the Performance Measurement Workgroup (PMWG) serve as the basis for the final recommendations for the RY 2023 QBR program. In addition, staff has modeled the QBR revenue adjustments with the recommended changes.

Maryland Performance by QBR Domain

Person and Community Engagement

During RY 2021, the **Person and Community Engagement** domain measured performance using the HCAHPS patient survey, as well as one emergency department (ED) wait time measure for admitted patients (ED-2b Decision to admit time to actual admission time) that was part of the CMS Inpatient

Quality Reporting (IQR) program; the addition of the emergency department wait time measures was an example of Maryland's quality programs differing from the nation to target an area of concern as Maryland has had extended ED wait times compared to the nation over a number of years. However, as of CY 2020, the CMS IQR program no longer requires submission of the measure, so the measure was removed in the RY 2022 policy. Staff does note that CMS has made optional an electronic clinical quality measure (eCQM) version of the ED-2b measure for hospitals to submit. Some stakeholders, including members of the Commission, have voiced support for including an ED wait time measure for patients not admitted to the hospital (OP 18-b- time of arrival to departure from the ED); in the policy deliberations for RYs 2021 and 2022, adoption of this measure was not approved as concerns were raised about increased wait times due to hospitals' efforts to treat and provide care management services as appropriate in the ED rather than admit this subset of patients. Options for ED wait time measures will again be considered for future adoption through the work of the QBR redesign subgroup staff will convene in CY 2021.

Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)

Figures 3 and 4 below provide graphic and numeric representations respectively of the HCAHPS measure results for the RY 2021 base and performance periods for Maryland compared to the Nation, revealing that Maryland continues to lag behind the Nation, but both the nation and Maryland are improving at similar rates overall.

For each HCAHPS measure, the changes over time from the base to the performance period for Maryland and the Nation, and the gaps in performance between Maryland and the Nation, are provided below.

- **Communication with nurses-** Maryland remained the same and the nation improved by 1 percent, and the gap widened by -1 percent, with Maryland -5 percent below (worse than) the Nation.
- **Communication with doctors-** Maryland and nation remained the same, as did the gap, with Maryland at -4 percent below the Nation.
- **Responsiveness of hospital staff-** Maryland improved by 1 percent while the nation remained the same, and the gap narrowed (improved) for Maryland from -9 percent to -8 percent below the Nation.
- **Communication about medicine-** Maryland improved by 1 percent and the nation remained the same, and the gap decreased for Maryland from -6 percent to -5 percent below the Nation.
- **Cleanliness and quietness-** Maryland improved by 1.5 percent and the nation improved by 0.5 percent, and the gap decreased for Maryland from -6.5 percent to -5 percent below the Nation.
- **Discharge information-** Maryland and the nation remained the same, and the gap remained the same for Maryland at -1 percent below the Nation.
- **Post discharge care understood**- Maryland remained the same and the nation improved by 1 percent, and the gap widened by -1 percent with Maryland at -5 percent below the Nation.

- **Overall hospital rating-** Maryland declined by -1 percent and the nation remained the same, and the gap widened for Maryland by -1 percent to -7 percent below the Nation.

Figure 3. HCAHPS Results: Maryland Compared to the Nation, RY 2021
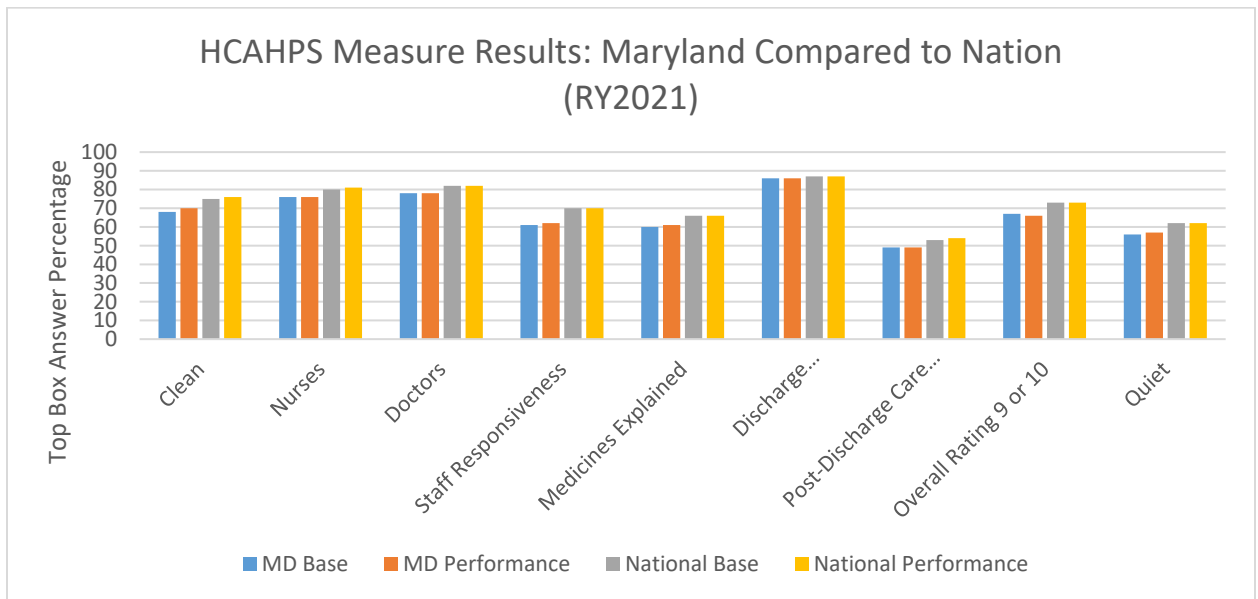
Figure 4. HCAHPS Numeric Results: Maryland Compared to the Nation, RY 2021[6]

	Clean/Quiet	Nurses	Doctors	Staff Responsiveness	Medicines Explained	Discharge Information Provided	Post-Discharge Care Strongly Understood	Overall Rating 9 or 10
MD Base	62	76	78	61	60	86	49	67
MD Performance	63.5	76	78	62	61	86	49	66
National Base	68.5	80	82	70	66	87	53	73
National Performance	69	81	82	70	66	87	54	73

While the statewide data suggests that Maryland continues to lag behind the nation on HCAHPS measures, there is variability in performance across individual hospitals, with some performing better than the national average on each measure. Furthermore, while the statewide improvements were modest, there were individual hospitals with significant improvements on each measure (Appendix III).

Stakeholders on the PMWG have previously raised concerns about HCAHPS performance. Payers have raised concern about the lack of improvement in the HCAHPS measures, and hospitals about the potential impact of the patient mix adjustment changes that the CMS VBP program updates between the base and performance periods at the federal level. Regarding the lack of improvement, alternative

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[6] This Figure provides the percent of patients surveyed that rated the hospitals for each of the HCAHPS categories in Maryland and the nation a score of 9 or 10 on a scale of 1-10 in the base and performance periods for RY 2021.

incentive methodology approaches to target HCAHPS will be considered as part of the QBR redesign. Regarding the patient mix adjustment changes, as noted in the RY 2022 policy, CMS has advised staff that these changes occur on an ongoing basis, and are not considered materially significant for the VBP program. Further, staff recognizes that the use of the prospective preset scale may make this a potential issue to consider in Maryland. [7] Therefore, staff proposes again to work with QBR redesign subgroup to be convened in CY 2021 and the PMWG to evaluate the impact, if any, of the patient mix adjustment.

Timely Follow-up after Acute Exacerbations of Chronic Conditions

As part of the TCOC model, the State is required to establish Statewide Integrated Health Improvement Strategies (SIHIS) across three domains that include hospital quality, care transformation across the system, and total population health.[8] Within the care transformation across the system domain, a goal has been established to improve care coordination for patients with chronic conditions. To assess this goal, staff identified a National Quality Forum (NQF) endorsed health plan measure that evaluates the percentage of ED visits, observation stays, and inpatient admissions for exacerbations of six conditions where a patient received follow-up within time frames recommended by clinical practices;[9] the chronic conditions and follow-up time frames include:

- Hypertension (7 days)
- Asthma (14 days)
- Heart Failure (14 days)
- CAD (14 days)
- COPD (30 days)
- Diabetes (30 days)

It should be noted that since non-hospital outpatient data is required for this measure that the HSCRC staff can only calculate follow-up for Medicare FFS beneficiaries at this time using Medicare claims.[10] Figure 5 provides a comparison of Maryland versus national Medicare performance for each condition, as well as the total follow-up rate across all conditions for CY 2019.[11] This figure shows that Maryland performs slightly worse on four of the conditions and the same or better on twoof the conditions. Since the TCOC model includes a Maryland specific primary care model, it is highly likely that CMS will include

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[7]The Patient-Mix Adjustment document for the October 2020 Public Report period can be found at: https://www.hcahpsonline.org/globalassets/hcahps/mode-patient-mix-adjustment/october_2020_pma_web_document.pdf

[8] For more information, refer to the Performance Measurement Workgroup meeting slides for August, September and October, 2020.

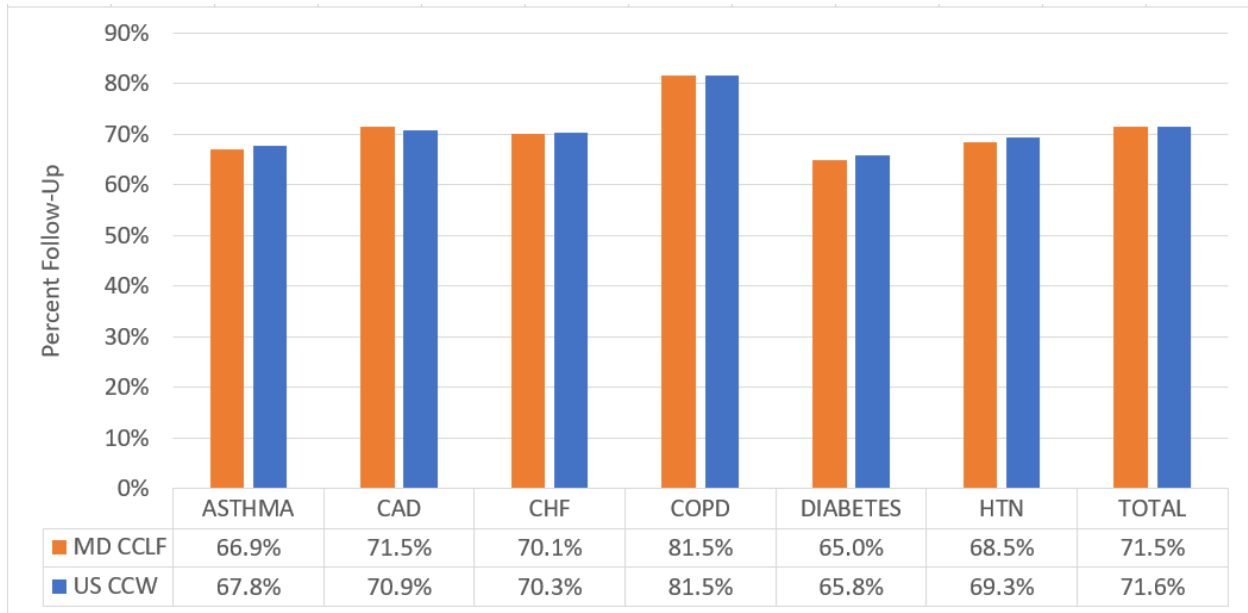[9] The measure, NQF 3455, was developed by IMPAQ on behalf of CMS.

[10] HSCRC staff is working with Medicaid and other payers to explore whether we can calculate an all-payer version of this measure in the future.

[11] Maryland rates are calculated from the Claims and Claims-line Feed (CCLF) data, while the national rates are calculated from the 5 percent sample in the CMS Chronic Condition Warehouse (CCW).

timely follow-up care in its overall evaluation of the TCOC Model; staff notes that timely follow-up care was also evaluated under the All-Payer Model.[12] Thus, there are many reasons why Maryland should focus on improving rates of timely follow-up care relative to the nation.

Figure 5. Follow-Up Rate for Medicare FFS in 2019, Maryland vs. National

	ASTHMA	CAD	CHF	COPD	DIABETES	HTN	TOTAL
MD CCLF	66.9%	71.5%	70.1%	81.5%	65.0%	68.5%	71.5%
US CCW	67.8%	70.9%	70.3%	81.5%	65.8%	69.3%	71.6%

Once this measure was selected for SIHIS, staff worked with stakeholders to develop performance targets for Year 3, 5, and 8 as shown in Figure 6. To bolster the State's efforts in meeting these SIHIS targets, staff proposes to add a hospital-level QBR measure to the PCE Domain for RY 2023. The PCE domain was selected since discharge info (of which getting appropriate follow-up should be included) is one of the HCAHPS measures. In general, PMWG members and other stakeholders have been supportive of this SIHIS goal and understand the rationale to include a hospital-level incentive (see additional feedback recommending that a delay in implementing this measure in the Stakeholder Feedback section). Staff will implement this measure using the methodology that is used for other QBR measures. Specifically, staff will use a CY 2019 base period to calculate a threshold (statewide hospital median rate) and benchmark (mean of the top 10 percent of Maryland hospitals) and then assign hospital scores on this measure (0-10 points) by comparing CY 2021 performance to the threshold and benchmark for attainment and CY 2019 rates for improvement. Similar to other measures in the QBR program, staff will provide opportunities to earn points on this measure as the higher of attainment and improvement. Furthermore, staff will work with CRISP to leverage health information exchange tools for

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[12] The CMS evaluation of the MD All-Payer Model, conducted by RTI, included an all condition evaluation of follow-up after discharge within fourteen days; staff believes that the NQF condition-specific follow-up measure is more clinically precise and actionable.

hospitals to track patient follow-up and to develop monitoring reports so that hospitals can track hospital progress during the performance period.

Domain 2: Care Transformation Domain				
Goal: Improve care coordination for patients with chronic conditions				
Measure	2018 Baseline	2021 Year 3 Milestone	2023 Year 5 Interim Target	2026 Year 8 Final Target
Timely Follow-up After Acute Exacerbations of Chronic Conditions^ (NQF# 3455)	71.36%	72.26% 1.25 percent improvement	73.16% 2.52 percent improvement	75.00% 5.10 percent improvement or 0.50 percent better than the national rate

Based on the analysis of the Person and Community Engagement domain, HSCRC staff proposes to continue to weight this domain at 50 percent of the QBR score, with the follow-up measure added to the HCAHPS measures in the domain. Staff proposes to consider ED wait time measure options, including the eCQM version of the ED-2b measure, as part of the QBR redesign during CY 2021 with potential re-adoption of an ED throughput measure for the RY 2024 policy.

Safety Domain

The **Safety** domain comprises five measures of six CDC National Health Safety Network (NHSN) healthcare associated infection (HAI) categories. As illustrated in Figure 7 below, Maryland's performance on the NHSN measures has been mixed (lower scores are better). Average hospital standardized infection ratios (SIRs) for five of the six HAI categories declined (improved) both nationally and for Maryland in the performance period compared to the base.[13] Maryland's improvement from the base was: better than that of the nation for three of the six measures (SSI colon, MRSA, and CDIF), and; on par with the nation for two measures (CLABSI CAUTI). Both Maryland and the nation were worse in the performance period than the base period for SSI Hysterectomy. Finally, in the performance period, Maryland's infection rates were better (lower) for MRSA; on par for SSI colon and CDIFF, slightly worse (higher) for CLABSI and CAUTI; and, markedly worse for SSI hysterectomy.

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[13] While there are six Healthcare Associated Infection categories, the two SSI colon and hysterectomy categories are combined resulting in five Safety domain measures.
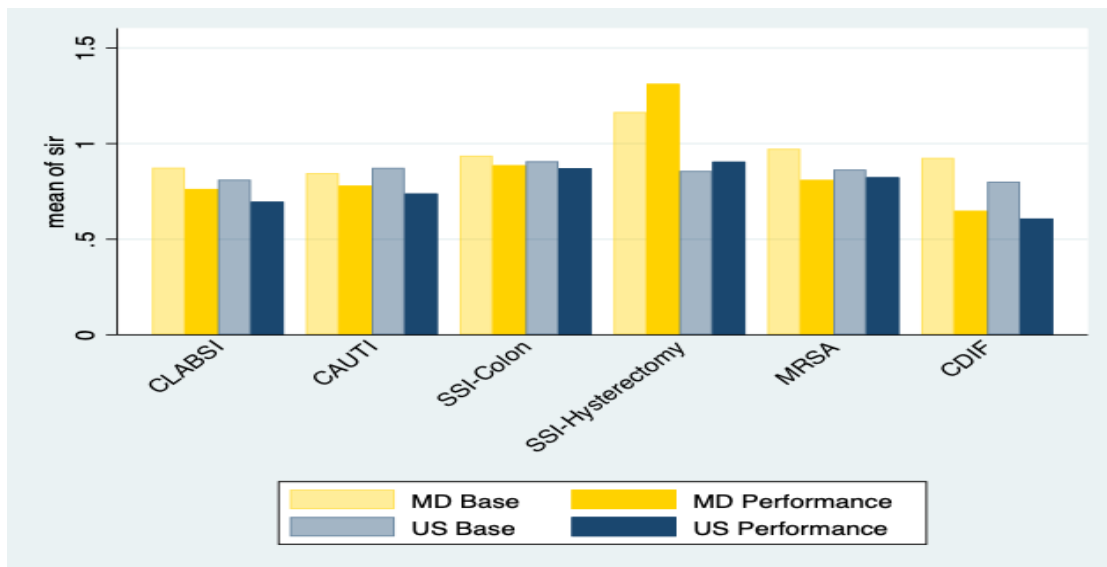
Patient Safety Indicator (PSI)-90

The Agency for Healthcare Research and Quality (AHRQ) Patient Safety Indicators (PSI) were developed[14] and released in 2003 to help assess the quality and safety of care for adults in the hospital. PSIs focus on potential in-hospital complications and adverse events following surgeries, procedures, and childbirth.

AHRQ's specified PSI uses include:

- Assess, monitor, track, and improve the safety of inpatient care
- Comparative public reporting, trending, and pay-for-performance initiatives
- Identify potentially avoidable complications that result from a patient's exposure to the health care system
- Detect potential safety problems that occur during a patient's hospital stay

The discharge weighted average of the observed-to-expected ratios for the following subset of AHRQ's PSIs comprise the PSI-90 composite measure:

- PSI 03 Pressure Ulcer Rate
- PSI 06 Iatrogenic Pneumothorax Rate

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[14] AHRQ contracted with the University of California, San Francisco, Stanford University Evidence-based Practice Center, and the University of California Davis for development. For additional Information: https://www.qualityindicators.ahrq.gov/Modules/psi_resources.aspx

- PSI 08 In-Hospital Fall With Hip Fracture Rate
- PSII 09 Perioperative Hemorrhage or Hematoma Rate
- PSI 10 Postoperative Acute Kidney Injury Requiring Dialysis Rate
- PSI 11 Postoperative Respiratory Failure Rate
- PSI 12 Perioperative Pulmonary Embolism (PE) or Deep Vein Thrombosis (DVT) Rate
- PSI 13 Postoperative Sepsis Rate
- PSI 14 Postoperative Wound Dehiscence Rate
- PSI 15 Abdominopelvic Accidental Puncture or Laceration Rate

CMS first adopted the composite in the VBP program in FFY 2015 and removed the measure in FY 2019-FY 2022 due to operational constraints from the International Classification of Diseases, Tenth Revision (ICD-10) transition. The HSCRC had used the ICD-9 version of this measure in the QBR program. CMS adopted the updated NQF endorsed ICD-10 version of the measure that will be used beginning with the FY 2023 Hospital VBP program.[15]

To align with the VBP program and expand the QBR program's measurement of preventable complications that cause patient harm and increase the cost of hospital care, staff vetted the inclusion of the all-payer version of the PSI-90 measure in QBR with the PMWG stakeholders. In general, staff and stakeholders are supportive of including this measure, as it was used previously and is part of national VBP program. Maryland statewide performance has improved (lower rates) on the PSI-90 overall composite as well as the majority of the component indicator measures between 2016 and 2018 as illustrated in Figure 8 below.

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[15] For more information on the measure removal and adoption, reference the FY 2018 IPPS/LTCH PPS final rule (82 FR 38242-38244) and (82 FR 38251-38256).

Figure 8. Maryland Statewide All-Payer Performance on PSI-90 and Component Indicators, 2016-2018

Maryland PSI-90 and Component Performance '16-'18

	12, Periop PE or DVT	11, Postop Resp Fail.	13, Postop Sepsis	09, Periop Bleeding	15, Accid Punc./Lac.	90, Composite	14, Postop Wound Dehis	10, Postop Kid inj w/Dial.	03, Ulcer	06, Pneumoth orax	08, Fall W/ Hip FX
2016	4.05	3.60	2.84	2.30	1.21	0.89	0.78	0.64	0.55	0.17	0.08
2017	3.61	2.99	2.92	2.32	1.31	0.86	0.81	0.47	0.60	0.19	0.07
2018	3.47	2.70	3.09	2.19	1.07	0.84	0.54	0.56	1.22	0.16	0.07

Figure 9 below illustrates the hospital-level performance on the PSI-90 composite measure for CY 2018; the wide variation in performance by hospital suggests there is opportunity for improvement on this measure.

Figure 9. PSI-90 Hospital-Level Performance, CY 2018

PSI-90 Composite Rate - CY 2018

PSI90 Patient Safety and Adverse Events Composite — Statewide PSI Rate
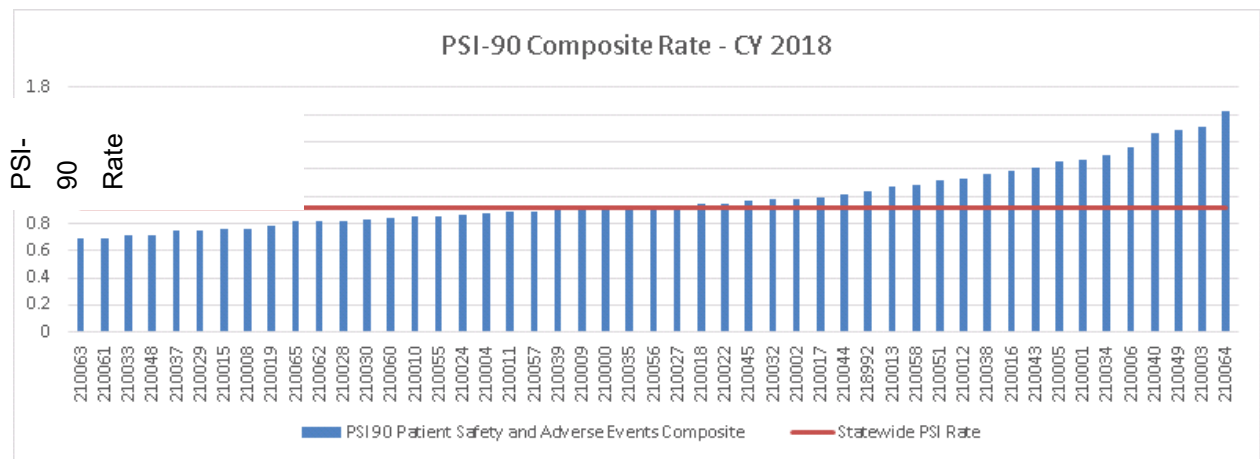
Based on assessment of the Safety domain, Staff proposes continuing to weight the domain at 35 percent of the total QBR score, and to include the PSI-90 composite measure back into the program. Regarding Maryland performance on the NHSN HAI measures, staff proposes to consider options for alternative methodologies to further assess performance and to target improvement as part of the QBR redesign work in CY 2021; this will include evaluating statewide

performance against the VBP benchmark and threshold values for the most current performance period, among other evaluation and incentive design approaches.

Clinical Care Domain

The QBR **Clinical Care** domain consists of one all-payer, all-cause, all-condition inpatient mortality measure, while the Medicare VBP program includes four 30-day condition-specific mortality measures (Heart Attack, Heart Failure, Pneumonia, and COPD). Medicare also monitors two additional 30-day mortality measures for Coronary Artery Bypass Graft and Stroke, b
ut does not include these measures in VBP. Both QBR and VBP include the Total Hip and Knee Arthroplasty (THA/TKA) complication measure on Medicare patients with elective primary procedures.

Based on the analysis of the weighted average rates for Maryland versus the nation for the condition specific mortality measures, Maryland performs similarly to the nation for all condition-specific measures of 30-day mortality (Figure 10).

Figure 10. Maryland Hospital Performance Compared with the nation on CMS Condition-Specific Mortality Measures
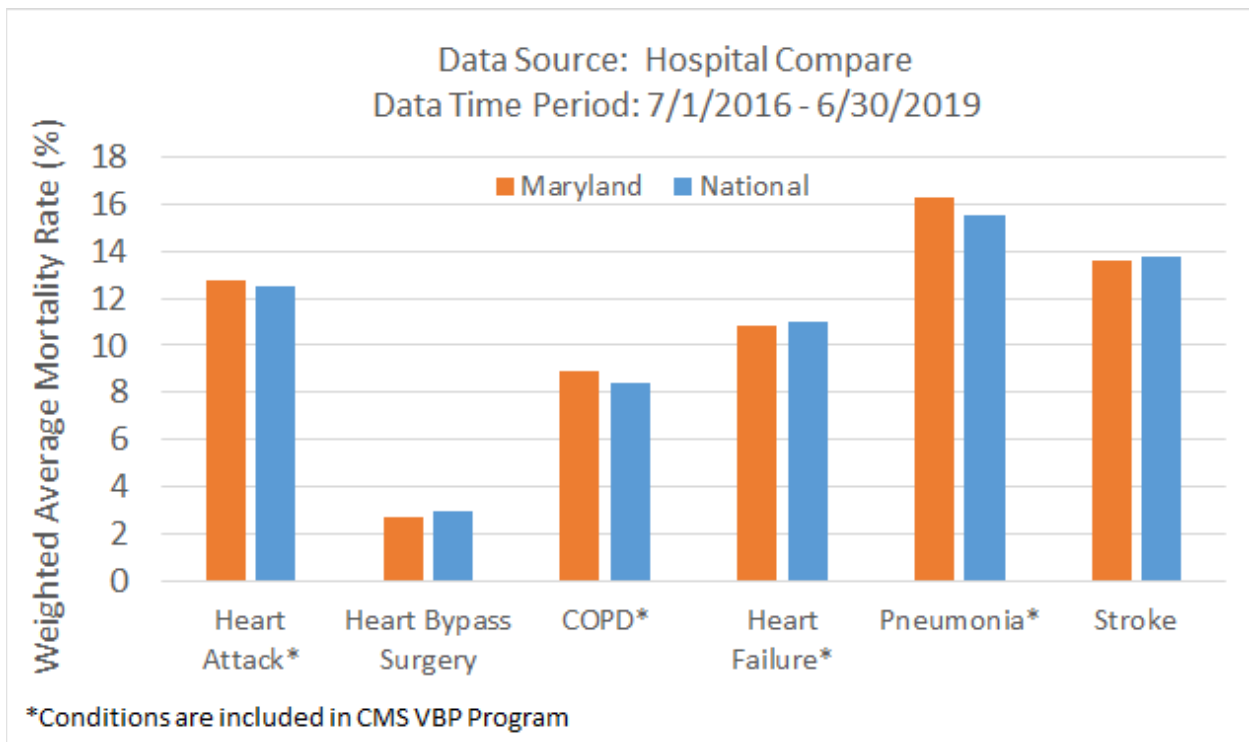
For the QBR all-payer inpatient mortality measure for RY 2021, which assesses hospital services where 80% of the mortalities occur (80% DRG exclusion), statewide survival rate increased (improved) from

95.57% in the base period to 96.00% in the performance period. As illustrated in Figure 11 below, all but three hospitals earned points for either attainment or improvement on the mortality measure; 34 hospitals performed better than the statewide threshold (50th percentile) as they earned at least one attainment point.

Figure 11. Maryland Hospital Performance, FY 2021 QBR

Inpatient All Condition, All Payer Mortality Measure

Number of Hospitals Scoring Points		Attainment Points	
		Yes	No
Improvement Points	Yes	29	3
	No	5	8

For RY 2023, staff is not proposing any significant methodology changes to the inpatient mortality measure.   However, staff continue to work with contractor support to develop an all-payer, all-cause mortality measure and plan to develop reports for monitoring this measure during CY 2021. Furthermore, this new mortality measure will require additional vetting with the QBR redesign subgroup and the PMWG during the course of the coming year, with potential plans for inclusion of the measure in the RY 2024 QBR program.

Hip and Knee Arthroplasty Complications

For the hip and knee complication rate measure for RY 2021, Figure 12 illustrates that, based on analysis of the weighted average rates for Maryland and the nation, Maryland performed better than the nation on this measure.

Figure 12. Maryland THA/TKA Measure Performance

Compared to the Nation
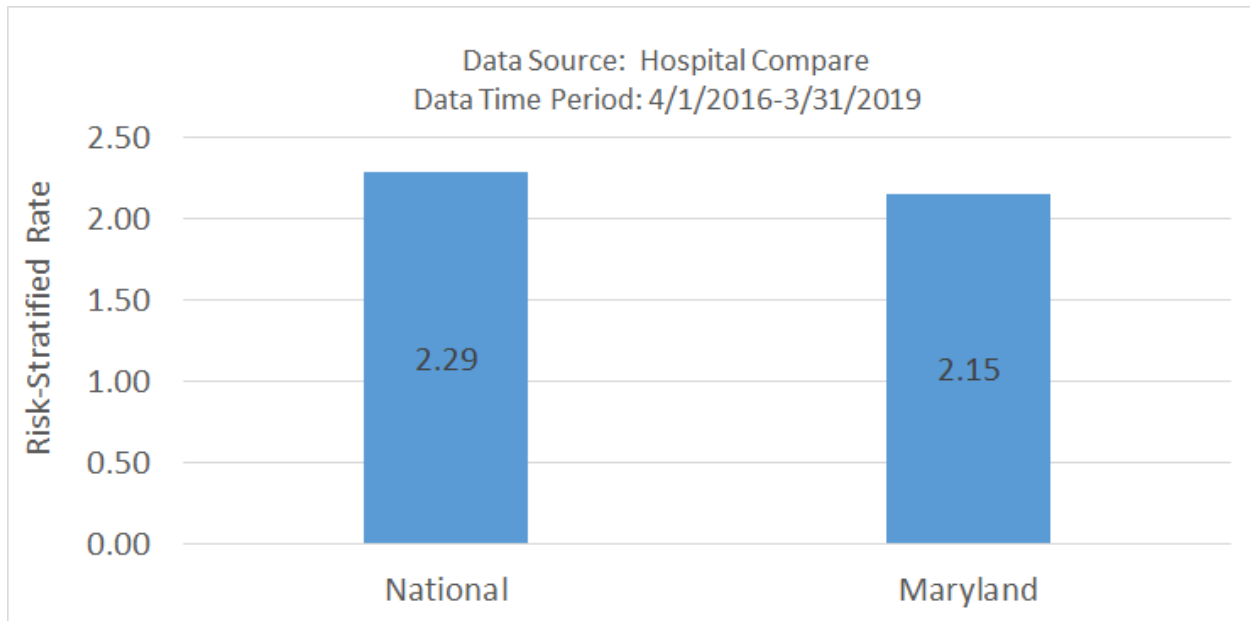
Since this measure is calculated by Hospital Compare using Medicare claims data using 3-year base and performance periods and includes only Medicare patients, payer stakeholders of the PMWG have voiced support for expanding this measure to the commercial population and other payers if feasible. In addition, staff notes that this measure is applicable only to patients in the inpatient setting. With the removal of elective hip and knee replacement procedures from the Medicare "inpatient only" list--procedures for which Medicare will reimburse only if performed in the inpatient setting--, and the shift of these procedures to the outpatient setting, staff believes the QBR redesign subgroup should consider both payer and care setting applicability options for measure expansion.

THA-TKA and Low Case Volumes and Complexity Exclusion

Staff proposed at the November PMWG meeting a low case volume and high complexity exclusion. Currently Johns Hopkins is excluded from the THA-TKA measure because they do not have 25 elective THA-TKA procedures during the three year performance period; UMMS however was included in RY 2021 with 29 cases several of which UMMS does not believe should have been classified as elective. Given these concerns, staff propose that for RY 2023 hospitals with less than 50 elective procedures over three years that are in the top 10th percentile of complexity as defined by the average case-mix index are excluded. To prospectively determine the measure exclusion, the RY 2023 policy will use the RY 2021 THA-THA results for case counts and CY 2018 and CY 2019 inpatient HSCRC case-mix data for average case-mix. Appendix IV provides this data by hospital and shows that the only hospital excluded is

22

UMMC.

Staff proposes continuing to include the inpatient mortality measure and hip and knee replacement complication measure in the Clinical Care domain consistent with the VBP program, and continuing to weight the Clinical Care domain at 15 percent.
Appendix V details the available published performance standards (for VBP measures) for each measure by domain for RY2024; staff will calculate and disseminate the inpatient mortality standards when Version 38 of the 3M APR DRG grouper is implemented.

COVID-19 Public Health Emergency Program Adjustments

Staff notes that, 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 still 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 at this time if Maryland has flexibility in suspending our RY 2022 pay-for-performance programs, and furthermore, Maryland's decision must be made prior to CMS making their decision due to the prospective nature of our pay-for-performance programs. However, CMMI has strongly suggested that the State must have quality program adjustments, and has further 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).

In context of the CMS announcement and subsequent CMMI comments, staff has evaluated the data issues and options for the RY 2022 QBR program in Maryland, as illustrated in Figure 13 below.

Figure 13. RY 2022 COVID-Related Data Concerns and Options

COVID Data Concern	Inpatient Mortality (source: HSCRC case mix data)	HCAHPS, CDC NHSN, Hip Knee Complications (source: CMS Hospital Compare)
If only 6 months of data for CY 2020: • Is 6-months data reliable? • What about seasonality? • How will HSCRC access the six months of Hospital Compare data, typically presented on a rolling 12-months basis?	• 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.)
If no data for CY 2020	• Consider using CY 2019 data, (re-using 4 quarters of RY 2021) or combining CY 2018 (re-using 4 quarters of RY 2020) with CY 2019 and using 2 year average.	• 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 (if available), 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

At this stage, staff believes the most appropriate approach for the QBR program is to exclude the COVID-19 patients[16] from the inpatient mortality measure if any CY 2020 data is used. Over the coming months, staff will work to assess any case-mix adjustment and performance standard issues due to the absence of COVID-19 patients in the base period and normative values, and to finalize the performance period. Staff will provide updates to the Commission in February, at the earliest, on the final decisions for any adjustments to all RY 2022 quality policies.

For RY 2023, the program to calculate the mortality measure will use v38 of the APR DRG grouper, which is updated with additional clinical logic changes impacting Risk of Mortality for COVID-19 positive patients. Staff will need to consider any additional modifications to address case-mix adjustment and performance standard concerns that may arise from inclusion of COVID-19 positive patients in the performance period, especially since COVID-19 cases were not part of the statewide normative values. Furthermore, based on stakeholder comments, analyses should be done on case-mix adjustment and performance standards concerns for non-COVID patients. For the other CMS Hospital Compare measures, staff will wait for updates from CMS in the coming months on how they will address the data issues for the FFY 2023 VBP program and adopt their approach if feasible.

Score and Revenue Adjustment Modeling

For this final policy, staff compared the RY 2021 scores and revenue adjustments without the ED wait time measure and with the incremental addition of the PSI-90 and follow-up measures. This modeling has been updated since the draft policy with updated PSI[17] and follow-up data. Beyond the measure changes, the QBR scores and revenue adjustments were calculated using the methodology approved for RY 2021 and RY 2022. This includes maintaining the reward/penalty cut-point at 41 percent. Since the draft policy, staff have calculated what the average VBP score would be nationally if the VBP program had the QBR domains and weights. While the national average score for FFY 2020 was slightly lower than the FFY2019 (40.2 percent vs 40.9 percent, respectively), the average VBP score for the last five years is 41.2 percent, which supports the cutpoint remaining at 41 percent. Specifically, these are the three models included in this policy:

- Model 1: RY 2021 data and time periods without ED wait time measure
- Model 2: Model 1 + PSI-90 (FY 18 base, CY19 performance)
- Model 3: Model 2 + follow-up measure (CY17 base, CY19 performance)

Hospital-specific domain scores and total QBR scores for each model are included in Appendix VI. The modeled hospital-specific and statewide revenue impacts are found in Appendix VII. Figure 14 provides

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[16] COVID-19 cases are defined as those coded with the ICD10 code U07.1

[17] The PSI-90 version was updated to the latest AHRQ v2020 logic; however staff only had FY2019 data so the scoring for this measure in the modeling is for attainment only and that may underestimate scores.

descriptive statistics for the total QBR scores for each model. This indicates that inclusion of the PSI measure (Model 2) reduces the average hospital score slightly, while inclusion of the follow-up measure with PSI (Model 3) raises the average score slightly, albeit they are still less than Model 1. Staff believes, however, that the changes in scores are not significant enough to warrant a change to the revenue adjustment scale.

Figure 14. Hospital Score Models

Descriptive Statistics	Model 1: RY 2021 without ED wait times	Model 2: Model 1 with PSI	Model 3: Model 2 with Follow Up
Median	32.98%	30.78%	31.55%
Average	33.33%	32.10%	32.30%
Min	14.30%	12.08%	12.90%
Max	49.33%	50.17%	50.48%
25th Percentile	25.58%	24.33%	26.81%
75th Percentile	41.83%	38.65%	38.24%

Using the scores presented above, staff modeled revenue adjustments using the RY 2022 preset scale. This scale is designed to not reward hospitals for performance that lag behind the nation. Figure 15 provides the estimated statewide revenue adjustments and counts of hospitals receiving a reward and penalty. Overall, the estimated revenue adjustments are fairly similar across the models, although penalties are the highest and rewards the lowest in Model 3. While the lower scores in Model 2 and Model 3 might call into question the current cut point of 41 percent, given CMS concerns on QBR performance, staff does not think this can be lowered at this time and believes that with incentives on PSI and the follow-up measure, performance will be better than shown in the modeling.

Figure 15. Revenue Modeling

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%	-$52,506,794	-0.50%	-$53,698,992	-0.54%
Penalties	-$50,932,110	-0.51%	-$54,410,613	-0.52%	-$55,720,686	-0.56%
Rewards	$2,250,470	0.02%	$1,903,819	0.02%	$2,021,694	0.02%
# Hospitals Penalized	30		36		35	
# Hospitals Rewarded/ Not Penalized	12		6		7	

QBR Future Updates

As previously mentioned, staff intends to convene a sub-group of the Performance Measurement Workgroup, comprised of key stakeholders and subject-matter experts, to consider an overhaul of the QBR program in the first half of CY 2021. This redesign was originally scheduled to occur during CY 2020 but was put on hold in light of the ongoing COVID-19 public health emergency. Subsequently, CMS has reviewed QBR performance as part of the FFY 2021 exemption request, and has raised concerns about

Maryland's performance. Thus, CMS has asked that the HSCRC submit a QBR sub-group work plan to them as part of the annual monitoring report that is due December 31st, 2020 and a report detailing the sub-group's activities and recommendations in 2021. Staff previously developed a workplan for this sub-group and will meet these deadlines, but does note the additional effort required by both staff and stakeholders.

This QBR Redesign sub-group will review the existing QBR policy and goals of the TCOC model, and will develop recommendations to modify the QBR program for the RY 2024 QBR Policy and beyond. Because the QBR policy assesses multiple domains of hospital quality, this program is particularly well suited for expanding into new areas that are relevant under the TCOC model. To accomplish this redesign, which will necessitate consideration of measures and domains outside of those in the current program, the sub-group will consider 1) measurement selection, which will include evaluating the feasibility of including other CMS inpatient and outpatient measures, as well as retaining measures currently used, or adopting other measures that cover important all-payer clinical areas that may not be addressed by CMS measurement and reporting; and 2) methodological concerns, which will include appropriate risk adjustment, scoring, and scaling, and establishing reasonable performance targets.

Among the topics the sub-group may consider are the following:

Strengthen the current incentives to improve patient experience (HCAHPS) **and** safety measures**, including methodology updates that** better target underperforming measures**.**

- Explore potential new QBR measures for **outpatient care** adopted or adapted from those already in the CMS hospital reporting pipeline, including measures not currently used in pay-for-performance.
- Consider options for re-adoption of **ED wait time measures.**
- Evaluate **disparities in performance** on the QBR measures and consider incentives for achieving health equity.
- Develop hospital pay-for-performance programs that foster accountability for broader care transformation and population health initiatives. Specifically, the QBR program could be utilized to support goals developed for the State Integrated Health Improvement Strategy (SIHIS) that do not fit under other quality programs.
- Evaluate additional **data sources** needed for performance measurement under the TCOC model such as eCQMs.

Staff acknowledges that this program redesign will require substantial work in concert with industry and a broad array of other stakeholders, including consumers, payers, cross-continuum providers, quality measurement experts, and government agencies (local, state, and federal). Staff welcomes additional

topics for consideration related to the QBR sub-group, and encourages those interested in participating in the sub-group to contact the Quality team at hscrc.quality@maryland.gov.[18]

Stakeholder Feedback and Responses

Comment letters on the draft QBR recommendations were submitted by the Maryland Hospital Association (MHA), the Johns Hopkins Health System (JHHS) and University of Maryland Medical System (UMMS) in a combined letter, and Luminis Health. All three commenters generally support the RY 2023 QBR policy and continued use of the current QBR methodology, with MHA recommending no specific modifications.

However, some targeted concerns were raised and suggestions provided for modifying specific aspects of the draft recommendations. These comments and suggestions are summarized below along with staff's responses.

Impact of SARS-CoV-2 on PSI-90 and Mortality

The JHHS/UMMS letter notes the significant shifts in the care delivery model because of the COVID-19 pandemic that include resource allocation, initial and ongoing assessment of patient condition and risk, family engagement, and clinical management. The letter points to a national documented increase in healthcare associated infections, and notes that infection prevention experts reference the fact that the full impact of the pandemic on health systems and traditional health associated complications remains to be determined. The letter recommends that HSCRC exclude COVID-19 patients from the RY 2023 (CY 2021 performance) for PSI 90 and for inpatient mortality measurement until the PSI COVID risk adjustment is defined by AHRQ and the impact on mortality is better understood.

Staff Response: Staff agrees that the pandemic impact is far reaching and the full impact is not understood on the larger care delivery model. Per the staff recommendation, staff supports retrospective adjustments to the QBR revenue impacts on hospitals related to COVID. Staff does continue to support including the COVID patients in the RY 2023 program and implementing the PSI 90 measure as specified by AHRQ, and monitoring for any COVID-related updates to the measure issued by AHRQ, and again evaluating data retrospectively for these measures and making appropriate adjustments.

PSI-90 Composite Measure

The JHHS/UMMS letter notes that the PSI measures include complications similar to the PPCs in the MHAC program and they are concerned about hospitals being penalized twice for the same outcome on the same patient. They recommend removing PSIs that are similar to PPCs from the PSI composite.

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[18] Stakeholders who were previously selected to participate will be contacted to verify continued ability and interest.

They also note a concern about low volume consequences related to Bayesian smoothing used for calculating the measure that can create a scenario where a small hospital may have zero events but have a non-zero PSI-90 measurement result; they recommend adding an exclusion for small hospitals or using a 2-year measurement for small hospitals, similar to the MHAC program.

Staff Response: Staff notes that the CMS VBP and HACRP programs use the same PSI-90 composite measure, which consists of ten individual PSI measures, in both programs. Staff further notes that in the RY 2021 MHAC policy document, an overlap analysis was presented for the PPCs and PSIs. Specifically, staff with the assistance of Mathematica Policy Research (MPR) used Maryland hospital discharge data to evaluate the performance of individual PPCs considered "overlapping" with PSI 90 component measures. Results of this analysis in the table below show significant variability in the numerator and denominator populations, as evidenced by the fact that overlapping PSI and PPC's never constituted more than 25 percent of the assessed hospital complications, i.e. the numerator – average overlap for each PPC/PSI pairing was 15 percent. While there was greater overlap in the denominator (average of 30 percent), it is important to note that the principal concern with PPC's and PSI's being duplicative is the possibility of a hospital receiving two revenue negative revenue adjustments for the same complication.

Figure 16. Comparison of PSI 90 Component PSI vs. "Matching" PPC Category Discharges, Maryland Hospitals (2016-2017)

Measures Compared	Measure Inclusion	Numerator Cases		Denominator Cases	
		Frequency	Percent	Frequency	Percent
PSI 03: Pressure Ulcer PPC 31: Pressure Ulcers	PSI and PPC	78	5%	232,044	40%
	PSI Only	1,580	95%	347,286	59%
	PPC Only	0	0%	4,511	1%
PSI 06: Iatrogenic Pneumothorax Rate PPC 49: Iatrogenic Pneumothorax	PSI and PPC	62	26%	678,312	67%
	PSI Only	85	35%	174,105	17%
	PPC Only	95	39%	158,280	16%
PSI 08: In Hospital Fall with Hip Fracture Rate PPC 28: In-Hospital Trauma and Fractures	PSI and PPC	46	24%	639,474	66%
	PSI Only	71	37%	76,032	8%
	PPC Only	77	40%	252,146	26%
PSI 09: Perioperative Hemorrhage or Hematoma Rate PPC 41: Peri-Operative Hemorrhage & Hematoma with Hemorrhage Control Procedure or I&D Procedure	PSI and PPC	124	21%	186,281	65%
	PSI Only	407	69%	34,501	12%
	PPC Only	62	10%	65,793	23%
PSI 10: Postoperative Acute Kidney Injury Requiring Dialysis Rate	PSI and PPC	18	11%	117,181	16%
	PSI Only	86	51%	17,122	2%
	PPC Only	66	39%	610,198	82%

Measures Compared	Measure Inclusion	Numerator Cases		Denominator Cases	
		Frequency	Percent	Frequency	Percent
PPC 25: Renal Failure with Dialysis					
PSI 11: Postoperative Respiratory Failure Rate PPC 03: Acute Pulmonary Edema and Respiratory Failure without Ventilation	PSI and PPC	79	5%	103,100	14%
	PSI Only	411	24%	12,119	2%
	PPC Only	1,234	72%	603,232	84%
PSI 11: Postoperative Respiratory Failure Rate PPC 04: Acute Pulmonary Edema and Respiratory Failure with Ventilation	PSI and PPC	122	9%	103,282	14%
	PSI Only	368	28%	11,937	2%
	PPC Only	819	63%	603,420	84%
PSI 12: Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate PPC 07: Pulmonary Embolism	PSI and PPC	327	25%	193,929	22%
	PSI Only	876	67%	41,913	5%
	PPC Only	104	8%	646,464	73%
PSI 12: Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate PPC 16: Venous Thrombosis	PSI and PPC	136	10%	193,882	22%
	PSI Only	1,067	77%	41,960	5%
	PPC Only	174	13%	646,632	73%
PSI 13: Postoperative Sepsis Rate PPC 35: Septicemia & Severe Infections	PSI and PPC	132	11%	25,838	6%
	PSI Only	305	26%	104,487	26%
	PPC Only	727	62%	270,936	68%
PSI 14: Postoperative Wound Dehiscence Rate PPC 38: Post-Procedural Infection and Deep Wound Disruption with Procedure	PSI and PPC	9	8%	44,734	16%
	PSI Only	56	53%	25,974	10%
	PPC Only	41	39%	201,391	74%
PSI 15: Unrecognized Abdominopelvic Accidental Puncture or Laceration Rate PPC 42: Accidental Puncture/Laceration During Invasive Procedure	PSI and PPC	102	19%	118,342	13%
	PSI Only	89	16%	35,575	4%
	PPC Only	351	65%	770,804	83%

Known differences in populations and measure specifications account for some of these results. As an example, both PSI 13 and PPC 35 address sepsis, however PSI 13 covers only postoperative sepsis while PPC 35 is for all inpatients. Other differences include age and the Major Diagnostic Category (MDC) variables used in the measure specifications. Overall, these data suggest the measure specifications are not sufficiently aligned for PSIs and PPCs to be considered comparable across most of the "overlapping" measure sets. Based on these prior analyses, staff does not support removing any of the component PSIs from the composite and supports using the composite as specified by AHRQ, the measure steward.

In terms of the small hospital exclusion, the program is currently using the standard for excluding small hospitals, similar to the approach under the ICD-9 version of the PSI measure that was previously

included in QBR. Staff agrees that we should consider an extended performance period for small hospitals as is done in the MHAC program. However, given the COVID-19 PHE it may be difficult to obtain a timely longer data period for CY 2021 since January-June 2020 data cannot be used (and with the recent surge the October-December data may also be need to be excluded). Thus, staff proposes keeping the one-year time period for RY 2023 and aligning with the national small hospital exclusion criteria, but revisiting this issue when addressing retrospective COVID-PHE related changes and/or for future rate years.

Timely Follow-up after Acute Exacerbation of Chronic Conditions Measure
The Luminis Health and JHHS/UMMS letters agree with the need to measure timely follow-ups after acute exacerbations of chronic conditions and promote alignment with the Statewide Integrated Health Improvement Strategy (SIHIS). However, they are concerned about understanding baseline hospital-specific data, and the ability for hospitals to track this data on a timely basis; they request that the Commission delay incorporating this measure until hospitals are able to see their baseline data and establish mechanisms for tracking performance on a timely basis using CRISP tools.

Staff Response: Staff does acknowledge that, as indicated in the Assessment section, this measure is based upon Medicare claims, including encounters outside the hospital. Staff further acknowledges that non-Medicare patients' follow up rates are not feasible to measure and report at the current time. Staff does also note that baseline rates by hospital for CY 2019 were provided to the PMWG at the November meeting (Appendix VIII). Further, staff has been working with CRISP to implement timely reports to hospitals through the CRS portal for the measure in CY 2021 and is on track to provide these reports. Finally, staff continues to support adopting this measure that is important to help achieve improvement in the domain of care transformation across the system, and to achieve the SIHIS goal established for this domain.

Final Recommendations for RY 2023 QBR Program

Recommendations for RY 2023 QBR Program

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 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 composite 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 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.

APPENDIX I. CMS NOTIFICATION OF MARYLAND QUALITY PROGRAMS EXEMPTION, FFY 2021

DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Medicare & Medicaid
Services 7500 Security Boulevard
Baltimore, Maryland 21244-1850

CENTER FOR MEDICARE AND MEDICAID INNOVATION

September 29, 2020

Katie Wunderlich
Executive Director,
HSCRC 4160 Patterson
Avenue
Baltimore, Maryland 21215

Re: Maryland's Request for Hospital Quality Program Exemption for Federal Fiscal Year

2021 Dear Ms. Wunderlich,

CMS has received your letter on behalf of the State of Maryland that requests an exemption from the national hospital quality and value-based payment programs for federal fiscal year (FFY) 2021 which include the Hospital Value-Based Purchasing (HVBP) program, Hospital Acquired Conditions Reduction (HAC) program, and the Hospital Readmissions Reduction program (HRRP). Under Section 8.d.iii. of the Maryland Total Cost of Care Model (MDTCOC model) Agreement, the Centers for Medicare & Medicaid Services (CMS) will waive Maryland from participating in the national hospital quality and value-based payment programs as long as the State implements hospital quality and value-based payment programs that achieve or surpass the measured results in terms of patient outcomes and cost savings in HVBP, HAC, and HRRP.

Under section 12.d.i.3 and 12.d.i.4 if CMS determines that the State has not improved quality or failed to demonstrate that the State's hospital and value-based payment program achieves or surpasses the measured results in terms of patient outcomes and cost savings in relation to the national program of equivalent, the result could qualify as an *other event*, and CMS may pursue corrective action as described in section 12.d.ii, including requiring the State to submit a formal *Corrective Action Plan* (CAP) or *termination* of the HVBP, HAC, or HRRP Medicare payment waivers.

CMS has reviewed your exemption request and is concerned with the State's performance under the QBR program; appendix A includes the QBR performance results for RY 2021 (performance June 2018-July 2019), as provided by the State. The Nation performed better than Maryland on five of the six safety measures in both the base and performance periods. Maryland's performance on five of six safety measures also failed to meet or exceed performance in comparison to the State specified base period.

Additionally, the Nation also performed better than Maryland on all eight HCAHPS measures in both the base and performance periods. Should this trend continue for future performance years (FFY 2022 and beyond), CMS may consider this an other event and pursue corrective action.

For FFY 2021, we have used our discretion to grant the State of Maryland's exemption from HVBP, HAC, and HRRP on the basis of expected QBR performance improvement, favorable performance

improvement under MHAC, and consistent performance under RRIP that has exceeded national outcomes. CMS strongly encourages the State to consider the QBR related requests, outlined below.

Quality Based Reimbursement (QBR): CMS reviewed each of the three domains under the QBR program, which includes clinical care, safety measures, and person and community engagement. Maryland's performance continues to lag behind the nation under the person and community engagement and safety measure domains. As a result, CMS agrees with the State's approach to propose a QBR program redesign for implementation in RY 2023 and supports the creation of a QBR focused subgroup tasked with leading this initiative. In the interim, CMS requests that the State integrate a high- level work plan to address CMS' concerns related to QBR and other program performance into the progress report defined at 16.b and Appendix D, due at the end of CY 2020. This work plan should include QBR redesign subgroup objectives, detail outlining the actionable strategies required to accomplish each objective, and an associated project milestone timeline. CMS requests the receipt of a more comprehensive report detailing QBR redesign subgroup findings and formalized plans to improve quality performance by the end of June 2021. This report and subsequent QBR policy changes will be
heavily considered in evaluating the State's national hospital quality and value-based payment programs exemption request for FFY 2022.

In addition to addressing person and community engagement and safety measure domains, we support 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 for RY 2023 and beyond. The State has had a longstanding issue with extended ED wait times compared to the nation. Therefore, CMS encourages the State to consider patient-centered care as a guiding principal when redesigning the QBR program.

Finally, as discussed in the FFY 2020 Hospital Quality Program Exemption approval memo, 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.

Potentially Avoidable Utilization (PAU) Savings: CMS supports expanding the definition of avoidable utilization to include ED and additional categories of unplanned admissions or other types of

unnecessary utilization, as it encourages a broader range of accountability and alignment of financial incentives across the TCOC Model. As a result of the Commission approved shift to a per capita PAU performance evaluation for Prevention Quality Indicators (PQIs) and Pediatric Quality Indicators (PDIs),
CMS expects the State set a concrete per capita PQI reduction target, and looks forward to reviewing the State's proposed per capita avoidable admissions target via the SIHIS by December 31, 2020.

Medicare Performance Adjustment (MPA): CMS understands the State plans to redesign components of the MPA, including the beneficiary attribution algorithm and moving to an attainment target under the program. CMS reaffirms its commitment to ensure the MPA incentivizes hospitals to extend their reach to include beneficiaries who are attributed to a hospital but do not have an associated hospital stay or participate in a CTI; CMS supports the State's initiative to transition to a pure geographic method of attribution as it simplifies the algorithm and provides predictability when assessing Total Cost of Care performance. In addition, CMS reiterates its request that the State consider increasing the amount of revenue at risk under the MPA to progressively incentivize care coordination and alignment between hospitals, hospital-based physicians/clinicians, and community based clinicians/physician. Increased accountability between hospital and non-hospital entities under the MPA provides the State with greater flexibility to control Medicare total cost of care without simultaneously changing all-payer hospital revenues; it is critical that revenue at risk under the MPA continue to increase to account for expenditure growth beyond hospital walls.

Improvement Strategy: CMS supports the HSCRC's approach to evaluate the efficacy of Maryland's hospital quality programs through ensuring key clinical topic areas, such as obstetric care and maternal/child health, are adequately addressed by the current measures. We support State efforts to explore opportunities to achieve greater health equity through reducing disparities, to assess how complications can be measured outside the inpatient setting, and to determine if expanding the quality adjustment under the MPA would continue to improve hospital pay-for-performance programs.
Ultimately, CMS expects the State to progressively align hospital pay-for-performance programs with the broader population health strategies of the model. CMS recognizes that the COVID-19 pandemic has caused quality program delays, data concerns, and other unforeseen model challenges. CMS remains committed to our partnership with the State and supports efforts to collaboratively work through these challenges on an ongoing basis.

Thank you for your continued efforts to improve the quality of hospital care in Maryland. Should you have any questions, please do not hesitate to contact the MDTCOC Model team.

Sincerely,

Pierre Yong, MD, MPH
Director, Division of All-Payer Models
Center for Medicare and Medicaid Innovation

Appendix A. sourced from *"Maryland All-Payer Model and TCOC Model Quality Programs Update and Request for further VBP Exemption in Federal Fiscal Year 2021"*

Appendix A.

RY 2021 QBR (CY2017 Base; Jul2018-Jun2019 YTD Perf unless otherwise specified)

Measures	MD Base	MD YTD Perfor-mance	MD Base Performance Difference	US Base	US YTD Perfor-mance	US Base Performance Difference	MD-US Diff in Base	MD-US Diff in YTD Performance
CLINICAL CARE - OUTCOMES								
Observed Mortality IP All-Cause (Maryland All-Payer) [1]	4.43%	4.00%	-0.43%	N/A	N/A	N/A	N/A	N/A
30-day mortality, AMI (Medicare) [2]	12.99	12.77	-0.21	13.01	12.67	-0.35	0.03	-0.11
30-day mortality, CABG (Medicare)	2.69	2.76	0.06	3.08	3.00	-0.08	0.39	0.24
30-day mortality, COPD (Medicare)	9.02	8.94	-0.08	8.37	8.52	0.15	-0.65	-0.43
30-day mortality, HF (Medicare)	11.03	11.02	0.00	11.39	11.18	-0.21	0.36	0.16
30-day mortality, PN (Medicare)	16.40	16.27	-0.13	15.71	15.63	-0.08	-0.69	-0.64
30-day, Mortality STK (Medicare)	14.02	13.71	-0.31	14.34	13.95	-0.38	0.32	0.24
Complications Hip/Knee [3]	2.38	2.32	-0.06	2.43	2.41	-0.02	0.05	0.09
SAFETY [4]								
AHRQ PSI composite (MD All-Payer)								
CLABSI	0.78	0.87	0.09	0.71	0.81	0.10	-0.07	-0.06
CAUTI	0.80	0.85	0.04	0.77	0.87	0.11	-0.04	0.03
SSI Colon	0.86	0.94	0.08	0.87	0.91	0.04	0.01	-0.03
SSI Abdominal Hysterectomy	1.44	1.17	-0.27	0.90	0.86	-0.04	-0.54	-0.31
MRSA	0.83	0.97	0.14	0.83	0.86	0.04	-0.01	-0.11
C.diff.	0.68	0.93	0.24	0.64	0.80	0.16	-0.04	-0.12
PATIENT EXPERIENCE OF CARE - HCAHPS Top-Box Scores [4]								
Communication with nurses	76%	76%	0%	80%	81%	1%	-4%	-5%
Communication with doctors	78%	77%	-1%	82%	82%	0%	-4%	-5%
Responsiveness of Hospital Staff	61%	61%	0%	70%	70%	0%	-9%	-9%
Communication about medicines	60%	61%	1%	66%	66%	0%	-6%	-5%
Cleanliness and Quietness	62%	63%	1%	69%	69%	0%	-6%	-6%
Discharge Information	86%	87%	1%	87%	87%	0%	-1%	0%
Care Transitions Measure	49%	49%	0%	53%	53%	0%	-4%	-4%
Overall Rating of Hospital	67%	66%	-1%	73%	73%	0%	-6%	-7%

APPENDIX II. HSCRC QBR PROGRAM BACKGROUND, DETAILED OVERVIEW

The Affordable Care Act established the hospital Medicare Value-Based Purchasing (VBP) program,[19] which requires CMS to reward hospitals with incentive payments for the quality of care provided to Medicare beneficiaries. The program assesses hospital performance on a set of measures in Clinical Care, Person and Community Engagement, Safety, and Efficiency domains. The incentive payments are funded by reducing the base operating diagnosis-related group (DRG) amounts that determine the Medicare payment for each hospital inpatient discharge.[20] The Affordable Care Act set the maximum penalty and reward at 2 percent for federal fiscal year (FFY) 2017 and beyond.[21]

Maryland's Quality-Based Reimbursement (QBR) program, in place since July 2009, employs measures that are similar to those in the federal Medicare VBP program, under which all other states have operated since October 2012. Similar to the VBP program, the QBR program currently measures performance in Clinical Care, Safety, and Person and Community Engagement domains, which comprise 15 percent, 35 percent, and 50 percent of a hospital's total QBR score, respectively. For the Safety and Person and Community Engagement domains, which constitute the largest share of a hospital's overall QBR score (85 percent), performance standards are the same as those established in the national VBP program. The Clinical Care Domain, in contrast, uses a Maryland-specific mortality measure and benchmarks. In effect, Maryland's QBR program, despite not having a prescribed national goal, reflects Maryland's rankings relative to the nation by using national VBP benchmarks for the majority of the overall QBR score.

In addition to structuring two of the three domains of the QBR program to correspond to the federal VBP program, the Commission has increasingly emphasized performance relative to the nation through benchmarking, domain weighting, and scaling decisions. For example, beginning in RY 2015, the QBR program began utilizing national benchmarks to assess performance for the Person and Community Engagement and Safety domains.   Subsequently, the RY 2017 QBR policy increased the weighting of the Person and Community Engagement domain, which was measured by the national Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey instrument to 50 percent. The weighting was increased in order to raise incentives for HCAHPS improvement, as Maryland has consistently lagged behind the nation on these measures. In RY 2020, ED-1b, and ED-2b wait time measures for admitted patients were added to this domain with the domain weight remaining at 50 percent; in RY 2021, the domain weight remained constant but the ED-1b measure was removed from

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[19] 42 USC § 1395ww(o)(7).

[20] 42 USC § 1395ww(o)(7)(C).

[21] The HCAHPS increase reduced the Clinical Care domain from 20 percent to 15 percent.

the program. For RY 2022, ED-2b was removed from QBR as CMS no longer required submission of the measure for the Inpatient Quality Reporting (IQR) program.

While the QBR program has many similarities to the federal Medicare VBP program, it does differ because Maryland's unique Model Agreements and autonomous position allow the State to be innovative and progressive. Figure 1 below compares the RY 2022 QBR measures and domain weights to those used in the CMS VBP program.

Figure 1. RY 2022 QBR Measures and Domain Weights Compared with CMS VBP Program[22]

	Maryland QBR Domains and Measures	CMS VBP Domain Weights and Measure Differences
Clinical Care	15 percent (2 measures: all cause inpatient Mortality; THA/TKA Complication)	25 percent (5 measures: 4 condition-specific Mortality, THA/TKA Complication)
Person and Community Engagement	50 percent (8 HCAHPS measures)	25 percent Same HCAHPS measures
Safety	35 percent (5 measures: CDC NHSN)*	25 percent (5 measures: CDC NHSN)*
Efficiency	N/A	25 percent (Medicare Spending Per Beneficiary measure)

*While there are six Healthcare Associated Infection categories, the two SSI colon and hysterectomy categories are combined resulting in five Safety domain measures.

The methodology for calculating hospital QBR scores and associated inpatient revenue adjustments has remained essentially unchanged since RY 2019, and involves: 1) assessing performance on each measure in the domain; 2) standardizing measure scores relative to performance standards; 3) calculating the total points a hospital earned divided by the total possible points for each domain; 4) finalizing the total hospital QBR score (0-100 percent) by weighting the domains based on the overall percentage or importance the Commission has placed on each domain; and 5) converting the total hospital QBR scores into revenue adjustments using the preset scale that ranges from 0 to 80 percent.

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[22] Details of CMS VBP measures may be found at: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Measure-Methodology.html ; last accessed 10./28/19.

Domain Weights and Revenue At-Risk

As illustrated in the body of the report, for the RY 2021 QBR program, the policy weighted the clinical care domain at 15 percent of the final score, the Safety domain at 35 percent, and the Person and Community Engagement domain at 50 percent.

The HSCRC sets aside a percentage of hospital inpatient revenue to be held "at-risk" based on each hospital's QBR program performance. Hospital performance scores are translated into rewards and penalties in a process that is referred to as scaling.[23] Rewards (positive scaled amounts) or penalties (negative scaled amounts) are then applied to each hospital's update factor for the rate year. The rewards or penalties are applied on a one-time basis and are not considered permanent revenue. The Commission previously approved scaling a maximum reward of 2 percent and a penalty of 2 percent of total approved base inpatient revenue across all hospitals.

HSCRC staff has worked with stakeholders over the last several years to align the QBR measures, thresholds, benchmark values, time lag periods, and amount of revenue at risk with those used by the CMS VBP program where feasible,[24] allowing the HSCRC to use data submitted directly to CMS. As mentioned above, Maryland implemented an efficiency measure in relation to population based revenue budgets based on potentially avoidable utilization outside of the QBR program. The potentially avoidable utilization (PAU) savings adjustment to hospital rates is based on costs related to potentially avoidable admissions, as measured by the Agency for Healthcare Research and Quality Prevention Quality Indicators (PQIs) and avoidable readmissions. HSCRC staff will continue to work with key stakeholders to complete development of an efficiency measure that incorporates population-based cost outcomes.

QBR Score Calculation

QBR Scores are evaluated by comparing a hospital's performance rate to its base period rate, as well as the threshold (which is the median, or 50th percentile, of all hospitals' performance during the baseline period), and the benchmark, (which is the mean of the top decile, or approximately the 95th percentile, during the baseline period).

Attainment Points: During the performance period, attainment points are awarded by comparing an individual hospital's rates with the threshold and the benchmark. With the exception of the MD Mortality measure and ED Wait Time measures, the benchmarks and thresholds are the same as those used by CMS for the VBP program measures.[25] For each measure, a hospital that has a rate at or above

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[23] Scaling refers to the differential allocation of a pre-determined portion of base-regulated hospital inpatient revenue based on assessment of the quality of hospital performance.

[24] VBP measure specifications may be found at: www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Measure-Methodology.html

[25] As an exception, for the ED wait time measures, attainment points are not calculated; instead full 10 points are awarded to hospitals at or below (more efficient) than the national medians for their respective volume categories in the performance period.

benchmark receives 10 attainment points. A hospital that has a rate below the attainment threshold receives 0 attainment points. A hospital that has a rate at or above the attainment threshold and below the benchmark receives 1-9 attainment points

Improvement Points: The improvement points are awarded by comparing a hospital's rates during the performance period to the hospital's rates from the baseline period. A hospital that has a rate at or above the attainment benchmark receives 9 improvement points. A hospital that has a rate at or below baseline period rate receives 0 improvement points. A hospital that has a rate between the baseline period rate and the attainment benchmark receives 0-9 improvement points.

Consistency Points: The consistency points relate only to the experience of care domain. The purpose of these points is to reward hospitals that have scores above the national 50th percentile in all of the eight HCAHPS dimensions. If they do, they receive the full 20 points. If they do not, the dimension for which the hospital received the lowest score is compared to the range between the national 0 percentile (floor) and the 50th percentile (threshold) and is awarded points proportionately.

Domain Denominator Adjustments: In particular instances, QBR measures will be excluded from the QBR program for individual hospitals. In the Person and Community Engagement domain, ED wait time measures (if included in the RY 2020 program) will be excluded for protected hospitals. As described in the body of the report, a hospital may exclude the ED-2b measure if it has earned at least one improvement point and if its improvement score would reduce its overall QBR score. If this measure is excluded, the Person and Community Engagement domain will reduce from 110 total points to 100 points.

Similarly, hospitals are exempt from measurement for any of the NHSN Safety measures for which there is less than 1 predicted case in the performance period. If a hospital is exempt from an NHSN measure, its Safety domain score denominator reduces from 50 to 40 points. If it is exempt from two measures, the Safety domain score denominator would be 30 total possible points. Hospitals must have at least 2 of 5 Safety measures in order to be included in the Safety domain.

Domain Scores: The better of attainment and improvement for each measure is used to determine the measure points for each measure, which are then summed and divided by the total possible points in each domain and multiplied by 100.

Total Performance Score: The total Performance Score is computed by multiplying the domain scores by their specified weights, then adding those totals The Total Performance Score is then translated into a reward/ penalty that is applied to hospital revenue.

Proposed RY 2023 QBR Program Updates

For RY 2023, no fundamental changes to the methodology, and the addition of the follow-up after acute exacerbation of chronic conditions and PSI-90 composite measures.

Figure 2 below depicts the steps for converting the measure scores to standardized scores for each measure, and then to rewards and penalties based upon total scores earned, with the proposed updates for RY 2023.

Figure 2. Proposed RY 2023 Process for Calculating QBR Scores
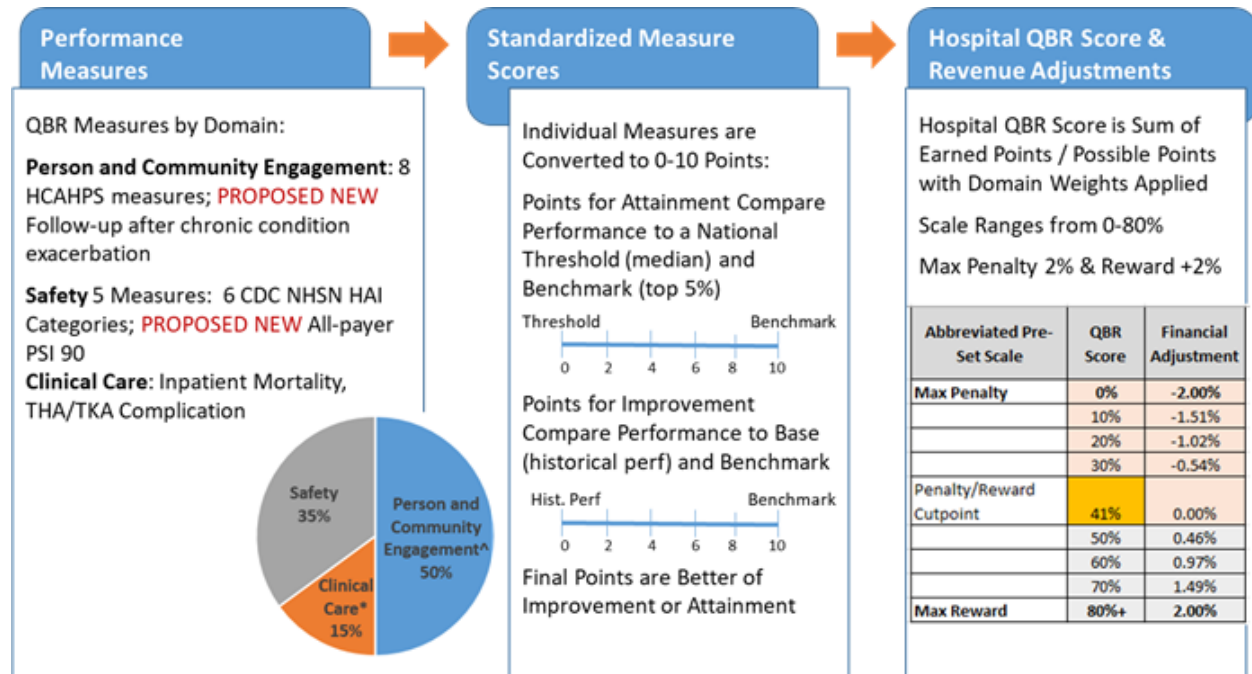
There are no fundamental changes proposed for the measures and domain weighting for RY 2023, as illustrated in Figure 3 below.

Figure 3. Proposed RY 2023 QBR Domains, Measures and Data Sources

	Clinical Care	**Person and Community Engagement**	**Safety**
Proposed QBR RY 23	15 percent 2 measures ☐ Inpatient Mortality (HSCRC case mix data) ☐ THA TKA (CMS Hospital Compare, Medicare claims data)	50 percent 9 measures ☐ 8 HCAHPS domains (CMS Hospital Compare patient survey) ☐ **NEW PROPOSED**: Follow up after acute exacerbation of Chronic Conditions (Medicare claims)	35 percent 7 measures ☐ 6 CDC NHSN HAI measures (CMS Hospital Compare chart abstracted) ☐ **NEW PROPOSED**: PSI 90 All-payer (HSCRC case mix data)

PSI 90 Measure (PROPOSED for RY 2023)

Newly proposed for RY 2023, the Patient Safety Indicators were developed by the Agency for Healthcare Research and Quality (AHRQ) in 2003.[26] PSI 90 comprises the weighted average of the observed-to-expected ratios for the following component indicators:

- PSI 03 Pressure Ulcer Rate
- PSI 06 Iatrogenic Pneumothorax Rate
- PSI 08 In-Hospital Fall With Hip Fracture Rate
- PSI 09 Perioperative Hemorrhage or Hematoma Rate
- PSI 10 Postoperative Acute Kidney Injury Requiring Dialysis Rate
- PSI 11 Postoperative Respiratory Failure Rate
- PSI 12 Perioperative Pulmonary Embolism (PE) or Deep Vein Thrombosis (DVT) Rate
- PSI 13 Postoperative Sepsis Rate
- PSI 14 Postoperative Wound Dehiscence Rate
- PSI 15 Abdominopelvic Accidental Puncture or Laceration Rate

PSI 90 combines the smoothed (empirical Bayes shrinkage) indirectly standardized morbidity ratios (observed/expected ratios) from selected AHRQ Patient Safety Indicators (PSIs). The weights of the individual component indicators are based on two concepts: the volume of the adverse event and the harm associated with the adverse event. The volume weights were calculated based on the number of safety-related events for the component indicators in the all-payer reference population. The harm weights were calculated by multiplying empirical estimates of the probability of excess harms associated with each patient safety event by the corresponding utility weights (1–disutility). Disutility is the measure of the severity of the adverse events associated with each of the harms (i.e., outcome severity, or least preferred states from the patient perspective). The harm weights were calculated using linked claims data for two years of Medicare Fee for Service beneficiaries. Figure 3 below details the most current volume and harm weights for the PSI 90 component measures.

The PSI 90 measure scores are converted to program scores as outlined in the QBR Score Calculation section above.

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[26] Source:
https://www.qualityindicators.ahrq.gov/Downloads/Modules/PSI/V2020/TechSpecs/PSI%2090%20Patient%20Safety%20and%20Adverse%20Events%20Composite.pdf

Figure 3. Composite Weights for PSI 90 v. 2020

INDICATOR	HARM WEIGHT	VOLUME WEIGHT	COMPONENT WEIGHT
PSI 3 Pressure Ulcer Rate	0.3080	0.1149	0.181
PSI 6 Iatrogenic Pneumothorax Rate	0.1381	0.0513	0.036
PSI 8 In Hospital Fall With Hip Fracture Rate	0.1440	0.0164	0.012
PSI 9 Perioperative Hemorrhage or Hematoma Rate	0.0570	0.1621	0.047
PSI 10 Postoperative Acute Kidney Injury Requiring Dialysis Rate	0.3584	0.0340	0.062
PSI 11 Postoperative Respiratory Failure Rate	0.2219	0.1485	0.168
PSI 12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate	0.1557	0.2569	0.204
PSI 13 Postoperative Sepsis Rate	0.3102	0.1510	0.239
PSI 14 Postoperative Wound Dehiscence Rate	0.1441	0.0137	0.010
PSI 15 Abdominopelvic Accidental Puncture or Laceration Rate	0.1474	0.0512	0.038

Source: 2017 State Inpatient Databases, Healthcare Cost and Utilization Program, Agency for Healthcare Research and Quality. 2012-2013 Medicare Fee-for-Service claims data.

Follow up after acute exacerbation for chronic conditions (PROPOSED for RY 2023)

Newly proposed for RY 2023, the measure was developed by IMPAQ on behalf of CMS.[27] Technical details for calculating measure scores are provided below.

Measure Full Title: Timely Follow-up After Acute Exacerbations of Chronic Conditions

Measure Steward: IMPAQ International

Description of Measure: The percentage of issuer-product-level acute events requiring either an emergency department (ED) visit or hospitalization for one of the following 6 chronic conditions: hypertension, asthma, heart failure (HF), coronary artery disease (CAD), chronic obstructive pulmonary disease (COPD), or diabetes mellitus (Type I or Type II), where follow-up was received within the timeframe recommended by clinical practice guidelines in a non-emergency outpatient setting

Unit of Analysis: Issuer-by-product

Numerator Statement: The numerator is the sum of the issuer-product-level denominator events (Emergency Room [ED], observation hospital stay or inpatient hospital stay) for acute exacerbation of hypertension, asthma, heart failure (HF), coronary artery disease (CAD), chronic obstructive pulmonary disease (COPD), or diabetes where follow-up was received within the timeframe recommended by clinical practice guidelines, as detailed below:

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[27] Source: https://impaqint.com/measure-information-timely-follow-after-acute-exacerbations-chronic-conditions

- Hypertension: Within 7 days of the date of discharge
- Asthma: Within 14 days of the date of discharge
- HF: Within 14 days of the date of discharge
- CAD: Within 14 days of the date of discharge
- COPD: Within 30 days of the date of discharge
- Diabetes: Within 30 days of the date of discharge

Numerator Details:

This measure is defined at the issuer-by-product level, meaning that results are aggregated for each qualified insurance issuer and for each product. For clarity, a product is a discrete package of health insurance coverage benefits that issuers offer in the context of a particular network type, such as health maintenance organization (HMO), preferred provider organization (PPO), exclusive provider organization (EPO), point of service (POS), or indemnity. Issuers are broadly defined as health insurance providers who participate in the Federally-facilitated Marketplaces and health insurance contracts offered in the Medicare Advantage market.

Timely follow-up is defined as a claim for the same patient after the discharge date of the acute event that is a non-emergency outpatient visit and has a CPT or HCPCS code indicating a visit that constitutes appropriate follow-up, as defined by clinical guidelines and clinical coding experts. The follow-up visit may be a general office visit or telehealth and take place in certain chronic care or transitional care management settings. The follow-up visit must occur within the condition-specific timeframe to be considered timely and for the conditions of the numerator/measure to be met. For a list of individual codes, please see the data dictionary attached in S.2b.

The follow-up visit timeframes for each of the 6 chronic conditions are based on evidence-based clinical practice guidelines (CPGs) as laid out in the evidence form.

Denominator Statement: The denominator is the sum of the issuer-product-level acute exacerbations that require either an ED visit, observation stay, or inpatient stay (i.e., acute events) for any of the 6 conditions listed above (hypertension, asthma, HF, CAD, COPD, or diabetes).

Denominator Details:

Acute events are defined as either an ED visit, observation stay, or inpatient stay. If a patient is discharged and another claim begins for the same condition on the same day or the following day, the claims are considered to be part of one continuous acute event. In this case, the discharge date of the last claim is the beginning of the follow-up interval. The final claim of the acute event must be a discharge to community.

An acute event is assigned to [condition] if:

1. The primary diagnosis is a sufficient code for [condition].

OR

2. The primary diagnosis is a related code for [condition] AND at least one additional diagnosis is a sufficient code for [condition].
   a. In cases where the event has two or more conditions with a related code as the primary diagnosis and a sufficient code in additional diagnosis positions, **assign the event to the condition with a sufficient code appearing in the "highest" (closest to primary) diagnosis position**.

If the visits that make up an acute event are assigned different conditions, the event is assigned the condition that occurs last in the sequence. Following this methodology, only one condition is recorded in the denominator per acute event. For a list of individual codes, please see the data dictionary attached in S.2b.

Denominator Exclusions:

The measure excludes events with:

1. Subsequent acute events that occur two days after the prior discharge, but still during the follow-up interval of the prior event for the same reason. To prevent double-counting, only the first acute event will be included in the denominator.
2. Acute events after which the patient does not have continuous enrollment for 30 days in the same product.
3. Acute events where the discharge status of the last claim is not "to community" ("Left against medical advice" is not a discharge to community.)
4. Acute events for which the calendar year ends before the follow-up window ends (e.g., acute asthma events ending fewer than 14 days before December 31)
5. Acute events where the patient enters a skilled nursing facility (SNF), non-acute care, or hospice care within the follow-up interval

Measure Scoring:

1) Denominator events are identified by hospitalization, observation, and ED events with appropriate codes (i.e., codes identifying an acute exacerbation of 1 of the 6 included chronic conditions).
2) Exclusions are applied to the population from step 1) to produce the eligible patient population for the measure (i.e., the count of all qualifying events).
3) For each qualifying event, it is determined whether or not claims included a subsequent code that satisfies the follow-up requirement for that particular qualifying event (e.g., a diabetes event received follow-up within the appropriate timeframe for diabetes, from an appropriate provider).

Each event for which the follow-up requirement was satisfied is counted as 'one' in the numerator. Each event for which the follow-up requirement was not satisfied is counted as a 'zero' in the numerator.

4) The percentage score is calculated as the numerator divided by the denominator.

Measure Scoring Logic

Following NQF's guideline, we employ **Opportunity-Based Weighting** to calculate the follow-up measure. (1) This means that each condition is weighted by the sum of acute exacerbations that require either an ED visit or an observation or inpatient stay for all the six conditions that occur, as reflected in the logic below.

[NUM(ASM) + NUM(CAD) + NUM(HF) + NUM (COPD) + NUM(DIAB) + NUM(HTN)] / [DENOM(ASM) + DENOM(CAD) + DENOM(HF) + DENOM (COPD) + DENOM(DIAB) + DENOM(HTN)]

***Please note that, while the development team designed the measure to aggregate each condition score in the manner described above into a single overall score, programs may choose to also calculate individual scores for each chronic condition when implementing the measure. Individual measure scores would simply be calculated by dividing the condition-specific numerator by the condition specific denominator, as in the example for failure: NUM(HF) / DENOM(HF)

The Follow up measure scores are converted to QBR scores as outlined in the QBR Score Calculation section above.

QBR RY 2023 Base and Performance Periods by Measure

Figure 4 below Illustrates the proposed base and performance period timeline for the RY 2023 QBR program.

Figure 4. RY 2023 Proposed Timeline (Base and Performance Periods; Financial Impact)

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)	Rate Year Impacted by QBR Results
	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		

*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.

47

APPENDIX III. RY 2021 PATIENT EXPERIENCE MEASURE RESULTS BY HOSPITAL

CMS ID	HCAHPS Measure / Hosp Name	Clean/Quiet Perf Pd	Clean/Quiet Δ frm Base	Nurse Comm Perf Pd	Nurse Comm Δ frm Base	Doctor Comm Perf Pd	Doctor Comm Δ frm Base	Staff Responsive Perf Pd	Staff Responsive Δ frm Base	Understood Medications Perf Pd	Understood Medications Δ frm Base	Discharge Information Perf Pd	Discharge Information Δ frm Base	Understood Post-Disch Care Perf Pd	Understood Post-Disch Care Δ frm Base	Hospital Rating 9 or 10 Perf Pd	Hospital Rating 9 or 10 Δ frm Base
210001	MERITUS MEDICAL CENTER	62.5	-0.5	79	2	77	1	62	1	60	1	89	1	47	0	65	-2
210002	UNIVERSITY OF MARYLAND MEDICAL CENTER	58	2	80	2	81	3	61	3	61	-2	88	0	51	-1	70	1
210003	UNIVERSITY OF MD PRINCE GEORGE'S HOSPITAL CTR	46.5	-6	60	-3	66	-7	37	-7	45	-4	79	2	32	-6	41	-5
210004	HOLY CROSS HOSPITAL	61.5	-4	73	1	75	1	58	3	59	4	83	2	41	-3	69	5
210005	FREDERICK MEMORIAL HOSPITAL	68	-2	81	1	78	-1	62	2	63	1	89	0	51	1	70	0
210006	UNIVERSITY OF MARYLAND HARFORD MEMORIAL HOSPITAL	58	0.5	78	0	78	2	56	-4	63	8	83	2	46	0	62	-3
210008	MERCY MEDICAL CENTER INC	73	1	80	-1	82	0	71	3	62	-9	90	2	58	3	77	-1
210009	JOHNS HOPKINS HOSPITAL, THE	70	0.5	83	2	82	2	63	2	65	1	90	2	62	4	84	3
210011	SAINT AGNES HOSPITAL	60.5	1.5	75	-1	77	-2	59	-1	60	-2	85	-1	47	-2	63	-4
210012	SINAI HOSPITAL OF BALTIMORE	63	1	75	-3	78	1	58	-2	57	-5	85	-2	49	0	65	-4
210013	BON SECOURS HOSPITAL	60.5	-5	66	-11	73	-9	53	-11	57	-6	84	-6	51	5	51	-6
210015	MEDSTAR FRANKLIN SQUARE MEDICAL CENTER	64	5.5	78	3	79	1	64	4	65	0	89	1	48	0	68	-2
210016	ADVENTIST HEALTHCARE WASHINGTON ADVENTIST HOSPITAL	66.5	6	77	4	80	5	64	5	62	3	89	5	47	4	73	6
210017	GARRETT COUNTY MEMORIAL HOSPITAL	70	4	84	5	88	7	81	11	65	-3	89	-2	55	4	75	4

CMS ID	Hosp Name	Clean/Quiet		Nurse Comm		Doctor Comm		Staff Responsive		Understood Medications		Discharge Information		Understood Post-Disch Care		Hospital Rating 9 or 10	
		Perf Pd	Δ frm Base	Perf Pd	Δ frm Base	Perf Pd	Δ frm Base	Perf Pd	Δ frm Base	Perf Pd	Δ frm Base	Perf Pd	Δ frm Base	Perf Pd	Δ frm Base	Perf Pd	Δ frm Base
210018	MEDSTAR MONTGOMERY MEDICAL CENTER	63.5	3.5	68	-3	72	-2	59	6	53	-2	85	-1	44	0	61	0
210019	PENINSULA REGIONAL MEDICAL CENTER	65	3	80	1	79	1	64	1	65	5	88	-2	52	-2	73	2
210022	SUBURBAN HOSPITAL	61	-4.5	76	-1	80	0	60	-3	59	2	85	1	52	1	68	-3
210023	ANNE ARUNDEL MEDICAL CENTER	65	-2.5	79	-2	79	-2	65	-4	62	0	87	2	53	-1	74	-3
210024	MEDSTAR UNION MEMORIAL HOSPITAL	63.5	-4.5	77	-2	83	1	63	0	67	2	89	0	54	4	69	-4
210027	WESTERN MARYLAND REGIONAL MEDICAL CENTER	68	0.5	79	0	75	-3	61	-2	64	-3	90	-1	51	-1	67	-3
210028	MEDSTAR SAINT MARY'S HOSPITAL	64	-2	80	2	77	-1	64	3	66	6	89	-1	51	2	68	0
210029	JOHNS HOPKINS BAYVIEW MEDICAL CENTER	57.5	-0.5	78	2	81	2	60	-2	63	1	88	0	54	0	68	-1
210032	UNION HOSPITAL OF CECIL COUNTY	58	-2.5	74	-3	69	-7	61	-1	57	-4	85	-1	43	-3	61	-3
210033	CARROLL HOSPITAL CENTER	64.5	-1	75	-4	71	-2	63	0	58	-4	89	2	48	1	66	2
210034	MEDSTAR HARBOR HOSPITAL	62	-3.5	73	-3	75	-5	61	-4	60	-5	86	0	48	1	63	-6
210035	UNIVERSITY OF MD CHARLES REGIONAL MEDICAL CENTER	68	5	77	-1	73	0	61	-3	62	0	86	1	43	-6	65	2
210037	UNIVERSITY OF MD SHORE MEDICAL CENTER AT EASTON	66.5	-0.5	80	-1	79	0	67	-1	61	-1	86	0	49	-1	65	-1
210038	UNIVERSITY OF MD MEDICAL CENTER MIDTOWN CAMPUS	65	1.5	75	1	79	3	62	-2	59	-1	82	-2	50	2	67	4
210039	CALVERTHEALTH MEDICAL CENTER	64	-0.5	75	-6	75	-1	59	-5	56	-8	85	-3	44	-6	61	-5
210040	NORTHWEST HOSPITAL CENTER	68.5	5	76	0	75	-1	68	2	61	-1	87	-1	49	2	66	1

CMS ID	Hosp Name	Clean/Quiet		Nurse Comm		Doctor Comm		Staff Responsive		Understood Medications		Discharge Information		Understood Post-Disch Care		Hospital Rating 9 or 10	
		Perf Pd	Δ frm Base	Perf Pd	Δ frm Base	Perf Pd	Δ frm Base	Perf Pd	Δ frm Base	Perf Pd	Δ frm Base	Perf Pd	Δ frm Base	Perf Pd	Δ frm Base	Perf Pd	Δ frm Base
210043	UNIVERSITY OF MD BALTO WASHINGTON MEDICAL CENTER	65	3.5	78	1	77	0	63	7	63	4	87	1	49	-1	69	3
210044	GREATER BALTIMORE MEDICAL CENTER	55.5	-2.5	78	-1	79	-2	58	-5	62	2	83	-6	50	-2	72	-1
210048	HOWARD COUNTY GENERAL HOSPITAL	64.5	1	78	-1	77	-1	61	0	60	1	86	0	52	0	68	-4
210049	UNIVERSITY OF M D UPPER CHESAPEAKE MEDICAL CENTER	60	-3	76	-3	75	-3	58	-3	62	-1	86	0	48	-3	64	-5
210051	DOCTORS' COMMUNITY HOSPITAL	58	-1	70	-3	74	-2	57	-2	53	-8	82	-4	43	1	59	-7
210056	MEDSTAR GOOD SAMARITAN HOSPITAL	62.5	1	77	-2	79	1	63	3	62	-2	88	-2	50	2	66	-1
210057	ADVENTIST HEALTHCARE SHADY GROVE MEDICAL CENTER	61.5	-0.5	74	-3	73	-6	51	-9	55	-6	87	0	50	0	67	-4
210060	FORT WASHINGTON HOSPITAL	52	-4.5	70	-3	74	-3	58	-8	50	-5	81	-2	45	3	54	-2
210061	ATLANTIC GENERAL HOSPITAL	62.5	2	82	4	84	5	70	2	66	2	92	4	54	2	75	6
210062	MEDSTAR SOUTHERN MARYLAND HOSPITAL CENTER	61	3.5	72	3	77	2	57	2	56	-1	84	1	41	-1	51	-4
210063	UNIVERSITY OF MARYLAND ST JOSEPH MEDICAL CENTER	65.5	-2	82	1	81	0	68	-1	61	-1	88	-1	54	-1	76	-2
210064	LEVINDALE HEBREW GERIATRIC CENTER AND HOSPITAL	57.5	16	58	-1	66	0	44	-1	49	8	88	3	44	-6	44	-12
210065	HOLY CROSS GERMANTOWN HOSPITAL	62.5	-4	72	6	76	0	57	8	58	3	86	4	44	-3	68	3

APPENDIX IV. THA /TKA Volumes and CMI by Hospital, CY 2019

Hospital ID	Hospital Name	Denominator	Score	Start Date	End Date	2019 Average Case-Mix Index for IP THA-TKA DRGs	2018 Average Case-Mix Index for IP THA-TKA DRGs
210002	UNIVERSITY OF MARYLAND MEDICAL CENTER	29	2.8	4/1/2016	3/31/2019	1.890	1.807
210006	UNIVERSITY OF MD HARFORD MEMORIAL HOSPITAL	31	2.7	4/1/2016	3/31/2019	1.656	1.724
210060	ADVENTIST HEALTHCARE FORT WASHINGTON MEDICAL CTR	33	2.2	4/1/2016	3/31/2019	1.697	1.709
210030	UNIVERSITY OF MD SHORE MEDICAL CTR AT CHESTERTOWN	66	2	4/1/2016	3/31/2019	1.722	1.671
210016	ADVENTIST HEALTHCARE WHITE OAK MEDICAL CENTER	88	2.3	4/1/2016	3/31/2019	1.725	1.767
210056	MEDSTAR GOOD SAMARITAN HOSPITAL	113	2.8	4/1/2016	3/31/2019		
210065	HOLY CROSS GERMANTOWN HOSPITAL	117	2.8	4/1/2016	3/31/2019	1.738	1.667
210039	CALVERT HEALTH MEDICAL CENTER	133	2.3	4/1/2016	3/31/2019	1.721	1.684
210034	MEDSTAR HARBOR HOSPITAL	148	3.8	4/1/2016	3/31/2019	1.674	1.675
210032	UNION HOSPITAL OF CECIL COUNTY	160	2.9	4/1/2016	3/31/2019	1.686	1.730
210061	ATLANTIC GENERAL HOSPITAL	163	2.4	4/1/2016	3/31/2019	1.581	1.631
210051	DOCTORS' COMMUNITY HOSPITAL	211	2.6	4/1/2016	3/31/2019	1.666	1.644
210048	HOWARD COUNTY GENERAL HOSPITAL	232	2.5	4/1/2016	3/31/2019	1.650	1.665
210062	MEDSTAR SOUTHERN MARYLAND HOSPITAL CENTER	238	4.1	4/1/2016	3/31/2019	1.657	1.669
210035	UNIVERSITY OF MD CHARLES REGIONAL MEDICAL CENTER	243	1.9	4/1/2016	3/31/2019	1.639	1.697
210017	GARRETT COUNTY MEMORIAL HOSPITAL	253	2.8	4/1/2016	3/31/2019	1.662	1.702
210015	MEDSTAR FRANKLIN SQUARE MEDICAL CENTER	294	2.8	4/1/2016	3/31/2019	1.676	1.677
210043	UNIVERSITY OF MD BALTIMORE WASHINGTON MEDICAL CENTER	296	3.1	4/1/2016	3/31/2019	1.703	1.687
210004	HOLY CROSS HOSPITAL	329	3.6	4/1/2016	3/31/2019	1.662	1.675
210018	MEDSTAR MONTGOMERY MEDICAL CENTER	346	3	4/1/2016	3/31/2019	1.639	1.625
210049	UMD UPPER CHESAPEAKE MEDICAL CENTER	370	2	4/1/2016	3/31/2019	1.655	1.658
210040	NORTHWEST HOSPITAL CENTER	422	2	4/1/2016	3/31/2019	1.667	1.665
210028	MEDSTAR SAINT MARY'S HOSPITAL	429	1.8	4/1/2016	3/31/2019	1.631	1.622
210044	GREATER BALTIMORE MEDICAL CENTER	464	2.2	4/1/2016	3/31/2019	1.662	1.660
210029	JOHNS HOPKINS BAYVIEW MEDICAL CENTER	475	1.8	4/1/2016	3/31/2019	1.650	1.645
210037	UMD SHORE MEDICAL CENTER AT EASTON	525	2.3	4/1/2016	3/31/2019	1.650	1.644
210033	CARROLL HOSPITAL CENTER	558	2.3	4/1/2016	3/31/2019	1.642	1.631
210011	SAINT AGNES HOSPITAL	568	2.3	4/1/2016	3/31/2019	1.663	1.658
210027	WESTERN MARYLAND REGIONAL MEDICAL CENTER	587	2.6	4/1/2016	3/31/2019	1.705	1.625
210012	SINAI HOSPITAL OF BALTIMORE	590	2	4/1/2016	3/31/2019	1.723	1.721
210005	FREDERICK HEALTH HOSPITAL	616	3	4/1/2016	3/31/2019	1.688	1.712
210057	ADVENTIST HEALTHCARE SHADY GROVE MEDICAL CENTER	644	3.6	4/1/2016	3/31/2019	1.672	1.678
210019	PENINSULA REGIONAL MEDICAL CENTER	705	1.5	4/1/2016	3/31/2019	1.704	1.705
210001	MERITUS MEDICAL CENTER	721	2.1	4/1/2016	3/31/2019	1.663	1.637
210022	SUBURBAN HOSPITAL	1310	2	4/1/2016	3/31/2019	1.649	1.652
210024	MEDSTAR UNION MEMORIAL HOSPITAL	1333	1.7	4/1/2016	3/31/2019	1.649	1.643
210063	UNIVERSITY OF MD ST JOSEPH MEDICAL CENTER	1526	1.5	4/1/2016	3/31/2019	1.671	1.676
210008	MERCY MEDICAL CENTER INC	1585	1.9	4/1/2016	3/31/2019	1.651	1.680
210023	ANNE ARUNDEL MEDICAL CENTER	2048	1.5	4/1/2016	3/31/2019	1.660	1.648
					90th percentile	1.723	1.725

APPENDIX V. RY 2023 QBR PERFORMANCE STANDARDS

Previously Established and Newly Established Performance Standards for the FY 2023 Program Year		
Measure Short Name	**Achievement Threshold**	**Benchmark**
Safety Domain		
CMS PSI 90*^ +(**PROPOSED NEW**)	(Prelim): 0.873	(Prelim): 0.587
CAUTI*+	0.676	0
CLABSI*+	0.596	0
CDI*+	0.544	0.01
MRSA Bacteremia*+	0.727	0
Colon and Abdominal Hysterectomy SSI*+	0.734 0.732	0 0

Clinical Outcomes Domain		
Inpatient Mortality	TBD	TBD
COMP-HIP-KNEE*#	0.027428	0.019779

* Lower values represent better performance.

^Preliminary using CY 2019 data.

Previously established performance standards

+ The newly established performance standards displayed in this table for the CDC NHSN measures (CAUTI, CLABSI, CDI, MRSA Bacteremia, and Colon and Abdominal Hysterectomy SSI) were published in CMS FY 2021 IPPS Final Rule and calculated using four quarters of CY 2019 data.

New Proposed Measure for FY 2023	Person and Community Engagement Domain+	
	Achievement Threshold	**Benchmark**
Follow Up after Exacerbation for Chronic Conditions	72.57	79.68

APPENDIX VI. MODELING OF SCORES BY DOMAIN: RY 2021 QBR DATA WITH RY 2023 MEASURE UPDATES

Hospital ID	Hospital Name	HCAHPS Final Score without ED Wait Times	HCAHPS Final Score without ED and with Follow-up	Morta-lity Final Score	THA-TKA Score	Safety Final Score	Safety Final Score with PSI-90	Model 1. Total Score without ED Wait Times	Model 2. Total Score without ED plus PSI-90	Model 3. Total Score without ED Wait Times with PSI-90 and Follow-Up
210001	MERITUS MEDICAL CENTER	21.00%	27.27%	90.00%	100.00%	40.00%	35.00%	38.50%	36.75%	39.89%
210002	UNIVERSITY OF MARYLAND MEDICAL CENTER	22.00%	20.00%	20.00%	40.00%	30.00%	26.67%	25.50%	24.33%	23.33%
210003	UM-PRINCE GEORGES	2.00%	3.64%	0.00%		38.00%	31.67%	14.30%	12.08%	12.90%
210004	HOLY CROSS HOSPITAL	21.00%	20.91%	20.00%	0.00%	16.00%	13.33%	18.10%	17.17%	17.12%
210005	FREDERICK HEALTH HOSPITAL, INC	26.00%	30.00%	100.00%	20.00%	52.00%	43.33%	42.20%	39.17%	41.17%
210006	UM-HARFORD MEMORIAL HOSPITAL	19.00%	20.91%	100.00%	50.00%	33.33%	25.00%	33.67%	30.75%	31.70%
210008	MERCY MEDICAL CENTER	46.00%	41.82%	0.00%	100.00%	6.00%	6.67%	30.10%	30.33%	28.24%
210009	JOHNS HOPKINS HOSPITAL	52.00%	47.27%	40.00%		6.00%	5.00%	34.10%	33.75%	31.39%
210010	UM-SHORE REGIONAL HEALTH AT DORCHESTER	20.00%	20.91%	60.00%	90.00%	58.00%	48.33%	40.80%	37.42%	37.87%
210011	ST. AGNES HOSPITAL	15.00%	13.64%	10.00%	90.00%	36.00%	30.00%	25.60%	23.50%	22.82%
210012	SINAI HOSPITAL	15.00%	14.55%	40.00%	100.00%	16.00%	13.33%	22.10%	21.17%	20.94%
210015	MEDSTAR FRANKLIN SQUARE	27.00%	25.45%	90.00%	60.00%	32.00%	26.67%	36.70%	34.83%	34.06%
210016	ADVENTIST WHITE OAK HOSPITAL	38.00%	36.36%	0.00%	90.00%	56.00%	46.67%	43.10%	39.83%	39.02%
210017	GARRETT COUNTY MEMORIAL HOSPITAL	59.00%	60.00%	0.00%	40.00%		46.67%	48.63%	47.83%	48.33%
210018	MEDSTAR MONTGOMERY MEDICAL CENTER	15.00%	19.09%	40.00%	50.00%	60.00%	48.00%	35.00%	30.80%	32.85%
210019	PENINSULA REGIONAL MEDICAL CENTER	28.00%	31.82%	10.00%	100.00%	16.00%	28.33%	25.60%	29.92%	31.83%
210022	SUBURBAN HOSPITAL	20.00%	25.45%	20.00%	100.00%	14.00%	20.00%	21.90%	24.00%	26.73%

Hospital ID	Hospital Name	HCAHPS Final Score without ED Wait Times	HCAHPS Final Score without ED and with Follow-up	Morta-lity Final Score	THA-TKA Score	Safety Final Score	Safety Final Score with PSI-90	Model 1. Total Score without ED Wait Times	Model 2. Total Score without ED plus PSI-90	Model 3. Total Score without ED Wait Times with PSI-90 and Follow-Up
210023	ANNE ARUNDEL MEDICAL CENTER	23.00%	23.64%	40.00%	100.00%	16.00%	25.00%	26.10%	29.25%	29.57%
210024	MEDSTAR UNION MEMORIAL HOSPITAL	32.00%	30.00%	80.00%	100.00%	35.00%	28.00%	41.25%	38.80%	37.80%
210027	UPMC - WESTERN MARYLAND	25.00%	30.00%	30.00%	60.00%	20.00%	16.67%	25.50%	24.33%	26.83%
210028	MEDSTAR ST. MARY'S HOSPITAL	29.00%	30.91%	30.00%	100.00%	76.67%	70.00%	49.33%	47.00%	47.95%
210029	JOHNS HOPKINS BAYVIEW MEDICAL CENTER	22.00%	22.73%	30.00%	100.00%	28.00%	31.67%	28.80%	30.08%	30.45%
210032	CHRISTIANACARE, UNION HOSPITAL	14.00%	12.73%	10.00%	50.00%	42.50%	34.00%	25.38%	22.40%	21.76%
210033	CARROLL HOSPITAL CENTER	19.00%	19.09%	100.00%	90.00%	62.00%	51.67%	45.70%	42.08%	42.13%
210034	MEDSTAR HARBOR HOSPITAL CENTER	15.00%	13.64%	40.00%	0.00%	36.00%	33.33%	24.10%	23.17%	22.48%
210035	UM-CHARLES REGIONAL MEDICAL CENTER	20.00%	19.09%	40.00%	100.00%	50.00%	51.67%	36.50%	37.08%	36.63%
210037	UM-SHORE REGIONAL HEALTH AT EASTON	20.00%	20.91%	80.00%	90.00%	58.00%	65.00%	42.80%	45.25%	45.70%
210038	UMMC MIDTOWN CAMPUS	18.00%	16.36%	70.00%		52.50%	52.00%	37.88%	37.70%	36.88%
210039	CALVERT HEALTH MEDICAL CENTER	14.00%	15.45%	100.00%	90.00%	60.00%	45.00%	42.50%	37.25%	37.98%
210040	NORTHWEST HOSPITAL CENTER	22.00%	20.00%	100.00%	100.00%	18.00%	15.00%	32.30%	31.25%	30.25%
210043	UM-BALTIMORE WASHINGTON MEDICAL CENTER	25.00%	25.45%	80.00%	10.00%	56.00%	55.00%	40.60%	40.25%	40.48%
210044	GREATER BALTIMORE MEDICAL CENTER	16.00%	16.36%	80.00%	100.00%	20.00%	16.67%	28.00%	26.83%	27.02%
210048	HOWARD COUNTY GENERAL HOSPITAL	18.00%	20.91%	50.00%	80.00%	40.00%	33.33%	32.00%	29.67%	31.12%
210049	UM-UPPER CHESAPEAKE MEDICAL CENTER	15.00%	18.18%	80.00%	100.00%	28.00%	23.33%	30.30%	28.67%	30.26%
210051	DOCTORS COMMUNITY MEDICAL CENTER	12.00%	10.91%	70.00%	70.00%	72.00%	61.67%	41.70%	38.08%	37.54%
210056	MEDSTAR GOOD SAMARITAN	20.00%	18.18%	60.00%	50.00%	34.00%	28.33%	30.40%	28.42%	27.51%
210057	SHADY GROVE ADVENTIST HOSPITAL	10.00%	14.55%	0.00%	40.00%	42.00%	36.67%	21.70%	19.83%	22.11%

Hospital ID	Hospital Name	HCAHPS Final Score without ED Wait Times	HCAHPS Final Score without ED and with Follow-up	Morta-lity Final Score	THA-TKA Score	Safety Final Score	Safety Final Score with PSI-90	Model 1. Total Score without ED Wait Times	Model 2. Total Score without ED plus PSI-90	Model 3. Total Score without ED Wait Times with PSI-90 and Follow-Up
210060	ADVENTIST HEALTHCARE FORT WASHINGTON	11.00%	10.00%	0.00%	100.00%			16.47%	16.47%	15.70%
210061	ATLANTIC GENERAL HOSPITAL	47.00%	44.55%	0.00%	80.00%	43.33%	47.50%	42.67%	44.13%	42.90%
210062	MEDSTAR SOUTHERN MARYLAND HOSPITAL CENTER	12.00%	10.91%	20.00%	0.00%	68.00%	56.67%	31.80%	27.83%	27.29%
210063	UM-ST. JOSEPH MEDICAL CENTER	33.00%	33.64%	100.00%	100.00%	44.00%	53.33%	46.90%	50.17%	50.48%
210065	HOLY CROSS HOSPITAL-GERMANTOWN	23.00%	20.91%	50.00%		70.00%	56.00%	43.50%	38.60%	37.55%

NOTE: **210013 - Grace is removed from FINAL SCORES due to transition to Free-standing Medical Facility**

NOTE: **210030 - UM-Chestertown is removed from FINAL SCORES due to insufficient HCAHPS completed surveys; insufficient inclusion criteria for Safety Domain measures.**

NOTE: 210017 - Garrett is now included in Safety Domain with3 of 6 measures (C.Diff, SSI-Colon and PSI-90)

NOTE: 210060 - Ft Washington remains excluded from the Safety domain with 2 of 6 measures (C Diff and PSI-90)

APPENDIX VII. MODELING OF QBR PROGRAM REVENUE ADJUSTMENTS

HOSPID	HOSPITAL NAME	RY 21 without ED Wait Times % Revenue Impact	RY 21 without ED Wait Times $ Revenue Impact	RY21 without ED Wait Times and with PSI % Revenue Impact	RY21 without ED Wait Times and with PSI $ Revenue Impact	RY21 without ED Wait Times and with PSI and Follow-Up % Revenue Impact	RY21 without ED Wait Times and with PSI and Follow-Up $ Revenue Impact
210001	MERITUS	-0.12%	-$259,257	-0.21%	-$453,700	-0.05%	-$108,024
210002	UNIVERSITY OF MARYLAND	-0.76%	-$9,373,280	-0.81%	-$9,989,943	-0.86%	-$10,606,606
210003	PRINCE GEORGE	-1.30%	-$3,423,711	-1.41%	-$3,713,410	-1.37%	-$3,608,065
210004	HOLY CROSS	-1.12%	-$4,078,744	-1.16%	-$4,224,414	-1.16%	-$4,224,414
210005	FREDERICK MEMORIAL	0.06%	$140,965	-0.09%	-$211,448	0.01%	$23,494
210006	HARFORD	-0.36%	-$196,560	-0.50%	-$273,000	-0.45%	-$245,700
210008	MERCY	-0.53%	-$1,299,473	-0.52%	-$1,274,955	-0.62%	-$1,520,139
210009	JOHNS HOPKINS	-0.34%	-$5,225,852	-0.35%	-$5,379,554	-0.47%	-$7,223,972
210010	DORCHESTER	-0.01%	-$2,052	-0.17%	-$34,880	-0.15%	-$30,776
210011	ST. AGNES	-0.75%	-$1,869,191	-0.85%	-$2,118,417	-0.89%	-$2,218,107
210012	SINAI	-0.92%	-$4,082,545	-0.97%	-$4,304,422	-0.98%	-$4,348,798
210013	BON SECOURS	2.00%	$0	2.00%	$0	2.00%	$0
210015	FRANKLIN SQUARE	-0.21%	-$648,591	-0.30%	-$926,558	-0.34%	-$1,050,099
210016	WASHINGTON ADVENTIST	0.11%	$197,724	-0.06%	-$107,849	-0.10%	-$179,749
210017	GARRETT COUNTY	0.39%	$89,753	0.35%	$80,548	0.38%	$87,452
210018	MONTGOMERY GENERAL	-0.29%	-$245,746	-0.50%	-$423,700	-0.40%	-$338,960
210019	PENINSULA REGIONAL	-0.75%	-$1,948,514	-0.54%	-$1,402,930	-0.45%	-$1,169,108
210022	SUBURBAN	-0.93%	-$2,023,698	-0.83%	-$1,806,096	-0.70%	-$1,523,214
210023	ANNE ARUNDEL	-0.73%	-$2,333,756	-0.57%	-$1,822,248	-0.56%	-$1,790,278
210024	UNION MEMORIAL	0.01%	$25,856	-0.11%	-$284,415	-0.16%	-$413,694
210027	WESTERN MARYLAND	-0.76%	-$1,334,559	-0.81%	-$1,422,359	-0.69%	-$1,211,639
210028	ST. MARY	0.43%	$341,012	0.31%	$245,846	0.36%	$285,498
210029	HOPKINS BAYVIEW MED CTR	-0.60%	-$2,327,675	-0.53%	-$2,056,113	-0.51%	-$1,978,524
210030	CHESTERTOWN	2.00%		2.00%		2.00%	
210032	UNION HOSPITAL OF CECIL	-0.76%	-$517,840	-0.91%	-$620,045	-0.94%	-$640,486
210033	CARROLL COUNTY	0.24%	$357,121	0.06%	$89,280	0.06%	$89,280
210034	HARBOR	-0.82%	-$1,001,948	-0.87%	-$1,063,043	-0.90%	-$1,099,699
210035	CHARLES REGIONAL	-0.22%	-$178,395	-0.19%	-$154,068	-0.21%	-$170,286
210037	EASTON	0.09%	$98,534	0.22%	$240,862	0.24%	$262,759
210038	UMMC MIDTOWN	-0.15%	-$161,556	-0.16%	-$172,326	-0.20%	-$215,408
210039	CALVERT	0.08%	$56,795	-0.18%	-$127,788	-0.15%	-$106,490
210040	NORTHWEST	-0.42%	-$590,308	-0.48%	-$674,638	-0.52%	-$730,858
210043	BALTIMORE WASHINGTON	-0.02%	-$53,283	-0.04%	-$106,566	-0.03%	-$79,925
210044	G.B.M.C.	-0.63%	-$1,557,352	-0.69%	-$1,705,671	-0.68%	-$1,680,952
210048	HOWARD COUNTY	-0.44%	-$818,895	-0.55%	-$1,023,618	-0.48%	-$893,340
210049	UPPER CHESAPEAKE HEALTH	-0.52%	-$817,806	-0.60%	-$943,622	-0.52%	-$817,806
210051	DOCTORS COMMUNITY	0.04%	$59,532	-0.14%	-$208,362	-0.17%	-$253,011
210055	LAUREL REGIONAL		$0		$0		$0
210056	GOOD SAMARITAN	-0.52%	-$838,436	-0.61%	-$983,550	-0.66%	-$1,064,169
210057	SHADY GROVE	-0.94%	-$2,674,350	-1.03%	-$2,930,405	-0.92%	-$2,617,449
210060	FT. WASHINGTON	-1.20%	-$260,360	-1.20%	-$260,360	-1.23%	-$266,869
210061	ATLANTIC GENERAL	0.09%	$36,571	0.16%	$65,015	0.10%	$40,634
210062	SOUTHERN MARYLAND	-0.45%	-$788,377	-0.64%	-$1,121,247	-0.67%	-$1,173,806
210063	UM ST. JOSEPH	0.30%	$754,639	0.47%	$1,182,268	0.49%	$1,232,577
210065	HC-GERMANTOWN	0.13%	$91,968	-0.12%	-$84,893	-0.17%	-$120,266
	Statewide Total		-$48,681,640		-$52,506,794		-$53,698,992

		ASTHMA	ASTHMA	ASTHMA	CAD	CAD	CAD	CHF	CHF	CHF	COPD	COPD	COPD	DIABETES	DIABETES	DIABETES	HTN	HTN	HTN	TOTAL	TOTAL	TOTAL
		\u2014										CY 2019 Follow-Up Rates										
Hosp ID	Hospital Name	Eligible Discharge	Follow-Up Received	Follow-Up Rate	Eligible Discharge	Follow-Up Received	Follow-Up Rate	Eligible Discharge	Follow-Up Received	Follow-Up Rate	Eligible Discharge	Follow-Up Received	Follow-Up Rate	Eligible Discharge	Follow-Up Received	Follow-Up Rate	Eligible Discharge	Follow-Up Received	Follow-Up Rate	Eligible Discharge	Follow-Up Received	Follow-Up Rate
210001	Meritus	268	208	77.6%	380	316	83.2%	668	542	81.1%	572	501	87.6%	259	183	70.7%	119	88	73.9%	2,266	1,838	81.11%
210002	UMMC	128	74	57.8%	368	256	69.6%	464	321	69.2%	202	156	77.2%	192	139	72.4%	122	82	67.2%	1,476	1,028	69.65%
210003	UM-PGHC	131	74	56.5%	269	188	69.9%	463	275	59.4%	244	178	73.0%	154	86	55.8%	136	75	55.1%	1,397	876	62.71%
210004	Holy Cross	158	101	63.9%	297	222	74.7%	512	376	73.4%	272	219	80.5%	201	131	65.2%	170	126	74.1%	1,610	1,175	72.98%
210005	Frederick	347	251	72.3%	448	365	81.5%	786	619	78.8%	571	484	84.8%	327	234	71.6%	188	147	78.2%	2,667	2,100	78.74%
210006	UM-Harford	92	57	62.0%	102	73	71.6%	257	180	70.0%	236	195	82.6%	95	62	65.3%	67	55	82.1%	849	622	73.26%
210008	Mercy	71	37	52.1%	151	82	54.3%	234	135	57.7%	143	102	71.3%	103	55	53.4%	42	22	52.4%	744	433	58.20%
210009	Johns Hopkins	180	105	58.3%	306	187	61.1%	606	388	64.0%	248	189	76.2%	302	186	61.6%	84	60	71.4%	1,726	1,115	64.60%
210010	UM-Dorchester*	297	209	70.4%	204	142	69.6%	446	316	70.9%	428	366	85.5%	260	183	70.4%	98	66	67.3%	1,733	1,282	73.98%
210011	St. Agnes	211	126	59.7%	256	160	62.5%	565	334	59.1%	449	338	75.3%	322	174	54.0%	160	104	65.0%	1,963	1,236	62.96%
210012	Sinai	169	104	61.5%	432	315	72.9%	670	461	68.8%	326	240	73.6%	291	168	57.7%	187	111	59.4%	2,075	1,399	67.42%
210015	MedStar Fr Square	396	249	62.9%	566	371	65.5%	1,102	733	66.5%	879	708	80.5%	499	319	63.9%	329	213	64.7%	3,771	2,593	68.76%
210017	Adventist White Oak	129	86	66.7%	338	239	70.7%	436	299	68.6%	180	154	85.6%	153	99	64.7%	112	78	69.6%	1,348	955	70.85%
210017	Garrett	35	26	74.3%	44	30	68.2%	76	57	75.0%	70	63	90.0%	36	28	77.8%	20	14	70.0%	281	218	77.58%
210018	MedStar Montgomery	112	83	74.1%	122	95	77.9%	276	214	77.5%	195	165	84.6%	120	89	74.2%	92	69	75.0%	917	715	77.97%
210019	Peninsula	381	287	75.3%	411	321	78.1%	712	557	78.2%	520	453	87.1%	352	256	72.7%	142	102	71.8%	2,518	1,976	78.47%
210022	Suburban	163	122	74.8%	268	222	82.8%	471	365	77.5%	243	209	86.0%	180	134	74.4%	112	88	78.6%	1,437	1,140	79.33%
210023	Anne Arundel	341	249	73.0%	451	310	68.7%	1,072	767	71.5%	710	612	86.2%	451	306	67.8%	258	179	69.4%	3,283	2,423	73.80%
210024	MedStar Union Mem	120	73	60.8%	429	294	68.5%	595	408	68.6%	265	191	72.1%	153	80	52.3%	142	83	58.5%	1,704	1,129	66.26%
210027	Western Maryland	187	146	78.1%	232	189	81.5%	446	341	76.5%	395	351	88.9%	205	144	70.2%	90	63	70.0%	1,555	1,234	79.36%
210028	MedStar St. Mary's	151	105	69.5%	171	128	74.9%	421	323	76.7%	318	271	85.2%	169	105	62.1%	84	65	77.4%	1,314	997	75.88%
210029	JH Bayview	180	126	70.0%	279	197	70.6%	588	430	73.1%	390	325	83.3%	236	142	60.2%	127	87	68.5%	1,800	1,307	72.61%
210030	UM-Chestertown	55	32	58.2%	31	20	64.5%	87	48	55.2%	97	73	75.3%	42	13	31.0%	21	16	76.2%	333	202	60.66%
210032	ChristianaCare, Union	166	101	60.8%	118	88	74.6%	258	174	67.4%	302	235	77.8%	149	104	69.8%	42	32	76.2%	1,035	734	70.92%
210033	Carroll	206	150	72.8%	333	231	69.4%	472	327	69.3%	421	358	85.0%	200	140	70.0%	178	122	68.5%	1,810	1,328	73.37%
210034	MedStar Harbor	114	65	57.0%	105	70	66.7%	263	165	62.7%	281	203	72.2%	116	62	53.4%	70	46	65.7%	949	611	64.38%
210035	UM-Charles Regional	151	101	66.9%	139	91	65.5%	321	217	67.6%	248	199	80.2%	174	130	74.7%	123	85	69.1%	1,156	823	71.19%
210037	UM-Easton	297	209	70.4%	204	142	69.6%	446	316	70.9%	428	366	85.5%	260	183	70.4%	98	66	67.3%	1,733	1,282	73.98%
210038	UMMC Midtown	43	26	60.5%	42	22	52.4%	131	68	51.9%	72	58	80.6%	87	50	57.5%	40	19	47.5%	415	243	58.55%
210039	Calvert	103	75	72.8%	259	203	78.4%	407	306	75.2%	252	210	83.3%	174	101	58.0%	106	71	67.0%	1,301	966	74.25%
210040	Northwest	247	130	52.6%	334	190	56.9%	769	456	59.3%	481	366	76.1%	353	193	54.7%	320	184	57.5%	2,504	1,519	60.66%
210043	UM-BWMC	416	286	68.8%	467	354	75.8%	967	703	72.7%	758	633	83.5%	492	327	66.5%	264	191	72.3%	3,364	2,494	74.14%
210044	GBMC	120	87	72.5%	123	83	67.5%	353	250	70.8%	248	207	83.5%	169	120	71.0%	118	84	71.2%	1,131	831	73.47%
210048	Howard County	301	203	67.4%	358	272	76.0%	738	546	74.0%	477	404	84.7%	301	221	73.4%	177	140	79.1%	2,352	1,786	75.94%
210049	UM-Upper Chesapeake	256	178	69.5%	410	307	74.9%	724	533	73.6%	538	469	87.2%	270	187	69.3%	189	139	73.5%	2,387	1,813	75.95%
210051	Doctors	258	162	62.8%	256	179	69.9%	682	455	66.7%	418	338	80.9%	328	211	64.3%	157	105	66.9%	2,099	1,450	69.08%
210056	MedStar Good Sam	169	94	55.6%	218	158	72.5%	533	357	67.0%	333	241	72.4%	241	145	60.2%	156	103	66.0%	1,650	1,098	66.55%
210057	Shady Grove	206	148	71.8%	286	228	79.7%	510	387	75.9%	322	274	85.1%	222	161	72.5%	202	152	75.2%	1,748	1,350	77.23%
210060	Ft. Washington	72	38	52.8%	71	41	57.7%	201	124	61.7%	143	106	74.1%	82	42	51.2%	60	33	55.0%	629	384	61.05%
210061	Atlantic General	90	55	61.1%	42	30	71.4%	175	130	74.3%	164	131	79.9%	84	63	75.0%	45	29	64.4%	600	438	73.00%
210062	MedStar Southern MD	150	92	61.3%	303	196	64.7%	577	345	59.8%	278	202	72.7%	211	115	54.5%	148	88	59.5%	1,667	1,038	62.27%
210063	UM-St. Joe	197	149	75.6%	414	282	68.1%	546	414	75.8%	329	275	83.6%	215	146	67.9%	176	137	77.8%	1,877	1,403	74.75%
210065	HC-Germantown	37	23	62.2%	77	53	68.8%	131	88	67.2%	75	50	66.7%	58	40	69.0%	59	36	61.0%	437	290	66.36%

*Data for UM Easton is used for UM Dorchester

threshold		72.98%
90th Percentile		78.63%
benchmark		79.64%