Report Extending the Readmission Reduction Incentive Program
for Rate Year 2024

April 13, 2021

This document extends the final staff recommendations for the Readmission Reduction Incentive Program, which was approved by the Commission on Jan 13, 2021, to RY 2024.

Introduction

With the commencement of the Total Cost of Care (TCOC) Model Agreement on January 1, 2019, the performance standards and targets in HSCRC's portfolio of quality and value-based payment programs have been reviewed and updated. In CY 2019, staff focused on the rate year (RY) 2022 RRIP program and convened a subgroup with clinical and measurement experts who made recommendations that were then further evaluated by the Performance Measurement Workgroup (PMWG). The RRIP subgroup and PMWG considered updated approaches for reducing readmissions in Maryland to support the goals of the TCOC Model. Specifically, the workgroup evaluated Maryland hospital performance relative to various opportunity analyses, including external national benchmarks, and developed a 5-year improvement target (2018-2023). In addition, the staff developed a within-hospital disparities metric for readmissions, which was linked with a Statewide Integrated Health Improvement Strategy (SIHIS) goal to have half of hospitals improve disparities by 50 percent.

The RY 2023 final recommendation, in general, maintained the measure updates and methodology determinations that were developed and approved for RY 2022.[1] Thus for RY 2024 staff propose to extend the RY 2023 policy with no significant changes. The RY 2023 final policy is included in the appendix.

Recommendations

These are the final recommendations for the RY 2023 Readmission Reduction Incentive Program (RRIP) policy:

1. Maintain the 30-day, all-cause readmission measure.
2. Improvement Target - Maintain the RY 2022 approved statewide 5-year improvement target of -7.5 percent from 2018 base period.
3. Attainment Target - Maintain the attainment target whereby hospitals at or better than the 65th percentile of statewide performance receive scaled rewards for maintaining low readmission rates.
4. Maintain maximum rewards and penalties at 2 percent of inpatient revenue,

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[1] See the RY 2022 policy for detailed discussion of the RRIP redesign, rationale for decisions, and approved recommendations

5. Provide additional payment incentive (up to 0.50 percent of inpatient revenue) for reductions in within-hospital readmission disparities. Scale rewards beginning at 0.25 percent of IP revenue for hospitals on track for 50 percent reduction in disparity gap measure over 8 years, capped at 0.50 percent of IP revenue for hospitals on pace for 75 percent or larger reduction in disparity gap measure over 8 years.

6. Continue development of an all-payer Excess Days in Acute Care measure in order to account for readmission, emergency department, and observation revisits post-discharge.

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

Appendix: RY 2023 Final Policy

Final Recommendation for the Readmission Reduction Incentive Program
for Rate Year 2023

January 13, 2021

This document contains the final staff recommendations for the Readmission Reduction Incentive Program and was approved by the Commission on Jan 13, 2021.

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List of Abbreviations

ADI	Area Deprivation Index
AMA	Against Medical Advice
APR-DRG	All-patient refined diagnosis-related group
CMS	Centers for Medicare & Medicaid Services
CMMI	Center for Medicare and Medicaid Innovation
CRISP	Chesapeake Regional Information System for Our Patients
CY	Calendar year
eCQM	Electronic Clinical Quality Measure
EDAC	Excess Days in Acute Care
FFS	Fee-for-service
HCC	Hierarchical Condition Category
HRRP	Hospital Readmissions Reduction Program
HSCRC	Health Services Cost Review Commission
HWR	Hospital-Wide Readmission Measure
MCDB	Medical Claims Database
MPR	Mathematica Policy Research
MSA	Metropolitan Statistical Area
NQF	National Quality Forum
PAI	Patient Adversity Index
PMWG	Performance Measurement Workgroup
PQI	Prevention Quality Indicators
RRIP	Readmissions Reduction Incentive Program
RY	Rate Year
SIHIS	Statewide Integrated Healthcare Improvement Strategy
SOI	Severity of illness
TCOC	Total Cost of Care
YTD	Year-to-date

Key Methodology Concepts and Definitions

All Patients Refined Diagnosis Related Groups (APR-DRG): Specific type of DRG assigned using 3M software that groups all diagnosis and procedure codes into one of 328 All-Patient Refined-Diagnosis Related Groups.

Severity of Illness (SOI): 4-level classification of minor, moderate, major, and extreme that can be used with APR-DRGs to assess the acuity of a discharge.

APR-DRG SOI: Combination of diagnosis-related groups with severity of illness levels, such that each admission can be classified into an APR-DRG SOI "cell" along with other admissions that have the same diagnosis-related group and severity of illness level.

Observed/Expected Ratio: Readmission rates are calculated by dividing the observed number of readmissions by the expected number of readmissions. Expected readmissions are determined through case-mix adjustment.

Case-Mix Adjustment: Statewide rate for readmissions (i.e., normative value or "norm") is calculated for each diagnosis and severity level. These statewide norms are applied to each hospital's case-mix to determine the expected number of readmissions, a process known as indirect standardization.

Prevention Quality Indicator (PQI): a set of measures that can be used with hospital inpatient discharge data to identify quality of care for "ambulatory care sensitive conditions." These are conditions for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease.

Area Deprivation Index (ADI): A measure of neighborhood deprivation that is based on the American Community Survey and includes factors for the theoretical domains of income, education, employment, and housing quality.

Patient Adversity Index (PAI): HSCRC developed composite measure of social risk incorporating information on patient race, Medicaid status, and the Area Deprivation Index.

Excess Days in Acute Care (EDAC): Capture excess days that a hospital's patients spent in acute care within 30 days after discharge. The measures incorporate the full range of post-discharge use of care (emergency department visits, observation stays, and unplanned readmissions).

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 Readmission Reduction Incentive Program (RRIP), 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 RRIP policy 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 RRIP policy currently holds 2 percent of hospital revenue at-risk for readmissions occurring within 30-days of discharge for all payers and all causes. Specific criteria for inclusion (oncology discharges) and exclusion (discharges leaving Against Medical Advice, Planned Admissions) are detailed in Appendix I.	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.	Currently, the RRIP policy measures within-hospital disparities in readmission rates, using an HSCRC-generated Patient Adversity Index (PAI), and provides rewards for hospitals that meet specified disparity gap reduction goals. The broader RRIP policy continues to reward or penalize hospitals on the better of improvement and attainment, which incentivizes hospitals to improve poor clinical outcomes that may be correlated with health disparities. It is important that persistent health disparities are not made permanent. Moving forward, the assessment of performance may evolve the existing PAI measure, and the reward structure for improvements in within-hospital disparities in readmission rates.

Recommendations

The RRIP policy was redesigned in Rate Year (RY) 2022 to modernize the program for the Total Cost of Care Model. This RY 2023 final recommendation, in general, maintains the measure updates and methodology determinations that were developed and approved for RY 2022.[2]

These are the final recommendations for the RY 2023 Readmission Reduction Incentive Program (RRIP) policy:

8. Maintain the 30-day, all-cause readmission measure.
    a. Remove Pediatric Oncology cases, in accordance with the intention of the oncology readmission measure.

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[2] See the RY 2022 policy for detailed discussion of the RRIP redesign, rationale for decisions, and approved recommendations

9. Improvement Target - Maintain the RY 2022 approved statewide 5-year improvement target of -7.5 percent from 2018 base period.

10. Attainment Target - Maintain the attainment target whereby hospitals at or better than the 65th percentile statewide performance receive scaled rewards for maintaining low readmission rates.

11. For improvement and attainment, increase the maximum reward hospitals can receive to 2 percent of inpatient revenue and maintain the maximum penalty at 2 percent of inpatient revenue.

12. Provide additional payment incentive (up to 0.50 percent of inpatient revenue) for reductions in within-hospital readmission disparities. Scale rewards beginning at 0.25 percent of IP revenue for hospitals on track for 50 percent reduction in disparity gap measure over 8 years (>=15.91 percent reduction in disparity gap measure 2018 to 2021), capped at 0.50 percent of IP revenue for hospitals on pace for 75 percent or larger reduction in disparity gap measure over 8 years (>=29.29 percent reduction in disparity gap measure 2018 to 2021).

13. Continue development of an all-payer Excess Days in Acute Care measure in order to account for readmission, emergency department, and observation revisits post-discharge.

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

    a. For RY 2022 (CY 2020 performance period)

        i. Exclude COVID-19 positive cases from the program.

        ii. Exclude the data for January to June 2020; evaluate whether to use the final six months of 2020 or whether to use a prior time period.

        iii. Evaluate case-mix adjustment and performance standards concerns arising from use of a pre-COVID time period to determine normative values.

    b. For RY 2023 (CY 2021 performance period) include COVID-19 positive cases but retrospectively assess any case-mix concerns, including the use of a pre-COVID time period to determine normative values.

Introduction

Since 2014, Maryland hospitals have been funded under a global budget system, which is a fixed annual revenue cap that is adjusted for inflation, quality performance, reductions in potentially avoidable utilization, market shifts, and demographic growth. Under the global budget system, hospitals are incentivized to transition services to the most appropriate care setting and may keep savings that they achieve via improved health care delivery (e.g., reduced avoidable utilization, such as readmissions or hospital-acquired infections). It is important that the Commission ensure that any incentives to constrain hospital expenditures do not result in declining quality of care. Thus, the Maryland Health Services Cost Review Commission's (HSCRC's or Commission's) Quality programs reward quality improvements that reinforce the incentives of the global budget system, while penalizing poor performance and guarding against unintended consequences.

The Readmissions Reduction Incentive Program (RRIP) is one of several pay-for-performance initiatives that provide incentives for hospitals to improve patient care and value over time. The RRIP currently holds up to 2 percent of inpatient hospital revenue at-risk in penalties and up to 1 percent at-risk in rewards based on improvement and attainment in case-mix adjusted readmission rates. In addition, the RRIP is the first quality policy to provide incentives for reducing disparities by rewarding hospitals up to 0.5 percent of inpatient hospital revenue for reducing within-hospital disparities in readmissions.

With the commencement of the Total Cost of Care (TCOC) Model Agreement on January 1, 2019, the performance standards and targets in HSCRC's portfolio of quality and value-based payment programs have been reviewed and updated. In CY 2019, staff focused on the RRIP program and convened a subgroup with clinical and measurement experts who made recommendations that were then further evaluated by the Performance Measurement Workgroup (PMWG). The RRIP subgroup and PMWG considered updated approaches for reducing readmissions in Maryland to support the goals of the TCOC Model. Specifically, the workgroup evaluated Maryland hospital performance relative to various opportunity analyses, including external national benchmarks, and staff developed a within-hospital disparities metric for readmissions in consultation with the workgroup.

Background

Brief History of RRIP program

Maryland made incremental progress each year throughout the All-Payer Model (2014-2018), ultimately achieving the Model goal for the Maryland Medicare FFS readmission rate to be at or below the unadjusted national Medicare readmission rate by the end of Calendar Year (CY) 2018. Maryland had historically performed poorly compared to the nation on readmissions; it ranked 50th among all states in a study examining Medicare data from 2003-2004.[3] In order to meet the All-Payer Model requirements, the Commission approved the RRIP program in April 2014 to further bolster the incentives to reduce unnecessary readmissions.

As recommended by the Performance Measurement Workgroup, the RRIP is more comprehensive than its federal counterpart, the Medicare Hospital Readmission Reduction Program (HRRP), as it is an all-cause measure that includes all patients and all payers.[4]

In Maryland, the RRIP methodology evaluates all-payer, all-cause inpatient readmissions using the CRISP unique patient identifier to track patients across Maryland hospitals. The readmission measure excludes certain types of discharges (such as planned readmissions) from consideration, due to data issues and clinical concerns. Readmission rates are adjusted for case-mix using all-patient refined diagnosis-related group (APR-DRG) severity of illness (SOI), and the policy determines a hospital's score and revenue adjustment by the better of improvement or attainment, with scaled rewards of up to 1 percent of inpatient revenue and scaled penalties of up to 2 percent.[5]

RRIP Redesign

As part of the ongoing evolution of the All-Payer Model's pay-for-performance programs to further bring them into alignment under the Total Cost of Care Model, HSCRC convened a work group in CY 2019 to evaluate the Readmission Reduction Incentive Program (RRIP). The work group consisted of stakeholders, subject matter

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[3] Jencks, S. F. et al., "Hospitalizations among Patients in the Medicare Fee-for-Service Program," *New England Journal of Medicine* Vol. 360, No. 14: 1418-1428, 2009.
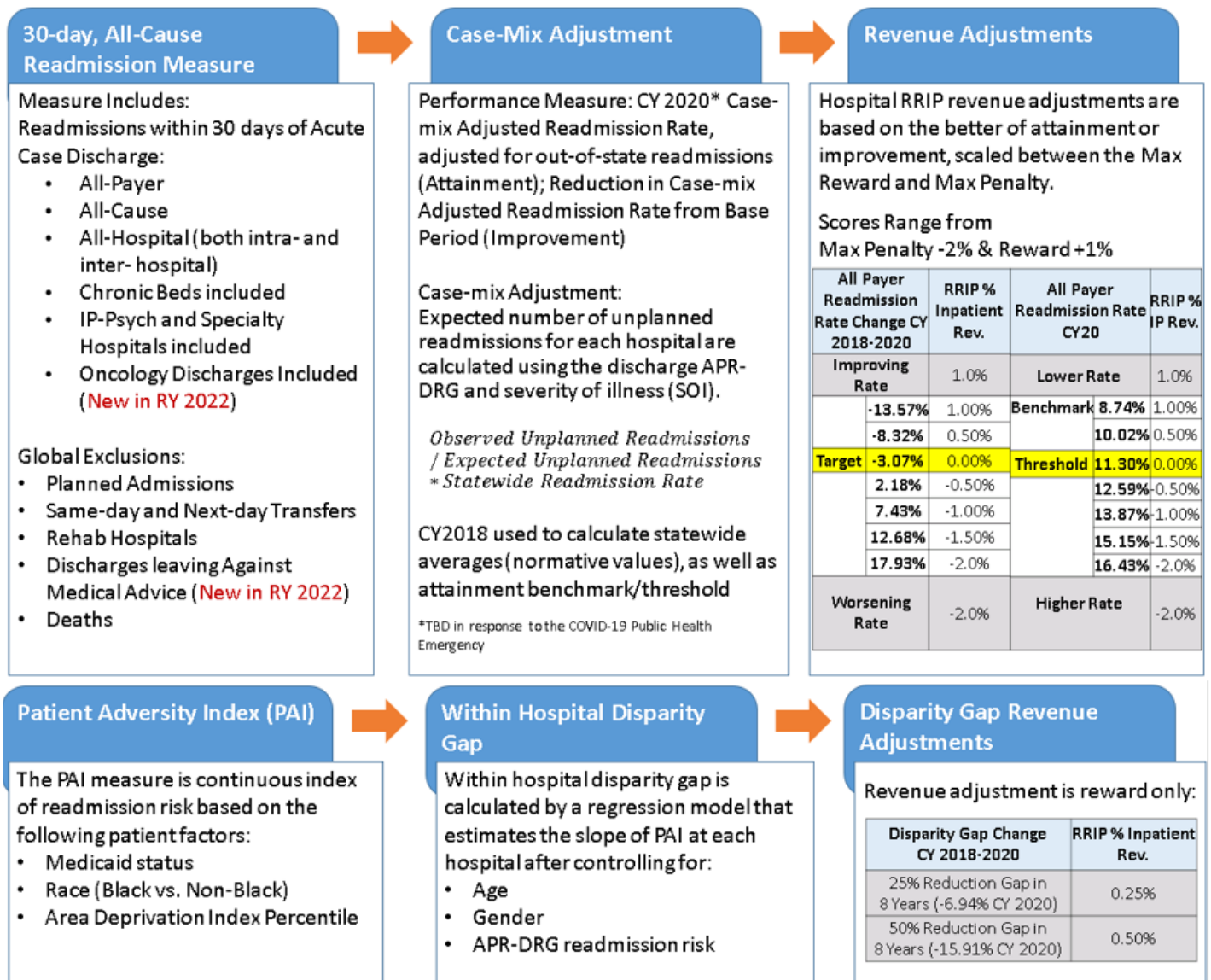
[4] For more information on the HRRP, please see: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Readmissions-Reduction-Program. Maryland remains exempted from the federal HRRP.

[5] See Appendix I for details of the current RRIP methodology.

experts, and consumers, and met six times between February and September 2019. The work group focused on the following six topics, with the general conclusions summarized below:

1. Analysis of Case-mix Adjustment and trends in Eligible Discharges over time to address concern of limited room for additional improvement;
   - Case-mix adjustment acknowledges increased severity of illness over time
   - Standard Deviation analysis of Eligible Discharges suggests that further reduction in readmission rates is possible
2. National Benchmarking of similar geographies using Medicare and Commercial data;
   - Maryland Medicare and Commercial readmission rates and readmissions per capita are on par with the nation
3. Updates to the existing All-Cause Readmission Measure;
   - Remove Eligible Discharges that left against medical advice (~7,500 discharges)
   - Include Oncology Discharges with more nuanced exclusion logic
     - Additionally, remove pediatric oncology cases from readmission eligibility
   - Analyze out-of-state ratios for other payers as data become available
4. Statewide Improvement and Attainment Targets under the TCOC Model;
   - 7.5 percent Improvement over 5 years (2018-2023)
   - Ongoing evaluation of the attainment threshold at 65th percentile
5. Social Determinants of Health and Readmission Rates; and
   - Methodology developed to assess within-hospital readmission disparities
6. Alternative Measures of Readmissions
   - Further analysis of per capita readmissions as broader trend; not germane to the RRIP policy because focus of evaluation is clinical performance and care management post-discharge
   - Observation trends under the All-Payer Model to better understand performance given variations in hospital observation use; future development will focus on incorporation of Excess Days in Acute Care (EDAC) measure in lieu of including observations in RRIP policy
   - Electronic Clinical Quality Measure (eCQM) may be considered in future to improve risk adjustment

Figure 1. Overview Rate Year 2022 RRIP Methodology

30-day, All-Cause Readmission Measure

Measure Includes:
Readmissions within 30 days of Acute Case Discharge:
- All-Payer
- All-Cause
- All-Hospital (both intra- and inter- hospital)
- Chronic Beds included
- IP-Psych and Specialty Hospitals included
- Oncology Discharges Included (New in RY 2022)

Global Exclusions:
- Planned Admissions
- Same-day and Next-day Transfers
- Rehab Hospitals
- Discharges leaving Against Medical Advice (New in RY 2022)
- Deaths

Case-Mix Adjustment

Performance Measure: CY 2020* Case-mix Adjusted Readmission Rate, adjusted for out-of-state readmissions (Attainment); Reduction in Case-mix Adjusted Readmission Rate from Base Period (Improvement)

Case-mix Adjustment:
Expected number of unplanned readmissions for each hospital are calculated using the discharge APR-DRG and severity of illness (SOI).

*Observed Unplanned Readmissions / Expected Unplanned Readmissions * Statewide Readmission Rate*

CY2018 used to calculate statewide averages (normative values), as well as attainment benchmark/threshold

*TBD in response to the COVID-19 Public Health Emergency

Revenue Adjustments

Hospital RRIP revenue adjustments are based on the better of attainment or improvement, scaled between the Max Reward and Max Penalty.

Scores Range from
Max Penalty -2% & Reward +1%

All Payer Readmission Rate Change CY 2018-2020		RRIP % Inpatient Rev.	All Payer Readmission Rate CY20		RRIP % IP Rev.
Improving Rate		1.0%	Lower Rate		1.0%
	-13.57%	1.00%	Benchmark	8.74%	1.00%
	-8.32%	0.50%		10.02%	0.50%
Target	-3.07%	0.00%	Threshold	11.30%	0.00%
	2.18%	-0.50%		12.59%	-0.50%
	7.43%	-1.00%		13.87%	-1.00%
	12.68%	-1.50%		15.15%	-1.50%
	17.93%	-2.0%		16.43%	-2.0%
Worsening Rate		-2.0%	Higher Rate		-2.0%

Patient Adversity Index (PAI)

The PAI measure is continuous index of readmission risk based on the following patient factors:
- Medicaid status
- Race (Black vs. Non-Black)
- Area Deprivation Index Percentile

Within Hospital Disparity Gap

Within hospital disparity gap is calculated by a regression model that estimates the slope of PAI at each hospital after controlling for:
- Age
- Gender
- APR-DRG readmission risk

Disparity Gap Revenue Adjustments

Revenue adjustment is reward only:

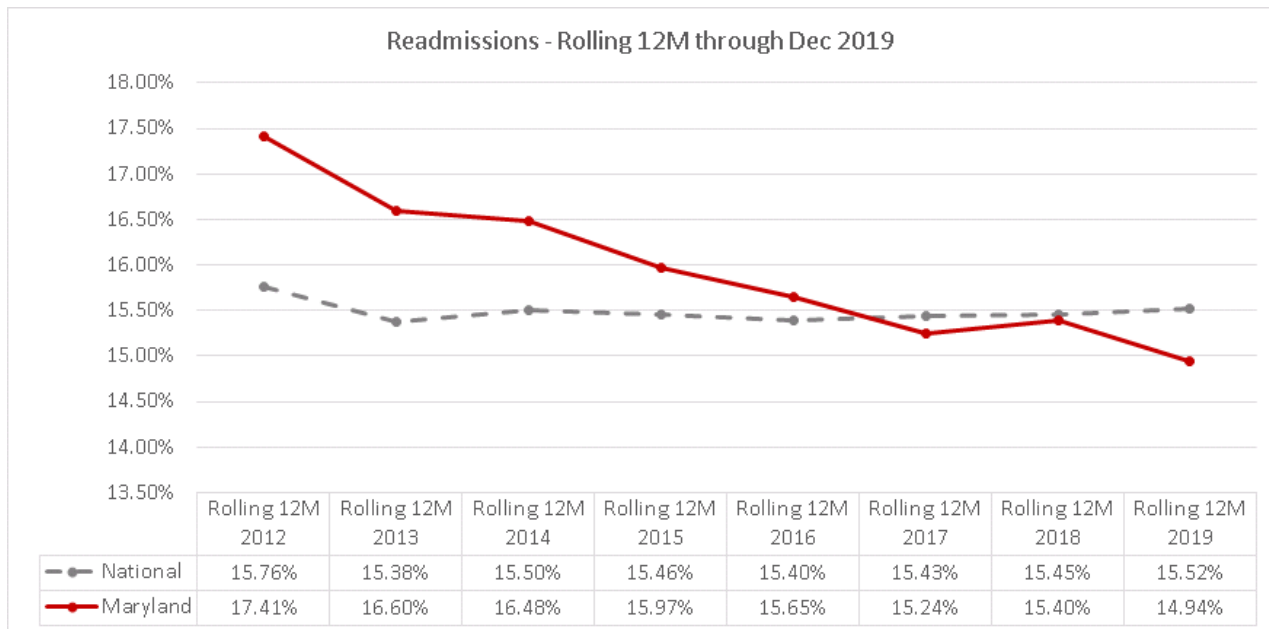| Disparity Gap Change CY 2018-2020	RRIP % Inpatient Rev.
25% Reduction Gap in 8 Years (-6.94% CY 2020)	0.25%
50% Reduction Gap in 8 Years (-15.91% CY 2020)	0.50%

Assessment

In general, stakeholders support the staff's recommendation to not make major changes to the RY 2023 RRIP program. This section of the report provides an overview of the data and issues discussed by the PMWG, including analysis of CY 2019 statewide readmission rates, estimated hospital scores, and revenue adjustment modelling. Staff has not included CY 2020 YTD readmission rates due to the ongoing COVID-19 Public Health Emergency (see more below).

Statewide Readmissions Performance

In CY 2019, Maryland improved upon its All-Payer Model achievement of being at or below the National Medicare FFS Rate. In CY 2018 at the conclusion of the All-Payer Model, Maryland had an unadjusted Medicare readmission rate of 15.40%, compared to the national rate of 15.45%. Through CY 2019, Maryland further improved its readmission rate, concluding the year with a rate of 14.94% compared to the national rate of 15.52% (see Figure 2 below).

Figure 2. TCOC Model "Waiver Test" - Maryland and National Unadjusted Readmission Rates

Readmissions - Rolling 12M through Dec 2019

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

Maryland also improved upon its Case-mix Adjusted Readmission rate in CY 2019, concluding CY 2019 with an all-payer case-mix adjusted readmission rate of 11.37%, a 2.90% reduction from the RY 2022 base period of CY 2018 (Figure 3, below). With the statewide improvement goal of 1.55% in CY 2020 (the compounded improvement needed to reach 7.5% over five years), 28 hospitals would have been "on track" to receive an incremental improvement reward for RY 2022, while 2 additional hospitals would have received the max reward for improvement.

Figure 3. RY 22 Monthly Case-mix Adjusted Readmission Rates, thru CY 2019

	All Payer	Medicare
CY2018	11.71%	12.57%
CY2019	11.37%	12.20%
Improvement	-2.95%	-2.96%
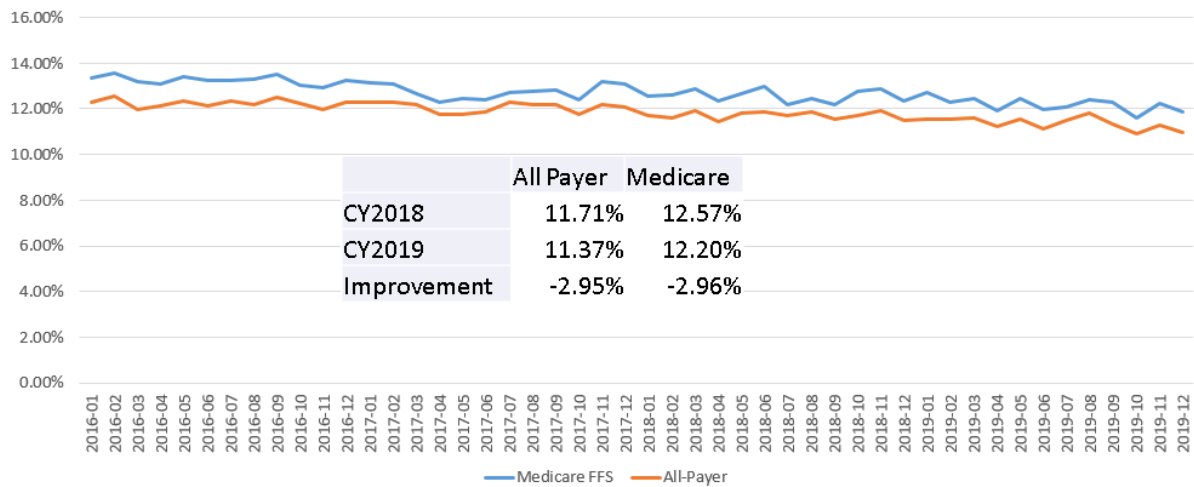
Given these favorable trends in readmission rates and given the challenges with assessing CY 2020 case-mix data during the COVID-19 Public Health Emergency (more below), staff is not recommending large changes to the RY 2023 RRIP policy, including maintaining the improvement and attainment methodologies for a planned CY 2021 performance period. The incremental improvement rate is assessed to be -4.57 percent, see Figure 4 below, while the attainment target benchmark and threshold will be calculated off of the most recent actionable case-mix data, adjusted for the proposed improvement (presently, CY 2019 under v37.1 of the APR-DRG grouper, yielding an attainment threshold of 10.96 percent and attainment benchmark of 8.16 percent). Based on the 2018 to 2019 readmission performance, there are 20 hospitals who have already exceeded the 4.57 percent improvement target such that if they maintain their 2019 readmission rates in 2021 they should receive an improvement reward.[6]

Figure 4. Compounded Improvement Rate to Achieve 7.5% Five-Year Improvement

Year	2019	2020	2021	2022	2023
Improvement	-1.55%	-3.07%	-4.57%	-6.05%	-7.50%

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[6] Based on this preliminary attainment target one additional hospital would receive an attainment reward despite not meeting the improvement target.

COVID-19 Program Considerations

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 even if submitted by hospitals.

- CMS is still reserving the right to suspend application of revenue adjustments for FFY 2022 for all hospital pay for performance programs at a future date in 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 programs. However, CMMI has strongly suggested that the State must have quality program adjustments, and has further suggested that the State pursue alternative strategies, such as reusing portions of CY 2019 (as is being done for the Skilled Nursing Facility VBP program) to create a 12-month performance period, should that be necessary for data reliability and validity.

In context of the CMS announcement and CMMI comments, staff has evaluated the data issues and options for the RY 2022 RRIP policy in Maryland, as illustrated in Figure 5 below.

Figure 5. RY 2022 COVID-Related Data Concerns and Options

COVID Data Concerns	Options
Only 6 months of data for CY 2020: 1. Is July-December data reliable? 2. What about seasonality?	● Use 6-months data, adjust base as needed for seasonality concerns ● Merge 2019 and 2020 data together to create a 12 month performance period ● Use 2019 data or revenue adjustments
Clinical concerns over inclusion of COVID patients	● Remove COVID patients from CY 2020 Eligible Discharges or Readmissions
Case-mix adjustment, performance standard and revenue adjustment scale concerns: 1. Inclusion of COVID patients when not in normative values 2. Impacts on other DRG/SOI of COVID PHE	● Remove COVID patients from CY 2020 evaluation ● Develop concurrent norms and performance standards for comparison and possible use ● Use 2019 data or revenue adjustments ● Modify revenue adjustment scale to recognize COVID related concerns

At this stage, staff believes the most appropriate approach for the RRIP policy is to exclude the COVID-19 patients[7] 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 will use v38 of the APR-DRG grouper, however, unlike the v38 PPC grouper, this updated grouper does not make changes to the readmission flags to account for COVID-19. 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.

Within-Hospital Disparities in Readmissions

In March 2020 the Commission approved rewards for hospitals reducing socioeconomic disparities in readmission rates between CY2018 and CY2020.[8] Evaluation of performance for CY2019 showed 26 of 45 hospitals improved on the disparity measure (Figure 6).

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[7] COVID-19 cases are defined as those coded with the ICD10 code U07.1
[8] Details on the methodology for calculating within hospital disparities can be found in the RY 2022 RRIP policy

Figure 6: CY2019 Disparity Improvement[9]

Disparity improvement, CY2018 to CY2019

Of those that improved, four would be ineligible for disparity reward due to overall RRIP performance requirement of some improvement, and one was not on track to attain the minimum disparity gap improvement threshold. Two hospitals are on track for a reward of 0.25% IP revenue and 19 are on track for a reward of 0.50% IP revenue.

Staff recommended the currently approved reward targets after reviewing analytics suggesting significant change in disparities would be difficult and time consuming for hospitals to achieve. However, as the program developed, Staff implemented a change in the calculation procedure to better account for shifting PAI values at individual hospitals. Specifically, initial analytics for the program were developed with the Patient Adversity Index (PAI), which measures patient socioeconomic exposures, using claims from CY2016 to 2018, which had the effect of stabilizing hospital disparity levels estimated annually during that three-year period. Ultimately, however, Staff elected to measure PAI, and to calculate mean PAI for each hospital, using data only from CY2018 to more accurately reflect PAI values, readmission risk, and performance during the base year, rather than during years not included in the base. This led to a larger-than-anticipated number of hospitals qualifying for the maximum reward category for RY 2022.

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[9] This graph does not show the absolute difference in readmission rates between Medicaid and other payers, black vs non black, and high ADI vs low ADI, and nor does it represent the change in readmission rates for these groups, but rather this graph shows the change in the disparity gap over time between the groups as determined through an evaluation of the change in slope for readmissions across all levels of patient adversity at each hospital.

Because of this methodology change, Staff recommends updating the reward structure to provide rewards beginning at 0.25 percent of IP revenue for hospitals on track for 50 percent reduction in disparity gap measure over 8 years (>=15.91 percent reduction in disparity gap measure 2018 to 2021), and 0.50 percent of IP revenue for hospitals on pace for 75 percent or larger reduction in disparity gap measure over 8 years (>=29.29 percent reduction in disparity gap measure 2018 to 2021).[10] Under this approach, six hospitals are currently on track to receive the lower reward, and 13 on track to receive the higher one. Staff also tends to evaluate approaches to scaling rewards between the lower and higher points.

Staff has received feedback from stakeholders suggesting that a review of initial program results to evaluate the possibility of unintended consequences related to the policy, such as shifts in coding of patient race. This work is planned for early 2021. Additionally, Staff is aware of the need to develop an approach to accounting for the effect of COVID-19 on disparities measurement.

Hospital Score and Revenue Adjustment Modeling

For this final policy, staff modeled hospital performance and revenue adjustments as if the policy had been applied from the base of 2018 to the 2019 performance year. This was done by calculating the one-year improvement targets for both case-mix adjusted readmissions and the disparity gap, i.e. 1.55 percent for readmissions and 3.53 percent (25 percent target) and 8.30 percent (50 percent target) for disparities. Furthermore, the attainment target was updated to what it would have been if it had been set at the 65th percentile of CY 2018 performance.

Using the readmission measure that was approved for RY 2022, staff modeled improvement for 2018 to 2019 and 2019 attainment.[11] The revenue adjustment scales for improvement and attainment were created as if the RY 2022 policy had been in place for 2019 performance. In addition staff modeled the disparity gap in 2018 and 2019 to assess improvement compared to the one year improvement goal needed to achieve a 25 and 50 percent reduction in disparities over 8 years. Based on the combined revenue adjustments for the better of improvement or attainment and the disparity gap reward, 13 hospitals would be penalized for a total of $7.5 million and 32 hospitals would be rewarded for a total of $41.7 million. Approximately half of the rewards ($20.3 million) are due to reductions in disparities between 2018 and 2019. Specifically, 19 hospitals had disparity gap reductions of greater than 8.30 percent (putting them on track to reduce disparities by 50 percent over 8 years and earning then 0.50 percent inpatient revenue reward) and 2 hospitals had disparity gap reductions of greater than 3.53 percent (putting them on track for 25 percent reduction over 8 years and earning them a 0.25 percent inpatient revenue reward). Based on this modeling, staff have proposed to raise the expectations for disparity reductions in order to begin earning a reward and plan to scale the rewards (i.e., make continuous) from those on track for a 50 percent improvement starting to earn reward and those on track for a 75 percent reward getting the full 0.50 percent reward.

Figure 7: Modeling of 2018-2019 Readmissions Performance

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[10] Five hospitals have already improved by greater than 29.29 percent CY 2018 to CY 2019
[11] Please note that this modeling was not updated to exclude pediatric oncology - per the Stakeholder Feedback section, pediatric oncology discharges are approximately 50 eligible discharges annually.

Statewide Revenue Adjustment Modeling	Improvement/Attainment Case-Mix Adjusted Readmission Rate		Disparity Gap Reduction Reward		Total Combined Revenue Adjustment	
	$	%	$	%	$	%
Net	$13,947,627	0.14%	$20,288,666	0.21%	$34,236,293	0.35%
Penalties	-$7,891,071	-0.08%			-$7,478,827	-0.08%
Rewards	$21,838,698	0.23%	$20,288,666	0.21%	$41,715,120	0.43%
# Hospitals Penalized	16		21		13	
# Hospitals Rewarded	29		24		32	

Additional Future Considerations

It remains important that the HSCRC continue to compare Maryland readmission rates against national readmission rates to evaluate relative Maryland performance. Staff is presently working with CMMI to better understand the federal Hospital-wide Readmission (HWR) measure, which is publicly posted on CMS Hospital Compare once a year. It may be advantageous to better understand the federal HWR measure, as it includes a risk-adjustment; the "Waiver Test" readmission rate for Maryland is presently an unadjusted readmission rate, which may present future challenges as Maryland reduces unnecessary utilization and simultaneously increases the case-mix index of remaining eligible discharges. Additionally, a Hybrid HWR Measure was adopted by CMS in 2018 as a voluntary measure under the Hospital Inpatient Quality Reporting Program. The Hybrid HWR Measure differs from the claims-based HWR measure, as it merges electronic health record (EHR) data elements with claims data to calculate the risk-standardized readmission rate.[12] Staff will consider potential use(s) of the HWR/HWR Hybrid measure in the future.

As mentioned above, staff will need to evaluate the implications of the COVID-19 Public Health Emergency on all pay-for-performance programs, including the RRIP. Finally, staff continue to work with Mathematica Policy Research (MPR), our contractor, to operationalize an all-payer measure of Excess Days in Acute Care, which would incorporate admissions, observation stays, and ED visits within 30 days of an acute care discharge. Staff appreciates the opportunity to continue to evolve this policy under the TCOC Model.

Stakeholder Feedback and Staff Response

The HSCRC received three comment letters, from the Maryland Hospital Association, the Johns Hopkins Healthcare System, and Luminis Health. The letters shared broad agreement with maintaining the recently redesigned RRIP as is, and made the following topical suggestions:

1. **Lower the improvement target from three-years (4.57%) to two-years (3.07%)** in acknowledgement of the COVID-19 pandemic and the unreliability of the CY 2020 data.

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[12] For additional information, see: https://qualitynet.cms.gov/inpatient/measures/hybrid

Response: Per the "Assessment" section above, just under half of MD hospitals (20) improved greater than 4.57% in one year, 2018-2019. We believe the five-year improvement remains reasonable and achievable; staff does not agree with the suggestion.

2. **Increase the maximum reward to 2%**, to align with the other quality, pay-for-performance programs.

   Response: Staff appreciates the commitment to symmetry across the pay-for-performance quality programs; and notes the historical improvement of Maryland hospitals with regard to readmission rates.

   Staff would also note the following:

   - A required further reduction of 7.5% over the 5 years of the TCOC Model after successfully reducing readmissions by ~15% during the All-Payer Model and the ultimate goal of moving the State to the 25th percentile of benchmark peers will require additional resources.
   - RRIP is the only Quality pay-for-performance policy that does not have symmetrical risk, which adds complexity to the policy.
   - The Commission routinely incentivizes hospitals to reduce readmissions through the Potentially Avoidable Utilization Shared Savings program by removing inflation from readmissions and avoidable admissions, thereby maintaining a greater emphasis on downside risk in readmissions.

   Staff therefore agrees with this suggestion to raise the maximum reward to 2 percent.

3. **"Blend" the base year to be a combination of multiple years**, so that one particularly good or bad base year does not have an outsized influence on potential improvement.

   Response: Currently the Maryland quality programs that assess improvement have a one year base period (or equal base period time frame as the performance period). This has been true for RRIP since its start where the base period was locked in at 2013 or 2016 (post ICD-10) and staff do not recall this being brought up as a stakeholder concern during the RRIP redesign. In addition, at a statewide level there is fairly high correlation in readmission rates year over year despite overall reductions in readmissions, suggesting that there is limited year over year volatility in hospital's readmission rate and widespread improvement in readmissions, which hospitals get credit for in the RRIP policy. Last, hospitals with a low readmission rate in the base period still have opportunities for attainment rewards under the policy.

4. In agreement with Commissioner Elliott, **remove pediatric oncology cases** from readmission eligibility.

   Response: Staff agrees, and thanks Commissioner Elliott for bringing this to our attention.

   Preliminary modeling suggests that the removal of pediatric oncology cases will result in little material impact, with approximately 50 annual eligible discharges affected. However, this measure update will further align the oncology discharges within the readmission measure with the intention of the measure steward.

5. JHHS recommended changing the **RRIP disparity component to provide rewards for past progress already achieved.**

   Response: Staff does not support inclusion of attainment rewards over the near term. The Commission's approach with the overall RRIP policy has been to focus on incenting improvement during the initial years of the policy, and the current disparity component is consistent with that approach. Secondly, unless the disparity threshold were set at zero, an attainment policy would have the effect of classifying some level of disparity as acceptable and suitable for reward. Staff does not believe this approach would ultimately result in an equitable healthcare system.

6. Continue to **evaluate the validity of the Excess Days in Acute Care (EDAC) measure**, including "factors that contribute to Emergency Department and Observation Revisits".

   Response: Staff appreciates this feedback and will continue to work with our stakeholder workgroup as we evaluate this measure. Currently staff have engaged Mathematica to develop an all-payer version of this measure, which staff at this time would see as additive to the program and not designed to necessarily replace the current readmission measure.

7. One stakeholder letter requested clarification on the **flags defining COVID positive patients**, and how COVID-positive cases transferred to a hospital would be accounted for in the RRIP policy.

   Response: COVID positive flag is presently U07.1 per CDC guidelines. Should these guidelines change we will follow the updated CDC guidelines. All patients transferred from one acute care hospital to another (discharged and then admitted within the same day or next-day) are excluded from counting as a readmission from the transferring hospital within the RRIP. These patients are counted as an eligible discharge for the receiving hospital. The current case-mix adjustment severity of illness will reflect the higher risk of readmission to transfer patients. However, the HSCRC can examine the specific risk to COVID positive patients retrospectively.

8. Finally, the Maryland Hospital Association reiterates that the COVID-19 public health emergency is ongoing and unprecedented. As such, MHA notes that the **CY 2020 data is unreliable and should not be used in any RY 2022 pay-for-performance assessment of quality, and that RY 2022 pay-for-performance programs should be suspended.**

   Response: Staff appreciates this viewpoint and notes that Maryland currently has no latitude to discontinue RY 2022 pay-for-performance revenue adjustment, as CMS and by extension CMMI have not as yet agreed to a blanket suspension of RY 2022 pay-for-performance programs. Should the federal government decide to suspend these programs, staff will advocate to include Maryland in that suspension. At present, staff is working with statisticians, subject-matter experts, and stakeholders to ascertain how best to apply revenue adjustments in FY 2022 (for RY 2022 programs). We appreciate stakeholder feedback on this endeavor.

Recommendations

1. Maintain the 30-day, all-cause readmission measure.

   a. Remove Pediatric Oncology cases, in accordance with the intention of the oncology readmission measure.

2. Improvement Target - Maintain the RY 2022 approved statewide 5-year improvement target of -7.5 percent from 2018 base period.

3. Attainment Target - Maintain the attainment target whereby hospitals at or better than the 65th percentile statewide performance receive scaled rewards for maintaining low readmission rates.

4. For improvement and attainment, increase the maximum reward hospitals can receive to 2 percent of inpatient revenue and maintain the maximum penalty at 2 percent of inpatient revenue.

5. Provide additional payment incentive (up to 0.50 percent of inpatient revenue) for reductions in within-hospital readmission disparities. Scale rewards beginning at 0.25 percent of IP revenue for hospitals on track for 50 percent reduction in disparity gap measure over 8 years (>=15.91 percent reduction in disparity gap measure 2018 to 2021), capped at 0.50 percent of IP revenue for hospitals on pace for 75 percent or larger reduction in disparity gap measure over 8 years (>=29.29 percent reduction in disparity gap measure 2018 to 2021).

6. Continue development of an all-payer Excess Days in Acute Care measure in order to account for readmission, emergency department, and observation revisits post-discharge.

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

   a. For RY 2022 (CY 2020 performance period)

      i. Exclude COVID-19 positive cases from the program.

      ii. Exclude the data for January to June 2020; evaluate whether to use the final six months of 2020 or whether to use a prior time period.

      iii. Evaluate case-mix adjustment and performance standards concerns arising from use of a pre-COVID time period to determine normative values.

   b. For RY 2023 (CY 2021 performance period) include COVID-19 positive cases but retrospectively assess any case-mix concerns, including the use of a pre-COVID time period to determine normative values.

Appendix I. Readmission Measure Specifications and Revenue Adjustment Methodology

1) Performance Metric

The methodology for the Readmissions Reduction Incentive Program (RRIP) measures performance using the 30-day all-payer all hospital (both intra- and inter-hospital) readmission rate with adjustments for patient severity (based upon discharge all-patient refined diagnosis-related group severity of illness [APR-DRG SOI]) and planned admissions.[13] Unique patient identifiers from CRISP are used to be able to track patients across hospitals for readmissions.

The measure is similar to the readmission rate that is calculated by CMMI to track Maryland performance versus the nation, with some exceptions. The most notable exceptions are that the HSCRC measure includes psychiatric patients in acute care hospitals, and readmissions that occur at specialty hospitals. In comparing Maryland's Medicare readmission rate to the national readmission rate, the Centers for Medicare & Medicaid Services (CMS) will calculate an unadjusted readmission rate for Medicare beneficiaries. Since the Health Services Cost Review Commission (HSCRC) measure is for hospital-specific payment purposes, an additional adjustment is made to account for differences in case-mix. See below for details on the readmission calculation for the RRIP program.

2) Inclusions and Exclusions in Readmission Measurement

- Planned readmissions are excluded from the numerator based upon the CMS Planned Readmission Algorithm V. 4.0. The HSCRC has also added all vaginal and C-section deliveries and rehabilitation as planned using the APR-DRGs, rather than principal diagnosis.[14] Planned admissions are counted as eligible discharges in the denominator, because they could have an unplanned readmission.
- Discharges for newborn APR-DRG are removed.[15]
- New in RY 2022: Remove DRG oncology exclusion but continue to exclude bone marrow transplants and liquid tumor patients by making these discharges not eligible to have an unplanned readmission or count as an unplanned readmission.[16]
- New in RY 2022: Exclude patients with a discharge disposition of Left Against Medical Advice (PAT_DISP = 71, 72, or 73 through FY 2018; 07 FY 2019 onward)
- Rehabilitation cases as identified by APR-860 (which are coded under ICD-10 based on type of daily service) are marked as planned admissions and made ineligible for readmission after readmission logic is run.
- Admissions with ungroupable APR-DRGs (955, 956) are not eligible for a readmission, but can be a readmission for a previous admission.
- APR-DRG-SOI categories with less than two discharges statewide are removed.
- A hospitalization within 30 days of a hospital discharge where a patient dies is counted as a readmission;

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[13] Planned admissions defined under [CMS Planned Admission Logic version 4 – updated March 2018].

[14] **Rehab** DRGs: 540, 541, 542, 560, and 860; **OB Deliveries and Associated DRGs**: 580, 581, 583, 588, 589, 591, 593, 602, 603, 607, 608, 609, 611, 612, 613, 614, 621, 622, 623, 625, 626, 630, 631, 633, 634, 636, 639, 640, and 863.

[15] **Newborn APR-DRGs:** 580, 581, 583, 588, 589, 591, 593, 602, 603, 607, 608, 609, 611, 612, 613, 614, 621, 622, 623, 625, 626, 630, 631, 633, 634, 636, 639, 640, and 863.

[16] **Bone Marrow Transplant:** Diagnosis code Z94.81 or CCS Procedure code 64; **Liquid Tumor:** Diagnosis codes C81.00-C96.0. See section below for additional details on the oncology logic.

however, the readmission is removed from the denominator because the case is not eligible for a subsequent readmission.

- Admissions that result in transfers, defined as cases where the discharge date of the admission is on the same or next day as the admission date of the subsequent admission, are removed from the denominator. Thus, only one admission is counted in the denominator, and that is the admission to the transfer hospital (unless otherwise ineligible, i.e., died). It is the second discharge date from the admission to the transfer hospital that is used to calculate the 30-day readmission window.
- Beginning in RY 2019, HSCRC started discharges from chronic beds within acute care hospitals.
- In addition, the following data cleaning edits are applied:
  o Cases with null or missing CRISP unique patient identifiers (EIDs) are removed.
  o Duplicates are removed.
  o Negative interval days are removed.
  HSCRC staff is revising case-mix data edits to prevent submission of duplicates and negative intervals, which are very rare. In addition, CRISP EID matching benchmarks are closely monitored. Currently, hospitals are required to make sure 99.5 percent of inpatient discharges have a CRISP EID.

Additional Details on Oncology Logic:

Flow Chart for Revised Oncology Logic
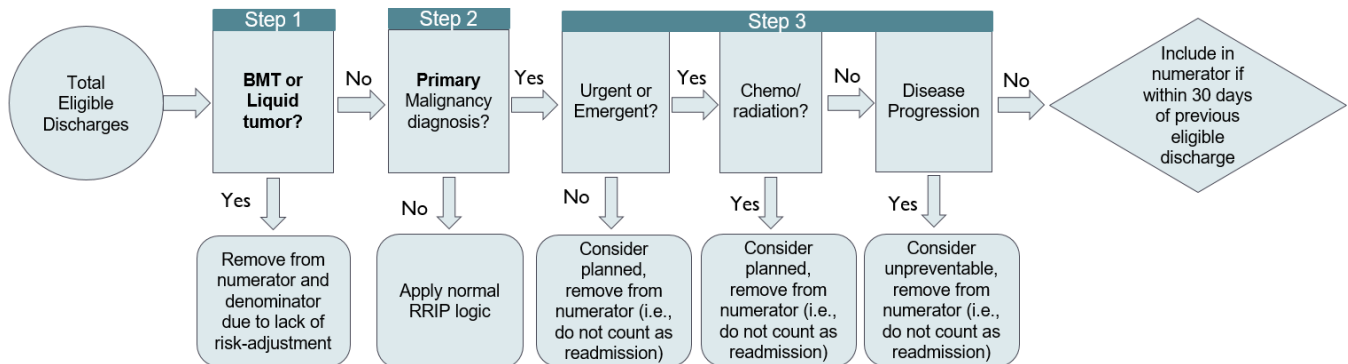
*Items that are **bolded** are adaptations from NQF measure

This updated logic replaces the RY 2021 measure logic that removes all oncology DRGs from the dataset, such that an admission with an oncology DRG cannot count as a readmission or be eligible to have a readmission.

Step 1: Exclude discharges where patients have a bone marrow transplant procedure, bone marrow transplant related diagnosis code, or liquid tumor diagnosis. This logic varies from the NQF cancer

hospital measure that risk-adjusts for bone marrow transplant and liquid tumors. HSCRC staff recommended removing these discharges (similar to current DRG exclusion) because the current indirect standardization approach did not allow for additional risk-adjustment but based on conversations with clinicians staff agreed these cases were significantly more complicated and at-risk for an unpreventable readmission.

Step 2: Flag discharges with a primary malignancy diagnosis to apply cancer specific logic for determining readmissions. This varies from the NQF cancer hospital measure that flags patients with primary or secondary malignancy diagnosis being treated in a cancer specific hospital. Staff think we should only flag those with a primary diagnosis since in a general acute care hospital there may be differences in the types of patients with a secondary malignancy diagnosis. Further, we remove the bone marrow and liquid tumor discharges regardless of malignancy diagnosis, thus ensuring the most severe cases are removed. Last, our initial analyses did not show a large impact on overall hospital rates when primary vs primary and secondary malignancies were flagged. It should be noted however that the current modeling in this policy uses readmission rates where both primary and secondary are flagged.

Step 3: Flag planned admissions using additional criteria beyond the CMS planned admission logic:

   a) Nature of admission of urgent or emergent considered unplanned, all other nature of admission statuses are planned
   b) Any admission with primary diagnosis of chemotherapy or radiation is considered planned
   c) Any admission with primary diagnosis of metastatic cancer is not considered preventable, and thus gets excluded from being a readmission

In step 3, admissions are deemed not eligible to be a readmission but they are eligible to have a subsequent unplanned readmission.

3) Details on the Calculation of Case-Mix Adjusted Readmission Rate

Data Source:
To calculate readmission rates for RRIP, inpatient abstract/case-mix data with CRISP EIDs (so that patients can be tracked across hospitals) are used for the measurement period, with an additional 30 day runout. To calculate the case-mix adjusted readmission rate for CY 2018 base period and CY 2020 performance period, data from January 1 through

December 31, plus 30 days in January of the next year are used. The base period data are used to calculate the normative values, which are used to determine a hospital's expected readmissions, as detailed below, as well as the estimated CY 2018 readmission rates.

Please note that, the base year readmission rates are not "locked in", and may change if there are CRISP EID or other data updates. The HSCRC does not anticipate changing the base period data, and does not anticipate that any EID updates will change the base period data significantly; however, the HSCRC has decided the most up-to-date data should be used to measure improvement. For the performance period, the CRISP EIDs are updated throughout the year, and thus, month-to-month results may change based on changes in EIDs.

SOFTWARE: APR-DRG Version 38 for CY 2018-CY 2021.

Calculation:

Case-Mix Adjusted   (Observed Readmissions)
Readmission Rate =   ------------------------------------   * Statewide Base Year Readmission Rate   (Expected
                        Readmissions)

Numerator: Number of observed hospital-specific unplanned readmissions.

Denominator: Number of expected hospital specific unplanned readmissions based upon discharge APR-DRG and Severity of Illness. See below for how to calculate expected readmissions, adjusted for APR-DRG SOI.

Risk Adjustment Calculation:
Calculate the Statewide Readmission Rate without Planned Readmissions.

- o Statewide Readmission Rate = Total number of readmissions with exclusions removed / Total number of hospital discharges with exclusions removed.

For each hospital, enumerate the number of observed, unplanned readmissions.

For each hospital, calculate the number of expected unplanned readmissions at the APR-DRG SOI level (see Expected Values for description). For each hospital, cases are removed if the discharge APR-DRG and SOI cells have less than two total cases in the base period data.

Calculate at the hospital level the ratio of observed (O) readmissions over expected (E) readmissions. A ratio of > 1 means that there were more observed readmissions than expected, based upon a hospital's case-mix. A ratio of < 1 means that there were fewer observed readmissions than expected based upon a hospital's case-mix.

Multiply the O/E ratio by the base year statewide rate, which is used to get the case-mix adjusted readmission rate by hospital. Multiplying the O/E ratio by the base year state rate converts it into a readmission rate that can be compared to unadjusted rates and case-mix adjusted rates over time.

Expected Values:
The expected value of readmissions is the number of readmissions a hospital would have experienced had its rate of readmissions been identical to that experienced by a reference or normative set of hospitals, given its mix of patients as

defined by discharge APR-DRG category and SOI level. Currently, HSCRC is using state average rates as the benchmark.

The technique by which the expected number of readmissions is calculated is called indirect standardization. For illustrative purposes, assume that every discharge can meet the criteria for having a readmission, a condition called being "eligible" for a readmission. All discharges will either have zero readmissions or will have one readmission. The readmission rate is the proportion or percentage of admissions that have a readmission.

The rates of readmissions in the normative database are calculated for each APR-DRG category and its SOI levels by dividing the observed number of readmissions by the total number of eligible discharges. The readmission norm for a single APR-DRG SOI level is calculated as follows:

Let:

N = norm
P = Number of discharges with a readmission
D = Number of eligible discharges
i = An APR DRG category and a single SOI level

$$N_i = \frac{P_i}{D_i}$$

For this example, the expected rate is displayed as readmissions per discharge to facilitate the calculations in the example. Most reports will display the expected rate as a rate per one thousand.

Once a set of norms has been calculated, the norms are applied to each hospital's DRG and SOI distribution. In the example below, the computation presents expected readmission rates for a single diagnosis category and its four severity levels. This computation could be expanded to include multiple diagnosis categories, by simply expanding the summations.

Consider the following example for a single diagnosis category.

Expected Value Computation Example – Individual APR-DRG

A Severity of Illness Level	B Eligible Discharges	C Discharges with Readmission	D Readmissions per Discharge (C/B)	E Normative Readmissions per Discharge	F Expected # of Readmissions (A*E)
1	200	10	.05	.07	14.0
2	150	15	.10	.10	15.0
3	100	10	.10	.15	15.0
4	50	10	.20	.25	12.5
Total	**500**	**45**	**.09**		**56.5**

For the diagnosis category, the number of discharges with a readmission is 45, which is the sum of discharges with readmissions (column C). The overall rate of readmissions per discharge, 0.09, is calculated by dividing the total number of eligible discharges with a readmission (sum of column C) by the total number of discharges at risk for readmission (sum of column B), i.e., 0.09 = 45/500. From the normative population, the proportion of discharges with readmissions for each severity level for that diagnosis category is displayed in column E. The expected number of readmissions for each severity level shown in column F is calculated by multiplying the number of eligible discharges (column B) by the normative readmissions per discharge rate (column E) The total number of readmissions expected for this diagnosis category is the sum of the expected numbers of readmissions for the 4 severity levels.

In this example, the expected number of readmissions for this diagnosis category is 56.5, compared to the actual number of discharges with readmissions of 45. Thus, the hospital had 11.5 fewer actual discharges with readmissions than were expected for this diagnosis category. This difference can also be expressed as a percentage or the O/E ratio.

4) Revenue Adjustment Methodology

The RRIP assesses improvement in readmission rates from base period, and attainment rates for the performance period with an adjustment for out-of-state readmissions. The policy then determines a hospital's revenue adjustment for improvement and attainment and takes the better of the two revenue adjustments, with scaled rewards of up to 1 percent of inpatient revenue and scaled penalties of up to 2 percent of inpatient revenue. The figure below provides a high level overview of the RY 2021 RRIP methodology for reference. For RY 2022 RRIP methodology, please see figure 1 within the policy.

Overview Rate Year 2021 RRIP Methodology

RRIP Performance Metric

Measure: All-Payer, 30-day, all-cause readmissions using CRISP unique identifier to track patients across acute hospitals in Maryland

Case-Mix Adjustment: Indirect standardization by diagnosis and severity of illness levels to calculate hospital expected readmissions given the patient mix and acuity

Discharges Ineligible for Readmission: transfers, deaths, oncology, rehab, newborns, APR-DRG SOI cells <2 discharges statewide, missing or ungroupable data

Unplanned Readmissions Only: Planned admissions (based on CMS logic) are not counted as readmissions (but are eligible for an unplanned readmission)

Improvement: Change in readmission rate from base period (RY 2022: CY16-CY19)

Attainment: All-payer readmission rate is adjusted to account for out of state readmissions using Medicare ratio of in-state vs. out-of-state readmissions

Revenue Adjustments: Better of Improvement or Attainment

Improvement

	Change in Readmission Rate	Percent Adjustment
Improving ➡	-14.40%	1.00%
	-9.15%	0.50%
	-3.90%	0.00%
	1.35%	-0.50%
	6.60%	-1.00%
	11.85%	-1.50%
Worsening ➡	17.10%	-2.0%

Max Penalty = 2%
Max Reward = 1%

Attainment

	Readmission Rate w/ Out-of-State	Percent Adjustment
Benchmark ➡	8.94%	1.00%
	10.03%	0.50%
Threshold ➡	11.12%	0.00%
	12.21%	-0.50%
	13.30%	-1.00%
	14.39%	-1.50%
	15.47%	-2.0%

Appendix II. RRIP Revenue Adjustment Modeling

Please note: These figures model RY 22 RRIP with CY 2018 Base period and CY 2019 Performance Period (i.e., using a one-year improvement target based on the RY 2022 readmission measure and the RY 22 at-risk amounts for rewards of 1% and penalties of 2%).

RY 22 RRIP for Modeling – CY 18 Base; CY 19 Perf				Imp	Attainment Scaling		Improve/Attain Final Adjustment			Disparity Gap				Combined Revenue Adjustment	
HOSP ID	HOSP NAME	RY 19 Estimated Permanent Inpatient Revenue	CY18-CY19 % Δ in CM Adj Rate	% Rev Adj For Imp - 1.55%	CY18 CM Adj Rate w OOS Adj	% Rev Adj 35th % 10.7%	$ Better of Att or Imp	RY20 Final % Rev Adj	Imp or Att	CY18-CY19 % Δ in Gap	Elig?	% Rev Adj	$ Rev Adj	% Rev Adj	$ Rev Adj
210001	MERITUS	$219,551,750	-6.24%	0.45%	11.06%	-0.12%	$987,983	0.45%	Imp	-18.99%	Yes	0.5%	$1,097,759	0.95%	$2,085,742
210002	UMMC	$1,203,673,856	-3.15%	0.15%	13.14%	-0.82%	$1,805,511	0.15%	Imp	-17.68%	Yes	0.5%	$6,018,369	0.65%	$7,823,880
210003	UM-PG	$282,929,188	-5.11%	0.34%	12.43%	-0.58%	$961,959	0.34%	Imp	42.94%	Yes	0.0%	$0	0.34%	$961,959
210004	HOLY CROSS	$355,608,692	-2.47%	0.09%	12.40%	-0.57%	$320,048	0.09%	Imp	15.12%	Yes	0.0%	$0	0.09%	$320,048
210005	FREDERICK	$232,665,827	-1.23%	-0.03%	10.96%	-0.09%	-$69,800	-0.03%	Imp	-54.71%	Yes	0.5%	$1,163,329	0.47%	$1,093,529
210006	UM-HARFORD	$54,181,186	0.00%	-0.15%	11.62%	-0.31%	-$81,272	-0.15%	Imp	11.76%	No	0.0%	$0	-0.15%	-$81,272
210008	MERCY	$226,492,002	-3.57%	0.19%	12.75%	-0.69%	$430,335	0.19%	Imp	14.65%	Yes	0.0%	$0	0.19%	$430,335
210009	JHH	$1,456,687,424	0.08%	-0.15%	13.67%	-0.99%	-$2,185,031	-0.15%	Imp	1.20%	No	0.0%	$0	-0.15%	-$2,185,031
210010	UM-DORCHEST	$22,653,845	-4.50%	0.28%	9.64%	0.36%	$81,554	0.36%	Att	0.90%	Yes	0.0%	$0	0.36%	$81,554
210011	ST. AGNES	$238,757,730	-4.94%	0.32%	11.61%	-0.30%	$764,025	0.32%	Imp	-14.38%	Yes	0.5%	$1,193,789	0.82%	$1,957,814
210012	SINAI	$399,817,673	-6.66%	0.49%	11.05%	-0.12%	$1,959,107	0.49%	Imp	28.48%	Yes	0.0%	$0	0.49%	$1,959,107
210015	MS-FR SQ	$306,898,504	-5.36%	0.36%	12.62%	-0.64%	$1,104,835	0.36%	Imp	0.53%	Yes	0.0%	$0	0.36%	$1,104,835
210016	WASH ADV	$164,197,283	-3.17%	0.15%	11.71%	-0.34%	$246,296	0.15%	Imp	-16.96%	Yes	0.5%	$820,986	0.65%	$1,067,282
210017	GARRETT	$23,714,400	-32.57%	1.00%	7.94%	0.92%	$237,144	1.00%	Imp	-29.27%	Yes	0.5%	$118,572	1.50%	$355,716

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ID	Name														
210018	MS-MONTG	$84,721,645	-13.13%	1.00%	10.91%	-0.07%	$847,216	1.00%	Imp	-21.21%	Yes	0.5%	$423,608	1.50%	$1,270,824
210019	PRMC	$249,228,264	-10.55%	0.86%	10.49%	0.07%	$2,143,363	0.86%	Imp	25.22%	Yes	0.0%	$0	0.86%	$2,143,363
210022	SUBURBAN	$208,954,270	-9.41%	0.75%	11.31%	-0.20%	$1,567,157	0.75%	Imp	-10.38%	Yes	0.5%	$1,044,771	1.25%	$2,611,928
210023	AAMC	$294,544,506	2.44%	-0.38%	12.15%	-0.49%	-$1,119,269	-0.38%	Imp	-52.60%	No	0.0%	$0	-0.38%	-$1,119,269
210024	MS-UNION	$243,156,679	-3.35%	0.17%	11.99%	-0.43%	$413,366	0.17%	Imp	-37.04%	Yes	0.5%	$1,215,783	0.67%	$1,629,149
210027	WESTERN MARYLAND	$169,462,000	2.60%	-0.39%	12.65%	-0.65%	-$660,902	-0.39%	Imp	4.34%	No	0.0%	$0	-0.39%	-$660,902
210028	MS-ST. MARY	$79,141,046	-5.85%	0.41%	12.41%	-0.57%	$324,478	0.41%	Imp	-3.28%	Yes	0.0%	$0	0.41%	$324,478
210029	JHBAYVIEW	$366,607,627	-3.64%	0.20%	13.76%	-1.02%	$733,215	0.20%	Imp	-8.22%	Yes	0.25%	$916,519	0.45%	$1,649,734
210030	UM-CHESTER	$17,859,942	-7.44%	0.56%	7.80%	0.97%	$173,241	0.97%	Att	-9.04%	Yes	0.5%	$89,300	1.47%	$262,541
210032	UNION OF CECIL	$65,426,887	3.91%	-0.52%	13.34%	-0.88%	-$340,220	-0.52%	Imp	3.19%	No	0.0%	$0	-0.52%	-$340,220
210033	CARROLL	$140,291,849	3.14%	-0.45%	12.35%	-0.55%	-$631,313	-0.45%	Imp	4.95%	No	0.0%	$0	-0.45%	-$631,313
210034	MS-HARBOR	$110,392,040	-6.97%	0.52%	13.42%	-0.91%	$574,039	0.52%	Imp	-59.46%	Yes	0.5%	$551,960	1.02%	$1,125,999
210035	UM-CHARL	$76,930,098	-1.92%	0.04%	12.07%	-0.46%	$30,772	0.04%	Imp	-11.66%	Yes	0.5%	$384,650	0.54%	$415,422
210037	UM-EASTON	$103,481,053	-5.16%	0.34%	9.31%	0.47%	$486,361	0.47%	Att	-26.70%	Yes	0.5%	$517,405	0.97%	$1,003,766
210038	UM-MID	$111,141,002	-3.05%	0.14%	14.52%	-1.28%	$155,597	0.14%	Imp	39.17%	Yes	0.0%	$0	0.14%	$155,597
210039	CALVERT	$67,111,996	8.12%	-0.92%	12.26%	-0.52%	-$348,982	-0.52%	Att	78.42%	No	0.0%	$0	-0.52%	-$348,982
210040	NORTHWE	$138,719,920	-11.31%	0.93%	10.47%	0.08%	$1,290,095	0.93%	Imp	-19.72%	Yes	0.5%	$693,600	1.43%	$1,983,695
210043	BWMC	$250,217,336	-0.85%	-0.07%	11.79%	-0.37%	-$175,152	-0.07%	Imp	-14.23%	Yes	0.5%	$1,251,087	0.43%	$1,075,935
210044	G.B.M.C.	$237,787,317	1.13%	-0.25%	10.93%	-0.08%	-$190,230	-0.08%	Att	-15.43%	No	0.0%	$0	-0.08%	-$190,230
210048	HOWARD	$182,870,977	2.42%	-0.38%	11.62%	-0.31%	-$566,900	-0.31%	Att	-4.38%	No	0.0%	$0	-0.31%	-$566,900
210049	UM-UCH	$128,686,091	-0.17%	-0.13%	11.83%	-0.38%	-$167,292	-0.13%	Imp	-7.06%	Yes	0.25%	$321,715	0.12%	$154,423
210051	DOCTORS	$141,094,311	-9.17%	0.73%	10.88%	-0.06%	$1,029,988	0.73%	Imp	11.59%	Yes	0.0%	$0	0.73%	$1,029,988
210056	MS-GOOD SAMARITAN	$146,901,579	-6.93%	0.51%	12.98%	-0.76%	$749,198	0.51%	Imp	-20.37%	Yes	0.5%	$734,508	1.01%	$1,483,706
210057	SHADY GR	$251,748,234	-8.49%	0.66%	10.09%	0.21%	$1,661,538	0.66%	Imp	-16.74%	Yes	0.5%	$1,258,741	1.16%	$2,920,279
210058	UMROI	$72,350,285	31.86%	-2.00%	11.30%	-0.20%	-$23,152	-0.03%	Att	7.57%	No	0.00%	$0	-0.03%	-$23,152

210060	FT. WASH	$19,890,383	11.19%	-1.21%	14.10%	-1.14%	-$226,750	-1.14%	Att	-19.73%	No	0.00%	$0	-1.14%	-$226,750
210061	ATLANTIC GENERAL	$36,931,910	-5.31%	0.36%	10.01%	0.23%	$132,955	0.36%	Imp	-10.59%	Yes	0.50%	$184,660	0.86%	$317,615
210062	MS-SO MD	$162,087,856	4.01%	-0.53%	13.02%	-0.78%	-$859,066	-0.53%	Imp	9.33%	No	0.00%	$0	-0.53%	-$859,066
210063	UM ST. JOE	$223,399,907	-0.44%	-0.11%	11.48%	-0.26%	-$245,740	-0.11%	Imp	32.73%	Yes	0.00%	$0	-0.11%	-$245,740
210064	LEVINDALE	$57,510,719	-8.68%	0.68%	10.00%	0.24%	$391,073	0.68%	Imp	-31.28%	Yes	0.50%	$287,554	1.18%	$678,627
210065	HC GTOWN	$59,062,315	-5.79%	0.40%	11.90%	-0.40%	$236,249	0.40%	Imp	13.92%	Yes	0.00%	$0	0.40%	$236,249
STATEWIDE		**$9,685,539,404**			**Net Reward/Penalty**		**$13,947,627**						**$20,288,666**		**$34,236,293**
Penalty					Penalty		-$7,891,071						$0		-$7,478,827
Reward					Reward		$21,838,698						$20,288,666		$41,715,120

Values for PG hospital represent just PG Hospital

Percentages have been rounded for display. Final scaling values are rounded to two decimal places.