

**Draft Recommendation for the
Readmissions Reduction Incentive Program
for Rate Year 2021**

December 12, 2018

Health Services Cost Review Commission

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This document contains the draft staff recommendations for updating the Maryland Hospital Readmissions Reduction Incentive Program (RRIP) for RY 2021. Please submit comments on this draft to the Commission by **Thursday, December 20, 2018**, via email to hsrc.quality@maryland.gov.

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LIST OF ABBREVIATIONS

ACA	Affordable Care Act
APR-DRG	All-patient refined diagnosis-related group
ARR	Admission-Readmission Revenue Program
CMS	Centers for Medicare & Medicaid Services
CMMI	Center for Medicare and Medicaid Innovation
CRISP	Chesapeake Regional Information System for Our Patients
CY	Calendar year
FFS	Fee-for-service
FFY	Federal fiscal year
HRRP	Hospital Readmissions Reduction Program
HSCRC	Health Services Cost Review Commission
ICD-10	International Classification of Disease, 10 th Edition
RRIP	Readmissions Reduction Incentive Program
RY	Rate year
SOI	Severity of illness
YTD	Year-to-date

KEY METHODOLOGY CONCEPTS AND DEFINITIONS

Diagnosis-Related Group (DRG): A system to classify hospital cases into categories that are similar in clinical characteristics and in expected resource use. DRGs are based on a patient's primary diagnosis and the presence of other conditions.

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**.

RECOMMENDATIONS

This is a draft recommendation for the Maryland Rate Year (RY) 2021 Readmission Reduction Incentive Program (RRIP) policy. At this time, the staff requests that Commissioners consider the following draft recommendations:

- A. Measure hospital performance as the better of attainment or improvement.
- B. Set the all-payer case-mix adjusted readmission rate improvement target at 4.51 percent for CY 2016 to CY 2019.
- C. Set the attainment performance standards for CY 2019 with an expanded benchmark and threshold range as follows:
 1. Use CY 2018 YTD hospital performance results with an improvement factor added.
 2. Increase the threshold where hospitals start to earn rewards from the 25th percentile to the 35th percentile, which is 10.96 percent.
 3. Decrease the benchmark where hospital receive the full 1 percent reward from the 10th percentile to the 5th percentile at 8.51 percent.
- D. Include admissions to specialty hospitals in the calculation of acute care hospital readmission rates and monitor readmission rates of specialty hospitals.
- E. Set the maximum reward hospitals can receive at 1 percent of inpatient revenue and the maximum penalty at 2 percent of inpatient revenue.

Staff will review the improvement target and attainment standards in April/May against finalized CY 2018 data in order to bring back to the Commission revised performance targets if data trends warrant the revision. This may necessitate an additional vote from Commissioners.

INTRODUCTION

The Maryland Health Services Cost Review Commission's (HSCRC's or Commission's) 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 policy holds 2% of hospital revenue at-risk for performance on 30-day all-cause all-payer readmission rates across all acute care hospitals in Maryland. Under the current All-Payer Model Agreement between Maryland and the Centers for Medicare & Medicaid Services (CMS), there are specific quality performance requirements, including reducing Medicare readmissions to below the national average by the end of CY 2018. Maryland is currently on target to meet this requirement. Maryland has reduced the Medicare fee-for-service readmission rate from 16.90% in 2013 to 15.38% in 2018 and is currently below the national average based on the latest 12-months of data through July of 2018.

As Maryland enters into a new Total Cost of Care (TCOC) Model Agreement with CMS on January 1, 2019, performance standards and targets in HSCRC's portfolio of quality and value-based payment programs will be updated. In CY 2018, staff focused on revising two of the Commission's Quality programs, the Maryland Hospital Acquired Complications program and the Potentially Avoidable Utilization program, per directives from HSCRC Commissioners.¹ In CY 2019, staff will focus on revising Maryland's readmission policies by convening an expert sub-group to make recommendations for RY 2022 and beyond (see Future of the Model section for more details).

Under the All-Payer Model agreement, if Maryland made incremental progress toward reducing readmissions the state received an automatic exemption from the CMS national Hospital Readmissions Reduction Program (HRRP). Under the TCOC Model, the State will maintain its exemption from the CMS national readmission program as long as Maryland's Medicare fee-for-service readmission rate continues to be at or below the national rate. This exemption from the national readmission program is important because the State of Maryland's all-payer global budget system benefits from having autonomous, quality-based measurement and payment initiatives that set consistent quality incentives across all-payers. This report provides staff's draft recommendations for updates to Maryland's RRIP for Rate Year (RY) 2021

¹ In the fall of 2017, HSCRC Commissioners with 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 revisions of financial and quality methodologies, as well as other staff operations.

BACKGROUND

Medicare Hospital Readmissions Reduction Program

The United States healthcare system currently has had an unacceptably high rate of preventable hospital readmissions, which are defined as an admission to a hospital within a specified time period after a discharge from the same or another hospital.² Excessive readmissions generate considerable unnecessary costs and represent substandard quality of care for patients. A number of studies show that hospitals can engage in several activities to lower their rate of readmissions, such as clarifying patient discharge instructions, coordinating with post-acute care providers and patients' primary care physicians, and reducing medical complications during patients' initial hospital stays.³

Efforts have been underway nationally to address excessive readmissions and their deleterious effects. Under authority of the Affordable Care Act, CMS established its Medicare Hospital Readmissions Reduction Program in federal fiscal year 2013. Under this program, CMS uses three years of data to calculate the average risk-adjusted, 30-day hospital readmission rates for patients with certain conditions. Additional details on the HRRP can be found in Appendix I.

Overview of the Maryland RRIP Policy

Under the All-Payer Model Agreement, Maryland's Medicare fee-for-service statewide hospital readmission rate must be equal to or below the national Medicare readmission rate by the end of Calendar Year (CY) 2018 (also known as the "Waiver Test"). In order to meet this Model requirement, the Commission built a Readmission Reduction Incentive Program (RRIP) beginning in 2014. As required by CMS, the RRIP is more comprehensive than the Medicare Hospital Readmission Program, as it includes all patients and payers, but it otherwise mostly aligns with the CMS readmission measure, and reasonably supports the goal of meeting or out-performing the national Medicare readmission rate (see Appendix I for additional background information).

With the migration from the All-Payer Model (2014-2018) to the Total Cost of Care (TCOC) Model (2019-), the State of Maryland will need to overhaul many of its existing inpatient quality pay-for-performance programs. The RRIP is slated for careful review with the sub-group of expert key stakeholders beginning in 2019, meaning that the RY 2021 policy presents minimal methodological changes. These changes include factoring in specialty hospitals when calculating acute hospital readmissions, updating improvement targets to align with projected CY 2019

² 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.; Epstein, A. M. et al., "The Relationship between Hospital Admission Rates and Rehospitalizations," *New England Journal of Medicine* Vol. 365, No. 24: 2287-2295, 2011.

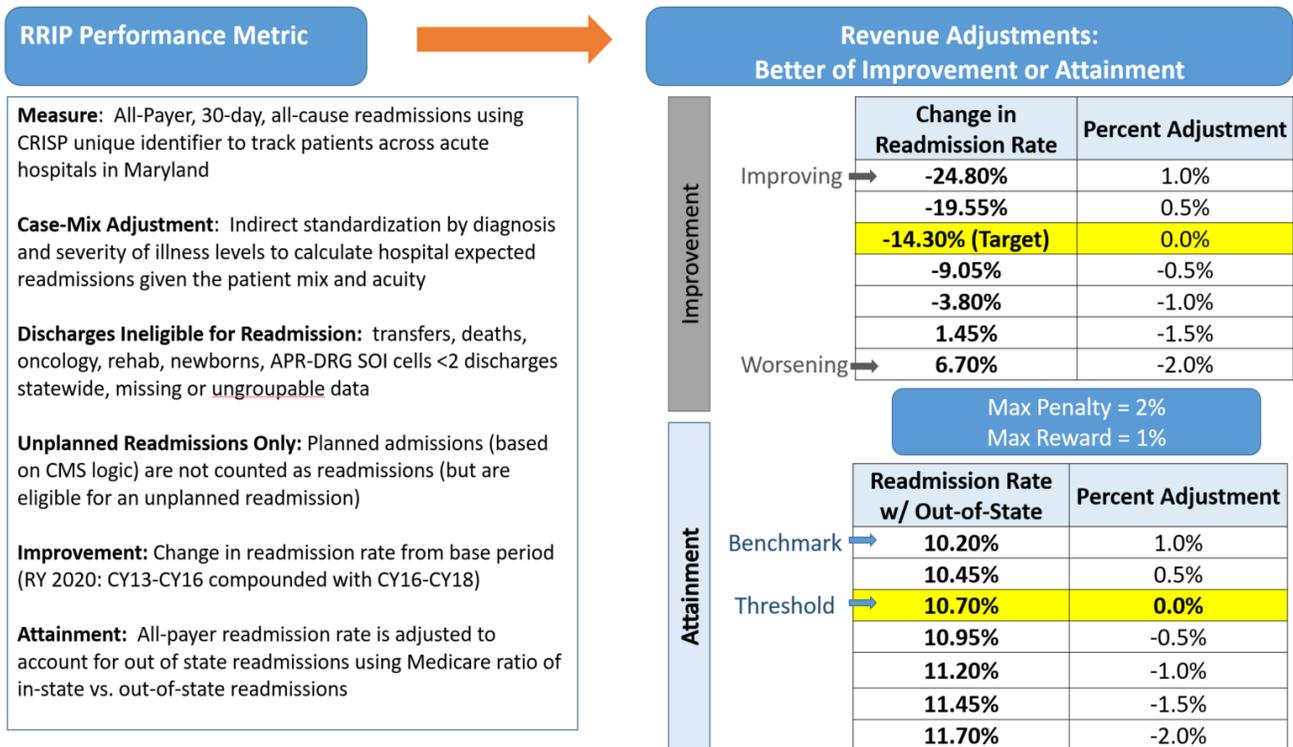
³ Ahmad, F. S. et al., "Identifying Hospital Organizational Strategies to Reduce Readmissions," *American Journal of Medical Quality* Vol. 28, No. 4: 278-285, 2013.; Silow-Carroll, S. et al., "Reducing Hospital Readmissions: Lessons from Top-Performing Hospitals," *Commonwealth Fund Synthesis Report*, New York: Commonwealth Fund, 2011.; Jack, B. W. et al., "A Reengineered Hospital Discharge Program to Decrease Hospitalization: A Randomized Trial," *Annals of Internal Medicine* Vol. 50, No. 3: 178-187, 2009.; and Kanaan, S. B., "Homeward Bound: Nine Patient-Centered Programs Cut Readmissions," Oakland, CA: California HealthCare Foundation, 2009.

national Medicare FFS readmission projections, and expanding the attainment scale to reflect additional gradations of performance.

RRIP Pay-for Performance Methodology

Under the RRIP, Maryland evaluates all-payer, all-cause inpatient readmissions using the CRISP unique patient identifier to track patients across acute care hospitals. In order to increase the fairness of the program related to data limitations and clinical concerns, the all-payer readmission measure excludes certain types of discharges from consideration, e.g., newborns and planned readmissions. Readmission rates are adjusted for case-mix using all-patient refined diagnosis-related groups (APR-DRG) and severity of illness (SOI)⁴. The readmission rate during the performance period is then compared to historical rate during a base period to assess improvement and to a threshold and benchmark to assess attainment. 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. Figure 1 provides a high level overview of the RY 2020 RRIP methodology. Additional details on the calculation of the improvement target and attainment performance standards are provided in the assessment section.

Figure 1. Overview Rate Year 2020 RRIP Methodology



⁴ See Appendix II for details of the indirect standardization method used to calculate a hospital’s expected readmission rate.

ASSESSMENT

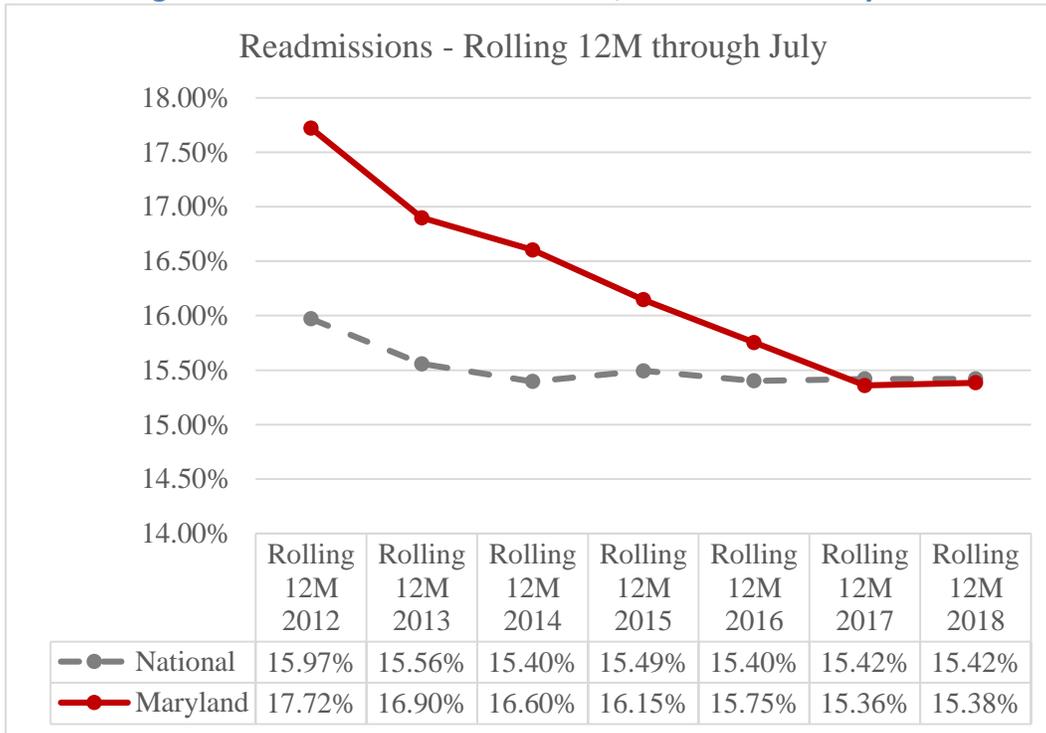
Under the Maryland All-Payer Model Agreement, the State receives data from CMS to track progress on the unadjusted Medicare FFS readmission waiver test. The following assessment section presents this data on current readmission performance, details the calculation of the RY 2021 improvement target and attainment standards, and provides modeling of revenue adjustments.

Maryland's Performance to Date

Maryland Waiver Test Performance

As mentioned previously, the waiver test requires that Maryland reduce its unadjusted Medicare FFS readmission rate to below the national average by the end of 2018. Figure 2 provides the CMS data for 2012 through 2018 on a rolling 12 month basis through July, and it indicates that Maryland's Medicare readmission rate is currently below the National rate. While it should be noted that the CY 2018 YTD readmission rate is higher than the CY 2017 YTD readmission rate, the progress that Maryland hospitals have made to reduce readmissions since 2013 is to be commended. Furthermore, it should be noted that the rolling 12 month readmission rate through June 2018 is the first time since September 2017 that Maryland did not have a readmissions cushion greater than 0.10%. This fluctuation is partly a function of Maryland's small numerator (readmissions) and denominator (admissions) relative to the nation, which has not experienced a change in its readmissions rate greater than .02% since December of 2015. Meanwhile, Maryland regularly has changes in the rolling readmission rate greater than .05%, and June 2018 was the largest change in the rolling readmission rate since the start of the All-Payer Model, suggesting that June 2018 may have been an outlier.

Figure 2. Medicare FFS Readmissions, National and Maryland



All-Payer Case-Mix Adjusted Performance

While the CMS readmission Waiver Test is based on the unadjusted readmission rate for Medicare patients, the RRIP incentivizes performance on the All-Payer, case-mix adjusted readmission rate. Based on CY 2018 year-to-date data through September under the RY 2020 methodology, the State has achieved a compounded reduction in the All-Payer, case-mix adjusted readmission rate of 15.60% since CY 2013, and 26 hospitals are on track to achieve the compounded cumulative improvement target of 14.30 percent. Since the incentive program also assesses attainment, an additional nine hospitals are on track to achieve the attainment goal of a readmission rate lower than 10.70 percent. Appendix III provides current hospital-level year-to-date improvement and attainment rates for CY 2018.

For RY 2021, the staff recommends that specialty hospitals be included when calculating acute care hospital readmission rates to increase the comprehensiveness and fairness of the measure. However, staff does not recommended including specialty hospitals in the payment program (due to lack of data regarding cross-border trends for purposes of an attainment target). Staff will provide data to specialty hospitals in CY 2019 so that they can track their readmissions.⁵ The

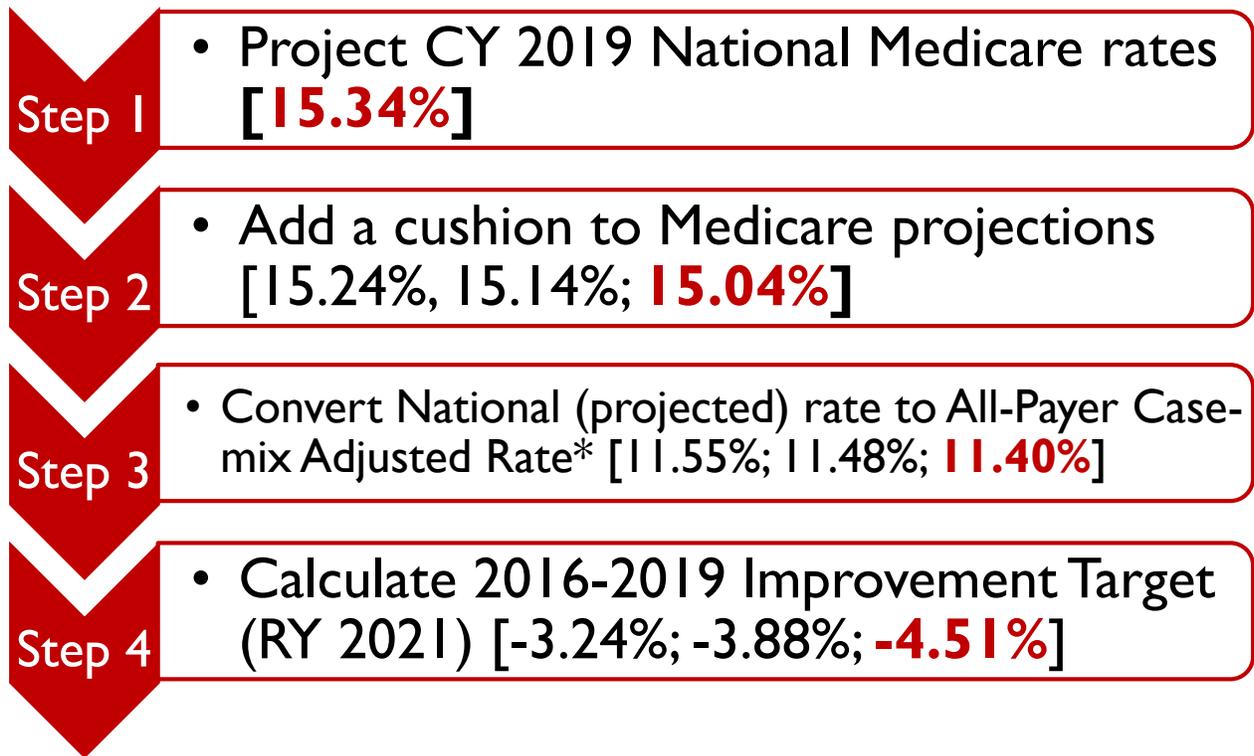
⁵ The specialty hospitals are: 213028 - Chesapeake Rehab; 213029 - Adventist Rehab Maryland; 213300 - Mt Washington Pediatric Hospital; 214000 - Sheppard Pratt; 214003 - Brook Lane. A sixth hospital, 214013 - Adventist Behavioral Health - Rockville, will merge with 210057 - Shady Grove Adventist, but has been included for modeling purposes.

inclusion of specialty hospitals has two impacts on acute care hospitals: 1) it removes index admissions from acute care hospitals that were transfers to a specialty hospital, i.e., it potentially decreases the denominator of eligible discharges for acute care hospitals; and 2) it counts readmissions from an acute to a specialty hospital, i.e., it potentially increases the numerator.. For the September Performance Measurement Workgroup meeting, staff provided CY 2017 data showing the statewide impact of including specialty hospitals on the readmission rate for acute care hospitals was an increase of 0.20% (11.63% to 11.83%). Appendix IV provides the CY 2017 readmission rates with and without specialty hospitals. Based on the staff recommendation, the calculations of the improvement and attainment standards use case-mix data with specialty hospitals included.

Improvement Target Calculation Methodology RY 2021

Under the RY 2021 policy, staff recommends setting a new improvement target to: a) account for projected national readmission reductions during CY 2019, and b) to ensure the Maryland program incentivizes continuous quality improvement beyond the initial Waiver Test goal. Developing an appropriate improvement target is a multi-step process to ensure that the State responsibly incorporates projections of the national Medicare readmissions rate with the latest federal data to determine the Maryland All-Payer Case-mix Adjusted Readmissions Rate and provides incentives for additional improvement. A flowchart of the steps to determine an improvement target and the current calculations is detailed below in Figure 3.

Figure 3. Steps to Determine Improvement Target



*Conversion factor for the Draft Policy is 75.8%. HSCRC expects to have more recent data to improve predictions for the final policy.

In Step 1, Mathematica Policy Research (MPR) and staff projected the CY 2019 national Medicare readmission rate using trends based on data through June or July 2018. Given that the RY 2021 improvement target must yield the improvement to enable Maryland to maintain a readmission rate lower than the national rate, staff will closely monitor updated data through the end of CY 2018, and **may revise the improvement target mid-year**. A mid-year revision would require Commissioners to approve an amendment to the proposed policy.

HSCRC staff and its contractor Mathematica Policy Research (MPR) modeled seven different projections (Figure 4) for the CY 2019 national readmission rate. As in RY 2020, staff then averaged the forecasts derived from the seven different methods to determine the CY 2019 national Medicare readmission rate of 15.34%.

Figure 4. Improvement Target Model Projections

Model Abbreviation	Model Name	Model Description	CY 2019 Projection
AAC	Average Annual Change	Averages the annual changes from 2013 to present	15.43%
MRAC	Most Recent Annual Change	2018 YTD over 2017 YTD	15.42%
12MMA	12 Month Moving Average	Moving average predictive method, using most recent 12M of data and moving trend forward	15.40%
24MMA	24 Month Moving Average	Moving average predictive method, using most recent 24M of data and moving trend forward	15.40%
PROC	PROC Forecast	Combination of deterministic time trend model (long-term) and autoregressive model (short-term)	15.07%
ARIMA	Auto-Regressive Integrated Moving Average	Parametric statistical model characterizing the time series data, which better incorporates seasonality and multiple evaluation criteria	15.36%
STL	Seasonal and Trend decomposition using Loess	Divides time series data into three components - seasonal, trend cycle, and remainder, to yield projection value	15.31%
	Average	Average of Seven Models	15.34%

In Step 2, given that predictions are fundamentally uncertain, staff has included a cushion to make the improvement target more aggressive in case the predictions are inaccurate, and to ensure that Maryland continues to improve beyond the initial goal of the national median. The cushions under the draft policy were set at 0.1%, 0.2%, and 0.3%.

In Step 3, staff converted the projected CY 2019 National Medicare Readmission rates to a Case-mix Adjusted, All-Payer improvement target to ensure fairness across Maryland hospitals with differing case-mix acuity. To convert to an all-payer readmission rate, staff evaluated the ratio between the unadjusted Maryland Medicare FFS readmission rates and the Case-Mix Adjusted, All-Payer readmission rates. As shown in Figure 5 below, this ratio appears to be relatively stable over time. The Case-mix Adjusted All-Payer Readmission Rate has been approximately 75% of the unadjusted Medicare FFS readmission rate over the past several years; staff has updated this ratio with YTD data through Jun 2013-2018, yielding a ratio relationship of 75.8%.

Figure 5. Unadjusted Medicare FFS to Case-mix Adjusted All-Payer Improvement Target Conversion

Year	National Medicare FFS Rate	CMMI (Unadjusted) MD Medicare FFS Rate	HSCRC Case-mix Adjusted All Payer Readmissions Rate	All Payer to Medicare Ratio of Readmission Rates
CY 13 YTD Jun	-15.59%	16.95%	12.72%	75.04%
CY14 YTD Jun	-15.39%	16.64%	12.97%	77.95%
CY 15 YTD Jun	-15.50%	16.20%	12.36%	76.31%
CY 16 YTD Jun	-15.40%	15.78%	11.51%	72.97%
CY 17 YTD Jun	-15.42%	15.42%	11.81%	76.62%
CY 18 YTD Jun	-15.42%	15.38%	11.67%	75.88%
			Average of Ratios	75.80%

Finally, in Step 4, staff takes the percent change between the projected Case-mix Adjusted, All-Payer Readmission rate (between 11.40%) and the CY 2016 Case-mix Adjusted, All-Payer Readmission Rate (11.94%) to determine the required improvement target for the RY 2021 policy (Figure 6 below). For purposes of the draft RY 2021 RRIP Policy modeling, staff has selected the three-year improvement target (CY 2016 to CY 2019) of -4.51%.

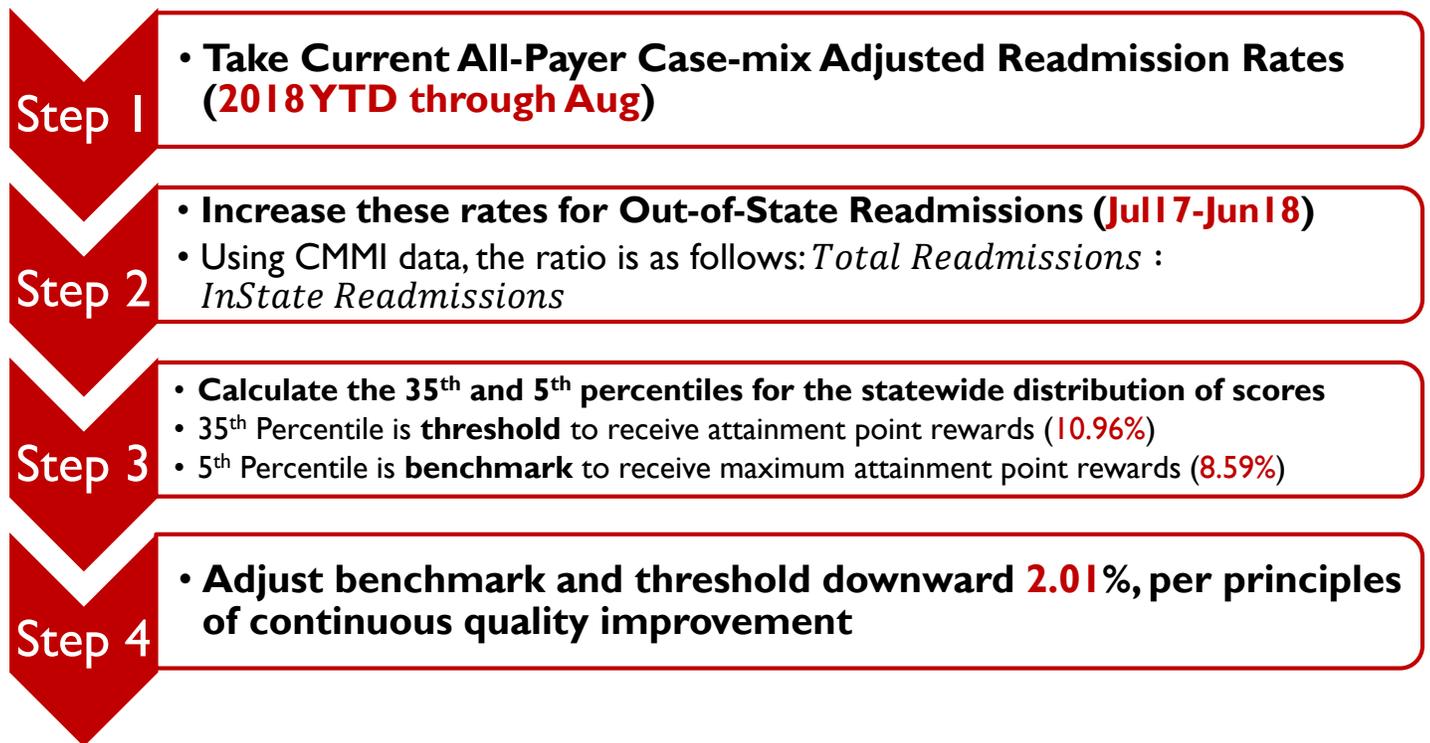
Figure 6. Converting Projected Unadjusted Medicare FFS Readmission Rate to Case-mix Adjusted, All-Payer Readmission Rate, Calculating Improvement Target

	Actual Trend	Actual Trend + -0.1% Cushion	Actual Trend + -0.2% Cushion	Actual Trend + -0.3% Cushion
Assuming CY 2019 National Rate	15.34%	15.24%	15.14%	15.04%
Ratio Approach	11.63%	11.55%	11.48%	11.40%
Improvement under Ratio Approach	-2.61%	-3.24%	-3.88%	-4.51%

Attainment Target Calculation Methodology

Beginning in RY 2017, HSCRC began including an attainment target, whereby hospitals with relatively low case-mix adjusted readmission rates are rewarded for maintaining low readmission rates. A simple flowchart of the necessary steps to determine the attainment target and the current calculations are included below in Figure 7.

Figure 7. Steps to Determine Attainment Target



In Step 1, staff examine the current All-Payer, Case-mix Adjusted Readmission Rates (these data are current through August). These rates are then increased to account for readmissions to out-of-state hospitals (Step 2), which is done by adjusting case-mix adjusted rates by the ratio of Medicare readmissions that were outside-of-Maryland in the most recent four full quarters of data (currently July 2017 - June 2018; additional information in Appendix V). From these adjusted trends, a threshold where hospitals begin to receive rewards (35th percentile) and benchmark where hospitals receive full 1% reward (5th percentile) are calculated, providing a range by which hospitals with relatively low readmission rates can be rewarded, should their attainment score be higher than their calculated improvement score (Step 3). The window of rewards between the 5th and 35th percentiles has been expanded from the prior years' policy to acknowledge Maryland's strong improvement relative to the nation. Last, both the benchmark and threshold are adjusted downward by an improvement factor to reflect the improvement target calculated previously and the State's expectation that all Maryland hospitals continue to improve over the next year (Step 4).⁶ Figure 8 shows the attainment standards calculated based on the CY 2018 YTD data through August; the current percentiles and the proposed wider percentile range with and without the improvement factor are presented.

⁶ The improvement target of -4.51% must be achieved over 36 months (2016-2019); -2.01% reflects the proportion of the improvement that should be achieved in the remaining 16 months between August 2018 and December 2019.

Figure 8. Attainment Target Threshold and Benchmark with Improvement Factor

Attainment Standards	Actual	Plus Improvement Factor
Current RY 2020 Policy		
Threshold 10th Percentile	9.98%	9.78%
Benchmark 25th Percentile	10.87%	10.65%
Proposed RY 2021 Policy		
Threshold 5th Percentile	8.76%	8.59%
Benchmark 35th Percentile	11.19%	10.96%

Prospective Scaling for RY 2021 Policy

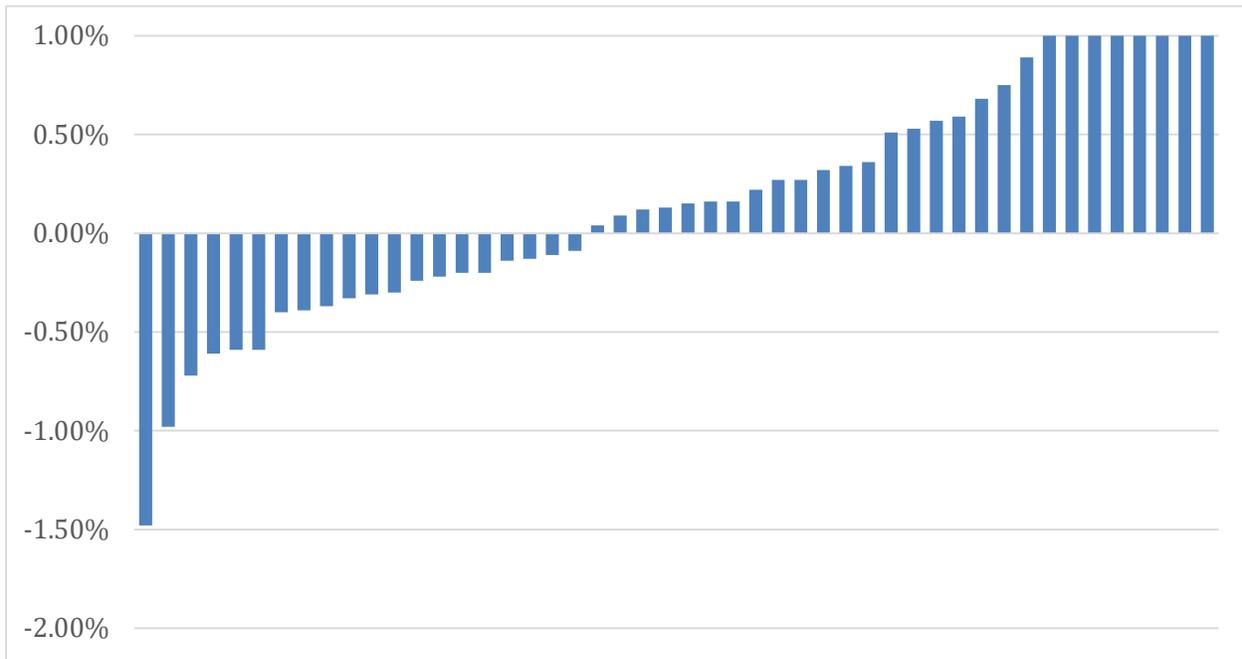
HSCRC will calculate a by-hospital revenue adjustment based on percent improvement and performance relative to the attainment standards. Hospitals will receive the more favorable revenue adjustment (the better of their improvement or attainment adjustments). For both improvement and attainment the rewards and penalties are linearly scaled between -2% and 1% using the improvement target and attainment threshold as the cut point. An illustration of the abbreviated scales is provided below in the tables in Figure 9. The use of preset revenue adjustment scales aligns with the core principles of Maryland Quality programs to provide hospitals with prospective performance standards, ways to track performance and revenue adjustments on an ongoing basis, and evaluate hospital performance independently of other hospitals, as the HSCRC wants to foster collaboration among hospitals that a relative ranking system would discourage.

Figure 9. RRIP Improvement and Attainment Revenue Adjustment Scales

All Payer Readmission Rate Change CY16-CY19		RRIP % Inpatient Revenue Payment Adjustment	All Payer Readmission Rate CY19		RRIP % Inpatient Revenue Payment Adjustment
	A	B		A	B
Improving Readmission Rate		1.0%	Lower Absolute Readmission Rate		1.0%
	-15.01%	1.00%	Benchmark	8.59%	1.00%
	-9.76%	0.50%		9.77%	0.50%
Target	-4.51%	0.00%	Threshold	10.96%	0.00%
	0.74%	-0.50%		12.15%	-0.50%
	5.99%	-1.00%		13.34%	-1.00%
	11.24%	-1.50%		14.52%	-1.50%
	16.49%	-2.0%		15.71%	-2.0%
Worsening Readmission Rate		-2.0%	Higher Absolute Readmission Rate		-2.0%

Staff has modeled revenue adjustments using RY 2020 year-to-date data through August 2018 and the proposed RY 2021 improvement and attainment scales (see Appendix VI). For this analysis, RY 2020 YTD data with specialty hospitals was compared against the proposed improvement and attainment targets. Based on these analyses, 20 hospitals would be penalized for a total of \$15.8 million, and 28 hospitals would be rewarded for a total of \$19.9 million. Because the improvement target, reflecting a relatively flat projected national readmission rate, is rather low, the majority of hospitals (34 out of 48) would receive their positive or negative revenue adjustment based on improvement and not attainment. Should the Commission decline to expand the attainment threshold and benchmark, and remain at the 25th and 10th percentiles, respectively, initial modeling suggest that 26 hospitals would receive rewards totaling \$20.2M, and 22 would receive penalties totaling \$-19.7M. The higher rewards under the narrower attainment range are because the full reward can be earned at the 10th, as opposed to the 5th, percentile of performance. The revenue modeling for RY 2021 in Appendix V, which uses RY 2020 year-to-date results, results in higher penalties than what would be expected if hospitals continue to improve throughout CY 2019. Figure 10 presents the revenue adjustment percentages by hospital based on this modeling.

Figure 10. Modeled Revenue Adjustments by Hospital



FUTURE OF MODEL

As previously mentioned, staff intends to convene a sub-group of the Performance Measurement Work Group, comprised of key stakeholders and subject-matter experts, to consider an overhaul of the Readmission pay-for-performance program in CY 2019. This group will review the existing policy to make recommendations for measure updates, and the approach for developing all-payer performance standards for the RY 2022 Readmission Policy and beyond. Among the topics the sub-group may review are the following:

- Goal-setting for statewide performance relative to available national standards for Medicare and other payers
- Continued measurement of improvement and attainment versus feasibility and appropriateness of attainment only with sociodemographic risk adjustment
- Readmission measure specification updates (e.g., inclusion of oncology admissions or other admissions currently excluded, assessment of CMS electronic clinical quality readmissions measures (eCQMs))
- Shrinking denominator concerns and potential solutions, including measurement of readmissions on a per capita basis
- Trends in observation stays commensurate with inpatient readmissions
- Interaction with readmissions as defined under the Potentially Avoidable Utilization (PAU) measure

Staff notes that in the draft RY 2021 RRIP policy, the improvement target is set to the national CY 2019 projection (plus a cushion). The sub-group may consider whether to set a more aggressive improvement target than the national average in future years.

Staff welcomes additional topics for consideration related to the readmission sub-group, and welcomes those interested in participating in the sub-group to contact the Quality team at hsrcr.quality@maryland.gov.

RECOMMENDATIONS

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 1. Use CY 2018 YTD hospital performance results with an improvement factor added.
 2. Increase the threshold where hospitals start to earn rewards from the 25th percentile to the 35th percentile, which is 10.96 percent.
 3. Decrease the benchmark where hospital receive the full 1 percent reward from the 10th percentile to the 5th percentile at 8.59 percent.
- D. Include admissions to specialty hospitals in the calculation of acute care hospital readmission rates and monitor readmission rates of specialty hospitals.
- E. Set the maximum reward hospitals can receive at 1 percent of inpatient revenue and the maximum penalty at 2 percent of inpatient revenue.

Staff will review the improvement target and attainment standards in April/May against finalized CY 2018 data in order to bring back to the Commission revised performance targets if data trends warrant the revision. This may necessitate an additional vote from Commissioners.

APPENDIX I. ADDITIONAL BACKGROUND

CMS Hospital Readmission Reduction Program

For federal fiscal year 2019, the HRRP includes patients with heart attack, heart failure, pneumonia, chronic obstructive pulmonary disease, elective hip or knee replacement, and coronary artery bypass graft surgery. As required by the 21st Century Cures Act, beginning in FY 2019, hospital performance in the HRRP is assessed relative to the performance of hospitals within the same peer group. Hospitals are stratified into five peer groups, or quintiles, based on the proportion of dual eligible stays. A hospital's dual proportion is the proportion of Medicare fee-for-service (FFS) and Medicare Advantage stays where the patient was dually eligible for full-benefit Medicaid. If a hospital's risk-adjusted readmission rate for such patients exceeds that average, CMS penalizes it in the following year by using an adjustment factor that is applied to Medicare reimbursements for care for patients admitted for any reason; the penalty is in proportion to the hospital's excess rate of readmissions.

Penalties under the Medicare Hospital Readmissions Reduction Program were first imposed in federal fiscal year 2013, during which the maximum penalty was 1 percent of the hospital's base inpatient claims, and the maximum penalty has increased to 3 percent for federal fiscal year 2015 and beyond.

Beginning in CY 2018, CMS has also begun voluntary reporting of the Hybrid Hospital-Wide Readmission measure for hospitals in order to test collection of core clinical data elements and laboratory test results that stakeholders believe would enhance the administrative coding data that is utilized currently in the risk model variables.⁷

Maryland Readmission Reduction Incentive Program

The All-Payer Model Agreement with CMS replaced the requirements of the Affordable Care Act by establishing two sets of requirements. One set of requirements established performance targets for readmissions and complications in order to maintain Maryland exemptions from these programs, while the second set of requirements ensured that the amount of potential and actual revenue adjustments in Maryland's quality-based programs was at or above the CMS levels in aggregate but on an all-payer basis.

Maryland has historically performed poorly compared to the nation on readmissions, ranked 50th among all states in a study examining Medicare data from 2003-2004.⁸ Under the All-Payer Model Agreement, Maryland's Medicare fee-for-service statewide hospital readmission rate must be equal to or below the national Medicare readmission rate by the end of Calendar Year (CY) 2018, and demonstrate annual progress toward this goal (also known as the "Waiver Test").

⁷ For more information on Medicare Hospital Readmissions Reduction Program, see <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Readmissions-Reduction-Program.html>.

⁸ 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.

In order to meet this new Model requirement, the Commission built a Readmission Reduction Incentive Program (RRIP) beginning in 2014 to further bolster the incentives to reduce unnecessary readmissions. The RRIP replaced a previous Commission policy, the Admission Readmission Revenue policy, which had been in place since RY 2012.⁹ As recommended by the Performance Measurement Work Group, the RRIP is more comprehensive than the Medicare Hospital Readmission Program, as it includes all patients and payers, but it otherwise mostly aligns – albeit with some minor differences – with the CMS readmission measure, and reasonably supports the goal of meeting or out-performing the national Medicare readmission rate. The most notable difference between the Maryland model and the Federal model is that Maryland does not stratify hospitals into peer groups, which CMS does based on the proportion of stays for patients who are fully dually-eligible for Medicare and Medicaid.

Staff does not plan on stratifying by Maryland-specific peer groups at this time, but may consider the feasibility and *methodological soundness* of this stratification in the overhaul of the readmissions program in 2019. In addition, adopting the national stratification determination for Maryland hospitals is not currently possible as this data is calculated retrospectively and will not be available until the start of federal fiscal year 2019. Staff will evaluate the CMS stratification approach and its applicability to Maryland as the data becomes available.

⁹ <http://hscrc.maryland.gov/Pages/archived-quality-initiatives.aspx>

APPENDIX II. HSCRC CURRENT READMISSIONS MEASURE SPECIFICATIONS

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 with the exclusion of planned admissions.¹⁰

This measure is similar to the readmission rate that will be calculated under the All-Payer Model, with some exceptions. The most notable exceptions are that the HSCRC measure includes psychiatric patients and excludes oncology admissions. 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, adjustments had to be made to the metric that accounted for planned admissions and severity of illness. See below for details on the readmission calculation for the RRIP program.

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 counts all vaginal and C-section deliveries and rehabilitation as planned using the APR-DRGs, rather than principal diagnosis (APR-DRGs 540, 541, 542, 560, 860). Planned admissions are counted in the denominator because they could have an unplanned readmission.
- Discharges for the newborn APR-DRG are removed.
- Oncology cases are removed prior to running the readmission logic (APR-DRGs 41, 110, 136, 240, 281, 343, 382, 442, 461, 500, 511, 512, 530, 680, 681, 690, 691, 692, 693, 694, 695, and 696).
- Rehabilitation cases as identified by APR-DRG 860 (which are coded under ICD-10 based on type of daily service) are marked as planned admissions and made ineligible for readmission after the 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.
- Hospitalizations within 30 days of a hospital discharge for a patient who dies during the second admission are counted as readmissions, however, the readmission is removed from the denominator because there cannot be a subsequent readmission.
- Admissions that result in transfers, defined as cases where the discharge date of the admission is on the same as or the next day after the admission date of the subsequent admission, are removed from the denominator counts. Thus, only one admission is counted in the denominator, and that is the admission to the receiving transfer hospital. It is this discharge date that is used to calculate the 30-day readmission

¹⁰ Defined under [CMS Planned Admission Logic version 4 – updated October 2017.]

window.

- Discharges from rehabilitation hospitals (provider IDs Chesapeake Rehab 213028, Adventist Rehab 213029, and Bowie Health 210333) are not included when assessing readmissions.
- Holy Cross Germantown 210065 and Levindale 210064 are included in the program.
- Starting in January 2016, HSCRC is receiving information about discharges from chronic beds within acute care hospitals in the same data submissions as acute care discharges.
- In addition, the following data cleaning edits are applied:
 - Cases with null or missing Chesapeake Regional Information System for our Patients (CRISP) unique patient identifiers (EIDs) are removed.
 - Duplicates are removed.
 - 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.

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, plus an additional 30 days. To calculate the case-mix adjusted readmission rate for CY 2016 base period and CY 2018 performance period, data from January 1 through December 31, plus 30 days in January of the next year are used.

SOFTWARE: APR-DRG Version 35 (ICD-10) for CY 2016-CY 2018.

Calculation:

$$\text{Risk-Adjusted Readmission Rate} = \frac{\text{(Observed Readmissions)}}{\text{(Expected Readmissions)}} * \text{Statewide Readmission Rate}$$

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.

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 can be applied to each hospital. In this example, the computation presents expected readmission rates for an individual APR-DRG category and its SOI levels. This computation could be expanded to include multiple APR-DRG categories or any other subset of data, by simply expanding the summations.

Consider the following example for an individual APR DRG category.

Expected Value Computation Example

1 Severity of Illness Level	2 Discharges at Risk for Readmission	3 Discharges with Readmission	4 Readmissions per Discharge	5 Normative Readmissions per Discharge	6 Expected # of Readmissions
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

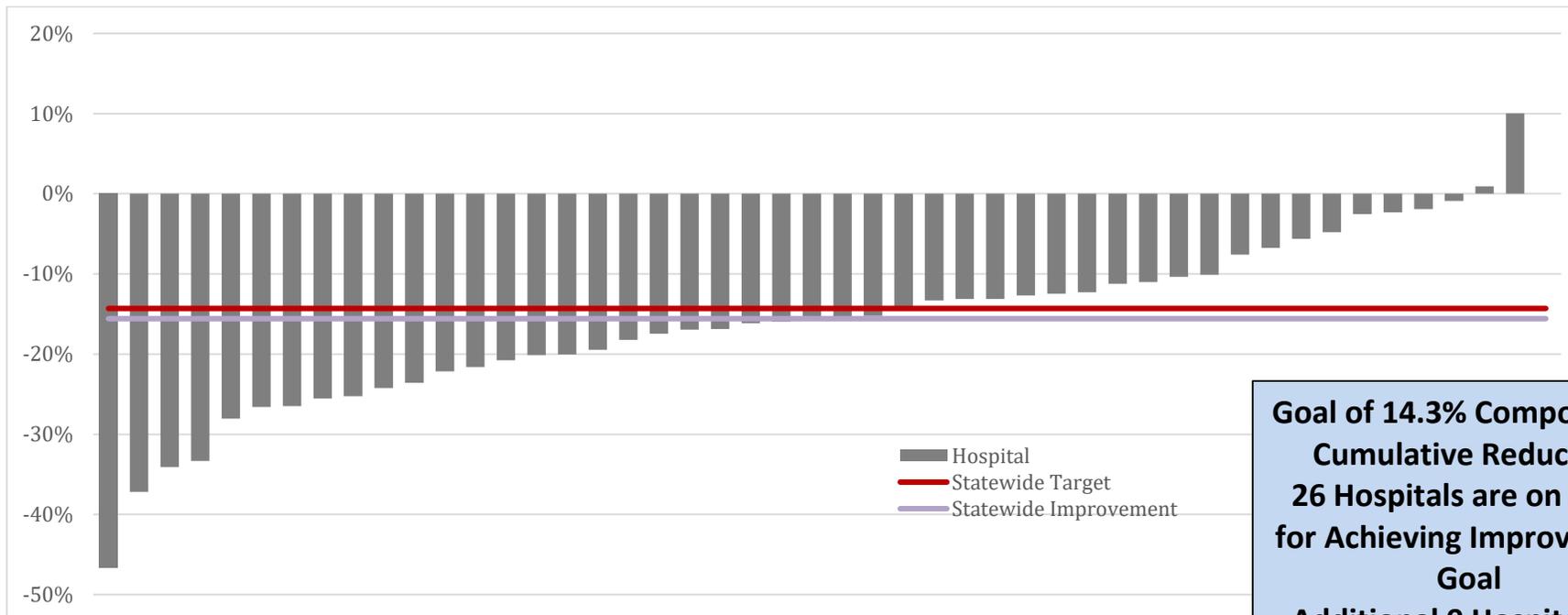
For the APR-DRG category, the number of discharges with a readmission is 45, which is the sum of discharges with readmissions (column 3). The overall rate of readmissions per discharge, 0.09, is calculated by dividing the total number of discharges with a readmission (sum of column 3) by the total number of discharges at risk for readmission (sum of column 2), i.e., $45/500 = 0.09$. From the normative population, the proportion of discharges with readmissions for each SOI level for that APR-DRG category is displayed in column 5. The expected number of readmissions for each SOI level (column 6) is calculated by multiplying the number of discharges at risk for a readmission (column 2) by the normative readmissions per discharge rate (column 5). The total number of readmissions expected for this APR-DRG category is the sum of the expected numbers of readmissions for the 4 SOI levels.

In this example, the expected number of readmissions for this APR-DRG 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 APR-DRG category. This difference can also be expressed as a percentage (79.65% of expected readmissions).

APR-DRGs by SOI categories are excluded from the computation of the actual and expected rates when there are only zero or one at risk admission statewide for the associated APR-DRG by SOI category.

APPENDIX III. RY 2020 BY-HOSPITAL READMISSION CHANGES

**Compounded Cumulative Change CY 2013- CY2018 YTD
through September**



Goal of 14.3% Compounded Cumulative Reduction
26 Hospitals are on Track for Achieving Improvement Goal
Additional 9 Hospitals on Track for Achieving Attainment Goal

Draft Recommendations for the Readmissions Reduction Incentive Program for Rate Year 2021

Case-mix Adjusted, All-Payer Readmission Rates – RY 2020 YTD through September by-Hospital

Hospitals		CY2018 Performance Period (YTD, Jan-Sep 2018)									
A	B	C = Obs/Exp * 11.78%	D	E	F = E/D	G	H = E/G	I = E/G * 11.78%	J = I/C - 1	K	L = J + K
HOSPITAL ID	HOSPITAL NAME	Case-Mix Adjusted Readmission Rate	Total # of IP Disch.	Total # of Readmits	Percent Readmits	Total # of Expected Readmits	Readmit Ratio	Case-Mix Adjusted Readmit Rate	Change in Case-mix Adjusted Rate from CY2016	RY 2018 % Change	CY17 Modified Cumulative Improvement Readmission Rate
210001	Meritus	11.29%	8,969	963	10.74%	1,130	0.852	10.03%	- 11.16%	- 6.44%	- 16.88%
210002	UMMC	12.92%	17,041	2,504	14.69%	2,289	1.094	12.87%	- 0.39%	- 11.95%	- 12.29%
210003	UM-PGHC	11.00%	8,337	993	11.91%	1,086	0.914	10.75%	- 2.27%	- 0.28%	- 2.54%
210004	Holy Cross	11.68%	17,638	1,448	8.21%	1,521	0.952	11.20%	- 4.11%	2.30%	- 1.90%
210005	Frederick	9.51%	11,094	1,161	10.47%	1,372	0.846	9.95%	4.63%	- 9.81%	- 5.63%
210006	UM-Harford	12.79%	2,947	398	13.51%	445	0.895	10.52%	- 17.75%	5.38%	- 13.32%
210008	Mercy	12.41%	9,506	809	8.51%	837	0.967	11.38%	- 8.30%	- 18.48%	- 25.25%
210009	Johns Hopkins	13.16%	27,926	4,108	14.71%	3,818	1.076	12.66%	- 3.80%	- 12.66%	- 15.98%
210010	UM-Dorchester	12.23%	1,311	160	12.20%	196	0.815	9.59%	- 21.59%	4.31%	- 18.21%
210011	St. Agnes	12.04%	10,365	1,256	12.12%	1,280	0.981	11.54%	- 4.15%	- 13.36%	- 16.96%
210012	Sinai	12.40%	10,251	1,221	11.91%	1,313	0.930	10.94%	- 11.77%	- 16.68%	- 26.49%
210013	Bon Secours	15.13%	2,239	484	21.62%	373	1.297	15.25%	0.79%	- 22.77%	- 22.16%
210015	MedStar Fr Square	12.40%	14,566	1,997	13.71%	1,856	1.076	12.66%	2.10%	- 4.33%	- 2.32%
210016	Washington Adventist	10.68%	6,972	639	9.17%	787	0.812	9.56%	- 10.49%	- 10.77%	- 20.13%
210017	Garrett	5.74%	1,470	97	6.60%	173	0.561	6.60%	14.98%	- 17.19%	- 4.79%
210018	MedStar Montgomery	10.62%	4,722	542	11.48%	608	0.891	10.48%	- 1.32%	- 14.22%	- 15.35%
210019	Peninsula	10.40%	11,840	1,361	11.49%	1,472	0.925	10.88%	4.62%	- 5.26%	- 0.88%
210022	Suburban	11.18%	9,796	1,067	10.89%	1,237	0.863	10.15%	- 9.21%	- 1.97%	- 11.00%
210023	Anne Arundel	11.31%	17,142	1,579	9.21%	1,658	0.952	11.20%	- 0.97%	- 9.50%	- 10.38%

Draft Recommendations for the Readmissions Reduction Incentive Program for Rate Year 2021

Hospitals		CY2018 Performance Period (YTD, Jan-Sep 2018)									
A	B	C = Obs/Exp * 11.78%	D	E	F = E/D	G	H = E/G	I = E/G * 11.78%	J = I/C - 1	K	L = J + K
HOSPITAL ID	HOSPITAL NAME	Case-Mix Adjusted Readmission Rate	Total # of IP Disch.	Total # of Readmits	Percent Readmits	Total # of Expected Readmits	Readmit Ratio	Case-Mix Adjusted Readmit Rate	Change in Case-mix Adjusted Rate from CY2016	RY 2018 % Change	CY17 Modified Cumulative Improvement Readmission Rate
210024	MedStar Union Mem	12.68%	7,395	904	12.22%	937	0.964	11.34%	- 10.57%	- 14.56%	- 23.59%
210027	Western Maryland	11.33%	7,447	880	11.82%	999	0.881	10.36%	- 8.56%	- 9.75%	- 17.48%
210028	MedStar St. Mary's	11.38%	4,559	455	9.98%	502	0.907	10.67%	- 6.24%	- 16.39%	- 21.61%
210029	JH Bayview	14.38%	12,769	1,883	14.75%	1,645	1.145	13.47%	- 6.33%	- 7.25%	- 13.12%
210030	UM-Chestertown	13.83%	704	62	8.81%	103	0.605	7.11%	- 48.59%	3.71%	- 46.68%
210032	Union of Cecil	10.83%	3,590	411	11.45%	461	0.891	10.48%	- 3.23%	4.29%	0.92%
210033	Carroll	11.59%	7,189	868	12.07%	896	0.969	11.40%	- 1.64%	- 8.62%	- 10.12%
210034	MedStar Harbor	11.79%	5,125	750	14.63%	634	1.182	13.91%	17.98%	- 6.76%	10.00%
210035	UM-Charles Regional	9.98%	4,435	489	11.03%	584	0.837	9.85%	- 1.30%	- 19.00%	- 20.05%
210037	UM-Easton	10.81%	4,400	385	8.75%	500	0.770	9.06%	- 16.19%	2.37%	- 14.20%
210038	UMMC Midtown	15.49%	2,918	567	19.43%	482	1.175	13.82%	- 10.78%	- 11.20%	- 20.77%
210039	Calvert	9.52%	3,870	420	10.85%	501	0.839	9.87%	3.68%	- 10.08%	- 6.77%
210040	Northwest	12.62%	6,815	909	13.34%	1,027	0.885	10.41%	- 17.51%	- 19.18%	- 33.33%
210043	UM-BWMC	12.65%	10,623	1,382	13.01%	1,495	0.924	10.87%	- 14.07%	- 13.35%	- 25.54%
210044	GBMC	10.50%	12,257	978	7.98%	1,183	0.827	9.73%	- 7.33%	- 6.26%	- 13.13%
210045	McCready	12.28%	160	17	10.63%	19	0.901	10.60%	- 13.68%	7.04%	- 7.60%
210048	Howard County	11.37%	9,956	994	9.98%	1,120	0.888	10.44%	- 8.18%	- 4.92%	- 12.70%
210049	UM-Upper Chesapeake	11.22%	7,049	789	11.19%	877	0.899	10.58%	- 5.70%	- 5.87%	- 11.24%
210051	Doctors	11.88%	6,689	801	11.97%	988	0.811	9.54%	- 19.70%	- 10.41%	- 28.06%
210055	UM-Laurel	11.72%	2,370	341	14.39%	341	1.000	11.77%	0.43%	- 16.49%	- 16.13%

Draft Recommendations for the Readmissions Reduction Incentive Program for Rate Year 2021

Hospitals		CY2018 Performance Period (YTD, Jan-Sep 2018)									
A	B	C = Obs/Exp * 11.78%	D	E	F = E/D	G	H = E/G	I = E/G * 11.78%	J = I/C - 1	K	L = J + K
HOSPITAL ID	HOSPITAL NAME	Case-Mix Adjusted Readmission Rate	Total # of IP Disch.	Total # of Readmits	Percent Readmits	Total # of Expected Readmits	Readmit Ratio	Case-Mix Adjusted Readmit Rate	Change in Case-mix Adjusted Rate from CY2016	RY 2018 % Change	CY17 Modified Cumulative Improvement Readmission Rate
210056	MedStar Good Sam	12.32%	4,933	879	17.82%	786	1.119	13.16%	6.82%	- 18.05%	- 12.46%
210057	Shady Grove	10.05%	11,138	833	7.48%	1,039	0.801	9.43%	- 6.17%	- 9.73%	- 15.30%
210058	UMROI	10.36%	373	19	5.09%	29	0.649	7.64%	- 26.25%	- 10.65%	- 34.10%
210060	Ft. Washington	9.44%	1,504	155	10.31%	223	0.695	8.17%	- 13.45%	- 27.41%	- 37.17%
210061	Atlantic General	8.76%	2,287	251	10.98%	314	0.800	9.41%	7.42%	- 25.02%	- 19.46%
210062	MedStar Southern MD	11.08%	6,922	707	10.21%	915	0.773	9.09%	- 17.96%	- 7.63%	- 24.22%
210063	UM-St. Joe	10.89%	10,243	954	9.31%	1,091	0.875	10.29%	- 5.51%	- 10.29%	- 15.23%
210064	Levindale	11.77%	781	115	14.72%	111	1.032	12.14%	3.14%	- 28.84%	- 26.61%
210065	HC-Germantown	10.43%	3,231	358	11.08%	371	0.965	11.36%	8.92%		
	STATEWIDE	11.79%	355,864	41,343	11.62%	43,624	0.948	11.15%	- 5.43%	- 10.75%	- 15.60%

APPENDIX IV. RY 2021 RRIP – READMISSION RATES WITH AND WITHOUT SPECIALTY HOSPITALS

ID	HOSPITAL NAME	CY17 with Specialty			CY17 Acute IP Only		
		Inpatient Discharges	Readmissions	Case-Mix Adjusted Readmission Rate	Inpatient Discharges	Readmissions	Case-Mix Adjusted Readmission Rate
210001	Meritus	13,853	1,712	11.81%	13,858	1,687	11.55%
210002	UMMC	23,047	3,557	13.53%	23,223	3,536	13.22%
210003	UM-PGHC	10,403	1,259	10.69%	10,451	1,242	10.56%
210004	Holy Cross	24,259	2,066	11.98%	24,397	2,074	11.73%
210005	Frederick	14,839	1,628	10.74%	14,877	1,611	10.52%
210006	UM-Harford	3,955	550	10.78%	3,956	540	10.76%
210008	Mercy	12,418	1,104	12.92%	12,419	1,102	12.72%
210009	Johns Hopkins	39,529	5,948	13.42%	39,745	5,944	13.22%
210010	UM-Dorchester	2,088	299	11.63%	2,100	285	11.21%
210011	St. Agnes	13,978	1,708	12.01%	13,979	1,703	11.78%
210012	Sinai	13,666	1,605	10.98%	13,684	1,589	10.80%
210013	Bon Secours	3,404	752	15.34%	3,408	722	15.15%
210015	MedStar Fr Square	19,870	2,853	13.54%	19,883	2,771	13.15%
210016	Washington Adventist	9,257	964	10.31%	9,609	925	9.60%
210017	Garrett	1,964	117	6.49%	1,968	117	6.37%
210018	MedStar Montgomery	6,628	867	12.07%	6,683	845	11.68%
210019	Peninsula	15,335	1,682	10.81%	16,140	1,784	10.78%
210022	Suburban	12,596	1,477	11.54%	12,961	1,474	11.17%
210023	Anne Arundel	24,483	2,072	10.97%	24,510	2,059	10.72%
210024	MedStar Union Mem	10,182	1,345	12.94%	10,185	1,340	12.67%
210027	Western Maryland	9,946	1,205	10.87%	9,949	1,204	10.79%
210028	MedStar St. Mary's	6,751	712	11.13%	6,755	696	10.87%
210029	JH Bayview	17,613	2,841	14.88%	17,631	2,816	14.65%
210030	UM-Chestertown	1,413	176	10.88%	1,413	176	10.73%
210032	Union of Cecil	4,972	568	10.54%	4,974	567	10.49%
210033	Carroll	9,099	1,104	11.51%	9,103	1,066	11.06%
210034	MedStar Harbor	6,739	983	13.62%	6,742	947	13.29%
210035	UM-Charles Regional	6,314	677	10.06%	6,316	675	9.87%
210037	UM-Easton	6,268	617	10.80%	6,275	617	10.63%
210038	UMMC Midtown	4,278	887	15.24%	4,283	864	15.05%
210039	Calvert	5,096	498	9.15%	5,101	481	8.81%
210040	Northwest	9,451	1,407	11.97%	9,460	1,379	11.78%
210043	UM-BWMC	14,699	2,024	12.02%	14,706	1,999	11.76%
210044	GBMC	15,726	1,274	10.53%	15,794	1,267	10.24%

Draft Recommendations for the Readmissions Reduction Incentive Program for Rate Year 2021

		CY17 with Specialty			CY17 Acute IP Only		
ID	HOSPITAL NAME	Inpatient Discharges	Readmissions	Case-Mix Adjusted Readmission Rate	Inpatient Discharges	Readmissions	Case-Mix Adjusted Readmission Rate
210045	McCready	213	23	10.18%	214	24	10.47%
210048	Howard County	15,134	1,553	10.99%	15,155	1,529	10.73%
210049	UM-Upper Chesapeake	9,525	914	9.65%	9,529	912	9.48%
210051	Doctors	8,458	1,187	11.40%	8,476	1,190	11.22%
210055	UM-Laurel	2,715	426	12.19%	2,726	417	11.95%
210056	MedStar Good Sam	6,946	1,122	12.36%	6,948	1,117	12.12%
210057	Shady Grove	15,048	1,232	10.41%	15,522	1,274	10.17%
210058	UMROI	592	34	9.20%	593	34	9.05%
210060	Ft. Washington	1,975	207	8.60%	1,977	206	8.42%
210061	Atlantic General	2,787	312	9.73%	2,927	348	10.25%
210062	MedStar Southern MD	9,491	1,143	10.83%	9,500	1,107	10.49%
210063	UM-St. Joe	14,075	1,270	10.71%	14,111	1,253	10.43%
210064	Levindale	1,040	152	11.43%	1,041	145	11.45%
210065	HC-Germantown	4,348	520	12.40%	4,383	510	11.95%
213029	Adv Rehab MD	L	L	0.00%			
213300	Mt. Washington Peds	303	27	8.62%			
214000	Sheppard Pratt	8,332	1,077	10.41%			
214003	Brook Lane	1,522	144	9.89%			
214013	Adventist BH-Rockville	3,684	528	11.14%			
	STATEWIDE	500,310	60,409	11.83%	489,640	58,170	11.63%
	Acute IP Only w/Specialty	486,466	58,633	11.83%			

APPENDIX V. OUT-OF-STATE MEDICARE READMISSION RATIOS

Out-of-State Readmission Ratios for RRIP Attainment

Based on CMMI Data July 2017 – June 2018.

ID	Hospital Name	Total Admissions	Total Readmissions	Total Readmissions in Maryland	Out-of-State Ratio
210001	MERITUS MEDICAL CENTER	6,025	1,083	1,036	1.0454
210002	UNIVERSITY OF MARYLAND MEDICAL CENTER	6,854	1,402	1,350	1.0385
210003	UM-PRINCE GEORGE'S HOSPITAL CENTER	3,034	576	477	1.2075
210004	HOLY CROSS HOSPITAL	4,263	699	644	1.0854
210005	FREDERICK MEMORIAL HOSPITAL	6,287	897	868	1.0334
210006	UM-HARFORD MEMORIAL HOSPITAL	1,527	229	224	1.0223
210008	MERCY MEDICAL CENTER	3,911	454	448	1.0134
210009	JOHNS HOPKINS HOSPITAL	11,038	2,082	1,919	1.0849
210011	ST. AGNES HOSPITAL	4,489	703	698	1.0072
210012	SINAI HOSPITAL	5,218	727	716	1.0154
210013	BON SECOURS HOSPITAL	483	96	94	1.0213
210015	MEDSTAR FRANKLIN SQUARE	7,096	1,290	1,286	1.0031
210016	WASHINGTON ADVENTIST HOSPITAL	2,854	481	424	1.1344
210017	GARRETT COUNTY MEMORIAL HOSPITAL	838	79	47	1.6809
210018	MEDSTAR MONTGOMERY MEDICAL CENTER	3,042	447	396	1.1288
210019	PENINSULA REGIONAL MEDICAL CENTER	7,807	1,149	1,084	1.0600
210022	SUBURBAN HOSPITAL	6,107	743	664	1.1190
210023	ANNE ARUNDEL MEDICAL CENTER	8,702	1,078	1,039	1.0375
210024	MEDSTAR UNION MEMORIAL HOSPITAL	4,663	595	583	1.0206

Draft Recommendations for the Readmissions Reduction Incentive Program for Rate Year 2021

ID	Hospital Name	Total Admissions	Total Readmissions	Total Readmissions in Maryland	Out-of-State Ratio
210027	WESTERN MARYLAND REGIONAL MEDICAL CENTER	4,987	750	674	1.1128
210028	MEDSTAR ST. MARY'S HOSPITAL	2,544	389	324	1.2006
210029	JOHNS HOPKINS BAYVIEW MEDICAL CENTER	6,436	1,257	1,233	1.0195
210030	UM-SHORE REGIONAL HEALTH AT CHESTERTOWN	719	83	76	1.0921
210032	UNION HOSPITAL OF CECIL COUNTY	1,896	321	250	1.2840
210033	CARROLL HOSPITAL CENTER	4,438	682	655	1.0412
210034	MEDSTAR HARBOR HOSPITAL CENTER	1,864	353	349	1.0115
210035	UM-CHARLES REGIONAL MEDICAL CENTER	2,658	383	324	1.1821
210037	UM-SHORE REGIONAL HEALTH AT EASTON	3,857	517	493	1.0487
210038	UMMC MIDTOWN CAMPUS	1,225	299	295	1.0136
210039	CALVERT HEALTH MEDICAL CENTER	2,053	272	240	1.1333
210040	NORTHWEST HOSPITAL CENTER	4,024	587	584	1.0051
210043	UM-BALTIMORE WASHINGTON MEDICAL CENTER	6,216	955	941	1.0149
210044	GREATER BALTIMORE MEDICAL CENTER	4,786	524	511	1.0254
210045	MCCREADY MEMORIAL HOSPITAL	133	12	12	1.0000
210048	HOWARD COUNTY GENERAL HOSPITAL	5,530	838	825	1.0158
210049	UM-UPPER CHESAPEAKE MEDICAL CENTER	4,425	558	547	1.0201
210051	DOCTORS COMMUNITY HOSPITAL	3,663	544	483	1.1263
210055	UM-LAUREL REGIONAL HOSPITAL	1,127	203	194	1.0464
210056	MEDSTAR GOOD SAMARITAN	3,418	603	600	1.0050
210057	SHADY GROVE ADVENTIST HOSPITAL	4,730	618	582	1.0619

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210058	UM-REHABILITATION & ORTHOPAEDIC INSTITUTE	176	L	L	1.0000
210060	FORT WASHINGTON MEDICAL CENTER	942	156	103	1.5146
210061	ATLANTIC GENERAL HOSPITAL	1,776	256	241	1.0622
210062	MEDSTAR SOUTHERN MARYLAND HOSPITAL CENTER	3,331	559	413	1.3535
210063	UM-ST. JOSEPH MEDICAL CENTER	5,852	706	696	1.0144
210064	LEVINDALE	190	23	23	1.0000
210065	HOLY CROSS HOSPITAL-GERMANTOWN	1,034	152	148	1.0270

APPENDIX VI. RY 2021 IMPROVEMENT AND ATTAINMENT SCALING – MODELED RESULTS

The following figure presents the proposed RY 2021 modeling, using preliminary CYTD 2018 readmission rate results. Column A shows the hospital’s RY 2018 permanent inpatient revenue. Column B and C show the CY 2016 YTD and CY 2018 in-state case-mix adjusted readmission rates. Columns D shows percent change in the case-mix adjusted rate from CY 16 to CY 18 YTD. Column E shows the actual case-mix adjusted rate with out-of-state adjustment for CYTD 2018. Columns F and G present the scaling results using the proposed RY 2021 improvement methodology, and columns H and I present the scaling results using the proposed RY 2021 attainment methodology. Columns J and K shows the revenue adjustment that is the better of attainment or improvement.

RY 2021 Readmission Reduction Incentive Program Modeling							Improvement		Attainment		Final Adjustment	
HOSP ID	HOSPITAL NAME	RY 18 Permanent Inpatient Revenue	CYTD16 Case Mix Adj. Readmit Rate	CYTD18 Casemix adj. readmit rate	CYTD18 % Change Case mix adj. Rate	CYTD18 Case mix adj. rate adj. for out of state	TARGET	Percent Rev. Adj.	TARGET (35 th perc)	Percent Rev. Adj.	RY20 Better of Attainment/ Improvement	Percent Rev. Adj.
		A	B	C	D=C/B-1	E	F	G	H	I	J	K=J/A
210001	Meritus	\$190,799,459	11.35%	10.21%	-10.04%	10.67%	-4.51%	0.53%	10.99%	0.13%	\$1,011,237.00	0.53%
210002	UMMC	\$919,253,797	13.13%	13.07%	-0.46%	13.57%	-4.51%	-0.39%	10.99%	-1.09%	-\$3,585,090.00	-0.39%
210003	UMPG	\$215,464,625	10.92%	10.89%	-0.27%	13.15%	-4.51%	-0.40%	10.99%	-0.91%	-\$861,859.00	-0.40%
210004	Holy Cross	\$340,412,069	11.84%	11.44%	-3.38%	12.42%	-4.51%	-0.11%	10.99%	-0.60%	-\$374,453.00	-0.11%
210005	Frederick	\$220,972,343	9.71%	10.51%	8.24%	10.86%	-4.51%	-1.21%	10.99%	0.05%	\$110,486.00	0.05%
210006	UM Harford	\$48,557,781	12.95%	10.93%	-15.60%	11.17%	-4.51%	1.00%	10.99%	-0.08%	\$485,578.00	1.00%
210008	Mercy	\$223,932,822	12.71%	11.77%	-7.40%	11.93%	-4.51%	0.27%	10.99%	-0.40%	\$604,619.00	0.27%
210009	Johns Hopkins	\$1,378,259,901	13.40%	12.98%	-3.13%	14.08%	-4.51%	-0.13%	10.99%	-1.31%	-\$1,791,738.00	-0.13%
210010	Dorchester	\$26,021,222	13.15%	9.98%	-24.11%	10.47%	-4.51%	1.00%	10.99%	0.22%	\$260,212.00	1.00%
210011	St. Agnes	\$237,889,236	12.15%	11.72%	-3.54%	11.80%	-4.51%	-0.09%	10.99%	-0.34%	-\$214,100.00	-0.09%
210012	Sinai	\$398,036,508	12.56%	11.21%	-10.75%	11.38%	-4.51%	0.59%	10.99%	-0.16%	\$2,348,415.00	0.59%
210013	Bon Secours	\$65,798,042	15.62%	15.24%	-2.43%	15.56%	-4.51%	-0.20%	10.99%	-1.94%	-\$131,596.00	-0.20%

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		A	B	C	D=C/B-1	E	F	G	H	I	J	K=J/A
210015	Franklin Sq	\$300,623,972	12.70%	12.92%	1.73%	12.96%	-4.51%	-0.59%	10.99%	-0.83%	-\$1,773,681.00	-0.59%
210016	Wash Adventist	\$158,337,604	11.23%	9.92%	-11.67%	11.25%	-4.51%	0.68%	10.99%	-0.11%	\$1,076,696.00	0.68%
210017	Garrett	\$21,075,334	5.76%	6.80%	18.06%	11.43%	-4.51%	-2.00%	10.99%	-0.19%	-\$40,043.00	-0.19%
210018	Montgomery	\$77,808,657	10.72%	10.99%	2.52%	12.41%	-4.51%	-0.67%	10.99%	-0.60%	-\$466,852.00	-0.60%
210019	PRMC	\$241,466,813	10.38%	11.02%	6.17%	11.68%	-4.51%	-1.02%	10.99%	-0.29%	-\$700,254.00	-0.29%
210022	Suburban	\$197,431,392	11.52%	10.59%	-8.07%	11.85%	-4.51%	0.34%	10.99%	-0.36%	\$671,267.00	0.34%
210023	AAMC	\$299,264,995	11.51%	11.36%	-1.30%	11.79%	-4.51%	-0.31%	10.99%	-0.34%	-\$927,721.00	-0.31%
210024	Union Mem	\$235,346,415	13.15%	11.52%	-12.40%	11.76%	-4.51%	0.75%	10.99%	-0.32%	\$1,765,098.00	0.75%
210027	Western Md	\$171,000,183	11.27%	10.44%	-7.36%	11.62%	-4.51%	0.27%	10.99%	-0.26%	\$461,700.00	0.27%
210028	St. Mary	\$76,303,058	11.32%	10.97%	-3.09%	13.17%	-4.51%	-0.14%	10.99%	-0.92%	-\$106,824.00	-0.14%
210029	Bayview	\$357,620,585	14.54%	13.65%	-6.12%	13.92%	-4.51%	0.15%	10.99%	-1.24%	\$536,431.00	0.15%
210030	Chestertown	\$21,139,936	14.11%	7.29%	-48.33%	7.96%	-4.51%	1.00%	10.99%	1.00%	\$211,399.00	1.00%
210032	Union Of Cecil	\$66,514,320	10.98%	10.35%	-5.74%	13.29%	-4.51%	0.12%	10.99%	-0.97%	\$79,817.00	0.12%
210033	Carroll	\$132,801,017	11.86%	11.73%	-1.10%	12.21%	-4.51%	-0.33%	10.99%	-0.52%	-\$438,243.00	-0.33%
210034	Harbor	\$112,526,840	11.95%	14.31%	19.75%	14.47%	-4.51%	-2.00%	10.99%	-1.48%	-\$1,665,397.00	-1.48%
210035	UM Charles	\$75,199,112	10.15%	9.95%	-1.97%	11.76%	-4.51%	-0.24%	10.99%	-0.33%	-\$180,478.00	-0.24%
210037	Easton	\$105,222,295	10.79%	9.29%	-13.90%	9.74%	-4.51%	0.89%	10.99%	0.52%	\$936,478.00	0.89%
210038	Midtown	\$117,217,727	15.60%	14.30%	-8.33%	14.49%	-4.51%	0.36%	10.99%	-1.48%	\$421,984.00	0.36%
210039	Calvert	\$63,677,722	10.12%	10.14%	0.20%	11.49%	-4.51%	-0.45%	10.99%	-0.21%	-\$133,723.00	-0.21%
210040	Northwest	\$133,828,758	13.11%	10.85%	-17.24%	10.91%	-4.51%	1.00%	10.99%	0.04%	\$1,338,288.00	1.00%

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		A	B	C	D=C/B-1	E	F	G	H	I	J	K=J/A
210043	UM BWMC	\$229,151,792	13.03%	10.99%	-15.66%	11.15%	-4.51%	1.00%	10.99%	-0.07%	\$2,291,518.00	1.00%
210044	G.B.M.C.	\$225,145,722	10.54%	9.94%	-5.69%	10.19%	-4.51%	0.11%	10.99%	0.33%	\$742,981.00	0.33%
210045	McCready	\$3,033,907	11.81%	10.01%	-15.24%	10.01%	-4.51%	1.00%	10.99%	0.41%	\$30,339.00	1.00%
210048	Howard	\$183,348,539	11.49%	10.82%	-5.83%	10.99%	-4.51%	0.13%	10.99%	0.00%	\$238,353.00	0.13%
210049	UM-UCH	\$130,150,364	11.38%	10.60%	-6.85%	10.81%	-4.51%	0.22%	10.99%	0.07%	\$286,331.00	0.22%
210051	Doctors	\$144,686,192	12.15%	9.90%	-18.52%	11.15%	-4.51%	1.00%	10.99%	-0.07%	\$1,446,862.00	1.00%
210055	Laurel	\$58,931,276	11.73%	12.10%	3.15%	12.66%	-4.51%	-0.73%	10.99%	-0.71%	-\$418,412.00	-0.71%
210056	Good Sam	\$140,674,848	12.55%	13.27%	5.74%	13.34%	-4.51%	-0.98%	10.99%	-0.99%	-\$1,378,614.00	-0.98%
210057	Shady Grove	\$231,939,525	10.30%	9.97%	-3.17%	10.59%	-4.51%	-0.13%	10.99%	0.17%	\$394,297.00	0.17%
210058	UMROI	\$69,966,359	10.39%	6.99%	-32.72%	6.99%	-4.51%	1.00%	10.99%	1.00%	\$111,946.00	0.16%
210060	Ft. Washington	\$19,548,527	9.08%	8.13%	-10.46%	12.31%	-4.51%	0.57%	10.99%	-0.56%	\$111,427.00	0.57%
210061	AGH	\$37,316,219	8.84%	9.18%	3.85%	9.75%	-4.51%	-0.80%	10.99%	0.52%	\$194,044.00	0.52%
210062	Southern MD	\$163,844,003	11.14%	9.16%	-17.77%	12.40%	-4.51%	1.00%	10.99%	-0.60%	\$1,638,440.00	1.00%
210063	UM St Joes	\$237,924,618	10.95%	10.59%	-3.29%	10.74%	-4.51%	-0.12%	10.99%	0.10%	\$237,925.00	0.10%
210064	Levindale	\$56,105,767	11.80%	11.83%	0.25%	11.83%	-4.51%	-0.45%	10.99%	-0.35%	-\$196,370.00	-0.35%
210065	HC German	\$60,632,167	11.05%	12.03%	8.87%	12.36%	-4.51%	-1.27%	10.99%	-0.58%	-\$351,667.00	-0.58%
STATEWIDE		\$9,222,204,362	11.77%	-5.10%							\$4,307,052.00	