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To: Hospital CFOs
Cc: Case Mix Liaisons, Hospital Quality Contacts
From: Alyson Schuster, Ph.D., Associate Director – Performance Measurement
Date: February 11, 2018
Re: Readmissions Reduction Incentive Program (RRIP) Policy for Rate Year (RY) 2021

This memo summarizes the changes to the Readmission Reduction Incentive Program (RRIP) that will impact hospital rates in RY 2021. The RY 2021 RRIP Policy was approved by the Commission on January 9, 2018. The RRIP methodology measures hospital performance on case-mix adjusted readmission rates and computes hospital scores based on the better of attainment or improvement. The Commission approved that the RY 2021 policy will reward hospitals that achieve an improvement rate of -3.90 percent between CY 2016 to CY 2019, or an attainment rate of 11.12% for CY 2019 (adjusted for out-of-state readmissions). The final, approved RRIP recommendation can be found on the HSCRC website in the [January 2019 Commission Meeting](#) Packet.

Measuring the Better of Attainment or Improvement in RY 2021

Based on staff assessment and stakeholder input, the following program updates were approved to measure attainment and improvement reliably across hospitals (further details are included in the recommendation):

- a. Measure hospital performance as the better of attainment or improvement.
- b. Set the all-payer case-mix adjusted readmission rate improvement target at 3.90 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:
 - i. Use CY 2018 YTD hospital performance results with an improvement factor added.
 - ii. Increase the threshold where hospitals start to earn rewards from the 25th percentile to the 35th percentile, which is 11.12 percent.

- iii. Decrease the benchmark where hospital receive the full 1 percent reward from the 10th percentile to the 5th percentile at 8.94 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.

Scaling and Magnitude of Revenue At-Risk

For the RY 2021 RRIP, the Commission approved scaled penalties of up to 2% and scaled rewards of up to 1% of inpatient revenue. These rewards and penalties are not revenue neutral.¹

Appendix A contains the RY 2021 preset scales for rewards and penalties linked to improvement and attainment performance levels. The percent change will be rounded to two decimal places for the payment incentive.

Readmission Measure Methodology

For the RRIP methodology, performance is measured using the 30-day all-payer, all hospital readmission rate (both within and between hospitals) with adjustments for patient severity (based upon discharge APR-DRG and severity of illness (SOI)) and with exclusions granted for planned admissions.²

New in RY 2021, readmissions to specialty hospitals will be included in the RRIP methodology.³ This change makes the readmission measure more comprehensive and equitable since similar patients seen in acute care hospitals were counted. The 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.⁴

See Appendix B for additional details on the HSCRC readmission measure specifications.

¹ Across all quality programs, there is a hospital maximum penalty guardrail of 3.4% of total revenue for RY 2020. The RY 2021 maximum guardrail policy will be voted on by the commission later in 2019.

² Most recent CMS Planned Admission logic is under Version 4. Current CCS Categories to calculate Planned Admissions are under Version 2019.1, more specifications on current CCS may be found here: <https://www.hcup-us.ahrq.gov/toolssoftware/ccs10/ccs10.jsp>.

³ The five specialty hospitals are: 213028 - Chesapeake Rehabilitation; 213029 - Adventist Rehabilitation; 213300 - Mt Washington Pediatric Hospital; 214000 - Sheppard Pratt; and 214003 - Brook Lane.

⁴ Hospitals that wish to review the impact of specialty hospital admissions in the readmission measure can review this change under the RY 20 logic on the CRS Portal. The summary-level report is entitled: “Readmissions w/ Specialty Hospitals Data – For Monitoring Only”

Grouper Versions

For RY 2021 the data for CY 2019 (performance period) will be run using version 36 of the APR grouper, and CY 2016 will also be rerun using version 36 to calculate the three-year improvement. A workbook with base period (CY 2016) data, re-run under version 36, CGS revision 2018.3.2, will be provided in the coming weeks. We also intend to provide CY 2017 and CY 2018 data for trending purposes.

RRIP Program Reporting

Summary reports and case-level data for the RRIP program are sent to hospitals via the CRISP Reporting Services (CRS) Portal. Each hospital has a point-of-contact, the Chief Financial Officer or their designee, who is contacted by CRISP to approve requests for access. If you need access to quality reports, please send an email to CRISP Support (support@crisphealth.org) indicating level of access (summary reports or case-level data).

For RY 2021, CRISP will provide a summary workbook that contains: a) the normative values; b) full base period CY 2016 readmission results under v36 (may vary over time; see Appendix B for details); c) CY 2016 to CY 2019 year-to-date improvement (by payer); and d) the readmission rate adjusted for out-of-state readmissions, which is used for attainment. The summary report will also contain a calculation sheet and the revenue adjustment scales. We anticipate the earliest the base year data will be posted to the CRS Portal is part of the March release; the first performance period report (January 2019) has an anticipated release in April.

If you have any questions, please e-mail hscrc.quality@maryland.gov or call Andrea Zumbrum (410-764-5591) or Dr. Alyson Schuster (410-764-2673).

Appendix A: RY 2021 RRIP Revenue Adjustment Scales

The tables below summarize the revenue adjustment scales for the improvement and attainment scales. All readmission rates used for the RRIP calculations are case-mix adjusted; readmission rates used to calculate attainment adjustment are further adjusted for proportion of out-of-state readmissions.

Improvement

Per Figure 1 below, hospitals with a 14.40 percent or larger decline (improvement) in CY 2019 readmission rates compared to CY 2016 base year rates will receive a positive adjustment of one percent of their inpatient revenue. Hospitals with a 17.10 percent or larger increase in their readmission rates will receive a negative adjustment of two percent of their inpatient revenue. Hospitals with performance between these two points will receive rewards and penalties based on their performance proportionate with the improvement target. For example, a hospital with 9.15 percent decline (improvement) would receive a 0.5 percent positive adjustment.

Attainment

A similar point scale is created to calculate rewards and penalties based on attainment rates, illustrated in Figure 2. Hospitals with a CY 2019 Readmission Rate of 8.94 percent or lower will receive a positive adjustment of 1 percent inpatient revenue. Hospitals with a rate of 15.47 percent or greater will receive a negative adjustment of two percent of their inpatient revenue.

The final adjustment amounts are determined by the better of attainment or improvement (Column B in both Figures).

Figure 1. Abbreviated RY 2021 Improvement Scale

Improvement Target: CY 2016 – CY 2019 Compounded Improvement = **-3.90%**

All Payer Readmission Rate Change CY16-CY19		RRIP % Inpatient Revenue Payment Adjustment
	A	B
Improving Readmission Rate		1.0%
	-14.40%	1.00%
	-9.15%	0.50%
Target	-3.90%	0.00%
	1.35%	-0.50%
	6.60%	-1.00%
	11.85%	-1.50%
	17.10%	-2.0%
Worsening Readmission Rate		-2.0%

Figure 2. Abbreviated RY 2021 Attainment Scale
 Attainment Target: CY 2019 = **8.94%**

All Payer Readmission Rate CY19		RRIP % Inpatient Revenue Payment Adjustment
	A	B
Lower Absolute Readmission Rate		1.0%
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%
Higher Absolute Readmission Rate		-2.0%

Appendix B: HSCRC RY 2021 Readmissions Measure Specifications

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.⁵ 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 will be calculated under the All-Payer Model, with some exceptions. The most notable exceptions are that the HSCRC measure includes psychiatric patients and currently excludes oncology admissions (due to concerns with how the planned admission logic handles these discharges). 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.⁶ Planned admissions are counted as eligible discharges in the denominator, because they could have an unplanned readmission.
- Discharges for newborn APR-DRG are removed.⁷
- Oncology cases are removed prior to running readmission logic.⁸
- 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.
- Hospitalizations within 30 days of a hospital discharge where a patient dies is counted as a readmission; 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

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

6 **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.

7 **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.

8 **Oncology DRGs:** 41, 110, 136, 240, 281, 343, 382, 442, 461, 500, 511, 512, 530, 680, 681, 690, 691, 692, 693, 694, 695, and 696.

- 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.
- Holy Cross Germantown - 210065 (two-year improvement, and CY 2018 attainment) and Levindale – 210064 (all-year improvement and CY 2018 attainment) are included in the program.
 - Beginning in RY 2019, HSCRC started including information about discharges from chronic beds within acute care hospitals.
 - In addition, the following data cleaning edits are applied:
 - Cases with null or missing 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.

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 2016 base period and CY 2019 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 2016 readmission rates.

Please note that, beginning in RY 2020, the base year readmission rates will not be “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. As with previous performance periods, 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 36 (ICD-10) for CY 2016-CY 2019.

Calculation:

$$\text{Case-Mix Adjusted Readmission Rate} = \frac{(\text{Observed Readmissions})}{(\text{Expected Readmissions})} * \text{Statewide Base Year Readmission Rate}$$

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.

Risk Adjustment Calculation:

Calculate the Statewide Readmission Rate without Planned Readmissions.

- 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 (CY 2016).

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.