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To: Hospital CFOs
Cc: Case Mix Liaisons, Hospital Quality Contacts
From: Alyson Schuster, Ph.D., Associate Director – Performance Measurement
Date: April 11, 2018
Re: Readmissions Reduction Incentive Program (RRIP) Policy for Rate Year (RY) 2020

This memo summarizes the changes to the Readmission Reduction Incentive Program (RRIP) that will impact hospital rates in RY 2020. The RY 2020 RRIP Policy was approved by the Commission on March 14, 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 2020 policy will reward hospitals that achieve a compounded, cumulative improvement rate of -14.30 percent between CY 2013 to CY 2018, or an attainment rate of 10.70% for CY 2018 (adjusted for out-of-state readmissions). The final, approved RRIP recommendation can be found on the HSCRC website in the [March 2018 Commission Meeting](#) Packet.

Measuring the Better of Attainment or Improvement in RY 2020

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):

- 1) Hospital readmission rates continue to be adjusted for out-of-state readmissions for all payers, based on a ratio developed using Medicare data.
- 2) The hospital attainment benchmark is set at the cutoff rate for the lowest 25th percentile (CY 2017 YTD through October), adjusted downward, which is 10.70% for RY 2020.
- 3) The improvement benchmark should be set at 14.30 percent for the CY 2018 performance period compared on a compounded basis to the CY 2013 readmission rates. Due to the ICD-10 transition and resultant changes to the All Patient Refined Diagnosis Related Group (APR-DRG) grouper, the compounded

cumulative improvement rate will be calculated by adding the RY 2018 improvement (CY 2013 to CY 2016 improvement under APR-DRG grouper versions 32 and 33) to the two-year CY 2016 to CY 2018 improvement (both under APR-DRG grouper version 35). The HSCRC has compounded the two-year improvement with the RY 2018 improvement to ensure that hospitals that made early investments in readmission reductions are not unduly penalized under the RY 2020 policy.

- a. Compounded cumulative improvement example: A hospital that reduced its case-mix adjusted readmission rate by -10.75% in RY 2018 would need to achieve an approximate additional -3.96% reduction in CY 2018 over CY 2016 rates, in order to achieve the compounded cumulative improvement target of -14.30%.

Scaling and Magnitude of Revenue At-Risk

For the RY 2020 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 2020 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 There were no major changes to the Readmission Measure Methodology for RY 2020. See Appendix B for additional details on the HSCRC readmission measure specifications.

Grouper Versions

For RY 2020 the data for CY 2018 (performance period) will be run using version 35 of the APR grouper, and CY 2016 will also be rerun using version 35 to calculate the two-year improvement. The RY 2018 readmission rates were calculated using version 32 (CY 2013) and version 33 (CY 2016) of the APR-DRG grouper. A workbook with base period (CY 2016) data, re-run under version 35, CGS revision 2017.3.3, will be provided in the coming weeks.

RRIP Program Reporting

Summary reports and case-level data for the RRIP program are sent to hospitals via

1 Across all quality programs, there is a hospital maximum penalty guardrail of 3.5% of total revenue for RY 2019. The RY 2020 maximum guardrail policy will be voted on by the commission in May or June 2018.

2 Most recent CMS Planned Admission logic is under Version 4. Current CCS Categories to calculate Planned Admissions are under Version 2018.1, more specifications on current CCS may be found here: <https://www.hcup-us.ahrq.gov/toolsoftware/ccs10/ccs10.jsp>.

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 2020, CRISP will provide a single summary workbook that contains: a) the normative values; b) full base period CY 2016 readmission results under v35 (may vary over time; see Appendix B for details); c) CY 2016 to CY 2018 year-to-date improvement (by payer), and the compounded cumulative improvement from CY 2013; and d) the readmission rate adjusted for out-of-state readmissions, which is used for attainment. The summary report also contains a calculation sheet and the revenue adjustment scales. In addition, technical documentation is being finalized so that all materials may be posted on the CRISP portal.

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

Appendix A: RY 2020 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 24.80 percent or larger cumulative decline (improvement) in CY 2018 readmission rates compared to CY 2013 base year rates will receive a positive adjustment of one percent of their inpatient revenue. Hospitals with a 6.70 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 19.55 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 2018 Readmission Rate of 10.20 percent or lower will receive a positive adjustment of 1 percent inpatient revenue. Hospitals with a rate of 11.70 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 2020 Improvement Scale

Improvement Target: CY 2013 – CY 2018 Compounded Improvement = **-14.30%**

All Payer Readmission Rate Change CY13-CY18	RRIP % Inpatient Revenue Payment Adjustment
A	B
Improving Readmission Rate	1.0%
-24.80%	1.0%
-19.55%	0.5%
-14.30% (Target)	0.0%
-9.05%	-0.5%
-3.80%	-1.0%
1.45%	-1.5%
6.70%	-2.0%
Worsening Readmission Rate	-2.0%

Figure 2. Abbreviated RY 2020 Attainment Scale
 Attainment Target: CY 2018 = **10.70%**

Attainment Scale

All Payer Readmission Rate CY18	RRIP % Inpatient Revenue Payment Adjustment
A	B
Lower Absolute Readmission Rate	1.0%
10.20% (Benchmark)	1.0%
10.45%	0.5%
10.70% (Threshold)	0.0%
10.95%	-0.5%
11.20%	-1.0%
11.45%	-1.5%
11.70%	-2.0%
Higher Absolute Readmission Rate	-2.0%

Appendix B: HSCRC RY 2020 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.³ 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.⁴ Planned admissions are counted as eligible discharges in the denominator, because they could have an unplanned readmission.
- Discharges for newborn APR-DRG are removed.⁵
- Oncology cases are removed prior to running readmission logic.⁶
- 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 admission is on the same or next day as the admission date of the subsequent

3 Planned admissions defined under [CMS Planned Admission Logic version 4 – updated October 2017].

4 **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.

5 **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.

6 **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, 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.
- Discharges from rehabilitation hospitals (provider IDs Chesapeake Rehab 213028, Adventist Rehab 213029) are removed.
 - 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 January 2016, HSCRC started receiving information about discharges from chronic beds within acute care hospitals with the same data submissions. These discharges were excluded from RRIP for RY 2018, but are included in RY 2019 and RY 2020.
 - 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 2018 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 35 (ICD-10) for CY 2016-CY 2018. The RY 2018 improvement was calculated using APR-DRG Version 32 (CY 2013) and Version 33 (CY 2016).

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.