maryland
health services
cost review commission

To: Hospital CFOs

Cc: Hospital Quality Liaisons, Case Mix Liaisons

From: HSCRC Quality Team

Date: April 6, 2022

Re: Rate Year 2024 Maryland Hospital Acquired Conditions (MHAC) Policy Recommendations and Program Details

On January 12, 2022, the Commission approved the staff recommendations for the Rate Year (RY) 2024 Maryland Hospital Acquired Conditions (MHAC) program. This memo summarizes the continuing and new/revised recommendations for the RY 2024 program, as well as additional COVID-19-related recommendations.

The MHAC policy was redesigned in Rate Year (RY) 2021 to modernize the program for the new Total Cost of Care Model. The RY 2024 final recommendation, in general, maintains the measures and methodology that were developed and approved for RYs 2022 and 2023.[1]

These are the final recommendations for the RY 2024 Maryland Hospital Acquired Conditions (MHAC) program:

1. Continue to use 3M Potentially Preventable Complications (PPCs) to assess hospital acquired complications.
    a. Maintain a focused list of PPCs in the payment program that are clinically recommended and that generally have higher statewide rates and variation across hospitals.
    b. Assess monitoring PPCs based on clinical recommendations, statistical characteristics, and recent trends to prioritize those for future consideration for updating the measures in the payment program.
    c. Engage hospitals on specific PPC increases to understand

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

trends and discuss potential quality concerns.

2. Use more than one year of performance data for small hospitals (i.e., less than 20,000 at-risk discharges and/or 20 expected PPCs). The performance period for small hospitals will be CY 2021 and 2022.
3. Continue to assess hospital performance on attainment only.
4. Continue to weigh the PPCs in the payment program by 3M cost weights [2]as a proxy for patient harm.
5. Maintain a prospective revenue adjustment scale with a maximum penalty at 2 percent and maximum reward at 2 percent and continuous linear scaling with a hold harmless zone between 60 and 70 percent.
6. Adjust retrospectively the RY 2024 MHAC pay-for-performance program methodology as needed due to COVID-19 Public Health Emergency and report any changes to Commissioners.

COVID-19 Program Adjustments

RY 2024 Changes to Timelines

Staff notes that, on September 2, 2020, CMS published an Interim Final Rule (IFR) in response to the COVID-19 PHE. In this IFR, they announced that CMS will not use CY Q1 or CY Q2 of 2020 quality data even if submitted by hospitals. Thus, the two-year base period for establishing performance standards (normative values, and the benchmarks/thresholds) needs to be modified for RY 2024 to exclude this 6-month period. **The 24-month base period for RY 2024 will be CY 2019 January-June + CY 2020 July - CY 2021 December.**

Assessing Performance During COVID

For both RY 2023 and RY 2024, retrospective changes may be needed to more fairly assess hospital performance due to COVID. For RY 2023 staff have worked with our contractor Mathematica Policy Research to model the **impact of concurrent norms (i.e., using the performance period to develop performance standards as opposed to a historical pre-COVID time period)** including COVID-19 discharges on hospitals scores, model fit, reliability and validity, hospital rankings relative to COVID

[2] Please see Excel file attachment entitled “ppc_v39_weights_ from 3m_OFFICIAL” which contains the PPC Grouper V. 39 Cost Weights. For PPC 67, HSCRC staff calculated this cost weight using a simple average of the cost weights of PPCs #5 and #6, Pneumonia PPCs.

volumes, impact on specific DRGS (e.g., Major Respiratory infections and inflammations, sepsis), and equity considerations. In addition, staff is proposing to adjust the payment scale for RY 2023 to factor in COVID's impact on scores. The PMWG has reviewed this analysis to date and staff will be bringing a report to the Commission in May 2022 recommending the use of concurrent norms and scale adjustment. These decisions may be carried over or reassessed for RY 2024, as the changes needed due to COVID will continue to impact the Maryland quality programs for the foreseeable future. As always, the staff appreciates the input of stakeholders and the patience of the hospital industry as we work to ensure the fairest approach for quality assessment.

Palliative Care Update

Last year for RY 2023, the MHAC program adjusted its methodology to not exclude palliative care cases because there was data on whether the palliative care diagnosis was present-on-admission. The 3M PPC grouper then could assign PPCs to discharges where palliative care was not present-on-admission. This addressed a long-standing concern among HSCRC staff that complications were being missed that caused a patient to go into palliative care during the hospitalization. Unfortunately, starting in October 2021 the palliative care diagnosis is again exempt from POA coding. **While 3M plans to assess and update the PPC grouper in future years to clinically determine which complications should be assigned to all patients with a palliative care diagnosis, in the meantime the HSCRC staff will remove discharges with palliative care for all of CY 2022.** The RY 2025 MHAC policy will re-evaluate palliative care Coding Clinic updates, PPC trend results with/without palliative care, and clinical updates to the PPC grouper v.40 to determine if the palliative care exclusion can be removed.

MHAC Performance To Date

Figure 1 below illustrates Maryland's performance on the fourteen payment PPCs from 2016 through June of 2021. CMS will assess any backsliding on performance relative to CY 2018. Specifically, there has been a 26% decrease in the PPC observed to expected (O/E) ratio from 2018 to the most recent data available (CY 2018 O/E ratio = 1.06 and CY 2021 YTD O/E ratio = 0.78). PPCs in the MHAC program include:

3 Acute Pulmonary Edema and Resp Failure w/o Ventilation
4 Acute Pulmonary Edema, Resp Failure w/ventilation

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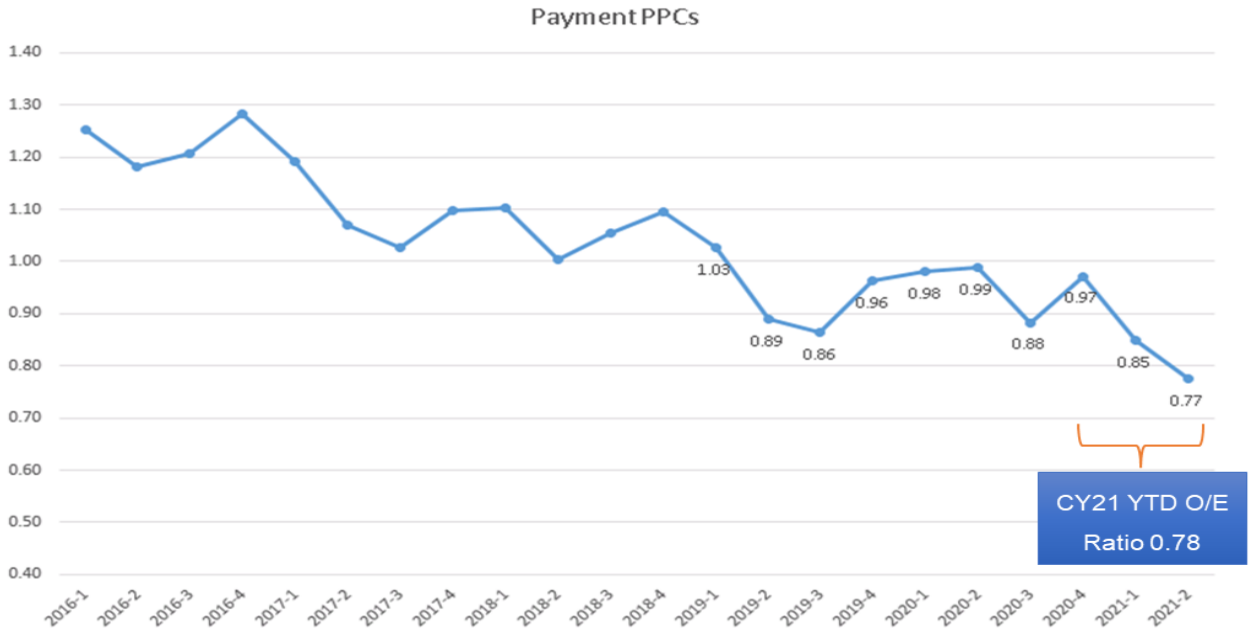
7	Pulmonary Embolism
9	Shock
16	Venous Thrombosis
28	In-Hospital Trauma and Fractures
35	Septicemia & Severe Infections
37	Post-Operative Infection & Deep Wound Disruption Without Procedure
41	Post-Operative Hemorrhage & Hematoma w/ Hemorrhage Control Procedure or I&D
42	Accidental Puncture/ Laceration During Invasive Procedure
49	Iatrogenic Pneumothorax
60	Major Puerperal Infection and Other Major Obstetric Complications
61	Other Complications of Obstetrical Surgical & Perineal Wounds
67	Pneumonia Combo (with and without aspiration)

Figure 1. Payment Program PPCs Quarterly Observed to Expected Ratios CY 2016 to CY 2021 June

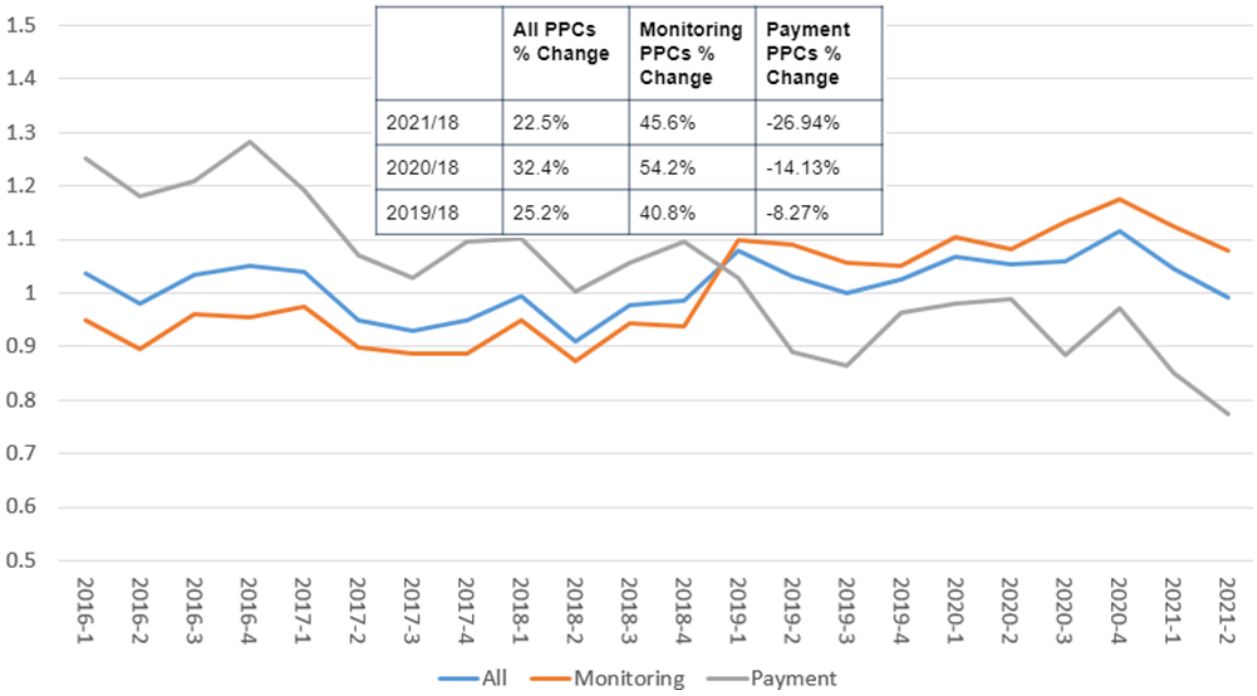


Monitored Complication

In addition to focusing on a narrowed list of PPCs for payment, as stated previously, the RY 2021 MHAC policy included a recommendation to monitor the remaining PPCs. Staff fulfills this recommendation by monitoring all PPCs that are still considered clinically valid by 3M, and distinguishing between “Monitoring” and “Payment” PPCs. The overall PPC trend across all 54 PPCs shows that there has been a slight increase in the overall statewide O/E ratio

from 0.98 in CY 2018 to 1.01 in CY 2021 YTD; the slight worsening in performance is driven primarily by increases in PPCs under monitoring status, and not increases in the payment program PPCs, as illustrated in Figure 2.

Figure 2. PPC O/E Ratio Trends CY 2016 Through CY 2021 Qtr 2



	All PPCs % Change	Monitoring PPCs % Change	Payment PPCs % Change
2021/18	22.5%	45.6%	-26.94%
2020/18	32.4%	54.2%	-14.13%
2019/18	25.2%	40.8%	-8.27%

As discussed in the RY 2023 policy, staff had reached out to hospitals with increases in monitoring PPCs and had been given several reasons for the increase unrelated to declining quality. Furthermore, last year staff had planned to analyze additional data to determine whether any monitored PPCs needed to be placed back into the payment program. However, due to the lack of valid and reliable data during the COVID-19 PHE, staff decided to maintain the current list of payment PPCs and did not recommend any monitoring PPCs be moved back into the payment program for RY 2024. Instead the RY 2024 policy includes a recommendation to engage hospitals on specific PPC increases to understand trends and discuss potential quality concerns in order to determine whether to possibly move PPCs back into the payment program in the future. Appendix I provides the statewide changes in observed, expected, and the O/E ratios for the monitoring PPCs sorted by the observed PPCs that accounted for the largest proportion of the increase from 2018 to 2021 YTD through June. **Hospitals are highly encouraged to review their monitoring PPC trends and to target improvements in these PPCs where warranted.**

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Hospital Scores and Revenue Adjustments

The revenue adjustment scale recommended in this policy ranges from 0 to 100 percent, with a hold harmless zone between 60 and 70 percent. The maximum penalty and reward are set at 2 percent of inpatient revenue as shown in Appendix II. The revenue adjustment scale is normally determined by looking at the distribution of scores from modeling but has not changed since the RY 2021 redesign. Despite historical concerns regarding the lack of a continuous scale from some stakeholders, staff still believe that the hold harmless zone is reasonable given the lack of national benchmarks for establishing a cut-point. Based on this scale, the RY 2021 MHAC program had net revenue adjustments of about $39M ($3M penalties, $42M rewards). These revenue adjustments reflect the continued improvement on complications during the TCOC model. Additional information on the MHAC revenue adjustment methodology can be found in Appendix III and in the RY 2024 policy.

Performance Standards and Payment Program Performance Periods

As stated above, the proposed base period for RY 2024 will be CY 2019 January-June + CY 2020 July - CY2021 December. The performance period will be CY 2022 for most hospitals, but small hospitals will have a two year performance period (i.e., CY 2021 and CY 2022). Performance standards are included in Appendix IV.

Grouper Version and Software Revision

The APR-DRG and PPC Grouper Version 39 (Pre-CY 21Q4: CGS 2021.3.0; as of CY21Q4: CGS 2022.0; then quarterly updates thereafter to CGS 2022.1 then 2022.2, etc.) will be used for RY 2024.

MHAC Program Reporting though CRISP Reporting Services (CRS) Portal

All monthly and quarterly MHAC summary reports and case-level data will continue to be made available to hospitals through the CRS portal. The monthly CRISP MHAC reports will be updated in the May release

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to provide RY 2024 program details and resources (i.e., updated 3M cost weights, performance standards (thresholds and benchmarks), the pre-set revenue adjustment scale, hospital PPC exclusions, normative values, and a calculation sheet). Most hospital contacts have access to the summary report, and a more limited number of hospital contacts may access the case-level detail that contains PHI. For access to the CRS portal, contact support@crisphealth.org.

If you have any questions, please email hscrc.quality@maryland.gov.

Appendix I: Monitoring PPCs

The table below shows the monitored PPCs O/E ratios for CY 21 YTD (through June) and the changes in the ratio from CY 2018. The PPCs highlighted in green represent those PPCs that staff believes should be “strongly considered,” and those highlighted in yellow are those that should be “considered.” In addition, the following statistical information is provided:

- The CY 2021 and 2019 rates per thousand
- The observed counts for CYs 2019 and 2020 combined
- The 3M cost weights: these are based upon cost variation correlated with individual PPCs. The cost measurement provides an estimate of the incremental cost of the average PPC over the cost of the typical case at admission. Cost estimates are converted into relative weights on a similar scale to those of other admissions to provide context.
- Reliability and validity statistics for CY 18-19
- Variations among hospitals’ O/E ratios with percent of hospitals below 0.85 or above 1.15 O/E
- Number of hospitals in the state eligible for the PPC (20 or more cases at risk for the PPCs and 2 or more expected PPCs) for those that staff is recommending be strongly considered or considered.

	PPC Description	O/E Ratio 2021	21/18 % change	21 rate per 1000 (obs/atrisk *1000)	19 rate per 1000 (obs/atrisk *1000)	obs counts 19&20	3M cost weights	Reliability CY 18-19	Spearman's Predictive Validity CY18-19	Pearson's Predictive Validity CY18-19	Hospital Variation CY 18-19 O/E	Qualifying Hospitals CY18-19
31	Decubitis Ulcer	2.072532252	177.75%	1.1979359	0.65542465	159	2.732754	Strong	Very Weak	Very Weak	82.61	46
51	Gastrointestinal Ostomy Complications	1.718597992	143.68%	0.7390512	0.430243656	363	1.536037	Moderate	Weak	Moderate	80	40
47	Encephalopathy	1.564997708	95.30%	1.0876954	0.711396182	428	0.73486	Strong	Moderate	Moderate	86.62	39
26	Diabetic Ketoacidosis & Coma	1.241225227	90.48%	0.1579474	0.144046556	71	0.529726	Low	N/A	N/A	94.74	19
50	Mechanical Complication of Device, Implant & Graft	1.469228381	83.29%	1.0828006	0.859003256	669	1.16229	Strong	Weak	Moderate	72.5	40
45	Post Procedure Foreign Body	1.590764476	68.36%	0.0290641	0.019134827	22	0.599007	Very Low	Very Weak	Very Weak	95.65	46
15	Peripheral Vascular Complications except Venous Thrombosis	1.536704471	104.91%	0.5493201	0.377287304	261	1.509014	Moderate	Very Weak	Weak	68.97	29
23	GU Complications Except UTI	1.413699187	85.21%	0.4168621	0.329810917	241	0.59266	Low	Weak	Very Weak	81.82	33
34	Moderate Infectious	1.592439017	77.22%	1.3389441	0.813836638	233	1.319832	Strong	Strong	Very Strong	78.79	33
18	Major Gastrointestinal Complications with Transfusion or Significant Bleeding	1.359434475	70.32%	0.6059707	0.450138595	340	1.532197	Moderate	Weak	Moderate	78.95	38
13	Other Cardiac Complications	1.175128606	51.50%	0.3970074	0.36516392	252	0.370811	Strong	Moderate	Moderate	88.57	35
17	Major Gastrointestinal Complications without Transfusion or Significant Bleeding	1.255369369	48.50%	0.6737902	0.547433419	397	1.243755	Strong	Weak	Weak	89.74	39
29	Poisonings except from Anesthesia	1.144385284	48.25%	0.1542033	0.156751835	88	0.135078	Moderate	Very Strong	Very Strong		
52	Inflammation & Other Complications of Devices,Implants or Gr	1.084425214	36.36%	1.2117467	1.177818333	836	1.114926	Strong	Moderate	Moderate		
20	Other Gastrointestinal Complications without Transfusion or Si	1.294820046	34.31%	1.1186044	0.801833667	641	1.084788	Moderate	Very Weak	Very Weak		
40	Post-Operative Hemorrhage & Hematoma withoutHemorrhage	1.120816644	27.35%	4.8969488	4.477363636	1150	0.726008	Strong	Very Weak	Very Weak		
66	Catheter-Related Urinary Tract Infection	1.593794825	25.92%	0.1702901	0.046158462	9	0.800112	Strong	N/A	N/A		
1	Stroke & Intracranial Hemorrhage	1.118901984	24.41%	1.4162018	1.1961753	919	0.903899	Moderate	Weak	Weak		
19	Major Liver Complications	1.136822422	23.16%	0.6633808	0.515488787	413	0.726922	Strong	Very Weak	Weak		
27	Post-Hemorrhagic & Other Acute Anemia withTransfusion	1.05087275	11.70%	1.0401768	0.896475793	518	0.976265	Strong	Moderate	Moderate		
10	Congestive Heart Failure	0.96501292	11.70%	0.1710669	0.185425552	94	0.421532	Strong	N/A	N/A		
8	Other Pulmonary Complications	0.837757869	7.52%	0.6607423	0.904226378	373	0.844686	Strong	Moderate	Moderate		
25	Renal Failure with Dialysis	1.025418548	7.31%	0.2468878	0.215890282	107	2.904097	Moderate	N/A	N/A		
39	Reopening Surgical Site	1.055902787	6.91%	2.8355142	2.207216287	446	1.678212	Moderate	Weak	Weak		
11	Acute Myocardial Infarction	0.932359935	5.26%	1.1045771	1.180943012	840	0.407992	Strong	Moderate	Moderate		
33	Cellulitis	0.890671509	-4.43%	0.6884197	0.749318391	465	0.912768	Strong	Moderate	Moderate		
21	Clostridium Difficile Colitis	0.856196362	-14.80%	4.7207173	5.333759647	667	1.3374	Strong	Moderate	Weak		
65	Urinary Tract Infection without Catheter	0.919584705	-15.57%	4.0051524	3.515917693	2406	0.677804	Strong	Moderate	Moderate		
6	Aspiration Pneumonia	0.832606481	-20.70%	0.9345935	0.942210085	617	0.926432	Strong	Moderate	Moderate		
2	Extreme CNS Complications	0.513988392	-44.27%	0.3701015	0.660879402	411	0.463291	Strong	Moderate	Strong		
5	Pneumonia & Other Lung Infections	0.624438177	-45.88%	1.3265499	1.683720491	534	1.296954	Strong	Very Weak	Very Weak		
63	Postoperative Respiratory Failure with Tracheostomy	0	-100.00%	0	31.25	4	7.572636	#N/A	#N/A	#N/A		
38	Post-Operative Wound Infection & Deep WoundDisruption with	1.236654438	140.38%	0.4604052	0.529836413	11	2.464263	Very Low	#N/A	#N/A	100	3
59	Medical & Anesthesia Obstetric Complications	1.550394274	122.98%	3.7068818	3.022534498	400	0.125938	Strong	Very Weak	Very Weak	87.1	31
44	Other Surgical Complication - Mod	1.882049283	102.00%	0.8025682	0.38502916	104	1.08229	Low	N/A	N/A	90	20
54	Infections due to Central Venous Catheters	1.708700704	84.83%	0.2510166	0.142946606	44	2.964553	Moderate	N/A	N/A	90	10
53	Infection, Inflammation & Clotting Complicationsof Peripheral \	1.582724561	84.35%	0.2333961	0.155606161	105	0.52856	Strong	N/A	N/A	80.77	26
64	Other In-Hospital Adverse Events	1.284914729	80.18%	0.4154651	0.390416411	296	0	Strong	Very Weak	Very Weak	86.84	38
48	Other Complications of Medical Care	1.190529596	59.08%	0.4286806	0.408025869	285	1.074701	Moderate	Very Weak	Very Weak	86.11	36
14	Ventricular Fibrillation/Cardiac Arrest.	1.240931756	32.75%	4.2005757	3.057108823	2020	0.510352	Strong	Weak	Moderate	67.39	46

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Appendix II. RY 2024 MHAC Revenue Adjustment Scale

Below is a concise version of the RY 2024 MHAC scale, which ranges from 0 to 100 percent and includes a revenue neutral zone between 60 and 70 percent.

Abbreviated Version	
Final MHAC Score	**% Revenue Adjustment**
0%	**-2.00%**
5%	-1.83%
10%	-1.67%
15%	-1.50%
20%	-1.33%
25%	-1.17%
30%	-1.00%
35%	-0.83%
40%	-0.67%
45%	-0.50%
50%	-0.33%
55%	-0.17%
60%	0.00%
65%	0.00%
70%	0.00%
75%	0.33%
80%	0.67%
85%	1.00%
90%	1.33%
95%	1.67%
100%	**2.00%**
Penalty Cut-point	**60%**
Reward Cut-point	**70%**

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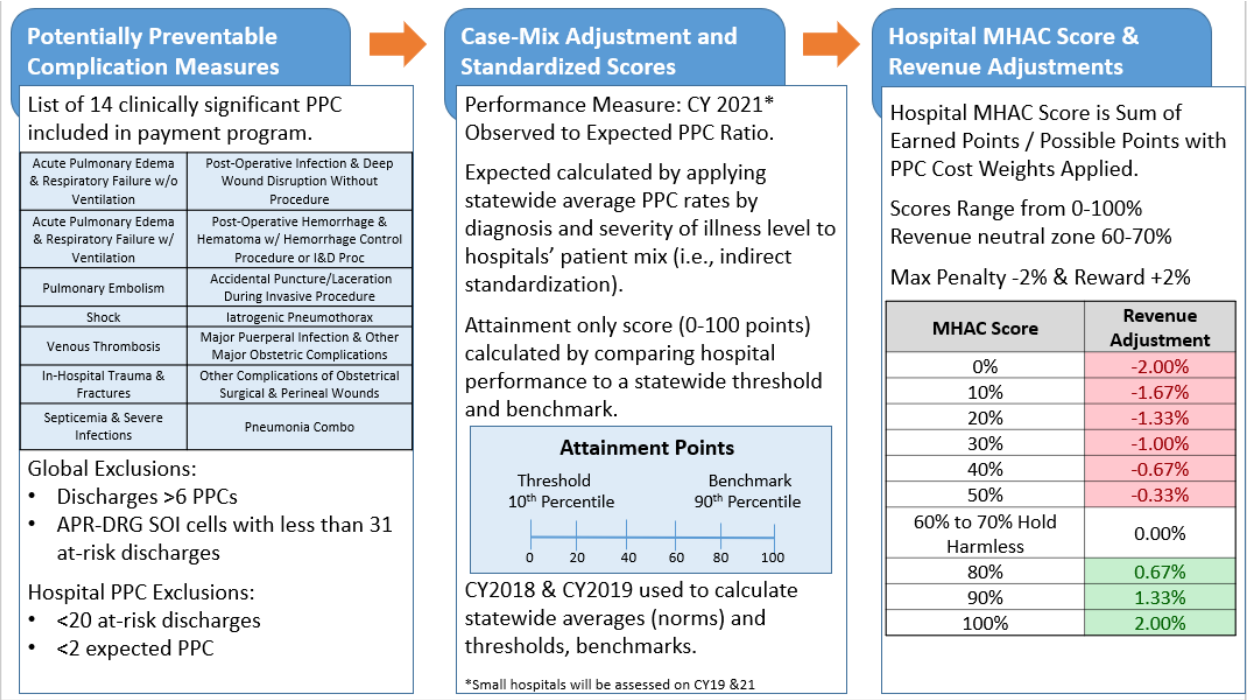
Appendix III: RY 2024 MHAC Program Methodology

Figure 1 below provides a summary overview of the RY 2023 MHAC methodology.

Figure 1. Overview of RY 2023 MHAC Methodology



The RY 2024 methodology is mostly unchanged from the graphic above with the exception of the period used to calculate performance standards (benchmark, threshold and normative values) and the adjustment of the global and hospital PPC exclusions to reflect this shorter base period of July 2020 through December 2021. Furthermore the global exclusion for palliative care will be added back into the program.

Performance Metric

The methodology for the MHAC program measures hospital performance using the Observed (O) /Expected (E) ratio for each PPC. Expected number of PPCs are calculated using historical data on statewide PPC rates by All Patient Refined Diagnosis Related Group and Severity of Illness Level (APR-DRG SOI). See below for details on how expected number of PPCs are calculated for each hospital.

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Observed and Expected PPC Values

The MHAC scores are calculated using the ratio of $Observed : Expected$ PPC values.

Given a hospital's unique mix of patients, as defined by APR-DRG category and Severity of Illness (SOI) level, the HSCRC calculates the hospital's expected PPC value, which is the number of PPCs the hospital would have experienced if its PPC rate were identical to that experienced by a normative set of hospitals.

The expected number of PPCs is calculated using a technique called indirect standardization. For illustrative purposes, assume that every hospital discharge is considered "at-risk" for a PPC, meaning that all discharges would meet the criteria for inclusion in the MHAC program. All discharges will either have no PPCs, or will have one or more PPCs. In this example, each discharge either has at least one PPC, or does not have a PPC. The unadjusted PPC rate is the percent of discharges that have at least one PPC.

The rates of PPCs in the normative database are calculated for each diagnosis (APR-DRG) category and severity level by dividing the observed number of PPCs by the total number of admissions. The PPC norm for a single diagnosis and severity level is calculated as follows:

Let:

N = norm
P = Number of discharges with one or more PPCs
D = Number of "at-risk" discharges
i = A diagnosis category and severity level

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

In the example, each normative value is presented as PPCs per discharge to facilitate the calculations in the example. Most reports will display this number as a rate per one thousand discharges.

Once the normative expected values have been calculated, they can be applied to each hospital. In this example, the normative expected values are computed for one diagnosis category and its four severity

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levels.

Consider the following example in Figure 2 for an individual diagnosis category.

Figure 2. Expected Value Computation Example for one Diagnosis Category

A Severity of illness Level	B At-risk Discharges	C Observed Discharges with PPCs	D PPCs per discharge (unadjusted PPC Rate)	E Normative PPCs per discharge	F Expected # of PPCs	G Observed: Expected Ratio
			= (C / B)	(Calculated from Normative Population)	= (B x E)	= (C / E) rounded to 4 decimal places
1	200	10	.05	.07	14.0	0.7143
2	150	15	.10	.10	15.0	1.0000
3	100	10	.10	.15	15.0	0.6667
4	50	10	.20	.25	12.5	0.8000
Total	500	45	.09		56.5	0.7965

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

In this example, the expected number of PPCs for the APR DRG category is 56.5, which is then compared to the observed number of discharges with PPCs (45). Thus, the hospital had 11.5 fewer observed discharges with PPCs than were expected for 500 at-risk discharges in this APR DRG category. This difference can be expressed as a percentage difference as well.

All APR-DRG categories and their SOI levels are included in the computation of the observed and expected rates, except when the APR-DRG SOI level has less than 30 at-risk discharges statewide.

PPC Exclusions

Consistent with prior MHAC policies, the number of at-risk discharges is determined prior to the calculation of the normative values (hospitals with <10 at-risk discharges are excluded for a particular PPC) and the normative values are then re-calculated after removing PPCs with <2 complication expected. The following exclusions will also be applied:

For each hospital, discharges will be removed if:

- Discharge is in an APR-DRG SOI cell has less than 31 statewide discharges.
- Discharge has more than 6 PPCs (i.e., a catastrophic case, for which complications are probably not preventable).

For each hospital, PPCs will be removed if during CY 2018 and CY 2019:

- The number of cases at-risk is less than 20; and
- The expected number of PPCs is less than 2.

The PPCs for which a hospital will be assessed are determined using the FY 2018 and FY 2019 data and not reassessed during the performance period. This is done so that scores can be reliably calculated during the performance period from a pre-determined set of PPCs. The MHAC summary workbooks provide the excluded PPCs for each hospital.

Combination PPCs

Based on clinical input and 3M recommendation, starting in RY 2021 two pneumonia (PPC 5 Pneumonia & Other Lung Infections & PPC 6 Aspiration Pneumonia) PPCs were combined into single pneumonia PPC and the 3M cost weight is a simple average of the two PPC cost weights.

Benchmarks and Thresholds

For each PPC, a threshold and benchmark value will be calculated for RY 2024 using the July 2020 through December 2021 data. In previous rate years when improvement as also assessed, the threshold was set at the statewide median of 1 and the benchmark was the O/E ratio for the top performing

hospitals that accounted for 25% of discharges. For RY 2021 under an attainment only methodology, staff adapted the MHAC points system to allow for greater performance differentiation by moving the threshold to the value of the observed to expected ratio at the 10th percentile of hospital performance, moving the benchmark to the value of the observed to expected ratio at the 90th percentile of hospital performance, and assigning 0 to 100 points for each PPC between these two percentile values.

Attainment Points (possible points 0-100)

If the PPC ratio for the performance period is greater than the threshold, the hospital scores zero points for that PPC for attainment.

If the PPC ratio for the performance period is less than or equal to the benchmark, the hospital scores a full 100 points for that PPC for attainment.

If the PPC ratio is between the threshold and benchmark, the hospital scores partial points for attainment. The formula to calculate the Attainment points is as follows:

- Attainment Points = [99 * ((Hospital's performance period score - Threshold)/ (Benchmark – Threshold))] + 0.5

Calculation of Hospital Overall MHAC Score

To calculate the final score for each hospital, the attainment points earned by the hospital and the potential points (i.e., 100) for each PPC are multiplied by the 3M cost weights. Hospital scores across PPCs are calculated by summing the total weighted points earned by a hospital, divided by the total possible weighted points (100 per PPC * 3M cost weight). Figure 3 provides a hypothetical example of the points based scoring approach with the 3M cost weights.

Figure 3: Hypothetical Example of Scoring Methodology

Hospital A								
PPC	**Threshold**	**Benchmark**	**Hospital O/E Ratio**	**ATTAINMENT POINTS**	**POSSIBLE DENOMINATOR**	**3M Weight**	**Weighted Points**	**Weighted Denominators**
	A	**B**	**C**	**D = C relative to A and B**	**E**	**F**	**G = D * F**	**H = E * F**
PPC 1	1.75	0.5	0.2	100	100	0.5	50	50
PPC 2	2	0.3	1.1	53	100	2	106	200
PPC 3	2.5	0.4	0.65	88	100	1	88	100
Total							**244**	**350**
					TOTAL WEIGHTED SCORE G total /H total			**70%**

Hospital B								
PPC	**Threshold**	**Benchmark**	**Hospital O/E Ratio**	**ATTAINMENT POINTS**	**POSSIBLE DENOMINATOR**	**3M Weight**	**Weighted Points**	**Weighted Denominators**
	A	**B**	**C**	**D = C relative to A and B**	**E**	**F**	**G = D * F**	**H = E * F**
PPC 1	1.75	0.5	2	0	100	0.5	0	50
PPC 2	2	0.3	1.5	30	100	2	60	200
PPC 3	2.5	0.4	1	71	100	1	71	100
Total							**131**	**350**
					TOTAL WEIGHTED SCORE G total /H total			**37%**

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Rounding

For the purposes of calculating scores, the benchmarks and O: E ratios are rounded to four (4) decimal places. The final score for each hospital is rounded to the whole percentage point (e.g., 10%, 20%).

Financial Impact of MHAC Performance (Scaling)

The RY 2024 scale, uses the full distribution of potential scores (scale of 0-100%), with a hold harmless zone between 60 and 70 percent. The maximum penalty and reward remain at 2 percent. As with the RY 2023 policy, retrospective changes to the revenue adjustment scale may be warranted due to COVID.

Small Hospital Methodology

Hospital-specific PPC inclusion requirements were maintained in the RY 2024 policy, i.e., all hospitals are required to have a specific number of at-risk discharges and expected PPCs in order for a particular PPC to be included in the payment program. Because of the volatility in performance scores for smaller hospitals, the Commission also approved the following policy updates in RY 2022:

> "Establish small hospital criteria for assessing performance under the MHAC policy based on the number of at-risk discharges and expected PPCs (i.e., small hospitals are those with less than 20,000 at-risk discharges and/or 20 expected PPCs across all payment program PPCs) as opposed to the number of PPC measure types, and for hospitals that meet small hospital criteria, increase reliability of score by using two years of performance data to assess hospital performance (i.e., for RY 2022 use CY 2019 and 2020). "

Because of the COVID PHE, the above proposal was not implemented for RY 2022 but instead, the MHAC scores and revenue adjustments for RY 2021 were repeated in RY 2022.

For RY 2023 and 2024, staff proposed to maintain the small hospital criteria and expected to utilize CY 2020, CY2021 and CY 2022 for the assessment of small hospitals. However, staff will need to reconsider this approach due to the COVID related suspension of data use for January to June of 2020. Thus, in the RY 2023 and 2024 recommendations, staff proposed that for small hospitals use more than one year of data be used, and that the performance period is yet to be determined performance period. For example, if the

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Commission decides to use July to December 2020 data, then small hospitals could be assessed on data from July 2020 through December 2020 and January to December 2021 for RY 2023.

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Appendix IV. MHAC RY 2024 Performance Standards

PPC Number	PPC Description	Threshold	Bench-mark
3	Acute Pulmonary Edema and Respiratory Failure without Ventilation	2.0252	0.3071
4	Acute Pulmonary Edema and Respiratory Failure with Ventilation	1.9753	0.2712
7	Pulmonary Embolism	1.9673	0.2765
9	Shock	1.9611	0.3778
16	Venous Thrombosis	2.303	0
28	In-Hospital Trauma and Fractures	1.9133	0
35	Septicemia & Severe Infections	1.6494	0.4975
37	Post-Operative Infection & Deep Wound Disruption Without Procedure	2.1521	0
41	Post-Operative Hemorrhage & Hematoma with Hemorrhage Control Procedure or I&D Proc	1.4481	0.4138
42	Accidental Puncture/Laceration During Invasive Procedure	1.5415	0.4788
49	Iatrogenic Pneumothorax	1.7954	0.216
60	Major Puerperal Infection and Other Major Obstetric Complications	2.2777	0
61	Other Complications of Obstetrical Surgical & Perineal Wounds	2.6309	0
67	Combined Pneumonia (PPC 5 and 6)	1.4251	0.2414