maryland
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RY 2027 Maryland Hospital Acquired Conditions Policy:
Overview of New Composite Measure and Scoring

HSCRC Quality Team

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Overview of MHAC Policy

- MHAC is one of several quality pay-for-performance initiatives that provide incentives for hospitals to improve and maintain high-quality patient care and value over time.
- Policy holds 2 percent of hospital revenue at-risk for hospital acquired complications that occur during a hospital stay, as a result of treatment, rather than the underlying progression of disease.
    - Examples: sepsis, pulmonary embolisms, surgical-site infections
- MHAC policy currently evaluates hospitals on a subset of the Solventum (formerly 3M) Potentially Preventable Complication (PPC) measures (15 of 59).
    - The PPCs included in the payment policy were originally selected by a workgroup of clinical and measurement experts. Criteria for inclusion included:
        - Clinically significant to patients, clinically actionable, high rates or volume, significant variation across hospitals, most hospitals eligible for the PPC, and acceptable levels of reliability and validity.

2024-2025 Development Work: PPC Composite

- Various stakeholders have raised concerns about the small cell size approach used in the current MHAC policy to determine whether a hospital should be assessed on a PPC.
  - The current MHAC program requires that a hospital have 2 expected PPCs and 20 admissions at-risk for a PPC.
- To address this concern, stakeholders were supportive of testing new methods to address potential unintended consequences of the current methodology, including:
  - **Low Content Validity** - the degree to which a measure captures the concept it is intended to measure
  - **Low Reliability** - the degree to whether the measure captures meaningful variation on hospital complications (signal) relative to random variation or error that can mask the signal (noise).
- New PPC Composite method has much higher reliability and higher content validity because it includes all PPCs for which a hospital has at-risk patients, weighted by hospital specific expected PPCs (i.e., volume weight)
  - The addition of volume weighting allows inclusion of low volume PPCs but places greater emphasis on a hospital's greatest areas of opportunity

First Evaluation Criteria: Content Validity

Hospital Category*	# Hospitals	Avg. # PPCs Evaluated	
		Current Method	Composite
Small Hospitals	5	3.6	13.2
Medium Hospitals	15	11.0	14.5
Large Hospitals	21	13.8	15

***Hospital category definitions are based on FY 2024 data. Small hospitals had less than 21,500 at-risk discharges or 22 expected PPCs; medium hospitals had between 60,000 and 150,000 at-risk discharges; large hospitals had greater than 150,000 at-risk discharges.**

- PPC Composite significantly improves Content Validity by increasing number of PPCs on which Hospitals are assessed/scored
- Improvement in Content Validity occurs across all sized hospitals
- Given clinical significance of each PPC measure, the staff believes the increased Content Validity is important and is most fairly achieved through use of volume weighted composite.

Second Evaluation Criteria: Signal-to-Noise Reliability

- Composite Methodology significantly improves reliability
  - Score of 1.00 indicates a perfect signal of hospital performance without noise (i.e., perfect reliability)
  - Score of 0 indicates no signal of hospital performance and all noise (i.e., worst reliability).
  - Staff considers reliability above 0.50 to be acceptable
- Put another way:
  - On average, measure results are unreliable 61% under the current methodology
  - On average measure results are unreliable 24% of the time under Composite Option 1.

Performance Period	Current Methodology*	Composite Option 1
FY 24	0.24	0.61
FY 23	0.38	0.81
FY 22	0.50	0.81
FY 21	0.42	0.80
Average	**0.39**	**0.76**

Rationale for weighting by expected PPCs

PPC #	PPC Name	At-risk discharges	Expected PPCs	Pct. of expected PPCs	3M Cost Weight	Pct. of Expected PPCs * 3M Cost Weight
4	Acute Pulmonary Edema and Respiratory Failure with Ventilation	11,525	7.3	6.5%	1.16	0.0754
67	Combined Pneumonia (PPC 5 and 6)	11,856	13.8	12.3%	1.17	0.1439
28	In-Hospital Trauma and Fractures	20,270	5.4	4.8%	0.45	0.0216
42	Accidental Puncture/Laceration during Invasive Procedure	20,294	10.2	9.1%	0.50	0.0455

- 3M cost weights measure the marginal cost (proxy for harm) of an observed PPCs.
- The expected harm of a PPC measure is the measure's 3M Cost Weight*Expected PPCs.
- Sensible for PPC measures with higher expected harm to have a higher weight in hospitals' MHAC scores.
- In this example, PPC 67 has a similar 3M Cost Weight as PPC 4 but roughly twice as many expected PPCs. Thus, it makes sense for PPC 67's weight to be roughly twice PPC 4's weight in MHAC composite calculations. The logic is the same for PPC 28 versus PPC 42.

RY 2027 Payment PPCs

PPC Number	PPC Description
3	Acute Pulmonary Edema and Respiratory Failure without Ventilation
4	Acute Pulmonary Edema and Respiratory Failure with Ventilation
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

PPC Number	PPC Description
41	Post-Operative Hemorrhage & Hematoma w/ Hemorrhage Control Procedure or I&D
42	Accidental Puncture/Laceration During Invasive Procedure
47	Encephalopathy
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)

Overview of **Old** MHAC Methodology

Potentially Preventable Complication Measures

List of 15 clinically significant PPC included in payment program.

3-Acute Pulmonary Edema and Respiratory Failure w/o Ventilation	4-Acute Pulmonary Edema and Resp Failure w/ Vent	7-Pulmonary Embolism
9-Shock	16-Venous Thrombosis	28-In-Hospital Trauma /Fractures
35-Septicemia & Severe Infections	37-Post-Operative Infection without Procedure	41-Post-Operative Hemor/ Hematoma w/Procedure or I&D
42-Accidental Puncture/ Laceration w/Invasive Procedure	47-Encephalopathy	49-Iatrogenic Pneumothorax
60-Major Puerperal Infection and Other Major OB Complications	61-Other Complications of OB Wounds	67-Pneumonia Combo (with and without Aspiration)

Global Exclusions:

- Palliative care
- Discharges >6 PPCs
- APR-DRG SOI cells with less than 31 at-risk discharges

Hospital PPC Exclusions:

- <20 at-risk discharges
- <2 expected PPCs

Case-Mix Adjustment and Standardized Scores

Performance Measure: CY 2024 Observed to Expected PPC Ratio.*

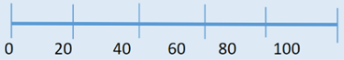
Expected calculated by applying statewide average PPC rates by diagnosis and severity of illness level to hospitals' patient mix (i.e., indirect standardization)

Attainment only score (0-100 points) calculated by comparing hospital performance to a statewide threshold and benchmark.

Attainment Points

Threshold
Avg 0-20th percentile

Benchmark
Avg 80th -100th percentile



July 2021-Jun 23 used to calculate statewide averages (norms) and thresholds, benchmarks.

***Small hospitals will be assessed on CYs 23 & 24**

Hospital MHAC Score & Revenue Adjustments

Hospital MHAC Score is Sum of Earned Points / Possible Points with PPC Cost Weights Applied.

Scores Range from 0-100%
Revenue neutral zone 60-70%

Max Penalty -2% & Reward +2%

MHAC Score	Revenue Adjustment
0%	-2.00%
10%	-1.67%
20%	-1.33%
30%	-1.00%
40%	-0.67%
50%	-0.33%
60% to 70% Hold Harmless	0.00%
80%	0.67%
90%	1.33%
100%	2.00%

RY 2027 Data Details

“Base” Period: July 2022-June 2024 (i.e., FYs 23 and 24)

- Used for the normative values for case-mix adjustment (i.e., calculation of expected PPCs)
- Used for the threshold and benchmark (i.e., performance standards) for scoring
- Used to determine hospital specific PPC exclusions (i.e., any PPCs for which hospital has zero at-risk/expected)
- Used to determine small hospitals

Performance Period: CY 2025

- Smaller hospitals use two years for performance period (CY24&25)

Solventum/3M APR-DRG and PPC Grouper Version 42

- Updated clinical logic and cost-weights

Cutpoint for Revenue Adjustment Scale (TBD)

- Staff will update the modeling of CY24 performance with v42 cost weights, QA results, and then will calculate the hospital average score to use as the prospectively determined cutpoint for the revenue adjustment scale
- Approved policy indicates if the actual average differs by +/- 10 percent, staff will propose a retrospective change to the cut point to the commission
- Average of statewide scores could be included in monthly reports for monitoring throughout the performance year

Review Excel Modeling

- Modeling in excel will be updated for actual RY2027 base

The hospitals should expect to be held accountable for all Payment PPCs for which they have at-risk/expected for RY2027.
HSCRC staff will send memo and work to implement reporting now that policy is approved,