



MHAC Report Static User Guide for Rate Year 2025

By CRISP, last updated 2/7/2023

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RY 2025 MHAC Report User Guide

Overview

The Maryland Hospital Acquired Conditions (MHAC) program is based on a system developed by 3M Health Information Systems to identify potentially preventable complications (PPCs) using present-on-admission codes available in claims data. 3M originally developed specifications for 65 PPCs, which are defined as harmful events that develop after the patient is admitted to the hospital and may result from processes of care and treatment rather than from the natural progression of the underlying illness. For example, the program holds hospitals accountable for respiratory failure and pulmonary embolisms that occur during inpatient stays. These complications can lead to 1) poor patient outcomes, including longer hospital stays, permanent harm, and death; and 2) increased costs. Thus, the MHAC program is designed to provide incentives to improve patient care by adjusting hospital budgets based on PPC performance. The maximum penalty remains at 2 percent, and the maximum reward is increased to 2 percent.

For more information on the MHAC policy, please visit the following HSCRC website page: https://hscrc.maryland.gov/Pages/init_qi_MHAC.aspx

Methodology

The MHAC methodology assesses attainment only. The attainment score is calculated by comparing hospital performance to a statewide threshold benchmark. For RY2025, hospitals are now evaluated on 15 clinically significant PPCs, weighted by 3M cost weights as proxy for patient harm. The MHAC program uses a point-based system for converting PPC results to standardized scores, and the weighted PPC scores are converted to revenue adjustment. For RY 2025, 24 months of data (July 2020- June 2022) is used to establish the normative values that are used to calculate a hospital's expected PPC rate, and to determine the threshold and benchmark for scoring hospital performance. The RY 2025 scale uses a full distribution of potential scores (scale of 0-100%), with a hold harmless zone between 60 and 70 percent. The performance period data for RY2025 is CY 2023 and CY2022-2023 for small hospitals; data will be reported via the CRS portal as it becomes available.

For RY 2025, data will be used during the COVID Public Health Emergency to assess performance standards. With the performance standards determined post-COVID, that reduces any concerns that may arise about using a pre-COVID period. The v40 grouper has clinic logic that determines if a COVID-related discharge can be assigned a PPC.

Grouper Version

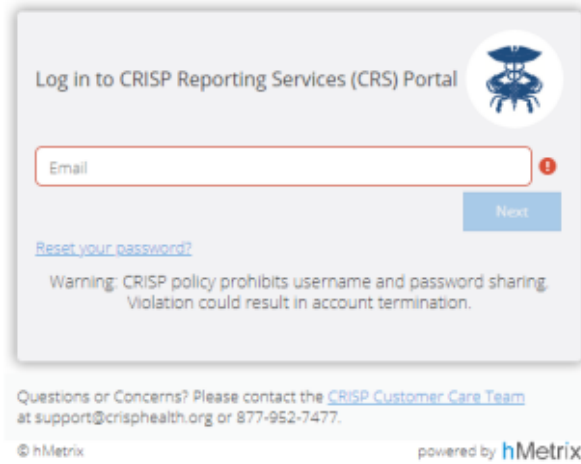
The APR-DRG and PPC Grouper Version 40 will be used for RY 2025.



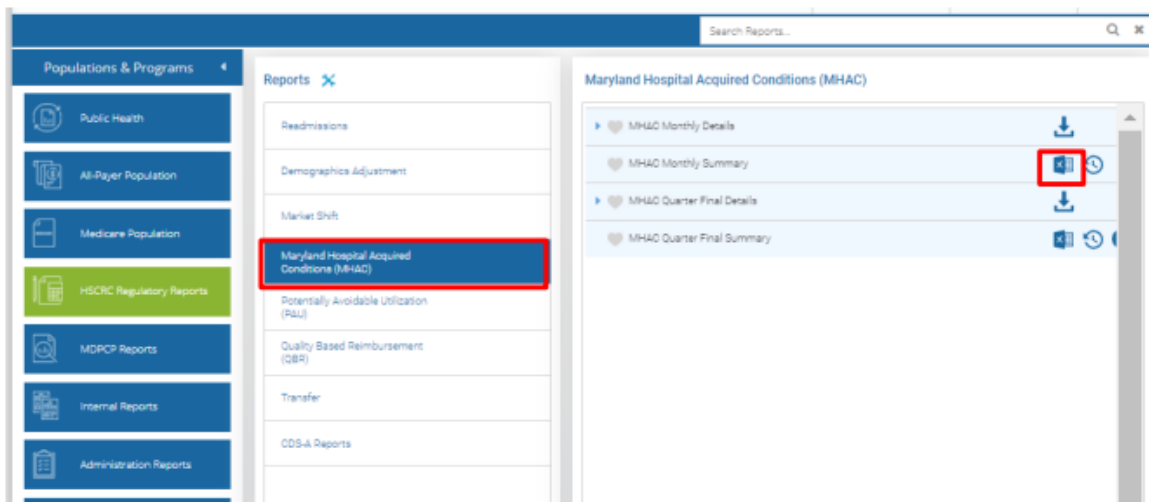
MHAC Report Access/Card

The MHAC Static Report can be accessed by visiting reports.crisphealth.org and logging-in with a CRS username and password.

Step 1. To access the HSCRC Regulatory Report tile, login to the CRISP Reporting Services Portal by visiting <https://reports.crisphealth.org>. Once in the CRS Portal, a dashboard of different blue report “cards” will appear. Availability of reports is based on the access of the user. Clicking the card named “HSCRC Regulatory Report” will bring up the available reports for this category. The following screenshots represent the user’s workflow.



Step 2. By clicking the Static Report icon as shown below, you will either access the MHAC Summary or MHAC Details Report. Users with PHI-level access to this report will have the MHAC Details report option. Users who can only see the MHAC Summary report (and not the MHAC Details report) are configured for summary level access (cannot see PHI reports).





Report Tabs

- Cover Sheet
- 3M Cost Weights
- Benchmarks
- Percent At-Risk Scaling
- Excluded PPCs
- Hospital Results by PPC
- Hospital Scores
- Statewide PPC Norms
- Calculation Sheet
- By Hospital by PPC
- Statewide by PPC
- By Hospital By PPC By Quarter

Cover Sheet

The cover sheet provides an overview of each sheet available in the MHAC report. It also lists the base year, performance year methodology version, and CGS.

| | | |
|--|---|--|
| RY2025 | | |
| BASE PERIOD | July 2020- June 2022 | |
| PERFORMANCE YEAR | CY2023 (small hospitals will have CY2022+ CY2023) | |
| METHODOLOGY VERSION | PPC and APR version 40 | |
| CGS | | |
| | | |
| INCLUDED IN THIS EXCEL WORKBOOK: | Sheet Name | Description |
| | 2. 3M Cost weights | V40 3M cost weights as proxy for patient harm used for weighing PPCs |
| | 3. Attainment Standards | Benchmarks and Thresholds for each PPC based on Base Period (July 2020- June 2022) data. |
| | 4. Percent At-Risk Scaling | This scale allows hospitals to "estimate" revenue adjustments. |
| | 5. Excluded PPCs | List of PPCs excluded from calculations for each Hospital. Hospitals not listed on the sheet have all payment PPCs included. |
| | 6. Hospital Results by PPC | Hospital PPC results: At-risk, Observed, Expected, O/E ratio, and weighted attainment points. |
| | 7. Hospital Scores | Hospital scores for attainment only. |
| | 8. Statewide Norms | PPC Norms based on Base Period (July 2020- June 2022) data |
| | 9. Calculation Sheet | Calculation Sheet for hospitals |
| 10. PPC Monitoring Tabs | 10A. By Hosp by PPC by Year | This tab provides annual by hospital and by PPC results for all payment and non-payment PPCs. HSCRC will monitor the non-payment program PPCs and use this data to track overall PPC performance. Hospitals should monitor this data to fully assess patient complications. There is a flag that indicates payment program PPCs, as well as the previously defined serious reportable events. |
| 10. PPC Monitoring Tabs | 10B. Statewide by PPC | This tab provides statewide PPC results for all payment and non-payment PPCs. HSCRC will monitor the non-payment program PPCs and use this data to track overall PPC performance. |
| 10. PPC Monitoring Tabs | 10C. By Hosp by PPC by Quarter | This tab is updated quarterly and provides quarterly by-hospital and by PPC results for all payment and non-payment PPCs. HSCRC will monitor the non-payment program PPCs and use this data to track overall PPC performance. Hospitals should monitor this data to fully assess patient complications. There is a flag that indicates payment program PPCs as well as the previously defined serious reportable events. |
| Updates: | | |
| 12/10/21: Per HSCRC regulatory guidance, these reports have removed cases from specifically designated Alternative Care Sites and PODs; these are generally defined as cases at applicable hospital campuses where R_FLAG = 'A'. For more information, please contact hscrc.quality@maryland.gov | | |



3M Cost Weights

This sheet displays each 3M cost weights as proxy for patient harm used for weighing PPCs (using cost weights assigned under v40 of the APR Grouper).

2. 3M PPC Cost Weights

As of 1/09/2023

| PPC NUMBER | PPC Description | 3M v40 PPC Marginal Costs |
|------------|---|---------------------------|
| 3 | Acute Pulmonary Edema and Respiratory Failure without Ventilation | 0.5005 |
| 4 | Acute Pulmonary Edema and Respiratory Failure with Ventilation | 1.5519 |
| 7 | Pulmonary Embolism | 1.1248 |
| 9 | Shock | 1.0478 |
| 16 | Venous Thrombosis | 1.5503 |
| 28 | In-Hospital Trauma and Fractures | 0.3379 |
| 35 | Septicemia & Severe Infections | 1.4394 |
| 37 | Post-Operative Infection & Deep Wound Disruption without Procedure | 1.5936 |
| 41 | Post-Operative Hemorrhage & Hematoma with Hemorrhage Control Procedure or I&D | 0.9745 |
| 42 | Accidental Puncture/Laceration During Invasive Procedure | 0.4264 |
| 47 | Encephalopathy | 0.7724 |
| 49 | Iatrogenic Pneumothorax | 0.4717 |
| 60 | Major Puerperal Infection and Other Major Obstetric Complications | 0.8978 |
| 61 | Other Complications of Obstetrical Surgical & Perineal | 0.2099 |
| 67 | Pneumonia Combo (with and without Aspiration) | 1.1330 |

| Metric | Description |
|---------------------------|---|
| 3M v40 PPC Marginal Costs | Weighting the 15 PPCs differentially using 3M cost weights as a proxy for degree of patient harm. |



Benchmarks

This sheet displays the benchmarks and thresholds for each PPC, based on base period July 2020 – June 2022 data. These metrics are used to assign attainment points, comparing the base period with CY 2023 performance; small hospitals will be assessed on CY 2022- 2023 for performance.

3. Benchmarks and thresholds for Payment Program PPCs

As of 1/25/2023

| PPC Number | PPC Description | Threshold | Benchmark |
|------------|--|-----------|-----------|
| 3 | Acute Pulmonary Edema and Respiratory Failure without Ventilation | 1.8412 | 0.3688 |
| 4 | Acute Pulmonary Edema and Respiratory Failure with Ventilation | 1.6823 | 0.3746 |
| 7 | Pulmonary Embolism | 1.9105 | 0.3419 |
| 9 | Shock | 1.9497 | 0.3746 |
| 16 | Venous Thrombosis | 1.7583 | 0.0928 |
| 28 | In-Hospital Trauma and Fractures | 1.8455 | 0.4319 |
| 35 | Septicemia & Severe Infections | 1.6128 | 0.5586 |
| 37 | Post-Operative Infection & Deep Wound Disruption Without Procedure | 2.1254 | 0.1655 |
| 41 | Post-Operative Hemorrhage & Hematoma with Hemorrhage Control Procedure or I&D Proc | 1.8211 | 0.3251 |
| 42 | Accidental Puncture/Laceration During Invasive Procedure | 1.4303 | 0.3886 |
| 47 | Encephalopathy | 1.8960 | 0.2459 |
| 49 | Iatrogenic Pneumothrax | 1.8156 | 0.3213 |
| 60 | Major Puerperal Infection and Other Major Obstetric Complications | 2.0890 | 0.0000 |
| 61 | Other Complications of Obstetrical Surgical & Perineal Wounds | 2.1321 | 0.3002 |
| 67 | Combined Pneumonia (PPC 5 and 6) | 1.6123 | 0.3541 |

| Metric | Description |
|------------------|---|
| <i>Threshold</i> | The value of the observed to expected ratio at the 10th percentile of hospital performance. |
| <i>Benchmark</i> | The value of the observed to expected ratio at the 90th percentile of hospital performance. |



Percent At-Risk Scaling

This scale allows hospitals to estimate revenue adjustments. The RY 2025 scale uses a full distribution of potential scores (scale of 0-100%), with a hold harmless zone between 60 and 70 percent.

| Metric | Description |
|---------------------------|---|
| <i>Final MHAC Score</i> | PPCs are calculated by summing the total weighted points earned by a hospital, divided by the total possible weighted points. |
| <i>Revenue Adjustment</i> | 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. |

4. RY 2025 Pre-Set Revenue Adjustment Scale*
 between 60 and 70 percent
 *Subject to change due to potential retrospective adjustments.

| Full Scale | | Abbreviated Version | |
|------------------|----------------------|---------------------|----------------------|
| Final MHAC Score | % Revenue Adjustment | Final MHAC Score | % Revenue Adjustment |
| 0% | -2.00% | 0% | -2.00% |
| 1% | -1.97% | 5% | -1.83% |
| 2% | -1.93% | 10% | -1.67% |
| 3% | -1.90% | 15% | -1.50% |
| 4% | -1.87% | 20% | -1.33% |
| 5% | -1.83% | 25% | -1.17% |
| 6% | -1.80% | 30% | -1.00% |
| 7% | -1.77% | 35% | -0.83% |
| 8% | -1.73% | 40% | -0.67% |
| 9% | -1.70% | 45% | -0.50% |
| 10% | -1.67% | 50% | -0.33% |
| 11% | -1.63% | 55% | -0.17% |
| 12% | -1.60% | 60% | 0.00% |
| 13% | -1.57% | 65% | 0.00% |
| 14% | -1.53% | 70% | 0.00% |
| 15% | -1.50% | 75% | 0.33% |
| 16% | -1.47% | 80% | 0.67% |
| 17% | -1.43% | 85% | 1.00% |
| 18% | -1.40% | 90% | 1.33% |
| 19% | -1.37% | 95% | 1.67% |
| 20% | -1.33% | 100% | 2.00% |
| 21% | -1.30% | | |
| 22% | -1.27% | | |
| 23% | -1.23% | | |
| | | Penalty Cut-point | 60% |
| | | Reward Cut-point | 70% |



Excluded PPCs

Under MHAC, the attainment score is measured on 15 PPCs. The sheet provides a list of PPCs excluded from calculations for each hospital based on the MHAC inclusion/exclusion criteria, which can be found in the MHAC memo on the HSCRC website. Hospitals not listed on the sheet have all 15 PPCs included.

5. List of Excluded PPCs by Hospital, based on Base Period Data

Hospitals not listed have no excluded PPCs.

As of 1/25/2023

| Hospital ID | Hospital | Excluded PPC Number |
|-------------|--------------------------------|---------------------|
| 210010 | UM-Cambridge | 7 |
| 210010 | UM-Cambridge | 9 |
| 210010 | UM-Cambridge | 16 |
| 210010 | UM-Cambridge | 28 |
| 210010 | UM-Cambridge | 35 |
| 210010 | UM-Cambridge | 37 |
| 210010 | UM-Cambridge | 41 |
| 210010 | UM-Cambridge | 42 |
| 210010 | UM-Cambridge | 47 |
| 210010 | UM-Cambridge | 49 |
| 210010 | UM-Cambridge | 60 |
| 210010 | UM-Cambridge | 61 |
| 210010 | UM-Cambridge | 67 |
| 210011 | Ascension Saint Agnes Hospital | 60 |
| 210011 | Ascension Saint Agnes Hospital | 61 |
| 210012 | Sinai | 60 |
| 210015 | MedStar Fr Square | 60 |
| 210016 | Adventist White Oak | 60 |
| 210016 | Adventist White Oak | 61 |
| 210017 | Garrett | 4 |
| 210017 | Garrett | 7 |
| 210017 | Garrett | 16 |
| 210017 | Garrett | 28 |
| 210017 | Garrett | 35 |
| 210017 | Garrett | 37 |



Hospital Results by PPC

Hospital PPC results based on Policy Modeling: At-risk, Observed, Expected, O/E ratio, and weighted attainment points. The policy modeled using June 2020-July 2022 data to establish norms and performance standards and CY2023 performance period data. These results are provided for reference only.

| HOSPITAL PERFORMANCE RESULTS BY PPC: CY2022 -- through 30Nov2022 (Prelim) Excluded ACS/POD cases and Palliative Care cases | | | | | | | | | | |
|---|---------------|-------------------------------------|------------|---|-----------|-----------|---------|---------------|---------------|-----------|
| HOSPITAL ID | HOSPITAL NAME | Minimum # Years of Performance Data | PPC NUMBER | PPC DESCRIPTION | THRESHOLD | BENCHMARK | AT RISK | OBSERVED PPCs | EXPECTED PPCs | O/E RATIO |
| 20084 | Holy Cross | 5 | 41 | Post-Operative Hemorrhage in Hemostasis/ Hemorrhage Control Procedure or HSD/Proc | 1448 | 0.407 | 504 | 1 | 2474 | 0.407 |
| 20084 | Holy Cross | 5 | 42 | Acute Pulmonary Edema and Respiratory Failure During Invasive Procedure | 1525 | 0.4134 | 6142 | 6 | 6305 | 0.948 |
| 20084 | Holy Cross | 5 | 43 | Isotretinoin | 1754 | 0.26 | 6760 | 2 | 1574 | 0.2707 |
| 20084 | Holy Cross | 5 | 44 | Major Pulmonary Infection and Other Major Obsolete Complications | 2270 | 0 | 6760 | 1 | 2367 | 0.424 |
| 20084 | Holy Cross | 5 | 45 | Other Complications of Obstetrical Surgery | 2433 | 0 | 780 | 2 | 4965 | 0.4764 |
| 20084 | Holy Cross | 5 | 46 | Combined Pneumonia (PPC 5 and 6) | 1438 | 0.2436 | 1285 | 18 | 6447 | 0.291 |
| 20085 | Federick | 5 | 47 | Acute Pulmonary Edema and Respiratory Failure without Ventilation | 2823 | 0.3067 | 736 | 9 | 6474 | 0.989 |
| 20085 | Federick | 5 | 48 | Acute Pulmonary Edema and Respiratory Failure with Ventilation | 1896 | 0.2771 | 720 | 4 | 333 | 0.2808 |
| 20085 | Federick | 5 | 49 | Pulmonary Embolism | 1808 | 0.2501 | 620 | 4 | 287 | 0.4898 |
| 20085 | Federick | 5 | 50 | Stroke | 1807 | 0.3681 | 674 | 7 | 2886 | 0.7552 |
| 20085 | Federick | 5 | 51 | Without Thrombolysis | 2302 | 0 | 545 | 4 | 174 | 0.2803 |
| 20085 | Federick | 5 | 52 | In-Hospital Trauma and 28 Procedure | 1902 | 0 | 652 | 1 | 1495 | 0.3728 |

| Metric | Description |
|-------------------------------------|--|
| <i>Threshold</i> | The value of the observed to expected ratio at the 10th percentile of hospital performance. |
| <i>Benchmark</i> | The value of the observed to expected ratio at the 90th percentile of hospital performance. |
| <i>At Risk</i> | Number of discharges at risk for PPCs. |
| <i>Observed PPCs</i> | Observed number of PPCs. |
| <i>Expected PPCs</i> | Expected number of PPCs are calculated using historical data on statewide PPC rates APR-DRG SOI. |
| <i>O/E Ratio</i> | Observed PPCs/Expected PPCs. |
| <i>Unweighted Attainment Points</i> | Points before adjusting with 3M cost weight. |
| <i>Total Possible Points</i> | Total possible weighted points (100 per PPC * 3M cost weight). |
| <i>3M Cost Weight</i> | Weight for each of the 15 PPCs using 3M cost weights as a proxy for degree of patient harm. |
| <i>Weighted Points</i> | Points for each PPC multiplied by the associated 3M Cost weight for the PPC. |
| <i>Weighted Denominator</i> | Total number of weighted points associated for each PPC. |



Hospital Scores

Hospital scores for attainment only based on policy modeling. The policy modeled using June 2020 – July 2022 data to establish norms and performance standards and CY2023 as performance period data. These results are provided for reference only.

| Hospital scores CY2022 YTD Excluded ACS/POD cases and Palliative Care cases | | | | | | | |
|--|----------------------------------|-------------------------------------|-------------------------------|-------------------------------|----------------------|----------------|--|
| HOSPITAL ID | HOSPITAL NAME | Number of Years of Performance Data | TOTAL NUMBER OF PPCs (max 14) | WEIGHTED FINAL HOSPITAL POINT | WEIGHTED DENOMINATOR | WEIGHTED SCORE | |
| 210001 | Meritus | 1 | 13 | 931.18 | 1367.09 | 68% | |
| 210002 | UMMC | 1 | 14 | 646.48 | 1460.22 | 44% | |
| 210003 | UM-Capital Region Medical Center | 1 | 9 | 608.7 | 1021.28 | 60% | |
| 210004 | Holy Cross | 1 | 14 | 910.47 | 1460.22 | 62% | |
| 210005 | Frederick | 1 | 13 | 472.76 | 1367.09 | 35% | |
| 210006 | UM-Harford | 2 | 5 | 287.28 | 502.18 | 57% | |
| 210008 | Mercy | 1 | 13 | 475.62 | 1411.29 | 34% | |
| 210009 | Johns Hopkins | 1 | 14 | 314.02 | 1460.22 | 22% | |
| 210011 | Ascension Saint Agnes Hospital | 1 | 12 | 775.46 | 1345.78 | 58% | |
| 210012 | Sinai | 1 | 13 | 635.37 | 1367.09 | 46% | |
| 210015 | MedStar Fr Square | 1 | 13 | 740.38 | 1367.09 | 54% | |
| 210016 | Adventist White Oak | 1 | 12 | 740.42 | 1345.78 | 55% | |
| 210017 | Garrett | 2 | 3 | 315.88 | 330.82 | 95% | |
| 210018 | MedStar Montgomery | 1 | 6 | 603.8 | 625.76 | 96% | |
| 210019 | Peninsula | 1 | 13 | 1084.34 | 1367.09 | 79% | |
| 210022 | Suburban | 1 | 12 | 584.92 | 1345.78 | 43% | |
| 210023 | Anne Arundel | 1 | 14 | 1064.38 | 1460.22 | 73% | |
| 210024 | MedStar Union Mem | 1 | 12 | 751.66 | 1345.78 | 56% | |
| 210027 | Western Maryland | 1 | 11 | 1050.39 | 1241.72 | 85% | |
| 210028 | MedStar St. Mary's | 1 | 8 | 791.78 | 846.88 | 93% | |
| 210029 | JH Bayview | 1 | 12 | 629.22 | 1345.78 | 47% | |
| 210032 | ChristianaCare, Union | 2 | 5 | 173.9 | 502.18 | 35% | |

| Metric | Description |
|---------------------------------------|--|
| <i>Total Number of PPCs (max 15)</i> | Number of PPCs included for each hospital based on MHAC inclusion methodologies. |
| <i>Weighted Final Hospital Points</i> | Total points hospitals received after the 3M Cost Weight adjustments. |
| <i>Weighted Denominator</i> | Total number of weighted points associated for each hospital based on the PPCs included. |
| <i>Weighted Score</i> | Weighted final hospital points/weighted denominator. |



Statewide PPC Norms

This sheet shows each PPC Norm value based on June 2020 – July 2022 data.

| ADMISSION APR-DRG +39.0 | ADMISSION APR-SOI revised +39.0 | NUMADM | ATRISK1 | ATRISK2 | ATRISK3 | ATRISK4 | ATRISK5 | ATRISK6 | ATRISK7 | ATRISK8 | ATRISK9 | ATRISK10 | ATRISK11 | ATRISK12 | ATRISK13 | ATRISK14 | ATRISK15 | ATRISK16 | ATRISK17 | ATRISK18 | ATRISK19 | ATRISK20 |
|-------------------------|---------------------------------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1 | 1 | 7 | | | | | | | | | | | | | | | | | | | | |
| 1 | 2 | 42 | | | | | | | | | | | | | | | | | | | | |
| 1 | 3 | 92 | | | | | | | | | | | | | | | | | | | | |
| 1 | 4 | 19 | | | | | | | | | | | | | | | | | | | | |
| 2 | 1 | 13 | | | | | | | | | | | | | | | | | | | | |
| 2 | 2 | 21 | | | | | | | | | | | | | | | | | | | | |
| 2 | 3 | 93 | | | | | | | | | | | | | | | | | | | | |
| 2 | 4 | 96 | | | | | | | | | | | | | | | | | | | | |
| 4 | 1 | 1 | | | | | | | | | | | | | | | | | | | | |
| 4 | 2 | 2 | | | | | | | | | | | | | | | | | | | | |
| 4 | 3 | 96 | | | | | | | | | | | | | | | | | | | | |
| 4 | 4 | 38 | | | | | | | | | | | | | | | | | | | | |
| 5 | 2 | 9 | | | | | | | | | | | | | | | | | | | | |
| 5 | 3 | 75 | | | | | | | | | | | | | | | | | | | | |
| 5 | 4 | 202 | | | | | | | | | | | | | | | | | | | | |
| 6 | 1 | 1 | | | | | | | | | | | | | | | | | | | | |
| 6 | 2 | 18 | | | | | | | | | | | | | | | | | | | | |
| 6 | 3 | 35 | | | | | | | | | | | | | | | | | | | | |
| 7 | 1 | 31 | | | | | | | | | | | | | | | | | | | | |
| 7 | 2 | 95 | | | | | | | | | | | | | | | | | | | | |
| 7 | 4 | 91 | | | | | | | | | | | | | | | | | | | | |
| 8 | 1 | 65 | | | | | | | | | | | | | | | | | | | | |
| 8 | 2 | 89 | | | | | | | | | | | | | | | | | | | | |
| 8 | 3 | 65 | | | | | | | | | | | | | | | | | | | | |
| 8 | 4 | 29 | | | | | | | | | | | | | | | | | | | | |
| 8 | 5 | 7 | | | | | | | | | | | | | | | | | | | | |
| 9 | 2 | 91 | | | | | | | | | | | | | | | | | | | | |
| 9 | 3 | 37 | | | | | | | | | | | | | | | | | | | | |
| 9 | 4 | 19 | | | | | | | | | | | | | | | | | | | | |

| Metric | Description |
|---------------------------|---|
| <i>NUMADM</i> | Number admitted with the APR-DRG and APR SOI. |
| <i>ATRISK1-ATRISK67</i> | Risk status indicates whether a discharge is at-risk or eligible to be assigned a specific PPC (i.e., only obstetrical cases could be at-risk for an obstetrical PPC) The sum indicates a total number of at-risk discharges. |
| <i>PPC1-PPC67</i> | Number of PPCs that occurred for each APR-DRG and APR SOI. |
| <i>NORMPPC1-NORMPPC67</i> | The normative values are the statewide rate for each PPC during the base period. |



Calculation Sheet

This sheet gives the opportunity for hospitals to estimate their attainment score. All the information to calculate attainment score is provided in the sheet. If a hospital is not measured on a PPC, then it should be removed from the calculation.

3. Calculation Sheet for Estimating Hospital Scores
As of 1/18/2022

If your hospital is not measured on a specific PPC (i.e., it is excluded because the hospital does not have +20 at-risk discharges or +2 expected PPC), then you can delete that PPC row and the score should calculate correctly.

| PPC Number | PPC Description | Performance Standards | | PERFORMANCE PERIOD RESULTS | | | | ATTAINMENT POINTS | POSSIBLE DENOMINATOR | 3M Cost Weight | WEIGHTED TOTAL POINTS BY RISK | TOTAL WEIGHTED DENOMINATOR |
|-----------------------------|--|-----------------------|-----------|----------------------------|----------|----------|---------|-------------------|----------------------|----------------|-------------------------------|----------------------------|
| | | Threshold | Benchmark | AT RISK | OBSERVED | EXPECTED | RATIO | | | | | |
| 3 | Acute Primary Central and Respiratory Failure without Ventilation | 1.0412 | 0.3680 | | | | #DIV/0! | #DIV/0! | 100 | 0.0006 | #DIV/0! | 08.06 |
| 4 | Acute Primary Central and Respiratory Failure with Ventilation | 1.6823 | 0.3746 | | | | #DIV/0! | #DIV/0! | 100 | 1.5519 | #DIV/0! | 155.19 |
| 7 | Pulmonary Embolism | 1.9185 | 0.3479 | | | | #DIV/0! | #DIV/0! | 100 | 1.1248 | #DIV/0! | 112.48 |
| 9 | Shock | 1.9487 | 0.3746 | | | | #DIV/0! | #DIV/0! | 100 | 1.0478 | #DIV/0! | 104.78 |
| 16 | Venous Thromboembolism | 1.7543 | 0.6020 | | | | #DIV/0! | #DIV/0! | 100 | 1.6503 | #DIV/0! | 165.03 |
| 28 | In-Hospital Trauma and Fractures | 1.0455 | 0.4719 | | | | #DIV/0! | #DIV/0! | 100 | 0.3379 | #DIV/0! | 33.79 |
| 35 | Sepsisemia & Sepsis Infections with Septic Shock and Deep Venous Thromboses | 1.6128 | 0.5580 | | | | #DIV/0! | #DIV/0! | 100 | 1.4394 | #DIV/0! | 143.94 |
| 37 | Disruption Without Procedure | 2.1254 | 0.1655 | | | | #DIV/0! | #DIV/0! | 100 | 1.5936 | #DIV/0! | 159.36 |
| 41 | Post-Operative Hemorrhage or Hematoma with Hemorrhage Control Procedure or I&D | 1.0211 | 0.3251 | | | | #DIV/0! | #DIV/0! | 100 | 0.9745 | #DIV/0! | 97.45 |
| 42 | Postoperative Infection/Calculation Using Invasive Procedure | 1.4383 | 0.3886 | | | | #DIV/0! | #DIV/0! | 100 | 0.4264 | #DIV/0! | 42.64 |
| 47 | Respiratory Infection | 1.896 | 0.3459 | | | | #DIV/0! | #DIV/0! | 100 | 0.7724 | #DIV/0! | 77.24 |
| 49 | Septic Pneumonia | 1.8158 | 0.3213 | | | | #DIV/0! | #DIV/0! | 100 | 0.4171 | #DIV/0! | 41.71 |
| 60 | Major Vascular Infection and Other Septic Complications | 2.089 | 0 | | | | #DIV/0! | #DIV/0! | 100 | 0.8978 | #DIV/0! | 89.78 |
| 61 | Open Complications or Complications Surgical & Perineal Wounds | 2.1321 | 0.3882 | | | | #DIV/0! | #DIV/0! | 100 | 0.2099 | #DIV/0! | 20.99 |
| 67 | Combined Pneumonia | 1.6123 | 0.3541 | | | | #DIV/0! | #DIV/0! | 100 | 1.1338 | #DIV/0! | 113.38 |
| TOTAL WEIGHTED SCORE | | | | | | | | | | | #DIV/0! | |

| Metric | Description |
|------------------------------|---|
| <i>At Risk</i> | Number of patients at risk for a PPC |
| <i>Observed</i> | Observed number of PPCs that occurred |
| <i>Expected</i> | Calculated using historical data on statewide PPC rates by APR-DRG SOI |
| <i>Ratio</i> | Observed/Expected PPC values |
| <i>Attainment Points</i> | Attainment Points that can be earned for each PPC |
| <i>Possible Denominator</i> | Total number of points possible in the denominator for each PPC |
| <i>3M Cost Weight</i> | Weight for each of the 15 PPCs using 3M cost weights as a proxy for degree of patient harm. |
| <i>Weighted Total Points</i> | Total number of points that can be earned after the 3M Cost Weight is applied |
| <i>Total Denominator</i> | Total possible denominator after the 3M Cost Weight Adjustment is applied |



PPC Monitoring Tabs (10a, 10b, 10c)

The following metrics are used for the PPC Monitoring Tabs (10a, 10b, 10c).

| Metric | Description |
|--|--|
| <i>At Risk</i> | Number of patients at risk for a PPC |
| <i>Observed PPC</i> | Observed number of PPCs that occurred |
| <i>Expected PPC</i> | Calculated using historical data on statewide PPC rates by APR-DRG SOI |
| <i>O/E Ratio</i> | Observed/Expected PPC values |
| <i>Case-mix Adjusted Rate</i> | Used to calculate expected PPC values |
| <i>Flag for one of the 15 Payment PPCs</i> | Indicates PPCs defined by MHAC |
| <i>Flag for Serious Reportable Events</i> | Indicates serious events that should be reported |
| <i>State Average Rate</i> | State average for PPC observed |

By Hospital by PPC (10a)

This sheet provides by hospital and PPC results for all payment and non-payment PPCs. HSCRC will monitor the non-payment program PPCs and use this data to track overall PPC performance. Hospitals should monitor this data to fully assess patient complications. There is a flag that indicates payment program PPCs as well as the previously defined serious reportable events.

| HOSPITAL ID | HOSPITAL NAME | PPC NUMBER | PPC DESCRIPTION | Year | All PPCs by Hospital Excluded ACS/POD cases and Palliative Care cases | | | | | | | | | |
|-------------|---------------|------------|--|------|--|------------|------------|-----------|-----------------------|--------------------------------|-------------------|--------------------|--|--|
| | | | | | AT RISK | OBSERVED P | EXPECTED P | O/E RATIO | Case-Mix Adjusted Rat | Flag for one of 15 Payment PPC | Reportable Events | State Average rate | | |
| 20001 | Meritus | 3 | Pulmonectomy (without bronchoplastic) | 2018 | 9399 | 23 | 93766 | 2.486 | 3.832 | 1 | 0 | 0.0017728 | | |
| 20001 | Meritus | 4 | Acute Pulmonary Edema and Respiratory | 2018 | 9194 | 7 | 3.8207 | 13204 | 1.228 | 1 | 0 | 0.0001456 | | |
| 20001 | Meritus | 5 | Pneumonia & Other Lung Infections | 2018 | 4725 | 88 | 4.6760 | 50009 | 4.6588 | 0 | 0 | 0.0002056 | | |
| 20001 | Meritus | 6 | Aspiration Pneumonia | 2018 | 3928 | 7 | 4.9917 | 10382 | 1.987 | 0 | 0 | 0.0014255 | | |
| 20001 | Meritus | 7 | Pulmonary Embolism | 2018 | 1274 | 2 | 4.1144 | 0.4572 | 0.2274 | 1 | 0 | 0.0014374 | | |
| 20001 | Meritus | 8 | Other Pulmonary Complications | 2018 | 8907 | 0 | 4.2869 | 236 | 1.9077 | 0 | 0 | 0.0000488 | | |
| 20001 | Meritus | 9 | Shock | 2018 | 6789 | 86 | 6.7662 | 16259 | 1.2376 | 1 | 0 | 0.0002096 | | |
| 20001 | Meritus | 10 | Congestive Heart Failure | 2018 | 1787 | 4 | 2.32 | 1078 | 0.2272 | 0 | 0 | 0.0001044 | | |
| 20001 | Meritus | 11 | Acute Myocardial Infarction | 2018 | 6574 | 81 | 6.9802 | 1164 | 1.5286 | 0 | 0 | 0.0001743 | | |
| 20001 | Meritus | 12 | Other Cardiac Complications | 2018 | 3789 | 2 | 3.7088 | 0.0330 | 0.3882 | 0 | 0 | 0.0002024 | | |
| 20001 | Meritus | 14 | Ventricular Fibrillation/Cardiac Arrest | 2018 | 6927 | 0 | 24.3042 | 0.4524 | 1.3232 | 0 | 0 | 0.0023285 | | |
| 20001 | Meritus | 16 | Postoperative Hemorrhage/Complications Except Venous Thromboembolism | 2018 | 6307 | 7 | 0.4950 | 0.2096 | 0.4261 | 0 | 0 | 0.0004972 | | |
| 20001 | Meritus | 18 | Venous Thromboembolism | 2018 | 6386 | 2 | 2.6939 | 0.7997 | 0.296 | 1 | 0 | 0.0004027 | | |
| 20001 | Meritus | 17 | Major Gastrointestinal Complications without Transfusion or Significant Bleeding | 2018 | 3248 | 7 | 6.3428 | 1.263 | 0.72 | 0 | 0 | 0.0001716 | | |
| 20001 | Meritus | 19 | Major Gastrointestinal Complications with Transfusion or Significant Bleeding | 2018 | 6286 | 2 | 4.2421 | 0.7071 | 0.3274 | 0 | 0 | 0.0004489 | | |
| 20001 | Meritus | 15 | Major Liver Complications | 2018 | 6272 | 4 | 3.8422 | 1.1837 | 0.3485 | 0 | 0 | 0.0004609 | | |
| 20001 | Meritus | 20 | Other Gastrointestinal Complications without Transfusion or Significant Bleeding | 2018 | 6207 | 0 | 6.0201 | 0.0007 | 0.8888 | 0 | 0 | 0.0002219 | | |
| 20001 | Meritus | 21 | Cerebral Thromboembolism | 2018 | 678 | 11 | 3.8424 | 1.7795 | 7.782 | 0 | 0 | 0.0047006 | | |
| 20001 | Meritus | 22 | ICU/Consultation Based UTI | 2018 | 6376 | 1 | 3.8122 | 6.281 | 0.181 | 0 | 0 | 0.0003774 | | |



Statewide by PPC (10b)

This tab provides statewide PPC results for all payment and non-payment PPCs by PPC. HSCRC will monitor the non-payment program PPCs and use this data to track overall PPC performance.

| All PPCs by PPC Number Excluded ACSI/POD cases and Palliative Care cases | | | | | | | | | | | |
|---|--|------|---------|------------|------------|-----------|-----------------------|--------------------------------|-------------------|--------------------|--|
| PPC NUMBER | PPC DESCRIPTION | Year | AT RISK | OBSERVED P | EXPECTED P | O/E RATIO | Case-Mix Adjusted Rat | Flag for one of 14 Payment PPC | Reportable events | State Average rate | |
| 3 | Acute Pulmonary Edema and Respiratory Failure without Ventilation | 2016 | 33667 | 608 | 410.8270 | 1.4552 | 2.847 | 1 | 0 | 0.0047230 | |
| 4 | Acute Pulmonary Edema and Respiratory Failure with Ventilation | 2016 | 322983 | 301 | 187.8076 | 1.8443 | 1.255 | 1 | 0 | 0.0003456 | |
| 5 | Pneumonia & Other Lung Infections | 2016 | 171754 | 368 | 214.7642 | 1.8066 | 2.277 | 0 | 0 | 0.0026206 | |
| 6 | Aspiration Pneumonia | 2016 | 349089 | 277 | 204.2614 | 1.3554 | 1.0665 | 0 | 0 | 0.00074255 | |
| 7 | Pulmonary Embolism | 2016 | 406045 | 228 | 173.6659 | 1.2362 | 8.6259 | 1 | 0 | 0.00046574 | |
| 8 | Other Pulmonary Complications | 2016 | 277230 | 152 | 143.5412 | 1.3923 | 8.7868 | 0 | 0 | 0.00049450 | |
| 9 | Shock | 2016 | 402088 | 418 | 373.9245 | 1.1205 | 1.3449 | 1 | 0 | 0.0023886 | |
| 10 | Congestive Heart Failure | 2016 | 288042 | 157 | 162.2481 | 2.7266 | 8.5481 | 0 | 0 | 0.0003844 | |
| 11 | Acute Myocardial Infarction | 2016 | 408066 | 277 | 303.2895 | 0.9121 | 8.0176 | 0 | 0 | 0.0003740 | |
| 12 | Other Cardiac Complications | 2016 | 379384 | 78 | 18.3484 | 0.5885 | 8.2321 | 0 | 0 | 0.00036284 | |
| 14 | Ventricular Fibrillation/Cardiac Arrest | 2016 | 388181 | 518 | 738.275 | 0.6875 | 2.0394 | 0 | 0 | 0.00252385 | |
| 15 | Peripheral Vascular Complications Except Venous Thrombosis | 2016 | 394786 | 78 | 137.8688 | 0.6078 | 8.2388 | 0 | 0 | 0.0004852 | |
| 16 | Venous Thrombosis | 2016 | 188042 | 148 | 83.7183 | 1.6723 | 0.797 | 1 | 0 | 0.0004527 | |
| 17 | Major Gastrointestinal Complications without Transfusion or Significant Bleeding | 2016 | 408042 | 78 | 183.3886 | 0.6435 | 8.3888 | 0 | 0 | 0.0005176 | |
| 18 | Major Gastrointestinal Complications with Transfusion or Significant Bleeding | 2016 | 402980 | 92 | 133.380 | 0.6149 | 8.2788 | 0 | 0 | 0.00049589 | |
| 19 | Major Liver Complications | 2016 | 408480 | 62 | 18.424 | 0.6372 | 0.224 | 0 | 0 | 0.00048389 | |
| 20 | Other Gastrointestinal Complications without Transfusion or Significant Bleeding | 2016 | 403323 | 208 | 333.4205 | 0.6229 | 8.7844 | 0 | 0 | 0.0022949 | |
| 21 | Clostridium Difficile Colitis | 2016 | 63031 | 398 | 284.852 | 1.4931 | 6.498 | 0 | 0 | 0.00439086 | |
| 22 | UTI/Complications Except UTI | 2016 | 421779 | 64 | 125.8880 | 0.523 | 8.1907 | 0 | 0 | 0.00037314 | |
| 24 | Renal Failure without Dialysis | 2016 | 354239 | 898 | 294.3594 | 0.5285 | 8.1907 | 0 | 0 | 0.0007025 | |
| 25 | Renal Failure with Dialysis | 2016 | 368520 | 48 | 37.3476 | 1.32 | 8.875 | 0 | 0 | 0.0004229 | |
| 26 | Diabetic Ketoacidosis & Coma | 2016 | 348449 | 21 | 45.4687 | 0.4619 | 8.0792 | 0 | 0 | 0.0005046 | |

By Hospital by PPC/by Quarter (10c)

This sheet provides by hospital and PPC results for all payment and non-payment PPCs by Quarter. HSCRC will monitor the non-payment program PPCs and use this data to track overall PPC performance. Hospitals should monitor this data to fully assess patient complications. There is a flag that indicates payment program PPCs as well as the previously defined serious reportable events.

| All PPCs by Hospital by Quarter Excluded ACSI/POD cases and Palliative Care cases | | | | | | | | | | | | | |
|--|---------------|------------|--|------|---------|---------|------------|------------|-----------|-----------------------|--------------------------------|-------------------|--------------------|
| HOSPITAL ID | HOSPITAL NAME | PPC NUMBER | PPC DESCRIPTION | Year | Quarter | AT RISK | OBSERVED P | EXPECTED P | O/E RATIO | Case-Mix Adjusted Rat | Flag for one of 14 Payment PPC | Reportable events | State Average rate |
| 2000 | Metris | 1 | Stroke/Ischemic Hemorrhage | 2016 | Jan-Mar | 376 | 1 | 2.862 | 0.384 | 9.627 | 0 | 0 | 0.0005022 |
| 2000 | Metris | 2 | Stroke/DBI/Complications | 2016 | Jan-Mar | 283 | 8 | 4.074 | 0 | 0 | 0 | 0 | 0.0003845 |
| 2000 | Metris | 3 | Acute Pulmonary Edema and Respiratory Failure without Ventilation | 2016 | Jan-Mar | 284 | 6 | 2.738 | 2.188 | 3.238 | 1 | 0 | 0.0007228 |
| 2000 | Metris | 4 | Acute Pulmonary Edema and Respiratory Failure with Ventilation | 2016 | Jan-Mar | 252 | 2 | 0.9413 | 1.032 | 1.044 | 1 | 0 | 0.0004949 |
| 2000 | Metris | 5 | Pneumonia & Other Lung Infections | 2016 | Jan-Mar | 869 | 6 | 1.862 | 5.076 | 8.1762 | 0 | 0 | 0.0033016 |
| 2000 | Metris | 6 | Aspiration Pneumonia | 2016 | Jan-Mar | 248 | 1 | 1.287 | 0.026 | 0.026 | 0 | 0 | 0.0007425 |
| 2000 | Metris | 7 | Pulmonary Embolism | 2016 | Jan-Mar | 3207 | 1 | 1.026 | 0.019 | 0.019 | 0 | 0 | 0.0004974 |
| 2000 | Metris | 8 | Other Pulmonary Complications | 2016 | Jan-Mar | 2162 | 2 | 1.014 | 0.019 | 1.01 | 0 | 0 | 0.0004949 |
| 2000 | Metris | 9 | Shock | 2016 | Jan-Mar | 398 | 4 | 2.905 | 0.019 | 0.02 | 1 | 0 | 0.0033988 |
| 2000 | Metris | 10 | Congestive Heart Failure | 2016 | Jan-Mar | 139 | 2 | 0.418 | 4.692 | 0.012 | 0 | 0 | 0.0005844 |
| 2000 | Metris | 11 | Acute Myocardial Infarction | 2016 | Jan-Mar | 157 | 2 | 2.328 | 0.008 | 0.789 | 0 | 0 | 0.0003740 |
| 2000 | Metris | 12 | Other Cardiac Complications | 2016 | Jan-Mar | 389 | 1 | 0.886 | 0 | 0 | 0 | 0 | 0.0003218 |
| 2000 | Metris | 14 | Ventricular Fibrillation/Cardiac Arrest | 2016 | Jan-Mar | 272 | 2 | 0.582 | 8.388 | 0.019 | 0 | 0 | 0.00252385 |
| 2000 | Metris | 15 | Peripheral Vascular Complications Except Venous Thrombosis | 2016 | Jan-Mar | 338 | 8 | 4.074 | 0 | 0 | 0 | 0 | 0.0004852 |
| 2000 | Metris | 16 | Venous Thrombosis | 2016 | Jan-Mar | 176 | 8 | 0.683 | 0 | 0 | 1 | 0 | 0.0004527 |
| 2000 | Metris | 17 | Major Gastrointestinal Complications without Transfusion or Significant Bleeding | 2016 | Jan-Mar | 327 | 3 | 3.484 | 3.032 | 1.988 | 0 | 0 | 0.0005176 |
| 2000 | Metris | 18 | Major Gastrointestinal Complications with Transfusion or Significant Bleeding | 2016 | Jan-Mar | 324 | 1 | 0.999 | 0.614 | 0.429 | 0 | 0 | 0.00049589 |
| 2000 | Metris | 19 | Major Liver Complications | 2016 | Jan-Mar | 323 | 2 | 4.704 | 2.744 | 1.944 | 0 | 0 | 0.00048389 |
| 2000 | Metris | 20 | Other Gastrointestinal Complications without Transfusion or Significant Bleeding | 2016 | Jan-Mar | 388 | 7 | 2.814 | 0.017 | 0.017 | 0 | 0 | 0.0022949 |
| 2000 | Metris | 21 | Clostridium Difficile Colitis | 2016 | Jan-Mar | 466 | 1 | 0.889 | 0.012 | 2.067 | 0 | 0 | 0.00439086 |
| 2000 | Metris | 22 | UTI/Complications Except UTI | 2016 | Jan-Mar | 324 | 8 | 0.714 | 0 | 0 | 0 | 0 | 0.00037314 |