Draft Recommendation for Modifying the Maryland Hospital Acquired Conditions Program for FY 2018

December 9, 2015

Health Services Cost Review Commission
4160 Patterson Avenue
Baltimore, Maryland 21215
(410) 764-2605
FAX: (410) 358-6217

This document contains the draft staff recommendations for updating the Maryland Hospital Acquired Conditions (MHAC) Program for FY 2018. Please submit comments on this draft to the Commission by Wednesday, January 4th, 2015, via hard copy mail or email to Dianne.feeney@maryland.gov.
INTRODUCTION

The Maryland Health Services Cost Review Commission’s (HSCRC’s or Commission’s) quality-based payment methodologies are important policy tools for providing strong incentives for hospitals to improve their quality performance over time.

The HSCRC implemented the Maryland Hospital Acquired Conditions (MHAC) program in state fiscal year (FY) 2011. In order to enhance the HSCRC’s ability to incentivize hospital care improvements and to meet the MHAC reduction targets in its All-Payer Model agreement with the Center for Medicare and Medicaid Innovation (CMMI) beginning January 1, 2014, the Commission approved changes to the program. These changes included 1) measuring hospital performance using observed-to-expected ratio values for each Potentially Preventable Complication (PPC) rather than using the additional incremental cost of the PPCs measured at each hospital, and 2) shifting from relative scaling to pre-established PPC performance targets for payment adjustments for FY 2016. The revised approach established a statewide MHAC improvement target with tiered amounts of revenue at risk based on whether or not the target is met; it also allocated rewards consistent with the amount of revenue in penalties collected. The FY 2017 policy adopted retrospective changes to the FY 2016 MHAC policy, allowing for high-performing hospitals to earn rewards not limited to the penalties collected. The FY 2017 policy also adopted changes to the statewide improvement target.

This draft recommendation proposes continuing with the current MHAC program core methodology for FY 2018 and updating the statewide improvement target.

BACKGROUND

1. Centers for Medicare & Medicaid Services (CMS) Hospital Acquired Conditions (HAC) Reduction Program

The federal HAC program began in federal fiscal year (FFY) 2012 when CMS disallowed an increase in diagnosis-related group (DRG) payments for cases with added complications in 14 narrowly defined categories. Beginning in FFY 2015, CMS established a second HAC Reduction program that reduced payments to hospitals with scores in the top quartile for the performance period on their rate of HACs as compared with the national average. In FFY 2016, the maximum reduction remains at one percent of total DRG payments.

The CMS HAC measures for FY 2017 are listed in Appendix I. In the 2016 Inpatient Prospective Payment System (IPPS) Final Rule, CMS indicated that, going forward, the collection and reporting of data through health information technology will greatly simplify and streamline reporting for the HAC Reduction programs and the CMS quality reporting programs overall.
2. MHAC Measures, Scaling, and Magnitude at Risk to Date

The MHAC program is currently based on the 64 PPCs developed by 3M Health Information Systems. The MHAC program was updated for FY 2017 in light of the established guiding principles for the program, including the following:

- The program must improve care for all patients, regardless of payer.
- The breadth and impact of the program must meet or exceed the Medicare national program in terms of measures and revenue at risk.
- The program should identify predetermined performance targets and financial impact.
- An annual target for the program must be established in the context of the trends of complication reductions seen in the previous years, as well as the need to achieve the new All-Payer Model goal of a 30 percent cumulative reduction by 2018.
- The program should prioritize PPCs that have high volume, high cost, opportunity for improvement, and are areas of national focus.
- Program design should encourage cooperation and sharing of best practices.
- The scoring method should hold hospitals harmless for a lack of improvement if attainment is highly favorable.
- Hospitals should have the ability to track progress during the performance period.

To achieve a policy that supports the guiding principles, the program methodology was substantially modified affecting the calendar year (CY) 2015 performance period, which was applied to rate year FY 2017 (see the detailed description in Appendix II). The key changes to the program were as follows:

- Using the Observed (O)/Expected (E) value for each PPC to measure each hospital’s performance.
- Using the appropriate exclusion rules to enhance measurement fairness and stability.
- Prioritizing PPCs that are high cost, high volume, have opportunity to improve, and are of national concern in the final hospital score through grouping the PPCs and weighting the scores of PPCs in each group commensurate with the level of priority.
- Calculating rewards/penalties using preset positions on the scale based on the base year scores.
- Using an annual statewide improvement target with tiered scaling.

ASSESSMENT

The HSCRC continues to solicit input from stakeholder groups comprising the industry and payers to determine the appropriate direction regarding areas of needed updates to the programs. These include the measures used and the program’s methodology.
The Performance Measurement Workgroup has deliberated pertinent issues and potential changes to Commission policy for FY 2018 that may be necessary to enhance the HSCRC’s ability to continue to improve quality of care and reduce costs related to HACs through continued PPC rate reductions. In its October and November meetings, the Workgroup reviewed analyses and discussed issues related to 1) PPC measurement trends, 2) the reliability and validity analyses results of the PPC measures, and 3) PPC tier adjustment options.

1. Updated PPC Measurement Trends

As illustrated in Figure 1 below, the statewide PPC rate decreased significantly year to year between 2013 and 2015, with a total risk-adjusted cumulative improvement rate of 36 percent.

<table>
<thead>
<tr>
<th>PPC Rates in Maryland- State FY 2013-2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPC RATES (FY 14 NORMS vs. 32)</td>
</tr>
<tr>
<td>FY 13</td>
</tr>
<tr>
<td>TOTAL NUMBER OF COMPLICATIONS</td>
</tr>
<tr>
<td>CASE-MIX ADJUSTED COMPLICATION RATE</td>
</tr>
</tbody>
</table>

In addition to the annual change in PPC rates, staff also analyzed monthly year-to-date (YTD) PPC Medicare and all-payer changes for 2013 through 2015 and discussed the findings at a public Commission meeting and with the Workgroup. Figure 2 shows the monthly trends in the case-mix adjusted PPC rate and the YTD through June rates for 2013, 2014, and 2015.
2. Reliability and Validity of PPC Measures

To explore questions of the PPC measures’ reliability and validity, under contract with HSCRC, Mathematica Policy Research (MPR) conducted a number of analyses and presented their results to the Workgroup at its November 20 meeting (see Appendix III).

Reliability was analyzed comparing between-provider variation (signal) and within-provider sampling variation (noise). To conduct the analysis, MPR pooled FY 2014 and 2015 PPC performance data. A PPC measure is low in reliability if its reliability estimate is less than the cut-off point of 0.4. With serious reportable event PPCs excluded from this reliability assessment, there were 12 total “low reliability” PPCs, with the majority from Tier C.

Validity analyses of the PPC rates conducted by MPR included the following:

- For predictive validity, the correlation of PPCs across years from CY 2012 to CY 2015, quarters 1 and 2, was measured.
- For convergent validity, correlations of PPCs with external measures including Patient Safety Indicators (PSIs) from the PSI-90 composite and mortality rates were measured.

Figure 3 outlines the predictive validity analysis results. Based on these results, HSCRC staff note that there is a relatively high level of consistency. Also, the consistency percentage is greatest for PPCs in Tier A, and there is a decreasing percentage of PPCs with consistency in Tiers B and C.
Convergent validity analysis results of selected PPCs that were roughly matched with the PSIs in the Agency for Healthcare Research and Quality (AHRQ) PSI 90 Composite measure reveal that most, but not all, of these “matched” measures are correlated. Six PPCs are relatively highly correlated with mortality in the MPR analysis.

Based on 3M Health Information System’s review of these analyses and initial feedback, staff note that 1) the PPC and PSI measure definitions are inconsistent, 2) mortality rates and PPCs measure different domains of care, and 3) the PPC model is constructed based on clinical rules defined by clinicians rather than statistical analysis of observed outcomes. Therefore, the statistical analyses must be considered in light of these issues, and additional discussion of 3M and other stakeholder input will be included in the final recommendation.

3. PPC Tier Adjustment

Based on the results of the MPR validity and reliability testing and continued small cell size issues for certain PPCs, staff support consideration for moving from a three-tier weighting to a two-tier weighting of PPCs, potentially combining some clinically similar PPCs, and potentially moving a small subset of PPCs to a “monitoring” position and suspending their use for payment for FY 2018. Staff will continue to vet the PPC proposed tiers and additional changes before finalizing these proposed changes for FY 2018 policy implementation.

Staff note that an overhaul of the program that would potentially entail composite measures for certain high-cost and high-volume conditions or procedures and encompass a broader range of services will entail further conceptual development and testing prior to implementation. In addition, such large scale updates to the program should be done in the context of a re-designed performance management strategy that is patient-centered and supports and measures population health improvement.
4. Annual Statewide MHAC Reduction Target and Score Scaling FY 2018

The Workgroup discussed options for the revised annual MHAC reduction target. Some participants noted that the state has achieved and exceeded the 30 percent target required by the All-Payer Model agreement with CMMI in two years. Staff noted the need to continue to improve care and reduce cost by reducing PPC rates.

Staff advocate for a 6 percent improvement target, which is on par with the improvement trends the state has been observing and is a reduction from last year’s annual improvement target of 7 percent. Staff also advocate for no change in the scaling approach by keeping the tiered score scaling constant, with no rewards if the statewide target is not met.

Using a tiered scaling approach provides strong incentives for collaboration between hospitals to share best practices and continue to improve to ensure the statewide target is achieved. While the current scaling approach is based on rewards and penalties for hospitals at the tail end of the scores and holds hospitals with scores in the middle harmless, other revenue reduction programs (Potentially Avoidable Utilization and Readmission Shared Savings) are based on a continuous scale where all hospitals receive reductions in proportion to their performance.

RECOMMENDATIONS

For the FY 2018 MHAC program, staff make the following draft recommendations:

1. The statewide reduction target should be set at 6 percent, comparing FY 2015 with CY 2016 risk-adjusted PPC rates.
2. The program should continue to use a tiered scaling approach where a lower level of revenue at risk is set if the statewide target is met versus not met as modeled in the FY 2016 policy.
3. Rewards should be distributed only if the statewide improvement target is met and should not be limited to the penalties collected.
APPENDIX I.
CMS HAC MEASURES FOR FY 2017

CMS HAC MEASURES Implemented Since FY 2012

HAC 01: Foreign Object Retained After Surgery
HAC 02: Air Embolism
HAC 03: Blood Incompatibility
HAC 04: Stage III & Stage IV Pressure Ulcers
HAC 05: Falls and Trauma
HAC 06: Catheter-Associated Urinary Tract Infection
HAC 07: Vascular Catheter-Associated Infection
HAC 08: Surgical Site Infection - Mediastinitis After Coronary Artery Bypas Graft (CABG)
HAC 09: Manifestations of Poor Glycemic Control
HAC 10: Deep Vein Thrombosis/Pulmonary Embolism with Total Knee Replacement or Hip Replacement
HAC 11: Surgical Site Infection – Bariatric Surgery
HAC 12: Surgical Site Infection – Certain Orthopedic Procedure of Spine, Shoulder, and Elbow
HAC 13: Surgical Site Infection Following Cardiac Device Procedures
HAC 14: Iatrogenic Pneumothorax w/Venous Catheterization

CMS HAC Reduction Program Measures Implemented Since FY 2015

- Domain 1- the Agency for Health Care Research and Quality (AHRQ) composite PSI #90 which includes the following indicators:
  - Pressure ulcer rate (PSI 3);
  - Iatrogenic pneumothorax rate (PSI 6);
  - Central venous catheter-related blood stream infection rate (PSI 7);
  - Postoperative hip fracture rate (PSI 8);
  - Postoperative pulmonary embolism (PE) or deep vein thrombosis rate (DVT) (PSI 12);
  - Postoperative sepsis rate (PSI 13);
  - Wound dehiscence rate (PSI 14); and
  - Accidental puncture and laceration rate (PSI 15).
- Domain 2- two healthcare-associated infection measures developed by the Centers for Disease Control and Prevention’s (CDC) National Health Safety Network:
  - Central Line-Associated Blood Stream Infection and
  - Catheter-Associated Urinary Tract Infection.

For the FY 2017 CMS HAC reduction program, CMS decreased the Domain 1 weight from 25 percent to 15 percent and increased the Domain 2 weight from 75 percent to 85 percent.

CMS also expanded the data used for CLABSI and CAUTI measures and will include data from pediatric and adult medical ward, surgical ward, and medical/surgical ward locations, in addition to data from adult and pediatric ICU locations.
APPENDIX II.
PPC MEASUREMENT DEFINITION AND POINTS CALCULATION

Definitions

The PPC measure would then be defined as:

\[
\text{Observed (O)/Expected (E) value for each measure}
\]

The threshold value is the minimum performance level at which a hospital will be assigned points and is defined as:

\[
\text{Weighted mean of all O/E ratios (O/E =1)}
\]

(Mean performance is measured at the case level. In addition, higher volume hospitals have more influence on PPCs’ means.)

The benchmark value is the performance level at which a full 10 points would be assigned for a PPC and is defined as:

\[
\text{Weighted mean of top quartile O/E ratio}
\]

For PPCs that are serious reportable events, the benchmark will be set at 0.

Performance Points

Performance points are given based on a range between a “Benchmark” and a “Threshold,” which are determined using the base year data. The Benchmark is a reference point defining a high level of performance, which is equal to the mean of the top quartile. Hospitals whose rates are equal to or above the benchmark receive 10 full attainment points.

The Threshold is the minimum level of performance required to receive minimum attainment points, which is set at the weighted mean of all the O/E ratios which equals to 1. The improvement points are earned based on a scale between the hospital’s prior year score (baseline) on a particular measure and the Benchmark and range from 0 to 9.

The formulas to calculate the attainment and improvement points are as follows:

- Attainment Points: \[
9 \times \frac{(\text{Hospital’s performance period score} - \text{threshold})}{(\text{benchmark} - \text{threshold})} \] + .5, where the hospital performance period score falls in the range from the threshold to the benchmark

- Improvement Points: \[
10 \times \frac{(\text{Hospital performance period score} - \text{Hospital baseline period score})}{(\text{Benchmark} - \text{Hospital baseline period score})} \] -.5, where the hospital performance score falls in the range from the hospital’s baseline period score to the benchmark.
APPENDIX III.
PPC MATHEMATICA POLICY RESEARCH VALIDITY AND RELIABILITY ANALYSIS AND FINDING

Reliability and Validity of PPCs in the MHAC Program

Presentation at the November Work Group Meeting

November 20th, 2015
Fei Xing • Huihua Lu • Haixia Xu
Emily McPherson • Frank Yoon • Eric Schone

Overview of PPC measure testing

<table>
<thead>
<tr>
<th>Testing Theme</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>Compares between-provider variation (signal) and within-provider sampling variation (noise)</td>
</tr>
</tbody>
</table>
| Validity      | Focuses on the PPC rates:  
  • Predictive validity – correlation of PPCs across years from CY2012 – CY 2015 quarter 1 and 2  
  • Convergent validity – correlation with external measures  
    o Compares with Patient Safety Indicators (PSIs) from the PSI-90 composite  
    o Compares with mortality rates |
Measure Reliability: precision of a quality measure

- correctly classified cases
- misclassified cases

Measure with high reliability

Measure with low reliability

PPC Performance Metric

Reliability testing: signal-to-noise framework

- Data:
  - Performance period: pooled FY2014, 2015 data*

- Reliability standard:
  - A PPC measure is in low reliability if its reliability estimate is less than the reliability cut-off point (0.4).
  - Serious reportable PPCs are excluded from reliability assessment.

- Low reliability PPCs: 12 in total, majority in Tier C
  - Tier A: PPC 38
  - Tier B: PPC 17 and 18
  - Tier C: PPC 2, 15, 20, 29, 33, 34, 44, 51, and 60

* Indirectly standardized using FY 2014 norms
### PPC reliability by hospital

<table>
<thead>
<tr>
<th>Low reliability PPCs</th>
<th>Description</th>
<th>Tier</th>
<th>Number of observed PPCs in FY15</th>
<th>Number of hospitals with PPC</th>
<th>Hospitals with low reliability rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>Post-operative Wound Infection &amp; Deep Wound Disruption with Procedure</td>
<td>A</td>
<td>28</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>17</td>
<td>Major Gastrointestinal Complications without Transplantation of Significant Bleeding</td>
<td>B</td>
<td>235</td>
<td>41</td>
<td>27</td>
</tr>
<tr>
<td>18</td>
<td>Major Gastrointestinal Complications with Transplantation of Significant Bleeding</td>
<td>B</td>
<td>103</td>
<td>88</td>
<td>38</td>
</tr>
<tr>
<td>2</td>
<td>Extensive CNS Complications</td>
<td>C</td>
<td>71</td>
<td>31</td>
<td>22</td>
</tr>
<tr>
<td>15</td>
<td>Peripheral Vascular Complications Except Various Thromboses</td>
<td>C</td>
<td>77</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>20</td>
<td>Other Gastrointestinal Complications without Transplantation of Significant Bleeding</td>
<td>C</td>
<td>133</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>29</td>
<td>Pneumonia Except for Anesthesia</td>
<td>C</td>
<td>55</td>
<td>33</td>
<td>16</td>
</tr>
<tr>
<td>33</td>
<td>Clostridium</td>
<td>C</td>
<td>156</td>
<td>40</td>
<td>26</td>
</tr>
<tr>
<td>34</td>
<td>Moderate Infections</td>
<td>C</td>
<td>66</td>
<td>32</td>
<td>27</td>
</tr>
<tr>
<td>44</td>
<td>Other Surgical Complication - Mild</td>
<td>C</td>
<td>96</td>
<td>84</td>
<td>33</td>
</tr>
<tr>
<td>51</td>
<td>Gastrointestinal Obstructive Complications</td>
<td>C</td>
<td>89</td>
<td>37</td>
<td>24</td>
</tr>
<tr>
<td>65</td>
<td>Major Posterior Infection and Other Major Obstetric Complications</td>
<td>C</td>
<td>57</td>
<td>27</td>
<td>27</td>
</tr>
</tbody>
</table>

### Validity testing

- **Validity Testing**
  - **Convergent Validity**
    - Compare with PSIs
  - **Predictive Validity**
    - Compare with mortality rate
  - **Validity Testing**
    - PPC stability over time
Predictive validity

• Predictive validity means that current results predict future performance.

• Data:

• Predictive validity rule:
  – A PPC performance metric has predictive validity if at least one of the studied pairs (CY 2012 vs CY 2013, CY 2013 vs CY 2014, and CY 2014 vs CY 2015 Jan – Jun) is positively correlated (and statistically significant).

*All indirectly standardized using FY 2014 norms

Predictive validity analysis summary

<table>
<thead>
<tr>
<th>PPC Result</th>
<th>Tier A</th>
<th>Tier B</th>
<th>Tier C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consistent:</td>
<td>PPC 3, 4, 5, 6, 7, 9, 14, 16, 24, 35, 37, 40, 42, 49, 54, 65, 68</td>
<td>PPC 8, 10, 11, 19, 41, 48, 27</td>
<td>PPC 1, 12, 13, 21, 23, 34, 36, 46, 47, 50, 51, 52, 53, 55, 58, 59, 60, 61, 62, 67</td>
</tr>
<tr>
<td>Total</td>
<td>17 (85%)</td>
<td>7 (78%)</td>
<td>22 (69%)</td>
</tr>
<tr>
<td>Inconsistent:</td>
<td>PPC 28, 31, 38</td>
<td>PPC 17, 18</td>
<td>PPC 2, 15, 20, 29, 30, 32, 33, 39, 44, 45</td>
</tr>
<tr>
<td>Total</td>
<td>3 (15%)</td>
<td>2 (22%)</td>
<td>10 (31%)</td>
</tr>
<tr>
<td>Tier Total</td>
<td>20</td>
<td>9</td>
<td>32</td>
</tr>
</tbody>
</table>
Correlations between PPCs and PSIs

<table>
<thead>
<tr>
<th>PSI Description</th>
<th>PPC Description</th>
<th>Correlation (FY 2013)</th>
<th>Correlation (CY 2014)</th>
<th>Correlation (FY 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI03 - Pressure Ulcer</td>
<td>PPC01 - Atrial Fibrillation</td>
<td>0.494</td>
<td>0.409</td>
<td>0.411</td>
</tr>
<tr>
<td>PSI05 - Intraparenchymal Hemorrhage</td>
<td>PPC09 - Perioperative Pleuritic Pain</td>
<td>0.503</td>
<td>0.411</td>
<td>0.515</td>
</tr>
<tr>
<td>PSI07 - Enterococcal Infection</td>
<td>PPC16 - Ventilation Failure with Significant Respiratory Acidosis or Alkalosis</td>
<td>0.542</td>
<td>0.590</td>
<td>0.569</td>
</tr>
<tr>
<td>PSI09 - Postoperative Hemorrhage or Hemostasis Failure Rate</td>
<td>PPC41 - Postoperative Hemorrhage or Hemostasis Failure</td>
<td>0.165</td>
<td>0.430</td>
<td>0.568</td>
</tr>
<tr>
<td>PSI11 - Perioperative Nerve Injury Rate</td>
<td>PPC42 - Atrial Fibrillation</td>
<td>0.226</td>
<td>0.115</td>
<td>0.357</td>
</tr>
<tr>
<td>PSI12 - Perioperative Fat or PDI</td>
<td>PPC16 - Ventilator Failure</td>
<td>0.214</td>
<td>0.280</td>
<td>0.254</td>
</tr>
<tr>
<td>PSI13 - Perioperative Nerve Injury</td>
<td>PPC29 - Hypoxemia &amp; Hypocapnia</td>
<td>0.215</td>
<td>0.102</td>
<td>0.432</td>
</tr>
<tr>
<td>PSI14 - Postoperative Nosocomial Infection</td>
<td>PPC06 - Postoperative Ventilator Failure &amp; Deep Wound</td>
<td>0.373</td>
<td>0.219</td>
<td>0.164</td>
</tr>
<tr>
<td>PSI15 - Accidental Puncture or Laceration</td>
<td>PPC40 - Accidental Contusion or Hemorrhage During Invasive Procedure</td>
<td>0.077</td>
<td>0.789</td>
<td>0.799</td>
</tr>
</tbody>
</table>

Data: PPCs use three different performance periods (FY 2013, CY 2014 and FY 2014), and are indirectly standardized using FY 2014 norms. PSIs are the risk-adjusted rate from FY 2013, CY 2014 and FY 2014.

Causes of unexpected results

• **A.** The substantial observed change in correlation between PSI 11 and the combination of PPCs 3, 4 and 63 may be due to the low reliability of PPC 63.
  – PPC 63 is currently combined with four other PPCs into PPC 67.

• **B.** PSI 14 and PPC 38 have low correlation in both periods. This may be due to the low reliability of PPC 38.
### PPCs having high correlations with mortality

<table>
<thead>
<tr>
<th>PPC</th>
<th>Description</th>
<th>Tier</th>
<th>Correlation with mortality rate</th>
<th>Also low reliability?</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Acute Pulmonary Edema and Respiratory Failure with Ventilation</td>
<td>A</td>
<td>0.405</td>
<td>no</td>
</tr>
<tr>
<td>14</td>
<td>Ventricular Fibrillation/Cardiac Arrest</td>
<td>A</td>
<td>0.460</td>
<td>no</td>
</tr>
<tr>
<td>9</td>
<td>Shock</td>
<td>A</td>
<td>0.386</td>
<td>no</td>
</tr>
<tr>
<td>54</td>
<td>Infections due to Central Venous Catheters</td>
<td>A</td>
<td>0.369</td>
<td>no</td>
</tr>
<tr>
<td>2</td>
<td>Extreme CNS Complications</td>
<td>C</td>
<td>0.463</td>
<td>yes</td>
</tr>
<tr>
<td>50</td>
<td>Mechanical Complication of Device, Implant &amp; Graft</td>
<td>C</td>
<td>0.453</td>
<td>no</td>
</tr>
<tr>
<td>52</td>
<td>Inflammation &amp; Other Complications of Devices, Implants or Grafts Except Vascular Infection</td>
<td>C</td>
<td>0.377</td>
<td>no</td>
</tr>
</tbody>
</table>

Data: PPCs use CY 2014 as performance period with FY 2014 norms; mortality rate uses CY 2014 risk adjusted mortality rate.