DESCRIPTION OF THE FEDERAL FISCAL YEAR 2015 HOSPITAL-ACQUIRED CONDITION (HAC) REDUCTION PROGRAM HOSPITAL-SPECIFIC REPORT

July 2014

Note: **The accompanying Microsoft® Excel file contains discharge-level data that are protected by the Health Insurance Portability and Accountability Act of 1996 (HIPAA). It is a violation of HIPAA rules to share these protected patient-level data with other organizations, including the press. E-mailing protected health information poses a security issue, and each HIPAA-covered entity is responsible for ensuring compliance with the security standards. There are only two secure ways to send your hospital's patient-level data: (1) encrypting the data (using a minimum 128-bit encryption) and shipping it via a bonded courier with an established chain of custody (for example the United States Postal Service or FedEx), and (2) sending it via the government-approved, secure section of the *QualityNet* website (http://www.qualitynet.org).**

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DOCUMENT OVERVIEW

The accompanying Microsoft® Excel file contains your hospital's Hospital-Specific Report (HSR) for the fiscal year (FY) 2015 Hospital-Acquired Condition (HAC) Reduction Program. The HSR includes the following information for your hospital:

- Total HAC Score
- Domain 1 and Domain 2 scores
- Results for the Agency for Healthcare Research and Quality (AHRQ) Patient Safety Indicators 90 (PSI 90) composite measure adopted for the HAC Reduction Program
- Discharge-level data used to calculate the PSI 90 composite measure for your hospital
- Results for the Centers for Disease Control and Prevention (CDC) Central Line-Associated Bloodstream Infection (CLABSI) and Catheter-Associated Urinary Tract Infection (CAUTI) measures adopted for the HAC Reduction Program

This description document provides additional detail about your HSR. Section I of this document provides a description of the background, scoring methodology, Review and Correction process, and plans for public reporting for the FY 2015 HAC Reduction Program. Section II provides a detailed description of the contents of each Excel worksheet in the HAC Reduction Program HSR. Section III provides instructions on how to replicate your hospital's PSI 90 composite value, Domain 1 score, Domain 2 score, and Total HAC Score to support the Review and Correction process.

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I. PROGRAM BACKGROUND

Section 3008 of the 2010 Patient Protection and Affordable Care Act (ACA) established the HAC Reduction Program to provide an incentive for hospitals to reduce HACs. Effective FY 2015 (October 1, 2014), the HAC Reduction Program requires the Secretary of the Department of Health and Human Services to adjust payments to applicable hospitals that rank in the worst performing quartile of all subsection (d) hospitals with respect to risk-adjusted HAC quality measures. As stated in ACA Section 3008, these hospitals will have their payments reduced to 99 percent of what would otherwise have been paid for such discharges.

In compliance with Section 3008, the Centers for Medicare & Medicaid Services (CMS) is providing hospitals with confidential HSRs during the Review and Correction period to allow them to review and potentially correct their FY 2015 HAC Reduction Program results.

A. Measure Selection and Calculation

As finalized in the FY 2014 Inpatient Prospective Payment System (IPPS)/Long Term Care Hospital Prospective Payment System (LTCH PPS) Final Rule, CMS adopted the AHRQ Patient Safety Indicator (PSI) 90 composite measure and CDC CLABSI and CAUTI measures for the FY 2015 HAC Reduction Program.

1. AHRQ PSI 90 Composite Measure

The AHRQ PSI 90 composite measure includes the following eight PSIs:

- PSI 03 - Pressure Ulcer
- PSI 06 - Iatrogenic Pneumothorax
- PSI 07 - Central Venous Catheter-Related Bloodstream Infections
- PSI 08 - Postoperative Hip Fracture
- PSI 12 - Perioperative Pulmonary Embolism or Deep Vein Thrombosis
- PSI 13 - Postoperative Sepsis
- PSI 14 - Postoperative Wound Dehiscence
- PSI 15 - Accidental Puncture or Laceration

The AHRQ PSI 90 composite measure is a weighted average of the risk- and reliability-adjusted versions (or smoothed versions) of these eight PSIs. For the FY 2015 Program, CMS is calculating smoothed versions of these eight PSIs using version 4.5a of the AHRQ PSI software, and hospitals' Medicare fee-for-service (FFS) claims from July 1, 2011 through June 30, 2013. When calculating the PSI 90 composite measure, if the number of eligible discharges in the denominator for one of the eight PSI component measures is fewer than three, the composite measure substitutes the national rate for the hospital rate for this component PSI. If the number of eligible discharges for a hospital is fewer than three for all eight PSI component measures, then the PSI 90 composite measure is not calculated due to insufficient data, and CMS will not use the PSI 90 composite value in the hospital's HAC Reduction Program results.

2. CDC NHSN CLABSI and CAUTI Measures

For the HAC Reduction Program, the CDC is calculating standardized infection ratios (SIRs) for the CLABSI and CAUTI measures. SIRs are ratios of observed-to-predicted numbers of healthcare-associated infections (HAIs). The CLABSI and CAUTI measures are risk-adjusted at the hospital-level and patient-care unit level. The CDC is using chart-abstracted surveillance data reported to the National Healthcare Safety Network (NHSN) for infections occurring from January 1, 2012 through December 31, 2013 for the FY 2015 HAC Reduction Program calculations.[1] CDC's calculations of the CLABSI and CAUTI measures are inclusive of patients in selected intensive care units (ICUs) only. CLABSI includes patients in adult, pediatric, or neonatal ICUs, and CAUTI includes patients in adult or pediatric ICUs. If a hospital's number of predicted HAIs for CLABSI or CAUTI is less than one, the CDC will not calculate an SIR due to the hospital having insufficient data, and the measure will not be included in the hospital's HAC Reduction Program results.

B. Scoring Methodology

1. Overview

In the FY 2014 IPPS/LTCH PPS Final Rule, CMS specified that it will identify the worst performing quartile of hospitals with respect to HACs by calculating a Total HAC Score that is composed of two domains: patient safety (Domain 1) and healthcare-associated infection (Domain 2). For the FY 2015 HAC Reduction Program, Domain 1 will include the AHRQ PSI 90 composite measure, and Domain 2 will include the CDC CLABSI and CAUTI measures.

CMS determines whether a hospital should be subject to a payment reduction based on the hospital's measure results and scoring. There are three major steps taken to determine a hospital's Total HAC Score. First, hospitals are classified based on their measure results. Specifically, each hospital is assigned a measure score between 1 and 10 for each measure result, which reflects the hospital's relative rank in 10 groups (or deciles) for that measure. Second, the measure score is used to calculate the domain score. For Domain 1, the points assigned for the PSI 90 composite measure yield the Domain 1 score, since Domain 1 only contains PSI 90. For Domain 2, the points assigned for the two Domain 2 measures are averaged to yield a Domain 2 score. Third, hospitals' Total HAC Scores are determined by the sum of weighted Domain 1 and Domain 2 scores. That is, Domain 1 is weighted at 35 percent of the Total HAC Score and Domain 2 is weighted at 65 percent of the Total HAC Score. Higher scores indicate worse performance relative to the performance of all other eligible hospitals. Hospitals with a Total HAC Score above the 75th percentile of the Total HAC Score distribution may be subject to payment reduction.

[1] CMS only has access to CDC CLABSI and CAUTI measure data for hospitals that are also participating in the Hospital Inpatient Quality Reporting (IQR) Program. Hospitals that are not participating in the IQR Program have not agreed to share their data with CMS; therefore, these hospitals will receive the maximum 10 points for Domain 2 for non-submission of their CLABSI and CAUTI data. This situation is described in more detail in the scoring methodology section.

2. Measure Score Calculation

A measure result is calculated for each measure for which a hospital has sufficient data. A performance decile[2] is assigned for each measure (PSI 90 composite measure, CLABSI, and CAUTI) based on the hospital's measure result. A score between 1 and 10 is assigned for each measure based on the hospital's performance decile. Higher scores indicate worse performance. For hospitals with a non-zero measure result for a given measure, CMS assigns *x* points to hospitals that fall within the x^{th} performance decile, ranging from a minimum of 1 point assigned to hospitals in the first performance decile (best performing hospitals) to a maximum of 10 points assigned to hospitals in the tenth performance decile (worst performing hospitals).[3] Tables A-C show the points CMS assigned to hospitals for each performance decile based on measure results for PSI 90, CLABSI, and CAUTI for the FY 2015 HAC Reduction Program.

Table A. Point Assignment and Performance Deciles for Hospitals with PSI 90 Composite Measure Results

Percentile*	FY 2015 PSI 90 composite measure percentile thresholds**	Performance decile	Points assigned based on decile
Minima ≤ p ≤ 10^{th}	Minima < r ≤ 0.6553171447	1	1
10^{th} < p ≤ 20^{th}	0.6553171447 < r ≤ 0.7194514366	2	2
20^{th} < p ≤ 30^{th}	0.7194514366 < r ≤ 0.7646182266	3	3
30^{th} < p ≤ 40^{th}	0.7646182266 < r ≤ 0.8034994136	4	4
40^{th} < p ≤ 50^{th}	0.8034994136 < r ≤ 0.8382591685	5	5
50^{th} < p ≤ 60^{th}	0.8382591685 < r ≤ 0.8683040621	6	6
60^{th} < p ≤ 70^{th}	0.8683040621 < r ≤ 0.9073324283	7	7
70^{th} < p ≤ 80^{th}	0.9073324283 < r ≤ 0.9804622728	8	8
80^{th} < p ≤ 90^{th}	0.9804622728 < r ≤ 1.1016233985	9	9
90^{th} < p ≤ 100^{th}	1.1016233985< r ≤ 2.0704517497	10	10

* "p" in this column represents the percentile of a hospital's measure result.

**Note: "r" in this column represents a hospital's PSI 90 composite measure result. In the accompanying HSR, CMS reports hospitals' PSI 90 composite measure results at the fourth decimal place (e.g., 0.6557), but it uses unrounded measure results when determining the performance deciles.

[2] CMS divides hospitals into 10
have approximately the same number of hospitals.

[3] Hospitals will be assigned the minimum of one point for any measure for which they have a measure result of zero (vol. 79, FR 28140-28141) regardless of the performance decile. For example, for the CAUTI measure, if 13 percent of hospitals have an SIR of 0, one point will be assigned to each of these hospitals, even though, arguably, 10 percent of the 13 percent fall into the first decile, and 3 percent of the 13 percent fall into the second decile. Because each percentile range ideally represents 10 percent of hospitals, two points will be assigned to the remaining 7 percent of hospitals in the second decile because their SIR is larger than 0.

Table B. Point Assignment and Performance Deciles for Hospitals with CLABSI Measure Results

Percentile*	FY 2015 CLABSI percentile thresholds**	Performance decile	Points assigned based on decile
Minima ≤ p ≤ 10th	r = 0.000	1	1
10th < p ≤ 20th	0.000 ≤ r ≤ 0.138	1-2	1 or 2***
20th < p ≤ 30th	0.138 < r ≤ 0.266	3	3
30th < p ≤ 40th	0.266 < r ≤ 0.370	4	4
40th < p ≤ 50th	0.370 < r ≤ 0.456	5	5
50th < p ≤ 60th	0.456 < r ≤ 0.549	6	6
60th < p ≤ 70th	0.549 < r ≤ 0.677	7	7
70th < p ≤ 80th	0.677 < r ≤ 0.856	8	8
80th < p ≤ 90th	0.856 < r ≤ 1.138	9	9
90th < p ≤ 100th	1.138 < r ≤ 5.081	10	10

* "p" in this column represents the percentile of a hospital's measure result.

** "r" in this column represents a hospital's CLABSI measure result.

***Hospitals within this decile will receive one point if their measure result is zero and two points for any measure result greater than zero. In the FY 2015 Program, 16.4 percent (376 out of 2,292 hospitals with a CLABSI measure result) had a CLABSI measure result = 0.

Table C. Point Assignment and Performance Deciles for Hospitals with CAUTI Measure Results

Percentile*	FY 2015 CAUTI percentile thresholds**	Performance decile	Points assigned based on decile
Minima ≤ p ≤ 10th	r = 0.000	1	1
10th < p ≤ 20th	0.000 ≤ r ≤ 0.251	2	1 or 2***
20th < p ≤ 30th	0.251 < r ≤ 0.444	3	3
30th < p ≤ 40th	0.444 < r ≤ 0.618	4	4
40th < p ≤ 50th	0.618 < r ≤ 0.810	5	5
50th < p ≤ 60th	0.810 < r ≤ 0.999	6	6
60th < p ≤ 70th	0.999 < r ≤ 1.243	7	7
70th < p ≤ 80th	1.243 < r ≤ 1.564	8	8
80th < p ≤ 90th	1.564 < r ≤ 2.013	9	9
90th < p ≤ 100th	2.013 < r ≤ 6.000	10	10

* "p" in this column represents the percentile of a hospital's measure result.

** "r" in this column represents a hospital's CAUTI measure result.

***Hospitals within this decile will receive one point if their measure result is zero and two points for any measure result greater than zero. In the FY 2015 Program, 15.3 percent (404 out of 2,638 hospitals with a CAUTI measure result) had a CAUTI measure result = 0.

When a hospital does not have sufficient data for the Domain 2 measures (CLABSI and CAUTI), measure scores are determined using the following rules:

A. IF a hospital submits data for only one of the two Domain 2 measures, THEN a measure score will not be calculated for the missing measure.

B. IF a hospital does not submit data for either of the Domain 2 measures, AND:

   1) IF any of the following circumstances apply, THEN a measure score will not be calculated for either measure:

      a) Hospital did not receive a calculated Domain 1 score

      b) Hospital completed an HAI Exception Form for both Domain 2 measures

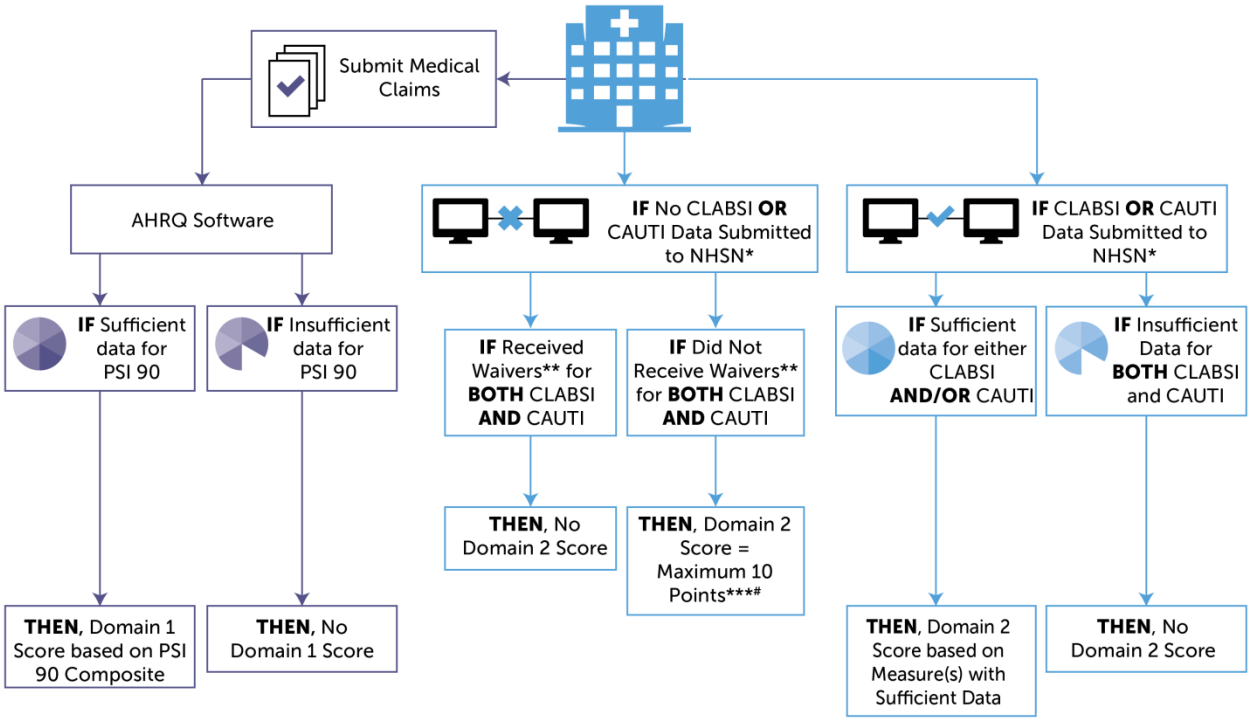
      c) Hospital did not indicate having any active ICU locations in NHSN for at least one quarter during the reporting period for both Domain 2 measures

   2) IF none of the aforementioned circumstances apply, THEN the maximum 10 points will be assigned to the hospital's Domain 2 measures.

3. Domain Score Calculation

Based on the points assigned for each measure, CMS then determines Domain 1 and Domain 2 scores. Since Domain 1 has a single measure (PSI 90), a hospital's Domain 1 score equals the hospital's PSI 90 composite measure score based on the hospital's measure results. Concurrently, since Domain 2 consists of two measures (CLABSI and CAUTI), a hospital's Domain 2 score is dependent upon the hospital's measure results for both Domain 2 measures. If a hospital has a measure score for both CLABSI and CAUTI, then the hospital's Domain 2 score equals the average of the hospital's CLABSI and CAUTI measure scores. If a hospital has a measure score for only one of the two Domain 2 measures, then the hospital's Domain 2 score equals the single measure score. Finally, a hospital will not receive a domain score when it does not have measure scores for any of the measures within the given domain. See Appendix Tables A.1 and A.2. for a more detailed explanation of which measures contribute to each domain score in multiple scenarios based on the submission of measure data for PSI 90, CLABSI, and CAUTI and completion of waivers for CLABSI and CAUTI. See Figure 1 for a visual overview of the scoring methodology for domain score calculations.

Figure 1. Overview of Scoring Methodology



* CMS only has access to CDC CLABSI and CAUTI measure data for hospitals that are also participating in the Hospital Inpatient Quality Reporting (IQR) Program. Hospitals that are not participating in the IQR Program have not agreed to share their data with CMS.

**"Waiver" includes ICU waiver or other waivers, including completing an HAI Exception Form or not indicating having any active ICU locations in NHSN for at least one quarter during the reporting period

***Domain scores range from 1 to 10 points with higher scores indicating worse performance.

If a hospital does not receive a Domain 1 score due to having insufficient data to calculate a PSI 90 composite measure result, then the hospital will not receive the maximum 10 points and will not receive a Domain 2 score.

4. Total HAC Score Calculation

CMS applies a weight of 35 percent for Domain 1 and 65 percent for Domain 2 when calculating the Total HAC Score for hospitals that received both a Domain 1 score and a Domain 2 score. If a hospital has only one domain score, then CMS applies a weight of 100 percent to the domain for which the hospital has a score. Refer to Appendix Tables A.1 and A.2 for a comprehensive summary of the weights applied to each domain score to calculate the Total HAC Score for different scenarios.

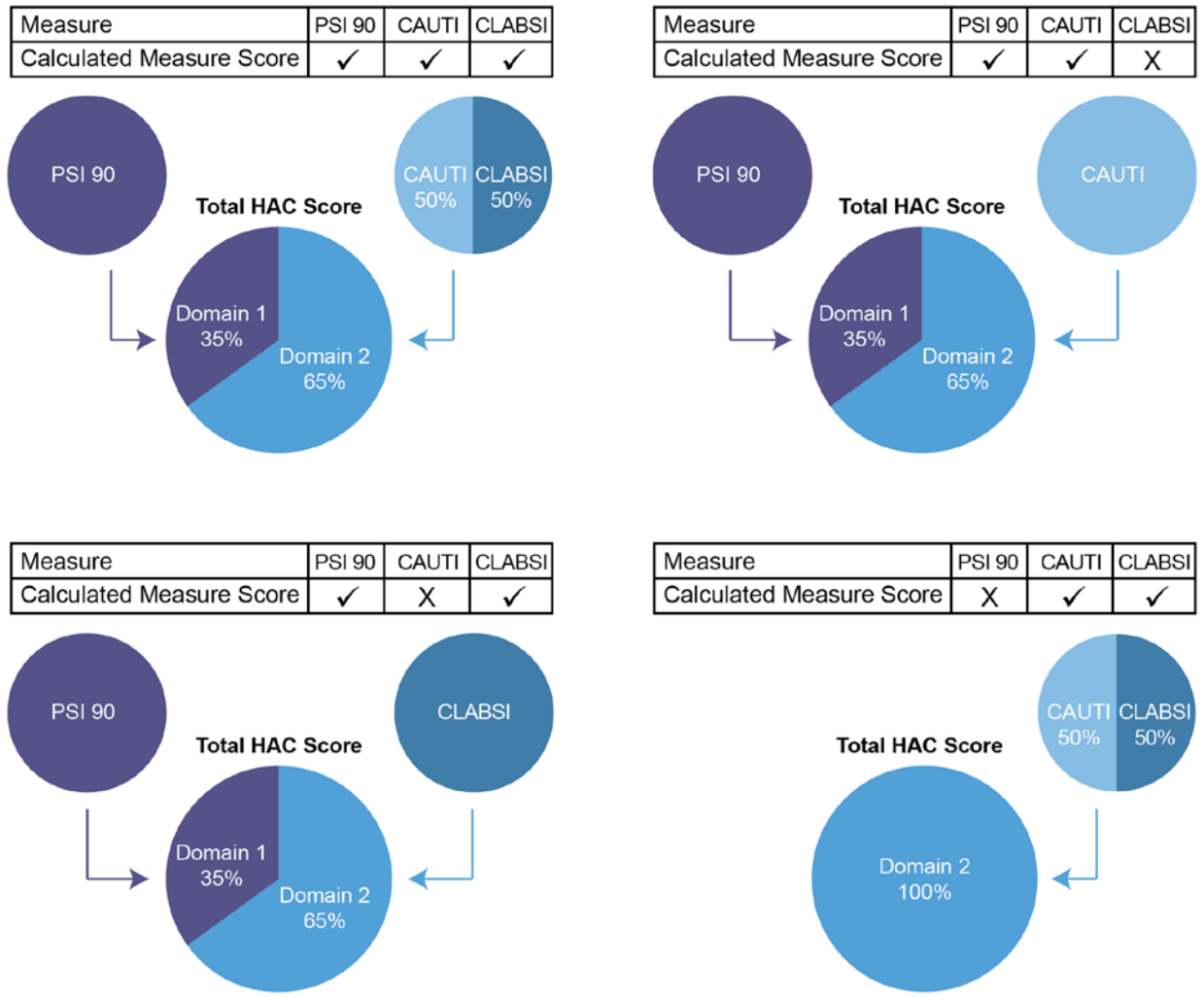
5. Total HAC Score Calculation and Identification of Worst Performers

As summarized above, the Total HAC Score is calculated by taking a hospital's Domain 1 score multiplied by the Domain 1 weight and the hospital's Domain 2 score multiplied by the Domain 2 weight.

$$\textit{Total HAC Score} = (\textit{Domain 1 Score} * \textit{Domain 1 weight}) + (\textit{Domain 2 Score} * \textit{Domain 2 Weight})$$

See Figure 2 for a visual overview of the scoring methodology for Total HAC Score calculations.

Figure 2. Scoring Methodology for Total HAC Score*

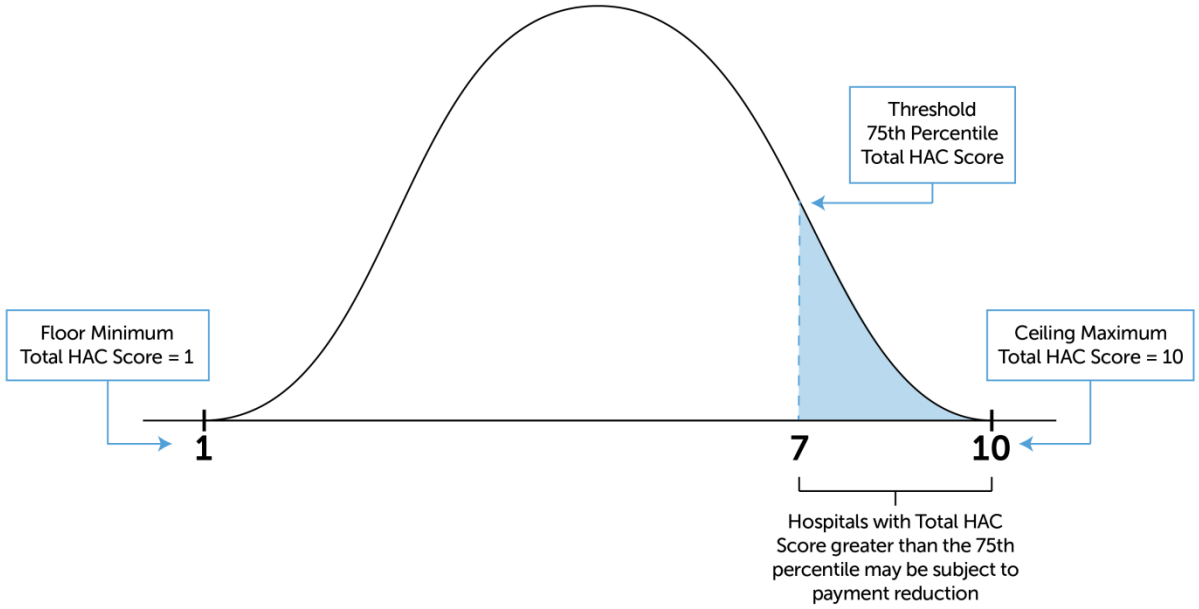


*This figure represents four of the eight possible combinations of presence (✓) or absence (x) of calculated measure scores for the PSI 90 composite, CAUTI, and CLABSI measures.

Hospitals that do not receive a Domain 1 score and do not receive a Domain 2 score will not receive a Total HAC Score. Higher Total HAC Scores indicate worse performance on patient safety events and HAIs. Hospitals with a Total HAC Score greater than the 75th percentile of all Total HAC Scores (i.e., hospitals in the worst performing quartile) may be subject to a payment reduction (see Figure 3).[4] Hospitals that are not in the worst performing quartile will not be subject to a payment reduction.

[4] Maryland hospitals have a waiver for the FY 2015 HAC Reduction Program. Maryland hospitals will receive an HSR with their CLABSI and CAUTI measure results, Domain 2 score, and Total HAC Score but will not be subject to a payment reduction. PSI 90 composite measure results and a Domain 1 score are not calculated for Maryland hospitals. Maryland hospitals' Total HAC Scores are not included in the distribution to determine the top quartile of scores.

Figure 3. Distribution of Total HAC Scores*



*This graphic does not reflect the actual distribution of Total HAC Scores for the FY 2015 HAC Reduction Program.

C. Review and Correction Process

CMS will give hospitals 30 days to review and submit corrections for their Total HAC Scores for the HAC Reduction Program to ensure that their Total HAC Scores were calculated correctly. The Review and Correction period will begin in late July 2014 when CMS provides hospitals with their HSRs via *QualityNet* secure portal accounts.[5] During the Review and Correction period, hospitals that have concerns about the calculation of their PSI 90 composite measure results, Domain 1 score, Domain 2 score, or Total HAC Score should submit a question using the following email address: qnetsupport@hcqis.org. CMS will investigate the validity of each concern and notify hospitals of the results. If CMS confirms that an error was made in creating the data extract or in calculating the score, CMS will correct the calculations, issue new confidential reports to affected hospitals, use the corrected calculation when identifying hospitals subject to the payment reduction, and publicly report the corrected Total HAC Score. If the errors could affect multiple hospitals or take more time than anticipated to correct, CMS will inform hospitals that corrected HAC Reduction Program results will be made available through delivery of confidential reports followed by a second 30-day Review and Correction period, subsequent publication, and posting on *Hospital Compare*.

In compliance with Section 3008 of the ACA, CMS will allow hospitals to review and correct the following information as part of the FY 2015 HAC Reduction Program prior to public reporting:

[5] Hospitals that do not have a *QualityNet* secure portal account will not be able to receive their HSRs. If your hospital did not receive an HSR or does not have a *QualityNet* secure portal account, please contact qnetsupport@hcqis.org.

- Measure result for the PSI 90 composite measure
- Measure scores for the PSI 90 composite, CLABSI, and CAUTI measures
- Domain 1 and Domain 2 scores
- Total HAC Score

Please note, however, the Review and Correction process does not allow hospitals to submit additional corrections related to the underlying claims data for the PSI 90 composite measure, or to add new claims to the data extract used to calculate the results. Additionally, under the Hospital IQR Program, hospitals had an opportunity to submit, review, and correct the chart-abstracted information used to calculate the CLABSI and CAUTI measures. Therefore, hospitals have already been given the opportunity to review and correct the CLABSI and CAUTI data for the FY 2015 HAC Reduction Program, so this Review and Correction process does not allow hospitals to correct the reported number of HAIs, CLABSI or CAUTI SIRs, or central-line or urinary catheter days.

D. Public Reporting

CMS also plans to make the following HAC Reduction Program information publicly available for each hospital on *Hospital Compare* in December 2014:

- PSI 90 composite measure score
- CLABSI and CAUTI measure scores
- Domain 1 and Domain 2 scores
- Total HAC Score

E. Contacts and Additional Resources

This document and the accompanying HAC Reduction Program HSR include only the most pertinent information for hospitals regarding their results. For technical assistance, please use the following resources and contacts:

Technical Assistance

If you have questions or comments about CMS's calculations and reporting of AHRQ PSIs based on Medicare claims, please visit:

http://www.qualitynet.org > Hospitals-Inpatient > Claims-Based Measures > Agency for Healthcare Research and Quality (AHRQ) Indicators

or contact the *QualityNet* Help Desk at

qnetsupport@hcqis.org

If you have questions about the AHRQ Quality Indicators™ or software, please visit the AHRQ Quality Indicator website:

http://www.qualityindicators.ahrq.gov

If you have questions or comments about the calculation of the CDC CLABSI and CAUTI SIRs, please visit:

www.cdc.gov/nhsn or

http://www.qualitynet.org > Hospitals-Inpatient > Healthcare Associated Infections (HAI)

or contact the NHSN Help Desk at

nhsn@cdc.gov

In the subject line of the email, indicate which measure(s) the question is about.

If you have questions or comments about the FY 2015 HAC Reduction Program, please visit:

http://www.qualitynet.org > Hospitals-Inpatient > Hospital-Acquired Condition (HAC) Reduction Program

or contact the *QualityNet* Help Desk at

qnetsupport@hcqis.org

II. HSR FILE CONTENTS AND DESCRIPTIONS

This section is intended to help you understand the data in your hospital's HAC Reduction Program HSR. The HSR workbook contains your hospital's Domain 1 and Domain 2 scores, Total HAC Score, performance on the PSI 90 composite measure, PSI 90 discharge-level data, and performance on the CLABSI and CAUTI measures.

A. Understanding Your Hospital's Performance on Domain 1, Domain 2, and Total HAC Score

Table 1 in the HSR contains information on your hospital's Domain 1 score, Domain 2 score, and Total HAC Score as well as the weight and contribution of each domain score to your hospital's Total HAC Score. Table 1 below provides a description of the data included in Table 1 of your HSR.

Table 1. Your Hospital's Total HAC Score Results Worksheet Contents

Column	Variable name	Description
Column A	Domain 1 Score	The Domain 1 score equals the points assigned to your hospital based on the decile in which your hospital's AHRQ PSI 90 composite value falls. Refer to Table A in Section I for more information on how CMS assigns points to the PSI 90 composite measure.
Column B	Weight of Domain 1 Score for Your Hospital	Weight assigned to your hospital's Domain 1 score in order to determine the contribution of the Domain 1 score to your hospital's Total HAC Score. For Maryland hospitals, no Domain 1 score is calculated, therefore, the weight of Domain 1 in the Total HAC Score is 0.00. Refer to Appendix A in this description document for more information on how CMS determines the weights based on a hospital's individual reporting circumstance.
Column C	Domain 1 Contribution to Total HAC Score	Domain 1 Contribution to Total HAC Score is calculated by multiplying your hospital's Domain 1 Score (Column A) by the Weight of Domain 1 Score for Your Hospital (Column B). This value is used to determine a portion of your hospital's Total HAC Score. Note for Maryland hospitals: No Domain 1 score is calculated; therefore, the Domain 1 contribution to the Total HAC Score is zero.
Column D	Domain 2 Score	If a hospital has measure scores for both CLABSI and CAUTI, then the hospital's Domain 2 score equals the average of the CLABSI and CAUTI measure scores. If a hospital has a measure score for only one of the two Domain 2 measures, then the hospital's Domain 2 score equals the measure score of the one Domain 2 measure. Refer to Tables B and C in Section I and Appendix A in this description document for more information on how CMS assigns points to the CLABSI and CAUTI measures and calculates the Domain 2 Score.
Column E	Weight of Domain 2 Score for Your Hospital	Weight assigned to your hospital's Domain 2 score in order to determine the contribution of the Domain 2 score to your hospital's Total HAC Score. Refer to Appendix A in this description document for more information on how CMS determines the weights based on a hospital's individual reporting circumstance.
Column F	Domain 2 Contribution to Total HAC Score	Domain 2 Contribution to Total HAC Score is calculated by multiplying your hospital's Domain 2 Score (Column D) by the Weight of Domain 2 Score for Your Hospital (Column E). This value is used to determine a portion of your hospital's Total HAC Score.

Table 1 *(continued)*

Column	Variable name	Description
Column G	Your Hospital's Total HAC Score	Your hospital's Total HAC Score is the sum of your hospital's Domain 1 Contribution to Total HAC Score (Column C) and Domain 2 Contribution to Total HAC Score (Column F). Higher Total HAC Scores indicate worse performance on patient safety events and HAIs. Note for Maryland hospitals: Your hospital's Total HAC Score is dependent on your hospital's Domain 2 score.
Column H	Payment Reduction Threshold	The Payment Reduction Threshold is the value of the 75th percentile among eligible hospitals' Total HAC Scores. The location of your hospital's Total HAC Score with respect to the Payment Reduction Threshold determines if your hospital may be subject to a payment reduction. Maryland hospitals are not included in the distribution to determine the Payment Reduction Threshold (75th percentile), since they are waived from the payment penalties for the HAC Reduction Program for FY 2015.
Column I	Subject to Payment Reduction (Yes/No)	Indicates if your hospital is subject to a payment reduction. If your hospital's Total HAC Score (Column G) is greater than the Payment Reduction Threshold (Column H), then your hospital may be subject to a payment reduction.

Table 2 in the HSR provides your hospital's measure results, performance decile, and points assigned based on the performance decile (i.e., measure score) for each measure in Domain 1 (PSI 90) and Domain 2 (CLABSI and CAUTI). This table also contains your hospital's Domain 1 and Domain 2 scores. Table 2 below provides a description of the data included in Table 2 of your HSR.

Table 2. Your Hospital's Domain Scores Worksheet Contents

Column	Variable name	Description
Column A	Domain	The two domains that make up the FY 15 HAC Reduction Program and the measures that are included in each domain.
Column B	Measure Results	For non-Maryland hospitals: Your hospital's measure results for PSI 90 composite measure, CLABSI, and CAUTI measures. For Maryland hospitals: No data are available to calculate a measure result for Domain 1 (PSI 90).
Column C	Performance Decile	The Performance Decile is the decile that your hospital falls in based on your hospital's PSI 90, CLABSI, and CAUTI measure results relative to other hospitals. Note for Maryland hospitals: No data are available to calculate a PSI 90 composite measure result; therefore, no Performance Decile is assigned for Domain 1. Refer to Tables A-C in Section I for more information on how CMS determines the performance decile for the PSI 90 composite measure, CLABSI, and CAUTI measures.
Column D	Points Assigned Based on Decile (Measure Score)	Your hospital is assigned a number of points based on its Performance Decile. Note for Maryland hospitals: no data are available to calculate a PSI 90 composite measure result; therefore, no Performance Decile or points are assigned for Domain 1. Refer to Tables A-C in Section I for more information on how CMS assigns points for the PSI 90 composite, CLABSI, and CAUTI measures.

Table 2 *(continued)*

Column	Variable name	Description
Column E	Domain Score	Your hospital's Domain 1 score is equivalent to the points assigned to the PSI 90 composite measure (Column D). If a hospital has measure scores for both CLABSI and CAUTI, then the hospital's Domain 2 score equals the average of the CLABSI and CAUTI measure scores. If a hospital has a measure score for only one of the two Domain 2 measures, then the hospital's Domain 2 score equals the measure score of the single Domain 2 measure.

B. Understanding Your Hospital's Performance on AHRQ PSI 90 Composite Measure

Table 3 in the HSR provides information on your hospital's performance on the PSI 90 composite measure and the eight PSI component measures that make up the composite.[6] Table 3 also summarizes your hospital's number of eligible discharges, number of outcomes, observed rates, expected rates, risk-adjusted rates, and smoothed rates for each of the eight component PSIs. This table also provides the national results for the PSI 90 composite measure and risk-adjusted rates for each of the eight component PSIs. In addition, the table contains each PSI component measure's weight in the PSI 90 composite measure along with the reliability weight. Having the information in this table enables your hospital to replicate its PSI 90 composite value, based on discharges between July 1, 2011 and June 30, 2013. Table 3 below provides a description of the data included in the corresponding Table 3 of your HSR.

Table 3. Your Hospital's Performance on AHRQ PSI 90 Composite Measure Worksheet Contents

Row*	Variable name	Description
Row 1	Composite Value	The AHRQ PSI 90 composite value is a weighted average of eight component PSIs. This value will be used to determine your measure score and Domain 1 score.
Row 2	Total Number of Eligible Discharges (Denominator) at Your Hospital	Number of discharges from your hospital that meet the inclusion criteria for the given PSI component. This variable is applicable to the eight individual PSI components included in the PSI 90 composite measure but is not presented for the PSI 90 composite measure as a whole.
Row 3	Number of Outcomes (Numerator)	Actual number of outcomes of interest that occurred at your hospital between July 1, 2011 and June 30, 2013. This variable is applicable to the eight individual PSI components included in the PSI 90 composite measure but is not presented for the PSI 90 composite measure as a whole.
Row 4	Observed Rate per 1,000 Eligible Discharges	Actual number of outcomes identified at your hospital (numerator, Row 3) divided by the number of eligible discharges for that component measure at your hospital (denominator, Row 2), multiplied by 1,000 for PSIs. This is also known as the "raw rate." This variable is applicable to the eight individual PSI components included in the PSI 90 composite measure but is not presented for the PSI 90 composite measure as a whole.

[6] For Maryland hospitals, the measure results for the PSI 90 composite measure and its component PSIs (PSI 03, PSI 06, PSI 07, PSI 08, PSI 12, PSI 13, PSI 14, and PSI 15) are not calculated.

Table 3 *(continued)*

Row*	Variable name	Description
Row 5	Expected Rate per 1,000 Eligible Discharges	Estimate of your hospital's expected performance if your hospital performed the same as the reference population given your hospital's actual case-mix (e.g., age, gender, diagnosis-related group, and comorbidity categories). This variable is applicable to the eight individual PSI components included in the PSI 90 composite measure but is not presented for the PSI 90 composite measure as a whole.
Row 6	Risk-Adjusted Rate per 1,000 Eligible Discharges	Estimate of your hospital's performance if your hospital had an "average" patient case-mix, given your hospital's actual performance. "Average" case-mix is defined using the Healthcare Cost and Utilization Project (HCUP) reference population. If your hospital had a healthier case-mix of patients than the case-mix in the HCUP reference population, then the risk-adjusted rate is higher than the observed rate. If your hospital has a less healthy patient case-mix than the case-mix in the HCUP reference population, then the risk-adjusted rate is lower than the observed rate. This variable is applicable to the eight individual PSI components included in the PSI 90 composite measure but is not presented for the PSI 90 composite measure as a whole.
Row 7	Smoothed Rate per 1,000 Eligible Discharges	Estimate of your hospital's expected performance with a large population of patients. This rate is a weighted average of the national risk-adjusted rate in the Medicare FFS population and your hospital's risk-adjusted rate. The weight used to construct the average is an estimate of the reliability of your hospital's risk-adjusted rate. This variable is applicable to the eight individual PSI components included in the PSI 90 composite measure but is not presented for the PSI 90 composite measure as a whole. However, CMS uses the smoothed rates for each PSI component indicator to calculate the PSI 90 composite measure.
Row 8	National Composite Value	Calculated by averaging the PSI 90 composite values across all subsection (d) hospitals in the country, weighted by the number of Medicare FFS discharges at each hospital.
Row 9	National Risk-Adjusted Rate per 1,000 Eligible Discharges	Calculated by averaging the risk-adjusted rate across all subsection (d) hospitals in the country, weighted by the number of Medicare FFS discharges at each hospital.
Row 10	Measure's Weight in Composite	Weights that were used to construct the PSI 90 composite measure from the eight individual PSI components using version 4.5a of the AHRQ software. The same weights were applied for all hospitals. AHRQ recommends these weights for use with version 4.5a of the AHRQ software. *QualityNet* contains a description of the HCUP reference population, which was used to calculate the component weights.
Row 11	Reliability Weight	Weights that are used to construct the smoothed rate for each individual PSI component. Reliability weights are calculated for each hospital based on the calculated reliability of the hospital. A reliability weight ranges from 0 to 1, representing the ratio of between-hospital variance to total variance. A larger reliability weight places a greater emphasis on the hospital's data when calculating the smoothed rate.

*This refers to the row number in the first column of the Excel worksheet.

C. Understanding Your Hospital's Discharge-level Information for the AHRQ PSI Measures

Table 4 in the HSR includes information about discharges at your hospital that meet criteria for one or more of the PSI component measures in the PSI 90 composite measure.[7] This worksheet contains data for all Medicare FFS patients aged 18 years or older who had the outcome of interest from July 1, 2011 through June 30, 2013, complete present-on-admission

[7] NOTE: For Maryland Hospitals, no AHRQ PSI measure results are available.

(POA) data, and a POA flag of "N" or "U" associated with the outcome of interest. An "N" indicates that the diagnosis was not present at the time of inpatient admission, while a "U" indicates that the documentation was insufficient to determine if a condition was present at the time of admission. The PSI 90 composite measure does not have discharge-level data because it is calculated from the individual PSI component measures. Table 4 below provides a description of the data included in Table 4 of your HSR.

External cause of injury codes (E codes) were not used to calculate the PSIs for the FY 2015 HAC Reduction Program, although they are included in your hospital's discharge-level data. Also, if your hospital submitted a claim with more than 25 diagnoses or more than 25 procedures, the 26th and subsequent diagnoses and 26th and subsequent procedures are not included in the AHRQ calculation or in the accompanying discharge-level data file. As such, only the first 25 diagnosis codes and first 25 procedure codes are used to calculate hospital PSI rates.

Do not email the contents of Table 4 of your HSR. The table contains Personally Identifiable Information (PII) and Protected Health Information (PHI). Emailing this data is a security violation. If you have questions, please contact the *QualityNet* Help Desk qnetsupport@hcqis.org, and they will provide directions for transmitting data. When referring to the contents of Table 4 in the HSR, use the ID Number.

Table 4. Your Hospital's Discharge-Level Information for the AHRQ PSI Measures Worksheet Contents

Column	Variable name	Description
Column A	ID Number	Unique identifier for each discharge included in the worksheet.
Column B	Measure	Identifies for which PSI measure discharge-level data are provided.
Column C	HICNO	6-12 digit Medicare health insurance claim account number. Note: This is not the same as the Social Security number (SSN).
Column D	Medical Record Number	Your hospital's Medical Record Number associated with each discharge.
Column E	Beneficiary DOB	Patient date of birth (DOB) (MM/DD/YYYY)
Column F	Admission Date	Patient admission date (MM/DD/YYYY)
Column G	Discharge Date	Patient discharge date (MM/DD/YYYY)
Column H	PSI Trigger Diagnoses or Procedures	Indicates which of the diagnoses or procedures were counted as a PSI outcome (e.g., 70705 for PSI 03) and included in the numerator. If one stay record has multiple diagnosis or procedure codes for the same PSI, all of these codes will be flagged in this variable, but at the hospital-level, the discharge is only counted once for the PSI measure. If a hospital stay qualified for two separate PSI measures, they are repeated in this file in each measure section.
Columns: I – BE (Every Other Column)	DX1-DX25	ICD-9 code for diagnosis 1-25 respectively
Columns: J – BF (Every Other Column)	POA1-POA25	Present on Admission flag for diagnosis 1-25 respectively (i.e., Y (Yes), N (No), U (Unknown), W (Clinically undetermined), 1 (Unreported/Exempt))

Table 4 (continued)

Column	Variable name	Description
Columns BG-CE	PR1-PR25	ICD-9 Code for Procedure 1-25 respectively

D. Understanding Your Hospital's Performance on CDC CLABSI and CAUTI Measures

Table 5 in the HSR includes information on your hospital's performance on the CDC CLABSI and CAUTI measures from January 1, 2012 to December 31, 2013. For both CLABSI and CAUTI, Table 5 summarizes your hospital's reported number of healthcare-associated infections (HAIs), predicted number of HAIs, reported central-line or urinary catheter days, and standardized infection ratio (SIR), as well as the national SIR. The "national SIR" reported for the HAC Reduction Program is calculated by dividing the total number of reported infections by the total number of predicted infections for all subsection (d) hospitals reporting HAIs between January 1, 2012 and December 31, 2013. Table 5 below provides a description of the data included in Table 5 of your HSR.

Table 5. Your Hospital's Performance on CLABSI and CAUTI Measures Worksheet Contents

Row*	Variable name	Description
Row 1	Reported Number of HAIs	The sum of your hospital's reported number of healthcare-associated infections (HAIs) across all applicable intensive care unit (ICU) locations within your hospital from January 1, 2012 through December 31, 2013.
Row 2	Predicted Number of HAIs	The CDC calculates the number of predicted HAIs for each patient care location by multiplying each ICU location's reported central-line or urinary catheter days by the ICU location's NHSN-specific infection rate and dividing by 1,000. NHSN-specific infection rates are generated from a standard population during a baseline period of 2006 through 2008 for CLABSI and a baseline period of 2009 for CAUTI. They are adjusted for several risk factors that have been found to be significantly associated with differences in infection incidence. Your hospital's predicted number of HAIs equals the sum of the predicted number of HAIs across each applicable ICU location within your hospital.
Row 3	Reported Central-line or Urinary Catheter Days	Total number of central-line or urinary catheter days reported for all applicable ICU locations within your hospital from January 1, 2012 through December 31, 2013.
Row 4	SIR	The CDC calculates standardized infection ratios (SIRs) by dividing a hospital's Reported Number of HAIs (Row 1) by a hospital's Predicted Number of HAIs (Row 2). A hospital must have greater than or equal to one predicted HAI in order to have sufficient data to calculate a reliable SIR. An SIR will not be calculated for hospitals with less than one predicted HAI.
Row 5	National SIR	The national SIR is calculated by summing all reported HAIs among subsection (d) hospitals for the January 1, 2012 through December 31, 2013 time period and dividing by the sum of all predicted HAIs for those hospitals during the same time period.

*This refers to the row number included in the first column of the Excel worksheet.

III. REPLICATION INSTRUCTIONS

This section provides instructions for replicating the calculation of your hospital's PSI 90 composite measure result from the component PSI results, Domain 1 score, Domain 2 score, and Total HAC Score. The calculation steps contain actual data for the FY 2015 payment reduction threshold, national PSI 90 composite value, national risk-adjusted PSI rates, national SIRs based on subsection (d) hospitals, and PSI component weights in the PSI 90 composite measure. Other hospital-specific values in the calculation steps are based on mock data.

This section does not include instructions on replicating the CDC CLABSI and CAUTI measure results as, under the Hospital IQR program, hospitals have the opportunity to review and correct their chart-abstracted CLABSI and CAUTI data for the full 4½ months following the last discharge date in a calendar quarter.

A. Replicating PSI 90 Composite Value

For the FY 2015 HAC Reduction Program, the AHRQ measures were calculated using version 4.5a of the AHRQ software. Note that your hospital's FY 2015 HAC Reduction Program PSI 90 composite measure results will likely differ from your hospital's 2014 IQR Program and FY 2015 Hospital Value-Based Purchasing (HVBP) Program performance period results for PSI 90, CLABSI, and CAUTI due to differences in the applicable hospitals, performance periods, and, for the PSI 90 composite measure, the version of the AHRQ software used across the programs.[8]

Presented below is a step-by-step example of a hospital with a PSI 90 composite measure index value of 0.8099 found in the mock HSR.[9] Each step is followed by an image of the process in Excel. An Excel file combining the steps (and showing formulas) is also available upon request, by contacting the *QualityNet* Help Desk at qnetsupport@hcqis.org with the following subject line: "Request for HAC Reduction Program Replication Example."

Note: For each individual PSI for which your hospital has fewer than three eligible discharges, skip to Step 5d and refer to footnote 11.

[8] Version 4.5a of the AHRQ software was used to calculate PSI 90 composite measure results for the FY 2014 IQR and FY 2015 HAC Reduction Program, while Version 4.5 of the AHRQ software was used for the FY 2015 HVBP program (vol. 79, FR 28365).

[9] Instructions on how to replicate CMS's results for the component AHRQ measures can be found on the *QualityNet* website (http://www.qualitynet.org>Hospitals-Inpatient>Claims-Based Measures>AHRQ Indicators>Resources).

Step 1: Identify Discharges Associated with Each PSI

Start on the tab titled "Table 4. AHRQ PSI Discharges" in your HSR.

For each individual PSI (03, 06, 07, 08, 12, 13, 14, and 15), limit your replication calculations to rows where "Measure" (Column B) in Table 4 equals the individual PSI that you are trying to replicate. In Figure 4 below, the discharge highlighted in Row 8 is the number of outcomes for PSI 03 (also shown in Table 3, Row 3 of the HSR).

Figure 4. AHRQ Replication Step 1

	A	B	C	D	E	F	G	H
1	Table 4: Your Hospital's Discharge-Level Information for the AHRQ PSI Measures for the FY 2015 HAC Reduction Program							
2	HOSPITAL NAME							
3	July 1, 2011 through June 30, 2013							
4	This file contains MOCK data except for national results. In your hospital's own HSR file, the data contains personally identifiable information (PII). DO NOT EMAIL THE REAL HSR FILES OR ANY OF THEIR CONTENTS BECAUSE THEY CONTAIN PII. When referring to these documents use ID Numbers.							
5	NOTE: For Maryland hospitals, no AHRQ PSI measure results are available.							
6								
7	**ID Number**	**Measure**	**HICNO**	**Medical Record Number**	**Beneficiary DOB**	**Admission Date**	**Discharge Date**	**PSI Trigger Diagnoses or Procedures**
8	1	CENTRAL VENOUS CATHETER-RELATED BLOODSTREAM INFECTIONS (PSI07)	999999999A	A001	09/09/9999	09/09/9999	09/09/9999	99932
9	2	POSTOPERATIVE PULMONARY EMBOLISM OR [illegible]	[illegible]9A	[illegible]	[illegible]	[illegible]	[illegible]9	45342, 41519
10	3	[illegible]	[illegible]9A	[illegible]	[illegible]	[illegible]	[illegible]9	41511
11	4	[illegible]	[illegible]9A	[illegible]	[illegible]	[illegible]	[illegible]9	45341
12	5	POSTOPERATIVE PULMONARY EMBOLISM OR DEEP VEIN THROMBOSIS (PSI12)	999999999A	A005	09/09/9999	09/09/9999	09/09/9999	45341, 41519
13	6	POSTOPERATIVE PULMONARY EMBOLISM OR DEEP VEIN THROMBOSIS (PSI12)	999999999A	A006	09/09/9999	09/09/9999	09/09/9999	45341
14	7	POSTOPERATIVE PULMONARY EMBOLISM OR DEEP VEIN THROMBOSIS (PSI12)	999999999A	A007	09/09/9999	09/09/9999	09/09/9999	41511
15	8	POSTOPERATIVE PULMONARY EMBOLISM OR DEEP VEIN THROMBOSIS (PSI12)	999999999A	A008	09/09/9999	09/09/9999	09/09/9999	41511
16	9	POSTOPERATIVE SEPSIS (PSI13)	999999999A	A009	09/09/9999	09/09/9999	09/09/9999	0389, 99592
17	10	POSTOPERATIVE WOUND DEHISCENCE (PSI14)	999999999A	A010	09/09/9999	09/09/9999	09/09/9999	4601, 5461
18	11	POSTOPERATIVE WOUND DEHISCENCE (PSI14)	999999999A	A011	09/09/9999	09/09/9999	09/09/9999	5492, 6561, 5461
19	12	ACCIDENTAL PUNCTURE OR LACERATION (PSI15)	999999999A	A012	09/09/9999	09/09/9999	09/09/9999	9982

This series of steps in the worksheet provides an example of how to replicate the HAC Reduction Program AHRQ PSI 90 results.

It presents a mock exmaple of a hospital with 1 qualifying discharge for the PSI 07 measure

Step 1:
IMPORTANT
Limit your replication calculations to rows where "Measure", or column B, equals the repsective PSI.

In this example for PSI 07, this is the discharge in Row 8

Step 2: Calculate the Observed Rate per 1,000 Eligible Discharges

Now, focus on the tab titled "Table 3. AHRQ PSI Performance" in your HSR.

2a. Divide the number of outcomes found in Step 1 (Table 3, Row 3 of the HSR) by the total number of eligible discharges at your hospital (Table 3, Row 2 of the HSR) highlighted in Figure 5.

2b. Next multiply the value calculated in Step 2a by 1,000. For example, cell C8 (PSI 03 – Pressure Ulcer) is divided by cell C7 then multiplied by 1,000. This is the **Observed Rate per 1,000 Eligible Discharges** and when rounded to two decimal places, should match the number in Row 4 of Table 3 in your HSR.

2c. Repeat Steps 2a – 2b for all individual PSI columns (Table 3, Column C – Column J of the HSR).

Figure 5. AHRQ Replication Step 2

Table 3: Your Hospital's Performance on AHRQ PSI 90 Composite for the FY 2015 HAC Reduction Program
HOSPITAL NAME
July 1, 2011 through June 30, 2013

Performance Information	PSI 90 Composite [a]	PSI 03 – Pressure Ulcer	PSI 06 – Iatrogenic Pneumothorax	PSI 07 – Central Venous Catheter-Related Bloodstream Infections	PSI 08 – Postoperative Hip Fracture	PSI 12 – Perioperative Pulmonary Embolism or Deep Vein Thrombosis
1. Composite Value*	**0.8099**	—	—	—	—	—
2. Total Number of Eligible** Discharges (Denominator) at Your Hospital [b]	—	2	5,293	3,060	437	1,432
3. Number of Outcomes (Numerator) [b]	—	0	0	1	0	7
4. Observed Rate per 1,000 Eligible** Discharges[b]	—	0.0000	0.0000	0.3268	0.0000	4.8883
5. Expected Rate per 1,000 Eligible** Discharges [b]	—	INS	0.3653	0.3176	0.0263	4.6920
6. Risk-Adjusted Rate per 1,000 Eligible** Discharges[b]	—	INS	0.0000	0.4208	0.0000	4.5531
7. Smoothed Rate per 1,000 Eligible** Discharges [b] [c]	—	INS	0.3299	0.3596	0.0933	4.5959
8. National Composite Value [d]	0.8840	—	—	—	—	—
9. National Risk-Adjusted Rate per 1,000 Eligible** Discharges [b]	—	0.3504	0.4089	0.2566	0.0935	4.6735
10. Measure's Weight in Composite [b]	—	0.0226	0.0708	0.0652	0.0011	0.2579
11. Reliability Weight [b]	—	INS	0.1933	0.6272	0.0019	0.6444

Example of Observed Rate Calculations
0.0003267974
0.3268

Step 2a: For each individual PSI, divide the number of outcomes by the total number of eligible discharges.

Step 2b: Multiply the value from Step 2a by 1,000

Step 3: Calculate the Risk-Adjusted Rate per 1,000 Eligible Discharges

3a. First divide the unrounded observed rate (from Step 2b) by the expected rate (Table 3, Row 5 of the HSR) highlighted in Figure 6.

3b. Next, multiply the value calculated in Step 3a by the respective measure's HCUP national rate, which can be found in Table D below.

Table D. HCUP National Rate[10]

PSI	HCUP national rate
PSI 03	0.000405478990
PSI 06	0.000438687857
PSI 07	0.000408959400
PSI 08	0.000031508378
PSI 12	0.004370307084
PSI 13	0.011803860776
PSI 14	0.001868245541
PSI 15	0.002427955624

3c. Then, multiply the value calculated in Step 3b by 1,000 and round to four decimal places to get the **Risk-Adjusted Rate per 1,000 Eligible Discharges** in Table 3 Row 6 of the HSR.

3d. Repeat Steps 3a – 3c for all individual PSI columns (Table 3, Column C – Column J of the HSR).

Figure 6. AHRQ Replication Step 3

Table 3: Your Hospital's Performance on AHRQ PSI 90 Composite for the FY 2015 HAC Reduction Program
HOSPITAL NAME
July 1, 2011 through June 30, 2013

Performance Information	PSI 90 Composite [a]	PSI 03 – Pressure Ulcer	PSI 06 – Iatrogenic Pneumothorax	PSI 07 – Central Venous Catheter-Related Bloodstream Infections	PSI 08 – Postoperative Hip Fracture	PSI 12 – Perioperative Pulmonary Embolism or Deep Vein Thrombosis	PSI 13 – Postoperative Sepsis
1. Composite Value*	**0.8099**	—	—	—	—	—	—
2. Total Number of Eligible** Discharges (Denominator) at Your Hospital [b]	—	2	5,293	3,060	437	1,432	139
3. Number of Outcomes (Numerator) [b]	—	0	0	1	0	7	1
4. Observed Rate per 1,000 Eligible** Discharges[b]	—	0.0000	0.0000	0.3268	0.0000	4.8883	7.1942
5. Expected Rate per 1,000 Eligible** Discharges [b]	—	INS	0.3653	0.3176	0.0263	4.6920	9.2184
6. Risk-Adjusted Rate per 1,000 Eligible** Discharges[b]	—	INS	0.0000	0.4208	0.0000	4.5531	9.2120
7. Smoothed Rate per 1,000 Eligible** Discharges [b] [c]	—	INS	0.3299	0.3596	0.0933	4.5959	10.0082
8. National Composite Value [d]	0.8840	—	—	—	—	—	—
9. National Risk-Adjusted Rate per 1,000 Eligible** Discharges [b]	—	0.3504	0.4089	0.2566	0.0935	4.6735	10.2448
10. Measure's Weight in Composite [b]	—	0.0226	0.0708	0.0652	0.0011	0.2579	0.0742
11. Reliability Weight [b]	—	INS	0.1933	0.6272	0.0054	0.7444	0.2290

Example of Risk-Adjusted Rate Calculations
1.0288654484
0.0004207642
0.4208

Step 3a: Divide the unrounded observed rate from Step 2b by the expected rate

Step 3b: Multiply the value from Step 3a by the respective measure's HCUP national rate

Step 3c: Multiply the value from Step 3b by 1,000

[10] The HCUP National Rates for each component PSI are based on the 2010 State Inpatient Database (SID) HCUP population.

Step 4: Calculate the Smoothed Rate per 1,000 Eligible Discharges

4a. Multiply the unrounded risk-adjusted rate (calculated in Step 3c) by each measure's respective reliability weight (Table 3, Row 11 of the HSR) highlighted in Figure 7.

4b. Next multiply the national risk-adjusted rate (Table 3, Row 9 of the HSR) by one minus the reliability weight (Table 3, Row 11 of the HSR) highlighted in Figure 7.

4c. Then, add the value calculated in Step 4a to the value calculated in Step 4b. This sum, when rounded to two decimal places, should match your hospital's smoothed rate (Table 3, Row 7 of the HSR).

4d. Repeat Steps 4a – 4c for all individual PSI columns (Table 3, Column C – Column J of the HSR).

Figure 7. AHRQ Replication Step 4

Table 3: Your Hospital's Performance on AHRQ PSI 90 Composite for the FY 2015 HAC Reduction Program
HOSPITAL NAME
July 1, 2011 through June 30, 2013

Performance Information	PSI 90 Composite [a]	PSI 03 – Pressure Ulcer	PSI 06 – Iatrogenic Pneumothorax	PSI 07 – Central Venous Catheter-Related Bloodstream Infections	PSI 08 – Postoperative Hip Fracture	PSI 12 – Perioperative Pulmonary Embolism or Deep Vein Thrombosis	PSI 13 – Postoperative Sepsis
1. Composite Value*	**0.8099**	—	—	—	—	—	—
2. Total Number of Eligible** Discharges (Denominator) at Your Hospital [b]	—	2	5,293	3,060	437	1,432	139
3. Number of Outcomes (Numerator) [b]	—	0	0	1	0	7	1
4. Observed Rate per 1,000 Eligible** Discharges[b]	—	0.0000	0.0000	0.3268	0.0000	4.8883	7.1942
5. Expected Rate per 1,000 Eligible** Discharges [b]	—	INS	0.3653	0.3176	0.0263	4.6920	9.2184
6. Risk-Adjusted Rate per 1,000 Eligible** Discharges[b]	—	INS	0.0000	0.4208	0.0000	4.5531	9.2120
7. Smoothed Rate per 1,000 Eligible** Discharges [b] [c]	—	INS	0.3299	0.3596	0.0933	4.5959	10.0082
8. National Composite Value [d]	0.8840	—	—	—	—	—	—
9. National Risk-Adjusted Rate per 1,000 Eligible** Discharges [b]	—	0.3504	0.4089	0.2566	0.0935	4.6735	10.2448
10. Measure's Weight in Composite [b]	—	0.0226	0.0708	0.0652	0.0011	0.2579	0.0742
11. Reliability Weight [b]	—	INS	0.1933	0.6272	0.0019	0.6444	0.2290

Example Smoothed Rate Calculations
0.2638832615
0.0956838497
0.3596

Step 4a: Multiply the unrounded risk-adjusted rate by the reliability weight

Step 4b: Multiply the national risk-adjusted rate by one minus the reliability weight

Step 4c: Add the value calculated in Step 4a to the value calculated in Step 4b

Step 5: Calculate the PSI 90 Composite Measure

5a. For each individual PSI, start with the unrounded smoothed rate calculated in 4c and divide by 1,000. [11]

5b. Next, divide the quantity in 5a by the corresponding HCUP national rate shown in Table D above.

5c. Multiply the quantity in 5b by the corresponding composite weight (Table 3, Row 10 of the HSR) highlighted in Figure 8.

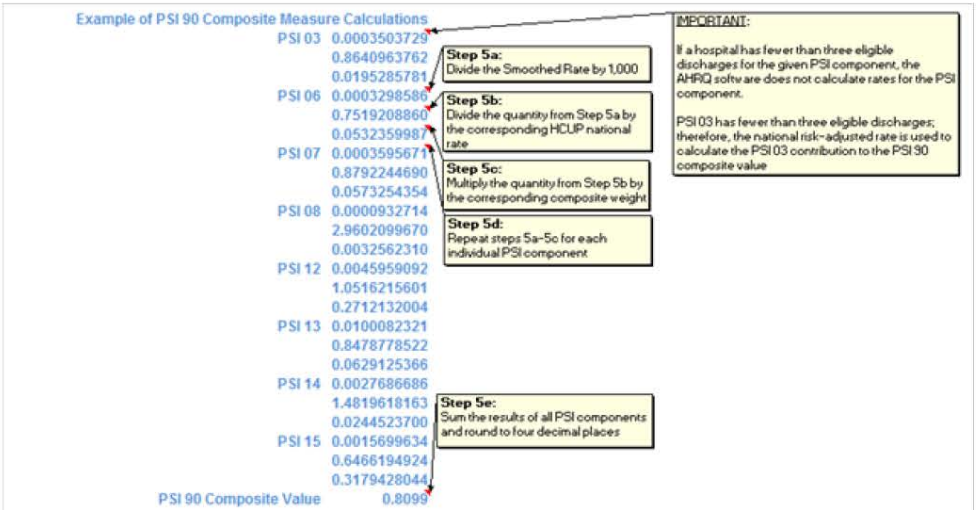
5d. Repeat Steps 5a – 5c for each individual PSI.

5e. Then sum the results of all PSI components from Step 5d and round to four decimal places, and this should match the PSI 90 composite measure Index Value in Table 3, cell B6 of the HSR. [12]

Figure 8. AHRQ Replication Step 5

Table 3: Your Hospital's Performance on AHRQ PSI 90 Composite for the FY 2015 HAC Reduction Program
HOSPITAL NAME
July 1, 2011 through June 30, 2013

Performance Information	PSI 90 Composite [a]	PSI 03 – Pressure Ulcer	PSI 06 – Iatrogenic Pneumothorax	PSI 07 – Central Venous Catheter-Related Bloodstream Infections	PSI 08 – Postoperative Hip Fracture	PSI 12 – Perioperative Pulmonary Embolism or Deep Vein Thrombosis	PSI 13 – Postoperative Sepsis	PSI 14 – Postoperative Wound Dehiscence	PSI 15 – Accidental Puncture or Laceration
1. Composite Value*	0.8099	—	—	—	—	—	—	—	—
2. Total Number of Eligible** Discharges (Denominator) at Your	—	2	5,293	3,060	437	1,432	139	119	5,396
3. Number of Outcomes (Numerator) [b]	—	0	0	1	0	7	1	2	5
4. Observed Rate per 1,000 Eligible** Discharges[b]	—	0.0000	0.0000	0.3268	0.0000	4.8883	7.1942	16.8067	0.9266
5. Expected Rate per 1,000 Eligible** Discharges [b]	—	INS	0.3653	0.3176	0.0263	4.6920	9.2184	2.0434	1.6453
6. Risk-Adjusted Rate per 1,000 Eligible** Discharges[b]	—	INS	0.0000	0.4208	0.0000	4.5531	9.2120	15.3661	1.3674
7. Smoothed Rate per 1,000 Eligible** Discharges [b] [c]	—	INS	0.3299	0.3596	0.0933	4.5959	10.0082	2.7687	1.5700
9. National Risk-Adjusted Rate per 1,000 Eligible** Discharges [b]	—	0.3504	0.4089	0.2566	0.0935	4.6735	10.2448	1.9113	1.9617
10. Measure's Weight in Composite [b]	—	0.0226	0.0708	0.0652	0.0011	0.2579	0.0742	0.0165	0.4917
11. Reliability Weight [b]	—	INS	0.1933	0.6272	0.0019	0.6444	0.2290	0.0637	0.6591



[11] If any of the component PSI measures have fewer than three eligible discharges, then the National risk-adjusted rate (Table 3, Row 9 of the HSR) is used for calculating that component PSI when calculating the PSI 90 composite measure.

[12] PSI 90 composite measure calculations you complete in Step 5e may be different from the PSI 90 composite measure index value in Table 2 of the HSR out to the fourth decimal due to differences in rounding between Excel and SAS. When CMS calculates the PSI 90 composite measure for the HAC Reduction Program, it uses the statistical software SAS, and the value in cell B7 of your HSR is based on this SAS calculation. The value that you calculate in step 5e is using Excel.

B. Replicating Your Hospital's PSI 90 Composite Measure Score and Domain 1 Score

Start on the tab titled "Table 2. Domain Scores" in your HSR.

D1.1. First, determine your hospital's PSI 90 composite value from the Measure Results column (Table 2, Row 7 of the HSR) highlighted in Figure 9.

D1.2. Next, determine the performance decile in which your hospital's PSI 90 composite value (step D1.1) falls from the Performance Decile column (Table 2, Row 7 of the HSR) highlighted in Figure 9.

D1.3. Then, refer to Table A in Section I.B of this document to validate your performance decile and to determine the number of points associated with your hospital's performance decile; this is your hospital's PSI 90 composite measure score. The points assigned to the PSI 90 composite measure should match the Points Assigned Based on the Decile column (Table 2, Row 7 of the HSR) highlighted in Figure 9. The PSI 90 composite measure score from step D1.3 is also your Domain 1 score (Table 2, Row 7 of the HSR) highlighted in Figure 9.

If your hospital has insufficient data ("INS" in Table 2, Row 7 of the HSR) for the PSI 90 composite measure, then your hospital will not receive a PSI 90 composite measure result, measure score, or Domain 1 score, and your hospital's Total HAC Score will be based exclusively on your hospital's Domain 2 score (if present).

Figure 9. Domain 1 and Domain 2 Score Replication

	A	B	C	D	E
1	Table 2: Your Hospital's Domain 1 and Domain 2 Performance for the FY 2015 HAC Reduction Program				
2	HOSPITAL NAME				
3	Domain 1: PSI 90 Composite Measure from July 1, 2011 through June 30, 2013				
4	Domain 2: CDC CLABSI & CAUTI Measures from January 1, 2012 through December 31, 2013				
5					
6	**Domain [a]**	**Measure Result [b]**	**Performance Decile [c]**	**Points Assigned Based on Decile (Measure Score) [d]**	**Domain Score [e]**
7	Domain 1 Score (PSI 90 Composite)	0.8099	5th	5	5.0000
8	Domain 2 Score	—	—	—	8.5000
9	CLABSI	0.949	9th	9	—
10	CAUTI	1.439	8th	8	—

C. Replicating Your Hospital's CLABSI and CAUTI Measure Scores and Domain 2 Score

Start on the tab titled "Table 2. Measure Scores" in your HSR. If your hospital has a CLABSI SIR in cell B10 of Table 2, follow steps D2.1 through D2.3, otherwise skip to step D2.4.

D2.1. First, determine your hospital's CLABSI SIR from the Measure Result column (Table 2, Row 9 of the HSR) highlighted in Figure 9.

D2.2. Next, refer to Table B in Section I.B of this document to determine the performance decile in which your hospital's CLABSI SIR (step D2.1.) falls. This is your hospital's CLABSI performance decile, which will be the same as cell C9 (Table 2, Row 9 of the HSR) highlighted in Figure 9.

D2.3. Then refer to Table B in Section I.B to determine the number of points associated with your hospital's CLABSI performance decile. This is your hospital's measure score for CLABSI, which will match cell D9 (Table 2, Row 9 of the HSR) highlighted in Figure 9.

If your hospital did not receive a CLABSI SIR in cell B10 of Table 2, follow steps D2.4 and D2.5.

D2.4. If cell B9 of Table 2 of your HSR contains an "INS" (i.e., insufficient data to calculate the CLABSI SIR), "NF" (i.e., not indicating having any active ICU locations in NHSN for at least one quarter during the reporting period for measure), "WV" (i.e., submitted HAI Exception Form for CLABSI), or "NMR" (i.e., did not submit data for this measure and either (1) did not receive a Domain 1 score or (2) submitted data for CAUTI), then CLABSI will not factor into your hospital's Domain 2 score because a CLABSI measure result was not calculated for your hospital.

D2.5. If cell B9 of Table 2 of your HSR contains a "MAX" (i.e., maximum 10 points for non-submission of CLABSI data), then 10 points will be your hospital's measure score for CLABSI because your hospital did not submit data for either of the Domain 2 measures, AND none of the following circumstances apply:

- Your hospital did not receive a calculated Domain 1 score
- Your hospital completed an HAI Exception Form for both Domain 2 measures
- Your hospital did not indicate having any active ICU locations in NHSN for at least one quarter during the reporting period for both Domain 2 measures

Start on the tab titled "Table 2. Measure Scores" in your HSR. If your hospital received a CAUTI SIR in cell B10 of Table 2, follow steps D2.6 through D2.8., otherwise skip to step D2.9.

D2.6. First, determine your hospital's CAUTI SIR from the Measure Result column (Table 2, Row 10 of the HSR) highlighted in Figure 9.

D2.7. Next, refer to Table C in Section I.B to determine the performance decile in which your hospital's CAUTI SIR (step D2.6.) falls. This is your hospital's CAUTI performance decile, which will be the same as is indicated in cell C10 (Table 2, Row 10 of the HSR) highlighted in Figure 9.

D2.8. Then refer to Table C in Section I.B to determine the number of points associated with your hospital's CAUTI performance decile. This is your hospital's measure score for CAUTI, which will match cell D10 (Table 2, Row 10 of the HSR) highlighted in Figure 9.

If your hospital did not receive a CAUTI SIR in cell B10 of Table 2, follow steps D2.9 and D2.10.

D2.9. If cell B10 of Table 2 of your HSR contains an "INS" (i.e., insufficient data for CAUTI), "NF" (i.e., not indicating having any active ICU locations in NHSN for at least one quarter during the reporting period for measure), "WV" (i.e., submitted HAI Exception Form for CAUTI), or "NMR" (i.e., did not receive a Domain 1 score or submitted data for CLABSI), then CAUTI will not factor into your hospital's Domain 2 score because a CAUTI measure result was not calculated for your hospital.

D2.10. If cell B10 of Table 2 of your HSR contains a "MAX" (i.e., maximum 10 points for non-submission of CAUTI data), then 10 points will be your hospital's measure score for CAUTI because your hospital did not submit data for either of the Domain 2 measures, AND none of the following circumstances apply:

- Your hospital did not receive a calculated Domain 1 score
- Your hospital completed an HAI Exception Form for both Domain 2 measures
- Your hospital did not indicate having any active ICU locations in NHSN for at least one quarter during the reporting period for both Domain 2 measures

D2.11. If your hospital was assigned points for both CLABSI and CAUTI, then add together your hospital's measure score for CLABSI and CAUTI and divide by two. This is your hospital's Domain 2 score. Otherwise, if your hospital received a measure score for only one of the Domain 2 measures, then your hospital's Domain 2 score equals the single measure score. If your hospital did not receive a measure score for either measure, then your hospital will not receive a Domain 2 score, and your hospital's Total HAC Score will be based exclusively on your hospital's Domain 1 score (if present). The Domain 2 score you calculate should match the Domain Score column (Table 2, Row 8 of the HSR).

D. Replicating Your Hospital's Total HAC Score

Start on the tab titled "Table 1. Total HAC Score" in your HSR.

THS.1. Multiply your hospital's Domain 1 score (result from Step D1.3 above) by the weight of the Domain 1 score for your hospital (Table 1, Row 5 of the HSR) highlighted in Figure 10. Refer to Appendix Tables A.1 and A.2 for a comprehensive summary of the weights applied to each domain score to calculate the Total HAC Score for different scenarios. The result should match the Domain 1 Contribution to Total HAC Score (Table 1, Row 5 of the HSR) highlighted in Figure 10.

THS.2. Multiply your hospital's Domain 2 score (result from step D2.11 above) by the weight of the Domain 2 score for your hospital (Table 1, Row 5 of the HSR) highlighted in Figure 10. Refer to Appendix Tables A.1 and A.2 for a comprehensive summary of the weights applied to each domain score to calculate the Total HAC Score for different scenarios. The result should match the Domain 2 Contribution to Total HAC Score (Table 1, Row 5 of the HSR) highlighted in Figure 10.

THS.3. Sum the results from steps THS.1 and THS.2. This sum should match your hospital's Total HAC Score (Table 1, Row 5 of the HSR). If this value is greater than the payment threshold (75th percentile), 7.0000, then your hospital is subject to a payment reduction.

Figure 10. Total HAC Score Replication

	A	B	C	D	E	F	G	H	I
1	Table 1: Your Hospital's Performance on Total HAC Score for the FY 2015 HAC Reduction Program								
2	HOSPITAL NAME								
3									
4	Domain 1 Score [a]	Weight of Domain 1 Score for Your Hospital [b]	Domain 1 Contribution to Total HAC Score [c]	Domain 2 Score [d]	Weight of Domain 2 Score for Your Hospital [e]	Domain 2 Contribution to Total HAC Score [f]	Your Hospital's Total HAC Score [g]	Payment Reduction Threshold (75th Percentile) [h]	Subject to Payment Reduction (Yes/No) [i]
5	5.0000	0.35	1.7500	8.5000	0.65	5.5250	7.2750	7.0000	Yes

APPENDIX A

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Table A.1. Scoring Methodology for Possible Scenarios When Hospital Has *Insufficient* Data to Calculate PSI 90

Which measure contributes to Domain 1	Domain 2: CLABSI	Domain 2: CAUTI	Which measure(s) contribute to Domain 2	Domain 1 weight in Total HAC Score	Domain 2 weight in Total HAC Score
NDS	No ICU Location (NF)	No ICU Location (NF)	NDS	N/A	N/A
NDS	No ICU Location (NF)	Waiver (WV)	NDS	N/A	N/A
NDS	No ICU Location (NF)	Insufficient data (INS)	NDS	N/A	N/A
NDS	No ICU Location(NF)	Sufficient data	CAUTI	0.00	1.00
NDS	No ICU Location (NF)	No submitted data (NMR)	NDS	N/A	N/A
NDS	Waiver (WV)	No ICU Location (NF)	NDS	N/A	N/A
NDS	Waiver (WV)	Waiver (WV)	NDS	N/A	N/A
NDS	Waiver (WV)	Insufficient data (INS)	NDS	N/A	N/A
NDS	Waiver (WV)	Sufficient data	CAUTI	0.00	1.00
NDS	Waiver (WV)	No submitted data	NDS	N/A	N/A
NDS	Insufficient data (INS)	No ICU Location (NF)	NDS	N/A	N/A
NDS	Insufficient data (INS)	Waiver (WV)	NDS	N/A	N/A
NDS	Insufficient data (INS)	Insufficient data (INS)	NDS	N/A	N/A
NDS	Insufficient data (INS)	Sufficient data	CAUTI	0.00	1.00
NDS	Insufficient data (INS)	No data submitted (NMR)	NDS	N/A	N/A
NDS	Sufficient data	No ICU Location (NF)	CLABSI	0.00	1.00
NDS	Sufficient data	Waiver (WV)	CLABSI	0.00	1.00
NDS	Sufficient data	Insufficient data (INS)	CLABSI	0.00	1.00
NDS	Sufficient data	Sufficient data	[CLABSI+CAUTI]/2	0.00	1.00
NDS	Sufficient data	No data submitted (NMR)	CLABSI	0.00	1.00
NDS	No data submitted (NMR)	No ICU Location (NF)	NDS	N/A	N/A
NDS	No data submitted (NMR)	Waiver (WV)	NDS	N/A	N/A
NDS	No data submitted (NMR)	Insufficient data (INS)	NDS	N/A	N/A
NDS	No data submitted (NMR)	Sufficient data	CAUTI	0.00	1.00
NDS	No data submitted (NMR)	No data submitted (NMR)	NDS	N/A	N/A

Notes:

N/A = Not applicable because Total HAC Score not calculated because hospital did not receive a calculated Domain 1 or Domain 2 score.

NDS = No domain score calculated because CMS did not assign a measure score to any measures in the domain.

INS = Measure results not available because hospital reported data but did not have sufficient data (i.e., had less than one predicted HAI) to calculate results. This measure will not factor into hospital's Domain 2 score or Total HAC Score.

NF = Measure results not available because hospital did not indicate having any active ICU locations in NHSN for at least one quarter during the reporting period. This measure will not factor into hospital's Domain 2 score or Total HAC Score.

NMR = Measure results not available because hospital did not submit data for this measure. This measure will not factor into hospital's Domain 2 score or Total HAC Score because the hospital either did not receive a Domain 1 score or submitted data for the other Domain 2 measure.

WV = Measure results not available because hospital submitted HAI Exception Form. This measure will not factor into hospital's Domain 2 score or Total HAC Score.

Table A.2. Scoring Methodology for Possible Scenarios When Hospital Has ***Sufficient*** Data to Calculate PSI 90

Which measure contributes to Domain 1	Domain 2: CLABSI	Domain 2: CAUTI	Which measure(s) contribute to Domain 2	Domain 1 weight in Total HAC Score	Domain 2 weight in Total HAC Score
PSI 90	No ICU Location (NF)	No ICU Location (NF)	NDS	1.00	0.00
PSI 90	No ICU Location (NF)	Waiver (WV)	NDS	1.00	0.00
PSI 90	No ICU Location (NF)	Insufficient data (INS)	NDS	1.00	0.00
PSI 90	No ICU Location (NF)	Sufficient data	CAUTI	0.35	0.65
PSI 90	No ICU Location (NF)	No data submitted (MAX)	CAUTI(MAX)*	0.35	0.65
PSI 90	Waiver (WV)	No ICU Location (NF)	NDS	1.00	0.00
PSI 90	Waiver (WV)	Waiver (WV)	NDS	1.00	0.00
PSI 90	Waiver (WV)	Insufficient data (INS)	NDS	1.00	0.00
PSI 90	Waiver (WV)	Sufficient data	CAUTI	0.35	0.65
PSI 90	Waiver (WV)	No data submitted (MAX)	CAUTI(MAX)	0.35	0.65
PSI 90	Insufficient data (INS)	No ICU Location (NF)	NDS	1.00	0.00
PSI 90	Insufficient data (INS)	Waiver (WV)	NDS	1.00	0.00
PSI 90	Insufficient data (INS)	Insufficient data (INS)	NDS	1.00	0.00
PSI 90	Insufficient data (INS)	Sufficient data	CAUTI	0.35	0.65
PSI 90	Insufficient data (INS)	No data submitted (NMR)	NDS	1.00	0.00
PSI 90	Sufficient data	No ICU Location (NF)	CLABSI	0.35	0.65
PSI 90	Sufficient data	Waiver (WV)	CLABSI	0.35	0.65
PSI 90	Sufficient data	Insufficient data (INS)	CLABSI	0.35	0.65
PSI 90	Sufficient data	Sufficient data	[CLABSI+CAUTI]/2	0.35	0.65
PSI 90	Sufficient data	No data submitted (NMR)	CLABSI	0.35	0.65
PSI 90	No data submitted (MAX)	No ICU Location (NF)	CLABSI(MAX)*	0.35	0.65
PSI 90	No data submitted (MAX)	Waiver (WV)	CLABSI(MAX)	0.35	0.65
PSI 90	No data submitted (NMR)	Insufficient data (INS)	NDS	1.00	0.00
PSI 90	No data submitted (NMR)	Sufficient data	CAUTI	0.35	0.65
PSI 90	No data submitted (MAX)	No data submitted (MAX)	[CLABSI(MAX) + CAUTI(MAX)]/2	0.35	0.65

Notes:

*Before assigning 10 points, CMS will confirm that the hospital correctly submitted data on its number of ICU locations in NHSN. If the hospital would have been recognized as having zero ICU locations for CLABSI and CAUTI if it had properly submitted data on its number of ICU locations in NHSN, then the hospital will be considered as having zero ICU locations for both measures and will not receive the maximum 10 points.

NDS = No domain score calculated because CMS did not assign a measure score to any measures in the domain.

INS = Measure results not available because hospital reported data but had insufficient data (i.e., less than one predicted HAIs) to calculate results. This measure will not factor into hospital's Domain 2 score or Total HAC Score.

NF = Measure results not available because hospital did not indicate having any active ICU locations in NHSN for at least one quarter during the reporting period. This measure will not factor into hospital's Domain 2 score or Total HAC Score.

NMR = Measure results not available because hospital did not submit data for this measure. This measure will not factor into hospital's Domain 2 score or Total HAC Score because the hospital either did not receive a Domain 1 score or submitted data for the other Domain 2 measure.

MAX = Measure results not available because hospital did not submit data for this measure. The hospital will receive the maximum 10 points for Domain 2 because all of the following circumstances apply: (1) hospital had a calculated Domain 1 score, (2) hospital did not have a completed HAI Exception Form that applies to both CLABSI and CAUTI, (3) hospital did not indicate having any ICU locations in NHSN for at least one quarter during the reporting period for both CLABSI and CAUTI, and (4) hospital did not submit data for the other Domain 2 measure.

WV = Measure results not available because hospital submitted HAI Exception Form. This measure will not factor into hospital's Domain 2 score or Total HAC Score.