

HAC Reduction Program Analysis – Federal Fiscal Year (FFY) 2017 Program

Update Based on Hospital Compare's June 2016 (2nd quarter 2016) Data Release

-Version 1, September 2016-

Analysis Description

The Hospital-Acquired Condition (HAC) Reduction Program Analysis is intended to provide hospitals with a preview of the potential impact of the FFY 2017 Medicare inpatient HAC Reduction Program, based on publicly available data and the program rules established by the Centers for Medicare and Medicaid Services (CMS).

The reports included in this analysis evaluate hospital performance under the FFY 2017 program using the 2nd quarter 2016 data update of Hospital Compare. The analysis includes estimates and details on how HAC measures and domain scores are calculated and how payment penalties are determined and applied under the program. Also provided are reports detailing how hospitals would have performed had CMS implemented for FFY 2017 its adopted future measure scoring methodology using Z-scores.

Due to data limitations, this analysis does not use the data for the same performance periods that CMS will use to calculate its final FFY 2017 HAC Program scores. That data will not be available on Hospital Compare until the start of the 2017 federal fiscal year. The estimated scores and dollar impacts shown in this analysis will differ from the final CMS calculations and may differ from those provided by other organizations due to differences in source data and analytic methods.

Data Sources

This analysis utilizes data published by CMS on its Hospital Compare website at <http://www.hospitalcompare.hhs.gov/>.

The HAC Reduction Program for FFY 2017 will assess hospital performance using Medicare claims and Centers for Disease Control (CDC) measures grouped into two domains:

- Domain 1 (AHRQ Measure derived from Medicare FFS claims):
 - PSI-90: Patient Safety Indicator (PSI) Composite—the PSI-90 measure is made up of 8 individual PSI measures. This analysis provides the PSI-90 composite ratio and does not provide the individual PSIs. CMS will be using the AHRQ Quality Indicators software, version 5.0.1 for the 2017 program. This analysis includes PSI-90 ratios using the same software versioning as the actual program.
- Domain 2 (CDC chart-abstracted measures):
 - HAI_1a: Central Line Associated Blood Stream Infection (CLABSI) (*ICU only*)
 - HAI_2a: Catheter Associated Urinary Tract Infection (CAUTI) (*ICU only*)
 - Pooled Surgical Site Infection (SSI) Standardized Infection Ratio (SIR) – this measure combines performance on two individual measures: SSI-Colon (HAI_3) and SSI-Abdominal Hysterectomy (HAI_4). Observed infections for both SSI measures are divided by expected infections for both measures to calculate a pooled SIR.
 - HAI_5: Methicillin-resistant Staphylococcus Aureus (MRSA)
 - HAI_6: Clostridium difficile (C.diff.)

The data for all of the HAC measures in this analysis come from the 2nd quarter 2016 update of Hospital Compare. The table below describes the performance periods analyzed in this analysis compared to the performance periods that will be evaluated for the FFY 2017 HAC program years:

FFY 2017 Program Timeline

		2013					2014					2015					2016					2017																											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Actual Program		Domain 1 - AHRQ Claims Based Measure															FFY 2017 Payment Adjustment																																
							Domain 2 - CDC Chart Abstracted Measures																																										
This Analysis		Domain 1 - AHRQ Claims Based Measure															FFY 2017 Payment Adjustment																																
							Domain 2 - CDC Chart Abstracted Measures																																										

Estimated IPPS operating and capital payments and HAC penalties were calculated based on the hospital payment data provided by CMS in its FFY 2017 IPPS final rule Impact File. FFY 2017 payment estimates are reduced by an inflation factor to estimate revenues for FFYs 2015 and 2016.

By law, hospitals determined to be in the top (i.e. worst performing) quartile for total HAC scores will be penalized for 1.0% of their total Medicare IPPS operating, uncompensated care and capital payments, inclusive of Disproportionate Share Hospital (DSH), Indirect Medical Education (IME), Low Volume Hospital (LVH) and any payment adjustment(s) made under the Readmission Reduction Program (RRP) and/or Value-Based Purchasing (VBP) Program. The penalty is also applied to outlier payments (if applicable). Due to year to year variability, impacts shown in this analysis do not take into account penalty adjustments to outlier payments.

Program Scoring and Impact Estimates

Under the program rules established by the CMS for the HAC Penalty Program, for each individual measure, and for all program-eligible hospitals, the HAC rates are grouped into deciles for scoring. Eligible hospitals are awarded points for each measure based on their national decile ranking according to the chart to the right.

If Hospital A's rate falls into this percentile	Then assign this number of points
1st-10th	1
11th-20th	2
21st-30th	3
31st-40th	4
41st-50th	5
51st-60th	6
61st-70th	7
71st-80th	8
81-90th	9
91st-100th	10

CMS' decile calculations for the program may differ from the deciles provided in this analysis for several reasons: differences in methodologic approach in assigning deciles, differing lists of excluded hospitals, and differing performance periods.

Similar to the Medicare inpatient VBP program, hospitals can achieve between 1 to 10 points on each measure; however, under the HAC Reduction Program lower scores are better and a score of 10 is the worst score.

The program requires that hospitals meet certain minimum standards for inclusion of HAC measures. The following describes the minimum requirements for measure scoring in each domain:

- **Domain 1 (AHRQ claims-based measure):** Hospitals are required to have a minimum of 3.0 predicted (i.e. expected) infections for at least one of the 8 individual PSI measures during the 24-month performance period.
- **Domain 2 (CDC chart-abstracted measures):** Hospitals are required to have a minimum of 1.0 predicted (i.e. expected) infection during the 24-month performance period in order to be scored on a measure. To receive a score for the pooled SSI measure, the combined expected infections for both SSI-Colon and SSI-Abdominal Hysterectomy must be greater than 1.0 instead.

After measure points are determined, overall scores for each domain are calculated by averaging the measure scores included in that domain. If a hospital does not have data or does not meet the minimum requirements to score points on a measure, that measure is not included in the calculation of the overall domain score.

Each domain is assigned a weight to calculate the total HAC score. The following weights will be applied to each domain to calculate a hospital's total HAC score for the applicable program year:

- FFY 2017
 - Domain 1 (AHRQ claims-based measure): 15%
 - Domain 2 (CDC chart-abstracted measures): 85%

If a hospital does not have data for a domain, the total HAC score is based solely on the remaining, useable domain. Hospitals without a valid score in either domain are not eligible for the program.

Once total HAC scores for all program-eligible hospitals are determined, CMS will calculate the 75th percentile score to determine the top quartile (worst) of program-eligible hospitals. Hospitals with a total HAC score falling at or above the 75th percentile will receive the payment penalty of 1.0%.

When CMS determines the 75th percentile score, several hospitals may be tied at that score, causing the number of penalized hospitals to exceed 25% of the total. If/when this occurs, CMS will adjust the penalty threshold to ensure that no more than 25% of program eligible hospitals are penalized. In order to be conservative, and to alert hospitals that are very close to the penalty score, this analysis does not adjust for ties. As a result, 25.58% of hospitals nationally receive the penalty in this analysis.

Z-Score Proxy Reports

Beginning with the FFY 2018 HAC program, CMS will assign winsorized z-scores to measures; instead of the decile method that assigns a score of 1 through 10 used for FFYs 2015-2017. A z-score represents how different a hospital performed relative to the national average, in terms of standard deviations from the mean, and is represented by the formula:

$$Z\text{-Score} = \frac{\text{Hospital's Measure Performance} - \text{Mean Performance for All Hospitals}}{\text{Standard Deviation for All Hospitals}}$$

Z-scores, mean performance, and standard deviation are calculated after nationwide hospital performance has been winsorized. Winsorization is intended to remove the effects of extreme outliers from a dataset by selecting a specific interval of data, and assigning outliers to the minimum or maximum of that interval. The winsorization method adopted by CMS sets all values below the 5th percentile, to the 5th percentile value. Likewise, all values above the 95th percentile are set to the 95th percentile value.

As with the prior HAC methodology, lower scores are better, with negative values representing performance below (better than) the national average, while positive values are assigned to scores that are above (worse than) the national average.

The calculation of domain scores, and determination of the hospitals to be penalized, remains unchanged.

Measures and data utilized by the FFY 2017 HAC program were used as a proxy for FFY 2018 in this analysis in order to provide hospitals with a view of what a current HAC score would look like in the future, assuming all data remained constant. The FFY 2018 HAC program will use the following measures:

- Domain 1 (AHRQ Measure derived from Medicare FFS claims):
 - **PSI-90: Patient Safety and Adverse Events Composite—the PSI-90 measure is made up of 10 individual PSI measures.**

- Domain 2 (CDC chart-abstracted measures):
 - **HAI_1: Central Line Associated Blood Stream Infection (CLABSI) (ICU and Select Wards)**
 - **HAI_2: Catheter Associated Urinary Tract Infection (CAUTI) (ICU and Select Wards)**
 - Pooled Surgical Site Infection (SSI) Standardized Infection Ratio (SIR) – this measure combines performance on two individual measures: SSI-Colon (HAI_3) and SSI-Abdominal Hysterectomy (HAI_4). Observed infections for both SSI measures are divided by expected infections for both measures to calculate a pooled SIR.
 - HAI_5: Methicillin-resistant Staphylococcus Aureus (MRSA)
 - HAI_6: Clostridium difficile (C.diff.)

The new, 10-component, PSI-90 measure has not yet been released (not expected until the summer of 2017 at the earliest); and the revised CAUTI and CLABSI measures currently only have 9 months of data available, out of the 24 required for the program. As a result, penalty estimates for FFY 2018 are not yet provided, but will be when more data become available.

Under the z-score method, 24.99% of hospitals nationally would receive a penalty in this analysis.

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