

Step-by-Step Calculations for Value-Based Purchasing

Understanding the Fiscal Year (FY) 2019 Hospital Value-Based Purchasing (VBP) Program Percentage Payment Summary Report (PPSR)

Overview

Hospitals participating in the Hospital VBP Program have the opportunity to review their FY 2019 PPSR. This quick reference guide offers an overview of how CMS calculates scores and awards points based on performance standards. The step-by-step process below summarizes scoring methods that determine the Total Performance Score (TPS) located in a hospital's PPSR. The PPSR displays the hospital's TPS and value-based incentive payment adjustment factor that will be applied in FY 2019.

Step 1: Calculate Achievement Points and Improvement Points for Each Measure

Step 2: Determine the Measure or Dimension Score

Step 3: Calculate the Unweighted Domain Scores

Step 4: Determine the Domain Weights

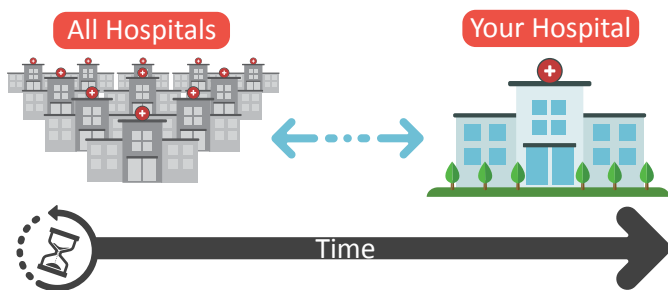
Step 5: Calculate the Weighted Domain Scores

Step 6: Calculate the Total Performance Score

Please note the values displayed in this guide serve as examples and are not reflective of any specific hospital's PPSR.

Step 1: Calculate Achievement Points and Improvement Points for Each Measure

Hospitals will receive two scores on each measure and dimension: one for achievement and one for improvement. When calculating achievement points and improvement points, CMS rounds the resulting value to the nearest whole number. CMS will only score the measures that meet the minimum data requirements. The minimum data requirements are found on the [Eligibility - Hospital VBP Program](#) page on *QualityNet*. If a hospital only meets the minimum data required during the performance period (and not the baseline period), only achievement points will be scored. CMS finalized a modified version of achievement and improvement point formulas for calculating the Medicare Spending per Beneficiary (MSPB) measure in the FY 2012 inpatient prospective payment system (IPPS) final rule (76 FR 51654–51656).



Achievement Points

Achievement points are awarded by comparing an individual hospital's rates during the performance period to all hospital's rates from the baseline period:

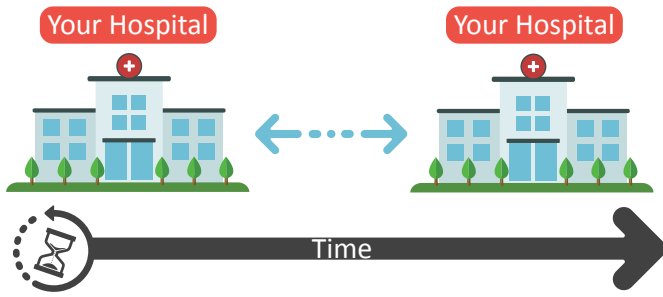
- Hospital rate at or above the benchmark = 10 achievement points
- Hospital rate below the achievement threshold = 0 achievement points

- Hospital rate equal to or greater than the achievement threshold but less than the benchmark = 1–9 achievement points; use the formula below:

$$\left(9 \times \frac{\text{Performance Period Rate} - \text{Achievement Threshold}}{\text{Benchmark} - \text{Achievement Threshold}} \right) + 0.5$$

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Improvement Points

Improvement points are awarded by comparing an individual hospital's rates during the performance period to that same individual hospital's rates from the baseline period:

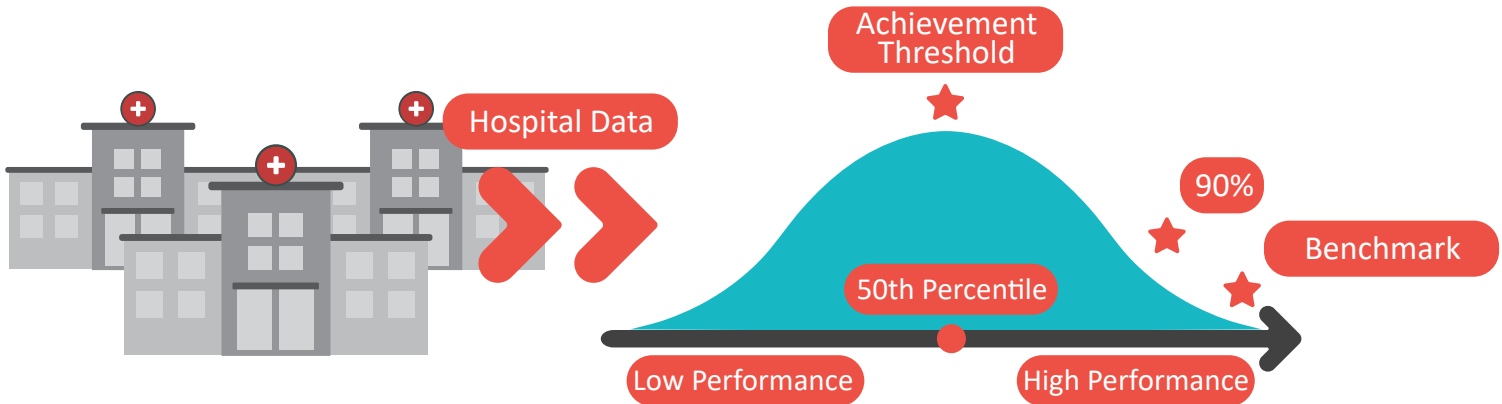
- Hospital rate at or above the benchmark = 9 improvement points
- Hospital rate at or below its baseline period rate = 0 improvement points

• Hospital rate greater than the baseline period score but below the benchmark = 0–9 improvement points; use the formula below:

$$\left(10x \frac{(\text{Performance Period Rate} - \text{Baseline Period Rate})}{(\text{Benchmark} - \text{Baseline Period Rate})} \right) - 0.5$$

Performance Standards: Benchmark and Achievement Threshold

A hospital's performance in achievement and improvement points will be based on its performance in comparison to the following performance standards. The FY 2019 performance standards are listed on the [Performance Standards - Hospital VBP Program](#) page on *QualityNet*.



The benchmark is the average (mean) performance of the top 10 percent of hospitals during the baseline period, while the achievement threshold is the performance at the 50th percentile (median) of hospitals during the baseline period.

Step 2: Determine the Measure or Dimension Score

CMS compares the rounded achievement and improvement scores and uses whichever is greater.

Measure	Achievement Points	Improvement Points
A	6	8
B	9	4
C	4	7

$$8+9+7=24$$

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Safety: Surgical Site Infection (SSI) Measure Only

CMS awards achievement and improvement points to each stratum of the SSI measure, then computes a weighted average of the measure score to each stratum by predicted infections. The weighted average of the points awarded will be the hospital's overall SSI measure score.

Note: If a hospital does not have the minimum of 1,000 predicted infections in one of the strata, the other strata meeting the minimum will carry 100% of the measure score weight.

$$\left(\frac{(\text{Colon Measure Score} \times \text{Colon Predicted Infections}) + (\text{Abdominal Hysterectomy Measure Score} \times \text{Abdominal Hysterectomy Infections})}{(\text{Colon Predicted Infections} + \text{Abdominal Hysterectomy Predicted Infections})} \right)$$

Step 3: Calculate the Unweighted Domain Scores

Clinical Care, Safety, and Efficiency and Cost Reduction Domains

CMS normalizes the Clinical Care, Safety, and Efficiency and Cost Reduction Domains to convert a hospital's earned points (the sum of the measure scores) to a percentage of total points that were possible (10 points per measure scored). The minimum number of measures required to calculate a domain score are found on the [Eligibility - Hospital VBP Program](#) page on *QualityNet*.

Result of Step 2 10 x Number of Measures Scored in Domain Normalized Score

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$$[24 \div (10 \times 3)] \times 100 = 80$$

Person and Community Engagement Domain

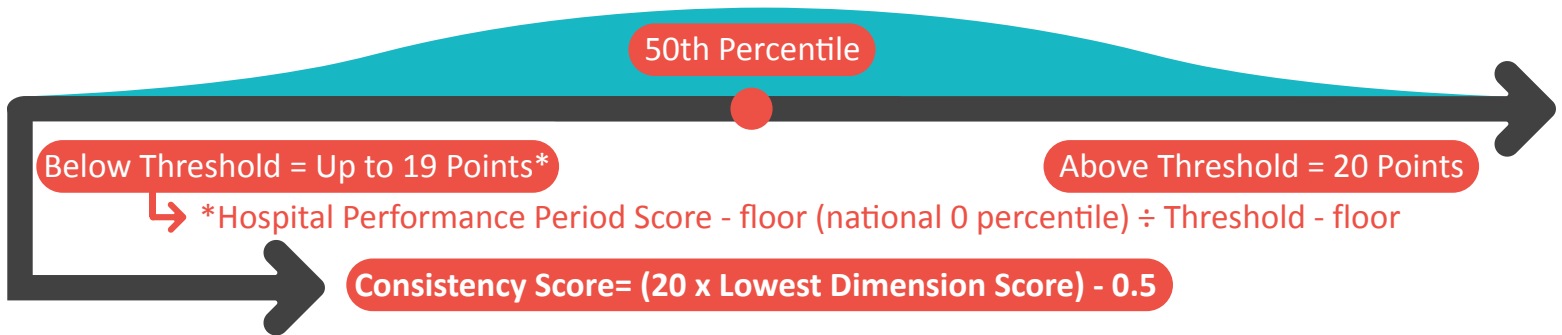
CMS calculates the HCAHPS Base Score by combining a hospital's Base Score and the hospital's consistency points. A minimum of 100 completed surveys during the performance period is required to calculate a score for the Person and Community Engagement Domain.

- The **Base Score** is calculated by summing the eight HCAHPS dimension scores (0–80).
- **Consistency points** are awarded by comparing an individual hospital's HCAHPS Survey dimension rates during the performance period to all hospitals' HCAHPS Survey rates from the baseline period.
- Determine the lowest dimension score using the Consistency Score Formula:
(20 multiplied by the lowest dimension score) minus 0.5
- Hospital's performance on all HCAHPS dimensions is at or above achievement threshold
= 20 consistency points

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- Any HCAHPS dimension rate is at or below the worst-performing hospital's performance on that dimension during the baseline period = 0 consistency points
- Lowest HCAHPS dimension score is greater than the worst-performing hospital's rate but less than the achievement threshold = 0–20 consistency points

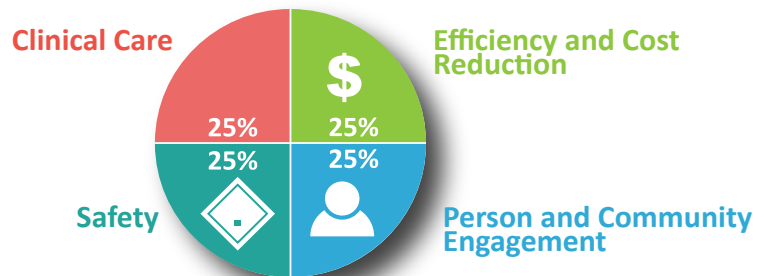


Add the HCAHPS consistency score to the HCAHPS Base Score to get the Clinical Care, Safety, Efficiency and Cost Reduction, and the Person and Community Engagement Domain Score.

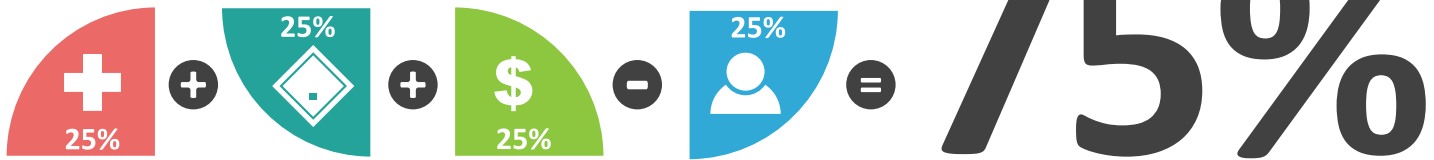
$$\text{HCAHPS Consistency Score} + \text{HCAHPS Base Score} = \text{Domain Score}$$

Step 4: Determine the Domain Weights

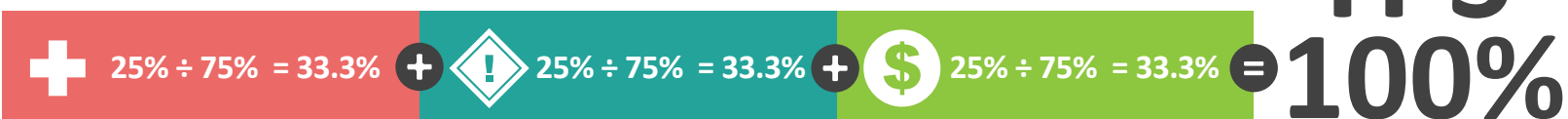
CMS weights each domain at 25% of the Total Performance Score; however, CMS allows hospitals with sufficient data in at least three out of the four domain scores to receive a TPS. Hospitals that only have scores in three domains will have their scores proportionally reweighted using the steps below:



A Sum eligible measure weights (25% + 25% + 25% - 25%) =



Divide the original Domain Weights by the sum of the result listed in A, then sum the total of the Weighted Domain Scores (33.3% + 33.3% + 33.3%) =







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Step 5: Calculate the Weighted Domain Scores

CMS calculates a hospital's Weighted Domain Score by multiplying the Unweighted Domain Score by the Domain Weight determined in step 4.

Domain	Unweighted Domain Score	Domain Weight	Weighted Domain Score
 Clinical Care	75.00	25%	18.750
 Person and Community Engagement	62.00	25%	15.500
 Safety	55.00	25%	13.750
 Efficiency and Cost Reduction	100.00	25%	25.000

Step 6: Calculate the Total Performance Score

CMS calculates the Total Performance Score by summing the Weighted Domain Scores.

Domain	Unweighted Domain Score	Domain Weight	Weighted Domain Score
 Clinical Care	75.00	25%	18.750
 Person and Community Engagement	62.00	25%	15.500
 Safety	55.00	25%	13.750
 Efficiency and Cost Reduction	100.00	25%	25.000

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