

Methodology for Domain and Overall Rating Calculations for 2016 Regional Consumer Guides:

Step 1. Prepare data for Scoring

The measure set in this rating system includes 46 measure results. For some measures with more than one indicator, we will follow CMS's weighted average method to average each measure's individual indicator rates and calculate a measure score (see equation below). Indicators with larger denominators will contribute more to the scoring than indicators with smaller denominators.¹

The weighted average equation is as follows:

$$X = \frac{\sum_1^i n_i * x_i}{\sum_1^i n_i}$$

Where X is the final measure score that is the weighted average, x_i is the indicator score, and n_i is the indicator denominator.

Step 2. Standardize Measure Scores

Measure results need to be standardized before the calculation of domain scores. Depending on the method of data collection, different statistics are used to create the standardized measure scores. More specifically, Z score is used for hybrid measures, H statistic from analysis of proportion (ANOP) is used for administrative measures and student's T statistic is used for the CAHPS measures.

For hybrid measures, the plan's standardized score is calculated using the z-score.

Standardized Score = (plan rate – statewide rate) / SQRT [(statewide rate * (1 –statewide rate)) / plan denominator]

For, administrative measures, the plan's standardized score is calculated using the Nelson's h statistic from analysis of proportions (ANOP).

Standardized Score= (plan rate – statewide rate) / (SQRT [statewide rate*(1-statewide rate)] * SQRT [(statewide denominator – plan denominator) / (statewide denominator*plan denominator)])

For satisfaction measures, the plan's standardized score is calculated using the Student's T statistics. The statewide rate is the average of the plan rates.

Standardized Score = (plan rate – statewide rate) / Standard Error

¹ <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityInitiativesGenInfo/Downloads/QRS-and-QHP-Enrollee-Experience-Survey-Technical-Guidance-for-2016.pdf>

Step 3. Calculate Domain Scores and Ratings

A domain score is the average of the standardized measure scores within the domain. The t statistic of the domain score is calculated and converted to a star rating by the percentile rank inferred from student's t distribution (Figure1). The cut-point values for the 5-star scale are shown in Table1.

Figure1.

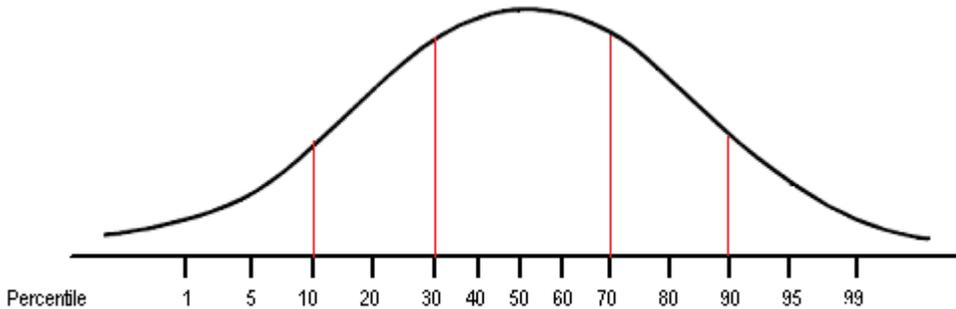


Table1.

Percentiles of T-statistic	Ratings
$0 \leq \text{Score Value} < 10$	1 star
$10 \leq \text{Score Value} < 30$	2 stars
$30 \leq \text{Score Value} < 70$	3 stars
$70 < \text{Score Value} < 90$	4 stars
$90 \leq \text{Score Value}$	5 stars

Step 4. Calculate Overall Rating

The overall rating is the average of the stars in the domain scores. The t statistic of the overall rating is calculated and converted to the 5-star scale by the percentile rank inferred from the student's t distribution. The method is the same as used in the domain ratings.