

## Attachment A

Methodology for Domain and Overall Rating Calculations for 2021 Regional Consumer Guides:

### **Step 1. Prepare Data for Scoring**

The measure set in this rating system includes 37 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.<sup>1</sup>

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. Measures that do not meet the minimum denominator size requirement for scoring are excluded from scoring.

Depending on the method of data collection, different statistics are used to create the standardized measure scores. More specifically, z statistic is used for hybrid measures, Nelson's  $h$  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-statistic.

$$\text{Standardized Score} = \frac{(\text{plan rate} - \text{statewide rate})}{\sqrt{\frac{\text{statewide rate} \times (1 - \text{statewide rate})}{\text{plan denominator}}}}$$

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

$$\text{Standardized Score} = \frac{(\text{plan rate} - \text{statewide rate})}{\sqrt{\text{statewide rate} \times (1 - \text{statewide rate})} \sqrt{\frac{(\text{statewide denominator} - \text{plan denominator})}{\text{statewide denominator} \times \text{plan denominator}}}}$$

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.

$$\text{Standardized Score} = \frac{(\text{plan rate} - \text{statewide rate})}{\text{Standard Error}}$$

<sup>1</sup> [https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-instruments/QualityInitiativesGenInfo/Downloads/2017\\_QRS-Measure\\_Technical\\_Specifications.pdf](https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-instruments/QualityInitiativesGenInfo/Downloads/2017_QRS-Measure_Technical_Specifications.pdf)

Note that the plan's standardized score for each measure is capped to no more than three times the average critical value for the domain. If a plan fails to submit valid data for a measure, the plan will be assigned a negative maximum capped value as the standardized score for that measure.

For hybrid measures, the plan's critical value is based on the 95% confidence interval for a normal distribution. The average critical value for each domain is the average of all the measures' critical values in that domain.

Critical Value=1.96

For administrative measures, the plan's critical value is based on  $1-\alpha/2$  percentage point of the Student's  $t$  distribution with  $N-n$  degrees of freedom,

where  $\alpha = 1 - 0.95^{\frac{1}{n}}$ ,  $N$ =the total number of members from all the plans that reported valid data (excluding plans with small sample size), and  $n$ =the number of plans that reported valid data for that measure (excluding plans with small sample size). The average critical value for each domain is the average of all the measures' critical values in that domain.

For satisfaction measures, the plan's critical value is based on the 95% confidence interval for the Student's  $t$  distribution, with  $n-1$  degrees of freedom, where  $n$ =the number of plans that reported valid data for that measure (excluding plans with small sample size). The average critical value for each domain is the average of all the measures' critical values in that domain.