

5. 2015 Composite Measure Methodology

Measurement and Reporting Committee

July 21, 2015



PURPOSE

As part of the Cost of Care reporting project, Q Corp is in the process of designing the consumer reporting for the Total Cost of Care (TCOC) index measures. Based on consumer research and recommendations from other communities that have reported the TCOC index, Q Corp has determined that it is crucial that any public reporting of cost information be accompanied by quality information. Q Corp has also determined that reporting an overall quality composite measure with the TCOC measures will make it easier for consumers to interpret the information correctly.

At Measurement and Reporting Committee meetings during the winter of 2014-2015, Q Corp staff presented several methodologies other organizations are using to report a composite quality score. The committee discussed features of the measures. Based on the feedback of the Committee, staff has put together the following methodology for calculating a composite measure that will be reported with the Total Cost of Care (TCOC) index measure on the www.PartnerForQualityCare.org website. Q Corp and the M&R Committee will revisit components of the Quality Composite methodology in the future during the annual measure review.

This report discusses components of the Quality Composite measure in the following sections:

- Measure Categories
- Measure Selection Criteria
- Measure Sets and Weighting for Adult and Pediatric Composites
- Handling Zero and Missing Values
- Standardization

MEASURE CATEGORIES TO INCLUDE IN QUALITY COMPOSITE

For the purposes of reporting a composite measure at the medical group or clinic level, Q Corp will include preventive, acute and chronic care measures. Patient experience measures will be incorporated into future composite measure calculations when the data becomes available at the medical clinic level.

CRITERIA FOR SELECTING MEASURES INCLUDED IN COMPOSITE

Staff considered the following criteria when selecting measures to be used in the overall composite:

- Measure must meet Measurement and Reporting Committee guidelines for measure selection
- Measure must impact public health
- Measure needs to apply to a broad subset of patients
- Measure must have been validated by medical groups and clinics
- Measure must be representative of medical group and clinic's practices
- There must be enough variation in performance for the measure that it can be used to differentiate among clinics

In addition, staff recommends separate measure sets for the adult and pediatric populations. This will align with the reporting of the Total Cost of Care measures. Medical groups and clinics that receive a Total Cost of Care report for the adult population will receive an Adult Quality Composite score; those who receive a Total Cost of Care report for their pediatric populations will receive a Pediatric Quality Composite score.

To identify the measures to include in the Adult and Pediatric Quality Composites, staff reviewed measures included in the Spring 2014 (R9) reporting cycle as these measures have been validated by medical groups and clinics. Note that only clinic with an attributed commercial population of 600 or more patients will receive a Total Cost of Care report. Likewise, this is the threshold that will be used for reporting the Quality Composite.

MEASURE SETS AND WEIGHTS FOR ADULT AND PEDIATRIC COMPOSITES

Below are the measure sets for the Adult and Pediatric Quality Composites. Measures in the Adult Composite were given a weight of 1.0 except for the two hospital admissions measures which were each given a weight of 0.5 so that overall hospital admissions are weighted 1.0 in total. Pediatric measures were given a weight of 1.0 except for developmental screening and well child visits for children 15 months and younger. These two measures were each given a weight of 0.5 because of committee concerns of overlap in what they measure.

Adult Measure Set:

Measure Name	Measure Category	Measure Weight
Breast Cancer Screening	Preventive	1.0
Cervical Cancer Screening	Preventive	1.0
Chlamydia Screening	Preventive	1.0
Diabetes A1C Testing	Chronic	1.0
Hospital Admissions for Ambulatory Sensitive Conditions – Acute	Acute	0.5
Hospital Admissions for Ambulatory Sensitive Conditions - Chronic	Chronic	0.5
Potentially Avoidable ED Visits, % of Total - Adult (age 18+)	Acute	1.0

Pediatric Measure Set:

Measure Name	Measure Category	Measure Weight
Adolescent Well-Child Visits	Preventive	1.0
Appropriate Antibiotics for Sore Throats	Acute	1.0
Chlamydia Screening	Preventive	1.0
Developmental Screenings in the First 36 Months of Life	Preventive	0.5
Well Child Visits 0-15 Months, 6 or more	Preventive	0.5
Well Child Visits 3 to 6 years	Preventive	1.0
Potentially Avoidable ED Visits, % of Total - Child (age 1-17)	Acute	1.0

HANDLING ZERO AND MISSING VALUES

Based on feedback from the Committee, Q Corp will adopt the NCQA methodology for filling in missing measure values when calculating composites:

- If the measure is missing due to small denominators, the Oregon average for that measure will be used to calculate the composite measure. Note the Q Corp Oregon average only includes data for clinics that publicly report a particular measure; i.e. the clinic must have at least three physicians, and meet the minimum denominator threshold of 30.
- If the measure is missing because a medical group or clinic did not provide requested data, the Oregon minimum value for that measure will be used to calculate the composite. Note that Q Corp will not be requesting data from medical groups or clinics in 2015, so this condition will not be applied. However, Q Corp may request data from medical groups or clinics in the future.

STANDARDIZATION

Q Corp staff tested a Z-scoring method using quality measure data from the Spring data (reporting period July 2012 – June 2013). Scores for clinics were translated into a Z-score which normalizes all measures onto one comparable scale. This methodology is similar to the methodology used by the Leapfrog Group to calculate their composite score¹.

For every clinic, a Z-score was calculated on each measure within the composite, using the following formulas:

- For all measures except PQI 91 and PQI 92: $[(\text{Clinic score} - \text{Oregon mean score}) / \text{Standard Deviation}]$
- For Potentially Avoidable ED Visits, PQI91 and PQI92: $[(\text{Oregon mean score} - \text{Clinic score}) / \text{Standard Deviation}]$

The final composite Z-Score for a clinic is the weighted average of all individual measure z-scores scaled to a mean of 1.0. Some adjustments are made to account for outliers.

Adult and Pediatric Quality Composites will be calculated for clinics that meet the threshold of 600 adult or pediatric commercial patients. The Oregon mean score will be imputed for any clinic missing a score. Q Corp will trim clinic scores to the 99th percentile to eliminate extreme values. Clinic scores for each measure will be converted to a Z-score for normalization. Z-scores will be truncated at -5.00 to ensure that one measure does not dominate a clinic's overall score in a negative way. Z-scores for a clinic will be weighted, added together, and divided by the total weight. In order to ensure each clinic is on a positive scale, a value of 5.0 will be added. Finally, the quality composite index score is calculated as follows:

Quality Composite Index Score = $[\text{Final Z-Score} / 5.0]$

¹ The methodology Q Corp has selected for standardizing the component measures and calculating the final composite score is based on the Leapfrog Group Hospital Safety Score Scoring Methodology, April 2015, p22-24

http://www.hospitalsafetyscore.org/media/file/HospitalSafetyScore_ScoringMethodology_Spring2015_Final.pdf

EXAMPLE

Table 5 –Adult Quality Composite Z-Score Calculation – Example Clinic “A”

Measure Name	Score	Z-score	Weight
Breast Cancer Screening (BCS)	91.6% OR mean: 78.3% OR std. deviation: 7.03	1.897	1
Cervical Cancer Screening (CCS)	78.4% OR mean: 72.8% OR std. deviation: 8.3	0.670	1
Chlamydia Screening (CHL)	35.5% OR mean: 40.0% OR std. deviation: 10.60	-0.429	1
Diabetes A1C Testing (CDC)	97.3% OR mean: 91.8% OR std. deviation: 4.47	1.229	1
Hospital Admissions for Ambulatory Sensitive Conditions – Acute (PQI 91)	0.184 per 100 patients OR mean: 0.102 OR std. deviation: 0.099	-0.827	0.5
Hospital Admissions for Ambulatory Sensitive Conditions – Chronic (PQI 92)	0.138 per 100 patients OR mean: 0.378 OR std. deviation: 0.580	0.415	0.5
Potentially Avoidable ED Visits, % of Total - Adult (age 18+)	9.3% OR mean: 9.8% OR std. deviation: 3.5	0.148	1
Quality Composite Final Z-Score:	$= (\text{SUM [Z-Score * Weight]})/[\text{Total Weight}]$ $= ([1.897*1] +[0.670*1] +[-0.429*1] +[1.229*1] +[-0.827*0.5] +[0.415*0.5] +[0.148*1]) / 6$ $= 0.552$		
Scaled Quality Composite Z-Score:	Final Z-Score + 5.0 = 5.552		
Quality Composite Index Score:	$= [\text{Final Z-Score} / 5.0]$ $= \mathbf{1.11}$		

The density plot at right shows the distribution of the final Quality Composite Index Scores for the Adult Quality Composite. It is approximately normally distributed.

Distribution of Adult Quality Composite Index Scores

