Total Cost of Care and Total Resource Use
Low Volume Measure Stabilization Module

HealthPartners Total Cost of Care (TCOC) and Total Resource Use measures have been in use for over a decade and received endorsement by the National Quality Forum in January 2012 and re-endorsement in September 2017. Since endorsement, uptake of the measures has expanded across the country and are used by both national and regional organizations and collaboratives to support cost sharing arrangements, promote transparency, and drive improvement efforts.

As uptake has expanded, a need has surfaced to measure population sizes smaller than the NQF-endorsed minimum of 600 patients. The 600 minimum threshold is necessary to produce reliable and valid results when deploying the measures for cost sharing or transparency purposes; however, measuring smaller population sizes is valuable to support improvement efforts and opportunity assessments. While the TCOC and Resource Use measures truncate total patient spend and resources at $125,000 to support valid and reliable measurement, in order for the results to be valid and reliable at lower N-sizes, additional adjustment is needed.

Smaller population sizes result in a greater chance for a single patient to significantly influence performance, creating an outlier effect. To more accurately reflect the performance of smaller populations, the measure stabilization module controls for and reduces the influence outliers have on the TCOC or Resource Use measures. The module is applied to all entities being measured; however, the larger the size, the less likely any one patient will influence the measures enough to be considered an outlier.

The Low Volume Measure Stabilization Module (LV-MSM) will: 1) Achieve year over year stability for small-sized groups; 2) Impact the "right" patients (targeted); 3) Retain the most spend.

Methodology

The method of the module stabilizes performance for smaller groups and limits the influence any given patient can have on performance by stabilizing risk adjustment. Due to the nature of any risk grouper some patients may have risk scores outside an expected range when considering their costs or resource consumption. A risk score outside of an expected range will exaggerate a patient's risk adjusted cost or resource use, creating an outlier effect that becomes more pronounced in smaller population sizes. The stabilization method reduces the impact of this effect.

Based on a predetermined percentage of influence defined by the user, the method limits or "caps" each patient's influence on the risk adjusted measure by increasing his or her risk score. By increasing patients' risk score, their impact on the group's Risk Adjusted PMPM is reduced to the predetermined level (e.g. 2%) and thus limits their influence on the group's Total Cost or Resource Use Index to this level.

Provider Group TCOC Example

Total PMPM (Spend) / **Risk Score** ⬆ = **Risk Adjusted PMPM** ⬇

⬇ **Total Cost Index** = ⬇ **Risk Adjusted PMPM** / Peer Group Risk Adjusted PMPM

Usability

The TCOC and Resource Use Measure Stabilization method retains the spend, resources, and patients by adjusting risk, as opposed to additional truncation or exclusion of the outlier patients. The method improves the accuracy of the results within years and the stability of results across years for small-sized groups, thus increasing usability and supporting further uptake of the measures. However, it is important to keep in mind that when measuring lower N-sizes there will always be more natural variation which lowers reliability. Because of this, HealthPartners recommends using the NQF-endorsed 600-patient minimum threshold for purposes of broad public reporting. A TCOC and Resource Use Measure Stabilization module is included in the TCOC grouper and shared on HealthPartners' TCOC website in order to assist organizations with usability and reporting needs at smaller population sizes that are geared towards practice management and internal improvement efforts.

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LV-MSM Calculation Details - Provider Group Example (2% Influence Level)

Equation 1

$$\text{Threshold for Risk Adjusted PMPM (2\% Influence Level)} = \text{Provider Group A Risk Adjusted PMPM} + \left[\frac{2\% \text{ Influence Level} \quad X \quad \text{Provider Group A Risk Adjusted PMPM}}{1/N} \right]$$
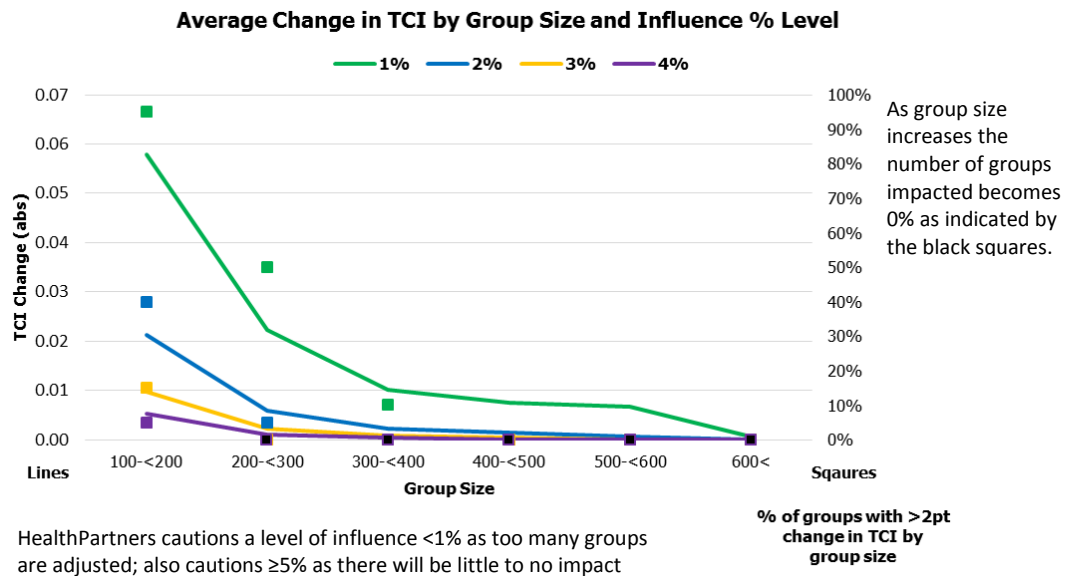
Equation 2

$$\text{Patient 1 LV-MSM Risk Score} = \text{Patient 1 Actual PMPM} / \text{Threshold for Risk Adjusted PMPM (2\% Influence Level)}$$

Patient	Risk Adjusted PMPM	Actual PMPM	Risk Score	LV-MSM Risk Score	LV-MSM Risk Adjusted PMPM
	Risk Adjusted PMPM = Actual PMPM / Risk Score				
1	$ 16,000	$ 8,000	0.50	**5.80** Equation 2	**$ 1380** Equation 1 - Threshold
2-100	$ 390	$ 450	1.15	1.15	$ 390
Provider Group A Total	$ 460	$ 525	1.14	**1.20**	**$ 440**
Peer Group	$ 400				$ 400
Provider Group A TCI	**1.15**				**1.10**

Step 1: Using Equation 1, determine the Risk Adjusted PMPM threshold "cap" amount at the 2% influence level ($1380)
Step 2: Using Equation 2, determine the new risk score (5.80)
Step 3: Calculate Provider Group A's new risk score and Risk Adjusted PMPM based on the LV-MSM adjustment (1.20, $440)
Step 4: Calculate Provider Group A's new TCI (1.10); Provider Group A Risk Adjusted PMPM / Peer Group Risk Adjusted PMPM

Application Considerations

The user determines the percentage of influence to apply. Users should consider the amount of variation that is reasonable for their market, the level of acceptability by those being measured, and their specific business needs to help determine which percentage of influence is appropriate. Markets more familiar with cost measurement may be comfortable seeing more variation and understand the impacts of outliers which would indicate a higher level of influence per member is suitable. Markets less familiar with cost measurement might see variation as a reflection of measure instability and require a lower level of influence creating more adjustment.

Average Change in TCI by Group Size and Influence % Level

As group size increases the number of groups impacted becomes 0% as indicated by the black squares.

HealthPartners cautions a level of influence <1% as too many groups are adjusted; also cautions ≥5% as there will be little to no impact

% of groups with >2pt change in TCI by group size

A lower percentage of influence results in more adjustment (less measure variation) versus a higher percentage which results in less adjustment (more measure variation). Users will aim to "thread the needle" between identifying actual variation across providers or time versus variation due to patient outliers. The graph is based on a simulated market and provided as reference to help guide decisions for application. The graph shows the average change in TCI by group size as well as the percent of groups within those size categories who had a greater than 2 point change in TCI. As group size increases there is less impact for all adjustment levels.

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