



# THE CAHPS CLINICIAN & GROUP SURVEY DATABASE

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## How Results Are Calculated

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## HOW RESULTS ARE CALCULATED

This document provides an overview of how the results displayed on the CAHPS<sup>®</sup> Clinician & Group Survey (CG-CAHPS) Database website <https://www.cahpsdatabase.ahrq.gov> are calculated. The analysis and reporting methods described in this document pertain to the results displayed on the public Online Reporting System (ORS) and in the Private Feedback Reports in Excel<sup>®</sup> available only to practice sites or groups that submit data to the CAHPS Database.

### Reporting and Inclusion Rules for the Database

Both complete and partial complete records are included in CG-CAHPS Database results. A complete record has responses for 50 percent or more of the key items and a response for one or more core composite measures or rating items. A partial complete record has responses for one or more core composite measure or rating items. Key items and composite measures can be found in the Fielding the CG-CAHPS Surveys guidelines <https://cahps.ahrq.gov/surveys-guidance/cg/index.html>.

The results for the core survey measures have been combined to include data from both the Adult 3.0 survey and Adult 3.0 survey with the Adult PCMH supplemental items for both the 2018 and 2019 CG-CAHPS Databases.

### Levels of Results

The CAHPS Clinician & Group Survey Database results are calculated at three levels: respondent, practice site, and group.

- **Respondent:** A *respondent* is defined as an individual patient who has completed or partially completed a CG-CAHPS survey. Respondent-level survey results are calculated across all respondents in the database, ignoring their association with a particular practice site or group.

Respondent-level results are calculated for the following measures reported in the Online Reporting System (ORS):

- Top Box Scores
- Frequencies
- Bar Charts of collapsed frequencies (found in the Report Builder tab)

- **Practice Site:** A *practice site* is an ambulatory care facility or medical office in a specific location. Each practice site located in a building containing multiple medical offices is considered a separate practice site. Providers in a single practice site should share administrative and clinical support staff. Practice site-level survey results are calculated across the respondents within a specific practice site.

Practice site-level results are calculated for the following measures reported:

- Percentiles on the ORS
- Statistical comparisons of practice site results reported in the Private Feedback Reports in Excel<sup>®</sup>

- **Group:** A *group* can be defined as a medical group, health system, state organization, or some other grouping of practice sites. A group is not a vendor organization. Group-level survey results are calculated across the respondents within a specific group, ignoring practice site associations.

Group-level results are calculated for the following measures reported:

- Statistical comparisons of Group results reported in the Private Feedback Reports in Excel<sup>®</sup>

## Data Adjustments

Under certain circumstances, CAHPS survey results can be adjusted to account for factors that may affect scores for groups or practice sites that are beyond its control. Without an adjustment, statistical differences between groups or practice sites could be due to differences in these external factors rather than to true differences in performance. Case-mix refers to the respondents' health status and other socio-demographic characteristics that have been shown to affect patient reports and ratings of groups or practice sites. The CG-CAHPS group and practice site mean scores are case-mix adjusted before conducting statistical difference testing that is available in the Private Feedback Reports in Excel. The mean scores are adjusted using the following respondent characteristics: age, education, and self-reported general and mental health status. Top box scores or percentiles presented on the ORS are not case-mix adjusted.

## TYPES OF RESULTS

### Frequencies

Frequencies provide the number and percentage of respondents answering each response option for the items on the survey. The frequencies can be calculated in two ways: excluding missing values from the calculation of percentages or including them. The ORS allows the user to view frequency results either way.

### Top Box and Bar Chart Proportional Scores

Item top box scores are created by calculating the percentage of survey respondents who chose the most positive response option for a given item response scale. Several different response scales are used on the CG-CAHPS surveys. Table 1 displays the different response scales and how the options are categorized for top box and proportional scoring.

**Table 1. Top Box and Proportional Score Crosswalk to Response Scales**

Response Scale	Lower Proportion	Middle Proportion	Top Box Score
Dichotomous	No	--	Yes
Global rating	0-6	7-8	9-10
3-point response scale	No	Yes, somewhat	Yes, definitely
4-point response scale	Never, Sometimes	Usually	Always

Note: The top box and bar chart proportional scoring results exclude missing in the calculation of percentages.

### Calculating top box and other proportional scores for an individual survey item:

Top box and other proportional scores are calculated by aggregating results across respondents for the practice site, group, or database. For the Online Reporting System, the top box score is calculated at the overall database respondent level. Because these calculations are made across all respondents, ignoring practice site or group, top box scores are not case-mix adjusted for respondent characteristics. For individual participants accessing the Private Feedback Report, this percentage is calculated by aggregating respondents to the practice site and group levels. For example, in a sample of 10 respondents, if 4 out of 10 respondents answered "Always" to a particular item, the top box score for that item would be 40 percent [i.e.,  $(4 \div 10) * 100 = 40\%$ ].

### Calculating top box and other proportional scores for a composite measure:

The scores for a composite measure are equal to the average or mean of the proportion of responses (excluding missing data) in each response category across the items in the composite measure. The following steps show how proportions for composite measures are calculated:

- Step 1 – Calculate the proportion of cases in each proportional score category for each question in a composite measure.
- Step 2 – Calculate the average proportion responding to each category across the questions in the composite measure.

As shown in Table 2, top box scores for composite measures are calculated by averaging the top box scores for the items within the composite measure. This methodology can be applied to any of the CAHPS composite measures. For example, the “Getting Timely Appointments, Care, and Information” composite measure has three items. If the top box score for the first item is 68 percent, the second item is 72 percent, and the third item is 61 percent, the composite measure score would be 67 percent (i.e., [68 percent + 72 percent + 61 percent] ÷ 3 = 67 percent). The same method is used for the other proportional scores.

**Table 2. Sample Calculation of Top Box and Proportional Scores**

Survey: CAHPS Clinician and Group Survey 3.0  
 Composite Measure: Getting Timely Appointments, Care, and Information

Items in Composite Measure	Response Scale	Lower Proportion (Never, Sometimes)	Middle Proportion (Usually)	Top Box Score (Always)
Got appointment for urgent care as soon as needed	Never, Sometimes, Usually, Always	12%	20%	68%
Got appointment for check-up or routine care as soon as needed		7%	21%	72%
Got answer to question during regular office hours on same day		16%	23%	61%
<b>Composite Measure Proportional Score</b>	--	<b>12%</b> = (12% + 7% + 16%) / 3	<b>21%</b> = (20% + 21% + 23%) / 3	<b>67%</b> = (68% + 72% + 61%) / 3

### Percentiles

Percentile scores are calculated using the practice site level data and represent the percentage of practice sites that scored at or below a particular top box score for an item or composite measure top box score. For example, the 75th percentile is the top box score at or below which 75 percent of all practice site top box scores fall. Percentiles range from 0 to 100. As top box scores are not case-mix adjusted for patient characteristics at the respondent level, percentiles are similarly not adjusted at the practice site level to facilitate comparisons on the ORS.

### Group and Practice Site Performance Measures

In the Private Feedback Reports in Excel<sup>®</sup>, statistical tests (t-tests) are used to determine whether a group or practice site’s mean item or composite measure mean score is significantly above or below the overall database mean item or composite measure score calculated at the group or practice site level, respectively. These statistical tests are based on a group or practice site’s case-mix adjusted mean item or composite measure score, rather than the top box scores. If a group or practice site’s mean item or composite measure is significantly higher or lower than the overall database mean, a numerical value of 3 is assigned for significantly higher or a 1 for significantly lower. If there is no significant difference between the group or practice site and the overall database mean, a value of 2 is assigned. Because the

statistical tests are based on group and practice site case-mix adjusted means, and compare to the database group or practice site case-mix adjusted mean (without that given group or practice site included in the overall database average), the results may not always appear to be completely in line with top box scores or proportional scores.

## **DATABASE SUPPRESSION RULES**

In the CAHPS Database Online Reporting System (ORS) and in the Private Feedback Reports, there are circumstances under which certain item or composite scores, practice site or group results, or reporting categories are suppressed (i.e., 'NA' is displayed). These instances of data suppression and/or exclusion are due to one or more of the following factors: (1) too few respondents answering an item, (2) a practice site (or group) having too few completed surveys, or (3) too few practice sites and/or respondents for a particular reporting category. The rules for data suppression and exclusion are described below.

### **1. Item Suppression.**

- a. If there are fewer than five valid responses available for any given item, the item's results are suppressed.

### **2. Practice Site or Group Suppression.**

- a. If there are fewer than 10 completed surveys for a given practice site or group, the practice site or group is excluded from percentile calculations and the practice site's or group's results are suppressed in the Private Feedback Reports in Excel®. The practice site's results are still included in the overall database results.
- b. When the values for any one of the respondent characteristics such as respondent age, education, or self-reported general or mental health status used in the case-mix adjustments are missing for all respondents in a practice site or group, the practice site's or group's results are excluded from the analyses and therefore not shown in the Private Feedback Reports in Excel®.

### **3. Reporting Category Suppression.**

- a. When displaying scores by practice site characteristics (e.g., region), a particular characteristic's results are suppressed if there are fewer than five practice sites and/or fewer than 300 completed surveys available for that characteristic.