



THE CAHPS HEALTH PLAN DATABASE

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 Health Plan Survey (HP CAHPS) Database Web site <https://www.cahpsdatabase.ahrq.gov> are calculated. The analysis and reporting methods described in this document pertain to the results displayed on both the public Online Reporting System (ORS) and in the Private Feedback Reports in Excel® available only to sponsors that submit data to the CAHPS Database.

Data Sources

Data presented in the CAHPS Health Plan Database were compiled from CAHPS Health Plan Survey results. The CAHPS Health Plan Database accepted survey data from the following survey populations:

- Adult Medicaid 5.0,
- Child Medicaid 5.0,
- Children's Health Insurance Program (CHIP), and
- Medicare.

The CAHPS Medicare results were obtained from the Centers for Medicare & Medicaid Services (CMS) for survey participants who were enrolled in a managed care health plan including both enrollees receiving prescription drug coverage through their health plan and those that don't receive prescription drug coverage through their health plan. For the core items of the 5.0 Child Medicaid survey, the data for children without chronic conditions and children with chronic conditions were combined. Users should note that the Medicare results presented here may differ from other reports because of the inclusion or exclusion of certain beneficiary groups and/or the use of case-mix adjustment variables.

Levels of Results

CAHPS® Health Plan Survey data is submitted and results are calculated at three levels: respondent, health plan, and sponsor.

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

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

- Top Box Scores
- Frequencies
- Barcharts

- **Health Plan:** Health plan level survey results are calculated across the respondents within a specific health plan.

Health plan-level results are only calculated for the percentiles reported in the ORS. In addition, statistical comparisons of health plan results reported in the private excel file are also at the health plan-level.

- **Sponsor:** A sponsor is defined as a participating organization (i.e., State Medicaid Agency, Children’s Health Insurance Program, coalition, individual health plan or group of health plans) submitting CAHPS Health Plan survey results. Sponsor level survey results are calculated across the respondents within a specific sponsor, ignoring health plan associations.

Sponsor-level results are only calculated for the statistical comparison of Group results reported in the private excel file.

Data Adjustments

Under certain circumstances, CAHPS survey results can be adjusted to account for factors that may affect scores for a health plan that are beyond its control. Without an adjustment, differences between health plans could be due to differences in these external factors rather than to true differences in performance. CAHPS data are most commonly adjusted for respondent characteristics (i.e., case-mix adjustments), but can also be adjusted for other factors such as the mode of survey administration.

Case-Mix Adjustments: Case-mix refers to the respondents’ health status and other socio-demographic characteristics that have been shown to affect enrollee reports and ratings of health plans. Characteristics used to case-mix adjust CAHPS Health Plan scores are respondent age, education, and self-reported general and mental health status.

Survey Mode Adjustments: CAHPS Health Plan surveys can be administered using different modes, including mail, telephone, IVR, and Web/Internet. Just as CAHPS survey data can be adjusted by enrollee case-mix, they can also be adjusted to account for potential differences in modes of survey administration. However, the current data are not adjusted by survey mode. Since the majority of the Health Plan survey data submitted to the CAHPS Health Plan Survey Database were collected using mail administration, there would likely be very little influence of other survey modes such as telephone, IVR, and Web/Internet on the results.

TYPES OF RESULTS

Top Box Scores

Item top box scores are created by calculating the percentage of survey respondents who chose the most positive score for a given item response scale (e.g., “Always” on the “Always-Never” scale). For the Online Reporting System, the top box score is calculated at the overall respondent level. Because these calculations are made across all respondents, ignoring plan or sponsor, top box scores are not case-mix adjusted for respondent characteristics. For individual participants accessing the private excel report, this percentage is calculated at the health plan and sponsor level. For example, in a sample of 100 respondents, if 40 out of 100 respondents answered “Always” to a particular item, the top box score for that item would be 40 percent [i.e., $(40 \div 100) * 100 = 40\%$]. These top box scores are not case-mix adjusted.

Composite Top Box Scores

Composite top box scores are calculated by averaging the top box scores on the items within the composite. Each item in a composite is equally weighted. For example, the “Getting Needed Care composite has two items. If the top box score for the first item is 68% and the second item is 72%, the composite score would be 70% (i.e., $[68\% + 72\%] \div 2 = 70\%$). The same method is used for the other proportional scores.

Given a composite with four items, where each item has four response options, a score for that composite is the proportion of responses (excluding missing data) in each response category. The following steps show how those proportions are calculated:

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

Table 1. Sample Calculation of Top Box and Proportional Scores

Survey: CAHPS Health Plan Composite Measure: Getting Needed Care Composite

Items in Composite	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%
Composite Proportional Score	--	10% = (12% + 7%) / 2	21% = (20% + 21%) / 2	70% = (68% + 72%) / 2

Note: If a plan or sponsor is missing an item from a composite for all respondents, the proportional score is still calculated on the remaining items, dividing by the number of items for which there are responses.

Percentiles

Percentile scores are calculated at the health plan-level and represent the percentage of health plans that scored at or below a particular item or composite top box score. For example, the 50th percentile, or the median, is the top box score at or below which 50 percent of all health plan top box scores fall. Percentiles range from 0 to 100. For ease of display, in the top box scores, the 90th, 75th, 50th, and 25th percentiles are presented for composites and items. Given that top box scores are not case-mix adjusted and that percentiles are not used to statistically test or directly compare health plans, percentiles are similarly not adjusted. Percentiles are only available for Medicaid and CHIP data.

Health Plan Performance Measures

Statistical tests (t-tests) are reported for private user data and are used to determine whether a health plan’s item or composite mean score is significantly above or below the overall item or composite mean score. These statistical tests are based on a health plan’s case-mix adjusted item or composite mean score rather than the top box scores or proportional scores represented in the bar charts.

DATA SUPPRESSION RULES AND GUIDELINES

In the CAHPS Database Online Reporting System, there are circumstances under which certain item/composite scores, health plan results, or reporting categories are suppressed (i.e., 'NA' is displayed). There are also times when certain health plans are excluded from percentile calculations. These instances of data suppression and/or exclusion are due to one or more of the following factors: (1) too few respondents responding to an item, (2) a health plan having too few completed surveys, or (3) too few health plans for a particular reporting category. The rules for data suppression and exclusion are described below.

- If there are fewer than 20 valid responses available for any item, the item's results are suppressed.
- If there are fewer than 10 valid responses for any of that item's response categories, all frequency table results are suppressed.
- If there are fewer than 20 completed surveys for a given health plan, the health plan is excluded from percentile calculations and the health plan's results are suppressed in the private excel file. The health plan's results are still included in overall results.
- When displaying scores by health plan characteristic (region or product type), a particular characteristic's results are suppressed if there are fewer than 10 health plans for that category.