**Aligning Forces for Quality** | Improving Health & Health Care in Communities Across America

Robert Wood Johnson Foundation

PRIMER/BRIEF

# Aggregating and Analyzing CAHPS Clinician & Group Survey Results: A Decision Guide

*January 2014*

Many organizations, including multi-stakeholder groups such as the *Aligning Forces for Quality* Alliances, are working to improve consumer awareness of and interest in health care quality and motivating providers to improve through publicly reporting on quality measures. An important component of ambulatory quality reports are patient experience measures derived from the CAHPS Clinician & Group Survey (CG-CAHPS). CG-CAHPS patient experience measures complement clinical quality measures to present a more comprehensive picture of how well medical practices are providing patient-centered care. Publicly reporting such information can highlight high-performing medical practices and reveal significant opportunities for improvement. Behind these valuable public reports are numerous analytical decisions that influence what can be reported and how results can be presented.

The purpose of this guide is to discuss some of the considerations that go into analytic decisions so CG-CAHPS Survey sponsors and their community partners can hone in on the issues they need to address and weigh their options given their shared goals and constraints. There are no right or wrong answers—just different options. Each community needs to make the decisions that are right for them. Consequently, this is neither a "how-to" guide nor a technical specifications document that provides instructions for analysis. Rather, this guide is intended to foster discussions on key decisions analysts need to make to produce comparable results across all of the medical practices participating in the community and can be used for all CG-CAHPS Survey versions, including Adult and Child versions. It can be used in conjunction with two related decision guides:

- ***Leveraging Existing Patient Survey Efforts: A Decision Guide*** for survey implementation
- ***Developing a Public Report for the CAHPS Clinician & Group Survey: A Decision Guide***.

The guide addresses the following decisions for aggregating and analyzing CG-CAHPS data:

## Aggregating Your CG-CAHPS Results

- Who will aggregate your data?
- What data will be submitted?
- How will data be submitted?

## Analyzing Your CG-CAHPS Results

- Who will analyze your data?
- What data-cleaning rules will you use?
- Will results be case-mix adjusted?
- Will results be weighted?

### About Aligning Forces for Quality

*Aligning Forces for Quality* (AF4Q) is the Robert Wood Johnson Foundation's signature effort to lift the overall quality of health care in targeted communities, as well as reduce racial and ethnic disparities and provide real models for national reform. The Foundation's commitment to improve health care in 16 AF4Q communities is the largest effort of its kind ever undertaken by a U.S. philanthropy. AF4Q asks the people who get care, give care, and pay for care to work together to improve the quality and value of care delivered locally. The Center for Health Care Quality in the Department of Health Policy at George Washington University School of Public Health and Health Services serves as the national program office. Learn more about AF4Q at http://www.forces4quality.org. Learn more about RWJF's efforts to improve quality and equality of care at http://www.rwjf.org/qualityequality.

- Will results be analyzed by any subgroup or category?
- How will statistical comparisons be done?
- To what benchmarks will you compare your results?
- How will results be communicated to participating practices?

Arriving at your final answers to these questions could take several months. But it is useful to begin the process of considering these questions in the early stages of planning a patient experience survey because your answers can affect how you move ahead with administering the survey (e.g., how you draw a sample), how you choose to report results publicly, and how you budget for the overall project.

## Aggregating Your CG-CAHPS Survey Results

Data aggregation is the process of bringing together all of the CG-CAHPS Survey data collected for different medical practices in order to analyze the data at the community level. This is the most commonly overlooked step when implementing the CG-CAHPS Survey at the community level. The complexity of the data aggregation process depends on which approach, the centralized or leveraged approach, was used for survey implementation.

Multi-stakeholder organizations using the centralized approach to CG-CAHPS Survey implementation do not need to make any decisions regarding data aggregation because the common vendor that administers the survey also aggregates the data. Data aggregation is part of the survey administration process. But for those using the leveraged approach, which takes advantage of existing surveying efforts in the community, aggregating the data is a critical step in the process. Data from these separate data collections must be brought together for analysis at the community level.

Although related, data aggregation is separate from data analysis and can be performed by different entities. Consequently, several key decisions must be made:

- Who will aggregate your data?
- What data will organizations submit?
- How will organizations submit their data?

### Who will aggregate your data?

Choosing who or what organization will aggregate your data is the first key decision. The organization that serves as the data aggregator will receive data submissions from all of the medical practices, medical groups, and health systems that collected CG-CAHPS Survey data. (For simplicity, the remainder of this guide will refer to all of these entities as “practices.”) Typically, the practices’ survey vendors will handle the data submissions on their behalf, so the data aggregator will interface with the vendors.

Multi-stakeholder organizations have several options:

(1) Serve as your own data aggregator.

(2) Rely on the national CAHPS Database.

### About the Author

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Related resources produced by the Shaller Consulting Group include:

- *Leverage Existing Efforts or Use a Centralized Approach? Two Strategies for Community-Wide Implementation of the CAHPS Clinician & Group Survey*
- *Developing a Public Report for the CAHPS Clinician & Group Survey: A Decision Guide*
- *Glossary: Patient Experience of Care*
- *Forces Driving Implementation of the CAHPS Clinician & Group Survey*

### Two Approaches to Implementing the CG-CAHPS Survey

The CG-CAHPS Survey can be implemented across a community using either of these two methods:

- The **centralized approach,** in which a single vendor administers a common survey to all practices.
- The **leveraged approach,** which refers to incorporating a common set of core questions from the CG-CAHPS Survey into the instruments practices are already using.

Lean more: *Leverage Existing Efforts or Use a Centralized Approach? Two Strategies for Community-Wide Implementation of the CAHPS Clinician & Group Survey*

(3) Contract with a third-party organization.

### Do it yourself

In this scenario, the multi-stakeholder organization serves as its own data aggregator. This "DIY" approach means the organization receives CAHPS data from all participating practices, typically directly from the practices' survey vendors. Organizations that choose this option usually have an analyst or someone with experience working with large data sets on their staff or available as a contractor. This person must verify the data received and check them for completeness and accuracy. Examples of such data quality checks include making sure fields have the correct types of data (e.g., dates, numeric, text) and correct ranges (e.g., minimum and maximum values). Once aggregated, the data are then passed to the person or organization that will conduct the data analysis, which is addressed in greater detail later in this guide.

### The CAHPS Database

The CAHPS Database is a national repository of CAHPS data that includes CG-CAHPS. The database's primary objective is to support comparisons of CAHPS survey results and publish national and regional benchmarks. CAHPS survey users voluntarily submit their data to the CAHPS Database and receive access to comparative benchmarking reports through an online reporting system that displays national and regional benchmarks on a public site accessible to anyone with Internet access. Organizations that contribute data receive access to a password-protected portion of the website where they can generate reports for their practices, including a statistical comparison to the overall database average. In addition, free technical assistance is available through the CAHPS User network. The CAHPS Database, including the online reporting system, is available at http://cahpsdatabase.ahrq.gov.

As a free resource funded by the federal Agency for Healthcare Research and Quality (AHRQ), the CAHPS Database can be a very practical and attractive option for aggregating data from a community-wide implementation of CG-CAHPS using the leveraged approach. If the CAHPS Database serves as a data aggregator, it also can handle the data analysis.

While using the CAHPS Database to aggregate and analyze your CG-CAHPS survey data has many advantages, it also has some potential constraints. The CAHPS Database accepts CG-CAHPS data submissions only once per year. Because the schedule for the CAHPS Database is dependent on resource priorities in the overall management of AHRQ's CAHPS program, the timeframe for submissions can change from year to year. Such changes have typically been no more than one quarter; nevertheless, the timeline for getting your results depends on the timeline for the submission period and release of the results by the CAHPS Database. While the CAHPS Database team works with potential submitters to keep them informed and clear on the implications for their timeline, this timeframe will be largely out of your control.

At this time, the CAHPS Database online reporting system includes only statistical comparisons against the overall database average. Comparisons to your state or even market level benchmarks may be more meaningful for your reporting purposes. The CAHPS Database team is planning to add statistical comparisons with state averages in 2015, which would cover data collected in 2014.

### A third-party organization

Another option is to use a third-party organization to aggregate your data. If the multi-stakeholder organization does not have the capabilities to serve as the data aggregator, another organization in the community may be able to play this role, such as one of the stakeholder organizations or a local university. If stakeholder organizations are not an option, another alternative is to hire a contractor to provide this service.

There are two types of organizations you may want to avoid. First, it is generally not recommended to have one of the organizations that participated in the survey serve as the data aggregator. For example, suppose one of the health systems (or health plans) in your market has offered to aggregate the data. While this may seem like a great option, you need to be sensitive to the fact that while the systems or plans are collaborating for the purposes of this project, they are competing in other areas. Having one system serve as a data aggregator may undermine your efforts to promote full collaboration.

Second, if you have implemented the CG-CAHPS survey using the leveraged approach and will have data from multiple survey vendors, it is better not to use a vendor as the data aggregator. Your organization may have selected a "preferred" or "recommended" vendor for practices that do not currently have a vendor. This vendor may seem like an obvious choice since any vendor administering the survey under the centralized approach would function in this capacity. However, it is important to respect that vendors are direct competitors; it would be awkward for a vendor to submit data to one of its competitors.

Overall, you have several options to finding an organization to aggregate your CAHPS survey data. Some options require more resources, while others require flexibility with your overall project. The answer to which organization makes the best data aggregator is specific to each community.

### What data will organizations submit?

Deciding what data participating organizations will submit may seem pretty obvious, but several important details determine exactly what data will be submitted. While many of these decisions were probably determined when you set up how the data will be collected (e.g., timeframe the survey covers, version, population), it is important to reinforce and confirm exactly what data should be submitted.

### Respondent-level data vs. survey results

The preferred approach is to have practices submit respondent-level data, that is, one unique record for every patient surveyed. This is sometimes referred to as "raw data." Once aggregated, respondent-level data are then analyzed together. Using respondent-level data for the analysis ensures the data are analyzed consistently across practices.

If aggregating and analyzing respondent-level data is not feasible, another option is to collect survey results calculated by the practices. You may also need to consider this option if participating practices are not willing to share respondent-level data but are willing to share their results for public reporting.

**Important Tips**

Make sure the organization serving as the data aggregator has sufficient data security and back-up capabilities.

Retain a copy of the original data files as an extra precaution.

While it may seem easier simply to obtain the survey results, many factors can have a significant effect on the comparability of the results. As you read through the section "Analyzing Your CG-CAHPS Survey Results," consider that all of those key functions must be performed by the practice, or in most cases, the practice's survey vendor. Unfortunately, not all vendors have the same capabilities, and some do not have the expertise to perform the analyses reliably. Moreover, verifying that each vendor did the data analyses as specified is difficult. If you do not have the resources to analyze the data, you definitely do not have the resources to verify the calculations performed by each vendor. Getting respondent-level data is an important way to avoid differences in the data analysis that can undermine both the comparability of the results and users' trust in the publicly reported results.

### Additional variables

In addition to the respondent-level survey data, you may want to consider collecting some additional information or variables that can be useful for the data analysis. The data from the vendor will contain all of the variables that were needed to administer the survey. Other potentially useful variables are often available but would need to be added to the survey administration data. Examples include:

- Practice characteristics, such as ownership, size, and type of practice.
- Additional information about patients, such as chronic condition indicators, payer, and health insurance status.

These variables are not necessary to analyze the data but can provide more detailed results. For some variables, the decision to add them must be made very early in the survey administration process because they can be pulled into the data file only when the sampling frame[i] is generated and cannot be added once the patient-identifying information is removed from the file after the survey is administered.

If you do not collect the information because you already have it, make sure you have a unique ID so the data files can be merged. A unique ID is a combination of letters and/or numbers used to identify a practice in multiple files. For example, suppose that ABC Practice has the unique ID of A1032. No other practices have the same ID (A1032). One data set has the survey response data for ABC Practice; another data file with additional practice characteristic data includes ABC Practice. ABC Practice should have the same ID (A1032) in both data files, so the files can be merged using the unique IDs. Avoid relying on matching practice names, as this type of text or character matching is prone to more errors. In the example of ABC Practice, if one file had ABC Practice listed without the space as "ABCPractice," matching the practice names probably would not correctly match them as the same practice.

### Data specifications

Data specifications are detailed instructions about how to construct the data file for submission. The format for the data to be submitted will depend upon how the data will be submitted, which will be discussed in the next section. Regardless of the format, your data specifications should include all of the variables you need for the analysis. A great deal of variation exists among vendors, so it is extremely important to provide detailed instructions (i.e., specifications) to ensure you receive standardized data.

Moreover, you will need to decide what data are critical to the analysis and which variables are nice to have, in other words, those that would not prevent the analysis from moving forward even if you were unable to get them. These decisions will drive what data elements are required. Missing data from required data elements can stop the submission. You may want all the variables, but the reality is that some practices or vendors may not be able to access the requested variables, especially the additional variables discussed previously. Is it worth not getting any data if they cannot deliver those variables? Requiring all variables can jeopardize your overall submission. Not all practices and vendors have the same capabilities, and the time it takes to communicate back and forth with the vendor regarding data submission can substantially drain your resources.

Even if you choose not to rely on the CAHPS Database as your data aggregator, you can still use its specifications for data submission as a template for your own data specifications. These specifications can provide a useful starting point, and the vast majority of vendors that administer CAHPS Surveys are already familiar with the format. Examples of data submission specifications can be found at: http://cahpsdatabase.ahrq.gov/CGDSS/login.aspx.

### How will organizations submit their data?

Now that you know what data will be submitted and the organization that will be receiving them, you will need to decide how participants will submit their data. This decision will depend on the capabilities of the organization serving as the data aggregator. Some options may be better than others when considering the long-term sustainability of the process, even if it seems like the process requires more resources in the short term.

The simplest file format for submitting data is a “flat file.” A flat file can be thought of as a simple table or matrix where data are organized into rows and columns. Generally, each row is a unique record with variables arranged in columns. Data can be column-defined (each variable starts at a specific column position) or delimited (each variable is separated by a specific element such as a comma or tab). The example specifications from the CAHPS Database require a column-defined format. Excel is not recommended for submissions because the program’s default formatting functions make it hard to keep formatting consistent, which can cause difficulties when loading the data into statistical analysis software.

Once you have established how the data file should be constructed, you will need to decide how the file will be exchanged. Regardless of which data submission method that you choose, make sure the method is secure. Although the data do not contain any patient identifying information, using a secure method to exchange patient-level information is a good data-handling practice. The organization serving as your data aggregator may already have a system in place to receive data. Examples of ways to exchange files include secure FTP sites or online portals.

## Analyzing Your CG-CAHPS Survey Results

Some of the most significant problems that occur in data analysis are caused by a lack of clear communication early in the process of planning for the analysis. If you are not an analyst, some of the technical language might seem like a foreign language to you. Analysts are typically well versed in the technical details but may lack the programmatic perspective to be able to make meaningful decisions about the analytic plan. This gap creates opportunities for miscommunication that can have a significant impact on your overall project. The questions below are intended to bridge that gap and open the discussion about the details of the analytic plan that must be decided before the analysis begins.

- Who will analyze the data?
- What data cleaning rules will be used?
- Will results be weighted or unweighted?
- Will results be presented by any subgroups or categories?
- Will results be case-mix adjusted?
- How will statistical comparisons be done (if any)?
- To what benchmark will you compare results?
- How will results be communicated to the participating practices?

The CAHPS Consortium has developed a CAHPS Analysis Program that can be used to analyze data from any CAHPS survey. This SAS-based program, also commonly referred to as the CAHPS macro, includes parameters that can be specified for all of these decisions. This free resource is available from the CAHPS User Network at http://cahpsdatabase.ahrq.gov/CGSurveyGuidance.aspx. Guidance on how to use the macro to analyze the survey data is available in *Instructions for Analyzing CAHPS Data:* http://cahpsdatabase.ahrq.gov/files/CGGuidance/Instructions%20for%20Analyzing%20CAHPS%20Surveys.pdf.

### Who will analyze the data?

The options for who will analyze your data are the same as for data aggregation. However, the same organization does not need to perform both data aggregation and data analysis. While the capabilities for data aggregation and data analysis are similar, they are not exactly the same. For example, the multi-stakeholder organization may be able to receive the data as the data aggregator but may not have the capabilities to conduct the data analysis.

### What data cleaning rules will be used?

Anyone who has cooked knows that once you have assembled your ingredients, you usually have some preparation to do before you can begin to cook. Similarly, the "raw data" submitted to the data aggregator must be prepared for analysis. Detailed recommendations for preparing CAHPS survey data for analysis can be found in ***Preparing and Analyzing Data from the CAHPS Clinician & Group Surveys*** at http://cahpsdatabase.ahrq.gov/files/CGGuidance/Preparing%20and%20Analyzing%20Data%20from%20CAHPS%20C&G%20Surveys.pdf.

Data preparation and cleaning can be broken down into four tasks:

- Identify and exclude ineligible cases.
- Code and enter the data.
- Clean the data.
- Conduct an audit.

The data cleaning process can include determining whether a survey response is "complete," removing "proxy" responses or those for which the patient did not answer the questions for him- or herself, and correcting data errors and inconsistencies.

### Will results be case-mix adjusted?

A common concern with performance measurement involving both clinical as well as survey measures is to ensure that fair comparisons can be made between practices. Case-mix adjustment "adjusts" or "corrects" for differences in the patient characteristics among practices that are associated with differences in patient experiences of care but beyond the control of the practice. Practices are now becoming used to the idea of case-mix adjustment, so they will less likely push back. It is strongly recommended that survey results be case-mix adjusted.

Once a decision to adjust for case-mix has been made, the next consideration is to determine what variables to use for adjustment. Generally, adjusters should represent factors over which the practice has absolutely no control. The CAHPS program recommends adjusting for patient age, education, and self-reported health status. These variables are all available through the survey itself, as they are demographic items at the end of the questionnaire that every survey respondent should answer. Using these variables as adjusters has decades of evidence and support in CAHPS surveys.

One of the most common questions centers around the lack of including other variables. For example, practices often argue for adjusting for differences in the proportion of patients of particular races or ethnicities. They posit that patients of different races or ethnicities rate their care differently. However, adjusting for race and ethnicity would essentially control for any true disparities in care. Health literacy and the presence of a chronic condition are other variables that have been recommended as case-mix adjusters, but using them may not be a good idea. Patients with lower health literacy often have a more difficult time communicating with providers, but providers have a role in improving care delivery to ensure that information and communication are appropriate for patients with low health literacy.

The last decision regarding case-mix adjustment is what to do with missing adjuster variables. If you are using the CAHPS Analysis Program, the program will drop any records for which all of the adjuster variables are missing. While this does not happen frequently, there is a tradeoff between dropping completed surveys because of missing case-mix adjusters and having enough completed survey responses to achieve higher reliability. Instead of dropping those records, another option is to impute the missing values. Imputation is the process of estimating values for missing data based on other data that are available. Data for missing case-mix adjusters can be imputed to prevent the loss of completed survey records from the analysis.

### Will results be weighted or unweighted?

The issue of weighting can be a question at several levels of the analysis: at the practice level and for items within a composite measure.

### Weighting data at the practice level

While most multi-stakeholder organizations report data at the practice level, some practices administer their CG-CAHPS Survey at the provider level instead. This means they target a particular number of completed surveys per provider. Consider the following example of ABC Practice with four providers. The practice administers the survey at the provider level and targets 50 completed surveys per provider per year. Provider A is the only full-time provider at the practice; consequently, she is responsible for the majority of the overall practice volume. The table below shows the difference between the distribution of the survey responses and the distribution of the overall patient visits by provider.

| | **ABC Practice** | |
|---|---|---|
| | **% of responses in the practice sample** | **% of overall visit volume** |
| Provider A | 25% | 40% |
| Provider B | 25% | 30% |
| Provider C | 25% | 20% |
| Provider D | 25% | 10% |

Without any weighting, the providers end up being equally weighted in the survey results (that is, unweighted), with each provider contributing equally to the overall results for the practice.

One argument is that the provider results should be weighted to better capture the actual distribution of how the providers see patients within the practice. Practice volume can be used to ensure Provider A’s results account for 40 percent of the overall results for the practice, Provider B’s results 30 percent, etc. If no action is taken to weight the results at the provider level, the results will, by default, be weighted by the percentage of respondents that each provider has in the survey results.

### Weighting items within a composite measure

The items in a composite measure can also be weighted. Composite measures are usually calculated by weighting each item in the composite equally (i.e., the items are unweighted). Each item contributes equally to the overall composite score. In other words, no one item is more important than another.

However, there may be a good reason to weight some items differently than others. Consider the access composite: Getting Timely Appointments, Care, and Information. This composite comprises five individual items:

- Getting appointments for urgent care
- Getting appointments for routine care
- Getting an answer to a medical question during regular office hours

- Getting an answer to a medical question after regular office hours
- Wait time for appointment to start.

Most of the items in this composite are paired with a screener item so that patients who did not have that particular experience are not asked to answer the question included in the composite. For example, if a patient did not make an appointment for urgent care, she would not have a response for how often she was able to get appointments for urgent care as soon as needed. Since appointments for urgent care and calls to the provider's office after regular office hours with a medical question are infrequent, the number of responses for these items in the composites tends to be low.

Some feel it is unfair to the practice to treat an item that has so few responses the same as other items that have many more responses. They advocate for weighting the items based on the number of responses so that items with more responses contribute more toward the overall composite.

A compromise between weighting based on the number of responses and not weighting at all is generally to weight items equally but to weigh less items that are below a specified threshold for responses. This method prevents the results for an item with very few responses from overly influencing a composite score but keeps the influence of the other items equal. One disadvantage of any weighting scheme, however, is the complexity of describing how the weighting was done in a public report for consumers.

### Will results be presented by any subgroups or categories?

The previous section on case-mix adjustment discussed variables that can differ by practice but should not be included as a case-mix adjuster because you would not want to control for or adjust away any differences in results associated with that particular variable. Examples of such variables are race, ethnicity, health literacy, and presence of a chronic condition. Rather than case-mix adjusters, these variables are perfect for subgroup analysis. In other words, how do results differ by race and ethnicity? Do patients with chronic conditions have different experiences of care from those who do not have a chronic condition? Do patients with higher health literacy experience better communication with providers than those with low health literacy?

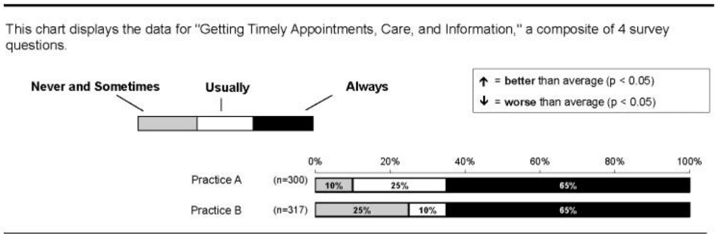
Survey results can be stratified by subgroup or category to offer insightful information about differences in experiences of care by that subgroup. This decision to conduct this kind of analysis should be made early in the process of the overall project. If you would like to make statistical comparisons among subgroups, you will need to make sure there are a sufficient number of responses for each subgroup.

### How will statistical comparisons be made (if any)?

If you choose to conduct statistical comparisons of your results, you have two options:

- **Top box scoring** is when the composite score is calculated based on the top box score only. Top box scores represent the percentage of survey respondents who gave the most positive response to an item or the percentage of most positive responses for a composite measure, such as the percentage of respondents who indicate that their provider "always" communicates well.
- **Mean scoring** is based on the mean score across all responses. The mean score takes into account all responses, not just the top box.

A practice's score (either top box or mean, depending on the method chosen) is then compared to the score of all the participating practices (either top box or mean, respectively) to determine whether its score is statistically above, below, or the same as the score from all of the practices. To illustrate the difference between mean and top box scoring, consider the example below of the CG-CAHPS access measure (Getting Timely Appointments, Care, and Information) for two practices:

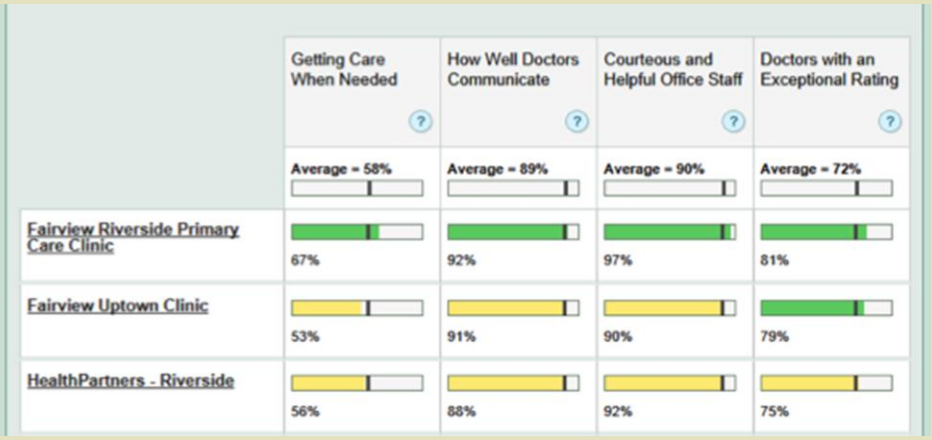


Practices A and B have identical top box scores of 65 percent. In Practice A, 25 percent of respondents "Usually" get timely appointments, care, and information, and 10 percent of patients respond "Never" or "Sometimes." In Practice B, those percentages are reversed. This indicates that Practice A is doing a better overall job at providing timely appointments, care, and information to its patients when compared to Practice B.

Using top box scoring, Practice A and B would be identical in the comparison to the group score of all participating practices since only the top box score is being used and their top box scores are the same. In this example, top box scoring masks the variation in the rest of the responses. However, top box scores are often recommended for consumer reports because they are intuitive and easy to understand. A statistical comparison using mean scoring would result in Practice A potentially scoring better than Practice B, depending on what overall score of the group. The disadvantage of mean scoring is that the overall mean is somewhat more difficult for consumers to interpret.

One other advantage of mean scoring compared to top box scoring is the number of completed surveys needed to reach an acceptable level of reliability. Recommended sample sizes are intended to achieve results that can differentiate reliably among practices. The greater the variation in results among practices, the better the reliability. Compressing the response options to examine only the top box decreases the level of variation that can be detected across the practices, thereby increasing the number of completed surveys needed to detect variation reliably. In other words, you need higher sample sizes for top box scoring than for mean scoring. One consequence is that a greater number of practices may have "too few patients to report" with top box scoring than with mean scoring.

### An Example from Minnesota Community Measurement (MNCM) (www.mnhealthscores.org)



| | Getting Care When Needed | How Well Doctors Communicate | Courteous and Helpful Office Staff | Doctors with an Exceptional Rating |
|---|---|---|---|---|
| | Average = 58% | Average = 89% | Average = 90% | Average = 72% |
| Fairview Riverside Primary Care Clinic | 🟩 67% | 🟩 92% | 🟩 97% | 🟩 81% |
| Fairview Uptown Clinic | 🟨 53% | 🟨 91% | 🟨 90% | 🟩 79% |
| HealthPartners - Riverside | 🟨 56% | 🟨 88% | 🟨 92% | 🟨 75% |

Minnesota Community Measurement incorporates both scoring methods in its public report. In this display, the percentage score that is reported is the top box score. However, the color of the bars is based on statistical comparisons using the mean score, with the green bars signifying "above average" performance and the yellow bars signifying "average" and "below" compared to the overall average of the participating practices. MNCM chose this approach so a greater number of practices would meet the reliability thresholds set for public reporting.

The downside of this approach is the possibility of confusion; two practices could have the same top box score yet different color coding (as seen in the example of Practices A and B). It is even possible for one practice to have a slightly lower top box score yet be statistically better than the state average. MNCM continues to assess how they will approach scoring in future reports given the tradeoff of ease of interpretation with the increased number of practices able to report reliable results.

## To what benchmark will you compare results?

The previous section assumed comparison to the average of the practices in the analysis. This is a common comparison and the default comparison of the CAHPS Analysis Program. However, you may want to consider other benchmarks for comparison of your survey results, including national, regional, and state. A detailed description of the types of benchmarks you may want to consider is available in the companion guide, *Developing a Public Report for the CAHPS Clinician & Group Survey: A Decision Guide.*

### How will you communicate results to participants?

Once you have the results from your analysis, a critical step in the process is sharing those results with the participating practices. If you will be publicly reporting the results, this "preview" step is important to give practices the opportunity to see their results before the information is public. It is also important to communicate with your stakeholders so they understand and trust the data available in the public report. This step is an opportunity to make sure that all stakeholders have a clear understanding of the results and the rationale for decisions made in preparing the public report. Even if you are not publicly reporting the results, sharing the results with the participating practices is helpful to motivating improvement and sharing best practices.

Do not assume practices should know what their results are because this is their data. While most vendors have an online portal where practices can see their data results almost in real time, this does not mean practices will know how their results will appear in the comparative report. Vendor portals typically report results based on "raw data," that is, without conducting any of the data cleaning and completeness steps of the data preparation process. The survey results available on vendor portals also are not typically case-mix adjusted. Consequently, the results a practice sees on its portal can differ from the results in the comparative report.

Do not rely solely on the public report to communicate the results to practices. Public reports are written for consumers as the primary audience. As a result, technical details, such as case-mix adjustment and statistical testing, are often simplified. Practices may want additional and more technical detail. For example, Minnesota Community Measurement (MNCM) uses a password-protected portal to provide participating practices with additional data beyond what is available in the public report (e.g., the full distribution of responses). MNCM also needed to make additional information available to practices to help them understand the rationale for using mean scoring with the top box display of scores. In many cases, MNCM met with representatives from health care systems to answer questions. These representatives tended to be the staff responsible for the overall survey efforts for the system, so they were in a good position to communicate information to each of their practices.

## Examples from the Trenches

Here are three examples from Alliances that briefly describe the decisions they have made regarding who serves as the data aggregator and who analyzes their data.

### Maine

In 2012, the Maine Dirigo Health Agency sponsored a statewide implementation of the CG-CAHPS Patient-Centered Medical Home (PCMH) Survey. They used the CAHPS Database as the data aggregator, which meant that participating practices were able to take advantage of the benefits of the CAHPS Database Online Reporting System. The agency was not able to use the database for the analysis, however. One reason was that the timing of the data result availability through the CAHPS Database Online Reporting System did not fit the agency's schedule. The second reason was that the agency wanted statistical comparisons to the state average rather than the national average. As a result, Dirigo contracted with a third-party analyst to conduct the data analysis.

### Minnesota

Minnesota Community Measurement serves as its own data aggregator. It has built its own online portal to receive data submissions and provide detailed specifications to vendors on how to submit the data. Its system then performs some data quality checks to ensure the data have been submitted in the proper format with valid values. MNCM contracts with a third party to conduct its data analysis. While MNCM requires the participating clinics to submit their data to the CAHPS Database, they contract to receive additional analyses beyond what the CAHPS Database Online Reporting System can offer as well as to get their data results when the timing of the CAHPS Database submission does not meet their needs.

### Wisconsin

The Wisconsin Collaborative for Healthcare Quality (WCHQ) handled both the data aggregation and analysis internally for its community-wide leveraged approach implementation of CG-CAHPS. Together, the WCHQ team worked through all the necessary decisions to obtain results for the public report.

## Conclusion

Many considerations are involved in aggregating and analyzing your CG-CAHPS Survey results. This guide has focused on the most critical decisions Alliances must address when analyzing the CG-CAHPS Survey results for practices within their communities. Specific strategies related to each of these decision points will be shaped by both decisions regarding implementation and reporting as well as the needs and interests of key stakeholders. Users of this Decision Guide can also refer to *Leveraging Existing Patient Survey Efforts: A Decision Guide* and *Developing a Public Report for the CAHPS Clinician & Group Survey: A Decision Guide*. Further guidance is available through the technical assistance resources supported by the Robert Wood Johnson Foundation's AF4Q program.

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[i] The sampling frame is the data file that contains a list of all patients eligible to be surveyed. This file is typically generated by the practice and sent to survey vendors for sampling. Once the survey is administered, all patient identifying information is removed from the results to maintain survey confidentiality.

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