# Fielding the CAHPS® Child Hospital Survey

## Sampling Guidelines and Protocols

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# Documents Available for the CAHPS Child Hospital Survey

This document is part of a set of instructional materials that address implementing the Child Hospital Survey, analyzing the data, and reporting the results. All documents are available on the Agency for Healthcare Research and Quality's Web site. For assistance in accessing these documents, please contact the CAHPS Help Line at 800-492-9261 or cahps1@westat.com.

For descriptions of these documents, refer to ***What's Available for the CAHPS Child Hospital Survey.***

### Available for the Child Hospital Survey:

- ***CAHPS Child Hospital Survey: Overview of the Questionnaire***
- ***CAHPS Child Hospital Survey 1.0*** (English and Spanish)

### Survey Administration Guidelines

- ***Fielding the CAHPS Child Hospital Survey***
- ***Sample Notification Letters and Emails for the CAHPS Child Hospital Survey***
- ***Sample Telephone Script for the CAHPS Child Hospital Survey***

### Reporting Measures and Guidelines

- ***Patient Experience Measures from the CAHPS Child Hospital Survey***

### Available for all CAHPS surveys:

- Analyzing CAHPS Survey Data: Free programs for analyzing the data, guidance on preparing survey results for analysis, and instructions for using the CAHPS Analysis Program.
- Translating Surveys and Other Materials: Guidelines for translating surveys and selecting translators and translation reviewers.

# Introduction

This document explains how to field the CAHPS Child Hospital Survey (Child HCAHPS) and gather the data needed for analysis and reporting. It provides instructions and advice related to the following topics:

- Constructing the sampling frame.
- Choosing the sample.
- Maintaining confidentiality.
- Collecting the data.
- Tracking returned questionnaires.
- Calculating the response rate.

This guidance applies to the Child version only. For information about the Adult version of the CAHPS Hospital Survey (HCAHPS), visit CMS's Web site for the CAHPS Hospital Survey.

### Figure 1: Summary of Key Requirements for Administering the Child HCAHPS Survey

| | |
|---|---|
| Administration | To generate the standardized data necessary for valid comparisons, the survey should be conducted by a third-party vendor according to the CAHPS guidelines specified in this document. |
| Sampling frame | Children (age 17 and under) who had at least one overnight stay in the hospital in a given month. |
| Collection mode | Mail, telephone, email (with mail or telephone), or mixed mode protocols |
| Sample size | The sample needs to be large enough to yield 300 completed surveys per hospital, a cost-effective method shown to produce statistically valid survey comparisons. |
| Target response rate | 30 percent, assuming rigorous data collection efforts. |

# Sampling Guidelines

These sampling guidelines will help you understand who is eligible to be included in the sample frame for the Child HCAHPS Survey. They also explain how to select a sample. By following these guidelines, you can be confident that your results will be comparable to those produced by other vendors and survey sponsors (organizations that fund or oversee the administration of the survey).

The best source of sample information is typically hospital discharge administrative data. In addition to hospitals, health plans or purchasers may have administrative or billing data to identify individual patients.

All of the items in this survey have been designed for the general population of children. Appropriate screening items are included for items intended to assess a specific experience or subgroup. In order to ensure that results are comparable to those produced by other vendors and sponsors, targeted sampling, such as selecting only patients with particular conditions or experiences, is not recommended.

## Defining the Sample Frame: Eligibility Criteria

The basic sampling procedure requires drawing a random sample of eligible monthly discharges. The sample will be drawn from a list of children age 17 and under who have received care from a given hospital during the specified time interval. This list is called a sample frame.

In order to generate the sample frame, hospitals and their survey vendors must apply the eligibility criteria, remove exclusions, and perform de-duplication. Please review these guidelines for determining whom to include in your sample frame:

- Children age 17 and under and their parent/guardian
- Patients with at least one overnight stay in the hospital
  - An overnight stay is defined as an inpatient admission in which the patient's admission date is different from the patient's discharge date.
  - The admission need not be 24 hours in length. For example, a patient had an overnight stay if he or she was admitted at 11:00 PM on Day 1, and discharged at 10:00 AM on Day 2.
  - Patients who did not have an overnight stay should not be included in the sample frame (e.g., patients who were admitted for a short period of time solely for observation; patients admitted for same-day diagnostic tests as part of outpatient care).
- Alive at time of discharge

## Exclusions

After the list of eligible children is determined using the above criteria, the following patients should be excluded from the sample frame (more detail on these groups will follow):

- "No-Publicity" patients
  - Defined as those who voluntarily submit a "no-publicity" request while hospitalized or who directly request a survey vendor or hospital not to contact them ("Do Not Call List").
- Court/Law enforcement patients
  - Excluded because of both the logistical difficulties in administering the survey to them in a timely manner, and regulations governing surveys of this population. These individuals can be identified by the admission source (UB-04 field location 15) "8 – Court/Law enforcement" or patient discharge status code (UB-04 field location 17) "21 – Discharged/transferred to court/law enforcement." This does not include patients residing in halfway houses.
- Patients with foreign home address
  - Excluded because of the logistical difficulty and added expense of calling or mailing outside of the United States (the U.S. territories—Virgin Islands, Puerto Rico, Guam, American Samoa, and Northern Mariana Islands—are not considered foreign addresses and therefore are not excluded).
- Patients discharged to hospice care (hospice-home or hospice-medical facility)
  - Excluded because of the heightened likelihood that they will expire before the survey process can be completed. Patients with a "Discharge Status" of "50 – Hospice – home" or "51 – Hospice – medical facility" should not be included in the sample frame. "Discharge Status" is the same as the UB-04 field location 17.
- Patients who are excluded because of state regulations
  - Some state regulations place further restrictions on patients who may be contacted after discharge. It is the responsibility of the hospitals/survey vendors to identify any applicable regulations and to exclude those patients as required by law or regulation in the state in which the hospital operates.

- Patients who are wards of the state
  - Excluded because they do not have parents/guardians to assess their experiences in the hospital.
- Patients who are emancipated minors
  - Excluded because they do not have parents/guardians to assess their experiences in the hospital.
- Healthy newborns
  - Excluded because the care that they receive can be closely associated with a mother's obstetric care. For newborns, only those requiring a NICU stay are eligible. These individuals can be identified by the admission source "0713 – Newborn – Level 3: intermediate care" or "0714 – Newborn – Level 4: intensive care."
- Patients with a psychiatric MS-DRG/principal diagnosis at discharge
  - Excluded due to the unique behavioral health issues pertinent to psychiatric patients.
- Maternity-stay patients
  - Excluded because care related to pregnancy does not generally fall within the purview of pediatric providers.
- Observation patients
  - Excluded because their hospital stay does not meet the criteria for an inpatient stay.
- Patients discharged to nursing homes and skilled nursing facilities
  - This applies to patients with a "Discharge Status" (UB-04 field location 17) of "03 – Skilled nursing facility," "61 – SNF Swing bed within hospital," or "64 – Certified Medicaid nursing facility."

Patients should be included in the Child HCAHPS survey sample frame unless the hospital/survey vendor has positive evidence that a patient is ineligible or fits within an excluded category. If information is missing on **any** variable that affects survey eligibility when the sample frame is constructed, the patient must be included in the sample frame.

## De-duplication

To reduce respondent burden, the hospital/survey vendor should, on a monthly basis, de-duplicate eligible patients to avoid (1) including the same person multiple times and (2) including multiple children from the same household. Patients can appear in sampling frames for consecutive months.

- **De-duplicating for multiple discharges.** The sampling frame is a person-level list and not a discharge-level list. Therefore, patients should appear only once in the sampling frame for any given month regardless of how many hospitalizations they have had in the month. The method used for de-duplicating depends on whether sampling is conducted continuously throughout the month or only at the end of the month.
  - For sample frame generation that occurs at the end of the month, use the patient's most recent hospitalization for inclusion in the sampling frame.
  - For more frequent sample frame generation (e.g., daily, weekly), compare each subsequent discharge list within a given month to the initial list for that month; any duplicate patients should be removed from the subsequent lists within that month. If multiple discharges occur within the same timeframe of the list (e.g., a patient has two separate discharges in the same week), retain the most recent discharge for comparison with the previous discharge list generated earlier in the month.
- **De-duplicating by household.** The sample frame should be further de-duplicated to exclude multiple individuals from the same household. In other words, the sample frame should not have more than one child per household.

## Timeframe

The following timeframe should be used when generating your sampling frame:

- Generate sample frames for each month. The sample frame for a particular month must include all eligible hospital discharges between the first and last days of the month (e.g., for January, any qualifying discharges between the 1st and 31st).
- Include only children who had been hospitalized in the past 6 weeks.
- Initiate surveying of eligible patients between 48 hours and 6 weeks (42 calendar days) after discharge. Do not distribute surveys to parents/guardians of patients before they are discharged.

- If a hospital is conducting sampling at the end of each month, it is important to create the sample frame in a timely manner in order to initiate contact for all sampled patients within 42 days of discharge.

### *Creation of the Sample Frame*

By applying the eligibility criteria, removing exclusions, and de-duplicating, hospitals/vendors create the sample frame from which the sample can be selected. Additional considerations for creating the sample frame include the following:

- Include patients whose eligibility status is uncertain.
- Use the address in the medical record as the contact information for the parent/guardian.
- Do not remove parents/guardians with missing or incomplete addresses and/or telephone numbers from the sample frame. Instead, try to find the correct address and/or telephone number. If the necessary contact information is not found, the "Final Survey Status" must be coded as non-response due to Bad address or Bad/no telephone number.

The following patient and parent/guardian information (data elements) should be included in the sample frame that a hospital provides to the vendor.

**Figure 2: Sample Frame Elements**

| **Data Elements Essential for Survey Administration** |
|---|
| Unique patient ID |
| Name of child (first and last names in separate fields) |
| Date of birth of child |
| Parent/guardian's name (first and last names in separate fields) |
| Gender of parent/guardian |
| Complete address of parent/guardian (includes street address, city, state, and ZIP Code each in a separate field) |
| Parent/guardian's telephone number with area code (if available) |
| Parent/guardian's email address (if available) |
| Preferred language of parent/guardian (if known) |
| Name and unique ID of hospital |
| Admission source |
| Admission date |
| Discharge date |
| Discharge status |
| Principal diagnosis (ICD-9/ICD-10) |
| Diagnosis-related group (MS-DRG code) |

## Recommended Number of Completes

To have a sufficient number of responses for analysis and reporting, you need to select enough individuals to obtain approximately 300 completed questionnaires per hospital. ("Questionnaires" are the survey instruments that have been mailed or are administered by telephone or online. **Appendix A** explains how to determine whether the returned questionnaire is "complete.") This is the minimum number of completed questionnaires required to ensure that the results are statistically reliable at the hospital-level. Hospitals wanting to compare results at a level other than the hospital-level (e.g., department, service line, etc.) will need additional completed surveys.

Please note that the recommendations regarding the number of completed questionnaires apply to the survey with **core items only**. If your survey includes supplemental items, which often apply to a relatively small subset of the overall sample, a higher number of completed questionnaires may be needed to generate enough responses to those items for the purposes of analysis and reporting. Generally speaking, to yield a level of reliability for supplemental items that is consistent with that of the core items, at least 100 responses per item are needed.

**Reasoning behind the recommendations.** These recommendations are based on data regarding the number of completed questionnaires necessary to achieve adequate hospital-level reliability for a measure. That is, how many completed surveys does one need to reliably distinguish among different hospitals? To answer this question, the survey development team examined data from a multi-site field test.

The hospital-level reliability coefficient indicates the extent to which the patients at a given hospital agree with one another in terms of their reported experiences at that hospital compared to the amount that hospitals differ from one another. This coefficient can take any value from 0.0 to 1.0, where 1.0 signifies a measure for which every parent or guardian of child in that hospital reports an identical experience. High levels of reliability are ideal, but achieving higher levels requires more completed questionnaires. To balance the goal of reliability with the need for a feasible sample size, the survey development team adopted the widely accepted coefficient of 0.70 as the threshold. In particular, a reliability level of at least 0.70 is strongly recommended for "high stakes" purposes such as public reporting or payment incentives, given the larger errors around estimated scores below this threshold.

An analysis of data from a multi-state field test of the Child HCAHPS Survey found that all but one measure had a hospital-level reliability greater than 0.70 at 300 responses per hospital. (See **Appendix B** for the data used to develop the sample size recommendation.) However, the number of completed questionnaires per hospital required to achieve the threshold of 0.70 can vary across areas and markets. In some markets, it may be possible to achieve 0.70 reliability with fewer responses. The recommendation of 300 completed surveys is based on the likelihood of achieving sufficient reliability across most scenarios of survey implementation.

## Selecting the Sample

The starting sample size you need to achieve 300 completed surveys should take several factors into account:

- The mode or modes of data collection
- The anticipated response rate
- The accuracy of the contact information
- Any prior survey experience with the same or similar populations
- Expectations about the number of individuals who may be identified as ineligible

To collect a total of 300 completed surveys, plan to sample at least monthly throughout an entire year. The basic sampling procedure entails drawing a random sample of all eligible discharges from a hospital on a monthly basis. Sampling may be conducted either continuously throughout the month or at the end of the month, as long as a random sample is generated from the entire month. If the hospital/survey vendor chooses to sample continuously:

- Draw each sample using the same sampling ratio (for instance, 25 percent of eligible discharges or every fourth eligible discharge) and the same sampling timeframe (for instance, every 24 hours, 48 hours, or week) throughout the month.
- Sample an approximately equal number of discharges each month. The annual sample should be allocated proportionally to each month according to the expected distribution of total eligible discharges over a 12-month period.
- Draw the sample according to this uninterrupted random sampling protocol and not according to any "quota" system.
- Sample from every month throughout the entire 12-month reporting period. Do not stop sampling or curtail ongoing survey administration activities even if 300 completed surveys have been attained.
- If the hospital is unable to reach at least 300 completed surveys in a 12-month period because it is small or has few pediatric patients who meet the eligibility criteria, sample all eligible discharges (i.e., conduct a census) and attempt to obtain as many completes as possible.

- If hospitals/vendors find that they are achieving less than the expected number of completed surveys, adjust monthly sample sizes at the beginning of a quarter to ensure that 300 completed surveys are obtained in a 12-month period.

## *Methods of Sampling*

Sampling for Child HCAHPS is based on the eligible discharges (sample frame) for a calendar month. There are three options for sampling patients: Simple Random Sampling (SRS), Proportionate Stratified Random Sampling (PSRS), and Disproportionate Stratified Random Sampling (DSRS). Once a method of sampling or "sample type" is used within a quarter, maintain it throughout that quarter. Sample type can be changed at the beginning of a quarter.

### Simple Random Sampling

SRS is the most basic sampling technique in which a group of patients (a sample) is randomly selected from a larger group of eligible patients (sample frame). Each patient is chosen entirely by chance, and each eligible patient has an equal chance of being included in the sample. For the Child HCAHPS Survey, a census sample is also considered to be a simple random sample.

Hospitals/vendors can undertake this sampling approach with different frequencies, which can be as often as daily but must be at least monthly.

### Proportionate Stratified Random Sampling

In proportionate stratified random sampling, the entire population is divided into non-overlapping subgroups, or strata. Commonly used definitions for strata include time period (daily, weekly, or bi-weekly) and hospital unit. The distribution of sample allocated to each strata is proportionate to the distribution of the strata within the hospital. All eligible monthly discharges should be contained in only one of the chosen strata; no eligible discharges can overlap strata.

Patients are then randomly sampled from each stratum at equal proportions or ratios. Each subgroup, or stratum, should have the same sampling ratio (i.e., proportion or percentage). That is, the percentage of eligible discharges sampled is the same across all strata. The same sampling ratio must be applied regardless of the number of eligible discharges in each defined stratum.

The following are examples of situations where proportionate stratified random sampling may be beneficial:

- The monthly sample is drawn at different scheduled times (e.g., each week) throughout the month. The same percentage of discharges is sampled each week.

- Distinct units within a hospital (e.g., wards, floors) are sampled separately. The same percentage of discharges is sampled in each unit.

The same strata names and definitions must be used each month throughout the quarter.

### Disproportionate Stratified Random Sampling

In disproportionate stratified random sampling, dissimilar sampling ratios are used to draw samples from different strata (e.g. hospital unit or week of the month). For example, in DSRS sampling, a hospital/vendor may sample the same number of patients from each unit, but the proportion (percentage) of the eligible discharges selected from each unit would be different. This means that each eligible discharge does not have an equal chance of being chosen.

Hospitals/vendors must sample a minimum of ten eligible discharges in each stratum in each month. Consistent strata sampling must be maintained throughout the quarter.

DSRS requires information about the strata and weighting prior to analysis. A hospital/vendor that elects to use DSRS must:

- Identify the strata, the number of discharges by strata by month, and the number that will be sampled by strata by month.

- Create and employ inverse probability strata weights using total eligible discharges and completed surveys by strata so that responding patients are representative of all eligible patients with respect to the strata used in DSRS.

Hospitals/vendors should only employ DSRS sampling if they have the capacity to complete inverse probability weighting.

## Preparing Sample Files for Data Collection

The pieces of information that are most critical to the success of data collection are accurate and complete patient, parent/guardian, and hospital names and contact information appropriate for the mode of administration (i.e., addresses for mail surveys, telephone number for telephone administration, and email addresses for online administration). When you have incomplete address information or have reason to believe that this information may be inaccurate, hospitals and/or vendors may be able to use other sources to clean or update the contact information, such as Internet directories.

Once the sample has been selected, the vendor assigns a unique identification (ID) number to each sampled person. This unique ID number should **not** be based on an existing identifier such as a Social Security number or a patient ID number. This number will be used **only** to track the respondents during data collection.

## Recommended Modes for Data Collection

Each hospital and/or vendor will need to choose the data collection mode that maximizes the response rate at an acceptable cost. The CAHPS team recommends the following modes:

- Mail only.
- Telephone only.
- Mixed mode (mail and telephone, email and mail, or email and telephone).

Results from the field tests, as well as the experiences of organizations that have fielded similar surveys, indicate that the mail with telephone followup method is most effective: results from survey research literature indicate that followup by telephone often adds 10 to 15 percentage points to the response rate.

## Data Collection Protocols

This section provides a protocol for collecting responses by mail with telephone followup and email with mail followup. You can adapt this protocol for mail-only, telephone only, or email with telephone followup. At this time, an email-only mode is not recommended.

Hospitals/vendors may choose to deviate from these protocols (perhaps by mixing mail and another mode or by omitting the postcard reminder). In that case, the vendor may have to conduct additional followup, i.e., additional attempts to obtain a completed questionnaire in order to achieve the desired response rate.

The survey field period must not exceed six weeks (42 calendars) beginning with the mailing of the first questionnaire. Data collection should not be stopped prematurely if the target number of completed questionnaires is achieved. The data collection protocol should be completed as planned to ensure comparability of the results.

## Maintaining Confidentiality

Privacy assurances are central to encouraging respondent participation. Survey vendors should already have standard procedures in place for maintaining the confidentiality of respondents' names and minimizing the extent to which identifying information, such as names and addresses, are linked to the actual survey responses. For example, the individual ID numbers that are used to track the survey must not be based on existing identifiers, such as Social Security numbers or patient ID numbers.

Many survey vendors require employees to sign statements of confidentiality ensuring that they will not reveal the names of respondents or any results linked to specific individuals.

There are several opportunities during the survey process to explain to respondents that their responses are kept strictly confidential. The key avenues are the advance and cover letters and interviewer assurances during telephone interviews.

## Mail Protocol

This section reviews the basic steps for collecting data through the mail and offers some advice for making this process as effective as possible.[1]

- **Set up a toll-free number** and publish it in all correspondence with respondents. Assign a trained project staff member to respond to questions on that line. It is useful to maintain a log of these calls and review them periodically.

- **Send the respondent the questionnaire with a cover letter and a postage-paid envelope.** A well-written, persuasive letter authored by a recognizable organization (e.g., the sponsor or participating hospital) will increase the likelihood that the recipient of the questionnaire will complete and return it within the 42-day data collection period. The cover letter should include instructions for completing and returning the questionnaire. For an example, see the ***Sample Notification Letter and Emails for the CAHPS Child Hospital Survey***.

  **Tips for the letter:**

  – Tailor the letter, including language that explains the purpose of your survey, the voluntary nature of participation, and the confidentiality of responses.

[1] Adapted from McGee J, Goldfield N, Riley K, and Morton J. Collecting Information from Health Care Consumers, Rockville, MD: Aspen Publications, 1996.

- Note that a refusal to participate will not affect an individual's health care.
- Personalize the letter with the name and address of the intended recipient.
- Have it signed by a representative of the sponsoring organization(s).
- Spend some time on the cover letter, checking it for brevity and clarity, and ensuring that there are no grammatical or typographical errors.

**Tips for the outside envelope:**

- Make it look "official" but not too bureaucratic; it must not look like junk mail.
- Place a **recognizable** name—such as the name of the hospital or a government agency, where applicable—above the return address.
- Mark the envelopes "Address service requested" in order to update records for respondents who have moved and to increase the likelihood that the survey packet will reach the intended respondent.

- **Send a postcard reminder to nonrespondents 10 days after sending the questionnaire.** Some vendors prefer sending a reminder postcard to all respondents 3 to 5 days after mailing the survey instead of sending a postcard only to nonrespondents 10 days after the questionnaire is mailed. Their reminder postcards serve as a thank-you to those who have returned their questionnaires and as a reminder to those who have not. The reminder postcard is an inexpensive way to increase your response rate. ***Sample Notification Letters and Emails*** contains a sample reminder card.

- Send a second questionnaire with a reminder letter and a post-paid envelope to those still not responding approximately 21 days after the first mailing. ***Sample Notification Letters and Emails*** includes a sample reminder letter.

## Telephone Protocol

The Child HCAHPS Survey must be modified for telephone administration. ***Sample Telephone Script for the CAHPS Child Hospital Survey*** provides a sample telephone script, including instructions and an introductory statement. When administering the survey by telephone, a vendor can use either a computer-assisted telephone interviewing (CATI) script or a paper-and-pencil method.

**Note on mode effects:** Research conducted by the CAHPS team indicates that telephone-only administration is associated with more positive reports and ratings of care. The direction of this effect is not uncommon in comparisons of mail-only and telephone-only survey administration. Further testing is needed before we can determine if and how users should adjust data collected using telephone-only mode.

- **Check telephone numbers.** Check the telephone numbers of sample respondents for out-of-date area codes and partial or unlikely telephone numbers. All survey vendors should have standard automated procedures for checking and updating telephone numbers before beginning data collection.

  After extensive tracking, you may still be left with some respondents who do not have a working telephone number, or for whom you have only an address. If using a mixed-mode administration, these respondents can be moved to the mail mode of administration.

- **Train the interviewers before they begin interviewing.** The interviewer should not bias survey responses or affect the survey results. (See the box below for advice regarding the training of interviewers.)

- **Begin contacting non-respondents.** If following up on a mailed questionnaire, initiate telephone contact with nonrespondents 3 weeks after sending the second questionnaire. You may want to send a letter to respondents in advance to let them know that you will be contacting them by telephone. A sample is provided in ***Sample Notification Letters and Emails***.

- **Attempt to contact each respondent by telephone at least five times.** The vendor should make at least five attempts unless the respondent explicitly refuses to complete the survey. These attempts must be on different days of the week (both weekdays and weekends), at different times of the day, and in different weeks.

## Training Interviewers

The CAHPS team recommends the following key procedures for conducting standardized, nondirective interviews:

- Interviewers should read questions exactly as worded so that all respondents are answering the same question. When questions are reworded, it can have important effects on the resulting answers. Please refer to ***Sample Telephone Script for the CAHPS Child Hospital Survey***.

- When a respondent fails to give a complete or adequate answer, interviewer probes should be nondirective. That is, interviewers should use probes that do not increase the likelihood of one answer over another. Good probes simply stimulate the respondent to give an answer that meets the question's objectives.

- Interviewers should maintain a neutral and professional relationship with respondents. It is important that they have a positive interaction with respondents, but there should not be a personal component. The primary goal of the interaction from the respondent's point of view should be to provide accurate information. The less interviewers communicate about their personal characteristics and, in particular, their personal preferences, the more standardized the interview experience becomes across all interviewers.

- Interviewers should record only answers that the respondents themselves choose. The CAHPS instrument is designed to minimize decisions that interviewers might need to make about how to categorize answers.

Training and supervision are the keys to maintaining these standards. Although these principles may seem clear, it has been shown that training, which includes exercises and supervised role playing, is essential for interviewers to learn how to put these principles into practice. In addition, interviewers may not meet these standards unless their work is monitored. A supervisor should routinely monitor a sample of each interviewer's work to ensure that the interviewers are, in fact, carrying out interviews using prescribed standards and methods. When you are hiring a survey vendor, the protocol for training and supervision should be among the top criteria you consider when choosing among data collection organizations.

## Email Protocol

This section reviews the basic steps for contacting respondents via email to invite them to take an online survey and offers some advice for making this process as effective as possible. The CAHPS team does not recommend an email-only protocol at this time. Regardless of the response rate achieved through email alone, the email protocol must be followed by a full mail or telephone protocol for nonrespondents to ensure that all patients in the sample have an equal chance of completing the survey

and that the respondents are representative of the patient population. For the same reason, the sample should not consist of only those patients for which you have an email address.

Note: This email protocol is also applicable when administering the survey through a patient portal

- **Set up an email address or toll-free telephone number** that respondents can contact with questions and publish it in all correspondence. Assign a trained project staff member to respond to questions that are submitted. It is useful to maintain a log of these emails/calls and review them periodically.

- **Send the respondent an email with a link to the online survey.** A well-written, persuasive message authored by a recognizable organization will increase the likelihood that the recipient of the survey invitation will complete it. The email should be personalized and contain an individualized ID and password to access the survey as well as an individualized direct link. The email invitation should include instructions for completing the survey and explain whom to contact if recipients have questions. ***Sample Notification Letters and Emails for the CAHPS Child Hospital Survey*** includes examples of email content that can be adapted.

  **Tips for the email:**

  – Tailor the email message, including language that explains the purpose of your survey, the voluntary nature of participation, and the confidentiality of responses.

  – Note that a refusal to participate will not affect an individual's health care.

  – Personalize the email message with the name of the intended recipient.

  – Have the email electronically signed or sent by a representative of the sponsoring organization(s).

  – Spend some time on the email message, checking it for brevity and clarity, and ensuring that there are no grammatical or typographical errors

  – To increase the likelihood that participants will respond to the email, it is helpful to have corresponded with the participant previously via email so that they recognize the email sender.

- **Send an email reminder to nonrespondents after sending the initial email invitation.** The email reminder serves as a thank you to those who have completed their survey and as a reminder to those who have not. ***Sample Notification Letters and Emails*** includes a sample reminder card that can be used as a template for the email reminder.

- **Send a second email reminder** to those still not responding after the initial email invitation.

- **Followup with nonrespondents by mail or telephone.** It is critical to initiate contact by either mail or telephone with everyone who has not completed the survey online. Since not all patients have access to or use email regularly, survey sponsors must follow the email protocol with either the full mail or telephone protocol for all nonrespondents to ensure that the final survey responses represent the patient population that was sampled. The CAHPS team does not recommend including a link to a Web-based online survey in a mailed letter; previous research and experience have shown this to be ineffective.

## Tracking Returned Questionnaires

Most vendors have established methods for tracking the sample. You should also set up a system to track the returned surveys by the unique ID number that is assigned to each respondent in the sample. This ID number should be placed on every questionnaire that is mailed, on the call record of each telephone case, or incorporated into the unique link for online surveys.

To maintain respondent confidentiality, the tracking system should not contain any of the survey responses. The survey responses should be entered in a separate data file linked to the sample file by the unique ID number. (This system will generate the weekly progress reports that sponsors and vendors should review closely.)

Each respondent in the tracking system should be assigned a survey result code that indicates whether the respondent:

- Returned the mail survey,
- Participated in the telephone interview,
- Responded to the online survey,
- Was ineligible to participate in the study,
- Could not be located,

- Is deceased, or
- Refused to respond.

The codes should also indicate whether the questionnaire is complete, partially complete, or incomplete.

- **Complete questionnaire:** A questionnaire is considered complete if responses are available for at least half of the key survey items and at least one reportable item.
- **Partially completed questionnaire:** A questionnaire is considered partially complete if responses are available for at least one reportable item, but less than half of the key items. It is important to keep track of partially completed questionnaires because they should be included for analysis and reporting.
- **Incomplete questionnaire:** A questionnaire is incomplete if the individual did not answer at least one reportable item.

For more information about the key and reportable items in the Child HCAHPS Survey, see **Appendix A** of this document.

The tracking system should also include the date the survey was returned (for mail surveys) or answered (for telephone and online surveys). The interim result code reflects the status of the case during the different rounds of data collection, and the final result code reflects the status at the end of data collection. These result codes are used to calculate response rates as shown in the next section.

## Calculating the Response Rate

In its simplest form, the response rate is the total number of completed questionnaires divided by the total number of individuals selected for the sample. Calculating your response rate is helpful in determining a more accurate starting sample size for future survey administration. For the Child HCAHPS Survey, the goal is a response rate of 30 percent.

To calculate the response rate, use the following formula:

$$\frac{\textbf{Number of completed returned questionnaires}}{\textbf{Total number of individuals surveyed – (deceased + ineligible)}}$$

Listed below is an explanation of the categories included and excluded in the response rate calculation.

### *Denominator Inclusions:*

The denominator should include:

- **Respondents.** The parent or guardian of the sampled child returned a questionnaire, whether complete, incomplete, or partially complete.
- **Refusals.** The parent or guardian of the sampled child refused to participate in writing or by phone.
- **Nonresponses.** The sampled child is presumed to be eligible, but the parent or guardian did not complete the survey for some reason (e.g. never responded, was unavailable at the time of the survey, was ill or incapable, had a language barrier).
- **Bad addresses/phone numbers.** In either case, the parent or guardian is presumed to be eligible even if you were unable to locate them.

### *Denominator Exclusions:*

- **Deceased.** In some cases, a household or family member may inform you of the death of the sampled child.
- **Ineligible.** The sampled child did not have an inpatient, overnight stay from the participating hospital in the month being sampled (e.g., in the last six weeks if sampling at the end of the month) or was in one of the subgroups excluded from the survey (see pages 4-6 of this document).

## Increasing the Number of Responses

Out-of-date mailing and email addresses, inaccurate telephone numbers, voicemail, gatekeepers, and frequent travel by respondents are common problems. Hospitals and vendors have a number of methods available to them to maximize responses:

- Improve initial contact rates by making sure that addresses and phone numbers are current and accurate (e.g., identify sources of up-to-date sample information, run a sample file through a national change-of-address database, send a sample to a phone number look-up vendor).
- Use all available tracking methods for correcting contact information (e.g., directory assistance, CD-ROM directories, free or subscription-based Internet database services and directories).
- Take steps to improve contact rates after data collection has begun (e.g., increase maximum number of calls, ensure that calls take place at different day and evening times over a period of days, mail second reminders, use experienced and well-trained interviewers).

- Consider using a mixed-mode protocol involving both a mail and telephone data collection procedure. In field tests, the combined approach was more likely to achieve a desired response rate than did either mode alone.

- Train interviewers on how to deal with gatekeepers.

- Train interviewers on refusal aversion/conversion techniques.

These methods will add to the costs of conducting a survey, but sponsors need to weigh these extra costs against the risk of obtaining low response rates and, consequently, less representative data.

Once the vendor reaches the potential respondent, other challenges await: people throw away the envelope, sometimes unopened, or set aside the questionnaire but then never complete it. These responses draw attention to the importance of effectively communicating why the person should complete the questionnaire. In addition to persistent follow-up, make sure that the outside envelope, cover letter, and questionnaire are as attractive and compelling as possible.

For additional advice and guidance, see:

- **Appendix C:** Enlisting Respondents Who Are Difficult to Reach

- McGee J, Goldfield N, Riley K, Morton J. *Collecting information from health care consumers*. Rockville, MD: Aspen Publications, 1996.

# Appendix A: Determining Whether a Survey Response Is Complete

To determine if a questionnaire is complete, the first step is to flag the key and reportable items in the core survey. Supplemental items are **not** included in the definition of a completed questionnaire.

**What are key items?** Key items are the survey questions that **all** respondents should answer, including:

- Questions confirming eligibility for the survey.
- The screeners for the questions included in the core composites measures.
- The hospital rating question.
- Demographic and other background items.

Table A-1 lists the key items from the Child HCAHPS Survey.

**What are reportable items?** Reportable items are the questions included in the composite and rating measures. For a list of the reportable items in the core survey, refer to the appendix in ***Patient Experience Measures from the CAHPS Child Hospital Survey.***

**Number of responses needed:**

- **Completed survey.** A questionnaire is considered complete if it has responses for at least 22 (50 percent) of the key items and 1 reportable item.
- **Partially completed survey.** A questionnaire is considered partially complete if it has responses for at least 1 reportable item and fewer than 22 (50 percent) of the key items.
- **Incomplete survey.** A questionnaire is considered incomplete if it does not have responses for any reportable items.

## Table A-1: Key Questions from the Child HCAHPS Survey

| Short Item Title | Item # |
|---|---|
| Child born during this hospital stay | 1 |
| Child admitted through the ER | 2 |
| Parent was asked about child's prescription medicines | 5 |
| Parent was asked about child's vitamins, herbal medicines, and over-the-counter medicines | 6 |
| Child able to talk with nurses and doctors | 7 |
| Nurses listened carefully to parent | 14 |
| Nurses explained things to parent in way that was easy to understand | 15 |
| Nurses treated parent with courtesy and respect | 16 |
| Doctors listened carefully to parent | 17 |
| Doctors explained things to parent in a way that was easy to understand | 18 |
| Doctors treated parent with courtesy and respect | 19 |
| Parent had privacy when discussing child's care with providers | 20 |
| Providers asked about things a family knows best about child | 21 |
| Providers talked and acted in a way that was appropriate for child's age | 22 |
| Providers kept parent informed about care | 23 |
| Child had tests done in hospital | 24 |
| Parent or child pressed the call button | 26 |
| Child given medicine in hospital | 28 |
| Providers told parents how to report mistakes | 30 |
| Child had pain that needed treatment | 31 |
| Room and bath were kept clean | 33 |
| Room was quiet at night | 34 |
| Hospital had things available that were right for child's age | 35 |
| Provider asked parent about child's readiness to leave the hospital | 36 |

| Short Item Title | Item # |
|---|---|
| Provider talked with parent about care after leaving the hospital | 37 |
| Child discharged on a new medicine | 38 |
| Provider explained when child can resume regular activities | 41 |
| Provider explained symptoms or problems to look for after leaving the hospital | 42 |
| Parent received written information about symptoms or problems to look for after leaving the hospital | 43 |
| Child was 13 years old or older | 44 |
| Rating of hospital | 48 |
| Recommend hospital to family and friends | 49 |
| Rating of child's overall health | 50 |
| Age (child) | 51 |
| Male or female (child) | 52 |
| Hispanic or Latino (child) | 53 |
| Race (child) | 54 |
| Respondent's relationship to child | 55 |
| Age (respondent) | 56 |
| Highest level of education completed (respondent) | 57 |
| Preferred language (respondent) | 58 |
| How much of the time respondent was at the hospital | 59 |
| Someone helped respondent complete the survey | 61 |
| **Total number of key items** | **44** |
| **Number of items needed to be a "complete" survey** | **22** |

# Appendix B: Justification for Recommendations Regarding Number of Completed Questionnaires

The goal of adequate reliability is to make it reasonably likely that apparently large differences in hospital scores represent true underlying differences and are not due to chance. The table below demonstrates that the ability to distinguish hospitals at different levels of performance increases as a direct function of reliability. Table B-1 provides estimated hospital-level reliabilities per hospital for each of the Child HCAHPS Survey measures based on results from the multi-site field test.

As the table shows, while a sample size of 300 completes per hospital does not guarantee a reliability of 0.70 for composites, individual item measures, and the global rating, it is reasonably likely to do so for most measures. Smaller sample sizes in an unknown population pose a substantial risk of not achieving this minimum level of reliability for most measures.

### Table B-1: Child HCAHPS Survey Measures: Hospital-Level Reliabilities for 300 Completed Surveys (Multi-site field test, 2012-2013)

| Composite and Single Item Measures | Hospital-Level Unit Reliability at N=300 |
|---|---|
| Nurse-parent communication | .80 |
| Doctor-parent communication | .73 |
| Communication about medicines | .91 |
| Informed about child's care | .79 |
| Privacy with providers | .82 |
| Preparing to leave hospital | .87 |
| Informed in Emergency Room | .74 |
| Nurse-child communication | .77 |
| Doctor-child communication | .84 |
| Involving teens in care | .66 |
| Mistakes and concerns | .90 |
| Call button | .78 |
| Child comfort | .91 |
| Child pain | .79 |
| Cleanliness | .86 |

| Composite and Single Item Measures | Hospital-Level Unit Reliability at N=300 |
|---|---|
| Quietness | .90 |
| Overall rating | .89 |
| Recommend hospital | .93 |

# Appendix C: Enlisting Respondents Who Are Difficult to Reach

It may be difficult to locate some respondents, but it is especially important to interview or receive returned questionnaires from those individuals who might be difficult to reach. They are likely to be different from those individuals who immediately complete and return a questionnaire or who are easily interviewed. They may, for example, be chronically ill, have two jobs, or be different in some other way that is relevant to your results. Unless you maintain a high response rate overall and make efforts to reach them, their views and experiences will be underrepresented.

Sponsors and vendors should discuss this possibility in advance and consider plans to do extensive telephone tracking and locating. You may also want to talk about the timing of interviews. Because the Child HCAHPS Survey is a survey of respondents in their homes, interviewers typically work in the evenings and on weekends. However, the survey vendor should provide at least one interviewer during the daytime to maintain appointments made with respondents during the day and try to reach those respondents who do not answer during the evenings (e.g., Those who have evening shift jobs). Interviewing during the daytime on weekdays is especially effective and appropriate for parents/guardians.

You are likely to encounter certain types of problems with which you should be familiar. Sponsors and vendors should discuss these issues and agree on appropriate procedures.

| Common Problems | Some Guidance |
|---|---|
| The interviewer reaches voice mail. | Voice mail is part of modern life. There is some debate about whether or not it is best to leave a message; unfortunately, there is no right answer to this question.<br><br>However, you cannot assume that a parent/guardian will call back, so survey vendors should continue to make an effort to reach the parent/guardian. In essence, when an interviewer reaches voice mail, it should be handled as though the respondent was not at home. |
| The telephone number for the sampled parent/guardian is incorrect. | The vendor should make every effort to find the right number:<br><br>• If the person answering the telephone knows how to reach the sampled individual, use that information.<br>• If there is no information about the sampled individual at the provided number, use directory assistance.<br>• If a correct telephone number cannot be found for the individual, and you are using both mail and telephone methods of data collection, mail the questionnaire. |
| The sampled parent/guardian has moved and the address in the sample is incorrect. | • The vendor should make every effort to track down the parent/guardian of the sampled child. Stamp all mail “Address Service Requested” so that undelivered mail gets returned. If the mail gets returned, refer to sources like Internet directories or national change of address directories to obtain the new address. |

| Common Problems | Some Guidance |
|---|---|
| The sampled parent/guardian is temporarily away. | The protocol for this situation will depend somewhat on the data collection schedule. If the person becomes available before data collection is scheduled to end, the correct procedure is to call back later. |
| The sampled parent/guardian does not speak English. | If the survey questionnaire has not been translated into the parent/guardian's language, an interview cannot be conducted. For the purposes of calculating response rates, these cases should be considered as "nonresponse" and cannot be excluded from the response rate formula's denominator. |
| The sampled parent/guardian is temporarily ill. | Contact the person again before the end of data collection to determine if he/she has recovered and can participate. |
| The sampled parent/guardian has a condition that prevents being interviewed, such as having a visual, hearing, or cognitive impairment. | This person becomes a nonrespondent by virtue of his or her condition unless an alternate mode is available that would be more appropriate for that person. |