Supporting Statement – Part A

A 1.0 CIRCUMSTANCES OF INFORMATION COLLECTION

A 1.1 Background

The intent of the HCAHPS initiative is to provide a standardized survey instrument and data collection methodology for measuring patients' perspectives on hospital care. While many hospitals currently collect information on patients' satisfaction with care, there is no national standard for collecting or publicly reporting this information that would enable valid comparisons to be made across all hospitals. In order to make "apples to apples" comparisons to support consumer choice, it is necessary to introduce a standard measurement approach. HCAHPS can be viewed as a core set of questions that can be combined with a broader, customized set of hospital-specific items. HCAHPS is meant to complement the data hospitals currently collect to support improvements in internal customer services and quality related activities.

Hospitals began using HCAHPS, also known as Hospital CAHPS or the CAHPS Hospital Survey, under the auspices of the Hospital Quality Alliance, a private/public partnership that includes the American Hospital Association, the Federation of American Hospitals, and the Association of American Medical Colleges, Joint Commission on Accreditation of Healthcare Organizations, National Quality Forum, AARP, and CMS/AHRQ, and other stakeholders who share a common interest in reporting on hospital quality. This Alliance has been proactive in making performance data on hospitals accessible to the public thereby

improving care. In March 2008, the first results from the HCAHPS survey were publicly reported on the Hospital Compare website, which can be found at www.hospitalcompare.hhs.gov, or through a link on www.medicare.gov

CMS is sensitive to the costs that will be borne by the hospitals that participate in the HCAHPS initiative. In order to gain a full and detailed understanding of the range of costs associated with implementation of HCAHPS, in 2005 CMS commissioned Abt Associates, Inc. to conduct a thorough investigation of the costs and benefits of HCAHPS.

Costs associated with collecting HCAHPS will vary depending on:

- The method hospitals currently use to collect patient survey data;
- The number of patients surveyed (target is 300 completed surveys per year); and
- Whether it is possible to incorporate HCAHPS into their existing survey.

Abt Associates' cost estimates are for data collection and transmission to CMS only and do not include administrative, information technology, or other costs that hospitals may incur as a result of HCAHPS. Abt estimates that the average data collection cost for a hospital conducting the 27-item version of HCAHPS as a stand-alone survey would be between $3,300 - $4,575 per year, assuming that 80-85 percent of hospitals collect HCAHPS by mail and the remainder by phone or active IVR. The costs for combining HCAHPS with existing surveys would be considerably less. It would cost $978 per hospital annually to incorporate the 27-item version of HCAHPS into existing surveys.

Abt estimates that the nationwide data collection cost for conducting the 27-item version of HCAHPS would be between $4.1 million and $19.1 million per year if all eligible hospitals participated, depending upon the extent to which hospitals integrate HCAHPS with their existing survey activities or conduct it as a stand-alone survey. In the context of overall hospital costs, the maximum national cost estimate of HCAHPS represents less than 0.02 percent of overall hospital costs, even if all hospitals collect HCAHPS as a stand-alone survey.

While the potential benefits of HCAHPS cannot be enumerated as precisely as its costs, Abt concluded that:

> *"What we can conclude with some level of confidence is that the marginal costs associated with a longer version of HCAHPS are likely to be relatively small, so if there is a reasonable basis for believing that the 27-item version of HCAHPS offers better information to consumers than a shorter alternative, then there are good reasons for implementing the current 27-item version of HCAHPS."*

The Executive Summary and Final Report cost-benefit analysis, "*Costs and Benefits of HCAHPS*", may be found at www.cms.gov/HospitalQualityInits in the section called "*HCAHPS: Patients' Perspectives of Care Survey."*

In spring of 2002, the Centers for Medicare & Medicaid Services (CMS), requested that the Agency for Healthcare Research and Quality (AHRQ), through the CAHPS team, develop and test a survey through which hospital patients could assess the care they receive. This process has been consistent with other CAHPS survey development processes, including: review of the relevant literature; review of existing hospital surveys obtained through a public call for measures; pilot testing; and a series of opportunities for public input.

Three broad goals have shaped HCAHPS. First, the survey is designed to produce comparable data on the patient's perspective on care that allows objective and meaningful comparisons between hospitals on domains that are important to consumers. Second, public reporting of the survey results is designed to create incentives for hospitals to improve their quality of care. Third, public reporting will serve to enhance public accountability in health care by increasing the transparency of the quality of hospital care provided in return for the public investment. With these goals in mind, the HCAHPS project has taken substantial steps to assure that the survey will be credible, useful, and practical. This methodology and the information it generates are available to the public.

CMS partnered with AHRQ to develop a standard instrument and data collection and reporting procedures that will capture patients' perspectives of their hospital care. AHRQ is a leader in developing instruments for measuring patient perspectives on care. AHRQ and its grantees developed the Health Plans CAHPS Survey, which is currently used to assess the care provided by health plans covering over 132 million Americans. While CAHPS has been accepted as the industry standard for measuring consumers' perspectives in the healthcare system, it does not address patients' perspectives in the acute care setting. In response to this need, AHRQ initiated the process of developing a public domain survey instrument for the acute care setting. AHRQ used its experience and expertise to work with CMS to develop both a standard survey for measuring patients' reports and ratings of their care in the hospital setting, and approaches to reporting the results to consumers. Steps in creating and implementing the survey are summarized in Table 1.

Table 1: HOSPITAL CAHPS SURVEY® Development and Implementation

	Timeframe
Published a "call for measures" in the *Federal Register* and received 7 submissions from Avatar, Edge Health Care Research Healthcare Financial Management Association, Jackson Organization, Press Ganey Associates, National Research Corporation, Peace Health, Professional Research Consultants, and SSM Health Care.	July 2002
Completed literature review.	Sept-Nov 2002
Held a Web chat to answer questions about HCAHPS.	Oct 2002
Provided draft domains to CMS.	Oct 2002
Reviewed measures submitted in response to Federal Register Notice (FRN).	Nov 2002
Held Stakeholders Meeting to solicit suggestions and comments.	Nov 2002
Held vendors meeting to solicit suggestions and comments.	Nov 2002
AHRQ delivered 66 item draft survey to CMS for use in pilot test.	Jan 2003
Developed data collection and sampling methods, and developed analysis plan.	Jan-Feb 2003
Published FRN soliciting comments on draft HCAHPS.	Feb 2003
Completed hospital recruitment for pilot.	Mar 2003
Began data collection for CMS 3-state pilot test.	June 2003
Published a FRN soliciting comments on draft HCAHPS and asked for input about implementation issues.	June 2003
Analyzed data from CMS pilot test.	Sept–Nov 2003
Review of instrument by CAHPS Cultural Comparability team.	Fall 2003
Began CT pilot test of the HCAHPS instrument.	Fall 2003
Held HCAHPS Stakeholders' Meeting at AHRQ.	Nov 2003
Revised HCAHPS instrument to 32 items.	Nov 2003
AHRQ submitted revised 32-items HCAHPS Instrument to CMS.	Dec 2003
Published a FRN soliciting input for 32-item HCAHPS instrument and implementation strategy.	Dec 2003-Feb 2004
Started coordination of national implementation with HSAG, the AZ QIO.	January 2004
Completed CT pilot test of HCAHPS.	Jan 2004
AHRQ submitted Analysis Report of the CMS 3-state pilot to CMS.	Jan 2004
Continued discussions with hospitals, vendors, consumers to follow-up on FRN comments from February.	March – Sept 2004
Revised 25-item HCAHPS Instrument submitted by AHRQ to CMS.	Oct 2004
Submitted HCAHPS to NQF for its consensus development process.	November 2004
Started developing training documents for national implementation.	December 2004
Started discussions regarding data transmission via QNET & other issues with the IFMC, the IA QIO.	April 2005
Formed the Data Integrity Group.	June 2005

Table 1: HOSPITAL CAHPS SURVEY® Development, cont.	**Timeframe**
Received endorsement for 27-item HCAHPS from the National Quality Forum.	May 2005
Modified survey instrument and protocol as 27-items.	May 2005
Abt Associates, Inc. receives OMB approval for cost-benefit analysis.	June 2005
Established the Data Submission and Reporting Group.	July 2005
Abt Associates, Inc. submits final report of the cost-benefit analysis.	October 2005
Published FRN soliciting comments on draft CAHPS Hospital Survey.	November 2005
Received final approval.	December 2005
Mode Experiment.	February – May 2006
National Implementation begins.	October 2006
HCAHPS participation linked to RHQDAPU program (*"pay for reporting"*).	July 2007
First public reporting of HCAHPS results.	March 2008

Throughout the HCAHPS development process, CMS has solicited and received a great deal of public input. As a result, the HCAHPS questionnaire and methodology have gone through several iterations. The first was a 66-item version that was tested in a three-state pilot study (this was developed for testing purposes; we never intended that the final version be this long). Prior to the start of the pilot test, a Federal Register notice was published in February 2003 soliciting input on the proposed pilot study. This notice produced nearly 150 comments. Based on results of the pilot study, the questionnaire was reduced to 32 items. CMS received additional feedback from a Federal Register Notice published in June 2003 that sought further comment on the survey and implementation issues while the initial pilot testing was underway. CMS received 110 responses to the notice from hospital associations, provider groups, consumers/purchasers, and hospital survey vendors.

A 32-item version of the HCAHPS instrument was published in the Federal Register in December 2003 for public comment; CMS received nearly 600 comments that focused on

the following topics: sampling, response rate, implementation procedures, cost issues, the length of the instrument, exclusion categories, question wording, and reporting.

CMS, AHRQ, the CAHPS grantees and members of the Instrument, Analysis, and Cultural Comparability teams met via conference calls two to three times per week to review all comments from the three Federal Register Notices and to modify the survey instrument and implementation strategy based on the comments. The input we received conflicted. Survey vendors and many hospitals indicated that the 32-item version was too long, while consumer groups indicated that the full content was needed to support consumer choice. After the comments were reviewed, CMS and AHRQ held additional discussions with hospitals, vendors and consumers to discuss the comments received.

Using the comments received from the public and stakeholders, and the psychometric analysis of the data from the 3-state pilot study, CMS reduced the next version of the HCAHPS questionnaire to 25 items. The following questions were eliminated from the longer versions of the questionnaire: overall rating of the doctor; overall rating of the nurse; how often did doctors treat you with courtesy and respect; how often did nurses treat you with courtesy and respect; overall mental health status; and two items related to whether and how a proxy helped complete the survey. The item regarding how often hospital staff ask if you were allergic to any medicine was also eliminated from the survey. A question from the original 66-item survey was used to replace the allergy question. This newly re-introduced item asks, "*Before giving you the medicine, how often did hospital staff tell you what the medicine was for?*" (Question 14 on the 25-item survey) in response to public input, we have also eliminated the reference to doctors in the screener question that identifies patients

who needed help getting to the bathroom or using a bedpan (Question 8 on the 25-item survey). The questions on overall mental health status and the two proxy questions were dropped because their impact in the patient-mix adjustment was negligible. Questions about being shown courtesy and respect by doctors and nurses were pulled from the latest version because input received indicated that the two items on doctors or nurses "explaining things fully" and "listening carefully" were synonymous with showing courtesy and respect. Taking these questions out of these composites did not adversely impact the psychometric properties of the doctor and nurse communication composites. The allergy question originally had a scale of "never to always' that didn't work well because the question is usually asked once upon admission. Changing the scale to a "yes/no" response provided very little variation across hospitals.

As the HCAHPS survey and implementation procedures evolved, CMS and AHRQ worked to develop procedures to allow for as much flexibility as possible to minimize disruption to current survey activities to the extent possible. For instance, prior to developing an implementation strategy CMS solicited input through the June 2003 Federal Register notice requesting feedback on mode of survey administration, periodicity of administration, and specific criteria for inclusion in the sampling frame. Using this feedback, CMS developed an implementation strategy that has been modified as a result of additional input received.

The basic implementation procedures were set up to provide flexibility to survey vendors and hospitals. For example, following training, approved hospitals or vendors can administer the Hospital CAHPS survey either as a (a) stand-alone survey or (b) integrated with the hospital's existing survey. The survey will be conducted continuously throughout

the year to make it easier to integrate with existing survey activities. Because vendors and hospitals currently use multiple modes to administer their internal hospital surveys, multiple survey modes are allowed. The hospital /vendors may use any of the following survey modes: telephone only, mail only, a mixed methodology of mail with telephone follow-up, or active interactive voice response (IVR). All modes of administration must follow a standardized protocol. Since different modes of administration may affect how patients respond, CMS conducted a large-scale mode experiment in 2006 to determine appropriate adjustments to the data for public reporting.

In addition to the development and review processes outlined above, CMS submitted the 25-item version of the HCAHPS instrument to the National Quality Forum (NQF), a voluntary consensus standard-setting organization established to standardize healthcare quality measurement and reporting, for its review and endorsement. NQF endorsement represents the consensus of numerous healthcare providers, consumer groups, professional associations, purchasers, federal agencies, and research and quality organizations. Following a thorough, multi-stage review process, HCAHPS was endorsed by the NQF board in May 2005. In the process, NQF recommended a few modifications to the instrument. As a result of the recommendation of the National Quality Forum Consensus Development Process, the two courtesy and respect items were added back into the survey. The review committee felt that these questions are important to all patients, but may be particularly meaningful to patients who are members of racial and ethnic minority groups. The two reinstated items are: *"During this hospital stay, how often did nurses treat you with courtesy and respect?*", and "*During this hospital stay, how often did doctors treat you with courtesy and respect?"*

Another recommendation from the NQF was to expand the response categories for the ethnicity question in the "About You" section as follows:

- No, not Spanish/Hispanic/Latino
- Yes, Puerto Rican
- Yes, Mexican America, Chicano
- Yes, Cuban
- Yes, other Spanish/Hispanic/Latino

Acting on another the recommendation of the National Quality Forum, CMS further examined the costs and benefits of HCAHPS. This cost-benefit analysis of HCAHPS was independently conducted by Abt Associates, Inc., and completed on October 5, 2005. The Executive Summary and Final Report cost-benefit analysis, "*Costs and Benefits of HCAHPS*", may be found at http://www.cms.gov/HospitalQualityInits/ in the section called "*HCAHPS: Patients' Perspectives of Care Survey.*"

The accumulated lessons learned from the pilot testing, public comments, input from stakeholders, numerous team discussions, and the National Quality Forum's review and endorsement through their consensus development process led to the latest version of the HCAHPS survey which has 27 items and the HCAHPS data collection protocol that allows hospitals to integrate their own specialized questions. The resulting core questionnaire is comprised of questions in several dimensions of primary importance to the target audience: doctor communication, responsiveness of hospital staff, cleanliness of the hospital environment, quietness of the hospital environment, nurse communication, pain

management, communication about medicines, and discharge information. The 27-item HCAHPS survey that was formally endorsed by the NQF may be found in Appendix A.

The HCAHPS implementation plan, in particular, changed significantly as a result of the public input we received. CMS has made the following major changes in the implementation approach:

- reduced the number of mailings for the "mail only" survey protocol from three to two; reduced the number of follow-up phone calls for the "telephone only" survey protocol from ten to five;
- added active interactive voice response (IVR) as a mode of survey administration;
- eliminated the cap on the number of hospital/vendor questions added to the HCAHPS items;
- eliminated the 50% response rate requirement;
- reduced the number of patient discharges to be surveyed.

Since national implementation began in 2006, CMS has continually refined and clarified HCAHPS survey protocols, created new translations of the mail version of the survey (in Chinese, Russian and Vietnamese), annually updated the HCAHPS *Quality Assurance Guidelines* (currently version 5.0; www.hcahpsonline.org/qaguidelines.aspx), improved the appearance and accessibility of HCAHPS results on the Hospital Compare website, and made information about HCAHPS quickly and easily available through its official HCAHPS On-Line website, www.hcahpsonline.org. In addition, the HCAHPS Project Team has published several analyses of HCAHPS results in peer-reviewed scientific journals and made numerous presentations at professional conferences.

After public reporting of hospitals HCAHPS results was inaugurated in March 2008, a growing number of healthcare, consumer and professional organizations, state governments, media outlets and others have adopted or incorporated HCAHPS scores, in part or in whole, for their own purposes. These activities, external to CMS, have had the effect of extending knowledge about HCAHPS and increasing the impact of survey results.

Finally, the content the HCAHPS survey, its methodology and administration protocols, and its ambition to measure and publicly report consumers' experiences in a uniform and standardized manner have influenced other surveys developed within CMS as well as those undertaken by hospitals and healthcare systems in the United States and abroad.

There are distinct roles for hospitals, or their survey vendors, and the federal government in the national implementation of HCAHPS. The government is responsible for:

- support and public reporting, including:
- conducting training on data collection and submission procedures;
- providing on-going technical assistance;
- ensuring the integrity of data collection;
- accumulating HCAHPS data from individual hospitals;
- producing patient-mix adjusted hospital-level estimates;
- conducting research on the presentation of data for public reporting; and,
- publicly reporting the comparative hospital data.

Hospitals or their survey vendors are responsible for data collection, including: developing a sampling frame of relevant discharges, drawing the sample of discharges to be surveyed,

collecting survey data from sampled discharges, and submitting HCAHPS data to CMS in a standard format. We have formatted the data files so hospitals/vendors will submit to CMS de-identified data files following 45 CFR Section §164.514. As they currently do, hospitals will maintain business associate agreements with their survey vendors. Hospitals securely submit their HCAHPS data to CMS through QualityNet Exchange.

CMS started collaboration with the Health Services Advisory Group (HSAG) in 2003 to coordinate the national implementation of the Hospital CAHPS Survey. HSAG's role is to provide technical assistance and training for vendors and hospitals, data validation, data processing, analysis, and adjustment, and oversight of self-administering hospitals and survey vendors. HSAG also produces electronic data files and a hospital level extract file for public reporting of the HCAHPS scores.

In the spring of 2006 CMS conducted a large-scale experiment to assess the impact of mode of survey administration, patient characteristics and patient non-response on HCAHPS results. This Mode Experiment was based on a nationwide random sample of short-term acute care hospitals. Hospitals from each of CMS' ten geographic regions participated in the Mode Experiment. A hospital's probability of being selected for the sample was proportional to its volume of discharges, which guaranteed that each patient would have an equal probability of being sampled for the experiment. The participating hospitals contributed patient discharges from a four-month period: February, March, April, and May 2006. Within each hospital, an equal number of patients was randomly assigned to each of the four modes of survey administration. Sample selection and surveying were conducted

by the National Opinion Research Center of the University of Chicago, and the data was analyzed by the RAND Corporation.

A randomized mode experiment of 27,229 discharges from 45 hospitals was used to develop adjustments for the effects of survey mode (Mail Only, Telephone Only, Mixed mode, or Active Interactive Voice Response) on responses to the HCAHPS survey. In general, patients randomized to the Telephone Only and Active Interactive Voice Response provided more positive evaluations than patients randomized to Mail Only and Mixed (Mail with Telephone follow-up) modes. These mode effects varied little by hospital, and were strongest for global items (rating and recommendation), and the Cleanliness & Quiet, Responsiveness, Pain Management, and Discharge Information composites. Adjustments for these mode effects are necessary to make the reported scores independent of the survey mode that was used. These adjustments are applied to HCAHPS results before they are publicly reported on the Hospital Compare website. The mode adjustments can be found on in the "Mode Adjustment" section of the HCAHPS website, www.hcahpsonline.org. The algorithm for the patient-mix adjustment can be found in Appendix B.

The Mode Experiment also provided valuable information on the impact of salient patient characteristics and non-response bias on HCAHPS results. This analysis was needed because hospitals do not provide care for comparable groups of patients but, as demonstrated in the HCAHPS Three-State Pilot Study, some patient characteristics may affect measures of patient experiences of care. The goal of patient-mix adjustment, which is also known as case-mix adjustment, is to estimate how different hospitals would be rated if they provided care to comparable groups of patients. As suggested by the Three-State Pilot

Study, a set of patient characteristics not under control of the hospital was selected for analysis. In summary, the most important patient-mix adjustment items were patients' self-reported health status, education, service line (maternity, medical or surgical care) and age. Patient-mix effects were generally less potent than survey mode. In addition, after mode and patient-mix adjustments have been made, non-response effects were found to be negligible. A report on patient-mix and non-response adjustments is available on the HCAHPS On-Line website, www.hcahpsonline.org. The algorithm for the patient-mix adjustment can be found in Appendix B.

We also looked at the extent to which each domain contributes to measurement in priority areas established by an independent, expert body on quality measurement, the National Quality Forum (NQF). The HCAHPS domains "communication with doctors", "communication with nurses", "communication about medications" will contribute to the NQF's priority on improving care coordination and communication. The HCAHPS "pain control" domain will contribute to the NQF's pain management priority, while the HCAHPS "discharge information" domain will contribute to the priority on improving self-management and health literacy.

CMS, with assistance from HSAG and its sub-contractor, the National Committee on Quality Assurance (NCQA), has developed and conducted two training programs for self-administering hospitals and survey vendors participating in the HCAHPS survey, as well as others interested in this program. HCAHPS Introductory Training was first offered at the CMS headquarters in January 2006, and then by webinar in January and April 2006. Since then, HCAHPS Introductory Training has been held annually, by webinar. In addition, CMS

developed the HCAHPS Update Training program. HCAHPS Update Training was first offered in May 2007 and has offered annually by webinar since then. HCAHPS Introductory Training is required for self-administering hospitals and survey vendors that wish to join HCAHPS. HCAHPS Update Training provides information on important changes to the HCAHPS program and is required for all self-administering hospitals and survey vendors participating in HCAHPS.

Self-administering hospitals and survey vendors may conduct a "dry run" of the HCAHPS survey to gain experience before they begin to fully participate. Using the official survey instrument and the approved modes of implementation and data collection protocols, self-administering hospitals and survey vendors collect HCAHPS data for eligible patients and submit it to CMS via QualityNet Exchange. In addition to providing real experience, participation in the dry run produces HCAHPS data that the hospital can use for self-assessment. Data collected for the dry run are not publicly reported.

HCAHPS dry runs also proved beneficial to CMS by providing a test of its HCAHPS-related systems and a check on the usability of the HCAHPS protocols. Based upon hospitals' experience in the first dry run in Spring 2006, CMS made several improvements to the data coding and submission processes and decided to exclude several small categories of patients from eligibility for logistical reasons. These patient categories are: patients who were prisoners, who were discharged to hospice care, who had a foreign home address, or who upon admission had requested that the hospital not survey them.

Voluntary collection of HCAHPS data for public reporting began in October 2006. The first

public reporting of HCAHPS results, which encompassed eligible discharges from October 2006 through June 2007, occurred in March 2008. HCAHPS results are posted on the Hospital Compare website, found at *www.hospitalcompare.hhs.gov*, or through a link on *www.medicare.gov*. Subsequent public reporting of HCAHPS results are based on four quarters of discharges, with the oldest quarter rolling off when the most recent quarter rolls on. A downloadable version of HCAHPS results is also available through this website. The number of hospitals that publicly report HCAHPS results has increased from 2,521 in March 2008 to 3,774 in July 2010. Additional HCAHPS results can be found on *HCAHPS On-Line*, (www.hcahpsonline.org), including a summary of state and national results, the "top-box" and "bottom-box" percentiles for the ten HCAHPS measures, a table of inter-correlations of the HCAHPS measures, and a bibliography of HCAHPS research publications.

The enactment of the Deficit Reduction Act of 2005 created an additional incentive for acute care hospitals to participate in HCAHPS. Since July 2007, hospitals subject to the Inpatient Prospective Payment System (IPPS) annual payment update provisions ("subsection (d) hospitals") must collect and submit HCAHPS data in order to receive their full IPPS annual payment update. IPPS hospitals that fail to publicly report the required quality measures, which include the HCAHPS survey, may receive an annual payment update that is reduced by 2.0 percentage points. Non-IPPS hospitals, such as Critical Access Hospitals, may voluntarily participate in HCAHPS.

The recently enacted Patient Protection and Affordable Care Act of 2010 (P.L. 111-148) includes HCAHPS among the measures to be used to calculate value-based incentive payments in the Hospital Value-Based Purchasing program (Section 3001) beginning with discharges in October 2012.

For each participating hospital, ten HCAHPS measures (six summary measures, two individual items and two global items) are publicly reported on the *Hospital Compare* website, *www.hospitalcompare.hhs.gov*. Each of the six summary measures, or composites, is constructed from two or three survey questions. Combining related questions into composites allows consumers to quickly review patient experience of care data and increases the statistical reliability of these measures. The six composites summarize how well nurses and doctors communicate with patients, how responsive hospital staff are to patients' needs, how well hospital staff help patients manage pain, how well the staff communicates with patients about medicines, and whether key information is provided at discharge. The two individual items address the cleanliness and quietness of patients' rooms, while the two global items report patients' overall rating of the hospital, and whether they would recommend the hospital to family and friends. Survey response rate and the number of completed surveys, in broad ranges, are also publicly reported. Table 2 lists the questions that comprise the two global

Table 2. HOSPITAL CAHPS SURVEY Global Ratings and Reporting Composites

Global Ratings		Response Format
Overall Rating of Hospital		
Q21	Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital	0-10 scale
Recommendation		
Q22	Would you recommend this hospital to your friends and family?	definitely no, probably no, probably yes yes
Composites and Individual Items		**Response Format**
Communication with Nurses		
Q1	During this hospital stay, how often did nurses treat you with courtesy and respect?	never, sometimes, usually, always
Q2	During this hospital stay, how often did nurses listen carefully to you?	never, sometimes, usually, always
Q3	During this hospital stay, how often did nurses explain things in a way you could understand?	never, sometimes, usually, always
Communication with Doctors		
Q5	During this hospital stay, how often did doctors treat you with courtesy and respect?	never, sometimes, usually, always
Q6	During this hospital stay, how often did doctors listen carefully to you?	never, sometimes, usually, always
Q7	During this hospital stay, how often did doctors explain things in a way you could understand?	never, sometimes, usually, always
Cleanliness of the physical environment		
Q8	During this hospital stay, how often were your room and bathroom kept clean?	never, sometimes, usually, always
	Quietness of the physical environment	
Q9	During this hospital stay, how often was the area around your room quiet at night?	never, sometimes, usually, always
Responsiveness of Hospital Staff		
Q4	During this hospital stay, after you pressed the call button how often did you get help as soon as you wanted it?	never, sometimes, usually, always
Q11	How often did you get help in getting to the bathroom or in using a bedpan as soon as you wanted?	never, sometimes, usually, always
Pain Management		
Q13	During this hospital stay, how often was your pain well controlled?	never, sometimes, usually, always
Q14	During this hospital stay, how often did hospital staff do everything they could to help you with your pain?	never, sometimes, usually, always
Communication about Medications		
Q16	Before giving you any new medicine, how often did hospital staff tell you what the medicine was for?	never, sometimes, usually, always
Q17	Before giving you any new medicine, how often did hospital staff describe possible side effects in a way you could understand?	never, sometimes, usually, always
Discharge Information		
Q19	During this hospital stay, did hospital staff talk with you about whether you would have the help you needed when you left the hospital?	yes, no

Q20	During your hospital stay, did you get information in Writing about what symptoms or health problems to look out for after you left the hospital?	yes, no

In addition to the questions that are used to form the HCAHPS measures of care from the patient's perspective, there are also four screener items (not listed in Table 2). These items are included to ensure that only appropriate respondents answer the questions that follow. For example, there is a screener item that asks whether during the hospital stay you were given any medicine that you had not taken before. Only respondents who answer "yes" are directed to answer the two following questions about how often hospital staff explained what the medicine was for and possible side effects. We considered dropping the screener questions; however, CAHPS testing has shown without screeners respondents are more likely to give an inappropriate response rather than checking off "not applicable." It was also thought that this potential error would be further exacerbated by having different modes of administration.

The psychometric performance of the domain-level composites with respect to reliability and construct validity is summarized in Table 3. The basic unit of reporting for HCAHPS measure is the hospital. Thus, we focus on the psychometric performance of the composites at the hospital level. Hospital-level reliability reflects the extent to which variation in scores on a composite reflects variation between hospitals, as opposed to random variation in patient response within hospitals. We want measures whose variation reflects differences in performance between hospitals. The hospital-level reliability reported in Table 3 is calculated as [1 – (1/F)], where F is the F-statistic for testing for differences among hospitals. The numerator of the F-statistic summarizes the amount of variation among the

means for different hospitals on the measure in question. The denominator summarizes the amount of random variation expected in these means due to sampling of patients. If there were no real differences among hospitals, such that all of the differences were due to random variations in the reports of patients who happened to answer the survey, the hospital-level reliability would be 0.0. The more real differences among hospitals, relative to random variation, the larger the hospital-level reliability is expected to be (up to a maximum of 1.0). Note that as we increase sample sizes, the measures become more precise, so the amount of random variation becomes smaller and the hospital-level reliability becomes larger.

There is no fixed level that reliability needs to reach for a measure to be useful, but 0.7 is a commonly used rule-of-thumb. The hospital-level reliabilities of communication with doctors (0.76), communication with nurses (0.89), responsiveness of hospital staff (0.81), cleanliness and quiet of the physical environment (0.77), and discharge information (0.75) are all above the rule-of-thumb. Pain control (0.62) and communication about medicines (0.68) are a little lower.

Construct validity represents the extent to which a measure relates to other measures in the way expected. If the proposed domains are important factors in quality for consumer choice, we would expect that hospitals with high scores on the composites would also have high scores on patient willingness to recommend the hospital and the overall rating. That is, the composites should be positively correlated at the hospital level with the willingness to recommend the hospital and the overall rating of the hospital. Again, there is no fixed level that these correlations need to reach for the composite to be useful, but 0.4 is a reasonable

rule-of-thumb. The hospital-level correlations between the composites and willingness to recommend the hospital were all above this level. The correlation was 0.54 for communication with doctors, 0.76 for communication with nurses, 0.70 for responsiveness of hospital staff, 0.68 for cleanliness and quiet of the physical environment, 0.72 for pain control, 0.73 for communication about medicines, and 0.53 for discharge information. There was a similar pattern for the correlations of the composites with the overall hospital rating. Values ranged from 0.81 for communication with nurses, to 0.57 with discharge information.

TABLE 3
HOSPITAL CAHPS SURVEY DOMAIN-LEVEL COMPOSITES,
INDICATORS OF PSYCHOMETRIC PERFORMANCE

	Psychometric performance		
		Construct validity	
Domain-level composite	Hospital-level reliability	Hospital-level correlation with willingness to Recommend	Hospital-level correlation with overall rating
Communication with doctors	0.76	0.54	0.59
Communication with nurses	0.89	0.76	0.81
Responsiveness of hospital staff	0.81	0.70	0.75
Cleanliness and quiet of environ.	0.77	0.68	0.75
Pain control	0.62	0.72	0.76
Communication about meds.	0.68	0.73	0.65
Discharge information	0.75	0.53	0.57

Note: Data from 3-state pilot study (130 hospitals, 19,683 discharges).

It should be noted, though, that the composites themselves are correlated, some highly so (see Table 4). One question is the extent to which each domain-level composite has an

independent effect on willingness to recommend the hospital and overall rating of the hospital. To examine this, AHRQ ran regressions of willingness to recommend the hospital and overall rating of the hospital with the seven composites.

TABLE 4
HOSPITAL-LEVEL CORRELATIONS AMONG DOMAIN COMPOSITES

	Commun. with doctors	Commun. with nurses	Respons. of staff	Cleanliness and quiet of envir.	Pain control	Commun. about meds	Discharge information
Communication with doctors	1.00						
Communication with nurses	0.55	1.00					
Responsiveness of hospital staff	0.62	0.91	1.00				
Cleanliness and quiet of envir.	0.39	0.64	0.64	1.00			
Pain control	0.82	0.82	0.85	0.59	1.00		
Communication about meds.	0.68	0.79	0.83	0.64	0.81	1.00	
Discharge information	0.80	0.65	0.73	0.39	0.76	0.69	1.00

Data from 3-state pilot study (130 hospitals, 19,683 discharges).

The results of these regressions are shown in Table 5. Because of the high collinearity among the composites, only communication with nurses and pain control had statistically significant effects in the equation for willingness to recommend the hospital. Communication with nurses, pain control, and communication about medicines had statistically significant effects in the equation for the overall rating of the hospital.

TABLE 5
HOSPITAL-LEVEL REGRESSIONS USING DOMAIN COMPOSITES

	Willingness to recommend hospital			Overall rating of hospital		
Domain-level composite	Parameter estimate	Standard error	p-value	Parameter estimate	Standard error	p-value
Communication with doctors	-0.296	0.160	0.067	-0.516	0.315	0.103
Communication with nurses	0.627	0.197	0.001	1.559	0.389	0.000
Responsiveness of hospital staff	0.046	0.120	0.706	0.138	0.237	0.562
Cleanliness and quiet of envir.	0.073	0.103	0.480	0.312	0.204	0.128
Pain control	0.536	0.160	0.001	1.112	0.316	0.001
Communication about meds.	0.114	0.086	0.189	0.403	0.170	0.019
Discharge information	0.126	0.213	0.555	0.485	0.420	0.251

R-square=0.669 for willingness to recommend hospital.
R-square=0.787 for overall rating of hospital.
Data from 3-state pilot study (130 hospitals, 19,683 discharges).

To further examine this issue, AHRQ conducted a hospital-level factor analysis just with items from the reduced version of the questionnaire. This analysis extracted three factors. A factor that might be called “nursing services” was formed that combined the communication with nurses, responsiveness of hospital staff, and communication about medicines composites. A factor that might be labeled “physician care” was formed that combined the communication with doctors, pain control, and discharge information composites. The third factor was the same as the current cleanliness and quiet of the hospital environment composite. AHRQ then ran regressions of willingness to recommend the hospital and overall rating of the hospital with these three factors. The results are presented in Table 6. The nursing services and physician care factors were strong predictors in both the equation for willingness to recommend the hospital and the equation for overall rating of the hospital. The effect of cleanliness and quiet of the environment was statistically significant in the overall rating equation.

TABLE 6
HOSPITAL-LEVEL REGRESSIONS USING COMBINED FACTORS

	Willingness to recommend hospital			Overall rating of hospital		
Factor	Parameter estimate	Standard error	p-value	Parameter estimate	Standard error	p-value
Nursing services a/	0.574	0.146	0.000	1.613	0.291	0.000
Physician care b/	0.709	0.247	0.005	1.761	0.492	0.001
Cleanliness and quiet of environment	0.142	0.103	0.172	0.426	0.205	0.040

R-square=0.619 for willingness to recommend hospital.
R-square=0.751 for overall rating of hospital.
Data from 3-state pilot study (130 hospitals, 19,683 discharges).
a/ Combines communication with nurses, responsiveness of hospital staff, and communication about medicines.
b/ Combines communication with doctors, pain control, discharge information.

Establishing domains that are important for public reporting is based on the psychometric characteristics of the measures and the utility of the information from perspective of consumers. The input we have received suggests that the seven composites are valuable. Thus, the original composite structure was maintained to best support consumer choice.

Another set of items is included on the survey for patient-mix adjustment and other analytic purposes. The goal of HCAHPS is to collect information from patients using the HCAHPS survey and to present the information based on those surveys to consumers, providers and hospitals. One of the methodological issues associated with making comparisons between hospitals is the need to adjust appropriately for patient-mix differences. Patient-mix refers to patient characteristics that are not under the control of the hospital that may affect measures of patient experiences, such as demographic characteristics and health status. The

basic goal of adjusting for patient-mix is to estimate how different hospitals would be rated if they all provided care to comparable groups of patients.

As discussed earlier, there is an adjustment for the hospital reports to control for patient characteristics that affect ratings and are differentially distributed across hospitals. Most of the patient-mix items are included in the "About You" section of the instrument, while others are taken from administrative records. Based on the mode experiment, and consistent with previous studies of patient-mix adjustment in CAHPS and in previous hospital patient surveys, we will be using the following variables in the patient-mix adjustment model:

- Self-reported general health status (specified as a linear variable)
- Education (specified as a linear variable)
- Type of service (medical, surgical, or maternity care)
- Age (specified as a categorical variable)
- Admission through emergency room
- Lag time between discharge and survey
- Age by service line interaction
- Language other than English spoken at home

Once the data are adjusted for patient-mix, there is a fixed adjustment for each of the reported measures for mode of administration (discussed in detail below). The patient-mix adjustment employs a regression methodology, also referred to as covariance adjustment.

On the survey, there are two additional questions to capture the race and ethnicity of the respondent. These are not included in the patient-mix adjustment model but included as

analytic variables to support the congressionally mandated "National Healthcare Disparities Report" and "National Healthcare Quality Report." These reports provide annual, national-level breakdowns of HCAHPS scores by race and ethnicity. Many hospitals collect information on race and ethnicity through their administrative systems, but coding is not standard. Thus it was determined that administrative data are not adequate to support the analyses needed for the reports and the items should be included in the questionnaire.

A 1.2 Survey Approach

The HCAHPS survey is administered in English and Spanish to a random sample of adult patients, with at least one overnight stay, discharged from an acute care hospital. Psychiatric and pediatric patients are excluded from the survey, as well as patients who were prisoners, who were discharged to hospice care, who had a foreign home address, or who at admission requested the hospital not to survey them ("no publicity" patients). In addition, self-administering hospitals and survey vendors have the option of offering the mail version of the HCAHPS survey in Chinese, Russian and Vietnamese, though using these instruments requires permission from CMS.

CMS requires that, following training, approved hospitals or vendors administer the HCAHPS survey either as (a) a stand-alone survey or (b) integrated with the hospital's existing survey. If the survey is integrated with an existing survey, HCAHPS' two global ratings, two individual items , and the items that constitute the six domains must be placed at the beginning of the questionnaire. Participating hospitals may place items from their current survey after these

HCAHPS core items (questions 1-22). HCAHPS demographic items (questions 23-27) may be placed anywhere in the questionnaire after the core items. Other than this permitted insertion of non-HCAHPS items, the order, wording and response categories of the 27 HCAHPS items may not be altered in any way. CMS suggests that the hospital/vendor use transitional phrasing such as the following to transition from the HCAHPS items to the hospital-specific ones:

> *"Now we would like to gather some additional detail on topics we have asked you about before. These items use a somewhat different way of asking for your response since they are getting at a little different way of thinking about the topics"*

Flexibility in the mode of administering the survey is permitted. The hospitals/vendors may use any of the following modes: telephone only, mail only, a mixed methodology of mail with telephone follow-up, or active interactive voice response (IVR). All modes of administration require following a standardized protocol. Quality assurance guidelines have been developed for each mode of survey administration detailing issues related to protocol, handling of the questionnaires and other materials, training, interviewing systems, attempts, monitoring and oversight.

Modes of Survey Administration

Mail Only

For the mail only option, the hospital/vendor is required to send the HCAHPS questionnaire, alone or combined with hospital-specific questions, along with a cover letter, between 48 hours and 6 weeks following discharge. CMS provides sample cover letters to hospitals/vendors in its training program for HCAHPS. The hospitals/vendors may tailor their letters, but the letters must contain information about the purpose of the survey, and

that participation in the survey is voluntary and will not affect their patients' health care benefits.

The hospital/vendor must send a second questionnaire with a reminder/thank you letter to those not responding approximately 21 days after the first mailing. Data collection would be closed out for a particular respondent within 21 days following the mailing of the second questionnaire.

Telephone Only

For the telephone only option, the hospital/vendor is required to begin data collection between 48 hours and six weeks following discharge. The hospital/vendor must attempt to contact respondents up to 5 times unless the respondent explicitly refuses to complete the survey. These attempts must be made on different days of the week and different times of the day and in different weeks to ensure that as many respondents are reached as feasible. Data collection is closed out for a particular respondent 42 days following the first telephone attempt.

For the HCAHPS portion of the survey, CMS is providing scripts to follow for the telephone interviewing in both English and Spanish. The interviewers conducting the survey must be trained before beginning interviewing. In its training program for HCAHPS CMS provides guidance on how to train interviewers to conduct HCAHPS. The training program emphasizes that interviewers read questions as worded, use non-directive probes, maintain a neutral and professional relationship with the respondent, and that interviewers record only the answers that the respondents themselves choose.

Mixed Mode

A third option is a combination of mail and telephone. In this mixed mode of administration, there is one wave of mailing (cover letter and questionnaire) and up to five telephone call-back attempts for non-respondents. The first survey is sent out between 48 hours and 6 weeks following discharge. Telephone follow-up is initiated for all non-respondents approximately 21 days after the initial questionnaire mailing. The telephone attempts must be made on different days of the week and different times of the day, and in different weeks to ensure that as many respondents are reached as feasible. Telephone interviewing must end 6 weeks after the first survey mailing. Similar to the telephone only mode, CMS provides telephone scripts for the hospitals/vendors to follow.

Active IVR

For active IVR, hospitals/vendors must initiate data collection by phone between 48 hours to six weeks following discharge. A live interviewer asks the respondent if she/he is willing to complete the survey using the IVR system. Through the IVR system respondents completes the survey using the touch-tone keypad on their phone. The hospital/vendor is required to provide an option for the respondent to opt out of the system and return to a live interviewer.

Similar to the telephone mode, the hospital/vendor must call each respondent up to 5 times unless the respondent refuses to complete the survey. These attempts must be made on different days of the week and different times of the day, and in different weeks to ensure that as many respondents are reached as feasible. Data collection must be closed out for a particular respondent 42 days following the first telephone attempt.

Sampling

A description of sampling for HCAHPS follows, including the basic structure of sampling, population and sampling frame, and sampling approach.

Basic structure of sampling

We received public input regarding sampling. The majority of respondents preferred to sample discharges on a more continuous basis (i.e., a monthly basis) and cumulate these samples to create rolling estimates based on 12-months of data. We chose to pursue the more continuous sampling approach for the following reasons:

- It is more easily integrated with many hospitals' existing survey processes used for internal improvement.
- Improvements in hospital care can be more quickly reflected in hospital scores (e.g., 12-month estimates could be updated on a quarterly or semi-annual basis).
- Hospital scores are less susceptible to unique events that could affect hospital performance at a specific point in time (e.g., a temporary shortage of nursing staff that could adversely affect the hospital's score if the survey was done only once during the year at the same time as the shortage).
- It is less susceptible to gaming (e.g., hospitals being on their best behavior just around the survey).
- By sampling and collecting data on a monthly basis, it is not necessary to reach so far back in time in order to obtain a sufficient number of discharges to meet the sample size requirements.

For these reasons, the basic structure of sampling for HCAHPS entails drawing a sample of relevant discharges on a monthly basis. Data will be collected from patients in each monthly sample and will be cumulated to create a rolling 12-month data file for each hospital. Hospital-level scores for the HCAHPS measure will be produced using 12 months

of data. After the initial 12 months of data collection, the hospital level scores will be updated on a quarterly basis utilizing the most recent 12 months worth of data.

Population and sampling frame

HCAHPS is designed to collect data on care from the patient's perspective for general acute care hospitals. Pediatric, psychiatric, and other specialty hospitals are not included (additional/different aspects of care need to be examined for these specialty settings). Within general acute care hospitals, HCAHPS scores are designed to reflect the care received by patients of all payers (not just Medicare patients). Specifically, this includes the population of non-psychiatric and non-pediatric patients who had an overnight stay in the hospital and were alive when discharged. Patients who did not have an overnight stay are excluded because we don't want to include patients who had very limited inpatient interaction in the hospital (e.g., patients who were admitted for a short period for purely observational purposes; patients getting only outpatient care are not included in HCAHPS). Patients who died in the hospital are excluded because HCAHPS is designed to capture information from the perspective of the patient himself or herself, thus proxy respondents are not permitted. For logistical reasons, we exclude several other categories of patients from eligibility: those who were prisoners, who were discharged to hospice care, who had a foreign home address, or who at admission had requested the hospital not to survey them ("no publicity" patients).

CMS designed the HCAHPS survey with the intention of capturing the views of the broadest sample of patients discharged from short-term, acute care hospitals. Therefore, categorical

exclusions of patients from the HCAHPS survey are few and are based on CMS policy decisions. Patients will be excluded only when the survey does not properly apply to them (pediatric patients below age 18, and psychiatric patients), or when they have died in hospital or prior to being surveyed.

While a wide spectrum of patients are eligible for participation in HCAHPS, personal identities are not asked for or revealed. Eligible discharged patients are randomly surveyed by hospitals or their designated survey vendor. We have designed the data files so all protected health information (PHI) are de-identified {See 45 CFR §164.514 (de-identification of PHI)} before transmission to CMS. Thus, a patient's personal identity is not transmitted to, revealed to, or used by CMS. It is our intent that hospitals and survey vendors submit a thoroughly de-identified data set through the Quality Net Exchange. The data is analyzed by the Health Services Advisory Group, a Quality Improvement Organization. Hospital-level data is then transmitted to CMS for public reporting.

The monthly sampling frame that defines the population for a given hospital includes all discharges between the first and last days of the month, with the exclusions noted above. CMS periodically reviews the patient sampling process employed by participating hospitals to assure that patients are being properly included or excluded, and that patients are being surveyed at random. Some states have further restrictions on patients who may be contacted. Hospitals/vendors should exclude other patients as required by law or regulation in the state in which they operate.

Sampling approach

Hospitals and survey vendors have several options for the monthly sampling of eligible discharges, including: a simple random sample (which includes a census of all eligible discharges); a proportionate stratified random sample (PSRS); or a disproportionate stratified random sample (DSRS). The simple random sample is considered normative. Hospitals/survey vendors must receive an exception in order to use a disproportionate stratified random sample, as well as provide information about the name, number of eligible discharges, and number of sampled discharges of each stratum.

In the simple random sample approach, the hospital/vendor will draw a simple random sample each month from the sampling frame of eligible discharges. Sampling can be done at one time after the end of the month or continuously throughout the month as long as a simple random sample is generated for the month (the hospital/vendor can chose what works best with their current survey activities for internal improvement).

As noted above, monthly data are cumulated to produce a rolling 12-month data file for each hospital that will be used to produce hospital-level scores for the HCAHPS measure. A target for the statistical precision of these scores is based on the reliability criterion. Higher reliability means higher "signal to noise" in the data. The target is that the reliability for the global ratings and most composites be 0.8 or more. Based on this, it is necessary for each hospital to obtain 300 completed HCAHPS questionnaires over a 12 month period. Small hospitals that are unable to reach the target of 300 completes in a given 12-month period should sample all eligible discharges and attempt to obtain as many completes as possible.

In order to calculate the number of discharges that need to be sampled each month to reach this target, it is necessary to take into account the proportion of sampled patients expected to complete the survey (not all sampled patients who are contacted to complete the survey will actually complete it; the target is 300 completes). This is a function of the proportion of sampled patients who turn out to be ineligible for the survey and the survey response rate among eligible respondents. The calculation of the sample size needed each month can be summarized as follows:

Step 1 – Identify the number of completes needed over 12 months

C = number of completes needed = 300

Step 2 – Estimate the proportion of sampled patients expected to complete the survey

Let:

I = expected proportion of ineligible sampled patients

R = expected survey response rate among eligible respondents

P = proportion of sampled patients expected to complete the survey

$= (1 - I) \times R$

Step 3 – Calculate the number of discharges to sample

N12 = sample size needed over 12 months = C / P

N1 = Sample size needed each month = N12 / 12

Some small hospitals will not be able to reach the target of 300 completes in a given 12-month period. In such cases, the hospital should sample all discharges and attempt to obtain

as many completes as possible. All hospital results are publicly reported. However, the lower precision of the scores derived from fewer than 300 completed surveys are noted in the public reporting. CMS also publicly reports the response rate achieved by each hospital participating in HCAHPS and, roughly, its number of completed surveys ("less than 100", "100 to 299", and "300 or more").

B 1.0 Need and Legal Basis

HCAHPS is part of the Hospital Quality Alliance, a private/public partnership that includes the American Hospital Association, the Federation of American Hospitals, and the Association of American Medical Colleges, Joint Commission on Accreditation of Healthcare Organizations, National Quality Forum, AARP, and CMS/AHRQ. Working together, the group wants to 1) provide useful and valid information about hospital quality to the public; 2) provide hospitals a sense of predictability about public reporting expectations; 3) begin to standardize data and data collection mechanisms; and 4) foster hospital quality improvement. Clinical information was made available on the Internet at www.cms.gov in the summer of 2003, and was added to the Hospital Compare website, www.hospitalcompare.hhs.gov, in April 2005. HCAHPS results were added to this website beginning in March 2008.

In addition, beginning with fiscal year 2008 participation in HCAHPS became part of the Reporting Hospital Quality Data Annual Payment Update (RHQDAPU) program. Hospitals that are subject to the inpatient prospective payment system (IPPS) provisions (RHQDAPU-eligible "subsection (d) hospitals") must meet the new reporting requirements in order to receive their full IPPS annual payment update (APU). Hospitals that do not participate in the RHQDAPU initiative, which includes the new HCAHPS reporting requirements, could receive a reduction of 2.0 percent in their Medicare Annual Payment Update for fiscal year 2008. Non-IPPS hospitals can voluntarily participate in HCAHPS.

The recently enacted Patient Protection and Affordable Care Act of 2010 (P.L. 111-148) includes HCAHPS among the measures to be used to calculate value-based incentive payments

in the Hospital Value-Based Purchasing program, beginning with discharges in October 2012 (see Section 3001).

B 2.0 Purpose and Use of Information

Three broad goals have shaped HCAHPS. First, the survey is designed to produce comparable data on the patient's perspective on care that allows objective and meaningful comparisons between hospitals on domains that are important to consumers. Second, public reporting of the survey results is designed to create incentives for hospitals to improve their quality of care. Third, public reporting serves to enhance public accountability in health care by increasing the transparency of the quality of hospital care provided in return for the public investment. With these goals in mind, the HCAHPS project has taken substantial steps to assure that the survey is credible, useful, and practical. This methodology and the information it generates are made available to the public.

There are many excellent patient surveys currently in use by hospitals. However, most of them are proprietary and are not constructed in a way that would allow patient assessment of hospital care across the country. That is, the instruments are not standardized. With a standardized instrument consumers will be able to make "apples to apples" comparisons among hospitals, allow hospitals and hospital chains to self compare, and increase the public accountability of hospitals.

A standardized instrument, developed under the CAHPS umbrella, has produced a reliable and valid instrument that any organization can use to obtain patient data about hospital

experiences. This tool was adopted by the Hospital Quality Alliance. Data collection began in October 2006, and the first public reporting of participating hospitals' HCAHPS results occurred in March 2008.

B 3.0 Use of Improved Information Technology

Since CMS is committed to allowing flexibility in the administration of HCAHPS, one of the four modes in administering the survey is active IVR. IVR, short for ***i****nteractive* ***v****oice* ***r****esponse*, a telephony technology in which a respondent uses a touch-tone telephone to interact with a database to acquire information from or enter data into the database. IVR technology does not require human interaction over the telephone as the user's interaction with the database is predetermined by what the IVR system will allow the user access to. For example, banks and credit card companies use IVR systems so that their customers can receive up-to-date account information instantly and easily without having to speak directly to a person. IVR technology is also used to gather information, as in the case of telephone surveys in which the user is prompted to answer questions by pushing the numbers on a touch-tone telephone. Patients selected for this mode will however be able to opt out of the interactive voice response system and to return to a "live" interviewer.

B 4.0 Efforts to Identify Duplication

Many hospitals have used their own patient satisfaction or patient experience of care surveys. These diverse, often proprietary surveys do not allow for useful comparisons across hospitals. Making comparative performance information available to the public can help consumers make more informed choices when selecting a hospital and can create incentives for hospitals to improve the care they provide.

Adding own items

Vendors/hospitals have the option to add their own questions to the HCAHPS core questionnaire. If a hospital/vendor wishes to add their own questions, they must add them after the core HCAHPS items (questions 1- 22). The "*About You*" section of HCAHPS items can be placed after the core HCAHPS items, or follow the hospital-specific items. If a hospital/vendor decides to add their own questions, they should pay attention to the length of the questionnaire. The longer the questionnaire is, the greater the burden on respondents.

Hospitals participating in HCAHPS will submit to CMS only the data collected for HCAHPS purposes. Hospitals will retain possession of all of data they collect from the HCAHPS survey and may analyze it according to their own needs. The analysis that CMS performs is done for the purposes of public reporting.

To promote its wide and rapid adoption, HCAHPS has been carefully designed to fit within the framework of patient satisfaction surveying that hospitals currently employ. Still, CMS fully understands that participation in the HCAHPS initiative will require some effort and expense on the part of hospitals that volunteer to take part. CMS has and will continue to provide mandatory training for HCAHPS (for no fee) to fully inform hospitals and survey vendors about implementation, reporting, and other issues. In addition, hospitals may fully trial HCAHPS (but with no public reporting of results) by conducting a "dry run" before they fully participate in HCAHPS.

CMS does not require that hospitals drop any items from their ongoing patient satisfaction surveys in order to participate in the HCAHPS initiative. The content of the HCAHPS survey has been kept to the minimum number of items necessary to fulfill the objective of providing valid and comparable information on topics of greatest importance to consumers. CMS does suggest that hospitals consider removing current items that essentially duplicate HCAHPS items. CMS makes no recommendations with respect to hospital items that are unrelated to HCAHPS domains, or to patient surveys targeted at those not eligible for HCAHPS.

Similarly, CMS does not require or recommend that participating hospitals abandon their customized surveys of specific patient groups. The recommended number of completed HCAHPS surveys (at least 300 per year from a random sample of eligible patients; 100 from smaller hospitals) can be accommodated within the surveying plans of most hospitals that conduct patient satisfaction surveys.

A hospital's participation in HCAHPS does not mean that it can or should survey only enough of its HCAHPS-eligible patients to produce 300 completed surveys per year. At its discretion, a hospital may submit more than 300 completed HCAHPS surveys, sample patients not eligible for HCAHPS, stratify patients according to its own criteria, or over-sample certain types of patients. During training CMS presents detailed information on sampling for HCAHPS, including how the HCAHPS sample can be accommodated within the stratified sampling schemes employed by hospitals. Detailed information on sampling and other important aspects of administering the HCAHPS survey can be found in the current version of the HCAHPS Quality Assurance Guidelines, which is available on our

website, www.hcahpsonline.org. In addition, policy and protocol updates, training announcements, etc. are regularly posted on this website.

There are a couple of additional issues related to integrating surveys: mixing response options on HCAHPS with the differing response options on the current vendor surveys, and revisiting domains that have already been covered earlier in the questionnaire. There are ways to handle this issue by using transitional phrasing between the HCAHPS questions and the hospital-specific ones. An example of such phrasing is as follows:

"Now we would like to gather some additional detail on topics we have asked you about before. These items use a somewhat different way of asking for your response since they are getting at a little different way of thinking about the topics"

B 5.0 Involvement of Small Entities

We realize that some small hospitals that wish to voluntarily participate in HCAHPS will not be able to reach the target of 300 completes in a given 12-month period. In such cases, the hospital should sample all discharges and attempt to obtain as many completes as possible. HCAHPS results from such hospitals will be publicly reported, but the lower stability of scores based on fewer than 300 completed surveys will be noted.

According to the Abt Associates cost and benefits report, the cost for a small hospital to have 100 complete surveys ranges from $1,000 - $1,500 if HCAHPS is implemented as a stand-alone survey. It will cost approximately $326 annually if it is integrated into an existing survey.

B 6.0 Consequences if Information Collected Less Frequently

We spent a great deal of time considering how often HCAHPS data should be collected and have solicited feedback from the public on this very issue. We received a lot of feedback on this issue from the June 27, 2003 Federal Register Notice. Two options for frequency of data collection were suggested: once during the year, and continuous. The majority of respondents to this notice suggested that continuous sampling would be easier for them to integrate into their current data collection processes. We have decided to require sampling of discharges on a more continuous basis (i.e., a monthly basis) and cumulating these samples to create rolling estimates based on 12-months of data. We chose to pursue the continuous sampling approach for the following reasons:

- It is more easily integrated with many existing survey processes used for internal improvement.
- Improvements in hospital care can be more quickly reflected in hospital scores (e.g., 12-month estimates could be updated on a quarterly or semi-annual basis).
- Hospital scores are less susceptible to unique events that could affect hospital performance at a specific point in time.
- It is less susceptible to gaming (e.g., hospitals being on their best behavior just around the survey).
- There is less variation in time between discharge and data collection.

B 7.0 Special Circumstances

There are no special circumstances with this information collection request.

B 8.0 Federal Register Notice/Outside Consultation

A 60-day Federal Register notice was published on July 13, 2007. Throughout the HCAHPS development process, CMS has solicited and received a great deal of public input. As a result, the HCAHPS questionnaire and methodology have gone through several iterations. The first was a 66-item version that was tested in a three-state pilot study (this was developed for testing purposes; we never intended that the final version be this long). Prior to the start of the pilot test, a Federal Register notice was published in February 2003 soliciting input on the proposed pilot study. This notice produced nearly 150 comments. Based on results of the pilot study, the questionnaire was reduced to 32 items. CMS received additional feedback from a Federal Register Notice published in June 2003 that sought further comment on the survey and implementation issues while the initial pilot testing was underway. CMS received 110 responses to the notice from hospital associations, provider groups, consumers/purchasers, and hospital survey vendors.

A 32-item version of the HCAHPS instrument was published in the Federal Register in December 2003 for public comment; CMS received nearly 600 comments that focused on the following topics: sampling, response rate, implementation procedures, cost issues, the length of the instrument, exclusion categories, question wording, and reporting.

CMS, AHRQ, the CAHPS grantees and members of the Instrument, Analysis, and Cultural Comparability teams met via conference calls two to three times per week to review all comments from the three Federal Register Notices and to modify the survey instrument and implementation strategy based on the comments. The input we received conflicted. Survey

vendors and many hospitals indicated that the 32-item version was too long, while consumer groups indicated that the full content was needed to support consumer choice. After the comments were reviewed, CMS and AHRQ held additional discussions with hospitals, vendors and consumers to discuss the comments received.

Using the comments received from the public and stakeholders, and the psychometric analysis of the data from the 3-state pilot study, CMS reduced the next version of the HCAHPS questionnaire to 25 items. The following questions were eliminated from the longer versions of the questionnaire: overall rating of the doctor; overall rating of the nurse; how often did doctors treat you with courtesy and respect; how often did nurses treat you with courtesy and respect; overall mental health status; and two items related to whether and how a proxy helped complete the survey. The item regarding how often hospital staff ask if you were allergic to any medicine was also eliminated from the survey. A question from the original 66-item survey was used to replace the allergy question. This newly re-introduced item asks, "*Before giving you the medicine, how often did hospital staff tell you what the medicine was for?*" (Question 14 on the 25-item survey) in response to public input, we have also eliminated the reference to doctors in the screener question that identifies patients who needed help getting to the bathroom or using a bedpan (Question 8 on the 25-item survey).

The questions on overall mental health status and the two proxy questions were dropped because their impact in the patient-mix adjustment was negligible. Questions about being shown courtesy and respect by doctors and nurses were pulled from the latest version because input received indicated that the two items on doctors or nurses "explaining things

fully" and "listening carefully" were synonymous with showing courtesy and respect. Taking these questions out of these composites did not adversely impact the psychometric properties of the doctor and nurse communication composites. The allergy question originally had a scale of "never to always' that didn't work well because the question is usually asked once upon admission. Changing the scale to a "yes/no" response provided very little variation across hospitals.

Following a thorough, multi-stage review process, HCAHPS was endorsed by the National Quality Forum (NQF) board in May 2005. In the process, NQF recommended a few modifications to the instrument. As a result of the recommendation of the National Quality Forum Consensus Development Process, the two courtesy and respect items were added back into the survey. The review committee felt that these questions are important to all patients, but may be particularly meaningful to patients who are members of racial and ethnic minority groups. The two reinstated items were: *"During this hospital stay, how often did nurses treat you with courtesy and respect?*", and "*During this hospital stay, how often did doctors treat you with courtesy and respect?"*.

B 9.0 Payments/Gifts to Respondents

There are no provisions for payments or gifts to respondents.

B 10.0 Assurance of Confidentiality

All information obtained through the survey is reported in the aggregate. No individual respondents' information is reported independently or with identifying information.

We have designed the data files so that the hospital/vendor submits a de-identified dataset to CMS through a QIO according to 45 CFR Section § 164.514.

In all the modes of survey administration, guidelines are included on issues related to confidentiality:

- Cover letters are not to be attached to the survey
- Respondents' names are not to appear on the survey
- Interviewers are not to leave messages on answering machines or with household member since this could violate a respondent's privacy

B 11.0 Information of a Sensitive Nature

There are no questions of a sensitive nature on the survey.

B 12.0 Estimates of Annualized Burden

National Implementation

For the most recent public reporting of HCAHPS results in July 2010, approximately 2,480,000 patients discharged between October 2008 and July 2006 completed the HCAHPS survey. On average, it takes respondents 7 minutes (0.11667 hours) to complete the survey, for a total 289,342 hours annual burden.

To calculate the cost per response, we employ the average hourly wage rate of $19.56 from "National Compensation Survey: Occupational Wages in the United States, May 2007," U.S. Department of Labor, Bureau of Labor Statistics. Thus, the annual cost burden of the survey is $5,659,530.

B 13.0 Capital Costs

Hospitals have the option to conduct HCAHPS as a stand-alone survey or to integrate it with their existing survey activities. They can choose to administer HCAHPS by mail, phone, or active IVR.

Costs associated with collecting HCAHPS will vary depending on:

- The method hospitals currently use to collect patient survey data;
- The number of patients surveyed (target is 300 completed surveys per year); and
- Whether it is possible to incorporate HCAHPS into their existing survey.

Abt estimates that the average data collection cost for a hospital conducting the 27-item version of HCAHPS as a stand-alone survey would be between $3,300 - $4,575 per year, assuming that 80-85 percent of hospitals collect HCAHPS by mail and the remainder by phone or active IVR. The costs for combining HCAHPS with existing surveys would be considerably less. It would cost $978 per hospital annually to incorporate the 27-item version of HCAHPS into existing surveys.

Abt Associates estimates that the nationwide data collection cost for conducting the 27-item version of HCAHPS would be approximately $15 million per year if all eligible hospitals participated, depending upon the extent to which hospitals integrate HCAHPS with their existing survey activities or conduct it as a stand-alone survey.

Approximately 3,775 hospitals participated in the most recent public reporting period. Using Abt Associates' estimate of approximately $4,000 per hospital for HCAHPS data collection, the annual cost burden is $15,100,000.

Note: There are no new costs to hospitals participating in the HCAHPS survey. From its beginning, hospitals have covered the cost of HCAHPS survey administration, data collection and data submission. The collection is being corrected now to reflect this existing cost.

B 14.0 Estimates of Annualized Cost to the Government

Costs to the government are for training, technical assistance, ensuring the integrity of the data, approving hospitals/vendors for HCAHPS; accumulating the data; analyzing the data; making adjustments for patient-mix and mode of administration; and public reporting.

B 15.0 Changes in Burden

All changes in burden are due to agency discretion. In our 2007 submission, the number of annual responses and the annual hour burden were estimated. In 2010 these figures are based on actual completed surveys. In addition, to calculate the cost per response, we now employ the average hourly wage rate of $19.56, taken from the "National Compensation Survey: Occupational Wages in the United States, May 2007," U.S. Department of Labor, Bureau of Labor Statistics.

B 16.0 Time Schedule, Publication, and Analysis Plans

Since October 2006, the HCAHPS survey has been administered on a continuous basis, and since March 2008, HCAHPS results have been publicly reported on the Hospital Compare

website four times per year. This pattern will continue into the foreseeable future. In addition, we plan to continue to offer both HCAHPS Introductory Training and HCAHPS Update Training on an annual basis.

B 17.0 OMB Expiration Date Exemption

CMS would like an exemption from displaying the expiration date on this collection as the survey will be used on a continuing basis. To include an expiration date would result in having to discard a potentially large number of surveys.

B 18.0 Exceptions to Certification Statement

The proposed data collection does not involve any exceptions to the certification statement identified in line 19 of OMB Form 83-I.