Understanding the Impact of a Survey Methodology Change on Patient Satisfaction Survey Response Rates and Results Administered in a Large, Not-for-Profit Health System

by

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About the Authors and Dedication

Craig Cordola is a 27-year veteran in the healthcare industry and a proud father of two college students. His daughter studies nursing, while his son majors in Russian, Spanish, and geography. Cordola's journey in healthcare began when he worked as an Emergency Medical Technician while pursuing his studies at The University of Texas at Austin, where he earned a Bachelor of Arts in Psychology. He then earned his Master of Healthcare Administration (MHA) and Master of Business Administration (MBA) from the University of Houston - Clear Lake. Throughout his career, Cordola has held various leadership positions in healthcare systems. Immediately after graduate school he served as a Director of Operations for Texas Children's Pediatrics, the largest pediatric primary care group in the United States. After his time at Texas Children's, he became the Chief Operating Officer (COO) and then the Chief Executive Officer (CEO) of Children's Memorial Hermann Hospital. He later served as the CEO of the Memorial Hermann - Texas Medical Center campus and as the Associate Dean at its affiliated Medical School, The University of Texas Health Science Center - Houston. After 14 years with Memorial Hermann he moved on to become the CEO of Ascension Texas and later took on the role as the COO for Ascension, nationally. Cordola is currently the CEO, Care Delivery for Fresenius Medical Care, a publicly traded international healthcare company. He is grateful for the guidance of his mentors, the unbelievable lessons learned along the journey, and, most importantly, the unwavering support of his wife, parents, and family.

Michelle Rajotte has 25 years of experience in management consulting, higher education, program management, and military financial operations. She currently serves as the Director of Global Client Services and Technology for Total Leadership Inc., a management and consulting firm focused on leadership training. In this role she consults with clients about their needs, designs content, delivers training, and coaches individuals and groups. She also co-teaches courses on team effectiveness and executive leadership in the executive MBA program at The Wharton School at the University of Pennsylvania. Prior to that, Rajoitte worked as Director of Operations for a marketing firm that specialized in biosafety products for biomedical research and pharmaceutical production companies. Rajotte also served as an acquisitions and financial officer in the United States Air Force where she developed cost estimates for various space systems, managed base-wide budgets, and served as Executive Officer to the Wing Commander. She also led the creation of a Junior Office Advisory Board to the Space and Missiles Systems Center commander and developed and implemented a training program for Second Lieutenants that was adopted Air Force-wide. Rajotte earned a Bachelor of Science in Marketing and a Bachelor of Science in Communication from Arizona State University, and an MBA from The Wharton School at the University of Pennsylvania. She lives in Dayton, OH, with her husband, a retired Air Force pilot, and her daughter is majoring in Environmental Biology and Ecology in college. Rajotte would like to thank her friend Nova for her unrelenting encouragement to begin this Ed.D. journey, and her classmates for sharing their incredible experiences and knowledge throughout this program. And a final thank you to her husband for his continued support, guidance, and hours of time helping to whiteboard all of her crazy ideas.

Introduction

Collecting representative patient satisfaction data in the healthcare industry is critical for guiding decisions about how healthcare is provided and ensuring maximum financial reimbursement from the Centers for Medicare and Medicaid (CMS). The HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems, pronounced "H-caps") survey is sent after discharge from an in-patient hospital stay to a sampling of adult patients and asks about the patient's ratings of hospital staff communication, the hospital environment, the overall rating a patient would give the hospital, and whether the patient would recommend the hospital. The survey results are sent to CMS where they are adjusted to create standardized ratings for health systems across the United States. CMS uses these results to impact Medicare reimbursement rates and funding. Many of these results are posted on publicly viewable websites in an effort to improve transparency and to allow for more informed decision making by patients on where they choose their care.

Our capstone partner organization is a large, national health system that recently changed from administering the HCAHPS survey by phone to mail. The organization is interested in understanding what impact, if any, this survey methodology change had on HCAHPS survey results, including response rates and survey ratings. Our review of existing literature found that survey respondents typically provide more positive ratings when completing a survey by phone than by mail (Elliott et al., 2009), a finding that CMS acknowledges and accounts for by applying a "mode adjustment" to survey ratings collected by mail. This mode adjustment is intended to normalize ratings provided by phone compared to by mail and the expected outcome is these differences will be zero (or close to zero) after the adjustment is applied. Studies also showed some demographic factors impact patient satisfaction scores (Barr, 2004). We did not, however, find any existing studies that address the potential interaction between survey mode changes and demographics and whether that potential interaction impacts survey ratings.

To explore the potential interaction between survey mode, demographics, and survey rating, we compared responses to the 77,452 surveys our capstone partner administered by phone and the 39,635 surveys administered by mail during the 3rd quarter of 2022 and 2023, respectively. Our study included an analysis of responses based on the four demographic questions in the standardized HCAHPS survey that ask about the patient's race, Spanish/Hispanic/Latino heritage, language most spoken at home, and education, as well as data provided by the hospital about patient age and gender. We explored differences in response rates and survey ratings based on demographic profile and how the survey results from our capstone partner were compared to the existing CMS mode adjustments applied to all HCAHPS survey results nationwide.

Organizational Context

Our capstone partner organization is a large, integrated health system operating over 140 hospitals across the United States. The health system includes hospitals, physician practices, ambulatory surgery centers, imaging centers, physical therapy locations, home health, and hospice services throughout the central and eastern portions of the country.

The organization has a rich history of delivering compassionate, personalized care to all, with special attention to persons living in poverty and those most vulnerable. In fiscal year 2022, the health system provided $2.3 billion in care for impoverished persons and those who utilized community benefit programs. A cornerstone of the organization includes its mission of caring for everyone with dignity and respect, valuing the patients and families they serve and those they serve alongside (Capstone Partner, 2023).

As mandated by the Center for Medicare and Medicaid Services (CMS), all hospitals across the country administer a patient satisfaction survey for a sampling of discharged hospitalized patients, known as the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS, pronounced "H-caps"). Before July 1, 2023, our partner health system contracted with Professional

Research Consultants (PRC) to administer the survey via phone. Beginning July 1, 2023, they changed vendors and contracted with Qualtrics to administer the survey via postal mail.

Our capstone partner organization is interested in understanding what impact, if any, this survey methodology change had on HCAHPS survey results, including response rates and survey ratings.

Problem of Practice

What is HCAHPS?

HCAHPS is a 29-item survey instrument (see Appendix C for the complete survey instrument) and data collection methodology. It utilizes a 4-point Likert scale (never, sometimes, usually, and always) to measure patients' perceptions of their hospital experience. The survey includes 19 core questions aggregated into 10 critical aspects of a patient's hospital experience: communication with nurses, communication with doctors, the responsiveness of hospital staff, communication about medicines, discharge information, care transition, the cleanliness of the hospital environment, the quietness of the hospital environment, overall rating of the hospital, and willingness to recommend the hospital. The survey questions included in each of the aggregated categories are listed in Table 1 below. An additional 10 questions are either administrative, provide data for adjusting patient mix across hospitals, or collect demographic data required by congressionally-mandated reporting requirements (Centers for Medicare & Medicaid Services, 2022).

Table 1: List of survey questions included in each of the 10 HCAHPS categorical scores

Composite Topics
Nurse Communication (Q1, Q2, Q3)
Doctor Communication (Q5, Q6, Q7)
Responsiveness of Hospital Staff (Q4, Q11)
Communication About Medicines (Q13, Q14)
Discharge Information (Q16, Q17)

Care Transition (Q20, Q21, Q22)
Individual Items
Cleanliness of Hospital Environment (Q8)
Quietness of Hospital Environment (Q9)
Global Items
Overall Rating of Hospital (Q18)
Willingness to Recommend Hospital (Q19)

Note: Data in table comes from Centers for Medicare & Medicaid Services "The HCAHPS Survey – Frequently Asked Questions (2023, August 3).

How is HCAHPS Administered?

CMS requires hospitals to participate in and administer a standardized patient satisfaction survey for discharged patients. HCAHPS is the first national, standardized, publicly reported survey of patients' perspectives of hospital care (CMS, 2021) and allows more than 6,000 hospitals nationally to benchmark their outcomes utilizing the quantitative results (CMS, 2022). The National Quality Forum endorsed the HCAHPS survey in December 2005, and the federal Office of Management and Budget approved the national implementation of HCAHPS for public reporting purposes. The first surveys were administered in October 2006, and the first public reporting of results occurred in March 2008 (CMS, 2022). HCAHPS is administered between 48 hours and 6 weeks after discharge to a random sample of adult inpatients (regardless of insurance type) admitted in the medical, surgical, or maternity care service lines and who meet the CMS criteria for survey eligibility. Those criteria include at least one overnight stay in the hospital as an inpatient and with a non-psychiatric Medicare Severity Diagnosis Related Group (MS-DRG) representing the principal diagnosis at discharge. CMS requires hospitals to administer HCAHPS monthly by one of four survey modes: mail only, phone only, mixed (mail with phone follow-up), or active interactive voice response. Each mode requires multiple attempts to contact patients (Centers for Medicare & Medicaid Services, 2022).

Capstone Partner HCAHPS Strategic Direction

Though the standardized HCAHPS survey allows hospitals to benchmark their performance compared to other hospitals, our capstone partner is not satisfied with the timeliness of the HCAHPS data and the content of the questions asked in the survey. The health system implemented a “real-time” email survey for all discharged patients not selected for the CMS-mandated HCAHPS Survey. This non-HCAHPS survey enables the organization to ask specific questions of importance that are not included in the HCAHPS survey, is less expensive to administer than HCAHPS, and provides real-time, actionable results as the online surveys are completed. For these reasons, the health system has shifted its focus to administering as many of its own emailed online surveys as possible while reducing the number of HCAHPS surveys it distributes.

Even with the change in its HCAHPS strategic direction, the health system continues to participate in the CMS survey and ensure they meet the mandated minimums for the number of completed surveys collected. Our capstone organization seeks to meet the CMS requirements and its internal preference to not experience a significant change in response rate or survey ratings for demographic categories such as gender, race, reason for admission, etc., due to the change in modality from phone to mail.

Relevant Stakeholders

Over 33.3 million patient hospitalizations occur annually in the United States throughout the country’s 6,000 hospitals (American Hospital Association, 2022). Patients are admitted to a hospital for everything from minor elective surgery to the birth of their first child to the devastating consequences of a significant trauma, stroke, or cardiac event. As one of the largest health systems in the country, the health system discharged more than 700,000 patients across their health system in 2022). Though the direct stakeholders of the results of this study are the members of the leadership team for the health

system, in the end, the patients and their families are the final stakeholders for whom they are working to improve outcomes.

Literature Review

Background

We completed an extensive literature review that was initially broad and included topics such as the history of HCAHPS, drivers of the patient experience, and the impact of the patient experience on patient outcomes and quality. As our research progressed, we focused more specifically on the impact of a survey modality change specific to the administration of HCAHPS, relying heavily on two articles published in *Health Services Research*. To better understand the background of HCAHPS as well as the related CMS requirements for hospitals, we reviewed the American Hospital Association (AHA) and the Center for Medicare and Medicaid Services (CMS) data depositories, which contain extensive material about the HCAHPS survey history, survey requirements, survey tool, and survey methodology. Finally, to gain a more in-depth understanding of the relevance of the HCAHPS survey to hospitals and health systems, we reviewed healthcare-related industry websites and books. While nearly a hundred articles were reviewed, approximately 40 identified were pertinent to our research focused on understanding the impact of a survey methodology change on patient satisfaction survey results.

The Importance of the HCAHPS Results

There are three primary reasons hospitals and health systems are interested in the data provided by the HCAHPS survey. First, the results expose health systems to *reputational risks* - the survey results can either enhance or diminish the reputation of hospitals and health systems. Second, meaningful *financial implications* for health systems related to HCAHPS outcomes exist. Third, a significant body of research indicates that *survey methodology* can impact a survey's overall results, which can lead to changes in outcomes that affect reputational risk and financial impacts.

Reputational Opportunities and Risks

Hospitals and health systems are ultimately in the service industry - caring for patients and their families. While their primary function is to care for patients clinically, like any other business, *how* they provide the service to patients and families matters. As such, the retention of existing patients and the acquisition of new patients are critical to the long-term success of health systems. CMS reports Patient Experience Star Ratings for all hospitals, calculated by averaging responses for the 10 HCAHPS categories of aggregated survey questions. This consistency in approach allows consumers to compare hospital patient experience scores nationwide. To provide transparency and easier decision-making for consumers, this data is presented in a simple "star rating" format to make it easier to understand and assess hospital information (Centers for Medicare & Medicaid Services, 2022). In addition, the official HCAHPS scores for all surveyed hospitals and health systems are publicly reported on Care Compare on Medicare.gov (www.medicare.gov/care-compare) quarterly, with the oldest quarter of surveys rolling off as the newest quarter rolls on. Each day, approximately 5,100 patients complete the HCAHPS (Centers for Medicare & Medicaid Services, 2022).

Many factors impact the overall outcome of the HCAHPS scores for hospitals, and most facilities have specific initiatives to improve their outcomes. For example, hospitals may train employees in how they should engage with patients and family members. Many hospitals follow Studer's Five Fundamentals of Service, known by the acronym "AIDET" (Acknowledge, Introduce, Duration, Explanation, Thank You), which, when used consistently, correlates closely with higher patient satisfaction scores (Studer, 2003). However, demographic factors have an impact on patient satisfaction scores as well. Elements such as primary language spoken at home, ethnicity, education, and race have been shown to influence how patients rate their hospital experience. McFarland et al. (2015) completed a large multivariate regression analysis and determined that "hospital size and primary language

('non-English speaking') most strongly predicted unfavorable HCAHPS scores while education and white ethnicity most strongly predicted favorable HCAHPS scores" (McFarland et al., 2015, p. 1).

Financial Implications

The vast majority of hospitals across the country rely on reimbursement from the federal government for a significant portion of their patient population covered through the Medicare program. In 2017, the American Hospital Association (AHA) reported that more than 40% of a typical hospital's patient volume comes from Medicare patients. To incentivize (and penalize) hospitals based on their patient satisfaction results, in 2011, CMS instituted a Value-Based Purchasing (VBP) program that ties a portion of the Inpatient Prospective Payment System (IPPS) to performance on quality measures. HCAHPS is the basis for the Person and Community Engagement (PCE) domain, which accounts for 25% of a hospital's Hospital VBP Total Performance Score (TPS) (Centers for Medicare & Medicaid Services, 2022). In addition to the financial impact on hospitals based on VBP, stronger patient experience scores improve patient retention and, thus, financial sustainability for the health system (Mehta, 2015).

The Impact of Survey Methodology on Survey Ratings

Survey methodology profoundly impacts a survey's overall rating or score. Multiple studies have demonstrated that respondents tend to provide higher ratings when a survey is administered by phone than when it is administered by mail. In 2006, Elliot et al. conducted a randomized mode experiment of HCAHPS with a sample of 27,229 discharges representing 45 hospitals nationwide. The study, published in 2009, found that, in general, evaluation results were more positive when the survey was administered via phone than by mail. Notably, these differences in ratings were "large enough to substantially bias comparisons among hospitals choosing different modes unless mode adjustments are made" (Elliott et al., 2009, p. 513). These findings align with a similar study by De Vries et al. that determined that, in general, HCAHPS survey respondents "were more likely than mail respondents to give positive evaluations of care" (De Vries et al., 2005, p. 2134). More specifically, administration via telephone

increased “the propensity for more favorable evaluations of care” for more than half of the HCAHPS questions examined (De Vries et al. 2005, p. 2120). These findings also align with a Drake et al. (2014) study examining how responses differed between phone and mail administration of a survey asking patients to report on their experiences with healthcare providers and office staff in the last 12 months. Based on the study performed by De Vries et al. (2005), the average hospital could improve its overall survey results simply by changing from a mail survey to a telephone survey. In one domain, *physical environment*, the study found that scores in this composite “would have improved by 1.51 hospital-level standard deviations, enough to move a hospital from the 7th percentile to the 50th percentile” (De Vries et al., 2005, p. 2136).

One possible explanation for phone surveys receiving higher overall scores is that mail surveys might “increase perceived impersonality and may encourage reporting of some sensitive information” (Bowling, 2005, p. 288). Phone surveys may also cause respondents to consider social norms and either respond as they think the interviewer expects or respond more favorably to appear more conforming, leading to social desirability bias (Bowling, 2005). Qualtrics, the vendor now administering our capstone partner organization’s HCAHPS survey via mail, reported a similar impact on HCAHPS results based on their experience. Qualtrics clients that moved from a phone distribution to a mail distribution for HCAHPS surveys saw an average -4.03 point decrease in overall ratings (Qualtrics, 2023).

Knowledge of the impact the changes the health system has made to the HCAHPS survey sample size and mode of administration will help inform whether additional changes need to be made that will allow them to maximize the utility of the results received from HCAHPS while primarily focusing on the non-HCAHPS related internal email patient satisfaction survey.

CMS Mode Adjustment to Ratings

CMS acknowledges the impact of the HCAHPS modality on the survey results. To account for the differences in HCAHPS results between phone, mixed method, and mail surveys, CMS calculates and applies a mode adjustment to survey results collected via phone or mixed methods. Survey results collected by mail are the reference and are not adjusted. The CMS Mode Adjustment was established after a nationwide 2006 mode experiment conducted by CMS compared responses from patients randomly assigned to complete the HCAHPS survey by mail, phone, mail with phone follow-up, or active interactive voice response (HCAHPS Online, 2008).

In 2021, CMS conducted a large-scale experiment to update the mode adjustments for current HCAHPS measures in the mail-only, telephone-only, and Mixed modes of the survey to be applied beginning with patients discharged in January 2023. The experiment used a random sample of acute care hospitals participating in HCAHPS from patients discharged between April and September 2021 from the 46 participating hospitals. The intent of the 2021 mode experiment was to more accurately capture the impact of the mode of survey administration on how patients respond.

The original mode adjustment from the 2021 survey reported “top box” (for example, responses of always) and “bottom box” (for example, responses of sometimes or never) scores for each of the 10 HCAHPS categories. A hypothetical set of responses collected by phone might show that in the Communication with Nurses category, 82.5% of respondents selected the top box (always), 9.7% selected a middlebox (usually), and 7.8% selected a bottom box (sometimes or never). These percentages are then adjusted by applying the most recent CMS mode adjustments noted in Table 2.

Table 2: HCAHPS Survey Mode Adjustments of Bottom and Top Box Percentages to a Reference of Mail

	Bottom Box		Top Box	
Composite Topics	**Phone Only**	**Mixed**	**Phone Only**	**Mixed**
Nurse Communication	-1.40%	-1.5%	-5.1%	-0.9%
Doctor Communication	-2.00%	-1.0%	-2.3%	-0.7%
Responsiveness of Hospital Staff	-2.00%	-2.5%	-2.4%	1.7%
Communication About Medicines	0.40%	0.3%	-6.3%	-1.9%
Discharge Information	1.40%	0.4%	-1.4%	0.4%
Care Transition	1.40%	0.9%	-0.6%	-1.3%
Individual Items				
Cleanliness of Hospital Environment	-1.20%	-0.9%	-0.9%	-0.7%
Quietness of Hospital Environment	-2.10%	-0.8%	-6.6%	-0.8%
Global Items				
Overall Rating of Hospital	0.00%	-0.9%	-0.5%	0.2%
Willingness to Recommend Hospital	0.20%	-0.3%	-3.0%	1.0%

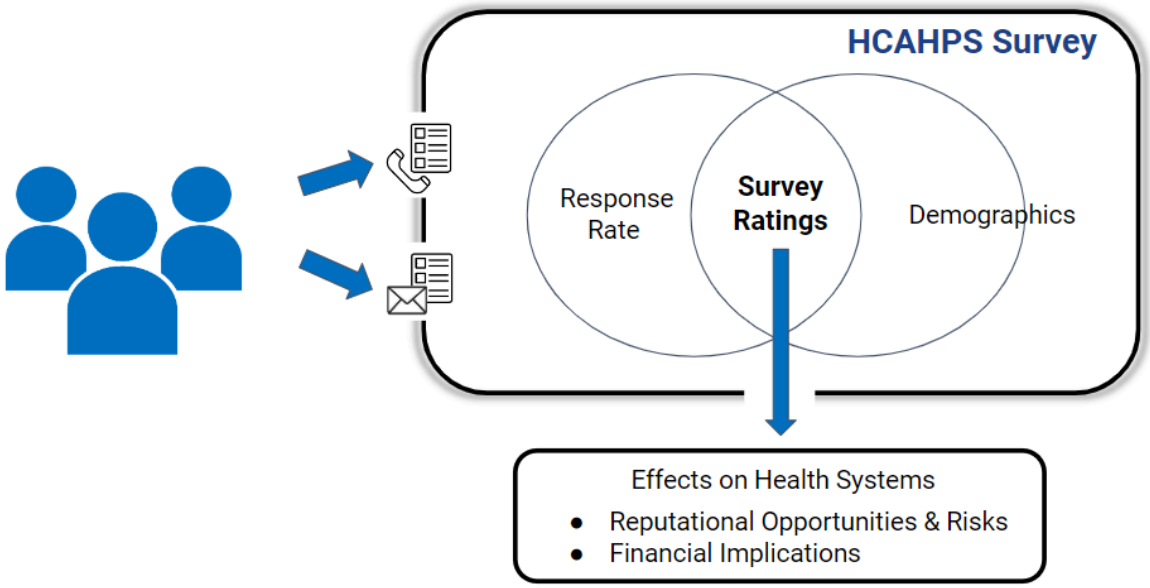
Note: Table is from HCAHPS Online, 2023.

In this example, the 82.5% of top box responses would be adjusted by -5.1% for an adjusted total of 77.4% of responses categorized as top box. The 7.8% of bottom box responses would be adjusted by -1.4% for an adjusted total of 6.4% of responses categorized as bottom box. Finally, to calculate the adjusted middle box percentage, the top, and bottom box percentages would be subtracted from 100%, resulting in 16.2% of responses categorized as middle box (100% – 77.4% top box – 6.4% bottom box = 16.2% middle box).

Conceptual Framing & Project Questions

Though several conceptual frameworks exist that address methods for improving the overall patient experience, physician engagement, and the connection between the patient experience and overall health outcomes, we did not find any frameworks that address the impact of a survey modality change on survey ratings based on both response rates and demographics of respondents. Given this, we developed the novel conceptual framework shown in Figure 1 that indicates the response rates and demographics of respondents may be impacted by survey modality, and this may impact survey results. Survey results have effects on health systems, including reputational opportunities and risks, as well as financial implications.

Figure 1: Conceptual Framework Model for Survey Mode Impact on HCAHPS



Based on this novel conceptual framework, our capstone partner is interested in an analysis of survey results collected by phone compared with those collected by mail which address the impact of survey methodology on survey ratings, potential risks, and opportunities, as well as potential financial implications for the organization. The aim of this research seeks to address the following questions:

The Impact of Survey Methodology on Survey Ratings

- Question 1a: How does the overall response rate differ, if at all?
- Question 1b: What differences, if any, are there in the survey ratings for the 10 HCAHPS survey categories based on the demographic profile of respondents?
- Question 1c: What differences, if any, are there in the survey ratings based on the demographic profile of respondents?

Reputational Risks and Opportunities

- Question 2: What are the changes, if any, on the Overall Hospital HCAHPS rating?

Financial Implications

- Question 3: How do the results for the 10 survey categories differ, if at all, from the current CMS HCAHPS Mode Adjustments?

Project Design

Recruitment

PRC and Qualtrics administer the HCAHPS survey as contracted vendors under the direction of our capstone partner. At the end of each month, they determine the population of patients eligible to be surveyed during the past month using criteria defined by the Centers for Medicare & Medicaid Services (Centers for Medicare & Medicaid Services, 2023). They then provide this list of patients to PRC and Qualtrics, and PRC and Qualtrics then use simple random sampling to select a subset of participants from the population. CMS guidelines require that “Hospitals must submit at least 300 completed HCAHPS Surveys in a rolling four-quarter period (unless the hospital is too small to obtain 300 completed surveys). The absence of a sufficient number of HCAHPS-eligible discharges is the only acceptable reason for submitting fewer than 300 completed HCAHPS Surveys in a rolling four-quarter period” (Centers for Medicare & Medicaid Services, 2023, p. 67).

PRC and Qualtrics calculate the estimated minimum sample size to achieve the required response rate for each hospital based on historical and expected return rates. There is no overall sampling rate across the health system - it is specific to each hospital.

Data Collection

CMS guidelines must be followed when administering the HCAHPS survey. Hospitals and their selected vendors are provided with detailed administrative procedures, including scripts for patient calls (Appendix A) and the mail survey instrument that must be used (Appendix C). The vendors must adhere to the guidelines published in the CMS CAHPS® Hospital Survey (HCAHPS) Quality Assurance Guidelines for surveys conducted by phone (Appendix B) and by mail (Appendix D) (Centers for Medicare & Medicaid Services, 2023).

PRC administered the HCAHPS survey via phone until June 30, 2023, and Qualtrics began administering the HCAHPS survey via mail as of July 1, 2023. We are collecting and analyzing data from the same period for 2022 and 2023 to reduce potential response variation due to seasonal differences. Data collected includes all HCAHPS Survey results from our capstone partner hospitals:

1. Collected by PRC by phone from a sample of patients discharged from the hospital between July 1, 2022, and September 30, 2022.
2. Collected by Qualtrics by mail from a sample of patients discharged from the hospital between July 1, 2023, and September 30, 2023.

Data from PRC for phone surveys were received on October 23, 2023, in a .csv file. Consistent with CMS guidelines, PRC made initial phone calls to the sampled patients between 48 hours and 6 weeks (42 calendar days) after initial discharge and up to five follow-up phone calls within 6 weeks (42 calendar days) of the initial phone call. The data includes 77,452 unique patients from 89 hospitals across 12 states as described in Appendix F, with 24,822 successful responses. Hospitals not meeting the

CMS guidelines for HCAHPS participation (Children's Hospitals, Behavioral Health Hospitals, etc.) were excluded from the data set.

Data from Qualtrics mail surveys were retrieved via the Qualtrics online portal on December 22, 2023, as a .csv file. Consistent with CMS guidelines, the first HCAHPS cover letter and questionnaire were mailed to 39,635 unique patients between 48 hours and 6 weeks (42 calendar days) after initial discharge. A second cover letter and questionnaire were sent to sampled non-respondents approximately 21 calendar days after the first mailing. This data set includes successful responses from 7,726 unique patients who responded to the mailed survey, representing 62 Hospitals.

HCAHPS Survey Tool Validity and Reliability

The HCAHPS survey is a valid tool that ensures objective and comparable survey results across hospitals. According to Tevis et al. (2014), after adjusting the results for "mode of administration, ... patient-reported health status, education, age, primary language, service line, hospital response rate, and service-age interaction, the HCAHPS Survey has been shown to have satisfactory internal consistency reliability and hospital-level reliability" (p. 151). Reliability ranged from 0.66–0.89 with a median of 0.88 at the hospital level and from 0.51–0.88 with a median of 0.72 for internal consistency. Tevis et al. found that, based on these results, hospitals and health systems can make valid comparisons of patient experiences across hospitals (2014).

Data Analysis

We analyzed the data received from PRC and Qualtrics using both R and Excel. In addition to the data collected on the HCAHPS survey, our data set included demographic data (gender and age) from the health system regarding each respondent. Below, we describe the analysis and type of statistical tests administered for each research question.

Question 1a: How does the overall response rate differ, if at all?

To answer this question, we first calculated the overall response rate for the surveys administered by PRC and Qualtrics and then ran a z-test to compare the two proportions.

Question 1b: What differences, if any, are there in the survey ratings for the 10 HCAHPS survey categories based on the demographic profile of respondents?

We first calculated the average scores for each data set for the 10 survey categories used by CMS. We ran t-tests to look for significant differences at the HCAHPS survey category level without separating by demographic. To look for differences by demographic profile, we then ran two-way ANOVAs with a dependent variable of the average rating for each of the 10 survey categories and independent variables of survey mode (phone vs mal) and demographic (gender, age, race, highest level of education, Spanish/Hispanic/Latino heritage, language most spoken at home).

Question 1c: What differences, if any, are there in the response rates based on the demographic profile of respondents?

PRC provided demographic data for those who did not respond to the phone survey, however, Qualtrics did not provide demographic data for respondents who did not respond to the mailed survey. Given this lack of demographic data for non-respondents from Qualtrics, we could not determine response rates by demographics. However, we calculated the percentage of respondents for each demographic variable and compared differences between surveys collected by phone and mail. We then ran z-tests to compare the two proportions.

Question 2: What are the changes, if any, on the Overall Hospital HCAHPS rating?

To determine if there was a statistically significant difference in the Overall Hospital rating provided by respondents via phone vs via mail, we ran a Welch two-sample independent t-test. The data for both the PRC and Qualtrics data sets are left skewed, though the large sample sizes (24,822 and

7,726, respectively) allow for some violation of normality. However, the differences in sample sizes indicate that a Welch's t-test may be more robust than a student's t-test.

Question 3: How do the results for the 10 survey categories differ, if at all, from the current CMS HCAHPS Mode Adjustments?

To compare whether the current CMS HCAHPS Mode Adjustments accurately reflect the differences in responses from patients who completed the survey via phone as compared to those who completed the survey via mail, we first calculated average scores for each data set for the 10 survey categories defined by CMS and described in Table 1. We then calculated the top, middle and bottom box scores using the process described in the CMS Mode Adjustment to Ratings section above. We then added the published CMS HCAHPS Mode Adjustment (as shown in Table 2) to each PRC score (collected via phone). We compared those to the scores from the surveys administered by Qualtrics (collected via mail and considered baseline for mode adjustment).

Data Collection Challenges

The HCAHPS data was provided by PRC in a .csv file which included data on all patients sampled, both respondents and non-respondents. Since the data file contains data about all sample members, we can determine the response rate by demographic variables.

The HCAHPS data provided by Qualtrics was provided as an Excel file. It did not, however, include data for the entire sample. It included data only for those in the sample who responded to the survey and it excluded data for those who did not respond. The lack of non-respondent data means we could not calculate response rates by demographic variables for the Qualtrics data. Though we asked our capstone partner for this information several times, it was not provided. It is unclear if Qualtrics does not have access to this data or if our requests were not addressed for other reasons. Qualtrics was, however, able to provide the total number of surveys mailed to patients for each hospital, and from that, we were able to calculate overall response rates.

Though the data sets from PRC and Qualtrics include similar information, not all data was comparable. Differences include that Qualtrics collapsed the highest level of education completed question from 6 response levels to 3, did not include text data about the primary “other” language spoken at home, did not include data for admission source, did not include data for the principal reason for admission, and reported pediatrics as the admitting provider specialty for 16 patients who are aged 18 to 76. Other differences included Qualtrics not using the CMS-defined variable names for some data and some hospitals represented in the PRC data set but not the Qualtrics data set. There are two main reasons for the differences in represented hospitals. First, the implementation with Qualtrics was a phased approach, which means specific markets were excluded. Second, because CMS doesn't require HCAHPS for Critical Access Hospitals, the decision was made not to administer HCAHPS (and use only the real-time listening online survey) for these hospitals.

Findings

Finding 1a: The response rates for surveys conducted by mail are 39.19% lower than response rates for surveys conducted by phone.

Results indicate that the response rates for surveys conducted via phone compared to those conducted via mail were significantly different ($z = 45.37$, $p < .00001$).

Table 3: Overall Response Rate

	PRC (phone)	Qualtrics (mail)	p value
Overall Response Rate	32.05%	19.49%	p < .0001

Finding 1b: There are differences for 9 of 10 survey categories based on whether the survey was completed by phone or mail.

To answer this question, we first ran t-tests to compare the differences between survey ratings for each category, regardless of demographic profile, for surveys collected by phone vs by mail. Results indicated a significant difference in survey rating for 9 of the 10 survey categories, as shown in Table 4 below. There was no significant difference in rating for Doctor Communication. Survey ratings for all other survey categories were higher/better when collected by phone than when collected by mail. Discharge Information is rated 1 for Yes and 2 for No, with lower scores indicating a more positive rating.

Table 4: Survey Ratings by Survey Category

HCAHPS Survey Category	PRC (phone)	Qualtrics (mail)	p value
Nurse Communication	3.74	3.72	p = 0.002
Doctor Communication	3.73	3.72	p > .05
Responsiveness of Hospital Staff	3.49	3.45	p < .001
Communication About Medicines	3.32	3.20	p < .001
Discharge Information	1.11	1.15	p < .001
Care Transition	3.47	3.42	p < .001
Cleanliness of Hospital Environment	3.59	3.53	p < .001
Quietness of Hospital Environment	3.56	3.44	p < .001
Overall Hospital Rating	8.84	8.61	p < .001
Recommend the Hospital	3.66	3.61	p < .001

Finding 1c: The demographic profile of those who responded is significantly different for each demographic variable.

We could not calculate response rates by demographic profile since Qualtrics could not provide demographic data for patients who were sent a survey but did not respond. We were, however, able to calculate the percentage of respondents in each demographic category. After doing this, we then conducted a z-test for proportions for each level of each demographic category. We found that for every demographic category, there were statistically significant differences in the proportion of responses for either all or most levels of that demographic variable.

Gender

As shown in Table 5, there were more female (61.78%) than male (38.22%) respondents for surveys collected by phone. The same pattern of more female (55.37%) and fewer male (44.63%) respondents was present for surveys collected by mail, but both the difference in the proportion of female respondents for phone compared to mail and the difference in the proportion of male respondents for phone compared to mail was significant.

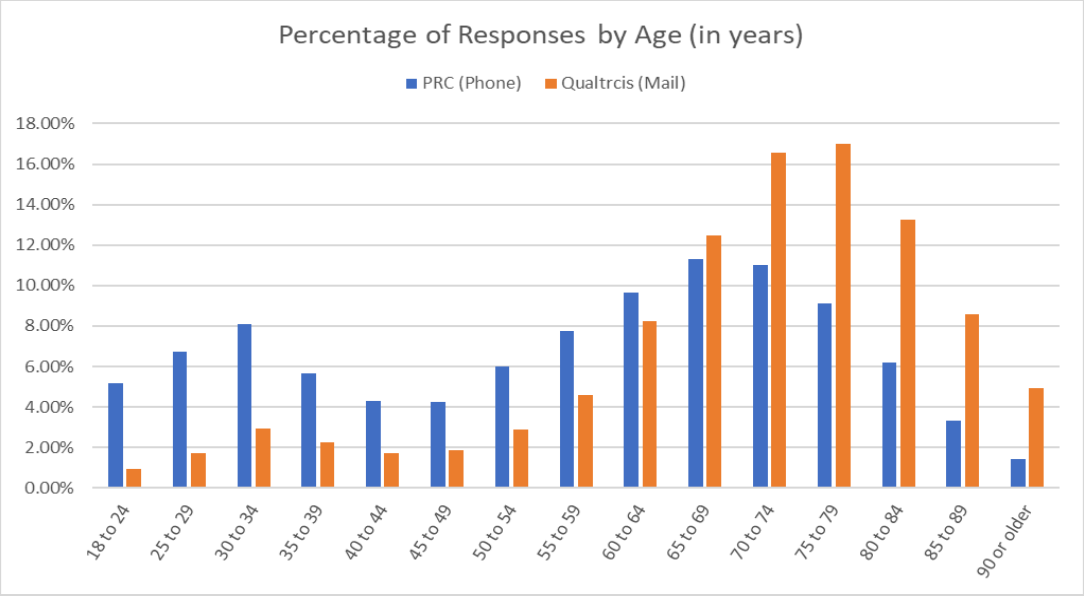
Table 5: Proportion of Responses by Gender

Gender	PRC (phone)	Qualtrics (mail)	p value
Male	38.22%	44.63%	$p < .001$
Female	61.78%	55.37%	$p < .001$

Age

Differences in the percentage of respondents that fell into each age group indicate that a higher number of younger respondents responded to the phone survey, and a higher number of older respondents responded to the mail survey. All results belo were significant with $p < .001$.

Figure 2: Proportion of Responses by Age



Race

Respondents who indicated two or more races in their survey response were categorized as mixed, and those who indicated one race were categorized as the race they indicated. Z-test results showed significant differences in the proportion of respondents who indicated they were mixed, white, Black, or Asian. Notably, the percentage of responses from participants who indicated they were Black decreased by 51.02%. Responses from participants who indicated they were white increased by 18.85%.

Table 6: Proportion of Responses by Race

Race	PRC (phone)	Qualtrics (mail)	p value
Mixed	6.59%	1.33%	p < .001
White	74.83%	88.94%	p < .001
Black or African-American	15.60%	7.64%	p < .001
Asian	1.97%	1.13%	p < .001
Native Hawaiian or Pacific Islander	0.18%	0.15%	p > .05
American Indian or Alaska Native	0.82%	0.80%	p > .05

Highest Level of Education

Z-tests comparing the highest level of education of respondents indicated significant differences in the proportion of respondents in all levels of the education demographic category. The percentage of respondents who indicated they were high school graduates or less dropped by 14.85% for surveys collected via mail, and increased for respondents who indicated they had some college or were 4-year graduates (7.22%) or had more than 4-year college degrees (27.48%).

Table 7: Proportion of Responses by Highest Level of Education

Highest level of education	PRC (phone)	Qualtrics (mail)	p value
High school graduate or less	43.38%	36.94%	p < .001
4-year college graduate or some college	45.01%	48.26%	p < .001
More than 4-year college degree	11.61%	14.80%	p < .001

Spanish/Hispanic/Latino Heritage

Z- tests indicated a significant difference in the percentage of respondents who noted either being or not being of Spanish/Hispanic/Latino heritage. For surveys collected by mail, the percentage of respondents who indicated being of Spanish/Hispanic/Latino heritage dropped by 63.18% and increased 9.36% for respondents who indicated not being of Spanish/Hispanic/Latino heritage.

Table 8: Proportion of Responses by Spanish/Hispanic/Latino heritage

Spanish/Hispanic/Latino heritage	PRC (phone)	Qualtrics (mail)	p value
Yes	12.90%	4.75%	p < .001
No	87.10%	95.25%	p < .001

Language Most Spoken at Home

The percentage of respondents who indicated that Spanish was the language they spoke most often at home dropped by 80.87%. The percentage of respondents who indicated that English was the language they spoke most often at home increased by 6.76%.

Table 9: Proportion of Responses by Language Most Spoken at Home

Language most spoken at home	PRC (phone)	Qualtrics (mail)	p value
English	92.16%	98.39%	p < .001
Spanish	7.32%	1.40%	p < .001
Some other language	0.52%	0.21%	p < .001

Finding 1d: In some cases the demographic profile or the combination of demographic profile and survey mode impacted survey category rating.

We next looked for significant interactions between survey mode and demographic profile for each of the 10 HCAHPS survey categories. Table 10 is an overview of significant interactions found between survey mode (phone vs mail) and the demographic category noted for each HCAHPS survey category.

Table 10: Significant Interactions Demographic Category and Survey Mode

	Interaction between demographic category and survey mode					
Survey Category	**Gender**	**Age**	**Race**	**Highest Level of Education**	**Spanish/ Hispanic /Latino**	**Language most spoken at home**
Nurse Communication					Yes	
Doctor Communication	Yes					
Responsiveness of Hospital Staff					Yes	
Communication About Medicines			Yes		Yes	
Discharge Information	Yes				Yes	
Care Transition	Yes		Yes	Yes	Yes	Yes
Cleanliness of Hospital Environment						
Quietness of Hospital Environment						
Overall Hospital Rating	Yes					
Recommend the Hospital						

The following sections provide detailed results of our statistical analysis of potential significant interactions between survey mode and demographic profile. Data for each of the 10 survey categories is presented, including whether a main effect was seen for demographic or for survey mode, as well as details about the survey ratings when a significant interaction between survey mode and demographic profile was found. Highlights include:

- A main effect of each of the six demographic variables was found for Doctor Communication, Communication About Medicines, Cleanliness of Hospital Environment, Quietness of Hospital Environment, Overall Hospital Rating, and Recommend the Hospital

- In general, younger respondents provided more positive survey ratings, and older respondents reported more negative survey ratings
- In general, respondents who indicated being of Spanish/Hispanic/Latino heritage provided more positive survey ratings than those who indicated not being of Spanish/Hispanic/Latino heritage

Nurse Communication

Table 11: Main Effects and Significant Interactions for Nurse Communication

Demographic Variable	Main Effect of Demographic	Main Effect of Survey Mode	Significant Interaction between Demographic and Survey Mode
Gender	No	Yes	No
Age	Yes	Yes	No
Race	Yes	Yes	No
Highest Level of Education	Yes	Yes	No
Spanish/Hispanic/ Latino	Yes	Yes	Yes
Language most spoken at home	Yes	Yes	No

Each two-way ANOVA for Nurse Communication by demographic category (gender, age, race, highest level of education, Spanish/Hispanic/Latino, and language most spoken at home) and survey mode revealed a main effect for survey mode. This aligns with our Finding 1b (detailed in Table 4) and indicates that respondents rated Nurse Communication higher when responding by phone (3.74 out of 4) than when responding by mail (3.72 out of 4).

In addition to a main effect for survey mode, a two-way ANOVA for Nurse Communication and gender revealed no main effect for gender. This indicates that ratings of Nurse Communication differed

based on survey mode, but did not differ based on gender. There was no significant interaction between survey mode and gender, indicating that modalities are not performing differently for different genders.

In addition to a main effect for survey mode, a two-way ANOVA for Nurse Communication and age revealed a main effect for age ($p<.0001$). This indicates that, in addition to survey mode, ratings of Nurse Communication differed based on age. Average ratings for Nurse Communication, in general, became lower the older a respondent was, with ratings from 18- to 24-year-olds averaging 3.78 out of 4, and ratings from respondents 90 years and older averaging 3.65 out of 4. There was no significant interaction between survey mode and age, indicating that modalities are not performing differently for different ages.

In addition to a main effect for survey mode, a two-way ANOVA for Nurse Communication and race revealed a main effect for race ($p=.0381$). This indicates that, in addition to survey mode, ratings of Nurse Communication differed based on race. Average ratings for Nurse Communication were highest for respondents who indicated they were Native Hawaiian or Pacific Islander (3.76 out of 4) or Asian (3.75 out of 4) and lowest for respondents who indicated they were American Indian or Alaska Native (3.72 out of 4). There was no significant interaction between survey mode and race, indicating that modalities are not performing differently for different races.

In addition to a main effect for survey mode, a two-way ANOVA for Nurse Communication and highest level of education revealed a main effect for the highest level of education ($p=.003$). This indicates that, in addition to survey mode, the rating of Nurse Communication differed based on highest level of education. Average ratings for Nurse Communication were higher from respondents who had a high school diploma or less (3.74 out of 4) or more than a 4-year college degree (3.74 out of 4) than they were from respondents with some college or a 4-year degree (3.72 out of 4). There was no significant interaction between survey mode and highest level of education, indicating that modalities are not performing differently for different levels of education.

In addition to a main effect for survey mode, a two-way ANOVA for Nurse Communication and Spanish/Hispanic/Latino heritage revealed a main effect for Spanish/Hispanic/Latino heritage ($p<.0001$). This indicates that, in addition to survey mode, the rating of Nurse Communication differed based on Spanish/Hispanic/Latino heritage. Average ratings for Nurse Communication were higher from respondents who indicated being of Spanish/Hispanic/Latino heritage (3.79 out of 4) than they were from respondents who indicated not being of Spanish/Hispanic/Latino heritage (3.73 out of 4). The two-way ANOVA also revealed that for Nurse Communication there was a significant interaction between survey mode (phone vs mail) and whether respondents indicated they were of Spanish/Hispanic/Latino heritage or not ($F=4.079$, $p=.048$), indicating that modalities are performing differently based on whether respondent indicated being of Spanish/Hispanic/Latino heritage. Average ratings from respondents who indicated they were of Spanish/Hispanic/Latino heritage were higher when responding by phone (3.80 out of 4) than when responding by mail (3.73 out of 4). Average ratings from respondents indicated they were not of Spanish/Hispanic/Latino heritage were also higher when responding by phone (3.73 out of 4) than when responding by mail (3.72 out of 4). The effect size for this interaction ($h2<.01$) indicates no practical significance of the interaction between survey mode and Spanish/Hispanic/Latino descent. However, the non-normality of the overall rating data may impact the effect size.

In addition to a main effect for survey mode, a two-way ANOVA for Nurse Communication and language most spoken at home revealed a main effect for language most spoken at home ($p<.0001$). This indicates that, in addition to survey mode, the rating of Nurse Communication differed based on language most spoken at home. Average ratings for Nurse Communication were higher from respondents who indicated speaking mainly Spanish at home (3.81 out of 4) than from respondents who indicated speaking mainly English at home (3.73 out of 4). There was no significant interaction between survey mode and language most spoken at home, indicating that modalities are not performing differently based on language most spoken at home.

Doctor Communication

Table 12: Main Effects and Significant Interactions for Doctor Communication

Demographic Variable	Main Effect of Demographic	Main Effect of Survey Mode	Significant Interaction between Demographic and Survey Mode
Gender	Yes	No	Yes
Age	Yes	No	No
Race	Yes	No	No*
Highest Level of Education	Yes	Yes**	No
Spanish/Hispanic/ Latino	Yes	No	No
Language most spoken at home	Yes	Yes**	No

* A significant interaction was revealed, but post hoc analysis showed this interaction was between different race categories across survey modes, and not the same race category across survey modes.

** In parsing out demographic effects, a main effect of survey mode was found, which contradicts the overall effect detailed in Table 10. This may be due to differences in sample size attributed to missing data.

A two-way ANOVA for Doctor Communication and gender revealed a main effect for gender ($p<.0001$) but no main effect for survey mode. This indicates that rating of Doctor Communication differed based on gender but did not differ based on survey mode. Average ratings for Doctor Communication were higher from females (3.73 out of 4) than they were from males (3.72 out of 4). There was a significant interaction between survey mode and gender ($F=4.076$, $p<.05$), indicating that modalities are performing differently based on gender. Average ratings from females were higher when responding by phone (3.74 out of 4) than by mail (3.72 out of 4). Average ratings from males were the same when responding by phone (3.71 out of 4) and by mail (3.71 out of 4). The effect size for the

interaction (h2<.01) indicates no practical significance. However, the non-normality of the overall rating data may impact the effect size.

A two-way ANOVA for Doctor Communication and age revealed a main effect for age (p<.0001) but no main effect for survey mode. This indicates that rating of Doctor Communication differed based on age, but did not differ based on survey mode. Average ratings for Doctor Communication became progressively lower the older a respondent was, with ratings (regardless of survey mode) from 18- to 24-year-olds averaging 3.83 out of 4, and rating from respondents 90 years and older averaging 3.63 out of 4. There was no significant interaction between survey mode and age, indicating that modalities are not performing differently for different ages.

A two-way ANOVA for Doctor Communication and race revealed a main effect for race (p<.0001) but no main effect for survey mode. This indicates that rating of Doctor Communication differed based on race, but did not differ based on survey mode. Regardless of survey mode, ratings provided by Asian (3.79 out of 4) and Black (3.77 out of 4) respondents were highest, and ratings provided by Native Hawaiian or Pacific Islander (3.70 out of 4) and white (3.72 out of 4) respondents were lowest. There was a significant interaction between survey mode and race (F=2.931, p=.0119), indicating that modalities are performing differently based on race. However, post hoc analysis showed significant differences between survey modes for different race categories, and not for the same race category. This indicates that the interaction between race and survey mode is driven by differences between race categories across survey modes and not differences in the same race category across survey modes. The effect size for the interaction (h2<.01) indicates no practical significance. However, the non-normality of the overall rating data may impact the effect size.

A two-way ANOVA for Doctor Communication and highest level of education revealed a main effect for the highest level of education (p=.0291) and a main effect for survey mode (p=.0318). This indicates that the rating of Doctor Communication differed based on highest level of education, with

higher ratings from respondents who had a high school diploma or less (3.74 out of 4) or more than a 4-year college degree (3.73 out of 4) than from respondents with some college or a 4-year degree (3.72 out of 4). In the parsing out of demographic effects of highest level of education on Doctor Communication a main effect of mode was found, in contradiction to the overall effect noted in Table 10. This may be due to differences in sample size attributed to missing data. There was no significant interaction between survey mode and highest level of education, indicating that modalities are not performing differently for different levels of education.

A two-way ANOVA for Doctor Communication and Spanish/Hispanic/Latino heritage revealed a main effect for Spanish/Hispanic/Latino heritage ($p<.0001$) but no main effect for survey mode. This indicates that rating of Doctor Communication differed based on Spanish/Hispanic/Latino heritage, but did not differ based on survey mode. Respondents who indicated being of Spanish/Hispanic/Latino heritage provided higher ratings (3.84 out of 4) than respondents who indicated not being of Spanish/Hispanic/Latino heritage (3.72 out of 4). There was no significant interaction between survey mode and Spanish/Hispanic/Latino heritage, indicating that modalities are not performing differently based on whether a respondent is of Spanish/Hispanic/Latino heritage.

A two-way ANOVA for Doctor Communication and language most spoken at home revealed a main effect for language most spoken at home ($p<.0001$) and a main effect for survey mode ($p=.0286$). This indicates that rating of Doctor Communication differed based on language most spoken at home, with respondents who indicated speaking mainly Spanish at home providing higher ratings (3.89 out of 4) than respondents who indicated speaking mainly English at home (3.72 out of 4). In parsing out the demographic effects of language most spoken at home on Doctor Communication, a main effect of mode was found, in contradiction to the overall effect noted in Table 10. This may be due to differences in sample size attributed to missing data. There was no significant interaction between survey mode and

language most spoken at home, indicating that modalities are not performing differently based on language most spoken at home.

Responsiveness of Hospital Staff

Table 13: Main Effects and Significant Interactions for Responsiveness of Hospital Staff

Demographic Variable	Main Effect of Demographic	Main Effect of Survey Mode	Significant Interaction between Demographic and Survey Mode
Gender	No	Yes	No
Age	Yes	Yes	No
Race	Yes	Yes	No
Highest Level of Education	Yes	Yes	No
Spanish/Hispanic/ Latino	Yes	Yes	Yes
Language most spoken at home	Yes	Yes	No

Each two-way ANOVA for Responsiveness of Hospital Staff by demographic category (gender, age, race, highest level of education, Spanish/Hispanic/Latino, and language most spoken at home) and survey mode revealed a main effect for survey mode. This aligns with our Finding 1b (detailed in Table 4) and indicates that respondents rated the Responsiveness of Hospital Staff higher when responding by phone (3.49 out of 4) than when responding by mail (3.45 out of 4).

In addition to a main effect for survey mode, a two-way ANOVA for Responsiveness of Hospital Staff and gender revealed no main effect for gender. This indicates that ratings of Responsiveness of Hospital Staff differed based on survey mode but did not differ based on gender. There was no significant interaction between survey mode and gender, indicating that modalities are not performing differently for different genders.

In addition to a main effect for survey mode, a two-way ANOVA for Responsiveness of Hospital Staff and age revealed a main effect for age ($p<.0001$). This indicates that, in addition to survey mode, ratings of Responsiveness of Hospital Staff differed based on age. Average ratings for Responsiveness of Hospital Staff increased from 18- to 24-year-olds (3.54 out of 4) through 35- to 39-year-olds (3.62 out of 4), but then dropped beginning with 40- to 44-year-olds (3.41 out of 4). This lower rating continued with an average rating of 3.44 out of 4 for age categories 40- to 44-year-olds through respondents older than 90 years. There was no significant interaction between survey mode and age, indicating that modalities are not performing differently for different ages.

In addition to a main effect for survey mode, a two-way ANOVA for Responsiveness of Hospital Staff and race revealed a main effect for race ($p<.0001$). This indicates that, in addition to survey mode, ratings of Responsiveness of Hospital Staff differed based on race. Average ratings for Responsiveness of Hospital Staff were highest for respondents who indicated they were Native Hawaiian or Pacific Islander (3.58 out of 4) and lowest for respondents who indicated they were Black (3.42 out of 4). There was no significant interaction between survey mode and race, indicating that modalities are not performing differently for different races.

In addition to a main effect for survey mode, a two-way ANOVA for Responsiveness of Hospital Staff and highest level of education revealed a main effect for the highest level of education ($p<.0001$). This indicates that, in addition to the survey mode, the rating of Responsiveness of Hospital Staff differed based on the highest level of education. Average ratings for Responsiveness of Hospital Staff were higher from respondents who had a high school diploma or less (3.49 out of 4) or more than a 4-year college degree (3.48 out of 4) than they were from respondents with some college or a 4-year degree (3.46 out of 4). There was no significant interaction between the survey mode and the highest level of education, indicating that modalities are not performing differently for different levels of education.

In addition to a main effect for survey mode, a two-way ANOVA for Responsiveness of Hospital Staff and Spanish/Hispanic/Latino heritage revealed a main effect for Spanish/Hispanic/Latino heritage ($p<.0001$). This indicates that, in addition to survey mode, the rating of Responsiveness of Hospital Staff differed based on Spanish/Hispanic/Latino heritage. Average ratings for Responsiveness of Hospital Staff were higher from respondents who indicated Spanish/Hispanic/Latino heritage (3.53 out of 4) than respondents who indicated not Spanish/Hispanic/Latino heritage (3.47 out of 4). The two-way ANOVA also revealed that for Responsiveness of Hospital Staff, there was a significant interaction between survey mode (phone vs mail) and whether respondents indicated they were of Spanish/Hispanic/Latino heritage or not ($F=6.561$, $p=.0104$), indicating that modalities are performing differently based on whether respondents indicated they were of Spanish/Hispanic/Latino heritage or not. Average ratings from respondents indicated they were of Spanish/Hispanic/Latino heritage were higher when responding by phone (3.60 out of 4) than when responding by mail (3.46 out of 4). Average ratings from respondents indicated they were not of Spanish/Hispanic/Latino heritage were also higher when responding by phone (3.48 out of 4) than when responding by mail (3.45 out of 4). The effect size for this interaction ($h2<.01$) indicates no practical significance of the interaction between survey mode and Spanish/Hispanic/Latino heritage. However, the non-normality of the overall rating data may impact the effect size.

In addition to a main effect for survey mode, a two-way ANOVA for Responsiveness of Hospital Staff and language most spoken at home revealed a main effect for language most spoken at home ($p<.0001$). This indicates that, in addition to survey mode, the rating of Responsiveness of Hospital Staff differed based on the language most spoken at home. Average ratings for Responsiveness of Hospital Staff were higher from respondents who indicated speaking mainly Spanish at home (3.59 out of 4) than they were from respondents who indicated speaking mainly English at home (3.47 out of 4). There was

no significant interaction between survey mode and language most spoken at home, indicating that modalities are not performing differently based on language most spoken at home.

Communication About Medicines

Table 14: Main Effects and Significant Interactions for Communication About Medicines

Demographic Variable	Main Effect of Demographic	Main Effect of Survey Mode	Significant Interaction between Demographic and Survey Mode
Gender	Yes	Yes	No
Age	Yes	Yes	No
Race	Yes	Yes	No
Highest Level of Education	Yes	Yes	No
Spanish/Hispanic/ Latino	Yes	Yes	Yes
Language most spoken at home	Yes	Yes	No

Each two-way ANOVA for Communication About Medicines by demographic category (gender, age, race, highest level of education, Spanish/Hispanic/Latino, and language most spoken at home) and survey mode revealed a main effect for survey mode. This aligns with our Finding 1b (detailed in Table 4) and indicates that respondents rated Communication About Medicines higher when responding by phone (3.32 out of 4) than when responding by mail (3.20 out of 4).

In addition to a main effect for survey mode, a two-way ANOVA for Communication About Medicines and gender revealed a main effect for gender ($p<.0001$). This indicates that, in addition to survey mode, ratings of Communication About Medicines differed based on gender. Average ratings for Communication About Medicines were higher from female respondents (3.31 out of 4) than from male

respondents (3.23). There was no significant interaction between survey mode and gender, indicating that modalities are not performing differently for different genders.

In addition to a main effect for survey mode, a two-way ANOVA for Communication About Medicines and age revealed a main effect for age ($p<.0001$). This indicates that, in addition to survey mode, ratings of Communication About Medicines differed based on age. Average ratings for Communication About Medicines became progressively lower the older a respondent was, with ratings from 18- to-24 year-olds averaging 3.53 out of 4 and ratings from respondents 90 years and older averaging 3.16 out of 4. There was no significant interaction between survey mode and age, indicating that modalities are not performing differently for different ages.

A two-way ANOVA for Communication About Medicines and race revealed no main effect for race. This indicates that ratings of Communication About Medicines did not differ based on respondents' race. There was a significant interaction between survey mode and race ($F=2.727$, $p=.0181$), indicating that modalities are performing differently based on race. Post hoc analysis showed significant differences between survey modes for respondents who indicated they were white ($p<.0001$), with average ratings by phone of 3.32 out of 4 and ratings by mail of 3.18 out of 4. There were no significant differences for any of the other race categories (mixed, Black, Asian, Native Hawaiian or Pacific Islander, and American Indian or Alaska Native). The effect size for the interaction ($h2<.01$) indicates no practical significance. However, the non-normality of the overall rating data may impact the effect size.

In addition to a main effect for survey mode, a two-way ANOVA for Communication About Medicines and highest level of education revealed a main effect for the highest level of education ($p<.0001$). This indicates that, in addition to survey mode, the rating of Communication About Medicines differed based on highest level of education. Average ratings for Communication About Medicines were higher from respondents who had a high school diploma or less (3.25 out of 4) than they were from respondents with more than a 4-year college degree (3.16 out of 4) or respondents with some college or

a 4-year degree (3.18 out of 4). There was no significant interaction between survey mode and highest level of education, indicating that modalities are not performing differently for different levels of education.

In addition to a main effect for survey mode, a two-way ANOVA for Communication About Medicines and Spanish/Hispanic/Latino heritage revealed a main effect for Spanish/Hispanic/Latino heritage ($p<.0001$). This indicates that, in addition to survey mode, the rating of Communication About Medicines differed based on Spanish/Hispanic/Latino heritage. Average ratings for Communication About Medicines were higher from respondents who indicated Spanish/Hispanic/Latino heritage (3.43 out of 4) than respondents who indicated not Spanish/Hispanic/Latino heritage (3.25 out of 4). The two-way ANOVA also revealed that for Communication About Medicines there was a significant interaction between survey mode (phone vs mail) and whether respondents indicated they were of Spanish/Hispanic/Latino heritage or not ($F=5.905$, $p=.0151$), indicating that modalities are performing differently based on whether respondents indicated they were of Spanish/Hispanic/Latino heritage or not. Average ratings from respondents indicated they were of Spanish/Hispanic/Latino heritage were higher when responding by phone (3.56 out of 4) than when responding by mail (3.31 out of 4). Average ratings from respondents indicated they were not of Spanish/Hispanic/Latino heritage were also higher when responding by phone (3.30 out of 4) than when responding by mail (3.20 out of 4). The effect size for this interaction ($h2<.01$) indicates no practical significance of the interaction between survey mode and Spanish/Hispanic/Latino heritage. However, the non-normality of the overall rating data may impact the effect size.

In addition to a main effect for survey mode, a two-way ANOVA for Communication About Medicines and language most spoken at home revealed a main effect for language most spoken at home ($p<.0001$). This indicates that, in addition to survey mode, the rating of Communication About Medicines differed based on the language most spoken at home. Average ratings for Communication About

Medicines were higher from respondents who indicated speaking mainly Spanish at home (3.58 out of 4) than from respondents who indicated speaking mainly English at home (3.25 out of 4). There was no significant interaction between the survey mode and the language most spoken at home, indicating that modalities are not performing differently based on the language most spoken at home.

Discharge Information

Table 15: Main Effects and Significant Interactions for Discharge Information

Demographic Variable	Main Effect of Demographic	Main Effect of Survey Mode	Significant Interaction between Demographic and Survey Mode
Gender	Yes	Yes	Yes
Age	Yes	Yes	No
Race	No	Yes	No
Highest Level of Education	No	Yes	No
Spanish/Hispanic/ Latino	Yes	Yes	Yes
Language most spoken at home	No	Yes	No

Each two-way ANOVA for Discharge Information by demographic category (gender, age, race, highest level of education, Spanish/Hispanic/Latino, and language most spoken at home) and survey mode revealed a main effect for survey mode. This aligns with our Finding 1b (detailed in Table 4) and indicates that respondents rated Discharge Information better when responding by phone (1.11 out of 2) than when responding by mail (1.15 out of 2). Discharge Information is rated as 1 for Yes and 2 for No, and lower scores indicate a more positive rating.

In addition to a main effect for survey mode, a two-way ANOVA for Discharge Information and gender revealed a main effect for gender ($p<.0001$). This indicates that, in addition to survey mode,

ratings of Discharge Information differed based on gender. Average ratings for Discharge Information were more positive from female respondents (1.14 out of 2) than from male respondents (1.11 out of 2). The two-way ANOVA also revealed that for Discharge Information there was a significant interaction between survey mode (phone vs mail) and gender, indicating that modalities are performing differently for different genders. Average ratings from females were better when responding by phone (1.11 out of 2) than by mail (1.17 out of 2). Average ratings for males were also better when responding by phone (1.10 out of 2) than by mail (1.12 out of 2). The effect size for the interaction ($h2<.01$) indicates no practical significance. However, the non-normality of the overall rating data may impact the effect size.

In addition to a main effect for survey mode, a two-way ANOVA for Discharge Information and age revealed a main effect for age ($p<.0001$). This indicates that, in addition to survey mode, ratings of Discharge Information differed based on age. Average ratings for Discharge Information became progressively worse the older a respondent was, with ratings from 18- to 24-year-olds averaging 1.08 out of 2, and ratings from respondents 90 years and older averaging 1.19 out of 4. There was no significant interaction between survey mode and age, indicating that modalities are not performing differently for different ages.

A two-way ANOVA for Discharge Information and race revealed no main effect for race. This indicates that ratings of Discharge Information did not differ based on respondents' race. There was a significant interaction between survey mode and race ($F=2.727$, $p=.0181$). There was no significant interaction between survey mode and race, indicating that modalities are not performing differently for different races.

A two-way ANOVA for Discharge Information and the highest level of education revealed no main effect for the highest level of education. This indicates that the ratings of Discharge Information did not differ based on the highest level of education. There was no significant interaction between the

survey mode and the highest level of education, indicating that modalities are not performing differently for different levels of education.

In addition to a main effect for survey mode, a two-way ANOVA for Discharge Information and Spanish/Hispanic/Latino heritage revealed a main effect for Spanish/Hispanic/Latino heritage ($p<.0001$). This indicates that, in addition to survey mode, the rating of Discharge Information differed based on Spanish/Hispanic/Latino heritage. Average ratings for Discharge Information were better from respondents who indicated not being of Spanish/Hispanic/Latino heritage (1.11 out of 2) than they were from respondents who indicated being of Spanish/Hispanic/Latino heritage (1.13 out of 2). The two-way ANOVA also revealed that for Discharge Information there was a significant interaction between survey mode (phone vs mail) and whether respondents indicated they were of Spanish/Hispanic/Latino descent or not ($F=4.647$, $p=.0311$). Average ratings from respondents indicated they were of Spanish/Hispanic/Latino heritage were better when responding by phone (1.08 out of 4) than when responding by mail (1.15 out of 2). Average ratings from respondents indicated they were not of Spanish/Hispanic/Latino heritage were also better when responding by phone (1.10 out of 2) than when responding by mail (1.14 out of 2). The effect size for this interaction ($h2<.01$) indicates no practical significance of the interaction between survey mode and Spanish/Hispanic/Latino descent. However, the non-normality of the overall rating data may impact the effect size.

A two-way ANOVA for Discharge Information and language most spoken at home revealed no main effect for the language most spoken at home. This indicates that the ratings of Discharge Information did not differ based on language most spoken at home. There was no significant interaction between survey mode and language most spoken at home, indicating that modalities are not performing differently for language most spoken at home.

Care Transition

Table 16: Main Effects and Significant Interactions for Care Transition

Demographic Variable	Main Effect of Demographic	Main Effect of Survey Mode	Significant Interaction between Demographic and Survey Mode
Gender	No	Yes	Yes
Age	Yes	Yes	No*
Race	Yes	Yes	Yes
Highest Level of Education	Yes	Yes	Yes
Spanish/Hispanic/ Latino	No	Yes	Yes
Language most spoken at home	Yes	Yes	Yes

* A significant interaction was revealed, but post hoc analysis showed this interaction was between different age categories across survey modes and not the same age category across survey modes.

Each two-way ANOVA for Care Transition by demographic category (gender, age, race, highest level of education, Spanish/Hispanic/Latino, and language most spoken at home) and survey mode revealed a main effect for survey mode. This aligns with our Finding 1b (detailed in Table 4) indicates that respondents rated Care Transition higher when responding by phone (3.47 out of 4) than when responding by mail (3.42 out of 4).

A two-way ANOVA for Care Transition and gender revealed no main effect for gender. This indicates that ratings of Care Transition did not differ based on respondents' gender. There was a significant interaction between survey mode and gender ($F=4.732$, $p=.0296$), indicating that modalities are performing differently for different genders. Average ratings from females were higher when responding by phone (3.47 out of 4) than when responding by mail (3.40 out of 4). Average ratings from

male were also higher when responding by phone (3.47 out of 4) than when responding by mail (3.43 out of 4). The effect size for the interaction ($h^2<.01$) indicates no practical significance. However, the non-normality of the overall rating data may impact the effect size.

In addition to a main effect for survey mode, a two-way ANOVA for Care Transition and age revealed a main effect for age ($p<.0001$). This indicates that, in addition to survey mode, ratings of Care Transition differed based on age. Average ratings for Care Transition became progressively worse the older a respondent was, with ratings from 18- to 24-year-olds averaging 3.56 out of 4, and ratings from respondents 90 years and older averaging 3.29 out of 4. There was no significant interaction between survey mode and age, indicating that modalities are not performing differently for different ages. There was a significant interaction between survey mode and age ($F=1.848$, $p=.0269$), indicating that modalities are performing differently for different ages. However, post hoc analysis showed significant differences between survey modes for different age categories, and not for the same age category. This indicates that the interaction between age and survey mode is driven by differences between age categories across survey modes and not differences in the same age category across survey modes. The effect size for the interaction ($h^2<.01$) indicates no practical significance. However, the non-normality of the overall rating data may impact the effect size.

In addition to a main effect for survey mode, a two-way ANOVA for Care Transition and race revealed a main effect for race ($p<.0001$). This indicates that, in addition to survey mode, ratings of Care Transition differed based on race. Average ratings for Care Transition were highest for respondents who indicated they were Native Hawaiian or Pacific Islander (3.49 out of 4) and lowest for respondents who indicated they were Black (3.43 out of 4). There was a significant interaction between survey mode and race ($F=4.468$, $p<.0001$), indicating that modalities are performing differently based on race. Post hoc analysis showed significant differences between survey modes for respondents who indicated they were white ($p<.0001$), with average ratings by phone of 3.50 out of 4 and ratings by mail of 3.42 out of 4.

There were no significant differences for any of the other race categories (mixed, Black, Asian, Native Hawaiian or Pacific Islander, and American Indian or Alaska Native). The effect size for the interaction ($h2<.01$) indicates no practical significance. However, the non-normality of the overall rating data may impact the effect size.

In addition to a main effect for survey mode, a two-way ANOVA for Care Transition and highest level of education revealed a main effect for the highest level of education ($p<.0001$). This indicates that, in addition to survey mode, the rating of Care Transition differed based on highest level of education. Average ratings for Care Transition were higher from respondents with more than a 4-year college degree (3.50 out of 4) and lower from respondents with a high school diploma or less (3.43 out of 4) and respondents with some college or a 4-year degree (3.45 out of 4). The two-way ANOVA also revealed that for Care Transition there was a significant interaction between survey mode (phone vs mail) and highest level of education, indicating that modalities are performing differently for different levels of education. Average ratings for Care Transition were higher for all levels of education when responding by phone vs by mail. For respondents with more than a 4-year college degree, average ratings were 3.54 out of 4 by phone and 3.46 out of 4 by mail. For respondents with a high school diploma or less, average ratings were 3.45 out of 4 by phone and 3.42 out of 4 by mail. For respondents with some college or a 4-year degree, average ratings were 3.50 out of 4 by phone and 3.42 out of 4 by mail. The effect size for the interaction ($h2<.01$) indicates no practical significance. However, the non-normality of the overall rating data may impact the effect size.

A two-way ANOVA for Care Transition and Spanish/Hispanic/Latino heritage revealed no main effect for Spanish/Hispanic/Latino heritage. This indicates that ratings of Care Transition did not differ based on whether respondents were of Spanish/Hispanic/Latino heritage. There was a significant interaction between survey mode and Spanish/Hispanic/Latino heritage ($F=7.773$, $p=.0053$), indicating that modalities are performing differently based on Spanish/Hispanic/Latino heritage. Contrary to the

average rating provided for Care Transition by phone vs by mail regardless of demographic profile, average ratings from respondents indicated they were of Spanish/Hispanic/Latino heritage were lower when responding by phone (3.48 out of 4) than when responding by mail (3.51 out of 4). Average ratings from respondents who indicated they were not of Spanish/Hispanic/Latino heritage were higher when responding by phone (3.48 out of 4) than when responding by mail (3.42 out of 4). It is likely that the drop in total respondents who indicated being of Spanish/Hispanic/Latino heritage from 12.9% for surveys administered by phone to 4.75% for surveys administered by mail impacted the variety of responses received, and this may have contributed to the differences in ratings for Care Transition that were provided overall compared to when those ratings were broken out by whether respondents indicated they were of Spanish/Hispanic/Latino heritage. The effect size for this interaction ($h2<.01$) indicates no practical significance of the interaction between survey mode and Spanish/Hispanic/Latino descent. However, the non-normality of the overall rating data may impact the effect size.

In addition to a main effect for survey mode, a two-way ANOVA for Care Transition and language most spoken at home revealed a main effect for language most spoken at home ($p=.0457$). This indicates that, in addition to survey mode, the rating of Care Transition differed based on language most spoken at home. Average ratings for Care Transition were higher from respondents who indicated speaking mainly Spanish at home (3.89 out of 4) than they were from respondents who indicated speaking mainly English at home (3.72 out of 4). The two-way ANOVA also revealed that for Care Transition there was a significant interaction between survey mode and language most spoken at home ($F=9.389$, $p<.0001$), indicating that modalities are performing differently based on language most spoken at home. Contrary to the average ratings provided for Care Transition by phone vs by mail regardless of demographic profile, average ratings from respondents who indicated speaking mainly Spanish at home were lower when responding by phone (3.43 out of 4) than when responding by mail (3.76 out of 4). However, average ratings from respondents who indicated speaking mainly English at home were higher when

responding by phone (3.49 out of 4) than when responding by mail (3.42 out of 4). It is likely that the change in total respondents who indicated speaking mainly Spanish or English at home from 7.32% and 92.16% respectively for surveys administered by phone, to 1.40% and 98.39% respectively for surveys administered by mail impacted the variety of responses received, and this may have contributed to the differences in ratings for Care Transition that were provided overall compared to when those ratings were broken out by the language respondents indicated they spoke most often at home. The effect size for this interaction (h2<.01) indicates no practical significance of the interaction between survey mode and language most spoken at home. However, the non-normality of the overall rating data may impact the effect size.

Cleanliness of Hospital Environment

Table 17: Main Effects and Significant Interactions for Cleanliness of Hospital Environment

Demographic Variable	Main Effect of Demographic	Main Effect of Survey Mode	Significant Interaction between Demographic and Survey Mode
Gender	Yes	Yes	No
Age	Yes	Yes	No
Race	Yes	Yes	No
Highest Level of Education	Yes	Yes	No
Spanish/Hispanic/ Latino	Yes	Yes	No
Language most spoken at home	Yes	Yes	No

Each two-way ANOVA for Cleanliness of Hospital Environment by demographic category (gender, age, race, highest level of education, Spanish/Hispanic/Latino, and language most spoken at home) and survey mode revealed a main effect for survey mode. This aligns with our Finding 1b (detailed in Table 4)

indicates that respondents rated Cleanliness of Hospital Environment higher when responding by phone (3.59 out of 4) than when responding by mail (3.53 out of 4).

In addition to a main effect for survey mode, a two-way ANOVA for Cleanliness of Hospital Environment and gender revealed a main effect for gender ($p<.0001$). This indicates that, in addition to survey mode, ratings of Cleanliness of Hospital Environment differed based on gender. Average ratings for Cleanliness of Hospital Environment were higher from female respondents (3.62 out of 4) than from male respondents (3.51 out of 4). There was no significant interaction between survey mode and gender, indicating that modalities are not performing differently for different genders.

In addition to a main effect for survey mode, a two-way ANOVA for Cleanliness of Hospital Environment and age revealed a main effect for age ($p<.0001$). This indicates that, in addition to survey mode, ratings of Cleanliness of Hospital Environment differed based on age. Ratings for Cleanliness of Hospital Environment became progressively worse, on average, the older a respondent was, with ratings from 18- to 24-year-olds averaging 3.68 out of 4, and ratings from respondents 90 years and older averaging 3.56 out of 4. There was no significant interaction between survey mode and age, indicating that modalities are not performing differently for different ages.

In addition to a main effect for survey mode, a two-way ANOVA for Cleanliness of Hospital Environment and race revealed a main effect for race ($p<.0001$). This indicates that, in addition to survey mode, ratings of Cleanliness of Hospital Environment differed based on race. Average ratings for Cleanliness of Hospital Environment were highest for respondents who indicated they were Mixed race (3.61 out of 4) and lowest for respondents who indicated they were Native Hawaiian or Pacific Islander (3.37 out of 4). There was no significant interaction between survey mode and age, indicating that modalities are not performing differently for different races.

In addition to a main effect for survey mode, a two-way ANOVA for Cleanliness of Hospital Environment and highest level of education revealed a main effect for the highest level of education

(p<.0001). This indicates that, in addition to survey mode, the rating of Cleanliness of Hospital Environment differed based on highest level of education. Average ratings for Cleanliness of Hospital Environment were higher from respondents with a high school diploma or less (3.58 out of 4) and lower from respondents with some college or a 4-year degree (3.54 out of 4). There was no significant interaction between survey mode and age, indicating that modalities are not performing differently for different levels of education.

In addition to a main effect for survey mode, a two-way ANOVA for Cleanliness of Hospital Environment and Spanish/Hispanic/Latino heritage revealed a main effect for Spanish/Hispanic/Latino heritage (p<.0001). This indicates that, in addition to survey mode, the rating of Cleanliness of Hospital Environment differed based on Spanish/Hispanic/Latino heritage. Average ratings for Cleanliness of Hospital Environment were better from respondents who indicated being of Spanish/Hispanic/Latino heritage (3.63 out of 4) than they were from respondents who indicated not being of Spanish/Hispanic/Latino heritage (3.56 out of 4). There was no significant interaction between survey mode and Spanish/Hispanic/Latino heritage, indicating that modalities are not performing differently based on whether respondents are of Spanish/Hispanic/Latino heritage.

In addition to a main effect for survey mode, a two-way ANOVA for Cleanliness of Hospital Environment and language most spoken at home revealed a main effect for language most spoken at home (p<.0001). This indicates that, in addition to survey mode, the rating of Cleanliness of Hospital Environment differed based on language most spoken at home. Average ratings for Cleanliness of Hospital Environment were higher from respondents who indicated speaking mainly Spanish at home (3.69 out of 4) than they were from respondents who indicated speaking mainly English at home (3.56 out of 4). There was no significant interaction between survey mode and language most spoken at home, indicating that modalities are not performing differently based on language most spoken at home.

Quietness of Hospital Environment

Table 18: Main Effects and Significant Interactions for Quietness of Hospital Environment

Demographic Variable	Main Effect of Demographic	Main Effect of Survey Mode	Significant Interaction between Demographic and Survey Mode
Gender	Yes	Yes	No
Age	Yes	Yes	No
Race	Yes	Yes	No
Highest Level of Education	Yes	Yes	No
Spanish/Hispanic/ Latino	Yes	Yes	No
Language most spoken at home	Yes	Yes	No

Each two-way ANOVA for Quietness of Hospital Environment by demographic category (gender, age, race, highest level of education, Spanish/Hispanic/Latino, and language most spoken at home) and survey mode revealed a main effect for survey mode. This aligns with our Finding 1b (detailed in Table 4) indicates that respondents rated Quietness of Hospital Environment higher when responding by phone (3.56 out of 4) than when responding by mail (3.44 out of 4).

In addition to a main effect for survey mode, a two-way ANOVA for Quietness of Hospital Environment and gender revealed a main effect for gender ($p<.0001$). This indicates that, in addition to survey mode, ratings of Quietness of Hospital Environment differed based on gender. Average ratings for Quietness of Hospital Environment were higher from female respondents (3.53 out of 4) than from male respondents (3.47 out of 4). There was no significant interaction between survey mode and gender, indicating that modalities are not performing differently for different genders.

In addition to a main effect for survey mode, a two-way ANOVA for Quietness of Hospital Environment and age revealed a main effect for age ($p<.0001$). This indicates that, in addition to survey mode, ratings of Quietness of Hospital Environment differed based on age. Ratings for Quietness of Hospital Environment dropped off significantly for respondents 40 years and older. Ratings from 18- to 24-year-olds through 35- to 39-year-olds averaged 3.64 out of 4, followed by a drop in ratings from 40- to 44-year-olds through respondents 90 years and older, which averaged 3.48 out of 4. There was no significant interaction between survey mode and age, indicating that modalities are not performing differently for different ages.

In addition to a main effect for survey mode, a two-way ANOVA for Quietness of Hospital Environment and race revealed a main effect for race ($p<.0001$). This indicates that, in addition to survey mode, ratings of Quietness of Hospital Environment differed based on race. Average ratings for Quietness of Hospital Environment were highest for respondents who indicated they were Black (3.64 out of 4) and lowest for respondents who indicated they were White (3.48 out of 4). There was no significant interaction between survey mode and age, indicating that modalities are not performing differently for different races.

In addition to a main effect for survey mode, a two-way ANOVA for Quietness of Hospital Environment and highest level of education revealed a main effect for the highest level of education ($p<.0001$). This indicates that, in addition to survey mode, the rating of Quietness of Hospital Environment differed based on highest level of education. Average ratings for Quietness of Hospital Environment were higher from respondents with a high school diploma or less (3.56 out of 4) and lower from respondents with some college or a 4-year degree (3.47 out of 4) and more than a 4-year degree (3.46 out of 4). There was no significant interaction between survey mode and age, indicating that modalities are not performing differently for different levels of education.

In addition to a main effect for survey mode, a two-way ANOVA for Quietness of Hospital Environment and Spanish/Hispanic/Latino heritage revealed a main effect for Spanish/Hispanic/Latino heritage ($p<.0001$). This indicates that, in addition to survey mode, the rating of Quietness of Hospital Environment differed based on Spanish/Hispanic/Latino heritage. Average ratings for Quietness of Hospital Environment were better from respondents who indicated being of Spanish/Hispanic/Latino heritage (3.62 out of 4) than they were from respondents who indicated not being of Spanish/Hispanic/Latino heritage (3.49 out of 4). There was no significant interaction between survey mode and Spanish/Hispanic/Latino heritage, indicating that modalities are not performing differently based on whether respondents are of Spanish/Hispanic/Latino heritage.

In addition to a main effect for survey mode, a two-way ANOVA for Quietness of Hospital Environment and language most spoken at home revealed a main effect for language most spoken at home ($p<.0001$). This indicates that, in addition to survey mode, the rating of Quietness of Hospital Environment differed based on language most spoken at home. Average ratings for Quietness of Hospital Environment were higher from respondents who indicated speaking mainly Spanish at home (3.73 out of 4) than they were from respondents who indicated speaking mainly English at home (3.49 out of 4). There was no significant interaction between survey mode and language most spoken at home, indicating that modalities are not performing differently based on language most spoken at home.

Overall Hospital Rating

Table 19: Main Effects and Significant Interactions for Overall Hospital Rating

Demographic Variable	Main Effect of Demographic	Main Effect of Survey Mode	Significant Interaction between Demographic and Survey Mode
Gender	Yes	Yes	Yes
Age	Yes	Yes	No
Race	Yes	Yes	No
Highest Level of Education	Yes	Yes	No
Spanish/Hispanic/ Latino	Yes	Yes	No
Language most spoken at home	Yes	Yes	No

Each two-way ANOVA for Overall Hospital Rating by demographic category (gender, age, race, highest level of education, Spanish/Hispanic/Latino, and language most spoken at home) and survey mode revealed a main effect for survey mode. This aligns with our Finding 1b (detailed in Table 4) indicates that respondents rated Overall Hospital Rating higher when responding by phone (8.84 out of 10) than when responding by mail (8.61 of 10).

In addition to a main effect for survey mode, a two-way ANOVA for Overall Hospital Rating and gender revealed a main effect for gender (p=.0396). This indicates that, in addition to survey mode, ratings of Overall Hospital Rating differed based on gender. Average ratings for Overall Hospital Rating were higher from male respondents (8.77 out of 10) than from female respondents (8.69 out of 10). There was a significant interaction between survey mode and gender (F=6.426, p=.0113), indicating that modalities are performing differently for different genders. Average ratings from males were higher when responding by phone (8.85 out of 4) than when responding by mail (8.68 out of 4). Average ratings

from females were also higher when responding by phone (8.84 out of 4) than when responding by mail (8.55 out of 4). The effect size for the interaction ($h2<.01$) indicates no practical significance. However, the non-normality of the overall rating data may impact the effect size.

In addition to a main effect for survey mode, a two-way ANOVA for Overall Hospital Rating and age revealed a main effect for age ($p<.0001$). This indicates that, in addition to survey mode, ratings of Overall Hospital Rating differed based on age. Ratings for Overall Hospital Rating dropped off significantly for respondents 40 years and older. Ratings from 18- to 24-year-olds through 35- to 39-year-olds averaged 3.64 out of 4, followed by a drop in ratings from 40- to 44-year-olds through respondents 90 years and older, which averaged 3.48 out of 4. There was no significant interaction between survey mode and age, indicating that modalities are not performing differently for different ages.

In addition to a main effect for survey mode, a two-way ANOVA for Overall Hospital Rating and race revealed a main effect for race ($p=.0156$). This indicates that, in addition to survey mode, ratings of Overall Hospital Rating differed based on race. Average ratings for Overall Hospital Rating were highest for respondents who indicated they were Native Hawaiian or Pacific Islander (9.42 out of 10) and lowest for respondents who indicated they were Asian (8.71 out of 10). There was no significant interaction between survey mode and race, indicating that modalities are not performing differently for different races.

In addition to a main effect for survey mode, a two-way ANOVA for Overall Hospital Rating and highest level of education revealed a main effect for the highest level of education ($p<.0001$). This indicates that, in addition to survey mode, the rating of Overall Hospital Rating differed based on highest level of education. Average ratings for Overall Hospital Rating were higher from respondents with a high school diploma or less (8.88 out of 10) and lower from respondents with some college or a 4-year degree (8.67 out of 10) and more than a 4-year degree (8.63 out of 10). There was no significant interaction

between survey mode and highest level of education, indicating that modalities are not performing differently for different levels of education.

In addition to a main effect for survey mode, a two-way ANOVA for Overall Hospital Rating and Spanish/Hispanic/Latino heritage revealed a main effect for Spanish/Hispanic/Latino heritage ($p<.0001$). This indicates that, in addition to survey mode, the rating of Overall Hospital Rating differed based on Spanish/Hispanic/Latino heritage. Average ratings for Overall Hospital Rating were higher from respondents who indicated being of Spanish/Hispanic/Latino heritage (9.12 out of 10) than they were from respondents who indicated not being of Spanish/Hispanic/Latino heritage (8.72 out of 10). There was no significant interaction between survey mode and Spanish/Hispanic/Latino heritage, indicating that modalities are not performing differently based on whether respondents are of Spanish/Hispanic/Latino heritage.

In addition to a main effect for survey mode, a two-way ANOVA for Overall Hospital Rating and language most spoken at home revealed a main effect for language most spoken at home ($p<.0001$). This indicates that, in addition to survey mode, the rating of Overall Hospital Rating differed based on language most spoken at home. Average ratings for Overall Hospital Rating were higher from respondents who indicated speaking mainly Spanish at home (9.64 out of 10) than they were from respondents who indicated speaking mainly English at home (8.71 out of 10). There was no significant interaction between survey mode and language most spoken at home, indicating that modalities are not performing differently based on language most spoken at home.

Recommend the Hospital

Table 20: Main Effects and Significant Interactions for Recommend the Hospital

Demographic Variable	Main Effect of Demographic	Main Effect of Survey Mode	Significant Interaction between Demographic and Survey Mode
Gender	Yes	Yes	No
Age	Yes	Yes	No
Race	Yes	Yes	No
Highest Level of Education	Yes	Yes	No
Spanish/Hispanic/ Latino	Yes	Yes	No
Language most spoken at home	Yes	Yes	No

Each two-way ANOVA for Recommend the Hospital by demographic category (gender, age, race, highest level of education, Spanish/Hispanic/Latino, and language most spoken at home) and survey mode revealed a main effect for survey mode. This aligns with our Finding 1b (detailed in Table 4) indicates that respondents rated Recommend the Hospital higher when responding by phone (3.66 out of 4) than when responding by mail (3.61 of 4).

In addition to a main effect for survey mode, a two-way ANOVA for Recommend the Hospital and gender revealed a main effect for gender ($p<.0001$). This indicates that, in addition to survey mode, ratings of Recommend the Hospital differed based on gender. Average ratings for Recommend the Hospital were higher from female respondents (3.65 out of 4) than from male respondents (3.61 out of 4). There was no significant interaction between survey mode and age, indicating that modalities are not performing differently for different genders.

In addition to a main effect for survey mode, a two-way ANOVA for Recommend the Hospital and age revealed a main effect for age ($p<.0001$). This indicates that, in addition to survey mode, ratings of Recommend the Hospital differed based on age. Ratings for Recommend the Hospital were lowest for 40- to 44-year-olds and 45- to 50-year-olds (average rating for both groups was 3.57 out of 4), and for 85- to 89-year-olds and respondents older than 90 years (average rating for both groups was 3.58 out of 4). Ratings for Recommend the Hospital were highest for 25- to 29-year-olds (3.71 out of 4). There was no significant interaction between survey mode and age, indicating that modalities are not performing differently for different ages.

In addition to a main effect for survey mode, a two-way ANOVA for Recommend the Hospital and race revealed a main effect for race ($p<.0001$). This indicates that, in addition to survey mode, ratings of Recommend the Hospital differed based on race. Average ratings for Recommend the Hospital were highest for respondents who indicated they were Native Hawaiian or Pacific Islander (3.70 out of 4) and lowest for respondents who indicated they were Black (3.61 out of 4) or American Indian or Alaska native (3.61 out of 4). There was no significant interaction between survey mode and race, indicating that modalities are not performing differently for different races.

In addition to a main effect for survey mode, a two-way ANOVA for Recommend the Hospital and highest level of education revealed a main effect for the highest level of education ($p<.0001$). This indicates that, in addition to survey mode, the rating of Recommend the Hospital differed based on highest level of education. Average ratings for Recommend the Hospital were higher from respondents with a high school diploma or less (3.65 out of 4) and lower from respondents with some college or a 4-year degree (3.62 out of 4) and more than a 4-year degree (3.63 out of 4). There was no significant interaction between survey mode and highest level of education, indicating that modalities are not performing differently for different levels of education.

In addition to a main effect for survey mode, a two-way ANOVA for Recommend the Hospital and Spanish/Hispanic/Latino heritage revealed a main effect for Spanish/Hispanic/Latino heritage ($p<.0001$). This indicates that, in addition to survey mode, the rating of Recommend the Hospital differed based on Spanish/Hispanic/Latino heritage. Average ratings for Recommend the Hospital were higher from respondents who indicated being of Spanish/Hispanic/Latino heritage (3.74 out of 4) than they were from respondents who indicated not being of Spanish/Hispanic/Latino heritage (3.63 out of 4). There was no significant interaction between survey mode and Spanish/Hispanic/Latino heritage, indicating that modalities are not performing differently based on whether respondents are of Spanish/Hispanic/Latino heritage.

In addition to a main effect for survey mode, a two-way ANOVA for Recommend the Hospital and language most spoken at home revealed a main effect for language most spoken at home ($p<.0001$). This indicates that, in addition to survey mode, the rating of Recommend the Hospital differed based on language most spoken at home. Average ratings for Recommend the Hospital were higher from respondents who indicated speaking mainly Spanish at home (3.87 out of 4) than they were from respondents who indicated speaking mainly English at home (3.62 out of 4). There was no significant interaction between survey mode and language most spoken at home, indicating that modalities are not performing differently based on language most spoken at home.

Finding 2: Overall Hospital Rating is lower on surveys administered by mail.

The difference in Overall Hospital Rating for patients who completed the survey via phone (M=8.84) as compared to those who completed the survey via mail (M=8.61) was statistically significant ($t(11,113) = 9.02$, $p < .001$), with participants who took the survey by mail reporting lower Overall Hospital Ratings than participants who took the survey by phone. We are 95% confident that the difference in ratings between the two groups is between .19 and .29.

Table 21: Overall Hospital Rating

	PRC (phone)	Qualtrics (mail)	p value
Overall Hospital Rating	8.84	8.61	p<.001

Finding 3: After applying the CMS HCAHPS Mode Adjustment, the percentage of surveys categorized as top, middle and bottom are between -5.6% to 3.41% different from each other for all 10 survey categories.

The CMS HCAHPS Mode Adjustments are calculated to account for differences in results for surveys collected by phone vs. by mail. The intended outcome is that, after applying the mode adjustment to the surveys collected via phone, the percentage of scores that fall in the top, middle, and bottom boxes for data collected via phone vs via mail will be the same. Our analysis shows that after applying the CMS HCAHPS Mode Adjustments, the percentage of ratings in the top, middle, and bottom boxes for all 10 survey categories are not the same, with differences ranging from -5.16% to 3.41%. That is, after applying the CMS mode adjustment, the percentage of ratings in the top, middle, and bottom boxes for all 10 survey categories are between 5.16% lower and 3.41% higher than expected.

The largest differences occurred in ratings for Quietness of Hospital Environment (top box = -5.16%, middle box = 3.28%), Cleanliness of Hospital Environment (top box = -4.55%, middle box = 3.41%), and Overall Hospital Rating (top box = -1.77%, bottom box = 2.82%).

Table 22: CMS mode Adjusted Rating by Survey Category

	Top Box Rating		
Survey Category	**PRC (Adjusted)**	**Qualtrics**	**Delta**
Nurse Communication	76.04%	77.18%	**1.14%**
Doctor Communication	79.15%	78.66%	**-0.49%**
Responsiveness of Hospital Staff	61.69%	59.03%	**-2.67%**
Communication About Medicines	58.06%	56.76%	**-1.30%**
Discharge Information	88.15%	85.43%	**-2.72%**
Care Transition	53.16%	50.85%	**-2.31%**
Cleanliness of Hospital Environment	72.02%	67.47%	**-4.55%**
Quietness of Hospital Environment	62.03%	56.88%	**-5.16%**
Overall Hospital Rating	70.24%	68.47%	**-1.77%**
Recommend the Hospital	70.80%	70.17%	**-0.64%**

	Middle Box Rating		
Survey Category	**PRC (Adjusted)**	**Qualtrics**	**Delta**
Nurse Communication	18.86%	17.95%	**-0.90%**
Doctor Communication	16.15%	16.01%	**-0.14%**
Responsiveness of Hospital Staff	27.45%	28.33%	**0.88%**
Communication About Medicines	20.39%	19.39%	**-1.01%**
Discharge Information	NA	NA	NA
Care Transition	41.05%	42.69%	**1.64%**
Cleanliness of Hospital Environment	17.54%	20.95%	**3.41%**
Quietness of Hospital Environment	29.49%	32.78%	**3.28%**

Overall Hospital Rating	21.89%	20.84%	**-1.06%**
Recommend the Hospital	23.19%	22.82%	**-0.37%**

	Bottom Box Rating		
Survey Category	**PRC (Adjusted)**	**Qualtrics**	**Delta**
Nurse Communication	5.10%	4.87%	**-0.24%**
Doctor Communication	4.70%	5.32%	**0.62%**
Responsiveness of Hospital Staff	10.86%	12.65%	**1.79%**
Communication About Medicines	21.55%	23.86%	**2.31%**
Discharge Information	11.85%	14.57%	**2.72%**
Care Transition	5.80%	6.47%	**0.67%**
Cleanliness of Hospital Environment	10.44%	11.58%	**1.14%**
Quietness of Hospital Environment	8.47%	10.35%	**1.87%**
Overall Hospital Rating	7.87%	10.69%	**2.82%**
Recommend the Hospital	6.01%	7.01%	**1.01%**

Limitations

Several limitations of this study exist and should be considered when interpreting the results and recommendations. First, Qualtrics was not able to provide demographic data for non-respondents. This means that we could not determine response rates for specific demographic categories to determine if there were differences in those rates for surveys conducted by phone and by mail. It also means that we could not determine if the profile of respondents who completed the survey by mail was representative of the sample of patients surveyed.

The HCAHPS survey contains primarily Likert scale questions with ratings of 4 (most positive) to 1 (least positive). Responses to all survey questions were left-skewed (more positive ratings than less

positive ratings), meaning the data is not normally distributed. Though the sample sizes are large (N=24,822 for phone and N=7,726 for mail), the non-normality of the data limits the validity of the use of t-tests and ANOVAs. The unequal sample size may also impact the validity of ANOVAs since equal variance cannot be assumed.

PRC and Qualtrics, contractors hired by our capstone partner organization, administered these surveys. Since we did not administer the surveys ourselves, we cannot verify that the actual patient responded to both the phone and mail surveys and not a family member or other individual. It is assumed that both PRC and Qualtrics followed identification protocol to verify respondens' identity . Still, it is possible that someone other than the patient responded to the survey.

Recommendations

Reputational Risks and Opportunities

Recommendation 1: Evaluate the Impact of the Lower Overall Hospital Rating on CMS Star Ratings.

Our capstone partner, and the health system overall, face a potentially significant reputational risk given our finding that the Overall Hospital rating scores are lower for mail surveys than for phone surveys. Various studies on HCAHPS modality suggest more positive results for phone surveys than for mail surveys (Elliott et al., 2009), and given our findings and the literature, we recommend our capstone partner evaluate the impact of its HCAHPS survey modality change on the annually published and publicly available CMS Star ratings. The organization should consider utilizing its Data Science Institute to use the new HCAHPS results from the mail survey and model the potential impact on the predicted CMS Star rating. The Data Science Institute can use historical CMS Star Rating quintiles for HCAHPS "Overall Rating" to conduct predictive modeling to determine the likely positioning of each of its hospitals based on the results from the HCAHPS survey administered by mail.

Financial Implications

Recommendation 2: Evaluate the disparity in CMS Mode Adjustment impact on reimbursement.

In addition to a negative impact on a hospital or health system's reputation, low HCAHPS scores can also limit the amount of Medicare funding received. HCAHPS patient satisfaction scores impact hospital reimbursement through the Hospital Value-Based Purchasing Program, which provides nearly $2 billion in annual value-based payments to hospitals for inpatient care. Hospitals with higher HCAHPS scores earn higher reimbursements. Given the significant difference in the survey outcomes after applying the CMS HCAHPS Mode Adjustment, we recommend additional analysis to understand the disparity and potential reimbursement impact on our capstone partner.

The 2021 mode adjustment experiment conducted by CMS included 46 participating hospitals (HCAHPS Online, 2008), while our capstone partner, by comparison, included responses from 89 hospitals for the phone survey and 62 hospitals for the mail survey - both well in excess of the CMS experiment. Our study with a large, integrated health system may interest CMS. We suggest it would be valuable for our capstone partner to further evaluate the impact on its reimbursements and share both that information and our study findings with CMS to challenge the 2021 mode adjustment experiment data. It is possible there are learnings from our study that could highlight potential considerations for CMS to address in future survey mode adjustments. Our partner organization can also model the potential financial impact on its health system due to the differences between the CMS-adjusted expectations and the organization's HCAHPS survey results. It is unclear if there will be a financial penalty or a financial gain given the range of differences in the percentage of ratings in the top, middle, and bottom boxes for all 10 survey categories compared to the baseline adjustment established by CMS.

The Impact of Survey Methodology on the Demographic Profile of Respondents

Recommendation 3: Compare the demographic profile of mail survey respondents to the overall patient population.

There are many inequities in the United States across demographic groups regarding access to quality healthcare services. Based on the demographic profile of respondents and the lower response rate by mail, we recommend our capstone partner health system compare the demographic profile of the mail survey respondents to the overall population the health system serves. Our findings indicate that, compared to the phone survey, mail survey respondents were older; represented an increase in those who indicated being white and a decrease in those who indicated being black; and represented a decrease in those who indicated being of Spanish/Hispanic/Latino heritage. If the mail survey results do not accurately represent the overall population served by our capstone partner, the health system is not only missing out on hearing the voices of all the patients it serves but, more importantly, it could be making clinical and care delivery decisions that may inadvertently impact those with significant Social Determinants of Health (SDOH). Given prior studies, we know that lower response rates for HCAHPS are typically associated with less representative data (Groves & Couper, 1998), and response rates may be related to patient experiences with care (Elliott et al., 2005). These findings could have meaningful implications for the health system's efforts in addressing SDOH, which are "pervasive and deeply embedded in our society, creating inequities in access to a range of social and economic benefits—such as housing, education, wealth, and employment. These inequities put people at higher risk of poor health" (CDC, 2022).

Given the disparities in healthcare delivery across the country, health systems must work to better address differences in SDOH and work towards health equity, "a state in which every person has the opportunity to attain their highest level of health" (CDC, 2022). We know that patients living in poverty have more adverse outcomes than those who are more affluent and that "poverty is highly

correlated with poorer health outcomes and higher risk of premature death" (CDC, 2022). SDOH and the structural racism in our country are significant drivers of health disparities within communities of color. Our capstone partner organization should ensure it is not perpetuating these problems by failing to collect and account for patient experience data from a representative sampling of patients, and specifically, from patients of color.

Final Recommendation with Broad Implications

Recommendation 4: Consider returning to administering the HCAHPS survey by phone.

Given the overall findings of our study, we would be remiss not to recommend the consideration of returning to the HCAHPS survey administered by phone, as compared to the current mail survey.

With the lower response rate overall, reduced Overall Hospital survey score, the shift in demographics of respondents, and the disparity in CMS mode adjustment, there are significant potential reputational, financial, and care delivery implications for our capstone partner organization. If, after further analysis, these factors cannot be better addressed in another way, the health system should terminate the survey administration by mail and return to a phone survey. Although the direct cost to administer the HCAHPS survey by mail is less on an annualized basis as compared to a phone survey, the true cost of the survey may be higher when taking into account reduced reimbursement by CMS, reputational impact as noted by CMS 5-Star ratings, and the potential harm created by decision making that does not take into account the experiences of the most vulnerable patients.

Table 23: Summary of Recommendations

Research Question	Finding	Recommendations
Impact of Survey Methodology on Response Rate and Survey Ratings	1a. Response rates for surveys conducted by mail are 39.19% lower than response rates for surveys conducted by phone.	Compare demographic profile of responses to overall patient population served to determine potential implications for SDOH
	1b. There are differences for 9 of 10 survey categories based on whether the survey was completed by phone or mail.	
	1c. The demographic profile of those who responded is significantly different for each demographic variable.	
	1d. In some cases the demographic profile or the combination of demographic profile and survey mode impacted survey category rating.	
Reputational Risks and Opportunities	2. The Overall Hospital rating is lower on surveys administered by mail.	Evaluate impact of lower Overall Hospital Ratings on CMS Star Ratings
Financial Implications	3. After applying the CMS HCAHPS Mode Adjustment, the percentage of surveys categorized as top, middle and bottom are between -5.6% to 3.41% different from each other for all 10 survey categories.	Evaluate the disparity in CMS Mode Adjustment impact on reimbursement
		Consider return to phone administration

Conclusion

Out of the 6,000 hospitals in the United States, over 4,000 participate in HCAHPS, and over 3.0 million patients complete the mandated survey each year (CMS, 2023). The standardized HCAHPS survey solicits input from patients about their hospital experiences to help hospitals improve processes, procedures, or clinical care to better meet patients' expectations. The survey is a powerful tool for hospitals to hear directly from the consumer - their patients. This feedback allows hospitals to celebrate the positive results while addressing areas of concern that did not meet patient expectations.

The changes in *who* responded to the survey in our capstone project were striking. The mail survey produced more responses from patients who were female, older, and white. In addition, our findings identified significant main effects between survey mode and the demographic profile for each of the 10 HCAHPS survey categories. These findings are particularly concerning considering the implications for SDOH, defined as the conditions in which "people are born, grow, live, work and age" (AHRQ, 2020). Consistent with our findings from the literature, the response rate and Overall Hospital rating scores decreased after the modality change. Unfortunately, lower response rates are also associated with less representative data (Groves & Couper, 1998), and "many underserved groups, including racial and ethnic minority patients, often have low response rates" (Elliott, 2022), which may limit the feedback received from underrepresented groups. "Patients who are Black, Hispanic, or of low socioeconomic status are less likely to respond to care experience surveys, underrepresenting these patients in overall assessments of care and hampering efforts to measure health care equity" (Price et al., 2022, p. 915).

There are many inequities across sociodemographic groups related to healthcare access and the quality of care received. An essential aspect of delivering high quality healthcare includes understanding the SDOH of patients and communities in which healthcare is provided. "Healthcare systems that learn about the communities their patients live in, and the community-level barriers members can face to becoming and staying healthy, can better adapt their recommendations to people's lives" (AHRQ, 2020).

To address health inequities in patient experiences, hospitals must accurately measure the differences in care experiences among a representative sample of the entire patient population. When hospitals and health systems lack feedback from the totality of the patient base, they may make ongoing clinical or procedural changes that could have unintended negative consequences for underrepresented patients or those who are more poor and vulnerable.

Hospitals and health systems have a choice in the mode they select to administer the HCAHPS survey. Survey mode matters, and there are implications for the hospital *and* the patients they serve. We encourage hospitals and health systems to select the survey mode carefully, given the implications to patients and the health systems themselves. It is a privilege to care for patients, and HCAHPS can be a powerful tool to reflect the voices of those served. With this feedback, hospitals are in a great position to make real-time adjustments to improve their reputation compared to other providers, maximize their reimbursement, and, most importantly, ensure they provide the right services to benefit all they serve.

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Appendix A: HCAHPS Telephone Script

This appendix includes a script published by the Centers for Medicare & Medicaid Services (2023) that must be followed by vendors administering the HCAHPS survey by telephone.

HCAHPS
Telephone Script (English)

Overview

This telephone interview script is provided to assist interviewers while attempting to reach the patient. The script explains the purpose of the survey and confirms necessary information about the patient. Interviewers must not conduct the survey with a proxy.

Note: No proxy respondents are permitted in the administration of the HCAHPS Survey. However, an individual may assist the patient by repeating questions or with translation of the survey -- but only the patient may provide answers to the survey.

General Interviewing Conventions and Instructions

- The telephone introduction script and HCAHPS questions must be read verbatim
- Practice pronouncing the patient's name before initiating the call
- It is optional to include the day of the week, e.g., Monday, with the discharge date (mm/dd/yyyy)
- All text that appears in lowercase letters must be read out loud
- Text in UPPERCASE letters must not be read out loud
  - However, YES and NO response options are to be read if necessary
- All questions and all answer categories must be read exactly as they are worded
  - During the course of the survey, the use of **neutral** acknowledgment words such as the following is permitted:
    - Thank you
    - Alright
    - Okay
    - I understand, or I see
    - Yes, Ma'am
    - Yes, Sir
- Read the scripts from the interviewer screens (reciting the survey from memory can lead to unnecessary errors and missed updates to the scripts)
- Adjust the pace of the HCAHPS Survey interview to be conducive to the needs of the respondent
- No changes are permitted to the order of the HCAHPS Survey (Questions 1-29)
- No changes are permitted to the order of the answer categories for the HCAHPS questions
- All transitional phrases must be read
- Text that is underlined must be emphasized
- Characters in < > brackets must not be read
- [Square brackets] are used to show programming instructions that must not actually appear on electronic telephone interviewing system screens
- Only one language (i.e., English, Spanish, Chinese, or Russian) must appear on the electronic interviewing system screen

- MISSING/DON'T KNOW (DK) is a valid response option for each item in the electronic telephone interviewing system script; however, this option must not be read out loud to the patient. MISSING/DK response options allow the telephone interviewer to go to the next question if a patient is unable to provide a response for a given question (or refuses to provide a response). In the survey file layouts, a value of MISSING/DK is coded as "M - Missing/Don't know."
- Skip patterns should be programmed into the electronic telephone interviewing system
  - Appropriately skipped questions should be coded as "8 - Not applicable." For example, if a patient answers "No" to Question 10 of the HCAHPS Survey, the program should skip Question 11, and go to Question 12. Question 11 must then be coded as "8 - Not applicable." Coding may be done automatically by the telephone interviewing system or later during data preparation.
  - When a response to a screener question is not obtained, the screener question and any questions in the skip pattern should be coded as "M - Missing/Don't know." For example, if the patient does not provide an answer to Question 10 of the HCAHPS Survey and the interviewer selects "MISSING/DON'T KNOW" to Question 10, then the telephone interviewing system should be programmed to skip Question 11, and go to Question 12. Question 11 must then be coded as "M - Missing/Don't know." Coding may be done automatically by the telephone interviewing system or later during data preparation.

NOTE: SEE INTERVIEWING GUIDELINES IN APPENDIX P FOR GUIDELINES ON HOW TO HANDLE DIFFICULT TO REACH PATIENTS.

INITIATING CONTACT

START Hello, may I please speak to [SAMPLED PATIENT NAME]?

OPTIONAL START:
Hello, my name is [INTERVIEWER NAME], may I please speak to [SAMPLED PATIENT NAME]?
<1> YES [GO TO INTRO]
<2> NO [REFUSAL]
<3> NO, NOT AVAILABLE RIGHT NOW [SET CALLBACK]

IF ASKED WHO IS CALLING:
This is [INTERVIEWER NAME] calling from [DATA COLLECTION CONTRACTOR] on behalf of [HOSPITAL NAME]. We are conducting a survey about healthcare. Is [SAMPLED PATIENT NAME] available?

IF ASKED WHETHER PERSON CAN SERVE AS PROXY FOR SAMPLED PATIENT:
For this survey, we need to speak directly to [SAMPLED PATIENT NAME]. Is [SAMPLED PATIENT NAME] available?

IF THE SAMPLED PATIENT IS NOT AVAILABLE:
Can you tell me a convenient time to call back to speak with (him/her)?

IF THE SAMPLED PATIENT SAYS THIS IS NOT A GOOD TIME:
If you don't have the time now, when is a more convenient time to call you back?

IF ASKED IF YOU WOULD LIKE TO SPEAK TO "SR." OR "JR.":
I would like to speak with [PATIENT NAME] who is approximately [AGE RANGE]. Is that person available?

IF SOMEONE OTHER THAN THE SAMPLED PATIENT ANSWERS THE PHONE RECONFIRM THAT YOU ARE SPEAKING WITH THE SAMPLED PATIENT WHEN HE OR SHE PICKS UP.

CALL BACK TO COMPLETE A PREVIOUSLY STARTED SURVEY

START Hello, may I please speak to [SAMPLED PATIENT NAME]?

OPTIONAL START:
Hello, my name is [INTERVIEWER NAME], may I please speak to [SAMPLED PATIENT NAME]?
<1> YES [GO TO CONFIRM PATIENT]
<2> NO [REFUSAL]
<3> NO, NOT AVAILABLE RIGHT NOW [SET CALLBACK]

IF ASKED WHO IS CALLING: This is [INTERVIEWER NAME] calling from [DATA COLLECTION CONTRACTOR] on behalf of [HOSPITAL NAME]. Is [SAMPLED PATIENT NAME] available to complete a survey that [HE/SHE] started at an earlier date?

CONFIRM PATIENT FOR A PREVIOUSLY STARTED SURVEY: This is [INTERVIEWER NAME] calling from [DATA COLLECTION CONTRACTOR] on behalf of [HOSPITAL NAME]. I would like to confirm that I am speaking with [SAMPLED PATIENT NAME]. I am calling to continue the survey started on an earlier date. CONTINUE SURVEY WHERE PREVIOUSLY LEFT OFF.

CONFIRM PATIENT FOR A CALL BACK: This is [INTERVIEWER NAME] calling from [DATA COLLECTION CONTRACTOR] on behalf of [HOSPITAL NAME]. I would like to confirm that I am speaking with [SAMPLED PATIENT NAME]. I am calling back at the time you requested to take the survey.

SPEAKING WITH SAMPLED PATIENT

INTRO Hi, this is [INTERVIEWER NAME], calling (OPTIONAL TO STATE from [DATA COLLECTION CONTRACTOR]) on behalf of [HOSPITAL NAME].
(MIXED MODE OPTIONAL TO STATE: A few weeks ago, we mailed you a survey about your recent experience at [HOSPITAL NAME] and now we would

like to follow up.) [HOSPITAL NAME] is participating in a survey about the care people receive in the hospital. Your responses will help improve the quality of hospital care and help other people make more informed choices about their care.

Participation in the survey is completely voluntary and your answers will be kept private. It should take about 7 minutes [OR HOSPITAL/SURVEY VENDOR SPECIFY] to complete.

This call may be monitored (OPTIONAL TO STATE and/or recorded) for quality improvement purposes.

OPTIONAL QUESTION TO INCLUDE:
I'd like to begin the survey now, is this a good time for us to continue?

[NOTE: THE STATED NUMBER OF MINUTES TO COMPLETE THE SURVEY MUST BE AT LEAST 7 MINUTES. IF SUPPLEMENTAL ITEMS ARE ADDED TO THE SURVEY, THIS NUMBER SHOULD BE INCREASED ACCORDINGLY.]

S1 Our records show that you were discharged from [HOSPITAL NAME] on or about [DISCHARGE DATE (mm/dd/yyyy)]. Is that right?

READ YES/NO RESPONSE CHOICES ONLY *IF NECESSARY*

<1>	YES	[GO TO Q1_INTRO]
<2>	NO	[GO TO INEL1]
<3>	DON'T KNOW	[GO TO INEL1]
<4>	REFUSAL	[GO TO INEL1]

CONFIRMING INELIGIBLE PATIENTS

INEL1 Were you ever at this hospital?
<1> YES [GO TO INEL2]
<2> NO [GO TO INEL_END]

INEL2 Were you a patient at this hospital in the last year?
<1> YES [GO TO INEL3]
<2> NO [GO TO INEL_END]

INEL3 When was this?

IF ANY DATE WAS WITHIN TWO WEEKS OF [DISCHARGE DATE (mm/dd/yyyy)], GO TO Q1_INTRO; OTHERWISE, GO TO INEL_END.

INEL_END Thank you for your time. It looks like we made a mistake. Have a good (day/evening).

BEGIN HCAHPS QUESTIONS

Q1_INTRO Please answer the questions in this survey about this stay at [HOSPITAL NAME]. When thinking about your answers, do not include any other hospital stays. The first questions are about the care you received from nurses during this hospital stay.

BE PREPARED TO PROBE IF THE PATIENT ANSWERS OUTSIDE OF THE ANSWER CATEGORIES PROVIDED. PROBE BY REPEATING THE ANSWER CATEGORIES ONLY; DO NOT INTERPRET FOR THE PATIENT.

Q1 During this hospital stay, how often did nurses treat you with courtesy and respect? Would you say…

<1> Never,
<2> Sometimes,
<3> Usually, or
<4> Always?

<M> MISSING/DK

Q2 During this hospital stay, how often did nurses listen carefully to you? Would you say…

<1> Never,
<2> Sometimes,
<3> Usually, or
<4> Always?

<M> MISSING/DK

Q3 During this hospital stay, how often did nurses explain things in a way you could understand? Would you say…

<1> Never,
<2> Sometimes,
<3> Usually, or
<4> Always?

<M> MISSING/DK

Q4 During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted it? Would you say…

<1> Never,
<2> Sometimes,
<3> Usually,
<4> Always, or
<9> I never pressed the call button?

<M> MISSING/DK

Q5_INTRO The next questions are about the care you received from doctors during this hospital stay.

Q5 During this hospital stay, how often did doctors treat you with courtesy and respect? Would you say…

<1> Never,
<2> Sometimes,
<3> Usually, or
<4> Always?

<M> MISSING/DK

Q6 During this hospital stay, how often did doctors listen carefully to you? Would you say…

<1> Never,
<2> Sometimes,
<3> Usually, or
<4> Always?

<M> MISSING/DK

Q7 During this hospital stay, how often did doctors explain things in a way you could understand? Would you say…

<1> Never,
<2> Sometimes,
<3> Usually, or
<4> Always?

<M> MISSING/DK

Q8_INTRO The next set of questions is about the hospital environment.

Q8 During this hospital stay, how often were your room and bathroom kept clean? Would you say…

<1> Never,
<2> Sometimes,
<3> Usually, or
<4> Always?

<M> MISSING/DK

Q9 During this hospital stay, how often was the area around your room quiet at night? Would you say…

<1> Never,
<2> Sometimes,
<3> Usually, or
<4> Always?

<M> MISSING/DK

Q10_INTRO The next questions are about your experiences in this hospital.

Q10 During this hospital stay, did you need help from nurses or other hospital staff in getting to the bathroom or in using a bedpan?

READ YES/NO RESPONSE CHOICES ONLY ***IF NECESSARY***

<1> YES
<2> NO [GO TO Q12]

<M> MISSING/DK [GO TO Q12]

Q11 How often did you get help in getting to the bathroom or in using a bedpan as soon as you wanted? Would you say…

<1> Never,
<2> Sometimes,
<3> Usually, or
<4> Always?

[<8> NOT APPLICABLE]
<M> MISSING/DK

[NOTE: IF Q10 = "2 - NO" THEN Q11 = "8 - NOT APPLICABLE" OR IF Q10 = "M - MISSING/DK" THEN Q11 = "MISSING/DK"]

Q12 During this hospital stay, were you given any medicine that you had not taken before?

READ YES/NO RESPONSE CHOICES ONLY *IF NECESSARY*

<1> YES
<2> NO [GO TO Q15_INTRO]

<M> MISSING/DK [GO TO Q15_INTRO]

Q13 Before giving you any new medicine, how often did hospital staff tell you what the medicine was for? Would you say…

<1> Never,
<2> Sometimes,
<3> Usually, or
<4> Always?

[<8> NOT APPLICABLE]
<M> MISSING/DK

[NOTE: IF Q12 = "2 - NO" THEN Q13 = "8 - NOT APPLICABLE" OR IF Q12 = "M - MISSING/DK" THEN Q13 = "M - MISSING/DK"]

Q14 Before giving you any new medicine, how often did hospital staff describe possible side effects in a way you could understand? Would you say…

<1> Never,
<2> Sometimes,
<3> Usually, or
<4> Always?

[<8> NOT APPLICABLE]
<M> MISSING/DK

[NOTE: IF Q12 = "2 - NO" THEN Q14 = "8 - NOT APPLICABLE" OR IF Q12 = "M - MISSING/DK" THEN Q14 = "M - MISSING/DK"]

Q15_INTRO The next questions are about when you left the hospital.

Q15 After you left the hospital, did you go directly to your own home, to someone else's home, or to another health facility?

READ RESPONSE CHOICES 1, 2 AND 3 ONLY ***IF NECESSARY***

<1> OWN HOME
<2> SOMEONE ELSE'S HOME
<3> ANOTHER HEALTH FACILITY [GO TO Q18]

<M> MISSING/DK [GO TO Q18]

Q16 During this hospital stay, did doctors, nurses, or other hospital staff talk with you about whether you would have the help you needed when you left the hospital?

READ YES/NO RESPONSE CHOICES ONLY ***IF NECESSARY***

<1> YES
<2> NO

[<8> NOT APPLICABLE]
<M> MISSING/DK

[NOTE: IF Q15 = "3 - ANOTHER HEALTH FACILITY" THEN Q16 = "8 - NOT APPLICABLE" IF Q15 = "M - MISSING/DK" THEN Q16 = "M - MISSING/DK"]

Q17 During this hospital stay, did you get information in writing about what symptoms or health problems to look out for after you left the hospital?

READ YES/NO RESPONSE CHOICES ONLY ***IF NECESSARY***

<1> YES
<2> NO

[<8> NOT APPLICABLE]
<M> MISSING/DK

[NOTE: IF Q15 = "3 - ANOTHER HEALTH FACILITY" THEN Q17 = "8 - NOT APPLICABLE" IF Q15 = "M - MISSING/DK" THEN Q17 = "M - MISSING/DK"]

Q18 We want to know your overall rating of your stay at [FACILITY NAME]. This is the stay that ended around [DISCHARGE DATE (mm/dd/yyyy)]. Please do not include any other hospital stays in your answer.

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 during your stay?

IF THE PATIENT DOES NOT PROVIDE AN APPROPRIATE RESPONSE, PROBE BY REPEATING: "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 during your stay?"

<0> 0
<1> 1
<2> 2
<3> 3
<4> 4
<5> 5
<6> 6
<7> 7
<8> 8
<9> 9
<10> 10

<M> MISSING/DK

Q19 Would you recommend this hospital to your friends and family? Would you say…

<1> Definitely no,
<2> Probably no,
<3> Probably yes, or
<4> Definitely yes?

<M> MISSING/DK

Q20_INTRO We have a few more questions about this hospital stay.

Q20 During this hospital stay, staff took my preferences and those of my family or caregiver into account in deciding what my health care needs would be when I left. Would you say…

<1> Strongly disagree,
<2> Disagree,
<3> Agree, or
<4> Strongly agree?

<M> MISSING/DK

Q21 When I left the hospital, I had a good understanding of the things I was responsible for in managing my health. Would you say...

<1> Strongly disagree,
<2> Disagree,
<3> Agree, or
<4> Strongly agree?

<M> MISSING/DK

Q22 When I left the hospital, I clearly understood the purpose for taking each of my medications. Would you say…

<1> Strongly disagree,
<2> Disagree,
<3> Agree,
<4> Strongly agree, or
<5> I was not given any medication when I left the hospital?

<M> MISSING/DK

IF THE PATIENT SEEMS CONFUSED BECAUSE HE/SHE RECEIVED A PRESCRIPTION INSTEAD OF MEDICATION, THEN PROBE BY READING THE FOLLOWING: "If you left the hospital with a prescription for a medication rather than an actual medication, please answer the question based on your understanding of the purpose for taking the prescription."

Q23_INTRO This next set of questions is about you.

Q23 During this hospital stay, were you admitted to this hospital through the Emergency Room?

READ YES/NO RESPONSE CHOICES ONLY *IF NECESSARY*
<1> YES
<2> NO

<M> MISSING/DK

Q24 In general, how would you rate your overall health? Would you say that it is…

<1> Excellent,
<2> Very good,
<3> Good,
<4> Fair, or
<5> Poor?

<M> MISSING/DK

Q25 In general, how would you rate your overall mental or emotional health? Would you say that it is…

<1> Excellent,
<2> Very good,
<3> Good,
<4> Fair, or
<5> Poor?

<M> MISSING/DK

Q26 What is the highest grade or level of school that you have completed? Please listen to all six response choices before you answer. Did you…

<1> Complete the 8th grade or less,
<2> Complete some high school, but did not graduate,
<3> Graduate from high school or earn a GED,
<4> Complete some college or earn a 2-year degree,
<5> Graduate from a 4-year college, or
<6> Complete more than a 4-year college degree?

<M> MISSING/DK

ACADEMIC TRAINING BEYOND A HIGH SCHOOL DIPLOMA THAT DOES NOT LEAD TO A BACHELORS DEGREE SHOULD BE CODED AS **4**. IF THE PATIENT DESCRIBES NON-ACADEMIC TRAINING, SUCH AS TRADE SCHOOL, PROBE TO FIND OUT IF HE/SHE HAS A HIGH SCHOOL DIPLOMA AND CODE **2** OR **3**, AS APPROPRIATE.

Q27 Are you of Spanish, Hispanic or Latino origin or descent?

READ YES/NO RESPONSE CHOICES ONLY ***IF NECESSARY***

<X> YES
<1> NO

<M> MISSING/DK

IF YES: Would you say you are… (READ ALL RESPONSE CHOICES)

<2> Puerto Rican,
<3> Mexican, Mexican American, Chicano,
<4> Cuban, or
<5> Other Spanish/Hispanic/Latino?

<M> MISSING/DK

[FOR TELEPHONE INTERVIEWING, QUESTION 28 IS BROKEN INTO PARTS A-E]

READ ALL RACE CATEGORIES, PAUSING AT EACH RACE CATEGORY TO ALLOW PATIENT TO REPLY TO EACH RACE CATEGORY.

IF THE PATIENT REPLIES, "WHY ARE YOU ASKING MY RACE?":

We ask about your race for demographic purposes. We want to be sure that the people we survey accurately represent the racial diversity in this country.

IF THE PATIENT REPLIES, "I ALREADY TOLD YOU MY RACE":

I understand, however the survey requires me to ask about all races so results can include people who are multiracial. If the race does not apply to you please answer "No." Thanks for your patience.

Q28 When I read the following, please tell me if the category describes your race. I am required to read all five categories. Please answer "Yes" or "No" to each of the categories.

Q28A Are you White?

<1> YES/WHITE
<0> NO/NOT WHITE

<M> MISSING/DK

IF THE PATIENT REPLIES THAT THEY ARE CAUCASIAN CODE AS WHITE.

Q28B Are you Black or African American?

<1> YES/BLACK OR AFRICAN AMERICAN
<0> NO/NOT BLACK OR AFRICAN AMERICAN

<M> MISSING/DK

Q28C Are you Asian?

<1> YES/ASIAN
<0> NO/NOT ASIAN

<M> MISSING/DK

Q28D Are you Native Hawaiian or other Pacific Islander?

<1> YES/NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER
<0> NO/NOT NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER

<M> MISSING/DK

Q28E Are you American Indian or Alaska Native?

<1> YES/AMERICAN INDIAN OR ALASKA NATIVE
<0> NO/NOT AMERICAN INDIAN OR ALASKA NATIVE

<M> MISSING/DK

Q29 What language do you mainly speak at home?

READ RESPONSE CHOICES IF NECESSARY AND STOP WHEN PATIENT PROVIDES A RESPONSE: Would you say that you mainly speak…

<1>	English,	[GO TO END]
<2>	Spanish,	[GO TO END]
<3>	Chinese,	[GO TO END]
<4>	Russian,	[GO TO END]
<5>	Vietnamese,	[GO TO END]
<6>	Portuguese,	[GO TO END]
<7>	German,	[GO TO END]
<8>	Tagalog,	[GO TO END]
<9>	Arabic, or	[GO TO END]
<20>	Some other language?	[GO TO Q29A]
<M>	MISSING/DK	[GO TO END]

IF THE PATIENT REPLIES WITH MULTIPLE LANGUAGES, PROBE: Would you say that you mainly speak [LANGUAGE A] or [LANGUAGE B]?

IF THE PATIENT REPLIES THAT THEY SPEAK AMERICAN PLEASE CODE AS 1 – ENGLISH.

Q29A What other language do you mainly speak at home?

[NOTE: PLEASE DOCUMENT THE OTHER LANGUAGE AND MAINTAIN IN YOUR INTERNAL RECORDS.]

[NOTE: IF HOSPITAL-SPECIFIC SUPPLEMENTAL QUESTION(S) ARE ADDED, ONE OF THE FOLLOWING STATEMENTS MUST BE PLACED IMMEDIATELY BEFORE THE SUPPLEMENTAL QUESTION(S).]

SUPPL_INTRO FOR A SINGLE SUPPLEMENTAL QUESTION

Questions 1-29 in this survey are from the U.S. Department of Health and Human Services or HHS, for use in quality measurement. The following question is from [NAME OF HOSPITAL] to gather additional feedback about your hospital stay and will not be shared with HHS.

SUPPL_INTRO FOR MORE THAN ONE SUPPLEMENTAL QUESTION

Questions 1-29 in this survey are from the U.S. Department of Health and Human Services or HHS, for use in quality measurement. The following questions are from [NAME OF HOSPITAL] to gather additional feedback about your hospital stay and will not be shared with HHS.

END Those are all the questions I have. Thank you for your time. Have a good (day/evening).

<THIS ITEM IS NOT TO BE PROGRAMMED. THE NOTE BELOW MUST APPEAR ON ALL PUBLISHED MATERIALS CONTAINING THIS CATI SCRIPT.>

<NOTE: Questions 1-19 and 23-29 are part of the HCAHPS Survey and are works of the U.S. Government. These HCAHPS questions are in the public domain and therefore are NOT subject to U.S. copyright laws. The three Care Transitions Measure® questions (Questions 20-22) are copyright of Eric A. Coleman, MD, MPH, all rights reserved.>

Appendix B: HCAHPS Telephone Survey Administration Guidelines

This appendix includes the guidelines published by the Centers for Medicare & Medicaid Services (2023) that must be met for all HCAHPS surveys administered by telephone.

Telephone Only Survey Administration

Overview

This chapter describes guidelines for the Telephone Only mode of the CAHPS Hospital Survey (HCAHPS) administration.

Data collection for sampled discharged patients must be initiated between 48 hours and six weeks (42 calendar days) after discharge. Hospitals/Survey vendors must wait 48 hours to make the first attempt to contact discharged patients. This will allow enough time to pass for the patient to return home and feel settled after his or her hospital stay. The HCAHPS Survey must **not** be administered while the patient is still in the hospital. A total of five telephone attempts must be made to contact non-respondents.

Note: If the hospital/survey vendor learns that a sampled patient is ineligible for HCAHPS, the hospital/survey vendor must not make further attempts to contact that patient. ***After the sample has been drawn, any patients who are found to be ineligible must not be removed or replaced in the sample. Instead, these patients are assigned the "Final Survey Status" code of ineligible (2, 3, 4, or 5; as applicable). An Administrative Data Record must be submitted for these patients.***

Data collection must be closed out for a sampled patient by six weeks (42 calendar days) following the first call attempt. If it is known that the patient may be available in the latter part of the 42 calendar day data collection time period (e.g., patient is on vacation the first 2 or 3 weeks of the 42 calendar day data collection time period and there would be an opportunity to reach the patient closer to the end of the data collection time period), then hospitals/survey vendors must use the entire data collection time period to schedule telephone calls. Telephone call attempts are to be made between the hours of 9 AM and 9 PM respondent time. Patients who receive the HCAHPS Survey must not be offered incentives of any kind. Patients who do not respond to the survey are assigned a "Final Survey Status" code of non-response.

Hospitals/Survey vendors must make every reasonable effort to achieve optimal survey response rates and to pursue contact with potential respondents until the data collection protocol is completed.

No proxy respondents are permitted in the administration of the HCAHPS Survey, not even for patients who are critically ill, elderly, physically or mentally impaired, or do not speak the language in which the survey is being administered (i.e., English, Spanish, Chinese, or Russian). As stated above, a proxy respondent must not answer the survey questions for the patient. However, an individual may assist the patient by repeating questions or with translation of the survey, but only the patient may provide answers to the survey.

The basic tasks and timing for conducting the HCAHPS Survey using the Telephone Only mode of survey administration are summarized below.

Telephone Only Survey Administration
Initiate systematic telephone contact with sampled patient(s) between 48 hours and six weeks (42 calendar days) after discharge.
Complete telephone sequence so that a total of five telephone calls are attempted at different times of the day, on different days of the week and in different weeks within the six weeks (42 calendar days) after initiation of the survey (initial contact). The five telephone call attempts must span more than one week (eight or more days) to account for patients who are temporarily unavailable. If it is known that the patient may be available in the latter part of the 42 calendar day data collection time period (e.g., patient is on vacation the first 2 or 3 weeks of the 42 calendar day data collection time period and there would be an opportunity to reach the patient closer to the end of the data collection time period), then hospitals/survey vendors must use the entire data collection time period to schedule telephone calls.
Submit final data files to CMS via the Hospital Quality Reporting (HQR) system (https://hqr.cms.gov/), formerly the QualityNet Secure Portal, by the data submission deadline. No files will be accepted after the submission deadline date.

To reiterate, the first telephone attempt must occur between 48 hours and six weeks (42 calendar days) after discharge. Data collection must then be completed no later than six weeks (42 calendar days) after the initial telephone attempt. To illustrate the timing of the telephone attempts, three examples are provided of patients who were discharged from a hospital on July 1.

Example Patient 1:

- The first telephone attempt is made on July 4 (three days after discharge)
- Data collection must be closed out by August 15 for this patient, which is six weeks (42 calendar days) from the July 4 first telephone attempt date:
  - If a telephone interview is completed on August 15, which is the last day of the survey administration time period for this patient, then the survey data are included in the final survey data file and assigned a "Final Survey Status" code of either "1 – Completed survey" or "6 – Non-response: Break-off" based on the calculation of percent complete as described in the Data Specifications and Coding chapter
    - Lag Time (see the *Data Specifications and Coding* chapter) for this patient is calculated as 45 days
  - If the survey is mistakenly completed after August 15 (August 16, for example), which is beyond the six weeks (42 calendar days) survey administration time period for this patient, then the survey data are not included in the final survey data file **(however, an Administrative Data Record is submitted for this patient)** and a "Final Survey Status" code of "8 – Non-response: Non-response after maximum attempts" is assigned
    - Lag Time for this patient is calculated and entered as 46 days

Example Patient 2:

- The first telephone attempt is made on August 12 (42 calendar days after discharge)
- Data collection must be closed out by September 23 for this patient, which is six weeks (42 calendar days) from the August 12 first telephone attempt date
  - If a telephone interview is completed on September 23, which is the last day of the survey administration time period for this patient, then the survey data are included in the final survey data file and assigned a "Final Survey Status" code of either "1 – Completed survey" or "6 – Non-response: Break-off" based on the calculation of percent complete as described in the *Data Specifications and Coding* chapter
    - Lag Time for this patient is calculated as 84 days

Example Patient 3:

- The first telephone attempt is made on August 12 (42 calendar days after discharge)
- Data collection must be closed out on September 23 for this patient, which is six weeks (42 calendar days) from the August 12 first telephone attempt date:
  - If the patient is reached on the fifth attempt on September 21 and the patient refuses to participate in the HCAHPS Survey, then the survey data are not included in the final survey data file **(however, an Administrative Data Record is submitted for this patient)** and the "Final Survey Status" code of "7- Non-response: Refusal" is assigned
    - Lag Time for this patient is calculated and entered as 82 days

Hospitals/Survey vendors must make every reasonable effort to achieve optimal telephone response rates by thoroughly familiarizing interviewers with the study purpose; carefully supervising interviewers; retraining those interviewers having difficulty enlisting cooperation; and re-contacting reluctant respondents with different interviewers at different times until the final data collection protocol is completed.

Telephone Interviewing Systems

Telephone Script

Hospitals/Survey vendors are provided standardized telephone scripts in English, Spanish, Chinese, and Russian (Appendices J through M) for HCAHPS Survey administration. These telephone scripts must be read verbatim without adding any other scripting or tag questions, such as "How are you?" Hospitals/Survey vendors are not permitted to make or use any other language translations of the HCAHPS Telephone Scripts. **We strongly encourage hospitals/survey vendors to administer the HCAHPS Survey in both English and Spanish, including offering the official HCAHPS Survey translations (Chinese or Russian) for hospitals with significant patient populations speaking in these languages.**

Each hospital/survey vendor must submit a copy of their HCAHPS Telephone Script and interviewer screen shots (including skip pattern logic) for review by the HCAHPS Project Team. Please see the *Oversight Activities* chapter for more detail.

Required for the Telephone Script

The HCAHPS Survey (Questions 1-29) must remain together. The HCAHPS Survey questions cannot be eliminated from the script.

Programming of the telephone scripts must follow the guidelines described below:

- Question and answer category wording must not be changed
- No changes are permitted to the order of the HCAHPS Survey (Questions 1-29)
- No changes are permitted to the order of the answer categories for the HCAHPS questions
- All underlined content must be emphasized
  - No other script content is to be emphasized; in particular, response options must be read at the same even pace without any additional emphasis on any particular response category
- Only one language (English, Spanish, Chinese, or Russian) may appear on the electronic interviewing system screen
- The hospital/survey vendor is responsible for programming the scripts and specifications into their electronic telephone interviewing system software or an alternative system
  - The transitional phrases found throughout the telephone script are part of the structured script and must be read. An example of a transitional phrase that must be read can be found before Question 10 (Q10_Intro): "The next questions are about your experiences in this hospital."
  - Do not program a specific response category as the default option
  - Survey vendors that subcontract call center services must instruct interviewers, if asked who is calling, to state the survey vendor name in the CATI script introduction for the data collection contractor: "…calling from [DATA COLLECTION CONTRACTOR] on behalf of [HOSPITAL NAME]…"

*Note: Hospitals/Survey vendors **must** include the copyright statement on any published materials containing the HCAHPS Telephone Script, preferably at the end of the telephone script (see Appendices J through M).*

Hospitals/Survey vendors must have a process in place to address patients' requests to verify the survey legitimacy or to answer questions about the survey. See Appendix Q "Frequently Asked Questions for Customer Support."

Use of Supplemental Questions

Hospitals/Survey vendors may add a reasonable number of hospital-specific supplemental questions to the HCAHPS Survey, following the guidelines described below:

- Hospital-specific supplemental question(s) may be added to the HCAHPS Survey but only after all the HCAHPS Survey questions (Questions 1-29). This approach ensures that the survey is conducted consistently across participating hospitals.
- The mandatory transition statement must be placed in the survey immediately before the supplemental questions to indicate a transition from the HCAHPS questions to the hospital-specific supplemental question or questions (see Appendices J through M for the exact text in English, Spanish, Chinese and Russian)
- Hospitals may include additional transition statements following the required transition statement. Examples of allowable additional transition statements are as follows:

- *"Now [NAME OF HOSPITAL] would like to gather some additional detail on topics previously examined. These items use a somewhat different way of asking for your response since they are getting at a slightly different way of thinking about the topics."*
- *"The following questions focus on additional care you may have received from [NAME OF HOSPITAL]."*

Note: Transition statements must be submitted for review by the HCAHPS Project Team.

- In addition, if a client hospital requests that a survey vendor include supplemental questions as part of the HCAHPS Survey asking the patient to provide their address or other contact information, the survey vendor is required to include explanatory text that describes the purpose for the information. This text must be placed before the requested information and state the purpose for the patient to *optionally* provide the requested information. It is NOT sufficient to only state that this information is optional. The following are examples of permissible explanatory text:
  - *"If you wish to be contacted by the hospital, please provide your contact information. This information is not required."*
  - *"By providing your contact information, you may be contacted by the hospital. This information is not required."*

Hospitals/Survey vendors must avoid hospital-specific supplemental questions that:

- pose a burden to the patient (e.g., number, length, and complexity of supplemental questions, etc.)
- may affect responses to the HCAHPS Survey
- may cause the patient to terminate the survey (e.g., items that ask about sensitive medical, health or personal topics, etc.)
- jeopardize patient confidentiality (e.g., items that ask for the patient's Social Security number, etc.)
- ask the patient to explain why he or she chose a specific response; for example, it is not acceptable to ask patients why they indicated that they would not recommend the hospital to friends and family

The number of supplemental questions added is left to the discretion of the hospital/survey vendor. The hospital/survey vendor must submit the maximum number of supplemental survey items in the Administrative Data Record for each survey (see Appendix T).

- Each potential supplemental item counts as one question, whether or not the item is phrased as a sentence or as a question
- Each open-ended or free response question counts as one supplemental item

Interviewing Systems

Two methods exist for telephone interviewing:

1. An electronic telephone interviewing system **is required for survey vendors**; it is optional for hospitals that are self-administering the survey. An electronic telephone interviewing system uses standardized scripts and design specifications. The hospital/survey vendor is responsible for programming the scripts and specifications into their electronic telephone

interviewing software. Regardless of patient response, the interviewer must record all responses in the telephone interview.

- Survey administration must be conducted in accordance with the Telephone Consumer Protection Act (TCPA) regulations
  - Cell phone numbers must be identified so that CATI systems with auto dialers do not call cell phone numbers without the permission of the respondent. Survey vendors may identify cell phone numbers through a commercial database and hospitals may identify cell phone numbers upon patient admission.
  - Predictive dialing may be used as long as there is a live interviewer to interact with the patient, and the system is compliant with Federal Trade Commission (FTC) and Federal Communications Commission (FCC) regulations
- Survey vendors may program the caller ID to display "on behalf of [HOSPITAL NAME]," with the permission and compliance of the hospital's HIPAA/Privacy Officer. Survey vendors **must not** program the caller ID to display only "[HOSPITAL NAME]."

2. Manual data collection is permitted only for hospitals that are self-administrating the survey. Manual data collection involves an interviewer who conducts the interview using the standardized script over the telephone and records answers on paper.

Monitoring/Recording Telephone Calls

Survey vendors must be aware of and follow applicable state regulations when monitoring and/or recording telephone calls, including those that permit monitoring/recording of telephone calls only after the interviewer states, "This call may be monitored (and/or recorded) for quality improvement purposes." This statement is found at the end of the INTRO section of the HCAHPS Telephone Script located in Appendices J through M.

Telephone Attempts

Hospitals/Survey vendors must attempt to reach each and every patient in the sample. It is strongly recommended that hospitals/survey vendors use both the primary (Patient Telephone Number 1) and secondary (Patient Telephone Number 2) numbers provided by the hospital. If the first telephone number is found to be bad/non-working, then the second telephone number should be used. It is up to the hospitals'/survey vendors' discretion to determine the number of attempts made to each telephone number; however, no more than a total of five call attempts can be made to a sampled patient.

Telephone call attempts are to be made between the hours of 9 AM and 9 PM respondent time. Repeated attempts must be made until the patient is contacted, found ineligible or five attempts have been made. After five attempts to contact the patient have been made, no further attempts are to be made. A telephone attempt is defined as one of the following:

- The telephone rings six times with no answer
- The interviewer reaches a wrong number
- An answering machine/voice mail is reached. In this case, the interviewer must not leave a message.
- The interviewer reaches a household member and is told that the patient is not available to come to the telephone or has a new telephone number. The interviewer must not leave a message.

- The interviewer reaches the patient and is asked to call back at a more convenient time
  - The callback must be scheduled at the patient's convenience. When requested, hospitals/survey vendors must schedule a telephone callback that accommodates a patient's request for a specific day and time (i.e., between the hours of 9 AM and 9 PM respondent time within the 42 calendar day data collection period).
- The interviewer reaches a busy signal
  - At the discretion of the hospital/survey vendor, a telephone attempt can consist of three consecutive telephone attempts made at approximately 20-minute intervals
- The interviewer reaches a "screening" number (e.g., privacy screen, privacy manager, phone intercept, or blocked call)
  - Hospitals/Survey vendors count this as one telephone attempt and continue to make additional attempts (up to five) to reach the patient before dispositioning the call as "8 – Non-response: Non-response after maximum attempts"

Sampled patients are to be called up to five times unless the sampled patient completes the survey, is found to be ineligible or explicitly refuses to complete the survey (or if someone refuses on behalf of the patient).

- If the patient is unavailable for any reason, the interviewer must not conduct the interview with a proxy
- If the hospital/survey vendor learns that a patient is ineligible for HCAHPS, that patient must not receive any further telephone attempts

Hospitals/Survey vendors must adhere to the following guidelines in their attempts to contact patients:

- Telephone attempts are made at various times of the day, on different days of the week and in different weeks to maximize the probability that the hospital/survey vendor will contact the patient

  Note: More than one telephone attempt may be made in a week (seven calendar days). However, the five telephone attempts cannot be made in only one week (seven calendar days). The five call attempts must span more than one week (eight or more days), and it is strongly recommended that call attempts also include weekends.

- Patients who call back after an initial contact can be scheduled for interviews or forwarded to an available HCAHPS interviewer
- Interviewers must not leave messages on answering machines or with household members, since this could violate a patient's privacy. Hospitals/Survey vendors must instead attempt to re-contact the patient to complete the HCAHPS Survey.
- When a patient requests to complete at a later date a telephone survey already in progress, a callback should be scheduled. At the time of the callback, the interview should resume with the next question where the patient left off from the previous call.
- If on the fifth attempt, the patient requests to schedule an appointment to complete the survey, it is permissible to schedule that appointment and call the patient back provided that the appointment is within the 42 calendar day data collection time period. If on the callback at the scheduled time, no connection is made with the patient, then no further

contact may be attempted. This additional (sixth) call attempt would be coded as "5 – Fifth Telephone attempt" for data submission.

Hospitals/Survey vendors must take the following steps to contact **difficult to reach patients**:

- If the patient's telephone number is incorrect, make every effort to find the correct telephone number. If the person answering the telephone knows how to reach the patient, the new information must be used.
- It is strongly recommended that the secondary telephone number be contacted if there is more than one telephone number available for the patient
- If the patient is away temporarily, he or she must be contacted upon return, provided that it is within the data collection time period. If it is known that the patient may be available in the latter part of the 42 calendar day data collection time period (e.g., patient is on vacation the first 2 or 3 weeks of the 42 calendar day data collection time period and there would be an opportunity to reach the patient closer to the end of the data collection time period), then hospitals/survey vendors must use the entire data collection time period to schedule telephone calls.
- If the patient does not speak the language in which the survey is being administered, the interviewer must thank the patient for his or her time and terminate the interview
- If the patient is temporarily ill or readmitted to the hospital, the interviewer must re-contact the patient before the end of the data collection period to see if there has been a recovery and the patient can now complete the survey
- If the patient is unavailable for any reason, the interviewer must not conduct the interview with a proxy
- If the call is inadvertently dropped and the interview is interrupted, the patient should be re-contacted immediately to complete the remainder of the survey. This re-contact does not constitute an additional call attempt.

Obtaining and Updating Telephone Numbers

Hospitals/Survey vendors normally obtain telephone numbers from the hospital's patient discharge records. It is strongly recommended that two telephone numbers are collected and used for each patient, if available. Hospitals/Survey vendors must use commercial software or other means to update telephone numbers provided by the hospital for **all** sampled patients. Requisite attempts must be made to contact every eligible patient drawn into the sample, whether or not there is a complete and correct telephone number for the patient when the sample is created. Hospitals/Survey vendors must retain a record of attempts to acquire missing telephone numbers. All materials relevant to survey administration are subject to review.

In addition to working with client hospitals to obtain the most current patient contact information, hospitals/survey vendors must employ various methods for updating telephone numbers:

- Running update program software against the sample file just before or after uploading data to survey management systems
- Utilizing commercial software, Internet directories and/or directory assistance

Note: It is strongly recommended that hospitals/survey vendors check the accuracy of sampled patients' contact information prior to survey fielding.

Data Receipt and Retention

Hospitals/Survey vendors must record the date of the telephone interview and must link survey responses from the telephone interview to their survey management system, regardless of the interviewing system employed. Hospitals/Survey vendors must maintain a crosswalk of their interim disposition codes to the HCAHPS "Final Survey Status" codes and include the crosswalk in the hospital's/survey vendor's QAP.

Hospitals/Survey vendors must record and submit lag time for **all** HCAHPS "Final Survey Status" codes. Additionally, hospitals/survey vendors must include the "Number Survey Attempts – Telephone" field in the Administrative Data Record. This field is required when "Survey Mode" in the Header Record is "2 – Telephone Only." Hospitals/Survey vendors must document the "Number Survey Attempts – Telephone" for the telephone attempt in which the "Final Survey Status" is determined. For example, if the interview was conducted and finished with the patient on the fourth telephone attempt then the "Number Survey Attempts – Telephone" would be coded as "4 – Fourth Telephone attempt." Please see the *Data Specifications and Coding* chapter for more information regarding the calculation of lag time and coding the "Number Survey Attempts – Telephone" field.

Electronic Telephone Interviewing System

The electronic telephone interviewing system employed by hospitals/survey vendors must be electronically linked to their survey management system to enable responses obtained from the electronic telephone interviewing system to be automatically added to the survey management system.

Manual Data Collection

Only hospitals self-administering the survey are permitted to use manual data collection methods. Hospitals using manual data entry (paper questionnaires) to collect survey data over the telephone must follow the guidelines below for linking survey responses to the survey management system. Either key-entry or scanning may be used.

- Key-entry
  - *Unique record verification system*: The survey management system performs a check to verify that the patient response data have not already been entered in the survey management system
  - *Valid range checks*: The data entry system identifies responses/entries that are invalid or out-of-range
  - *Validation*: The hospital must perform checks to confirm that key-entered data accurately capture the responses of the telephone interview. A different staff member (preferably the data entry supervisor) must reconcile any discrepancies. It is strongly suggested that hospitals using the HCAHPS Data Form, formerly the Online Data Entry Tool, download Excel spreadsheets containing entered data and compare entered data to the original survey completed by the telephone interviewer. This validation process must be performed by someone other than the person doing data entry via the HCAHPS Data Form.

- Scanning
  - *Unique record verification system*: The survey management system performs a check to confirm that the survey responses have not already been entered in the survey management system
  - *Valid range checks*: The software identifies invalid or out-of-range responses
  - *Validation*: The hospital must perform checks to verify that scanned data accurately capture the responses on the original survey completed by the telephone interviewer. A staff member must reconcile any responses not recognized by the scanning software.

Data Storage

The following data storage guidelines must be followed for HCAHPS telephone surveys:

- Data collected through an electronic telephone interviewing system must be retained in a secure manner for a minimum of three years and must be easily retrievable
- Data collected manually by telephone with paper questionnaires and then key-entered must be de-identified and stored in a secure and environmentally controlled location for a minimum of three years and must be easily retrievable
- Optically scanned questionnaire images of telephone interviews collected with paper questionnaires also must be de-identified and retained in a secure and environmentally controlled location for a minimum of three years and must be easily retrievable
- Hospitals/Survey vendors must destroy HCAHPS-related data files, including paper copies or scanned images of the questionnaires and electronic data files in a secure and environmentally safe location. Obtain a certificate of the destruction of data.

Quality Control Guidelines

Hospitals/Survey vendors are responsible for the quality of work performed by any staff members and subcontractor(s). Hospitals/Survey vendors must employ the following guidelines for proper interviewer training, monitoring and oversight regardless of whether they are using organizational staff or subcontractor(s) to perform this work.

Interviewer Training

Consistent monitoring of interviewers' work is essential to achieve standardized and accurate results. Properly trained and supervised interviewers ensure that standardized, non-directive interviews are conducted. Interviewers conducting the telephone survey must be trained prior to interviewing. (See Appendix P for more information on interviewing guidelines.)

- Training must direct interviewers to read questions exactly as worded in the script, use non-directive probes and maintain a neutral and professional relationship with the respondent
  - During the course of the survey, the use of neutral acknowledgment words such as the following is permitted:
    - Thank you
    - Alright
    - Okay
    - I understand, or I see
    - Yes, Ma'am
    - Yes, Sir
- Interviewers must be trained to read the script from the telephone screens (reciting the survey from memory can lead to unnecessary errors and missed updates to the scripts)

- Interviewers must be trained to read response options exactly as worded and at an even pace without emphasis on any particular response category
- Interviewers must be trained to record responses to survey questions only after the patient has responded to the questions; that is, interviewers must not pre-code response choices
- In organizations where interviewers assign interim or final call disposition codes, they must be trained in the definition of each disposition code
- Interviewers must be trained in a process for redirecting calls to another interviewer when the patient is personally known to the initial interviewer
- Interviewers must be trained to adjust the pace of the HCAHPS Survey interview to be conducive to the needs of the respondent

If a hospital/survey vendor uses a subcontractor to conduct telephone interviewing, then the hospital/survey vendor is responsible for attending/participating in the subcontractor's telephone interviewer training to confirm compliance with HCAHPS protocols and guidelines. Hospitals/Survey vendors must conduct on-site verification of subcontractor's interviewing processes (strongly recommended on an annual basis, at a minimum).

Telephone Monitoring and Oversight

Each hospital/survey vendor employing the Telephone Only mode of survey administration must institute a telephone monitoring and evaluation program. The telephone monitoring and evaluation program must include, but is not limited to, the following oversight activities:

- Hospitals/Survey vendors must monitor at least 10 percent (on an ongoing and continuous basis throughout the survey administration period) of all HCAHPS interviews, dispositions and call attempts in their entirety (across all translations in which the survey is administered) through silent monitoring of interviewers using the electronic telephone interviewing system software or an alternative system. Silent monitoring capability must include the ability to monitor calls live, both on-site at the hospitals'/survey vendors' or their subcontractors' business locations and from remote locations. All staff conducting HCAHPS interviews must be included in the monitoring. Hospitals'/Survey vendors' supervisory staff monitoring the telephone interviewers should use the electronic telephone interviewing system to listen to the audio of the call and simultaneously observe that the correct responses are entered by the interviewer. Additionally, it is required that hospitals/survey vendors provide "floor rounding" in their call-center(s) to visually observe and ensure the professionalism of the telephone interviewers.

  Note: Telephone interviews/monitoring must not be conducted from a residence or non-business location unless an approved Exception Request is in place.

- For hospitals using manual data collection, supervisors must observe at least 10 percent (on an ongoing and continuous basis throughout the survey administration period) of all HCAHPS interviews and call attempts in their entirety when silent monitoring is not an option
- Hospitals/Survey vendors using a subcontractor must monitor at least 10 percent (on an ongoing and continuous basis throughout the survey administration period) of the subcontractor's HCAHPS telephone interviews and call attempts in their entirety, provide feedback to the subcontractor's interviewers about their performance and confirm that the

subcontractor's interviewers correct any areas that need improvement. Feedback must be provided to interviewers as soon as possible following a monitoring session.

Note: HCAHPS protocols currently require that approved HCAHPS Survey vendors who subcontract the task of HCAHPS telephone interviewing monitor at least 10 percent of all HCAHPS calls/attempts/completed surveys (on an ongoing and continuous basis throughout the survey administration period). The HCAHPS Project Team also expects that a survey vendor's subcontractor will conduct internal monitoring of their telephone interviewers as a matter of good business practice that incorporates quality checks. While it is preferred that each organization continue to monitor 10 percent of HCAHPS interviews (for an overall total of 20 percent), it is permissible for the survey vendor and its subcontractor to conduct a combined total of at least 10 percent monitoring, as long as each organization conducts a portion of the monitoring. Therefore, the survey vendor and its subcontractor can determine the ratio of monitoring that each organization conducts, as long as the combined total meets or exceeds 10 percent. Please note that HCAHPS interviews monitored concurrently by the survey vendor and its subcontractor do not contribute separately to each organization's monitoring time.

- Staff who are found to be consistently unable to follow the script verbatim, employ proper probes, remain objective and courteous, be clearly understood, or operate the electronic telephone interviewing system competently, must be identified and retrained or, if necessary, replaced
- In organizations where interviewers assign interim or final disposition codes, the assignment of codes must be reviewed by a supervisor
- Organizations must monitor interviewer survey response coding by, at a minimum, reviewing the frequency of missing responses in the surveys administered by interviewers

*Note: Hospitals/Survey vendors **must** retain a record of all quality control activities and document these activities in the hospital's/survey vendor's QAP. All materials relevant to survey administration are subject to review.*

Appendix C: HCAHPS Mail Survey

This appendix includes the survey published by the Centers for Medicare & Medicaid Services (2023) that must be used by vendors administering the HCAHPS survey by mail.

HCAHPS Survey

SURVEY INSTRUCTIONS

- You should only fill out this survey if you were the patient during the hospital stay named in the cover letter. Do not fill out this survey if you were not the patient.
- Answer all the questions by checking the box to the left of your answer.
- You are sometimes told to skip over some questions in this survey. When this happens you will see an arrow with a note that tells you what question to answer next, like this:

  ☐ Yes
  ☑ No ➔ ***If No, Go to Question 1***

You may notice a number on the survey. This number is used to let us know if you returned your survey so we don't have to send you reminders.
Please note: Questions 1-29 in this survey are part of a national initiative to measure the quality of care in hospitals. OMB #0938-0981 (Expires September 30, 2024)

Please answer the questions in this survey about your stay at the hospital named on the cover letter. Do not include any other hospital stays in your answers.

YOUR CARE FROM NURSES

1. During this hospital stay, how often did nurses treat you with courtesy and respect?

1☐ Never
2☐ Sometimes
3☐ Usually
4☐ Always

2. During this hospital stay, how often did nurses listen carefully to you?

1☐ Never
2☐ Sometimes
3☐ Usually
4☐ Always

3. During this hospital stay, how often did nurses explain things in a way you could understand?

1☐ Never
2☐ Sometimes
3☐ Usually
4☐ Always

4. During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted it?

1☐ Never
2☐ Sometimes
3☐ Usually
4☐ Always
9☐ I never pressed the call button

YOUR CARE FROM DOCTORS

5. During this hospital stay, how often did doctors treat you with courtesy and respect?

1 ☐ Never
2 ☐ Sometimes
3 ☐ Usually
4 ☐ Always

6. During this hospital stay, how often did doctors listen carefully to you?

1 ☐ Never
2 ☐ Sometimes
3 ☐ Usually
4 ☐ Always

7. During this hospital stay, how often did doctors explain things in a way you could understand?

1 ☐ Never
2 ☐ Sometimes
3 ☐ Usually
4 ☐ Always

THE HOSPITAL ENVIRONMENT

8. During this hospital stay, how often were your room and bathroom kept clean?

1 ☐ Never
2 ☐ Sometimes
3 ☐ Usually
4 ☐ Always

9. During this hospital stay, how often was the area around your room quiet at night?

1 ☐ Never
2 ☐ Sometimes
3 ☐ Usually
4 ☐ Always

YOUR EXPERIENCES IN THIS HOSPITAL

10. During this hospital stay, did you need help from nurses or other hospital staff in getting to the bathroom or in using a bedpan?

1 ☐ Yes
2 ☐ No ➔ **If No, Go to Question 12**

11. How often did you get help in getting to the bathroom or in using a bedpan as soon as you wanted?

1 ☐ Never
2 ☐ Sometimes
3 ☐ Usually
4 ☐ Always

12. During this hospital stay, were you given any medicine that you had not taken before?

1 ☐ Yes
2 ☐ No ➔ **If No, Go to Question 15**

13. Before giving you any new medicine, how often did hospital staff tell you what the medicine was for?

1 ☐ Never
2 ☐ Sometimes
3 ☐ Usually
4 ☐ Always

14. Before giving you any new medicine, how often did hospital staff describe possible side effects in a way you could understand?

1 ☐ Never
2 ☐ Sometimes
3 ☐ Usually
4 ☐ Always

WHEN YOU LEFT THE HOSPITAL

15. After you left the hospital, did you go directly to your own home, to someone else's home, or to another health facility?

- [1] ☐ Own home
- [2] ☐ Someone else's home
- [3] ☐ Another health facility → **If Another, Go to Question 18**

16. During this hospital stay, did doctors, nurses or other hospital staff talk with you about whether you would have the help you needed when you left the hospital?

- [1] ☐ Yes
- [2] ☐ No

17. During this hospital stay, did you get information in writing about what symptoms or health problems to look out for after you left the hospital?

- [1] ☐ Yes
- [2] ☐ No

OVERALL RATING OF HOSPITAL

Please answer the following questions about your stay at the hospital named on the cover letter. Do not include any other hospital stays in your answers.

18. 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 during your stay?

- [0] ☐ 0 Worst hospital possible
- [1] ☐ 1
- [2] ☐ 2
- [3] ☐ 3
- [4] ☐ 4
- [5] ☐ 5
- [6] ☐ 6
- [7] ☐ 7
- [8] ☐ 8
- [9] ☐ 9
- [10] ☐ 10 Best hospital possible

19. Would you recommend this hospital to your friends and family?

- [1] ☐ Definitely no
- [2] ☐ Probably no
- [3] ☐ Probably yes
- [4] ☐ Definitely yes

UNDERSTANDING YOUR CARE WHEN YOU LEFT THE HOSPITAL

20. During this hospital stay, staff took my preferences and those of my family or caregiver into account in deciding what my health care needs would be when I left.

- [1] ☐ Strongly disagree
- [2] ☐ Disagree
- [3] ☐ Agree
- [4] ☐ Strongly agree

21. When I left the hospital, I had a good understanding of the things I was responsible for in managing my health.

1☐ Strongly disagree
2☐ Disagree
3☐ Agree
4☐ Strongly agree

22. When I left the hospital, I clearly understood the purpose for taking each of my medications.

1☐ Strongly disagree
2☐ Disagree
3☐ Agree
4☐ Strongly agree
5☐ I was not given any medication when I left the hospital

ABOUT YOU

There are only a few remaining items left.

23. During this hospital stay, were you admitted to this hospital through the Emergency Room?

1☐ Yes
2☐ No

24. In general, how would you rate your overall health?

1☐ Excellent
2☐ Very good
3☐ Good
4☐ Fair
5☐ Poor

25. In general, how would you rate your overall mental or emotional health?

1☐ Excellent
2☐ Very good
3☐ Good
4☐ Fair
5☐ Poor

26. What is the highest grade or level of school that you have completed?

1☐ 8th grade or less
2☐ Some high school, but did not graduate
3☐ High school graduate or GED
4☐ Some college or 2-year degree
5☐ 4-year college graduate
6☐ More than 4-year college degree

27. Are you of Spanish, Hispanic or Latino origin or descent?

1☐ No, not Spanish/Hispanic/Latino
2☐ Yes, Puerto Rican
3☐ Yes, Mexican, Mexican American, Chicano
4☐ Yes, Cuban
5☐ Yes, other Spanish/Hispanic/Latino

28. What is your race? Please choose one or more.

1☐ White
2☐ Black or African American
3☐ Asian
4☐ Native Hawaiian or other Pacific Islander
5☐ American Indian or Alaska Native

29. What language do you <u>mainly</u> speak at home?

- [1] ☐ English
- [2] ☐ Spanish
- [3] ☐ Chinese
- [4] ☐ Russian
- [5] ☐ Vietnamese
- [6] ☐ Portuguese
- [7] ☐ German
- [8] ☐ Tagalog
- [9] ☐ Arabic
- [20] ☐ Some other language (please print): _____

NOTE: IF HOSPITAL-SPECIFIC SUPPLEMENTAL QUESTION(S) ARE ADDED, THE MANDATORY TRANSITION STATEMENT MUST BE PLACED IMMEDIATELY BEFORE THE SUPPLEMENTAL QUESTION(S).

THANK YOU

Please return the completed survey in the postage-paid envelope.

[NAME OF SURVEY VENDOR OR SELF-ADMINISTERING HOSPITAL]

[RETURN ADDRESS OF SURVEY VENDOR OR SELF-ADMINISTERING HOSPITAL]

Appendix D: HCAHPS Mail Survey Administration Guidelines

This appendix includes the guidelines published by the Centers for Medicare & Medicaid Services (2023) that must be met for all HCAHPS surveys administered by mail.

Mail Only Survey Administration

Overview

This chapter describes guidelines for the Mail Only mode of the CAHPS Hospital Survey (HCAHPS) administration.

Data collection for sampled discharged patients must be initiated between 48 hours and six weeks (42 calendar days) after discharge. Hospitals/Survey vendors must wait 48 hours to make the first attempt to contact discharged patients. This will allow enough time to pass for the patient to return home and feel settled after his or her hospital stay. Patients must **not** be given the survey while they are still in the hospital.

Hospitals/Survey vendors will send sampled patients a first questionnaire with a cover letter. A second questionnaire with a follow-up cover letter **must** be sent to all sampled patients who did not respond to the first questionnaire, approximately 21 calendar days after the first questionnaire mailing.

Note: If after the first mailing the hospital/survey vendor learns that a sampled patient is ineligible for HCAHPS, the hospital/survey vendor must not send the patient the second questionnaire. ***After the sample has been drawn, any patients who are found to be ineligible must not be removed or replaced in the sample. Instead, these patients are assigned a "Final Survey Status" code of ineligible (2, 3, 4, or 5; as applicable). An Administrative Data Record must be submitted for these patients.***

Data collection must be closed out for a sampled patient by six weeks (42 calendar days) following the mailing of the first questionnaire. Patients who receive the HCAHPS Survey must not be offered incentives of any kind. Patients who do not respond to the survey are assigned a "Final Survey Status" code of non-response.

Hospitals/Survey vendors must make every reasonable effort to achieve optimal survey response rates and to pursue contacts with potential respondents until the data collection protocol is completed.

No proxy respondents are permitted in the administration of the HCAHPS Survey, not even for patients who are critically ill, elderly, physically, or mentally impaired. As stated above, a proxy respondent must not answer the survey questions for the patient; however, an individual may assist the patient with reading the survey, writing responses or with translation of the survey, but only the patient may provide answers to the survey.

The basic tasks and timing for conducting the HCAHPS Survey using the Mail Only mode of survey administration are summarized below.

Mail Only Survey Administration
Send first questionnaire with initial cover letter to sampled patient(s) between 48 hours and six weeks (42 calendar days) after discharge.
Send second questionnaire with follow-up cover letter to non-respondent(s) approximately 21 calendar days after the first questionnaire mailing.
Complete data collection within six weeks (42 calendar days) of the first questionnaire mailing.
Submit final data files to CMS via the Hospital Quality Reporting (HQR) system (https://hqr.cms.gov/), formerly the QualityNet Secure Portal, by the data submission deadline. No files will be accepted after the submission deadline date.

To reiterate, the initial mail-out of the survey must occur between 48 hours and six weeks (42 calendar days) after discharge. Data collection must then be completed no later than six weeks (42 calendar days) after the initial mail-out. To illustrate the timing of survey mail-out, three examples are provided of patients who were discharged from a hospital on July 1.

Example Patient 1:

- The first survey is mailed out on July 4 (three days after discharge)
- If the patient has not returned the survey by July 25 (21 days after the initial mailing on July 4), a second survey is mailed out
  - An optional reply-by date on the **follow-up cover letter** with the second survey mailing will be August 8 (35 days from initial mailing)
- Data collection must be closed out on August 15 for this patient, which is six weeks (42 calendar days) from the July 4 initial mail-out date:
  - If the survey is returned on August 15, which is the last day of the survey administration time period for this patient, then the survey is included in the final survey data file and assigned a "Final Survey Status" code of either "1 – Completed survey" or "6 – Non-response: Break-off" based on the calculation of percent complete as described in the *Data Specifications and Coding* chapter
    - Lag Time (see the *Data Specifications and Coding* chapter) for this patient is calculated as 45 days
  - If the survey is returned after August 15 (August 16, for example), which is beyond the six weeks (42 calendar days) survey administration time period for this patient, then the survey data are not included in the final survey data file **(however, an Administrative Data Record is submitted for this patient)** and a "Final Survey Status" code of "8 – Non-response: Non-response after maximum attempts" is assigned
    - Lag Time for this patient is calculated and entered as the number of days between the patient's discharge from the hospital and the date that data collection activities ended for this patient. Lag time for this patient is calculated as 46 days.

Example Patient 2:

- The first survey is mailed out on August 12 (42 calendar days after discharge)
- If the patient has not returned the survey by September 2 (21 days after the initial mailing on August 12), a second survey is mailed out
  - The reply-by date **follow-up cover letter** with the second survey mailing will be September 16 (35 days from initial mailing)
- Data collection must be closed out on September 23 for this patient, which is six weeks (42 calendar days) from the August 12 initial mail-out date:
  - If the survey is received on September 23, which is the last day of the survey administration time period for this patient, then the survey data are included in the final survey data file and assigned a "Final Survey Status" code of either "1 – Completed survey" or "6 – Non-response: Break-off" based on the calculation of percent complete as described in the *Data Specifications and Coding* chapter
    - Lag Time for this patient is calculated as 84 days
  - If the survey is received after September 23, (September 24, for example) which is beyond the six week (42 calendar days) survey administration time period for this patient, then the survey data are not included in the final survey data file **(however, an Administrative Data Record is submitted for this patient)** and a "Final Survey Status" code of "8 – Non-response: Non-response after maximum attempts" is assigned
    - Lag Time for this patient is calculated and entered as the number of days between the patient's discharge from the hospital and the date that data collection activities ended for this patient. Lag time for this patient is calculated as 85 days.

Example Patient 3:

- The first survey is mailed out on August 12 (42 calendar days after discharge)
- If the patient has not returned the survey by September 2 (21 days after the initial mailing on August 12), a second survey is mailed out
  - The reply-by date **follow-up cover letter** with the second survey mailing will be September 16 (35 days from initial mailing)
- If the patient has not returned a survey by September 23, then data collection must be closed out on September 23 for this patient, which is six weeks (42 calendar days) from the August 12 initial mail-out date:
  - If the survey is received on September 23, which is the last day of the survey administration time period for this patient, and there is evidence received on September 23 that the patient is deceased (e.g., the words "deceased" written on the survey, etc.) then the survey data are not included in the final survey data file **(however, an Administrative Data Record is submitted for this patient)** and the "Final Survey Status" code of "2 – Ineligible: Deceased" is assigned
    - Lag Time for this patient is calculated and entered as 84 days

Note: The timing of the survey administration protocol begins with the first mailing and does not restart if another "first mailing" is sent to the patient due to an address correction/update. Therefore, data collection must still be closed out by six weeks (42 calendar days) following the original first mailing.

Production of Questionnaire and Related Materials

The Mail Only mode of survey administration may be conducted in English, Spanish, Chinese, Russian, Vietnamese, Portuguese, German, Tagalog, or Arabic. Hospitals/Survey vendors are provided with the HCAHPS questionnaires in English, Spanish, Chinese, Russian, Vietnamese, Portuguese, German, Tagalog, and Arabic (Appendices A through I), and initial and follow-up cover letters in English, Spanish, Chinese, Russian, Vietnamese, Portuguese, German, Tagalog, and Arabic (Appendices A through I). Hospitals/Survey vendors are not permitted to make or use any other translations of the HCAHPS cover letters or questionnaires. **We strongly encourage hospitals/survey vendors to administer the HCAHPS Survey in both English and Spanish, including offering the official HCAHPS Survey translations (Chinese, Russian, Vietnamese, Portuguese, German, Tagalog, and Arabic) for hospitals with significant patient populations speaking in these languages.** We encourage hospitals that serve patient populations that speak languages other than those noted to request CMS to create an official translation of the HCAHPS Survey in those languages.

For HCAHPS Survey administration, the OMB Paperwork Reduction Act language must appear in the mailing, either on the cover letter or on the front or back of the questionnaire. (See Appendices A through I for the exact language in English, Spanish, Chinese, Russian, Vietnamese, Portuguese, German, Tagalog, and Arabic.) In addition, the OMB control number (OMB #0938-0981) and expiration date must appear on the front page of the questionnaire.

To reinforce the requirement that no one other than the sampled patient completes the survey, language must be included in the questionnaire, and optionally in the cover letter(s), clearly stating that only the sampled patient may fill out the survey.

Each hospital/survey vendor will submit a sample of their HCAHPS mailing materials (questionnaires, cover letters, and outgoing/return envelopes) with all applicable HCAHPS *Quality Assurance Guidelines V18.0* updates for review by the HCAHPS Project Team. Please see the *Oversight Activities* chapter for more detail.

Required for the Mail Questionnaire

The HCAHPS Survey (Questions 1-29) must remain together. The HCAHPS Survey questions cannot be eliminated from the questionnaire.

Hospitals/Survey vendors must adhere to the following specifications for questionnaire formatting and the production of mail materials:

Questions and Answer Categories

- Question and answer category wording must not be changed
- No changes are permitted to the order of the HCAHPS Survey (Questions 1-29)
- No changes are permitted to the order of the answer categories for the HCAHPS questions
- Question and answer categories must remain together in the same column and on the same page
- Response choices must be listed individually for each question, not presented in a matrix format. For example, when a series of questions is asked that have the same answer categories (Never, Sometimes, Usually, or Always), the answer categories must be repeated with every question. A matrix format which simply lists the answer categories

across the top of the page and the questions down the side of the page is not allowed, because it has been shown that this format tends to produce inaccurate and incomplete responses.

- Response options must be listed vertically (see examples in Appendix A). Response options that are listed horizontally or in a combined vertical and horizontal format are not allowed.

Formatting

- Wording that is underlined in the questionnaire provided in the HCAHPS *Quality Assurance Guidelines* must be emphasized in the same manner in the hospital's/survey vendor's questionnaire
- Arrow (i.e., ➔) placement in the questionnaire instructions and answer categories that specifies skip patterns must not be changed
- Section headings (e.g., YOUR CARE FROM NURSES, etc.) must be included on the questionnaire, must be capitalized and consistently formatted (all centered or all left justified)
- Survey materials must be in a readable font (i.e., Arial or Times New Roman) with a font size of 10-point at a minimum

Other Requirements

- All survey instructions written at the top of the questionnaire must be printed verbatim
- The text indicating the purpose of the unique identifier *("You may notice a number on the survey. This number is used to let us know if you returned your survey so we don't have to send you reminders.")* must be printed either immediately after the survey instructions on the questionnaire (preferred) or on the cover letter, and may appear on both
- Randomly generated, unique identifiers must be placed on the first or last page of the questionnaire, at a minimum. Hospitals/Survey vendors may add internal codes on the questionnaire for tracking purposes; however, the internal codes must not contain any patient identifiers such as the patient's discharge date (including the month and year), doctor or unit. The patient's name must not be printed on the questionnaire.
- The copyright statement must be included on the questionnaire, preferably on the last page, in a readable font size at a minimum of 10-point (see Appendices A through I for the exact text)
- The OMB control number (OMB #0938-0981) and expiration date must appear on the front page of the questionnaire
- The OMB language must appear verbatim on either the front or back page of the questionnaire (preferred) or on the cover letter, and may appear on both, in a readable font size at a minimum of 10-point (see Appendices A through I for the exact text in English, Spanish, Chinese, Russian, Vietnamese, Portuguese, German, Tagalog, and Arabic); however, the OMB language cannot be printed on a separate piece of paper
- The hospital's/survey vendor's return address must be printed on the questionnaire to make sure that the questionnaire is returned to the correct address in the event that the enclosed return envelope is misplaced by the patient
  - If the hospital's/survey vendor's name is included in the return address, then the hospital's/survey vendor's business name must be used, not an alias or tag line

Optional for the Mail Questionnaire

Hospitals/Survey vendors have some flexibility in formatting the HCAHPS questionnaire by following the guidelines described below.

- Small coding numbers, preferably in superscript, may be included next to the response choices on the questionnaire
- It is acceptable to have a place on the survey for patients to voluntarily fill in their name/ telephone number as long as the name/telephone number items are placed after the HCAHPS questions. Explanatory text must be placed before this item to state the purpose for the patient to *optionally* provide the requested information. See Use of Supplemental Questions section below for more detail.
- Hospital logos may be included on the questionnaire; however, other images and tag lines are not permitted
- It is optional to place the title "HCAHPS Survey" on the questionnaire
- The phrase "Use only blue or black ink" may be printed on the questionnaire
- The name of the hospital may be printed on the questionnaire before Question 1 and in the introduction to Question 18
  - "Please answer the questions in this survey about your stay at [HOSPITAL NAME]. Do not include any other hospital stays in your answers."
- Page numbers may be included on the questionnaire
  - This is encouraged as a guide to assist patients in responding to all pages of the questionnaire
- Color may be incorporated in the questionnaire
- The phrase "There are only a few remaining items left" before the "About You" questions may be eliminated
- Language such as one of the following may be added in the footer of the survey:
  - Continue on next page
  - Continue on reverse side
  - Turn over to continue
  - → to continue
  - Continue on back
  - Turn over

Hospitals/Survey vendors should consider incorporating the following recommendations in formatting the HCAHPS questionnaire to increase the likelihood of receiving a returned survey:

- Two-column format that is used in Appendices A through I
- Wide margins (at least 3/4 inch) so that the survey has sufficient white space to enhance its readability

Use of Supplemental Questions

Hospitals/Survey vendors may add a reasonable number of hospital-specific supplemental questions to the HCAHPS Survey, following the guidelines described below:

- Hospital-specific supplemental question(s) may be added to the HCAHPS Survey but only after all of the HCAHPS Survey questions (Questions 1-29). This approach ensures that the survey is conducted consistently across participating hospitals.
- Supplemental questions must be integrated into the HCAHPS Survey and not be a separate insert

- The mandatory transition statement must be placed in the survey immediately before the supplemental questions to indicate a transition from the HCAHPS questions to the hospital-specific supplemental question or questions (see Appendices A through I for the exact text in English, Spanish, Chinese, Russian, Vietnamese, Portuguese, German, Tagalog, and Arabic)
- Hospitals may include additional transition statements following the required transition statement. Examples of allowable additional transition statements are as follows:
  - *"Now [NAME OF HOSPITAL] would like to gather some additional detail on topics previously examined. These items use a somewhat different way of asking for your response since they are getting at a slightly different way of thinking about the topics."*
  - *"The following questions focus on additional care you may have received from [NAME OF HOSPITAL]."*

  Note: Transition statements must be submitted for review by the HCAHPS Project Team.

- In addition, if a client hospital requests that a survey vendor include supplemental questions as part of the HCAHPS Survey asking the patient to provide their name, telephone number or other contact information, the survey vendor is required to include explanatory text that describes the purpose for the information. This text must be placed before the requested information and state the purpose for the patient to *optionally* provide the requested information. It is NOT sufficient to only state that this information is optional. The following are examples of permissible explanatory text:
  - *"If you wish to be contacted by the hospital, please provide your name and telephone number. This information is not required."*
  - *"By providing your name and telephone number, you may be contacted by the hospital. This information is not required."*

Hospitals/Survey vendors must avoid hospital-specific supplemental questions that:

- pose a burden to the patient (e.g., number, length, and complexity of supplemental questions, etc.)
- may affect responses to the HCAHPS Survey
- may cause the patient to terminate the survey (e.g., items that ask about sensitive medical, health or personal topics, etc.)
- jeopardize patient confidentiality (e.g., items that ask for the patient's Social Security number, etc.)
- ask the patient to explain why he or she chose a specific response; for example, it is not acceptable to ask patients why they indicated that they would not recommend the hospital to friends and family

The number of supplemental questions added is left to the discretion of the hospital/survey vendor. The hospital/survey vendor must submit the maximum number of supplemental survey items in the Administrative Data section for each survey (see Appendix T).

- Each potential supplemental item counts as one question, whether or not the item is phrased as a sentence or as a question
- Each open-ended or free response question counts as one supplemental item

Cover Letters

Hospitals/Survey vendors may adapt the sample HCAHPS Cover Letters provided (see Appendices A through I) or compose their own cover letters. Hospitals/Survey vendors must follow the guidelines described below when altering the cover letter templates provided in this manual.

Note: Text is formatted in [UPPERCASE LETTERING] to designate a placeholder. Please populate placeholders using standard capitalization rules.

Required for the Cover Letter

- Cover letters must be in a readable font (i.e., Arial or Times New Roman) with a font size of 12-point at a minimum
- Cover letters must be printed on the hospital's (preferred) or survey vendor's letterhead and must include the signature of the hospital administrator or hospital/survey vendor project director
  - The signature must correspond with the organization on the letterhead
  - An electronic signature is permissible
- The following items must be included in the body of the cover letter:
  - Name and address of the sampled patient. "To Whom It May Concern" is not an acceptable salutation.
  - The hospital name and discharge date (it is optional to include the day of the week, e.g., Monday, with the discharge date), to make certain that the patient completes the survey based on the hospital stay associated with that particular discharge date. The term "discharged on" must be used in the cover letters.
  - The sentence stating the sponsor of the survey and length of time to complete questions 1-29 must be included verbatim: "Questions 1-29 in the survey are sponsored by the United States Department of Health and Human Services and should take about 7 minutes to complete."
  - The sentence stating that participation in the survey is voluntary and responses are kept private must be included verbatim: "Your participation is voluntary and your answers will be kept private."
  - The sentences stating the purpose of the survey and where to find hospital ratings must be included verbatim: "Your responses will help improve the quality of hospital care and help other people make more informed choices about their care. You can see current survey results and find hospital ratings on Care Compare on Medicare.gov (www.medicare.gov/care-compare)."
  - A customer support telephone number for hospitals self-administering the survey and a toll-free customer support telephone number for survey vendors. In some instances, hospitals contracting with survey vendors may want their own telephone number on the survey in addition to, or in lieu of, the survey vendor's number. In cases where the hospital has a customer support telephone number in lieu of the survey vendor, it is the responsibility of the survey vendor to monitor the hospital's customer support telephone number, at a minimum on a quarterly basis, to confirm that the hospital's customer support telephone number is operational. The survey vendor must also verify that the hospital is prepared to receive questions prior to the first mailing of the

questionnaire; the hospital answers patient questions accurately; and the hospital keeps a record of customer support inquiries about HCAHPS.

- The OMB language (Appendices A through I) must appear verbatim on either the questionnaire (preferred) or cover letter, and may appear on both, in a readable font at a minimum of 10-point
- Cover letters must **not**:
  - be attached to the survey; doing so could compromise confidentiality
  - attempt to bias, influence or encourage patients to answer HCAHPS questions in a particular way
  - imply that the hospital, its personnel or its agents will be rewarded or gain benefits if patients answer HCAHPS questions in a particular way
  - ask or imply that patients should choose certain responses; indicate that the hospital is hoping for a given response, such as a "10," "Definitely yes," or an "Always"
  - indicate that the hospital's goal is for all patients to rate them as a "10," "Definitely yes" or an "Always"
  - offer incentives of any kind for participation in the survey
  - include any content that attempts to advertise or market the hospital's mission or services
  - offer patients the opportunity to complete the survey over the telephone
  - include any promotional or marketing text

Optional for the Cover Letter

- Use of the Spanish, Chinese, Russian, Vietnamese, Portuguese, German, Tagalog, or Arabic cover letters is allowed if the hospital/survey vendor is sending a Spanish, Chinese, Russian, Vietnamese, Portuguese, German, Tagalog, or Arabic questionnaire to the patient
- Information may be added to the cover letters (in English, Spanish, Chinese, Russian, Vietnamese, Portuguese, German, Tagalog, or Arabic) that indicates that the patient may request a mail survey in English, Spanish, Chinese, Russian, Vietnamese, Portuguese, German, Tagalog, or Arabic
- Any instructions that appear on the survey may be repeated in the cover letter
- The wording indicating the purpose of the unique identifier ("You may notice a number on the survey. This number is used to let us know if you returned your survey so we don't have to send you reminders.") must be printed immediately after the survey instructions on the questionnaire (preferred) or on the cover letter, and may appear on both
- Hospital's/Survey vendor's return address may be included on the cover letter to make sure the questionnaire is returned to the correct address in the event that the enclosed return envelope is misplaced by the patient
- If the hospital's/survey vendor's name is included in the return address, then the hospital's/survey vendor's business name must be used, not an alias or tag line
- A reply-by date may be added to the **follow-up cover letter**. It is recommended that the reply-by date be calculated as 35 days from the initial mailing to make sure the survey is returned before the data collection closes.
  - There are two options for adding the reply-by date to the **follow-up cover letter** in a readable font size at a minimum of 12-point. (See Appendices A through I for the exact text and placement.)

Required for the Envelopes

- The outgoing envelope **must** be printed with the hospital's/survey vendor's address as the return address
- A self-addressed, stamped business return envelope must be enclosed in the survey envelope along with the cover letter and questionnaire
- All envelopes must be in a readable font (i.e., Arial or Times New Roman) with a font size of 10-point at a minimum

Optional for the Envelopes

- The outgoing envelope may be printed with the banner, "Important - Open Immediately."
  - Other messages, marketing or promotional text such as, "Survey Enclosed," "Important Information from the Centers for Medicare & Medicaid Services Enclosed," or "We always strive to provide excellent service" on either side (front or back) is **not** permitted
- The outgoing envelope may be printed with the hospital or survey vendor logo, or both

  Note: The return envelope may not include marketing or promotional text.

- Hospitals/Survey vendors may use window envelopes as a quality control measure to ensure that each patient's survey package is mailed to the address of record for that patient

Note: Any variations to the survey materials, other than the optional items listed above, will require an approved Exception Request prior to survey administration (see the Exception Request/Discrepancy Report Processes chapter).

Mailing of Materials

Hospitals/Survey vendors must mail materials following the guidelines described below:

- Attempts must be made to contact every eligible patient drawn into the sample, whether or not they have a complete mailing address. Hospitals/Survey vendors must use commercial software or other means to update addresses provided by the hospital for sampled patients. (Mailings returned as undeliverable and for which no updated address is available must be coded "9 – Non-response: Bad address.") Hospitals/Survey vendors must retain a record of attempts made to acquire missing address data. All materials relevant to survey administration are subject to review.
  - Hospitals/Survey vendors have flexibility in not sending mail surveys to patients without mailing addresses, such as the homeless. However, hospitals/survey vendors must first make every reasonable attempt to obtain a patient's address including re-contacting the hospital client to inquire about an address update for patients with no mailing address. Attempts to obtain the patient's address must be documented.

  Note: It is strongly recommended that hospitals/survey vendors check the accuracy of sampled patients' contact information prior to survey fielding.

- The HCAHPS Survey cannot be administered without both a cover letter and self-addressed, stamped business return envelope

- All mailings must be sent to each patient by name, and to the patient's most current address listed in the hospital record or retrieved by other means
- For patients who request to be sent an additional questionnaire (either after the first or second mailing) hospitals/survey vendors must follow the guidelines below:
  - It is acceptable to mail a replacement survey at the patient's request within the 42 calendar day survey administration period; however, the survey administration timeline does not restart
  - After 42 calendar days from the first mailing, a replacement HCAHPS Survey must NOT be mailed-out, as the data collection timeframe of 42 calendar days after the first mailing has expired

Hospitals/Survey vendors are **not** allowed to:

- show or provide the HCAHPS Survey or cover letters to patients prior to the administration of the survey, including while the patient is still in the hospital
- mail any pre-notification letters or postcards after discharge to inform patients about the HCAHPS Survey

Note: In instances where returned mail surveys have all missing responses (i.e., without any questions answered – blank questionnaires), send a second survey to the patient if the data collection time period has not expired. If the second mailing is returned with all missing responses, then code the "Final Survey Status" as "7 – Non-response: Refusal." If the second mailing is not returned, then code the "Final Survey Status" as "8 – Non-response: Non-response after maximum attempts."

Note: When the first survey is not returned, the second survey is mailed and subsequently the second mailed survey is returned with all missing responses, then code the "Final Survey Status" as "7 – Non-response: Refusal."

It is strongly recommended that all mailings be sent with first class postage or indicia to ensure delivery in a timely manner and to maximize response rates, as first class mail is more likely to be opened.

Data Receipt and Retention

Hospitals/Survey vendors may use key-entry or scanning to record returned survey data in their data collection systems. Returned questionnaires must be tracked by date of receipt as well as key-entered or scanned in a timely manner. If a patient returns two survey questionnaires, the hospital/survey vendor must use only the first HCAHPS Survey received.

Hospitals/Survey vendors must maintain a crosswalk of their interim disposition codes to the HCAHPS Final Survey Status codes and include the crosswalk in the hospital's/survey vendor's QAP.

Hospitals/Survey vendors must record and submit lag time for **all** HCAHPS "Final Survey Status" codes. Additionally, hospitals/survey vendors must include the "Number Survey Attempts – Mail" field in the Administrative Data Record. This field is required when "Survey Mode" in the Header Record is "1 – Mail Only." Hospitals/Survey vendors must document the "Number Survey Attempts – Mail" for the mail wave in which the "Final Survey Status" is determined. For example,

if a survey is returned from the first mailing then the "Number of Survey Attempts – Mail" would be coded "1 – First wave mailing." When a survey is returned from the second mailing, then the "Number Survey Attempts – Mail" would be coded "2 – Second wave mailing." Please see the *Data Specifications and Coding* chapter for more information regarding the calculation of lag time and coding the "Number Survey Attempts – Mail" field.

Hospitals/Survey vendors must follow the data entry decision rules and data storage requirements described below.

Key-entry

Hospitals'/Survey vendors' key-entry processes must incorporate the following features:

- *Unique record verification system*: The survey management system performs a check to verify that the patient response data have not already been entered in the survey management system
- *Valid range checks*: The data entry system identifies responses/entries that are invalid or out-of-range
- *Validation*: Hospitals/Survey vendors must have a plan and process in place to verify the accuracy of key-entered data. Hospitals/Survey vendors must confirm that key-entered data accurately capture the responses on the original survey. A different staff member (preferably the data entry supervisor) must reconcile any discrepancies. It is strongly suggested that hospitals using the HCAHPS Data Form, formerly the Online Data Entry Tool, download Excel spreadsheets containing entered data and compare entered data to the original returned surveys. This validation process must be performed by someone other than the person doing data entry via the HCAHPS Data Form.

Scanning

Hospitals'/Survey vendors' scanning software must accommodate the following:

- *Unique record verification system*: The survey management system performs a check to confirm that the patient's survey responses have not already been entered in the survey management system
- *Valid range checks*: The software identifies invalid or out-of-range responses
- *Validation*: Hospitals/Survey vendors must have a plan and process in place to confirm the accuracy of scanned data. Hospitals/Survey vendors must make certain that scanned data accurately capture the responses on the original survey. A staff member must reconcile any responses not recognized by the scanning software.

Decision Rules

Whether employing scanning or key-entry of mail questionnaires, hospitals/survey vendors must use the following decision rules to resolve common ambiguous situations. Hospitals/Survey vendors must follow these guidelines to ensure standardization of data entry across hospitals.

- If a mark falls between two response options but is obviously closer to one than the other, then select the choice to which the mark is closest
- If a mark falls equidistant between two response options, then code the value for the item as "M – Missing/Don't Know"
- If a mark is missing, code the value for the item as "M – Missing/Don't Know." Hospitals/Survey vendors must not impute a response.

- When more than one response option is marked, code the value as "M – Missing/Don't Know" (except for survey Question 28, *"What is your race? Please choose one or more."*)

  Note: In instances where there are multiple marks, ***but*** *the patient's intent is clear, hospitals/survey vendors should code the survey with the patient's* ***clearly identified*** *intended response.*

Data Storage

Hospitals/Survey vendors must store returned paper questionnaires or scanned images of paper questionnaires in a secure and environmentally controlled location for a minimum of three years. Paper questionnaires or scanned images must be easily retrievable. Hospitals/Survey vendors must destroy HCAHPS-related data files, including paper copies or scanned images of the questionnaires and electronic data files in a secure and environmentally safe location. Obtain a certificate of the destruction of data.

Quality Control Guidelines

Hospitals/Survey vendors are responsible for the quality of work performed by any staff members and subcontractor(s), such as printers or fulfillment houses. Hospitals/Survey vendors must conduct **on-site** verification of printing and mailing processes (strongly recommended on an annual basis, at a minimum), regardless of whether they are using organizational staff or subcontractor(s) to perform this work.

Note: Mail survey administration activities must not be conducted from a residence or non-business location unless an approved Exception Request is in place.

To avoid mail administration errors and to make certain that questionnaires are delivered as required, hospitals/survey vendors must:

- perform interval checking of at least 10 percent (on an ongoing and continuous basis throughout the survey administration period) of all printed mailing pieces for:
  - fading, smearing and misalignment of printed materials
  - appropriate survey contents, accurate address information and proper postage on the survey sample packet
  - assurance that all printed materials in a mailing envelope have the same unique identifier
  - inclusion of all eligible sampled patients in the sample mailing for that month
- include seeded mailings in mail-outs at a minimum on a quarterly basis
  - Seeded mailings are sent to designated hospital/survey vendor HCAHPS project staff (other than the staff producing the materials) to check for timeliness of delivery, accuracy of addresses, content of the mailing, and the quality of the printed materials
  - Seeded mailings must be integrated into the hospital's batched survey mailings, not sent as a stand-alone mailing to HCAHPS project staff
- perform address updates for missing or incorrect information
  - Attempts must be made to update address information to confirm accuracy and correct formatting
  - In addition to working with client hospitals to obtain the most current patient contact information, hospitals/survey vendors must employ other methods, such as the National

Change of Address (NCOA) and the United States Postal Service (USPS) Coding Accuracy Support System (CASS) Certified Zip+4 software. Other means are also available to update addresses for accurate mailings, such as:

- Commercial software
- Internet search engines

*Note: If automated processes are being used to perform interval checks, then checks of the system or equipment must be performed on an ongoing and continuous basis throughout the survey administration period. Hospitals/Survey vendors **must** retain a record of all quality control activities and document these activities in the hospital's/survey vendor's QAP. All materials relevant to survey administration are subject to review.*