NATIONAL QUALITY FORUM

MEASURE WORKSHEET

This document summarizes the evaluation of the measure as it progresses through NQF's Consensus Development Process (CDP). The information submitted by measure developers/stewards is included after the Brief Measure Information, Preliminary Analysis, and Pre-meeting Public and Member Comments sections.

To navigate the links in the worksheet: Click to go to the link. ALT + LEFT ARROW to return

Purple text represents the responses from measure developers.

Red text denotes developer information that has changed since the last measure evaluation review.

Brief Measure Information

NQF #: 0517

Corresponding Measures:

De.2. Measure Title: CAHPS® Home Health Care Survey (experience with care) NQF#: 0517

Co.1.1. Measure Steward: Centers for Medicare & Medicaid Services

De.3. Brief Description of Measure: The Consumer Assessment of Healthcare Providers and Systems (CAHPS®) Home Health Care Survey, also referred as the "CAHPS Home Health Care Survey" or "Home Health CAHPS" or "HHCAHPS" is a standardized survey instrument and data collection methodology for measuring home health patients 'perspectives on their home health care in Medicare-certified home health care agencies. AHRQ and CMS participated in the development of the Home Health CAHPS to measure the experiences of those receiving home health care with these three goals in mind:

(1) To produce comparable data on patients´ perspectives on care that allow objective and meaningful comparisons between home health agencies on domains that are important to consumers,

(2) To create incentives for agencies to improve their quality of care through public reporting of survey results, and

(3) To enhance public accountability in health care by increasing the transparency of the quality of care provided in return for public investment.

1b.1. Developer Rationale: It is statutorily mandated to publicly report the HHCAHPS survey data and the Home Health Agencies must collect and publicly report HHCAHPS data for their full payment of the annual payment update.

As part of the US Department of Health and Human Services (DHHS) Transparency Initiative, CMS implemented a process to measure and report patient experiences with health care providers using standardized surveys developed by the CAHPS grantees with input from the public, stakeholders, Medicare beneficiaries, family and friends of beneficiaries, and providers, in accordance to the development processes that are part of the requirements to receive the CAHPS survey trademark. The HHCAHPS is part of a family of CAHPS surveys that asks patients to report on and rate their experiences with health care. The HHCAHPS survey presents home health care patients with a set of standardized questions about their home health care providers and about the quality of their home health care. Prior to HHCAHPS, there was no national standard for collecting information about patient experiences that would enable valid comparisons across all home health agencies. The HHCAHPS Survey was designed to measure and assess the experiences of those persons receiving home health care with these three goals in mind, (1) to produce comparable data on patient´ perspectives of care that allow objective

and meaningful comparisons between HHAs on domains that are important to consumers, (2) to create incentives for agencies to improve their quality of care through public reporting of survey results, and (3) to hold home health care providers accountable for the care that they provide.

S.4. Numerator Statement: The numerator statement is that each measure encompasses the responses for all questions that make up the particular measure. Missing data for individual survey questions are not included in the calculations. Only data from a completed survey are used in the calculations. The measures scores averages the proportion of those responding to each answer choice in all questions. Each global rating is scored based on the number of the respondents in the distribution of top responses, such as the percentage of patients rating a home health agency with a 9 or a 10, where 10 is the highest quality responses on a scale from 0 to 10.see S2.

S.6. Denominator Statement: For each of the proportions described in S.5 the denominator is the number of respondents who replied to the question.

S.8. Denominator Exclusions: Numerator and Denominator Exclusions:

- Patients under 18 years of age at any time during their stay are excluded.
- Patients who received fewer than 2 visits from home health agency personnel during a 2-month look-back period are excluded. The 2-month look-back period is defined as the 2-months prior to and including the last day in the sample month.
- Patients have been previously selected for an HHCAHPS sample during any month in the current quarter, or during the last 5 months, are excluded.
- Patients who are currently receiving hospice, or are discharged to hospice, are excluded.
- All routine maternity patients are excluded.
- All "No publicity" status patients are excluded.
- Patients receiving only non-skilled care are excluded.
- Patients who reside in a state where their health condition exclude them from surveys.
- Patients who are decedents at the time of the sample are excluded.

De.1. Measure Type: Outcome: PRO-PM

S.17. Data Source: Instrument-Based Data

S.20. Level of Analysis: Facility

IF Endorsement Maintenance – Original Endorsement Date: Mar 31, 2009 **Most Recent Endorsement Date:** Jan 07, 2015

IF this measure is included in a composite, NQF Composite#/title:

IF this measure is paired/grouped, NQF#/title:

De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results? N/A

Preliminary Analysis: Maintenance of Endorsement

To maintain NQF endorsement endorsed measures are evaluated periodically to ensure that the measures still meets the NQF endorsement criteria ("maintenance"). The emphasis for maintaining endorsement is focused on how effective the measure is for promoting improvements in quality. Endorsed measures should have some experience from the field to inform the evaluation. The emphasis for maintaining endorsement is noted for each criterion.

Criteria 1: Importance to Measure and Report

1a. Evidence

Maintenance measures – less emphasis on evidence unless there is new information or change in evidence since the prior evaluation.

1a. Evidence. The evidence requirements for a health outcome measure include providing empirical data that demonstrate a relationship between the outcome and at least one healthcare structure, process, intervention, or service; if these data not available, data demonstrating wide variation in performance, assuming the data are from a robust number of providers and results are not subject to systematic bias. For measures derived from patient report, evidence also should demonstrate that the target population values the measured outcome, process, or structure and finds it meaningful.

Evidence Summary

- Brief background: This is a patient-reported outcome-based performance measure (PRO-PM) that uses survey data from patients ages 18+ measuring home health patients' perspectives on their home health care in Medicare-certified home health care agencies.
- Developers offer a depiction of a logic model connecting patient reported experience of care with structures, clinical quality, patient behavior and outcomes. Developers discuss the logic of each of the five domains.
- Developers offer evidence of meaningfulness and value:
    - Results are presented of focus groups and interviews with patients in home health settings specific to HHCAHPS
    - CMS is consequentially looking at alternative wording and question order, as well as the removal and addition of some items
- Developer offers no empirical data demonstrating the ability to influence HHCAHPS scores through a process, structure, intervention or service.
- Instead, the developer demonstrates the performance gap, and offers a series of potential interventions that low performing HHAs could potential perform to improve their scores

Changes to evidence from last review

☐ **The developer attests that there have been no changes in the evidence since the measure was last evaluated.**

☒ **The developer provided updated evidence for this measure:**

Updates:

- Developer provided an updated logic model and diagram depicting the connections between clinical structures, clinical quality, patient behavior, patient outcomes, and patient reported experience of care
- Developer explains the connection between the logic model and the individual domains of care of patients, communications between patients and providers, special care issues, overall rating of care by the provider, and "Would you recommend…?"
- Developer offered a description of the value and meaning of the measure to patients
    - Description of 2016-17 focus groups with patients and whether the HHCAHPS Survey was meaningful and valuable to them
    - This will be used to improve phraseology of questions, reordering questions, and possibly dropping or adding additional questions
    - Developer describes the areas of priority for patients

- Developer offered gap analysis and anecdotal evidence to suggest that there are processes, structures, interventions or services that could be deployed to improve performance.
    - Developer notes that "studies in other settings have found that patient reports about care are moderately related to HEDIS (Healthcare Effectiveness Data and Information Set) clinical measures and predictive of clinical outcomes"
    - Developer suggests that providing better care for patients would improve performance on the "Care for Patients" domain; offering better communication would lead to better performance on the "Communications…" domain
    - Developer points to the interquartile range to suggest that some facilities are doing different things to improve their scores.

Question for the Committee:

- *Is there at least one thing that the provider can do to achieve a change in the measure results?*
- *Does the target population value the measured outcome and find it meaningful?*

Guidance from the Evidence Algorithm

Measure assesses outcome (box 1) YES -> relationship between outcome and at least one healthcare action (box 2) YES -> PASS

Preliminary rating for evidence: ☒ Pass ☐ No Pass

1b. Gap in Care/Opportunity for Improvement and 1b. Disparities

Maintenance measures – increased emphasis on gap and variation

1b. Performance Gap. The performance gap requirements include demonstrating quality problems and opportunity for improvement.

- Developer offers in the Appendix Tables 1 and 2 to present agency-level descriptive statistics (means, standard deviations, quartiles, etc.) for 8,694 agencies that submitted data to the HHCAHPS data center for the 2017 survey year.
- Means across the 5 domains range from 77.4 – 87.8% of respondents giving a top box score, with SDs ranging from 7.0 – 12.87

Disparities

- Minority groups had lower ratings on two of three HHCAHPS measures.
- Results were mixed for the specific care issues measure.
- For both Care Coordination and Patient-Centered Care measures in the Post-Acute Setting of Home Health Care, AHRQ has found disparities with worse care being reported by African Americans, Asian Americans, Native American Indians, and Hispanic Americans.
- Although disparities in home health care have decreased from 2012 to 2017, the disparities compared with Whites is statistically significant.

Questions for the Committee:

- Is there a gap in care that warrants a national performance measure?
- Are you aware of evidence that disparities exist in this area of healthcare?

Preliminary rating for opportunity for improvement: ☐ High ☒ Moderate ☐ Low ☐ Insufficient

Committee Pre-evaluation Comments:
Criteria 1: Importance to Measure and Report (including 1a, 1b, 1c)

1a. Evidence: *For all measures (structure, process, outcome, patient-reported structure/process), empirical data are required. How does the evidence relate to the specific structure, process, or outcome being measured? Does it apply directly or is it tangential? How does the structure, process, or outcome relate to desired outcomes? For maintenance measures –are you aware of any new studies/information that changes the evidence base for this measure that has not been cited in the submission? For measures derived from a patient report: Measures derived from a patient report must demonstrate that the target population values the measured outcome, process, or structure.*

- The evidence provided by the developer applies to the outcome being measured. The developer has provided sufficient evidence of the importance of the measures to the target populations as well as to CMS for level-setting expectations from providers. Data is not provided on the method(s) for performance improvement that providers could use to improve their scores, nor has it shown that the tool has created an improvement in scores, in general, for Home Health Agencies. Some missing data would be helpful in the interpretation of Table 2 to be discussed later.
- Maintenance measure, a PRO that uses survey data from patients ages 18+ measuring home health patients' perspectives on their care from Medicare-certified home health care agencies. Logic model connecting patient reported experience of care with structures, clinical quality, patient behavior and outcomes included and linked to the five domains; no empirical data offered. Updated results are presented of focus groups and interviews with patients in home health settings specific to HHCAHPS. CMS is consequentially looking at alternative wording and question order, as well as the removal and addition of some items; additional detail here would be helpful. Offered gap analysis and anecdotal evidence to suggest that there are processes, structures, interventions or services that could be deployed to improve performance. Any additional studies on agency performance improvements? Can developer share detailed from the focus groups; any relevant changes projected? PASS

1b. Performance Gap: *Was current performance data on the measure provided? How does it demonstrate a gap in care (variability or overall less than optimal performance) to warrant a national performance measure? Disparities: Was data on the measure by population subgroups provided? How does it demonstrate disparities in the care?*

- The developer provided sufficient evidence to establish disparities in care between a number of sub-populations, however, the demographics provided do not speak to sub-populations identified. There is no demographic information provided regarding racial and ethnic groups. The ethnically sensitive category of language shows little variability with 97% of those who complete surveys being English-speaking. In order to truly address the disparities in care noted in the discussion and evidence provided, the demographic data for those sub-populations should be presented for evaluation. Regarding language, a 3% capture of non-English speaking is not reflective of the nation's populations. (https://www.washingtonexaminer.com/record-632-million-non-english-speaking-residents-surge-in-arabic-chinese-spanish). In addition, gender-based representation is also not in line with national statistics, which are close to 50/50 (https://www.kff.org/other/state-indicator/distribution-by-gender/?currentTimeframe=0&selectedRows=%7B%22wrapups%22:%7B%22united-states%22:%7B%7D%7D%7D&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D). No discussion is provided by the developer with regards to how they can improve the demographics to better reflect a more representative sample of the target sub-populations, especially those identified in the disparity evidence. Finally, Table 2 does not include sample sizes by decile. In most composites and global items there is an odd pattern in the standard deviations in that they are either zero or .50. This is suggestive of a gap in responses that would reduce the sensitivity of the tool to identify differences between agencies other than those that score highly or score poorly.
- The performance gap requirements include demonstrating quality problems and opportunity for improvement. Data presented for CY17. Means, for the 5 domains, range from 77.4 – 87.8% of respondents giving a top box score, with SDs ranging from 7.0 – 12.87. Minority groups had lower ratings

on two of three HHCAHPS measures. Non-Hispanic Asians reported the greatest disparities. Results were mixed for the specific care issues measure. Rating – MODERATE

Criteria 2: Scientific Acceptability of Measure Properties

2a. Reliability: Specifications **and** Testing

2b. Validity: Testing**;** Exclusions**;** Risk-Adjustment**;** Meaningful Differences**;** Comparability**;** Missing Data

Reliability

2a1. Specifications requires the measure, as specified, to produce consistent (reliable) and credible (valid) results about the quality of care when implemented. For maintenance measures – no change in emphasis – specifications should be evaluated the same as with new measures.

2a2. Reliability testing demonstrates if the measure data elements are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period and/or that the measure score is precise enough to distinguish differences in performance across providers. For maintenance measures – less emphasis if no new testing data provided.

Validity

2b2. Validity testing should demonstrate the measure data elements are correct and/or the measure score correctly reflects the quality of care provided, adequately identifying differences in quality. For maintenance measures – less emphasis if no new testing data provided.

2b2-2b6. Potential threats to validity should be assessed/addressed.

Complex measure evaluated by Scientific Methods Panel? ☒ **Yes** ☐ **No**

Evaluators: NQF Scientific Methods Panel

Methods Panel Review (Combined)

Methods Panel Evaluation Summary:

This measure was reviewed by the Scientific Methods Panel and discussed on the call. A summary of the measure and the Panel discussion is provided below.

- **Reliability:** 3 high, 2 moderate, 0 low and 1 insufficient → measure passes with high reliability rating
  - Testing included score-level and data element testing
  - SMP members noted that "Cronbach alpha was used to evaluate the reliability of the composite measures and an inter-class reliability coefficient was calculated to determine whether variation in domain scores across the agencies is due to true variation versus chance or measurement error. The latter approach is acceptable for evaluating reliability (precision) of agency scores."
  - Panel members noted that "the agency level reliability estimates were acceptable for each measure, as agency-level reliability exceeded 0.70 for all HHCAHPS measures."
    - Internal consistency (alphas) in the 0.70-0.72 range.
    - ICR values:
      - Measure 1: Care of Patients (ICR=0.84)
      - Measure 2: Communication between Providers and Patients (ICR=0.79)
      - Measure 3: Specific Care Issues (ICR=0.85)
      - Measure 4: Would Recommend Agency to Family and Friends (ICR=0.81)
      - Measure 5: Overall Rating of Care (ICR=0.79)

        - SMP noted that "ICC values were good with sample sizes above 50 (0.70-0.98), but marginal for sample sizes below 50 (0.52-0.61)"
    - Note to developer from SMP: "May need to specify agencies with >50 responses and complete response information in >50% (although those below 50% should be called out)."
    - Note: measure developer only performed data-element testing (using Cronbach's alpha) for multi-item domains. Global scores, included in measures 3 and 4, did not include data-element reliability testing.
- **Validity:** 1 high, 4 moderate, 0 low and 1 insufficient → measure passes with moderate validity rating
    - Testing included score-level and data element testing
    - SMP describes the approach as follows: "The developer conducted a confirmatory factor analysis, looked at correlations between each survey item with composite measures and examined correlations between the HHCAHPS multi-item measures (Care of Patients, Communication between Providers and Patients, and Specific Care Issues), and with each of the two global measures (Overall Rating of Care from the Agency, and Would Recommend the Agency to Family or Friends). The developers focused on construct validity using confirmatory factor analysis and correlational analyses. While this approach is unorthodox for NQF validity testing, it is reasonable to perform this approach for patient experience measures."
    - SMP synopsis of results: "The results showed that the 3-factor model fit well with strong factor loadings. Survey items correlated strongly with relevant composite measures and the five HHCAHPS measures were positively correlated with the four agency-level satisfaction measures. These findings indicate the survey items and composites are closely related. The results supported the construct validity for the measures."
    - Note to developer: "Some concern over possible agency differences in proportions of patients who are excluded, unless that potential bias can be addressed in the quality measure. The following exclusions could cause bias or concern: Patients who died during the sample month; Patients who received fewer than 2 visits from home health agency personnel during a 2-month look-back period; those who are currently receiving hospice or are discharged to hospice. Can these proportions be reported and reconciled with the measure?"
    - Note to developer on risk adjustment: "Social factors associated with survey responses are appropriately included in the use of diagnoses of schizophrenia or dementia/cerebral degeneration as risk adjustors in adjustment model. It should be noted that the risk adjustment model seems to have relatively little explanatory power (R-squared values are very small), but it's not clear how we can trust responses from patients with dementia or schizophrenia. What could have been done to create a model with greater explanatory power?"

Questions for the Committee regarding reliability:

- Do you have any concerns that the measure can be consistently implemented (i.e., are measure specifications adequate)?
- The SMP is satisfied with the reliability testing for the measure. Does the Committee think there is a need to discuss and/or vote on reliability?

Questions for the Committee regarding validity:

- Do you have any concerns regarding the validity of the measure (e.g., exclusions, risk-adjustment approach, etc.)?
- The SMP is satisfied with the validity analyses for the measure. Does the Committee think there is a need to discuss and/or vote on validity?

Preliminary rating for reliability:	☒ **High**	☐ **Moderate**	☐ **Low**	☐ **Insufficient**
Preliminary rating for validity:	☐ **High**	☒ **Moderate**	☐ **Low**	☐ **Insufficient**

Measure Number: 0517

Measure Title: CAHPS® Home Health Care Consumer Assessment of Healthcare Providers and Systems Survey (HHCAHPS)

Type of measure:

☐☐ **Process** ☐ **Process: Appropriate Use** ☐ **Structure** ☐ **Efficiency** ☐ **Cost/Resource Use**

☐☐ **Outcome** ☒☐ **Outcome: PRO-PM** ☐ **Outcome: Intermediate Clinical Outcome** ☐ **Composite**

Data Source:

☐ **Claims** ☐ **Electronic Health Data** ☐ **Electronic Health Records** ☐ **Management Data**

☐ **Assessment Data** ☐ **Paper Medical Records** ☐☒ **Instrument-Based Data** ☐ **Registry Data**

☐ **Enrollment Data** ☐☐ **Other**HHCAHPS Survey (Mail or Telephone)

Level of Analysis:

☐ **Clinician: Group/Practice** ☐ **Clinician: Individual** ☒ **Facility** ☐ **Health Plan**

☐ **Population: Community, County or City** ☐ **Population: Regional and State**

☐ **Integrated Delivery System** ☐ **Other**

Measure is:

☐ **New** ☒ **Previously endorsed (**NOTE: Empirical validity testing is expected at time of maintenance review; if not possible, justification is required.)

MP#2: 5 measures: Two overall ratings (Measures 4-5) and three multi-item scales (Measures 1-3; Care of Patients, Communication Between Providers and Patients, and Specific Care Issues). Following standard CAHPS practice, items within a measure are first individually patient-mix adjusted and then are weighted so as to give each survey item equal influence within the measure.

RELIABILITY: SPECIFICATIONS

1. **Are submitted specifications precise, unambiguous, and complete so that they can be consistently implemented?** ☒ **Yes** ☐ **No**

   Submission document: "MIF_xxxx" document, items S.1-S.22

   NOTE*: NQF staff will conduct a separate, more technical, check of eCQM specifications, value sets, logic, and feasibility, so no need to consider these in your evaluation.*

2. **Briefly summarize any concerns about the measure specifications.**

MP#4: No concerns

MP#6: None

MP#1: No concerns with the specifications.

RELIABILITY: TESTING

Submission document: "MIF_xxxx" document for specifications, testing attachment questions 1.1-1.4 and section 2a2

3. **Reliability testing level** ☒ **Measure score** ☐☒ **Data element** ☐ **Neither**

   MP#3: Although the developer didn't check the "data element" box on the testing form.

4. **Reliability testing was conducted with the data source and level of analysis indicated for this measure**
   ☐☒ **Yes** ☐ **No**

5. If score-level and/or data element reliability testing was NOT conducted or if the methods used were NOT appropriate, was **empirical <u>VALIDITY</u> testing** of <u>patient-level data</u> conducted?

   ☒☐ **Yes** ☐ **No** NA

6. **Assess the method(s) used for reliability testing**

   MP#6: Standardized Cronbach's alphas were computed to determine internal consistency reliability for each multi-item measure and inter-class reliability (ICR) to determine how much of the variation in domain scores across the agencies is due to true variation versus chance or measurement error.

   Submission document: Testing attachment, section 2a2.2

   MP#4: Methods used are appropriate.

   MP#3: Data element reliability tests for three multi-item measures were based on Cronbach's alphas at the respondent level, however, multiple items were not treated as a scale in terms of measure score calculation. Instead a summary score for each survey item was calculated first for each item each facility and then item-specific facility scores were averaged to arrive at an overall measure score for each facility. Therefore, Cronbach's alphas at the respondent-level do not provide the necessary information.

   Measure score reliability was appropriately assessed using intraclass correlation coefficient.

   MP#1: Cronbach alpha was used to evaluate the reliability of the composite measures and an inter-class reliability coefficient was calculated to determine whether variation in domain scores across the agencies is due to true variation versus chance or measurement error. The latter approach is acceptable for evaluating reliability (precision) of agency scores.

   MP#5: The methods used for reliability testing were generally acceptable, using standard and well-accepted methods, at both data element and measure score levels.

7. **Assess the results of reliability testing**

   Submission document: Testing attachment, section 2a2.3

   MP#4: Moderate levels of reliability at the element level and the score level.

   MP#5: The results of reliability results for all 5 measures testing were acceptable.

   MP#1: The agency level reliability estimates were acceptable for each measure, as agency-level reliability exceeded 0.70 for all HHCAHPS measures.

   MP#3: Measure score reliability results for all 5 measures were acceptable. However, for three measures that consist of multiple items, testing method for data element reliability was not appropriate.

   MP#2:

   a. Internal consistency (alphas) are acceptable, in the 0.70-0.72 range.

   b. ICR values very solid:

   Measure 1: Care of Patients (ICR=0.84)

   Measure 2: Communication between Providers and Patients (ICR=0.79)

   Measure 3: Specific Care Issues (ICR=0.85)

   Measure 4: Would Recommend Agency to Family and Friends (ICR=0.81)

   Measure 5: Overall Rating of Care (ICR=0.79)

   ICC values were good with sample sizes above 50 (0.70-0.98), but marginal for sample sizes below 50 (0.52-0.61)

c. However, this is an older population (30% or more over age 85) with significant limitations on providing accurate/reliable self-report. non-professional proxies are allowed, but responses not likely to link to those of patients.

MP#6: Site-level reliability exceeded 0.70 for all HHCAHPS measures that consist of multiple items, testing method for data element reliability was not appropriate. and ICC indicated good to excellent reliability when there are 50 or more respondents per agency.

8. Was the method described and appropriate for assessing the proportion of variability due to real differences among measured entities? NOTE: If multiple methods used, at least one must be appropriate.

   Submission document: Testing attachment, section 2a2.2

   ☒ **Yes**

   ☐ **No**

   ☐ **Not applicable** (score-level testing was not performed)

9. Was the method described and appropriate for assessing the reliability of ALL critical data elements?

   Submission document: Testing attachment, section 2a2.2

   ☐☒ **Yes**

   ☒☐ **No**

   ☐ **Not applicable** (data element testing was not performed)

10. **OVERALL RATING OF RELIABILITY** (taking into account precision of specifications and all testing results):

    ☐☒ **High** (NOTE: Can be HIGH only if score-level testing has been conducted)

    ☒☐ **Moderate** (NOTE: Moderate is the highest eligible rating if score-level testing has not been conducted)

    ☐ **Low** (NOTE: Should rate LOW if you believe specifications are NOT precise, unambiguous, and complete or if testing methods/results are not adequate)

    ☒☐ **Insufficient** (NOTE: Should rate INSUFFICIENT if you believe you do not have the information you need to make a rating decision)

11. **Briefly explain rationale for the rating of OVERALL RATING OF RELIABILITY and any concerns you may have with the approach to demonstrating reliability.**

    MP#3: Based on NQF guideline, reliably testing at the data element level is required for instrument-based measures, the reported data element reliability testing is not consistent with the measures (multiple items) as specified.

    MP#2: May need to specify agencies with >50 responses and complete response information in >50% (although those below 50% should be called out).

    MP#1: Based on the agency-level reliability estimates, these measures demonstrated a high level of precision at the agency-level.

    MP#6: No concerns, Cronbach's Alpha and ICC demonstrated acceptable reliability

    MP#5: See response to item 7 above.

    MP#4: Based on the testing results.

VALIDITY: ASSESSMENT OF THREATS TO VALIDITY

12. **Please describe any concerns you have with measure exclusions.**

    MP#3: No

MP#2: Some concern over possible agency differences in proportions of patients who are excluded, unless that potential bias can be addressed in the quality measure. The following exclusions could cause bias or concern: Patients who died during the sample month; Patients who received fewer than 2 visits from home health agency personnel during a 2-month look-back period; those who are currently receiving hospice or are discharged to hospice. Can these proportions be reported and reconciled with the measure?

MP#6: No exclusions

Submission document: Testing attachment, section 2b2.

MP#4: No concerns with exclusions.

MP#1: N/A

MP#5: None

13. **Please describe any concerns you have regarding the ability to identify meaningful differences in performance.**

MP#3: No concern

MP#6: None

Submission document: Testing attachment, section 2b4.

MP#4: None

MP#1: None.

MP#5: The developers find that a substantial number of sites are either significantly above or below the national mean in scores on essentially all the measures derived from this survey. In this particular version of CAHPS, there was an effort to identify a "minimally important difference" by linking each specific measure to an overall rating of the agency.

14. **Please describe any concerns you have regarding comparability of results if multiple data sources or methods are specified.**
MP#2: Concern with patient versus proxy reporting

Submission document: Testing attachment, section 2b5.
MP#4: None
MP#5: N/A

15. **Please describe any concerns you have regarding missing data.**

MP#3: No concern

MP#6: Agree with submitters that the patient-mix adjustment model accounted for any bias in missing survey responses and does not warrant further investigation

MP#2: Concerned that the nature of the population, and the requirement to obtain self-reported experience, will result in missing data levels that will compromise agency comparisons, especially if agencies have to rely on proxy completion.

Submission document: Testing attachment, section 2b6.

MP#4: None

MP#5: None.

16. **Risk Adjustment**

16a. **Risk-adjustment method** ☐ **None** ☒ **Statistical model** Patient mix adjustment ☐ **Stratification**

16b. **If not risk-adjusted, is this supported by either a conceptual rationale or empirical analyses?**

☒☐ Yes ☐ No ☐☒ Not applicable

16c. **Social risk adjustment:**

16c.1 Are social risk factors included in risk model? ☒ Yes ☐ No ☐ Not applicable

16c.2 Conceptual rationale for social risk factors included? ☒ Yes ☐ No

16c.3 Is there a conceptual relationship between potential social risk factor variables and the measure focus? ☒ Yes ☐ No

16d.**Risk adjustment summary:**

16d.1 All of the risk-adjustment variables present at the start of care? ☒ Yes ☐ No

16d.2 If factors not present at the start of care, do you agree with the rationale provided for inclusion? ☐☒ Yes ☐ No NA

16d.3 Is the risk adjustment approach appropriately developed and assessed? ☒ Yes ☐ No

16d.4 Do analyses indicate acceptable results (e.g., acceptable discrimination and calibration) ☒ Yes ☐ No

16d.5.Appropriate risk-adjustment strategy included in the measure? ☐☒ Yes ☐ No

16e**. Assess the risk-adjustment approach**

MP#6: Robust patient mix adjustment model addresses critical aspects of risk adjustment for the population

MP#4: Based on CAHPS risk adjustment model. No concerns.

MP#1: Risk adjustment approach is acceptable.

MP#3: Risk adjustment approach was in general appropriate. The only concern is with the use of diagnoses of schizophrenia or dementia/cerebral degeneration as risk adjustors. It is not clear how we can trust responses from patients with dementia or schizophrenia.

MP#2: The only concern is patient mix adjustment factors were derived from identified patient characteristics that have previously been determined to impact response tendencies. Data presented were consistent with expectations.

MP#5: The approach is generally acceptable**.** Social factors associated with survey responses are appropriately included in the adjustment model. It is should be noted that the risk adjustment model seems to have relatively little explanatory power (R-squared values are very small), but it's not clear how we can trust responses from patients with dementia or schizophrenia. Also, what could have been done to create a model with greater explanatory power.

For cost/resource use measures ONLY:

17. **Are the specifications in alignment with the stated measure intent?**

    ☐ **Yes** ☐ **Somewhat** ☐ **No (If "Somewhat" or "No", please explain)**

18. **Describe any concerns of threats to validity related to attribution, the costing approach, carve outs, or truncation (approach to outliers):**

VALIDITY: TESTING

19. **Validity testing level:** ☐☒ **Measure score** ☐☒ **Data element** ☒☐ **Both**

    MP#3: The developer did not check the "data element" box on the testing form.

20. **Method of establishing validity of the measure score:**

    ☐ **Face validity**

    ☒ **Empirical validity testing of the measure score**

    ☐ **N/A (score-level testing not conducted)**

21. **Assess the method(s) for establishing validity**

MP#6: Confirmatory factor analysis (CFA) of the items comprising the multi-item measures and correlations of each item with sum scores for its own multi-item measure, as well as with the other two multi-item measures were appropriate for testing validity

MP#2:

a. **Structural validity (CFA) results were highly supportive given fit statistics**

Submission document: Testing attachment, section 2b2.2

MP#4: Methods selected for validity seem reasonable.

MP#3: Data element validity: Both discriminant validity and structural validity tests were not consistent with the three multiple items measures as specified, they were all carried out at the respondent-level. However, for the three multi-item measures, no respondent level domain score was ever calculated.

Measure score validity: The measure score validity for two global measures are assumed (they are submitted for evaluation as well), not empirically tested. If we accept that and use that to validate the validity of the other multi-item measures, the results were acceptable. If we cannot accept the assumption, then we don't have the needed information on measure score validity.

MP#1: The developer conducted a confirmatory factor analysis, looked at correlations between each survey item with composite measures and examined correlations between the HHCAHPS multi-item measures (Care of Patients, Communication between Providers and Patients, and Specific Care Issues), and with each of the two global measures (Overall Rating of Care from the Agency, and Would Recommend the Agency to Family or Friends). The developers focused on construct validity using confirmatory factor analysis and correlational analyses. While this approach is unorthodox for NQF validity testing, it is reasonable to perform this approach for patient experience measures.

MP#5: The developers rely on correlations among measures in the survey to establish measure score-level validity – a modest level of correlation (neither too high nor too low) is viewed as acceptable evidence of validity. There is no evidence presented linking measure scores to any independent measure of quality of care at the clinic level.

22. **Assess the results(s) for establishing validity**

MP#2:

a. Expected moderate correlations across measures and related constructs.

MP#6: All results supported validity of the measure score

Submission document: Testing attachment, section 2b2.3

MP#4: Sample size is adequate

MP#3: See 21.

MP#1: The results showed that the 3-factor model fit well with strong factor loadings. Survey items correlated strongly with relevant composite measures and the five HHCAHPS measures were positively correlated with the four agency-level satisfaction measures. These findings indicate the survey items and composites are closely related. The results supported the construct validity for the measures.

MP#5: Results are generally acceptable, showing moderate correlations among scores and between specific domain scores and overall ratings of care.

23. **Was the method described and appropriate for assessing conceptually and theoretically sound hypothesized relationships?**

Submission document: Testing attachment, section 2b1.

☒ **Yes**

☐ **No**

☐ **Not applicable** (score-level testing was not performed)

24. **Was the method described and appropriate for assessing the accuracy of ALL critical data elements?** *NOTE that data element validation from the literature is acceptable.*

    Submission document*: Testing attachment, section 2b1.*

    ☐☒ **Yes**

    ☒☐ **No**

    ☒☐ **Not applicable** (data element testing was not performed)

25. **OVERALL RATING OF VALIDITY taking into account the results and scope of all testing and analysis of potential threats.**

    ☒☐ **High** (NOTE: Can be HIGH only if score-level testing has been conducted)

    ☐☒ **Moderate** (NOTE: Moderate is the highest eligible rating if score-level testing has NOT been conducted)

    ☐ **Low** (NOTE: Should rate LOW if you believe that there are threats to validity and/or relevant threats to validity were not assessed OR if testing methods/results are not adequate)

    ☒☐ **Insufficient** (NOTE: For instrument-based measures and some composite measures, testing at both the score level and the data element level is required; if not conducted, should rate as INSUFFICIENT.)

26. **Briefly explain rationale for rating of OVERALL RATING OF VALIDITY and any concerns you may have with the developers' approach to demonstrating validity.**

    MP#4: Based on the testing and test results.

    MP#6: As noted, both tests supported validity of the survey questions. No concerns identified

    MP#1: Construct validity is weaker than other forms of validity, but the findings presented support continued use of these measures.

    MP#3: At data element level, validity testing is not specific to the measures as specified.

    MP#5: The validity of this version of CAHPS and other versions rests largely on assessments of face validity. There is no information presented linking the CAHPS scores to any separate, independent measure of quality of care at the agency level. The patterns of correlations do demonstrate adequate validity of the measure at the individual patient or data element level and do provide weak evidence for validity at the measure score level.

FOR COMPOSITE MEASURES ONLY: Empirical analyses to support composite construction

27. **What is the level of certainty or confidence that the empirical analysis demonstrates that the component measures add value to the composite and that the aggregation and weighting rules are consistent with the quality construct?**

    ☐ **High**

    ☐ **Moderate**

    ☐ **Low**

    ☐ **Insufficient**

28. **Briefly explain rationale for rating of EMPIRICAL ANALYSES TO SUPPORT COMPOSITE CONSTRUCTION**

ADDITIONAL RECOMMENDATIONS

29. **If you have listed any concerns in this form, do you believe these concerns warrant further discussion by the multi-stakeholder Standing Committee? If so, please list those concerns below.**

MP#5: This set of measures, like all the other CAHPS measure sets, claims to be a set of outcome measures. These are not outcome measures. They do not reflect the state of a patient after treatment; they use the patient report to provide data on care processes. These are process measures, not outcome measures, even though the data come from patient surveys. A satisfaction survey would be an outcome measure, but these are "experience of care" surveys using the patient as a data source about care processes. Since users like CMS make distinctions in their P4P programs between process and outcome measures, often assigning greater weight to outcome measures, this is a very important distinction and the NQF endorsement process should make clear that these are not outcome measures.

Committee Pre-evaluation Comments:
Criteria 2: Scientific Acceptability of Measure Properties (including all 2a, 2b, and 2c)

2a1. Specifications: *Which data elements, if any, are not clearly defined? Which codes with descriptors, if any, are not provided? Which steps, if any, in the logic or calculation algorithm or other specifications (e.g., risk/case-mix adjustment, survey/sampling instructions) are not clear? What concerns do you have about the likelihood that this measure can be consistently implemented?*

- The reliability specifications were clearly defined and properly calculated. Given the comment regarding a note to the developer to specify agencies should have >50% response information, I do not see a need to have the committee discuss/vote on reliability.
- No concerns; see details under 2.a.2

2a2. Reliability testing: *Do you have any concerns about the reliability of the measure?*

- The Cronbach's alpha results suggest that the tool has moderately high reliability and I have no concerns in this area.
- Testing included score-level and data element testing. SMP members noted "Cronbach alpha was used to evaluate the reliability of the composite measures and an inter-class reliability coefficient was calculated to determine whether variation in domain scores across the agencies is due to true variation versus chance or measurement error. The latter approach is acceptable for evaluating reliability (precision) of agency scores." Panel members noted "the agency level reliability estimates were acceptable for each measure, as agency-level reliability exceeded 0.70 for all HHCAHPS measures." Internal consistency (alphas) in the 0.70-0.72 range. ICR values ranged 0.79-.84. Note to developer from SMP: "May need to specify agencies with >50 responses and complete response information in >50% (although those below 50% should be called out)." Rating – Mod-High

2b2. Validity testing: *Do you have any concerns with the testing results?*

- The results of the factor analysis and correlations supports the three categories identified.
- Testing included score-level and data element testing. SMP describes the approach as follows: "The developer conducted a confirmatory factor analysis, looked at correlations between each survey item with composite measures and examined correlations between the HHCAHPS multi-item measures (Care of Patients, Communication between Providers and Patients, and Specific Care Issues), and with each of the two global measures (Overall Rating of Care from the Agency, and Would Recommend the Agency to Family or Friends). The developers focused on construct validity using confirmatory factor analysis and correlational analyses. While this approach is unorthodox for NQF validity testing, it is reasonable to perform this approach for patient experience measures." SMP synopsis of results: "The results showed that the 3-factor model fit well with strong factor loadings. Survey items correlated strongly with relevant composite measures and the five HHCAHPS measures were positively correlated with the four agency-level satisfaction measures. These findings indicate the survey items and composites are closely related. The results supported the construct validity for the measures." Note to developer: "Some concern over possible agency differences in proportions of patients who are excluded, unless that potential bias can be addressed in the quality measure. The following exclusions could cause bias or concern: Patients who died during the sample month; Patients who received fewer than 2 visits from home health agency personnel during a 2-month look-back period; those who are currently receiving hospice or are discharged to hospice. Can these proportions be reported and reconciled with the measure?" Rating - Moderate

Validity- Threats to Validity: *Threats to Validity (Statistically Significant Differences, Multiple Data Sources, Missing Data). 2b4. Meaningful Differences: How do analyses indicate this measure identifies meaningful differences about quality? 2b5. Comparability of performance scores: If multiple sets of specifications: Do analyses indicate they produce comparable results? 2b6. Missing data/no response: Does missing data constitute a threat to the validity of this measure?*

- Threats to validity include the absence of a representative sample population (language, gender, race, ethnicity) and exclusions for those who ended care after two visits, both of which could introduce bias. Theoretically, ending services after two visits could be indicative of a failure to communicate adequately or feel uncomfortable with a caregiver who does not understand and/or respect their preferences.
- Meaningful difference metrics shared. Comparable results for discussions. Missing data – no concern. Exclusions reviewed and no concerned raised.

Other Threats to Validity: *Other Threats to Validity (Exclusions, Risk Adjustment). 2b2. Exclusions: Are the exclusions consistent with the evidence? Are any patients or patient groups inappropriately excluded from the measure? 2b3. Risk Adjustment: If outcome (intermediate, health, or PRO-based) or resource use performance measure: Is there a conceptual relationship between potential social risk factor variables and the measure focus? How well do social risk factor variables that were available and analyzed align with the conceptual description provided? Are all of the risk-adjustment variables present at the start of care (if not, do you agree with the rationale provided)? Was the risk adjustment (case-mix adjustment) appropriately developed and tested? Do analyses indicate acceptable results? Is an appropriate risk-adjustment strategy included in the measure?*

- The risk adjustment strategy appears appropriate and acceptable.
- Risk adjustment presented. Note to developer on risk adjustment: "Social factors associated with survey responses are appropriately included in the use of diagnoses of schizophrenia or dementia/cerebral degeneration as risk adjustors in adjustment model. It should be noted that the risk adjustment model seems to have relatively little explanatory power (R-squared values are very small).

Criterion 3. Feasibility

Maintenance measures – no change in emphasis – implementation issues may be more prominent

3. Feasibility is the extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

- Measure developer describes the HHA requirement of utilizing a federally approved HHCAHPS survey vendor
- Measure developer did not identify the costs associated with the retention of an approved vendor as a feasibility challenge to the measure

Questions for the Committee:

- Does the Committee agree that the measure is feasible despite the costs to facilities?

Preliminary rating for feasibility: ☐ **High** ☐ **Moderate** ☒ **Low** ☐ **Insufficient**

RATIONALE:

- A low rating is assigned because measure developer has not evaluated the burden on plans associated with measure implementation in the form of fees from retention of an approved CAHPS vendor to administer the surveys.
- Based on the information submitted there is low confidence or certainty that the criterion is met.
- Note: this is not a must pass criteria per NQF's current rules.

Committee Pre-evaluation Comments:
Criteria 3: Feasibility

3. Feasibility: *Which of the required data elements are not routinely generated and used during care delivery? Which of the required data elements are not available in electronic form (e.g., EHR or other electronic sources)? What are your concerns about how the data collection strategy can be put into operational use?*

- Data collection is consistent with other CAHPS-based instruments.
- Measure developer describes the HHCAHPS survey process but did not identify the costs associated with the retention of an approved vendor or ongoing operational costs. Rating – LOW

Criterion 4: Usability and Use

Maintenance measures – increased emphasis – much greater focus on measure use and usefulness, including both impact/improvement and unintended consequences

4a. Use (4a1. Accountability and Transparency; 4a2. Feedback on measure)

4a. Use evaluate the extent to which audiences (e.g., consumers, purchasers, providers, policymakers) use or could use performance results for both accountability and performance improvement activities.

4a.1. Accountability and Transparency. Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

Current uses of the measure

Publicly reported? ☒ **Yes** ☐ **No**

Current use in an accountability program? ☒ **Yes** ☐ **No** ☐ **UNCLEAR**

OR

Planned use in an accountability program? ☐ **Yes** ☐ **No**

Accountability program details

- Developer offers examples of public reporting and payment programs connected with the HHCAHPS survey
    - Home Health Compare
    - Home Health Quality Reporting Program

4a.2. Feedback on the measure by those being measured or others. Three criteria demonstrate feedback: 1) those being measured have been given performance results or data, as well as assistance with interpreting the measure results and data; 2) those being measured, and other users have been given an opportunity to provide feedback on the measure performance or implementation; 3) this feedback has been considered when changes are incorporated into the measure

Feedback on the measure by those being measured or others

- Developer offers vague and unsatisfying responses related to feedback, especially compared to other CAHPS survey submissions which reference the use of focus groups and other vehicles for obtaining feedback on the survey.
- The quotes below represent the entire summary of feedback received:
    - "In general, the feedback has been favorable from vendors, HHAs and patients"
    - "Patients have reported they find the questionnaire relevant and easy to answer"

Additional Feedback: N/A

Questions for the Committee:

- Do you feel that the developer's description of the feedback received is adequate?
- Do you feel that the developer has adequately demonstrated use of the measure?

Preliminary rating for Use: ☒ **Pass** ☐ **No Pass**

4b. Usability (4a1. Improvement; 4a2. Benefits of measure)

4b. Usability evaluate the extent to which audiences (e.g., consumers, purchasers, providers, policymakers) use or could use performance results for both accountability and performance improvement activities.

4b.1 Improvement. Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated.

Improvement results

- Developer does not offer data, or any discussion related to improvement trends over time.

4b2. Benefits vs. harms. Benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

Unexpected findings (positive or negative) during implementation

- Developer identified no unexpected findings.

Potential harms

- No harms identified by the developer

Additional Feedback: N/A

Questions for the Committee:

- Do you agree with the developer that there are no potential unintended consequences?

Preliminary rating for Usability and use: ☐ **High** ☐ **Moderate** ☐ **Low** ☒ **Insufficient**

RATIONALE:

- Developer does not offer any discussion or data related to improvement over time; this is not sufficient by NQF standards.
- Note: this is not a must-pass criterion.

Committee Pre-evaluation Comments:
Criteria 4: Usability and Use

4a. Use: *4a1. Use - Accountability and Transparency: How is the measure being publicly reported? Are the performance results disclosed and available outside of the organizations or practices whose performance is measured? For maintenance measures - which accountability applications is the measure being used for? For new measures - if not in use at the time of initial endorsement, is a credible plan for implementation provided? 4a2. Use - Feedback on the measure: Have those being measured been given performance results or data, as well as assistance with interpreting the measure results and data? Have those being measured or other users been given an opportunity to provide feedback on the measure performance or implementation? Has this feedback has been considered when changes are incorporated into the measure?*

- Feedback information on the tool by the target populations is poor at best.
- Current uses of the measure – publicly reported (Home Health Compare) and used in an accountability/payment program. No specifics provided on feedback; only anecdotal comments. Need

more information on feedback and how the measure has been use to improve care; can we ask developer to provider user data? SMP rated as Pass – discussion for committee.

4b. Usability: *4b1. Usability – Improvement: How can the performance results be used to further the goal of high-quality, efficient healthcare? If not in use for performance improvement at the time of initial endorsement, is a credible rationale provided that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations? 4b2. Usability – Benefits vs. harms: Describe any actual unintended consequences and note how you think the benefits of the measure outweigh them.*

- The developer has offered no discussion on benefits vs. harms, nor has it provided any data on improvement.
- Developer does not offer any discussion or data related to improvement over time; this is not a must-pass criterion. No improvement data were reported, or any discussion related to improvement trends over time. Benefit/harm - no unexpected findings reported which is a source of discussion. Rating – insufficient

Criterion 5: Related and Competing Measures

Related or competing measures

- The following measures are all related, though not necessarily competing:
  - NQF 0005 CAHPS Clinician and Group Surveys V3.0
  - NQF 0006 CAHPS Health Plan Survey V5.0
  - NQF 0166 Hospital CAHPS Survey
  - NQF 0258 CAHPS In-Center Hemodialysis Survey
  - NQF 0517 CAHPS Home Health Care Survey
  - NQF 1741 CAHPS Surgical Care Survey
  - NQF 2548 Child Hospital CAHPS Survey
  - NQF 2967 CAHPS Home- and Community-Based Services Survey

Harmonization

N/A

Committee Pre-evaluation Comments: Criterion 5: Related and Competing Measures

Related and Competing: *Are there any related and competing measures? If so, are any specifications that are not harmonized? Are there any additional steps needed for the measures to be harmonized?*

- No.
- Yes - related • The following measures are all related, though not necessarily competing: o NQF 0005 CAHPS Clinician and Group Surveys V3.0 o NQF 0006 CAHPS Health Plan Survey V5.0 o NQF 0166 Hospital CAHPS Survey o NQF 0258 CAHPS In-Center Hemodialysis Survey o NQF 0517 CAHPS Home Health Care Survey o NQF 1741 CAHPS Surgical Care Survey o NQF 2548 Child Hospital CAHPS Survey o NQF 2967 CAHPS Home- and Community-Based Services Survey. Discussion on competing would be relevant for patients receiving multiple services.

Public and Member Comments

Comments and Member Support/Non-Support Submitted as of: June/13/2019

- **No NQF members have submitted support/non-support choices as of this date**

1. Evidence and Performance Gap – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. ***Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.***

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form

HHCAHPS-Evidence-Form-4-23-2019-1000pm--WAedits_lglt.docx

1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?

Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. Please use the most current version of the evidence attachment (v7.1). Please use red font to indicate updated evidence.

No

1a. Evidence (subcriterion 1a)

Measure Number (if previously endorsed)**:** 0517
Measure Title: Home Health Care CAHPS Survey or HHCAHPS Survey
IF the measure is a component in a composite performance measure, provide the title of the Composite Measure here:
Date of Submission: 4/24/2019

1a.1. This is a measure of: (*should be consistent with type of measure entered in De.1*)

Outcome

☒ Outcome: PRO

☒Patient-reported outcome (PRO): Experience with Care

PROs include HRQoL/functional status, symptom/symptom burden, experience with care, health-related behaviors. (*A PRO-based performance measure is not a survey instrument. Data may be collected using a survey instrument to construct a PRO measure.)*

☐ Intermediate clinical outcome (*e.g., lab value*):

☐ Process:

☐ Appropriate use measure:

☐ Structure:

☐ Composite:

1a.2. LOGIC MODEL Diagram or briefly describe the steps between the healthcare structures and processes (e.g., interventions, or services) and the patient's health outcome(s). The relationships in the diagram should be easily understood by general, non-technical audiences. Indicate the structure, process or outcome being measured.

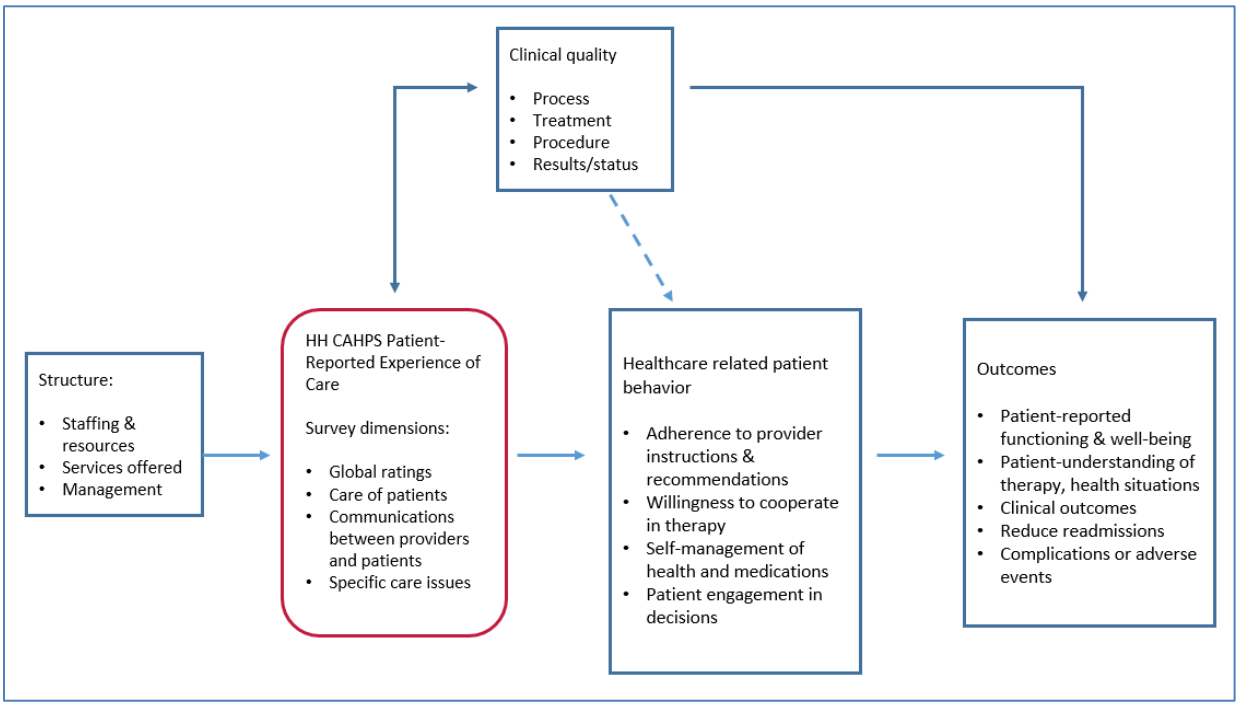
The HHCAHPS (Home Health Care Consumer Assessment of Healthcare Providers and Systems) Survey is the only national, standardized, publicly-reported survey of patients' perspectives of home health care experiences. CMS publicly reports the top-box or the most favorable response percentages for

the survey. CMS reports the responses as top-box so that consumers can easily identify the best home care providers.

The following diagram illustrates how the home health care setting might work when the HHCAHPS Survey is assessing the patients' perspectives of their care in addition to typical outcomes of successful care measured by better health. The HHCAHPS Survey adds to this process by providing the patients' voices of their views of how their home health care experiences reflect positive or negative outcomes of their home health care.

The following diagram called The Home Health Care Experience Process of Care for Patients, begins with a block called Structure, which is symbolic of the home health agency in addition to other institutions such as hospitals, or recent hospitalizations. The block at the top of the diagram called Clinical Quality includes the required medical care to the patients. Clinical Quality is related to good outcomes. The next block called HHCAHPS lists the measure categories of the five measures, the global ratings, care of patients, the communications between providers and patients, and specific care issues of home health care. Both the Clinical Quality and the HHCAHPS measures impact healthcare related patient behavior that include patient compliance with provider instructions, patient compliance in therapy, and patient self-care in taking medications as prescribed and taking care of themselves by following a prescribed diet, etc. Patients also need to be engaged in decisions and this is assessed in the HHCAHPS Survey. Patient engagement is related to successful outcomes. The last block called Outcomes includes both positive and negative outcomes of the home health care experiences. If patients report improved functioning, well-being, and are not re-admitted to the hospital, then patients had successful outcomes. If patients report no changes in their functioning and well-being, or worsening well-being, and are re-admitted to hospitals, then the patients had negative outcomes to their home health care experiences. Outcomes are also impacted by complications of home health care or adverse events such as allergic reactions to topical products used to treat a diabetic wound or physical therapy that was too rigorous for a very frail elderly person.

The Home Health Care Experience Process of Care for Patients



There are five HHCAHPS measures to assess the important aspects of home health care in the patients' perspectives of their home healthcare experiences to report on that are key in assessing if home health care services yielded positive or negative outcomes:

1. Care of Patients

"Care of Patients" is a multi-item measure including four important aspects of care to patients, stakeholders, families, providers, and home health experts: how often did the provider seem informed about the patient's care and treatment, how often did the provider treat the patient as gently as possible, how often did the provider treat the patient with courtesy and respect, and did the patient have any problems with the care from the provider. High scores on the Care of Patients measure are connected with a presence of patient engagement in decisions, listed as a healthcare-related patient behavior on the diagram, leading to better outcomes.

2. Communications between Patients and Providers

"Communications" is a multi-item measure including six important aspects of care to patients, stakeholders, families, providers, and home health experts: at the start of care, did the provider tell the patient what care and services would be received, did the provider keep the patient informed about when the provider would arrive, did the provider explain things to the patient in a way that was easy to understand, did the provider listen carefully to the patient, did the patient receive the help or advice needed when contacting the provider, and when the patient contacted the provider, how long did it take to receive the help or advice needed. High scores on the Communications between Patients and Providers measure are connected with a presence of patients' adherences to providers' instructions and recommendations, listed as a healthcare-related patient behavior on the diagram, leading to better outcomes.

3. Special Care Issues

"Special Care Issues" is a multi-item measure including seven important aspects of care to patients, stakeholders, families, providers, and home health experts, asking the patient: at start of care, did the provider talk with you about how to set up the home for safe movement in the home, did the provider talk about your medications, did the provider ask to see the patient's medications, did the provider talk about pain, did the provider talk about the purpose of new or changed medication, did the provider talk about when to take medications, and did the provider talk about the side effects of the medications. High scores on the Special Care Issues measure are connected with a presence of patient self-management of health and medications, listed as a healthcare-related patient behavior on the diagram, leading to better outcomes.

4. Overall Rating of Care by the Provider

"Overall Rating of Care" is a single-item measure rating the provider on a scale of 0 (worst care) to 10 (best care). High scores on the Overall Rating indicate patient engagement in home health care therapies in addition to several other behaviors or all of the healthcare-related patient behaviors listed on the diagram, leading to better outcomes.

5. Would you recommend the agency to family and friends?

"Would you recommend" is a single-item measure with a "yes" or "no" answer. A high number of "yes" responses indicate patient engagement in home health care therapies in addition to several other or all of the healthcare-related patient behaviors listed on the diagram, leading to better outcomes.

1a.3. **Value and Meaningfulness: IF** this measure is derived from patient report, provide evidence that the target population values the measured ***outcome, process, or structure*** and finds it meaningful. (Describe how and from whom their input was obtained.)

In 2016-2017, CMS conducted focus groups and interviews with patients to understand their home health experiences and whether the topics in the HHCAHPS Survey were relevant and meaningful to them. CMS believed that we should determine if the HHCAHPS Survey still included issues of most importance to home health care patients. CMS found that the domains in the HHCAHPS Survey are still important, but CMS is testing out the domains and with alternative wording and re-ordering of the question items. CMS is considering possibly dropping a few items and adding new items. CMS

would like the revised survey to be somewhat shorted than the current survey. In keeping with the agency's view to have tighter and less burdensome surveys, CMS is continuing this work, and we look forward to future testing of proposed revisions. With that said, CMS has not received complaints from the public about the length of the HHCAHPS survey or about its content. The comments provided by the focus group participants indicate the level of importance that home health care patients place on specific components of care. The focus groups were instrumental in helping CMS evaluate the survey to make sure that it remains relevant and useful to patients and families, who select home health care agencies based on publicly reported measures that therefore need to reflect components of care that they value.

The following characteristics of home health care were cited by focus group participants as important in home health; these concepts are reflected in the HHCAHPS Survey as noted.

1. *Personal traits of the caregiver*

   The most important characteristic of home health care is the personal traits of the caregiver(s). The focus group participants explained that caregivers should be caring, supportive, patient, empathetic, respectful, and considerate.

   The HHCAHPS questionnaire has several questions that address this issue.

2. *Staff time spent with patient/rushing between appointments*

   Staff being rushed because the HHA was understaffed was an issue among the long-term care group. Because time-spent with the patient was viewed as very important, HHA understaffing was viewed as a problem. Time spent with the patient was important in all three focus groups.

   Although no specific HHCAHPS items address this issue, there are questions that indirectly ask about thoroughness of the caregiver that would be adversely affected if sufficient time was not provided to the patient.

3. *Pain management / medications*

   There were some concerns about pain management among the low-SES group.

   Several questions in the HHCAHPS questionnaire ask did the home health care provider discuss pain; did the home health provider ask to see the patient's medications and did the provider discuss how to take the medications, what are the side effects of the medications, and are any of the medications new for the patient. These issues (discussing pain, and discussing medications) were found to be of lower priority to patients in relation to other aspects of home health care.

4. *Scheduling/promptness*

   Scheduling and providing reminder calls to the patient of when caregivers are coming was viewed as important to all participants. Participants were both current and former home healthcare patients, and all of them discussed the importance of caregivers being prompt to scheduled appointments with the patient, and also, to let the patient know if the home health staff person will be delayed or will need to reschedule an appointment.

   One HHCAHPS question (Question 15) addresses this concern.

5. *Caregiver education of patients*

   Staff educating the patient was viewed as important. This includes specific exercises, how to arrange their home, tips to enhance their recovery, and other general information such as change in medical condition or advice on diet.

   The HHCAHPS Survey has many questions concerned with patient self-care, and patient awareness of their healthcare needs.

****RESPOND TO ONLY ONE SECTION BELOW -EITHER 1a.2, 1a.3 or 1a.4) ****

1a.2. FOR OUTCOME MEASURES including PATIENT REPORTED OUTCOMES—Provide empirical data demonstrating the relationship between the outcome (or PRO) to at least one healthcare structure, process, intervention, or service.

CAHPS (Consumer Assessment of Healthcare Providers and Systems) Surveys provide information about selected aspects of care. One would not expect a large correlation between CAHPS Surveys and clinical performance indicators because they provide complementary information about care. However, quality of care as measured in the CAHPS Surveys should correlate significantly with aspects of clinical performance that are similar to the CAHPS domains. Indeed, some studies in other settings have found that patient reports about care are moderately related to HEDIS (Healthcare Effectiveness Data and Information Set) clinical measures and predictive of clinical outcomes.

For all of the five HHCAHPS measures the scores across home health agencies range from 0 to 100 suggesting room for improvement among some agencies and the ability of agencies to do well on these measures.

The Specific Care Issues measure has an interquartile range of 79.0 to 88.0, with an average score of 83.03. This measure contains seven important aspects of patient care in the home health setting with an emphasis on home safety and medications management. If any agency has a score in the first decile where the average score is 65.78 they could improve their performance by increasing provider/caregiver communication about specific information to the patients about medication administration, and if applicable, discuss new or changed medications, as well as potential side effects of the patients' medications; and educating all of their staff about speaking with their patients about how to make their homes safer so that they live in their homes with greater safety and ease of movement.

The Care of Patients measure scores have an interquartile range of 85.0 to 92.0, with an average score of 87.2. The Care of Patients measure contains four important qualities of patient care in the home health setting: was the provider up-to-date on the patient's health issues, was the provider handling the patient as gently as possible, was the provider providing care with courtesy and respect, and had the patient reported problems to the home health agency. Agencies, patients, and families can use the scores on the Care of Patients measure to compare agencies on these dimensions. An agency needing to improve the Care of Patients measure scores can make conscious efforts to emphasize courtesy and respect to patients, to emphasize being informed and up-to-date about their patients, to treat patients as gently as possible, and to strive to minimize any problems experienced by patients.

The Communications between Providers and Patients measure scores have an interquartile range of 82.0 to 89.0, with an average score of 84.90. This measure reflects important components of care to patients, including whether someone from the agency told the patient about what care and services they would receive, whether the agency informed the patient when home health staff would arrive at their home, whether these staff explained the patient's health issues clearly to them, and whether these staff listened carefully to the patient. Agencies with lower scores on this measure are able to influence these scores by holding their staff accountable for communicating about these topics with their patients and by training and encouraging their staff on how to address these issues. Lower performing agencies on this measure can focus staff training on improving each of these components of this measure. Clear communication increases patient adherence to treatment.

While CMS does not have direct visibility to how agencies use the HHCAHPS scores for their internal quality improvement efforts, anecdotal evidence from CMS's national implementation contractor site visits to the HHCAHPS Survey vendors and discussions CMS has with home health agencies has shown that vendors typically provide question-level responses to their HHA clients, to allow their clients to drill down to specific questions that make up each multi-item measure to help them target quality improvement initiatives.

1a.3. SYSTEMATIC REVIEW (S) OF THE EVIDENCE (for INTERMEDIATE OUTCOME, PROCESS, OR STRUCTURE PERFORMANCE MEASURES, INCLUDING THOSE THAT ARE INSTRUMENT-BASED) If the evidence is not based on a systematic review go to section 1a.4) If you wish to include more than one systematic review, add additional tables.

What is the source of the systematic review of the body of evidence that supports the performance measure? A systematic review is a scientific investigation that focuses on a specific question and uses explicit, pre-specified scientific methods to identify, select, assess, and summarize the findings of similar but separate studies. It may include a quantitative synthesis (meta-analysis), depending on the available data. (IOM)

☐ Clinical Practice Guideline recommendation (with evidence review)

☐ US Preventive Services Task Force Recommendation

☐ Other systematic review and grading of the body of evidence (*e.g., Cochrane Collaboration, AHRQ Evidence Practice Center*)

☐ Other

Source of Systematic Review: • **Title** • **Author** • **Date** • **Citation, including page number** • **URL**	
Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR.	
Grade assigned to the **evidence** associated with the recommendation with the definition of the grade	
Provide all other grades and definitions from the evidence grading system	
Grade assigned to the **recommendation** with definition of the grade	
Provide all other grades and definitions from the recommendation grading system	
Body of evidence: • Quantity—how many studies? • Quality—what type of studies?	
Estimates of benefit and consistency across studies	
What harms were identified?	
Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR?	

1a.4 OTHER SOURCE OF EVIDENCE

If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, please describe the evidence on which you are basing the performance measure.

1a.4.1 Briefly SYNTHESIZE the evidence that supports the measure. A list of references without a summary is not acceptable.

1a.4.2 What process was used to identify the evidence?

1a.4.3. Provide the citation(s) for the evidence.

1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- Disparities in care across population groups.

1b.1. Briefly explain the rationale for this measure *(e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)*

If a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and answer the composite questions.

It is statutorily mandated to publicly report the HHCAHPS survey data and the Home Health Agencies must collect and publicly report HHCAHPS data for their full payment of the annual payment update.

As part of the US Department of Health and Human Services (DHHS) Transparency Initiative, CMS implemented a process to measure and report patient experiences with health care providers using standardized surveys developed by the CAHPS grantees with input from the public, stakeholders, Medicare beneficiaries, family and friends of beneficiaries, and providers, in accordance to the development processes that are part of the requirements to receive the CAHPS survey trademark. The HHCAHPS is part of a family of CAHPS surveys that asks patients to report on and rate their experiences with health care. The HHCAHPS survey presents home health care patients with a set of standardized questions about their home health care providers and about the quality of their home health care. Prior to HHCAHPS, there was no national standard for collecting information about patient experiences that would enable valid comparisons across all home health agencies. The HHCAHPS Survey was designed to measure and assess the experiences of those persons receiving home health care with these three goals in mind, (1) to produce comparable data on patient´ perspectives of care that allow objective and meaningful comparisons between HHAs on domains that are important to consumers, (2) to create incentives for agencies to improve their quality of care through public reporting of survey results, and (3) to hold home health care providers accountable for the care that they provide.

1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. *(This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.*

Agency-level descriptive statistics can be found in Appendix A, attached, along with characteristics of patients.

The measure testing form includes the information about reliability and validity. Performance scores are available on our website, https://homehealthcahps.org. We have the current publicly reported data and the archived publicly reported data on our website. HHCAHPS publicly reported data are posted and updated quarterly in January, April, July, and October, on Home Health Compare on www.medicare.gov.

1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.

Patient reported experience of care is an increasingly measured construct used to assess health care service quality with the goal of providing consumer information and improving service quality through provider competitiveness (Goldstein, Cleary, Langwell, Zaslavsky, & Heller, 2005). With demographic characteristics projected to become increasingly diverse over the coming decades (U.S. Census Bureau Population Division, 2012a), identifying and reducing disparities (undesirable variation (Hebert, Sisk, & Howell, 2008)) in patient outcomes, provision of quality health care services, and patient experience of care is an increasingly important area of focus (AHRQ, 2013).

The national implementation of the HHCAHPS Survey provides us with the only way that we hear the voices of home health patients for reliable comparisons across all agencies. This is accomplished by training vendors to implement many tasks in the same way so that we can achieve the uniform survey implementation of the HHCAHPS Survey.

Patients' experience with health care services is known to vary by a range of personal and health-related characteristics that may be independent of the care received (Carle, Weech-Maldonado, Ngo-Metzger, & Hays, 2012; Hasan, Lipsitz, & Hicks, 2009; Martino, Weinick, Kanouse, Brown, Haviland, Goldstein, Adams, Hambarsoomian, Klein, & Elliott, 2013; Morales, Elliott, Weech-Maldonado, Spritzer, & Hays, 2001; Otani, Herrmann, & Kurz, 2010; Zweifler, Hughes, & Lopez, 2010; Weech-Maldonado, Elliott, Oluwole, Schiller, & Hays, 2008). These factors include but are not limited to age, education, race/ethnicity, and self-reported health status. Alternatively, some differences in patient ratings of care for some patient characteristics may be attributable to disparities in the care given by providers (Brooks-Carthon, Kutney-Lee, Sloane, Cimiotti, & Aiken, 2011; Goldstein, Elliott, Lehrman, Hambarsoomian, & Giordano)

1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. *(This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.) For measures that show high levels of performance, i.e., "topped out", disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.*

Based on analyses of the HHCAHPS data, patient experience of care ratings were high across all groups, but minority groups had lower ratings on two of three HHCAHPS measures. Non-Hispanic Asians reported the greatest disparities, with scores lower than White non-Hispanic patients by 4 percentage points for the care processes measure and the communications measure. Results were mixed for the specific care issues measure, which showed significantly lower responses for patients reporting multiple races and patients with unknown race and significantly higher responses for Black non-Hispanic patients. Hispanic and Black non-Hispanic patients had approximately 1 to 2 percentage point lower scores than White non-Hispanic patients, and Native Hawaiian/Other Pacific Islander non-Hispanic and American Indian non-Hispanic patients had approximately 1.5 to 2.5 percentage point lower scores than White non-Hispanic patients. Patients with multiple races or who reported Hispanic ethnicity and patients with unknown race had approximately 1 to 3 percentage point lower scores than White non-Hispanic patients. Three quarters of disparities were found to be within-agency disparities, which were primarily related to care processes and provider/patient communications rather than to specific health care services received. (Smith, L. M., Anderson, W. L., Kenyon, A. E., Kinyara, M. E., With, S. K., Teichman, L., et al. (2015). Racial and ethnic disparities in patients' experience with home health care services. Medical Care Research and Review, 1, 1–19. 10.1177/1077558715597398).

Annually, CMS provides to AHRQ the HHCAHPS survey data by racial and ethnic demographics, in addition to age, education, and gender of the home health patient respondents. These data are used in the annual report by AHRQ on Disparities in Health Care.

AHRQ has summarized the HHCAHPS tabular findings in two categories of Patient-Centered Care and Care Coordination. The HHCAHPS data have been part of the AHRQ disparities reports for the years 2012 through 2017, and we intend to continue providing these annual data to AHRQ. For both Care Coordination and Patient-Centered Care measures in the Post-Acute Setting of Home Health Care, AHRQ has found disparities with worse care being reported by African Americans, Asian Americans, Native American Indians, and Hispanic Americans. Although disparities in home health care have decreased from 2012 to 2017, the disparities compared with Whites is statistically significant. The disparities have worsened since 2012 if racial and ethnic minorities are in the lowest poverty levels. AHRQ has noted that researchers assessing re-hospitalization rates for persons with home health care are significantly worse for minorities living below the poverty level. Some research for re-hospitalization suggest that home health utilization is lower for racial and ethnic minorities compared with whites.

Please refer to the AHRQ Disparities Report for 2017 at this URL:
https://www.ahrq.gov/research/findings/nhqrdr/nhqdr17/index.html

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1b.5. If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4

N/A

2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. ***Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.***

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. Subject/Topic Area *(check all the areas that apply):*

De.6. Non-Condition Specific*(check all the areas that apply):*

Person-and Family-Centered Care

De.7. Target Population Category *(Check all the populations for which the measure is specified and tested if any):*

Elderly, Populations at Risk : Dual eligible beneficiaries, Populations at Risk : Individuals with multiple chronic conditions

S.1. Measure-specific Web Page *(Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)*

https://homehealthcahps.org

S.2a. If this is an eMeasure, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

This is not an eMeasure **Attachment:**

S.2b. Data Dictionary, Code Table, or Value Sets *(and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)*

No data dictionary **Attachment:**

S.2c. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

Attachment **Attachment:** HHCAHPS_Questionnaire_English-636918037383426028.pdf

S.2d. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

Patient

S.3.1. For maintenance of endorsement: Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.

No

S.3.2. For maintenance of endorsement, please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.

There have been no changes.

S.4. Numerator Statement *(Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.*

IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

The numerator statement is that each measure encompasses the responses for all questions that make up the particular measure. Missing data for individual survey questions are not included in the calculations. Only data from a completed survey are used in the calculations. The measures scores averages the proportion of those responding to each answer choice in all questions. Each global rating is scored based on the number of the respondents in the distribution of top responses, such as the percentage of patients rating a home health agency with a 9 or a 10, where 10 is the highest quality responses on a scale from 0 to 10.see S2.

S.5. Numerator Details *(All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)*

IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Please note that the HHCAHPS Protocols and Guidelines Manual, Version 11 (January 2019), at https://homehealthcahps.org has full details about these measures and calculations.

Missing data for individual survey questions are not included in the calculation of the HHCAHPS agency-level measures.

Only data from a "completed survey" is used in the calculations. A survey is considered complete if at least 50 percent of the "core" HHCAHPS survey questions are answered by the respondent. The core questions are 1-25. Questions 26-34 are "About You" questions.

The three HHCAHPS measures that consist of multiple survey items are the Care of Patients (Q9, Q16, Q19, and Q24), Communication between Providers and Patients (Q2, 15, Q17, Q18, Q22, and Q23), and Specific Care Issues (Q3, Q4, Q5, Q10, Q12, Q13, and Q14). The question items within each measure are individually patient-mix adjusted and then averaged and then weighted so as to give each question item equivalent influence within the measure.

The five publicly reported HHCAHPS measures are the three multi-item measures and two global measures called "Overall Rating of Care" (Q20) and "Would You Recommend the Home Health Agency to Family and Friends" (Q22).

Home health agencies sample a fixed number of patients every month on a continuous basis to reach the target of 300 completes in a 12-month period. The sampling rates may change from quarter to quarter to ensure that a sufficient number of patients are surveyed over the year and based on the number of eligible home health patients each month/quarter.

Global Item Measures

There are two global measures: the "Overall Rating of Care" measure (Q20) and the "Willingness to Recommend the Home Health Agency to Family and Friends" (Q25) measure.

Overall Rating of Care

In Q20, respondents are asked "Using any number from 0–10, where 0 is the worst home health care possible, and 10 is the best home health care possible, what number would you use to rate your care from this agency's home health care providers?"

The scoring for this measure represents the proportion of respondents who gave a rating of 9 or 10. The steps for calculating the "Overall Rating of Care" score are shown below.

Step 1: Calculate the proportion "P" of survey responses in the quarter who answered Q20 with an overall rating of 9 or 10.

The proportion P is defined as follows: P = X/Y, where

- the numerator X is the number of respondents for whom the overall rating is 9 or 10, and
- the denominator Y is the total number of respondents who answered Q20.

Willingness to Recommend the Home Health Agency to Family and Friends

Respondents are asked, "Would you recommend this home health agency to your family and friends if they needed home health care?"

The scoring for Q25 represents the proportion of respondents who answered "Definitely Yes." The steps for calculating the "Willingness to Recommend" score are:

Step 1: Calculate the proportion "P" of cases in the quarter who answered "Definitely Yes" to Q25.

The proportion P is defined as follows: P = X/Y, where

- the numerator X is the number of respondents who answered "Definitely Yes" to Q25 and
- the denominator Y is the total number of respondents who answered Q25.

The Three Measures that consist of Multiple Survey Items on the HHCAHPS Survey

As previously stated, the three measures including multiple items are: (1) Care of Patients, (2) Communication between Providers and Patients, and (3) Specific Care Issues (pain, safety & medication). The calculation of the scores for these three measures follow.

For each of the three measures, include only cases where the survey status is a completed survey.

For each of the three measures, include only cases with non-missing values on the specific questions in the calculations.

Measure 1: Care of Patients

The Care of Patients measure is produced by combining responses to four questions:

Q9 "In the last 2 months of care, how often did home health providers from the agency seem informed and up-to-date about all the care or treatment you got at home? "

Response Category: Never, Sometimes, Usually, or Always

Q16 "In the last 2 months of care, how often did home health providers from this agency treat you as gently as possible?"

Response Category: Never, Sometimes, Usually, or Always

Q19 "In the last 2 months of care, how often did home health providers from this agency treat you with courtesy and respect?"

Response Category: Never, Sometimes, Usually, or Always

Q24 "In the last 2 months of care, did you have any problems with the care you got through this agency?"

Response Category: Yes or No

The basic steps in calculating an agency's score for the Care of Patients measure:

Step 1 – Calculate the proportion of cases answering "always" or "yes" for each question similar to how the proportion was calculated for "overall rating of agency care" measure above:

P1 = Proportion of respondents who said "always" to Q9

P2 = Proportion of respondents who said "always" to Q16

P3 = Proportion of respondents who said "always" to Q19

P4 = Proportion of respondents who said "yes" to Q24

Step 2 – Combine responses from Q9, Q16, Q19, and Q24 to form the Care of Patients measure

Calculate the average proportion responding to "always" and "yes."

Care of Patients = Proportion who said "always" and "yes"= (P1 + P2 + P3 + P4)/4

Measure 2: Communication Between Providers and Patients

The Communication Between Providers and Patients is produced by combining responses to six questions:

Q2 “When you first started getting home health care from this agency, did someone from the agency tell you what care and services you would get?”

Response Category: Yes or No

Q15 “In the last two months of care, how often did home health providers from this agency keep you informed about when they would arrive at your home?”

Response Category: Never, Sometimes, Usually, or Always

Q17 “In the last two months of care, how often did home health providers from this agency explain things in a way that was easy to understand?”

Response Category: Never, Sometimes, Usually, or Always

Q18 “In the last two months of care, how often did home health providers from this agency listen carefully to you?”

Response Category: Never, Sometimes, Usually, or Always

Q22 “In the last two months of care, when you contacted this agency’s office did you get the help or advice you needed?”

Response Category: Yes or No

Q23 “When you contacted this agency’s office, how long did it take for you to get the help or advice you needed?” Response Category: Same day/1-5 days/6-14 days/more than 14 days. “Same Day” is the answer of choice.

Response Category: Yes or No

The basic steps in calculating an agency’s score for the Communication between Providers and Patients are:

Step 1 – Calculate the proportion of cases in each of the categories.

P1 = Proportion of respondents who said “yes” to Q2

P2 = Proportion of respondents who said “always” to Q15

P3 = Proportion of respondents who said “always” to Q17

P4 = Proportion of respondents who said “always” to Q18

P5 = Proportion of respondents who said “yes” to Q22

P6 = Proportion of respondents who said “yes” (did receive help same day) to Q23

Step 2 – Combine responses from the six questions to form the measure

Calculate the average proportion responding “always” and “yes”

Communication = Measure proportion who said “always” and “yes” = (P1 + P2 + P3 + P4 + P5 + P6)/6

Measure 3: Specific Care Issues

The Specific Care Issues measure is produced by combining responses to seven questions:

Q3 “When you first started getting home health care from this agency, did someone from the agency talk with you about how to set up your home so you can move around safely?”

Response Category: Yes or No

Q4 “When you started getting home health care from this agency, did someone from the agency ask to see all the prescription medicines you were taking?”

Response Category: Yes or No

Q5 “When you started getting home health care from this agency, did someone from the agency ask to see all the prescription medicines you were taking?”

Response Category: Yes or No

Q10 “In the last two months of care, did you and a home health provider from this agency talk about pain?”

Response Category: Yes or No

Q12 “In the last two months of care, did home health providers from this agency talk with you about the purpose for taking your new or changed prescription medicines?”

Response Category: Yes or No

Q13 “In the last two months of care, did home health providers from the agency talk with you about when to take these medicines?”

Response Category: Yes or No

Q14 “In the last two months of care, did home health providers from this agency talk with you about the important side effects of these medicines?”

Response Category: Yes or No

Step 1 – Calculate the proportion of cases with “yes” responses in each question

P1 = Proportion of respondents who said “yes” to Q3

P2 = Proportion of respondents who said “yes” to Q4

P3 = Proportion of respondents who said “yes” to Q5

P4 = Proportion of respondents who said “yes” to Q10

P5 = Proportion of respondents who said “yes” to Q12

P6 = Proportion of respondents who said “yes” to Q13

P7 = Proportion of respondents who said “yes” to Q14

Step 2 – Combine “yes” responses from the seven questions to form the measure

Calculate the average proportion responding “yes” in the seven questions

Specific Care Issues = Measure proportion who said “yes” = (P1 + P2 + P3 + P4 + P5 + P6 + P7)/7

S.6. Denominator Statement *(Brief, narrative description of the target population being measured)*

For each of the proportions described in S.5 the denominator is the number of respondents who replied to the question.

S.7. Denominator Details *(All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*

IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

The target population is composed of patients whose home health care was paid for by Medicare or Medicaid. To be included a patient must also have had at least one home health visit for skilled nursing care, physical therapy, occupational therapy, or speech therapy during the sample month. In addition they must have had at least two home health visits for skilled nursing care, physical therapy, occupational therapy, or speech therapy during the lookback period (includes the sample month and the preceding month.)

Patients must also meet the following criteria:

- They must be at least 18 years of age by the end of the sample month;
- They are not currently receiving hospice care; and are not deceased;
- They must have received home visits for services other than routine maternity care in the sample month.

All of these survey criteria are spelled out in the HHCAHPS Protocols and Guidelines Manual, Version 11 (January 2019), at https://homehealthcahps.org with full details, explanations of lessons learned in the national implementation of the HHCAHPS Survey in the past ten years.

S.8. Denominator Exclusions *(Brief narrative description of exclusions from the target population)*

Numerator and Denominator Exclusions:

- Patients under 18 years of age at any time during their stay are excluded.
- Patients who received fewer than 2 visits from home health agency personnel during a 2-month look-back period are excluded. The 2-month look-back period is defined as the 2-months prior to and including the last day in the sample month.
- Patients have been previously selected for an HHCAHPS sample during any month in the current quarter, or during the last 5 months, are excluded.
- Patients who are currently receiving hospice, or are discharged to hospice, are excluded.
- All routine maternity patients are excluded.
- All "No publicity" status patients are excluded.
- Patients receiving only non-skilled care are excluded.
- Patients who reside in a state where their health condition exclude them from surveys.
- Patients who are decedents at the time of the sample are excluded.

S.9. Denominator Exclusion Details *(All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*

The following guidance shows the denominator for computing response rates on the HHCAHPS Survey. Specific codes designating ineligible (i.e., excluded) patients are identified in the exhibit below and defined in the diagram that follows.

How Response Rates Are Calculated:

The total number of completed surveys is divided by the total number of surveys fielded minus the total number of ineligible surveys.

Definition of disposition codes follows:

HHCAHPS Survey Disposition Codes

Code	Description
110	Completed Mail Survey

The respondent answered at least 50 percent of the questions based on the specific completeness criteria. Assign this code for mail-only cases if the sample member responded to the questionnaire mailing and for mixed-mode cases if the sample member responded by mail.

120	Completed Phone Interview

The respondent answered at least 50 percent of the questions based on the specific completeness criteria. Assign this code if the interview was completed by phone and for mixed-mode cases if the sample member responded by phone.

210	Ineligible: Deceased

Assign this code if the sample member is reported as deceased during the course of the survey period.

220	Ineligible: Does Not Meet Eligible Population Criteria[2]

Assign this code if it is determined during the data collection period that the sample member does not meet all of the required eligibility criteria for being included in the survey sample. This includes the following:

- The sample member is under age 18.
- The sample member's home health care was not paid for by either Medicare or Medicaid.
- The sample member reports that he or she did not have at least one skilled care visit by the sample HHA during the sample month.
- The sample member reports that the home health visits she received were for routine maternity care only.
- It is reported that the sample member was discharged to hospice care during the sample month.
- The sample member answers "No" to Q1 and no additional questions in the survey instrument are answered.

A full listing of eligibility criteria is provided in Chapter IV of this manual.

230 Ineligible: Language Barrier

Assign this code to sample members who do not speak any of the HHCAHPS Survey language(s) which the vendor is administering for that HHA. The language barrier code only applies to the sample member and should not be assigned until a determination is made that the sample member cannot speak the language(s) being administered.

240 Ineligible: Mentally or Physically Incapacitated/No Proxy Available

Assign this code if it is determined that the sample member is unable to complete the survey because he or she is mentally or physically incapable and no proxy is available to complete the survey on his or her behalf. This includes sample members who are visually impaired (for mail surveys only) or hearing impaired (for telephone surveys only).

310 Break-Off

Assign this code if the sample member completes some responses but not enough to meet the completeness criteria.

320 Refusal

Assign this code if the sample member indicates either in writing or verbally (for telephone administration) that he or she does not wish to participate in the survey.

330 Bad Address/Undeliverable Mail

This code should be assigned only when using the mail-only mode. It should be assigned if it is determined that the sample member's address is bad (e.g., the questionnaire is returned by the Post Office as undeliverable with no forwarding address).

340 Wrong, Disconnected, or No Telephone Number

This code should be used in telephone-only or mixed-mode survey administration. Because the telephone follow-up represents the last attempt to reach the sample member for mixed-mode survey administration, this code should be used even if it is determined that the mailing address is also bad.

This code should be assigned if it is determined that the telephone number is bad (disconnected, no telephone number available, etc.).

350 No Response After Maximum Attempts

This code can be used in all three approved data collection modes. It should be assigned when the contact information for the sample member is assumed to be viable, but the sample member does not respond to the survey/cannot be reached during the data collection period.

This code should be assigned to completed surveys received after the data collection period for the sample month ends.

Mail-Only Mode

- This code should be assigned if the sample member's address is viable but he or she does not respond to either the first or second questionnaire mailing during the data collection period. Assign this code only if work on the case has not resulted in a completed survey or other final disposition code.
- This code should be assigned if the initial questionnaire is returned blank and the second questionnaire is never returned.
- Telephone-Only Mode
- This code should be assigned if it is determined that the telephone number is viable but the maximum number of telephone attempts (five) did not result in a completed interview or other final disposition code.
- Mixed Mode
- This code should be assigned if it is determined that the address and telephone number are viable but the maximum number of contact attempts (i.e., the questionnaire mailing and five telephone attempts) did not result in a completed survey or another final disposition code.

This information can be found on pages 107-122 in the HHCAHPS Protocols and Guidelines Manual, Version 11 (January 2019), for download at https://homehealthcahps.org. The Manual has full details.

S.10. Stratification Information *(Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)*

N/A

S.11. Risk Adjustment Type (Select type. Provide specifications for risk stratification in measure testing attachment)

Other

If other: The patient mix adjustment factors are derived from identified patient characteristics that have been determined to impact response tendencies. The patient-mix regression results indicate the tendency of patients with particular characteristics to respond more positively or negatively to HHCAHPS Survey questions. Patient-mix adjustment factors are derived directly from these data OLS regression results.

S.12. Type of score:

Rate/proportion

If other:

S.13. Interpretation of Score *(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)*

Better quality = Higher score

S.14. Calculation Algorithm/Measure Logic (*Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)*

Only surveys that meet the completeness criteria, which requires that 50% or more of the questions applicable to all sample members are answered, are included in the calculation of the measures. Each of the multi-item measures consist of four of more questions that are reported as one measure score. The final measure score averages the proportion of those responding to each answer choice in all of the survey questions that are associated with that measure score. Only questions that are answered by respondents are included in the calculation of the measure scores. The data are adjusted for patient mix so that all data are comparable across all of the home health agencies.

S.15. Sampling *(If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)*

IF an instrument-based performance measure (e.g., PRO-PM), identify whether (and how) proxy responses are allowed.

The target for the statistical precision of Home Health CAHPS Survey data that are publicly reported is based on a reliability criterion. The reliability target for the Home Health CAHPS ratings is 0.70 or higher. Based on the statistical precision required, 300 completed Home Health CAHPS surveys for each HHA are needed for each 12-month reporting period. This is equivalent to an average of 25 completed surveys per HHA per month.

The HHCAHPS Protocols and Guidelines Manual, Version 11 (January 2019), at https://homehealthcahps.org has a comprehensive chapter about sampling. CMS allows census sampling if the home health agency is small and this is the only way possible that the home health agency can achieve the 300 completes.

S.16. Survey/Patient-reported data *(If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)*

Specify calculation of response rates to be reported with performance measure results.

CMS does not mandate a minimum response rate to HHCAHPS. All HHCAHPS survey vendors must follow all of the survey administration rules in the current version of the HHCAHPS Protocols and Guidelines Manual, version 11.0.

S.17. Data Source *(Check ONLY the sources for which the measure is SPECIFIED AND TESTED).*

If other, please describe in S.18.

Instrument-Based Data

S.18. Data Source or Collection Instrument *(Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data are collected.)*

IF instrument-based, identify the specific instrument(s) and standard methods, modes, and languages of administration.

The best source for this information is the HHCAHPS Protocols and Guidelines Manual, Version 11.0, posted on https://homehealthcahps.org. CMS provides this information in the Measure Testing Form accompanying this submission for re-endorsement of HHCAHPS.

S.19. Data Source or Collection Instrument *(available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)*

Available at measure-specific web page URL identified in S.1

S.20. Level of Analysis *(Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)*

Facility

S.21. Care Setting *(Check ONLY the settings for which the measure is SPECIFIED AND TESTED)*

Home Care

If other:

S.22. COMPOSITE Performance Measure - Additional Specifications *(Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)*

2. Validity – See attached Measure Testing Submission Form

NQF-Measure-Testing-Form-HHCAHPS-0517-Maintenance-April2019.docx

2.1 For maintenance of endorsement

Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment.

Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

Yes

2.2 For maintenance of endorsement

Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

Yes

2.3 For maintenance of endorsement

Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes social risk factors is not prohibited at present. Please update sections 1.8, 2a2, 2b1,2b4.3 and 2b5 in the Testing attachment and S.140 and S.11 in the online submission form. NOTE: These sections must be updated even if social risk factors are not included in the risk-adjustment strategy. You MUST use the most current version of the Testing Attachment (v7.1) -- older versions of the form will not have all required questions.

Yes - Updated information is included

Measure Testing (subcriteria 2a2, 2b1-2b6)

Measure Number (*if previously endorsed*)**:** Measure Number 0517
Measure Title: Home Health Care Consumer Assessment of Healthcare Providers and Systems Survey (HHCAHPS)
Date of Submission: 1/7/2019

Type of Measure:

☒ Outcome (*including PRO-PM*)	☐ Composite—*STOP—use composite testing form*
☐ Intermediate Clinical Outcome	☐ Cost/resource
☐ Process *(including Appropriate Use)*	☐ Efficiency
☐ Structure	

1. Data/Sample Used for All Testing of This Measure

Often the same data are used for all aspects of measure testing. In an effort to eliminate duplication, the first five questions apply to all measure testing. If there are differences by aspect of testing,(e.g., reliability vs. validity) be sure to indicate the specific differences in question 1.7.

1.1. What type of data was used for testing? (*Check all the sources of data identified in the measure specifications and data used for testing the measure. Testing must be provided for all the sources of data specified and intended for measure implementation.* ***If different data sources are used for the numerator and denominator, indicate N [numerator] or D [denominator] after the checkbox.***)

Measure Specified to Use Data From: **(*must be consistent with data sources entered in S.17*)**	**Measure Tested with Data From:**
☐ abstracted from paper record	☐ abstracted from paper record
☐ claims	☐ claims
☐ registry	☐ registry
☐ abstracted from electronic health record	☐ abstracted from electronic health record
☐ e-Measure (HQMF) implemented in EHRs	☐ e-Measure (HQMF) implemented in EHRs
☒ other: HHCAHPS Survey (Mail or Telephone)	☒ other: HHCAHPS Survey (Mail or Telephone)

1.2. If an existing dataset was used, identify the specific dataset (*the dataset used for testing must be consistent with the measure specifications for target population and healthcare entities being measured; e.g., Medicare Part A claims, Medicaid claims, other commercial insurance, nursing home MDS, home health OASIS, clinical registry*).

Data used in the analysis for reliability and validity for this NQF application were obtained from 8,694 Medicare-certified home health agencies that submitted HHCAHPS Survey data collected from patients who received at least two skilled home health care visits during the period January to December 2017. Eligible patients were at least 18 years old as of the end of each sample month, they received at least one skilled home health care visit in the sample month and at least two skilled visits during the sample month and calendar month immediately preceding it, they were not receiving hospice care, they did not receive visits for routine maternity care only, and their care was paid for by Medicare and/or Medicaid.

The HHCAHPS Survey is administered on a monthly basis, through mail only, telephone only, or mixed mode (mail with telephone follow-up) and is available in multiple languages. The dataset contained response data from 1,201,695 surveys, with a response rate of 28.7%. HHCAHPS survey items are not imputed when responses are missing. Imputation is only used on a very limited basis for respondent characteristics (e.g., age or education group) in the score adjustment process.

1.3. What are the dates of the data used in testing? January to December 2017

1.4. What levels of analysis were tested? (*Testing must be provided for all the levels specified and intended for measure implementation, e.g., individual clinician, hospital, health plan*)

Measure Specified to Measure Performance of: **(*must be consistent with levels entered in item S.20*)**	**Measure Tested at Level of:**
☐ individual clinician	☐ individual clinician
☐ group/practice	☐ group/practice
☒ hospital/facility/agency	☒ hospital/facility/agency
☐ health plan	☐ health plan
☐ other:	☐ other:

1.5. How many and which measured entities were included in the testing and analysis (by level of analysis and data source)? (*Identify the number and descriptive characteristics of measured entities included in the analysis (e.g., size, location, and type); if a sample was used, describe how entities were selected for inclusion in the sample*)

Data used in this analysis were obtained from 8,694 Medicare-certified home health agencies that submitted HHCAHPS Survey data collected from patients who received at least two skilled home health care visits during the period January to December 2017. The requirement of at least two skilled visits is an inclusion criterion for both the testing and the reported measure.

The distribution of agencies by state/territory is shown in **Table 1** below.

Table 1. Distribution of Home Health Agencies by State/Territory (N=8,694)

State/Territory	N	%
Alabama	148	1.7
Alaska	12	0.1
Arizona	124	1.4
Arkansas	96	1.1
California	1029	11.8
Colorado	136	1.6
Commonwealth of the Northern Marianas Islands	2	0.0
Connecticut	86	1.0
Delaware	18	0.2
District of Columbia	16	0.2
Florida	787	9.1
Georgia	100	1.2
Guam	4	0.1
Hawaii	14	0.2
Idaho	47	0.5
Illinois	576	6.6
Indiana	181	2.1
Iowa	131	1.5
Kansas	94	1.1
Kentucky	101	1.2
Louisiana	186	2.1
Maine	22	0.3
Maryland	50	0.6
Massachusetts	170	2.0
Michigan	399	4.6
Minnesota	138	1.6
Mississippi	46	0.5
Missouri	146	1.7
Montana	24	0.3
Nebraska	59	0.7
Nevada	110	1.3
New Hampshire	23	0.3
New Jersey	42	0.5
New Mexico	66	0.8
New York	126	1.5
North Carolina	165	1.9
North Dakota	13	0.2

(continued)

Table 1. Distribution of Home Health Agencies by State/Territory (N=8,694) (continued)

State/Territory	N	%
Ohio	446	5.1
Oklahoma	222	2.6
Oregon	52	0.6
Pennsylvania	278	3.2
Puerto Rico	37	0.4
Rhode Island	22	0.3
South Carolina	68	0.8
South Dakota	26	0.3
Tennessee	124	1.4
Texas	1401	16.1
Utah	89	1.0
Vermont	11	0.1
Virgin Islands	1	0.0
Virginia	196	2.3
Washington	60	0.7
West Virginia	61	0.7
Wisconsin	89	1.0
Wyoming	24	0.3

1.6. How many and which patients were included in the testing and analysis (by level of analysis and data source)? (*Identify the number and descriptive characteristics of patients included in the analysis (e.g., age, sex, race, diagnosis); if a sample was used, describe how patients were selected for inclusion in the sample*)

Demographic characteristics of the 1,201,695 patients included in the analyses are shown in **Table 2**. The sample selection for this testing was consistent with the inclusion and exclusion criteria used for the HHCAHPS measure. Eligible patients were at least 18 years old as of the end of the sample month, they received at least one skilled home health care visit in the sample month and at least two skilled visits during the sample month and calendar month immediately preceding it, they were not receiving hospice care, they did not receive visits for routine maternity care only, and their care was paid for by Medicare and/or Medicaid.

Table 2. Demographic Characteristics of Respondents (January–December 2017) (N=1,201,695)

Characteristic	N	%
Gender		
Male	464,862	39
Female	736,326	61
Missing	507	0
Age		
18–49	27,568	2
50–64	126,087	10
65–74	335,565	28
75–84	398,662	33
85+	311,995	26
Missing	1,818	1
Education		
<8th grade	92,132	8
Some HS	119,511	10
HS grad/GED	399,686	33
Some College	293,496	24
College Grad or more	241,600	20
Missing	55,270	5
English speaker		
English	1,165,198	97
Non-English	31,410	3
Missing	5,087	0
Self-Reported Mental Health		
Excellent	211,761	18
Very good	327,205	27
Good	368,691	31
Fair	217,336	18
Poor	51,263	4
Missing	25,439	2
Self-Reported Overall Health		
Excellent	109,645	9
Very good	206,977	17
Good	377,987	31
Fair	356,891	30
Poor	121,398	10
Missing	28,797	2

1.7. If there are differences in the data or sample used for different aspects of testing (e.g., reliability, validity, exclusions, risk adjustment), identify how the data or sample are different for each aspect of testing reported below.

Not applicable; there were no differences in the sample used for different aspects of testing.

1.8. What were the social risk factors that were available and analyzed? For example, patient-reported data (e.g., income, education, language), proxy variables when social risk data are not collected from each patient (e.g., census tract), or patient community characteristics (e.g., percent vacant housing, crime rate) which do not have to be a proxy for patient-level data.

The HHCAHPS Survey has a set of "About You" questions, some of which are used in patient-mix adjustment. The survey has questions about self-reported health status, self-reported mental health status, whether the patient lives alone, race/ethnicity, the patient's primary language spoken at home, and self-reported educational level. It is important to note that the HHCAHPS Survey data are de-identified; CMS does not receive information on where patients live. The self-reported educational level is seen as a reasonable proxy for socioeconomic status and is therefore one of the variables used in the patient-mix adjustment process.

2a2. Reliability Testing

***Note**: If accuracy/correctness (validity) of data elements was empirically tested, separate reliability testing of data elements is not required—in 2a2.1 check critical data elements; in 2a2.2 enter "see section 2b2 for validity testing of data elements"; and skip 2a2.3 and 2a2.4.*

2a2.1.What level of reliability testing was conducted? (*May be one or both levels*)

☒ **Critical data elements used in the measure** *e.g., inter-abstractor reliability; data element reliability must address ALL critical data elements*

☒ **Performance measure score** (e.g., *signal-to-noise analysis*)

2a2.2.For each level checked above, describe the method of reliability testing and what it tests (*describe the steps—do not just name a method; what type of error does it test; what statistical analysis was used*)

At the respondent level, standardized Cronbach's alphas were computed to determine internal consistency reliability for each multi-item measure. In addition, for each measure, we calculated the alphas if an item was deleted from the measure.

We emulated the method from Hamer (1990) and computed intra-class correlation measures. At the agency level, we calculated the intra-class correlation (ICC) for each measure, using the INTRACC SAS macro. We followed the intra-class correlations methodology used in assessing rater reliability. We computed the ICC when survey respondents vary across settings, which is applicable when there are multiple raters and raters are not the same across units. In addition, we computed the inter-class reliability (ICR) to determine how much of the variation in domain scores across the agencies is due to true variation versus chance or measurement error. The ICR was computed by fitting a one-way analysis of variance regressing domain scores on agency and then transforming the F-statistic as follows: ICR = (F-1)/F.

2a2.3.For each level of testing checked above, what were the statistical results from reliability testing? (e.*g., percent agreement and kappa for the critical data elements; distribution of reliability statistics from a signal-to-noise analysis*)

Cronbach's alphas for the multi-item measures at the respondent-level were:

- **Measure 1**: Care of Patients (alpha=0.71)
- **Measure 2:** Communications between Providers and Patients (alpha=0.70)
- **Measure 3:** Specific Care Issues (alpha=0.77)

Alphas for the measure if individual items were deleted are shown in **Table 3**.

Table 3. Cronbach's Alphas if Item Deleted

Measure/Item		Alpha if Item Deleted
Measure 1: Care of Patients		
Q9.	In the last 2 months of care, how often did home health providers from this agency seem informed and up-to-date about all the care of treatment you got at home?	0.66
Q16.	In the last 2 months of care, how often did home health providers from this agency treat you as gently as possible?	0.59
Q19.	In the last 2 months of care, how often did home health providers from this agency treat you with courtesy and respect?	0.58
Q24.	In the last 2 months of care, did you have any problems with the care you got through this agency?	0.73
Measure 2: Communication between Providers and Patients		
Q2.	When you first started getting home health care from this agency, did someone from the agency tell you what care and services you would get?	0.71
Q15.	In the last 2 months of care, how often did home health providers from this agency keep you informed about when they would arrive at your home?	0.64
Q17.	In the last 2 months of care, how often did home health providers from this agency explain things in a way that was easy to understand?	0.61
Q18.	In the last 2 months of care, how often did home health providers from this agency listen carefully to you?	0.61
Q22.	In the last 2 months of care, when you contacted this agency's office did you get the help or advice you needed?	0.68
Q23.	When you contacted this agency's office, how long did it take for you to get the help or advice you needed?	0.70

(continued)

Table 3. Cronbach's Alphas if Item Deleted (continued)

Measure/Item		Alpha if Item Deleted
Measure 3: Specific Care Issues		
Q3.	When you first started getting home health care from this agency, did someone from the agency talk with you about how to set up your home so you can move around safely?	0.76
Q4.	When you first started getting home health care from this agency, did someone from this agency talk with you about all the prescription medicines you were taking?	0.74
Q5.	When you first started getting home health care from this agency, did someone from the agency ask to see all the prescription medicine you were taking?	0.75
Q10.	In the last 2 months of care, did you and a home health provider from this agency talk about pain?	0.78
Q12.	In the last 2 months of care, did home health providers from this agency talk with you about the purpose for taking your new or changed prescription medicines?	0.72
Q13.	In the last 2 months of care, did home health providers from this agency talk with you about when to take these medicines?	0.72
Q14.	In the last 2 months of care, did home health providers from this agency talk with you about the important side effects of these medicines?	0.73

On average, 138 patients responded per agency. The agency-level reliability coefficients by measure were:

- **Measure 1**: Care of Patients (ICR=0.84)
- **Measure 2:** Communication between Providers and Patients (ICR=0.79)
- **Measure 3:** Specific Care Issues (ICR=0.85)
- **Measure 4:** Would Recommend Agency to Family and Friends (ICR=0.81)
- **Measure 5:** Overall Rating of Care (ICR=0.79)

Intra-class correlations are shown by number of respondents per agency in **Table 4**.

Table 4. Intra-class Correlations by Number of Respondents per Agency

Measure	Number of Respondents per Agency				
	< 50	**50–99**	**100–199**	**200–999**	**1000+**
Care of Patients	0.57	0.79	0.85	0.90	0.97
Communication between Providers and Patients	0.53	0.75	0.83	0.87	0.95
Specific Care Issues	0.61	0.81	0.88	0.92	0.98
Would Recommend Agency to Family and Friends	0.54	0.70	0.80	0.88	0.97
Overall Rating of Care	0.52	0.73	0.82	0.89	0.96

2a.2.4.What is your interpretation of the results in terms of demonstrating reliability? (i.*e., what do the results mean and what are the norms for the test conducted?*)

Cronbach's alpha quantifies how related the items in a domain are to each other with values of 0.70 or higher generally being considered acceptable reliability for group-level comparisons. Higher scores for inter-class reliability indicate a better ability to differentiate between agencies. Similar to Cronbach's alpha, values of 0.70 or higher indicate acceptable reliability. Site-level reliability exceeded 0.70 for all HHCAHPS measures. For intra-class correlations (ICC), Koo and Li (2016) recommended the following classifications of strength of reliability: poor (ICC < 0.50), moderate (ICC 0.50–0.75), good (ICC 0.75–0.90), and excellent (ICC > 0.90). The values for the ICCs indicate moderate reliability for the HHCAHPS multi-item measures when there are fewer than 50 respondents per agency, and good to excellent reliability when there are 50 or more respondents per agency. Overall, the HHCAHPS measures demonstrated acceptable reliability at both the respondent and agency levels.

2b1. Validity Testing

2b1.1.What level of validity testing was conducted? (*May be one or both levels*)

☒ **Critical data elements** (*data element validity must address ALL critical data elements*)

☒ **Performance measure score**

☒ **Empirical validity testing**

☐ **Systematic assessment of face validity of performance measure score as an indicator** of quality or resource use (*i.e., is an accurate reflection of performance on quality or resource use and can distinguish good from poor performance*) **NOTE**: Empirical validity testing is expected at time of maintenance review; if not possible, justification is required.

2b1.2. For each level of testing checked above, describe the method of validity testing and what it tests (*describe the steps—do not just name a method; what was tested, e.g., accuracy of data elements compared to authoritative source, relationship to another measure as expected; what statistical analysis was used)*

Structural validity of the HHCAHPS measures was assessed by conducting a confirmatory factor analysis (CFA) of the items comprising the multi-item measures. Items should cluster into three factors, representing the three CAHPS measures (Care of Patients, Communication between Providers and Patients, and Specific Care Issues). Fit of the three-factor model was assessed using the following model fit indices: Comparative Fit Index

(CFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). Values of 0.90 or higher on the CFI and TLI and values of 0.05 or lower on the RMSEA indicate acceptable model fit.

Discriminant validity was assessed by computing correlations of each item with sum scores for its own multi-item measure, as well as with the other two multi-item measures. To demonstrate good discriminant validity, items should be more highly correlated with their own measure than other measures. (Note: Item-total correlations were computed to compare items to their own measures while removing the item of interest to avoid inflation of the correlation.) Scaling success rates were then calculated to determine the percentage of times each item correlated more highly with its own measures than the other measures. Ideally, scaling success rates should be close to 100%.

Construct validity was assessed at the respondent and facility levels by examining correlations of each of the HHCAHPS multi-item measures (Care of Patients, Communication between Providers and Patients, and Specific Care Issues), and with each of the two global measures (Overall Rating of Care from the Agency, and Would Recommend the Agency to Family or Friends). Correlations should be moderate-sized and in the positive direction (r=0.3 to 0.7), suggesting they are measuring similar, but not identical, constructs. Correlations are hypothesized to be higher among the HHCAHPS measures addressing universally-relevant aspects of home health care (the Care of Patients, and the Communication between Providers and Patients); and lower for the HHCAHPS measure which includes specific care experiences that may not impact all patients (the Specific Care Issues measure).

2b1.3.What were the statistical results from validity testing? (*e.g., correlation; t-test*)

The results of the confirmatory factor analyses and correlations are shown in **Tables 5, 6, and 7**.

Table 5. Factor Loadings from Three-Factor Confirmatory Factor Model

Measures/Survey Questions	Factor Loadings		
	Factor 1: Care of Patients	Factor 2: Communication between Providers and Patients	Factor 3: Specific Care Issues
Measure 1: Care of Patients			
Q9. In the last 2 months of care, how often did home health providers from this agency seem informed and up-to-date about all the care of treatment you got at home?	0.80		
Q16. In the last 2 months of care, how often did home health providers from this agency treat you as gently as possible?	0.87		
Q19. In the last 2 months of care, how often did home health providers from this agency treat you with courtesy and respect?	0.92		
Q24. In the last 2 months of care, did you have any problems with the care you got through this agency?	0.63		
Measure 2: Communication between Providers and Patients			
Q2. When you first started getting home health care from this agency, did someone from the agency tell you what care and services you would get?		0.67	
Q15. In the last 2 months of care, how often did home health providers from this agency keep you informed about when they would arrive at your home?		0.75	
Q17. In the last 2 months of care, how often did home health providers from this agency explain things in a way that was easy to understand?		0.88	
Q18. In the last 2 months of care, how often did home health providers from this agency listen carefully to you?		0.91	
Q22. In the last 2 months of care, when you contacted this agency's office did you get the help or advice you needed?		0.60	
Q23. When you contacted this agency's office, how long did it take for you to get the help or advice you needed?		0.44	

(continued)

Table 5. Factor Loadings from Three-Factor Confirmatory Factor Model (continued)

Measures/Survey Questions	Factor Loadings		
	Factor 1: Care of Patients	Factor 2: Communication between Providers and Patients	Factor 3: Specific Care Issues
Measure 3: Specific Care Issues			
Q3. When you first started getting home health care from this agency, did someone from the agency talk with you about how to set up your home so you can move around safely?			0.73
Q4. When you first started getting home health care from this agency, did someone from this agency talk with you about all the prescription medicines you were taking?			0.88
Q5. When you first started getting home health care from this agency, did someone from the agency ask to see all the prescription medicine you were taking?			0.71
Q10. In the last 2 months of care, did you and a home health provider from this agency talk about pain?			0.65
Q12. In the last 2 months of care, did home health providers from this agency talk with you about the purpose for taking your new or changed prescription medicines?			0.89
Q13. In the last 2 months of care, did home health providers from this agency talk with you about when to take these medicines?			0.90
Q14. In the last 2 months of care, did home health providers from this agency talk with you about the important side effects of these medicines?			0.87

Note: Model fit indices: Comparative Fit Index (CFI)=0.97, Tucker-Lewis Index (TLI)=0.97, and Root Mean Square Error of Approximation (RMSEA)=0.04.

Table 6. Correlations between Single Items and Multi-Item Measures

Single Question Item	Measure 1: Care of Patients	Measure 2: Communication between Providers and Patients	Measure 3: Specific Care Issues
Care of Patients			
Q9. In the last 2 months of care, how often did home health providers from this agency seem informed and up-to-date about all the care of treatment you got at home?	0.46	0.34	0.28
Q16. In the last 2 months of care, how often did home health providers from this agency treat you as gently as possible?	0.56	0.33	0.16
Q19. In the last 2 months of care, how often did home health providers from this agency treat you with courtesy and respect?	0.57	0.33	0.15
Q24. In the last 2 months of care, did you have any problems with the care you got through this agency?	0.34	0.12	0.07
Communication between Providers and Patients			
Q2. When you first started getting home health care from this agency, did someone from the agency tell you what care and services you would get?	0.20	0.26	0.20
Q15. In the last 2 months of care, how often did home health providers from this agency keep you informed about when they would arrive at your home?	0.37	0.52	0.19
Q17. In the last 2 months of care, how often did home health providers from this agency explain things in a way that was easy to understand?	0.43	0.60	0.22
Q18. In the last 2 months of care, how often did home health providers from this agency listen carefully to you?	0.45	0.62	0.22
Q22. In the last 2 months of care, when you contacted this agency's office did you get the help or advice you needed?	0.28	0.34	0.19
Q23. When you contacted this agency's office, how long did it take for you to get the help or advice you needed?	0.23	0.27	0.14

(continued)

Table 6. Correlations between Single Items and Multi-Item Measures (continued)

Single Question Item	Measure 1: Care of Patients	Measure 2: Communication between Providers and Patients	Measure 3: Specific Care Issues
Specific Care Issues			
Q3. When you first started getting home health care from this agency, did someone from the agency talk with you about how to set up your home so you can move around safely?	0.22	0.20	0.41
Q4. When you first started getting home health care from this agency, did someone from this agency talk with you about all the prescription medicines you were taking?	0.21	0.20	0.47
Q5. When you first started getting home health care from this agency, did someone from the agency ask to see all the prescription medicine you were taking?	0.15	0.15	0.41
Q10. In the last 2 months of care, did you and a home health provider from this agency talk about pain?	0.23	0.20	0.29
Q12. In the last 2 months of care, did home health providers from this agency talk with you about the purpose for taking your new or changed prescription medicines?	0.26	0.24	0.58
Q13. In the last 2 months of care, did home health providers from this agency talk with you about when to take these medicines?	0.22	0.22	0.61
Q14. In the last 2 months of care, did home health providers from this agency talk with you about the important side effects of these medicines?	0.23	0.25	0.57

Note: Correlations between an item and its corresponding measure are item-total correlations which are adjusted to remove the item of interest.

Table 7. Correlations of CAHPS Measures at Respondent-Level and Agency-Level

	Respondent-Level		**Agency-Level**	
HHCAHPS Measure	**Rating of Care**	**Would Recommend Agency**	**Rating of Care**	**Would Recommend Agency**
Care of Patients	0.44	0.39	0.71	0.68
Communication between Providers and Patients	0.36	0.32	0.70	0.67
Specific Care Issues	0.25	0.25	0.49	0.48

2b1.4. What is your interpretation of the results in terms of demonstrating validity? (i.*e., what do the results mean and what are the norms for the test conducted?*)

The HHCAHPS measures demonstrated good validity. The three-factor model fit well; all model fit indices exceeded the criteria for acceptable model fit (CFI=0.97, TLI=0.97, and RMSEA=0.04) and all items except one item in one measure had factor loadings of 0.60 or higher (**Table 5**). These findings support the division of the items into three measures.

As shown in **Table 6**, all items correlated more highly with their own measure than the other measures, resulting in a 100% scaling success rate across all three measures.

The five HHCAHPS measures were positively correlated at both the respondent-level (r=0.25 to 0.44) and at the agency-level (r=0.48 to 0.71) with higher correlations for the four measures of Care of Patients, Communication, Overall rating of agency, and Would you recommend agency, as hypothesized, supporting the construct validity of the measures (**Table 7**).

2b2. Exclusions Analysis

NA ☒ no exclusions—*skip to section* 2b3

2b2.1. Describe the method of testing exclusions and what it tests (*describe the steps—do not just name a method; what was tested, e.g., whether exclusions affect overall performance scores; what statistical analysis was used*)

2b2.2.What were the statistical results from testing exclusions? (*Include overall number and percentage of individuals excluded, frequency distribution of exclusions across measured entities, and impact on performance measure scores*)

2b2.3.What is your interpretation of the results in terms of demonstrating that exclusions are needed to prevent unfair distortion of performance results? (*i.e., the value outweighs the burden of increased data collection and analysis. Note: **If patient preference is an exclusion**, the measure must be specified so that the effect on the performance score is transparent, e.g., scores with and without exclusion*)

2b3. Risk Adjustment/Stratification for Outcome or Resource Use Measures

If not an intermediate or health outcome, or PRO-PM, or resource use measure, skip to section 2b4**.**

2b3.1. What method of controlling for differences in case mix is used?

☐ **No risk adjustment or stratification**
☐ **Statistical risk model with risk factors**
☐ **Stratification by risk categories**
☒ **Other,** Patient mix adjustment

2b3.1.1 If using a statistical risk model, provide detailed risk model specifications, including the risk model method, risk factors, coefficients, equations, codes with descriptors, and definitions.

The patient mix adjustment factors are derived from identified patient characteristics that have been determined to impact response tendencies. The patient-mix regression results indicate the tendency of patients with particular characteristics to respond more positively or negatively to HHCAHPS Survey questions. Patient-mix adjustment factors are derived directly from these data OLS regression results.

Patient-mix adjustment factors are updated quarterly in January, April, July, and October on https://homehealthcahps.org . The patient-mix adjustment factors posted on the HHCAHPS website align with Home Health Compare publicly reported HHCAHPS Survey data results that is updated in the same months (January, April, July, and October).

Patient-mix adjustment factors to account for differences in patient mix are recalculated quarterly and applied to HHCAHPS scores for the respective quarter. The last four quarters of adjusted scores are then averaged to produce the current quarter's published scores. Publicly reported HHCAHPS Survey scores are adjusted for differences between an HHA's patient composition according to the HHCAHPS patient-mix characteristics and

the overall national composition of home health patients on these same characteristics. This adjustment, which allows consumers to compare different HHAs based on the same overall patient composition, is made by subtracting the national mean for a given patient characteristic from an HHA's share of patients on this patient characteristic.

For example, if nationally 20% of patients are aged 65–74, but an HHA's share of patients on this measure is 25%, then this adjustment for the difference in the HHA's patient composition versus the overall national patient composition is calculated as 25% minus 20%, or 5%.

Four sets of numbers are needed to calculate an HHA's adjusted score for any given HHCAHPS measure: (1) the individual-level patient-mix adjustment factors shown in **Table 8** (top box adjustment factors), (2) the national mean on the patient-mix characteristic variables shown in **Table 9**, (3) the HHA's mean on the respective HHCAHPS outcome before adjustment, and (4) the HHA's mean on each of the patient-mix characteristic variables.

The adjusted score for a given HHCAHPS Survey measure for an HHA is the sum of a series of products in the equation shown below, where each product multiplies the adjustment from **Table 8** (top box) by the deviation of the HHA's mean on a given patient-mix characteristic from the national mean on that characteristic:

$$y' = y + a1\,(h1 - m1) + a2\,(h2 - m2) + a3\,(h3 - m3) + \ldots + a19\,(h19 - m19)$$

Where

y' is the HHA's adjusted score for the respective HHCAHPS measure

y is the HHA mean on the respective unadjusted top box HHCAHPS measure

a is the national adjustment factor for a patient characteristic

h is the HHA mean percentage value for having patients with that characteristic

m is the national mean percentage value for a patient characteristic

In the HHCAHPS Survey, we control for the factors that influence how a patient responds to the survey (response tendencies). Here are the Patient-Mix Adjustment Factors reflecting the period January 2017 through December 2017 (**Table 8**)

Table 8. "Top Box" HHCAHPS Patient-Mix Adjustment Factors (Four-Quarter Average for the July 2018 Public Reporting Period, January 2017 through December 2017 Home Health Patients

Patient Mix Characteristic Patient Mix Level	Overall Rating	Willingness to Recommend	Care of Patients	Communication	Specific Care Issues
Proxy					
Proxy	0.007	0.012	0.002	0.003	0.007
Non-English survey response					
Non-English survey response	−0.054	−0.043	0.002	−0.003	−0.033
Age					
18–49	0.071	0.051	0.038	0.023	0.028
50–64	0.026	0.014	0.016	0.008	0.005
65–74	RC	RC	RC	RC	RC
75–84	0.005	0.011	0.004	0.012	0.015
85+	0.015	0.027	0.009	0.027	0.030
Education					
< 8th grade	−0.004	−0.005	0.002	0.000	−0.022
Some high school	−0.013	−0.011	−0.003	−0.004	−0.017
High school graduate/GED	RC	RC	RC	RC	RC
Some college	0.022	0.012	0.011	0.012	0.018
College graduate or more	0.046	0.023	0.022	0.023	0.048
Residence status					
Patient lived alone	0.026	0.034	0.023	0.025	0.023
Self-reported health status					
Excellent	−0.101	−0.122	−0.049	−0.051	−0.062
Very good	−0.015	−0.006	−0.006	−0.004	−0.010
Good	RC	RC	RC	RC	RC
Fair	0.007	0.001	0.005	0.006	0.000
Poor	0.026	0.015	0.018	0.017	0.005
Mental/emotional status					
Excellent/very good	−0.044	−0.043	−0.024	−0.026	0.001
Good	RC	RC	RC	RC	RC
Fair/poor	0.020	0.015	0.011	0.015	0.008
Diagnoses					
Schizophrenia	0.049	0.038	0.041	0.038	0.040
Dementia/cerebral degeneration	0.008	0.004	0.003	0.012	0.010

RC = reference category

Table 9. National Means on Patient-Mix Adjustment Factors (Four-Quarter Average for the July 2018 Public Reporting Period, January 2017 through December 2017 Home Health Patients)

Patient Mix Characteristic **Patient Mix Level**	**Mean**
Proxy respondent used	0.12
Non-English survey response	0.06
Age	
18–49	0.03
50–64	0.12
65–74	0.27
75–84	0.32
85+	0.26
Education	
8th grade or less	0.11
Some high school	0.12
High school graduate/GED	0.34
Some college	0.24
College graduate or more	0.19
Residence status	
Patient lived alone	0.35
Self-reported health status	
Excellent	0.09
Very good	0.16
Good	0.31
Fair	0.33
Poor	0.12
Mental/emotional status	
Excellent/very good	0.42
Good	0.32
Fair/poor	0.26
Diagnoses	
Schizophrenia	0.01
Dementia/cerebral degeneration	0.08

2b3.2. If an outcome or resource use component measure is not risk adjusted or stratified, provide rationale and analyses to demonstrate that controlling for differences in patient characteristics (case mix) is not needed to achieve fair comparisons across measured entities.

Not applicable.

2b3.3a. Describe the conceptual/clinical and statistical methods and criteria used to select patient factors (clinical factors or social risk factors) used in the statistical risk model or for stratification by risk (*e.g., potential factors identified in the literature and/or expert panel; regression analysis; statistical significance of p<0.10; correlation of x or higher; patient factors should be present at the start of care*) **Also discuss any "ordering" of risk factor inclusion**; for example, are social risk factors added after all clinical factors?

The risk adjustment process for HHCAHPS has been described above in section 2b3.1.1.

The clinical factors in the HHCAHPS patient-mix adjustment model include patient's age, gender, self-reported overall health status, self-reported mental/emotional health status, and diagnoses of schizophrenia or dementia.

The social risk factors in the HHCAHPS patient-mix model include patient's self-reported education, language in which the survey was completed, whether the patient lives alone, and whether the survey was answered by a proxy.

We do not do any ordering when including risk factors in the patient-mix adjustment model; all patient-mix adjustment factors are entered simultaneously.

2b3.3b.How was the conceptual model of how social risk impacts this outcome developed? Please check all that apply:

☒ **Published literature**

☒ **Internal data analysis**

☐ **Other (please describe)**

2b3.4a.What were the statistical results of the analyses used to select risk factors?

Every quarter, we publish the patient mix adjustments that are applicable to the data that are on Home Health Compare. We provide these statistical adjustments every quarter. Typically, home health agencies receive HHCAHPS data results from the vendors without adjustments. When people can see the adjustments in the national analyses of the HHCAHPS Survey data, they are able to better understand the publicly reported data on Home Health Compare.

The most important variables impacting the HHCAHPS survey results are the characteristics of the survey respondents: age, education, self-reported mental or emotional status, self-reported health status, the respondent lives alone, the respondent's primary language spoken at home, and the respondent's number of deficits in the activities of daily living.

2b3.4b. Describe the analyses and interpretation resulting in the decision to select social risk factors *(e.g., prevalence of the factor across measured entities, empirical association with the outcome, contribution of unique variation in the outcome, assessment of between-unit effects and within-unit effects.)* **Also describe the impact of adjusting for social risk (or not) on providers at high or low extremes of risk.**

We followed the CAHPS approach for case-mix adjustment (which we refer to as patient-mix adjustment in the HHCAHPS program). The selection of factors in the HHCAHPS patient-mix adjustment model is based on evidence that these factors met CAHPS case-mix adjustment criteria: exogeneity, significant variation between home health agencies, and significant association with HHCAHPS outcomes within agencies. All patient-mix adjustment factors, including the social risk factors, are measured at the patient level, are exogenous and not caused by the agency; varied to a substantial and statistically significant extent within agencies; and are associated with patient experience of care outcomes in the patient-mix adjustment model. Agencies that were at the extremes of social risk factors that were associated with less positive response tendency (e.g., agencies with high proportions of patients with schizophrenia or dementia) received substantial positive adjustments.

2b3.5. Describe the method of testing/analysis used to develop and validate the adequacy of the statistical model or stratification approach (*describe the steps—do not just name a method; what statistical analysis was used*)

We first assessed all potential patient-mix characteristics for excessive correlation using a variance inflation factor (VIF) test. All variables had a VIF score of no higher than 2.0. We then estimated both OLS and logistic regression models on each HHCAHPS measure using HHA fixed effects. To begin testing potential patient-mix characteristics, we first estimated models containing all patient characteristics plus 9 different high-level diagnosis groups, finding that only 2 diagnosis groups—dementia and schizophrenia—were almost always statistically significant and with large coefficients. The other 7 groups were inconsistently statistically significant and had relatively lower magnitude in coefficients. We included only dementia and schizophrenia as diagnosis groups in the remainder of testing.

We also decomposed the effects of mode variables by separating mixed mode into its two separate components (mixed-mode mail and mixed-mode telephone), conducting regressions using only mode variables with HHA fixed effects and no other variables, and testing for proxy effects on mode. We found that mixed-mode and mixed-mail effects were generally oppositely signed, so when combined, the effect of the combined variable is muted. Generally, large effects for the proxy variable were found, particularly in relationship to other patient-mix covariates. Telephone mode was statistically significant in only a minority of regressions, was mixed in sign, and without large magnitude compared to other characteristics.

Next, we estimated fully specified regression models using the full set of independent variables, but only the with the two diagnosis groups above. In successive steps, we eliminated selected independent variables across all regressions based on prior Hospital CAHPS experience and RTI analysts' sense of the relative contributions of each potential characteristic. The last step contained the fewest set of potential adjusters, which generally paralleled many of the adjusters used in the Hospital CAHPS Survey.

After calculating the adjusted HHCAHPS score for each HHA resulting from each of the steps above, project staff also calculated both the percentage point difference and the percent difference of the resulting adjusted score from the prior step's score to provide a measure of how much adjusted scores changed between steps as more variables were dropped from the regression model. Project staff developed a table of impact analysis results that presented a count of the number of HHAs for which the adjusted scores moved a certain fixed amount of percentage points. For example, after each step above, project staff tabulated the number of HHAs for which the scores moved less than 1 percentage point, between 1 and 2 percentage points, between 2 and 5 percentage points, and more than 5 percentage points to show the relative impact of each successive step in the impact analysis. The recommendations for which adjustment factors to use in the HHCAHPS Survey are based on the results of this impact analysis. We elected to include all patient characteristics that were contained in the 3rd of 6 steps because we saw little change in impact analysis from eliminating additional characteristics and sought relatively robust models.

Provide the statistical results from testing the approach to controlling for differences in patient characteristics (case mix) below.

If stratified, skip to 2b3.9

2b3.6. Statistical Risk Model Discrimination Statistics (*e.g., c-statistic, R-squared*)**:**

R-square values from regressions ranged from as high as 0.08 to as low as 0.03 across the 19 regressions. Most often, R-square values ranged from 0.04 to 0.05. The 6 steps of the impact analysis process described above provided a better sense of the impact of removing small groups of patient characteristics from the prior regression step on HHCAHPS scores.

2b3.7. Statistical Risk Model Calibration Statistics (*e.g., Hosmer-Lemeshow statistic*): Not analyzed.

2b3.8. Statistical Risk Model Calibration—Risk decile plots or calibration curves: Not analyzed.

2b3.9. Results of Risk Stratification Analysis:

Not applicable.

2b3.10.What is your interpretation of the results in terms of demonstrating adequacy of controlling for differences in patient characteristics (case mix)? W*hat do the results mean and what are the norms for the test conducted*?

The characteristics used for HHCAHPS to control for patient mix are similar to the characteristics used for other patient experience surveys and are the ones that have been shown in the literature to impact response tendencies. The patient-mix adjustment factors being used in the HHCAHPS Survey are derived from coefficients obtained from Ordinary Least Squares regression analyses on the HHCAHPS outcomes controlling for the identified patient characteristics. The regression coefficients indicate the tendency of patients with particular characteristics to respond more positively or negatively to HHCAHPS Survey questions. Patient-mix adjustment factors are calculated directly from these regression coefficients by multiplying the coefficients by negative one (−1.0). For example, analyses of the data on which results that are being currently publicly reported showed that patients who were aged 50–64 in the regression on the Overall Rating global measure were 2.6 percent less likely to provide the most positive ("top box") response (a rating or a 9 or a 10 for this HHCAHPS measure) when compared to the reference group of patients aged 65–74 years of age. Consequently, the adjustment factor for patients 50–64 years of age is +2.6 percent.

2b3.11. Optional Additional Testing for Risk Adjustment (*not required, but would provide additional support of adequacy of risk model, e.g., testing of risk model in another data set; sensitivity analysis for missing data; other methods that were assessed*)

2b4. Identification of Statistically Significant & Meaningful Differences in Performance

2b4.1. Describe the method for determining if statistically significant and clinically/practically meaningful differences in performance measure scores among the measured entities can be identified (*describe the steps—do not just name a method; what statistical analysis was used? Do not just repeat the information provided related to performance gap in 1b)*

We used a distribution-based method to determine the minimally important differences (MID) for HHCAHPS measures at the agency-level. Specifically, we computed the MID as one standard error of measurement, using the agency-level estimates of reliability for each measure reported above in section 2a2.3.

In addition, to determine if observed differences in HHCAHPS measures are practically meaningful, we compared mean scores for agencies with high vs. low values for the two global items (overall rating of care, would recommend agency to family and friends). Using a median split, agencies were classified into high vs. low performance based on the percentage of respondents who gave top box ratings for the agency on the corresponding item (i.e., a rating of 9 or 10 for overall care, response of would definitely recommend the agency). Mean scores for the agencies in the two groups were compared using t-tests.

2b4.2.What were the statistical results from testing the ability to identify statistically significant and/or clinically/practically meaningful differences in performance measure scores across measured entities? (e.g., *number and percentage of entities with scores that were statistically significantly different from mean or some benchmark, different from expected; how was meaningful difference defined*)

Minimally important differences for each HHCAHPS measure are shown in **Table 10**.

Mean scores for all three measures differed significantly between agencies with high vs. low performance on the global items ($p < 0.001$). Mean differences between the groups exceeded the minimally important differences shown in **Table 11**. For example, the minimum threshold for being considered an important difference (i.e., MID) for the Care of Patients measure is 2.47. The observed difference in measure scores between high performers and low performers on the overall rating of care was 6.31, a value higher than the MID.

Table 10. Minimally Important Differences (MID) for HHCAHPS Measures

Measure	MID
Care of Patients	2.47
Communication between Providers and Patients	3.11
Specific Care Issues	2.97
Would Recommend Agency to Family and Friends	4.98
Overall Rating of Care	4.40

Note: MID is computed as one standard error of measurement

Table 11. Comparison of Mean (SD) HHCAHPS Measure Scores by Global Items

Measure	High Mean (SD)	Low Mean (SD)	Difference Mean (SD)	p-value
Overall Rating of Care				
Care of Patients	90.99 (3.91)	84.67 (6.52)	6.31 (5.31)	< 0.001
Communication between Providers and Patients	88.40 (4.60)	81.48 (6.99)	6.92 (5.85)	< 0.001
Specific Care Issues	86.07 (6.33)	79.91 (7.75)	6.16 (7.04)	< 0.001
Would Recommend Agency to Family Friends				
Care of Patients	91.00 (3.74)	84.93 (6.56)	6.18 (5.35)	< 0.001
Communication between Providers and Patients	88.56 (4.37)	81.72 (7.06)	6.83 (5.87)	< 0.001
Specific Care Issues	86.19 (6.17)	80.15 (7.84)	6.03 (7.06)	< 0.001

2b4.3.What is your interpretation of the results in terms of demonstrating the ability to identify statistically significant and/or clinically/practically meaningful differences in performance across measured entities? (i*.e., what do the results mean in terms of statistical and meaningful differences?*)

Every quarter, we update the coefficients for the patient mix adjustments that are applicable to the data that are publicly reported on Home Health Compare. The most important variables impacting response tendencies for the HHCAHPS survey are the following patient characteristics: age, education, self-reported mental or emotional status, self-reported health status, the respondent lives alone, the respondent's primary language spoken at home, and the respondent's diagnoses. The patient-mix adjustment factors being used in the HHCAHPS Survey are derived from coefficients obtained from Ordinary Least Squares regression analyses on each separate HHCAHPS response item for the identified patient characteristics. The regression coefficients indicate the tendency of patients with particular characteristics to respond more positively or negatively to HHCAHPS Survey questions. More information is available below on the analyses conducted.

The results indicate that statistically significant and meaningful differences in agencies can be detected using HHCAHPS measures.

2b5. Comparability of Performance Scores When More than One Set of Specifications

If only one set of specifications, this section can be skipped.

Note*: This item is directed to measures that are risk-adjusted (with or without social risk factors)* ***OR*** *to measures with more than one set of specifications/instructions (e.g., one set of specifications for how to identify and compute the measure from medical record abstraction and a different set of specifications for claims or e-Measures). It does not apply to measures that use more than one source of data in one set of specifications/instructions (e.g., claims data to identify the denominator and medical record abstraction for the numerator).* ***Comparability is not required when comparing performance scores with and without social risk factors in the risk adjustment model. However, if comparability is not demonstrated for measures with more***

than one set of specifications/instructions, the different specifications (e.g., for medical records vs. claims) should be submitted as separate measures.

Not applicable

2b5.1. Describe the method of testing conducted to compare performance scores for the same entities across the different data sources/specifications (*describe the steps—do not just name a method; what statistical analysis was used*)

2b5.2.What were the statistical results from testing comparability of performance scores for the same entities when using different data sources/specifications? (*e.g., correlation, rank order*)

2b5.3.What is your interpretation of the results in terms of the differences in performance measure scores for the same entities across the different data sources/specifications? W*hat do the results mean and what are the norms for the test conducted*?

2b6. Missing Data Analysis and Minimizing Bias

2b6.1. Describe the method of testing conducted to identify the extent and distribution of missing data (or nonresponse) and demonstrate that performance results are not biased due to systematic missing data (or differences between responders and non-responders) and how the specified handling of missing data minimizes bias (*describe the steps—do not just name a method; what statistical analysis was used*)

Bias can be created through missing data if there are correlations between the missing data and the response patterns. We identified and reviewed the extent of missing data in our HHCAHPS items and demographic variables to determine if further bias testing was necessary. Further, we imputed demographic variables for the implementation of the patient-mix adjustment to handle bias.

2b6.2.What is the overall frequency of missing data, the distribution of missing data across providers, and the results from testing related to missing data? (*e.g., results of sensitivity analysis of the effect of various rules for missing data/nonresponse; if no empirical sensitivity analysis, identify the approaches for handling missing data that were considered and pros and cons of each*)

The overall frequencies of missing data for HHCAHPS items and demographic variables are listed in **Table 12 and Table 13**.

Table 12. Percentage of Missing Responses for HHCAHPS Items

HHCAHPS Item	Percent Missing 2017Q1–2017Q4
Q2. When you first started getting home health care from this agency, did someone from the agency tell you what care and services you would get?	0.99
Q3. When you first started getting home health care from this agency, did someone from the agency talk with you about how to set up your home so you can move around safely?	1.44
Q4. When you first started getting home health care from this agency, did someone from this agency talk with you about all the prescription medicines you were taking?	1.03
Q5. When you first started getting home health care from this agency, did someone from the agency ask to see all the prescription medicine you were taking?	1.18
Q9. In the last 2 months of care, how often did home health providers from this agency seem informed and up-to-date about all the care of treatment you got at home?	4.08
Q10. In the last 2 months of care, did you and a home health provider from this agency talk about pain?	1.69
Q12. In the last 2 months of care, did home health providers from this agency talk with you about the purpose for taking your new or changed prescription medicines?	3.51
Q13. In the last 2 months of care, did home health providers from this agency talk with you about when to take these medicines?	3.53
Q14. In the last 2 months of care, did home health providers from this agency talk with you about the important side effects of these medicines?	3.81
Q15. In the last 2 months of care, how often did home health providers from this agency keep you informed about when they would arrive at your home?	1.44
Q16. In the last 2 months of care, how often did home health providers from this agency treat you as gently as possible?	1.15
Q17. In the last 2 months of care, how often did home health providers from this agency explain things in a way that was easy to understand?	1.21
Q18. In the last 2 months of care, how often did home health providers from this agency listen carefully to you?	1.44

(continued)

Table 12. Percentage of Missing Responses for HHCAHPS Items (continued)

HHCAHPS Item	Percent Missing 2017Q1–2017Q4
Q19. In the last 2 months of care, how often did home health providers from this agency treat you with courtesy and respect?	1.05
Q22. In the last 2 months of care, when you contacted this agency's office did you get the help or advice you needed?	4.99
Q23. When you contacted this agency's office, how long did it take for you to get the help or advice you needed?	5.06
Q24. In the last 2 months of care, did you have any problems with the care you got through this agency?	2.46
Q20. Using any number from 0 to 10, where 0 is the worst home health care possible and 10 is the best home health care possible, what number would you use to rate your care from this agency's home health providers?	1.86
Q25. Would you recommend this agency to your family or friends if they needed home health care?	2.02

Table 13. Percentage of Missing Responses for Demographic Items

Demographic Variable	Percent Missing 2017Q1–2017Q4
Proxy	0.57
Language Spoken at Home	0.42
Age	0.15
Education	4.60
Live Alone	3.54
Overall Health	2.40
Mental Health	2.12
Diagnosis Code	5.19

The frequencies of missing data across providers for HHCAHPS items and demographic variables are shown in **Tables 14 and 15** below.

Table 14. Distribution of Percentage of Missing Data within Providers for HHCAHPS Items

HHCAHPS Item	Distribution of Percent Missing Within Providers by Variable								
	1%	5%	10%	25%	50%	75%	90%	95%	99%
Q2. When you first started getting home health care from this agency, did someone from the agency tell you what care and services you would get?	0.00	0.00	0.00	0.00	0.54	1.59	3.13	4.65	10.00
Q3. When you first started getting home health care from this agency, did someone from the agency talk with you about how to set up your home so you can move around safely?	0.00	0.00	0.00	0.00	1.00	2.13	3.92	5.76	11.76
Q4. When you first started getting home health care from this agency, did someone from this agency talk with you about all the prescription medicines you were taking?	0.00	0.00	0.00	0.00	0.56	1.52	2.86	4.35	9.09
Q5. When you first started getting home health care from this agency, did someone from the agency ask to see all the prescription medicine you were taking?	0.00	0.00	0.00	0.00	0.70	1.75	3.23	4.65	10.00
Q9. In the last 2 months of care, how often did home health providers from this agency seem informed and up-to-date about all the care of treatment you got at home?	0.00	0.00	0.00	1.91	3.64	6.12	10.64	15.22	25.00
Q10. In the last 2 months of care, did you and a home health provider from this agency talk about pain?	0.00	0.00	0.00	0.00	1.31	2.56	4.26	5.88	12.50
Q12. In the last 2 months of care, did home health providers from this agency talk with you about the purpose for taking your new or changed prescription medicines?	0.00	0.00	0.00	1.34	3.15	4.86	7.56	10.53	20.00

(continued)

Table 14. Distribution of Percentage of Missing Data within Providers for HHCAHPS Items (continued)

HHCAHPS Item	Distribution of Percent Missing Within Providers by Variable								
	1%	5%	10%	25%	50%	75%	90%	95%	99%
Q13. In the last 2 months of care, did home health providers from this agency talk with you about when to take these medicines?	0.00	0.00	0.00	1.28	3.17	4.88	7.69	10.71	20.00
Q14. In the last 2 months of care, did home health providers from this agency talk with you about the important side effects of these medicines?	0.00	0.00	0.00	1.56	3.45	5.26	8.00	11.11	21.43
Q15. In the last 2 months of care, how often did home health providers from this agency keep you informed about when they would arrive at your home?	0.00	0.00	0.00	0.00	1.01	2.21	4.35	6.67	14.29
Q16. In the last 2 months of care, how often did home health providers from this agency treat you as gently as possible?	0.00	0.00	0.00	0.00	0.71	1.75	3.64	5.56	12.50
Q17. In the last 2 months of care, how often did home health providers from this agency explain things in a way that was easy to understand?	0.00	0.00	0.00	0.00	0.77	1.86	3.77	5.66	11.76
Q18. In the last 2 months of care, how often did home health providers from this agency listen carefully to you?	0.00	0.00	0.00	0.00	0.80	1.96	4.00	6.45	23.08
Q19. In the last 2 months of care, how often did home health providers from this agency treat you with courtesy and respect?	0.00	0.00	0.00	0.00	0.59	1.64	3.45	5.26	11.11
Q22. In the last 2 months of care, when you contacted this agency's office did you get the help or advice you needed?	0.00	0.00	0.00	2.38	4.49	6.62	9.62	12.50	25.00

(continued)

Table 14. Distribution of Percentage of Missing Data within Providers for HHCAHPS Items (continued)

HHCAHPS Item	Distribution of Percent Missing Within Providers by Variable								
	1%	5%	10%	25%	50%	75%	90%	95%	99%
Q23. When you contacted this agency's office, how long did it take for you to get the help or advice you needed?	0.00	0.00	0.00	2.67	4.67	6.82	10.17	13.53	25.00
Q24. In the last 2 months of care, did you have any problems with the care you got through this agency?	0.00	0.00	0.00	0.00	2.07	3.54	5.63	7.69	16.67
Q20. Using any number from 0 to 10, where 0 is the worst home health care possible and 10 is the best home health care possible, what number would you use to rate your care from this agency's home health providers?	0.00	0.00	0.00	0.00	0.00	1.80	3.70	5.45	11.36
Q25. Would you recommend this agency to your family or friends if they needed home health care?	0.00	0.00	0.00	0.00	1.52	3.30	6.42	9.09	19.51

Table 15. Distribution of Percentage of Missing Data within Providers for Demographic Items

Demographic Variable	Distribution of Percent Missing Within Providers by Variable								
	1%	5%	10%	25%	50%	75%	90%	95%	99%
Proxy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35.09
Language Spoken at Home	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53
Age	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.00	0.00	0.00	2.55	4.35	6.92	11.11	15.00	27.27
Live Alone	0.00	0.00	0.00	1.30	2.99	5.56	8.81	11.32	20.00
Overall Health	0.00	0.00	0.00	0.00	1.99	3.60	6.25	8.82	16.67
Mental Health	0.00	0.00	0.00	0.00	1.69	3.21	5.88	8.33	15.39
Diagnosis Code	0.00	0.00	0.00	0.00	0.00	1.12	9.38	22.84	100.00

We considered an overall imputation of missing data for reporting purposes. There are several methods, including the hot deck method we use for the imputation needed for the HHCAHPS patient-mix adjustment, that provide a statistically reasonable distribution of responses. However, we wished to limit the inclusion of data not explicitly gathered from patients. Also, a provider-level imputation process is favored. This keeps the information used for a provider from being potentially over influenced by other providers. However, it also serves to reinforce the data already provided by the provider's patients. Using a provider-level imputation, the results would be expected to have minimal change. With little expected change, the cost and effort for doing imputation is in question.

We considered an overall imputation for testing purposes as well. We could impute under standard methods and test how response patterns for providers could theoretically be affected by the missing data. This process can estimate the effect of missing data but it is still just a best guess of the effect; the true effect remains unknown. This process can also find firm limits to the potential effects of missing data. However, theoretical limits may be misleading as they are not expected to ever be reached.

RTI project staff conducted a mode experiment in 2009 with 24,561 patients who had at least one skilled visit during the sample month (August, September, or October 2009). We conducted an analysis comparing HHCAHPS mode experiment respondents to non-respondents using demographic and other data the participating HHAs provided on the monthly patient sample files. **Table 16** shows the proportion of the mode experiment sample (respondents and non-respondents) with selected characteristics.

As can be seen from **Table 16**, mode experiment respondents and non-respondents have very similar characteristics. The younger and older populations were slightly less likely to respond to the survey. The admission source "Other" was not always understood by the participating HHAs and accounts for a very small proportion of sampled patients. There is some indication that sample members with greater debility, as indicated by the ADL measure, were slightly less likely to respond to the survey. These characteristics, along with other statistically significant variables are used in the patient-mix adjustment process, adequately adjusting for any effects on response.

Table 16. Characteristics of Respondents and Non-respondents

	Respondents	Non-respondents
Number in group	6,782	7,428
	%	%
Age		
18–49	5.0	6.4
50–64	12.2	13.2
65–74	23.9	20.7
75–84	34.9	32.3
85+	24.0	27.4
Sex		
Missing	0.0	0.03
Female	63.9	63.8
Male	36.1	36.2
Admission Source		
Hospital	42.1	42.8
Inpatient rehab facility	4.6	4.2
Skilled nursing facility	8.1	8.7
Nursing home	0.4	0.5
Other inpatient	1.6	0.9
Community	34.2	33.8
Payer		
Medicare	89.8	88.5
Medicaid	13.0	14.5
(Some patients had both payers indicated)		
Number of ADL deficits		
Missing	13.7	17.0
0	8.3	7.5
1	11.0	9.2
2	11.0	9.5
3	8.6	7.6
4	16.5	15.4
5	30.9	33.9

Note: Other characteristics in the HHA files had a very high rate of missing and are not displayed here.

2b6.3.What is your interpretation of the results in terms of demonstrating that performance results are not biased due to systematic missing data (or differences between responders and non-responders) and how the specified handling of missing data minimizes bias? (i.*e., what do the results mean in terms of supporting the selected approach for missing data and what are the norms for the test conducted; if no empirical analysis, provide rationale for the selected approach for missing data*)

We feel the high item response rates do not warrant further investigation of the effects of missing data.

3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

3a.1. Data Elements Generated as Byproduct of Care Processes.

Other

If other: CMS and the federal contractor for the National Implementation of HHCAHPS trains and conducts oversight of HHCAHPS approved survey vendors that are unassociated with home health care services. The home health agencies choose from the list of approved HHCAHPS vendors and the vendors conduct the HHCAHPS Survey. The vendors submit the HHCAHPS data on a quarterly basis to the HHCAHPS Data Warehouse. The federal contractor for the National Implementation of HHCAHPS compile the survey data for CMS. The federal contractor for the National Implementation of HHCAHPS submits the HHCAHPS data to the CMS website contractor on a quarterly basis so that the data are made publicly available on Home Health Compare on www.medicare.gov.

3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

3b.1. To what extent are the specified data elements available electronically in defined fields (*i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields*) Update this field for **maintenance of endorsement**.

No data elements are in defined fields in electronic sources

3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources. For **maintenance of endorsement**, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

These are patient experience of care surveys from the patients receiving home health care. HHCAHPS approved survey vendors process the data and submit de-identified data to the HHCAHPS Data Center through the private links on https://homehealthcahps.org.

3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.

Attachment:

3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

3c.1. Required for maintenance of endorsement. Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.

IF instrument-based, consider implications for both individuals providing data (patients, service recipients, respondents) and those whose performance is being measured.

None

3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified *(e.g., value/code set, risk model, programming code, algorithm)*.

No fees.

4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

4.1. Current and Planned Use

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)
	Public Reporting Home Health Patient Experience of Care www.medicare.gov HHCAHPS official website https:/homehealthcahps.org Home Health Patient Experience of Care www.medicare.gov HHCAHPS official website https:/homehealthcahps.org Payment Program Home Health Quality Reporting Program www.medicare.gov Home Health Quality Reporting Program www.medicare.gov Quality Improvement (external benchmarking to organizations) Quality Improvement (Internal to the specific organization) Home Health Care CAHPS Survey https://homehealthcahps.org

4a1.1 For each CURRENT use, checked above (update for maintenance of endorsement), provide:

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

CMS is the sponsor. This national survey that includes approximately 8,800 home health agencies averages 1,300,000 completed surveys annually. The survey data are updated on Home Health Compare on

http://www.medicare.gov quarterly. All Medicare certified HHAs serving 60 or more home health patients in a specified annual time period must participate in HHCAHPS in order to receive their full annual payment update. We report all information about HHA requirements in the HH payment rules. Both HHCAHPS and OASIS data are required to fulfill the requirements of the DHHS Secretary´s Home Health Quality Reporting Program which is codified in federal regulation.

4a1.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons? (*e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?*)
N/A

4a1.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement. (*Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.*)

N/A

4a2.1.1. Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.

How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

Performance results are shared quarterly with HHAs through individual preview reports. We have training for HHAs and a series of opportunities for HHAs to ask questions.

Please refer to the Measure Testing form.

4a2.1.2. Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.

We regularly get feedback from survey vendors though annual on-site visits and through annual vendor and agency training.

4a2.2.1. Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.

Describe how feedback was obtained.

In general the feedback has been favorable from vendors, HHAs and patients.

4a2.2.2. Summarize the feedback obtained from those being measured.

Patients have reported they find the questionnaire relevant and easy to answer.

4a2.2.3. Summarize the feedback obtained from other users

HHAs have provided no complaints about the questionnaire

4a2.3. Describe how the feedback described in 4a2.2.1 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.

No revisions at this time.

Improvement
Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b1. Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)

If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

Across all five HHCAHPS measures, there is variation in scores ranging from 0 to 100; however, the median value for the measures is 79 or above. Performance tends to be fairly high for many agencies. These data are used both for consumer choice and to help drive quality improvement. The data described in 1b are for 8,694 agencies across the United States and cover most of the Medicare-certified agencies that are eligible to participate in this survey. Although HHCAHPS measures generally reflect positive care experiences, there is moderate variation across states and regions. More positive experiences are seen in the Southeast, South Central, and the middle United States.

Below are a couple of examples about how agencies use these data to target their quality improvement efforts.

As can been seen by the tables in 1b, the Specific Care Issues measure has an interquartile range of 79.0 to 88.0, with an average score of 83.03. This measure contains seven important aspects of patient care in the home health setting with an emphasis on home safety and medications management. If any agency has a score in the first decile where the average score is 65.78, they could improve their Specific Care Issues measure score by engaging in quality improvement activities to increase provider communication about specific information to the patients about medication administration, and if applicable, inform them about their new or changed medications, as well as potential side effects, in addition to educating all of their staff about speaking with their patients about how to make their homes safer so that they can move in their homes with greater safety.

The Care of Patients measure scores have an interquartile range of 85.0 to 92.0, with an average score of 87.2. The Care of Patients measure contains four important qualities of patient care in the home health setting: was the provider up-to-date on the patient's health issues, was the provider handling the patient as gently as possible, was the provider providing care with courtesy and respect, and had the patient reported problems to the home health agency. Agencies, patients, and families can use the scores on the Care of Patients measure to compare agencies on these dimensions. An agency needing to improve the Care of Patients measure scores can engage in quality improvement activities for increased courtesy and respect, being informed and up-to-date about their patients, treating patients as gently as possible, and striving to minimize any problems experienced by patients.

4b2. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4b2.1. Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.

We had no unexpected findings.

4b2.2. Please explain any unexpected benefits from implementation of this measure.

N/A

5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

No

5.1a. List of related or competing measures (selected from NQF-endorsed measures)

5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.

5a. Harmonization of Related Measures

The measure specifications are harmonized with related measures;
OR
The differences in specifications are justified

5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):
Are the measure specifications harmonized to the extent possible?

No

5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.

This is a patient experience survey where patients report on experiences where the patient is the best source of the information. Both HHCAHPS and OASIS measure fulfill the goals of the DHHS Secretary´s goals in the Home Health Quality Reporting Program.

5b. Competing Measures

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);
OR
Multiple measures are justified.

5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):
Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)

There are no competing measures. This is the only patient perspectives of care survey in the United States to validly allow for comparisons for all home health agencies.

Appendix

A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

Attachment **Attachment:** AppendixA_HHCAHPS_NQF_0517_PerformanceScores-636918038433277060.docx

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): Centers for Medicare & Medicaid Services

Co.2 Point of Contact: Helen, Dollar-Maples, Helen.Dollar-Maples@cms.hhs.gov, 410-786-7214-

Co.3 Measure Developer if different from Measure Steward: Centers for Medicare & Medicaid Services

Co.4 Point of Contact: Helen, Dollar-Maples, Helen.Dollar-Maples@cms.hhs.gov, 410-786--

Additional Information

Ad.1 Workgroup/Expert Panel involved in measure development

Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.

Please see the 2009 NQF Submission for all information about this.

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: 2009

Ad.3 Month and Year of most recent revision: 04, 2014

Ad.4 What is your frequency for review/update of this measure? Quarterly

Ad.5 When is the next scheduled review/update for this measure? 06, 2019

Ad.6 Copyright statement:

Ad.7 Disclaimers:

Ad.8 Additional Information/Comments:

Appendix A

Performance Scores for Home Health CAHPS NQF# 0517

1b.2. Provide performance scores on the measure

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1b.2. Provided performance scoresProvide performance scores on the measure as specified (**current and over time**) at the specified level of analysis. (This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include). This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

Tables 1 and 2 below present agency-level descriptive statistics (means, standard deviations, quartiles, etc.) for 8,694 agencies that submitted data to the HHCAHPS data center for the 2017 survey year. The statistics are split into two tables for ease of viewing.

Table 1. Descriptive Statistics for Agency-Level Home Health Care CAHPS Composite Scores

	N	Mean	Median	Mode	Standard Deviation	Inter-Quartile Range	Minimum	Maximum
Composites								
Care of Patients	8694	87.82	89.00	89.00	7.01	85.00–92.00	0.00	100.00
Communication between Providers and Patients	8694	84.90	86.00	87.00	7.63	82.00–89.00	0.00	100.00
Specific Care Issues	8694	83.03	84.00	85.00	8.67	79.00–88.00	0.00	100.00
Global Items								
Overall Rating of Care	8694	83.26	85.00	86.00	10.92	79.00–89.00	0.00	100.00
Would Recommend Agency to Family and Friends	8694	77.42	79.00	82.00	12.87	72.00–85.00	0.00	100.00

Table 2. Mean (and SD) Agency-Level Home Health Care CAHPS Composite Scores by Decile

	1	2	3	4	5	6	7	8	9	10
Composites										
Care of Patients	74.33 (9.47)	83.12 (0.81)	85.55 (0.50)	87.54 (0.50)	89.00 (0.00)	90.00 (0.00)	91.00 (0.00)	92.00 (0.00)	93.44 (0.50)	97.25 (1.90)
Communication between Providers and Patients	69.01 (9.44)	78.71 (1.11)	82.15 (0.81)	84.55 (0.50)	86.00 (0.00)	87.00 (0.00)	88.49 (0.50)	90.00 (0.00)	91.41 (0.49)	95.68 (2.52)
Specific Care Issues	65.78 (9.91)	76.24 (1.38)	79.50 (0.50)	81.53 (0.50)	83.52 (0.50)	85.50 (0.50)	87.00 (0.00)	88.47 (0.50)	90.88 (0.81)	95.92 (2.41)
Global Items										
Overall Rating of Care	61.06 (13.84)	75.25 (1.38)	79.67 (1.12)	82.52 (0.50)	84.50 (0.50)	86.50 (0.50)	88.00 (0.00)	89.91 (0.82)	92.85 (0.81)	97.86 (1.91)
Would Recommend Agency to Family and Friends	50.26 (13.91)	67.09 (2.27)	72.61 (1.11)	76.04 (0.82)	78.50 (0.50)	81.01 (0.82)	83.48 (0.50)	85.90 (0.81)	88.95 (0.83)	95.46 (3.38)

Characteristics of patients are shown in Table 3 below. Patients who responded were predominantly female, over the age of 75, with educational attainment of some college or less, English speakers, in good or fair overall health and in good or very good mental or emotional health.

Table 3. Demographic Characteristics of Respondents (January-December 2017) (N=1,201,695)

Characteristic	N	%
Gender		
Male	464,862	39
Female	736,326	61
Missing	507	0
Age		
18–49	27,568	2
50–64	126,087	10
65–74	335,565	28
75–84	398,662	33
85+	311,995	26
Missing	1,818	1
Education		
<8th grade	92,132	8
Some HS	119,511	10
HS grad/GED	399,686	33
Some College	293,496	24
College Grad or more	241,600	20
Missing	55,270	5
English speaker		
English	1,165,198	97
Non-English	31,410	3
Missing	5,087	0
Self-Reported Mental Health		
Excellent	211,761	18
Very good	327,205	27
Good	368,691	31
Fair	217,336	18
Poor	51,263	4
Missing	25,439	2
Self-Reported Overall Health		
Excellent	109,645	9
Very good	206,977	17
Good	377,987	31
Fair	356,891	30
Poor	121,398	10
Missing	28,797	2