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: Ctrl + click link 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 #: 2615

Corresponding Measures:

De.2. Measure Title: CoreQ: Long-Stay Resident Measure

Co.1.1. Measure Steward: American Health Care Association

De.3. Brief Description of Measure: The measure calculates the percentage of long-stay residents, those living in the facility for 100 days or more, who are satisfied (see: S.5 for details of the time-frame). This patient reported outcome measure is based on the CoreQ: Long-Stay Resident questionnaire that is a three item questionnaire.

1b.1. Developer Rationale: Collecting satisfaction information from skilled nursing facility (SNF) patients is more important now than ever. We have seen a philosophical change in healthcare that now includes the patient and their preferences as an integral part of the system of care. The Institute of Medicine (IOM) endorses this change by putting the patient as central to the care system (IOM, 2001). For this philosophical change to person-centered care to succeed, we have to be able to measure patient satisfaction for these three reasons:

(1) Measuring satisfaction is necessary to understand patient preferences.

(2) Measuring and reporting satisfaction with care helps patients and their families choose and trust a health care facility.

(3) Satisfaction information can help facilities improve the quality of care they provide.

The implementation of person-centered care in SNFs has already begun, but there is still room for improvement. The Centers for Medicare and Medicaid Services (CMS) demonstrated interest in consumers' perspective on quality of care by supporting the development of the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey for patients in nursing facilities (Sangl et al., 2007).

Further supporting person-centered care and resident satisfaction are ongoing organizational change initiatives. These include: the Advancing Excellence in America's Nursing Homes campaign (2006), which lists person-centered care as one of its goals; Action Pact, Inc., which provides workshops and consultations with nursing facilities on how to be more person-centered through their physical environment and organizational structure; and Eden Alternative, which uses education, consultation, and outreach to further person-centered care in nursing facilities. All of these initiatives have identified the measurement of resident satisfaction as an essential part in making, evaluating, and sustaining effective clinical and organizational changes that ultimately result in a person-centered philosophy of care.

The importance of measuring resident satisfaction as part of quality improvement cannot be stressed enough.

Quality improvement initiatives, such as total quality management (TQM) and continuous quality

improvement (CQI), emphasize meeting or exceeding "customer" expectations. William Deming, one of the first proponents of quality improvement, noted that "one of the five hallmarks of a quality organization is knowing your customer's needs and expectations and working to meet or exceed them" (Deming, 1986). Measuring resident satisfaction can help organizations identify deficiencies that other quality metrics may struggle to identify, such as communication between a patient and the provider.

As part of the US Department of Commerce renowned Baldrige Criteria for organizational excellence, applicants are assessed on their ability to describe the links between their mission, key customers, and strategic position. Applicants are also required to show evidence of successful improvements resulting from their performance improvement system. An essential component of this process is the measurement of customer, or resident, satisfaction (Shook & Chenoweth, 2012).

The CoreQ: Long Stay questionnaire and measure can strategically help nursing facilities achieve organizational excellence and provide high quality care by being a tool that targets a unique and growing patient population. Over the past several decades, care in nursing facilities has changed substantially. Statistics show that more than half of all elders cared for in nursing homes are now discharged home (approximately 1.6 million residents; CMS, 2009). Moreover, when satisfaction information from current residents (i.e., long stay residents) is compared with those of elders discharged home, substantial differences exist (Castle, 2007). This indicates that long stay and short stay residents are different populations with different needs in the nursing facilities. Thus, the CoreQ: Long Stay questionnaire and measure are needed to improve the care for long stay SNF patients.

Moreover, improving the care for long stay nursing home patients is tenable. A review of the literature on satisfaction surveys in nursing facilities (Castle, 2007) concluded that substantial improvements in resident satisfaction could be made in many nursing facilities by improving care (i.e., changing either structural or process aspects of care). This was based on satisfaction scores ranging from 60 to 80% on average.

It is worth noting, few other generalizations could be made because existing instruments used to collect satisfaction information are not standardized. Thus, benchmarking scores and comparison scores (i.e., best in class) were difficult to establish. The CoreQ: Long Stay measure has considerable relevance in establishing benchmarking scores and comparison scores.

This measure's relevance is furthered by recent federal legislative actions. The Affordable Care Act of 2010 requires the Secretary of Health and Human Services (HHS) to implement a Quality Assurance & Performance Improvement Program (QAPI) within nursing facilities. This means all nursing facilities have increased accountability for continuous quality improvement efforts. In CMS's "QAPI at a Glance" document there are references to customer-satisfaction surveys and organizations utilizing them to identify opportunities for improvement. Lastly, the new "Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities" proposed rule includes language purporting the importance of satisfaction and measuring satisfaction. CMS states "CMS is committed to strengthening and modernizing the nation's health care system to provide access to high quality care and improved health at lower cost. This includes improving the patient experience of care, both quality and satisfaction, improving the health of populations, and reducing the per capita cost of health care." There are also other references in the proposed rule speaking to improving resident satisfaction and increasing person-centered care (Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities, 2015). The CoreQ: Long Stay measure has considerable applicability to both of these initiatives.

Castle, N.G. (2007). A literature review of satisfaction instruments used in long-term care settings. Journal of Aging and Social Policy, 19(2), 9-42.

CMS (2009). Skilled Nursing Facilities Non Swing Bed - Medicare National Summary. http://www.cms.hhs.gov/MedicareFeeforSvcPartsAB/Downloads/NationalSum2007.pdf.

CMS, University of Minnesota, and Stratis Health. QAPI at a Glance: A step by step guide to implementing quality assurance and performance improvement (QAPI) in your nursing home. https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/Downloads/QAPIAtaGlance.pdf.

Deming, W.E. (1986). Out of the crisis. Cambridge, MA. Massachusetts Institute of Technology, Center for Advanced Engineering Study.

Institute of Medicine (2001). Improving the Quality of Long Term Care. National Academy Press, Washington, D.C., 2001.

Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities; Department of Health and Human Services. 80 Fed. Reg. 136 (July 16, 2015) (to be codified at 42 CFR Parts 405, 431, 447, et al.).

MedPAC. (2015). Report to the Congress: Medicare Payment Policy. http://www.medpac.gov/documents/reports/mar2015_entirereport_revised.pdf?sfvrsn=0.

Sangl, J., Bernard, S., Buchanan, J., Keller, S., Mitchell, N., Castle, N.G., Cosenza, C., Brown, J., Sekscenski, E., and Larwood, D. (2007). The development of a CAHPS instrument for nursing home residents. Journal of Aging and Social Policy, 19(2), 63-82.

Shook, J., & Chenoweth, J. (2012, October). 100 Top Hospitals CEO Insights: Adoption Rates of Select Baldrige Award Practices and Processes. Truven Health Analytics. http://www.nist.gov/baldrige/upload/100-Top-Hosp-CEO-Insights-RB-final.pdf.

S.4. Numerator Statement: The numerator is the sum of the individuals in the facility that have an average satisfaction score of =>3 for the three questions on the CoreQ: Long -Stay Resident questionnaire.

S.6. Denominator Statement: The denominator includes all of the residents that have been in the SNF for 100 days or more regardless of payer status; who received the CoreQ: Long-Stay Resident questionnaire (e.g. people meeting exclusions do not receive the questionnaire), who responded to the questionnaire within the two month time window, who did not have the questionnaire completed by somebody other than the resident, and who did not have more than one item missing.

S.8. Denominator Exclusions: Exclusions made at the time of sample selection are the following: (1) Residents who have poor cognition defined by the BIMS score; (2) residents receiving hospice; (3) residents with a legal court appointed guardian; and (4) residents who have lived in the SNF for less than 100 days.

Additionally, once the survey is administered, the following exclusions are applied: a) surveys received outside of the time window (two months after the administration date) b) surveys that have more than one questionnaire item missing c) surveys from residents who indicate that someone else answered the questions for the resident. (Note this does not include cases where the resident solely had help such as reading the questions or writing down their responses.)

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: Oct 25, 2016 **Most Recent Endorsement Date:** Oct 25, 2016

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? Not Applicable

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.

Summary of prior review in 2016

- This new PRO-PM is very similar to #2614 CoreQ: Short Stay Discharge Measure and #2616 CoreQ: Long-Stay Family Measure. The Committee had questions about validity and whether staff members were allowed to fill out the surveys on behalf of patients. The developer responded that there is no way to stop staff from doing so, but if staff indicate that they have responded on behalf of a patient, those data will be excluded. The Committee agreed that the measure was very similar to #2614 and did not require additional discussion or voting. Ultimately, the Committee recommended this measure for endorsement.
- This patient-reported outcome performance measure calculates the percentage of long-stay residents, those living in the facility for 100 days or more, who are satisfied (see: S.5 for details of the time-frame). This measure is based on the CoreQ: Long-Stay Resident questionnaire that is a three item questionnaire.
- During the 2016 original endorsement review, Committee members noted that this measure is very similar to #2614 CoreQ: Short Stay Discharge Measure and #2616 CoreQ: Long-Stay Family Measure in that it targets the overall assessment of patient satisfaction in context to the nursing home or SNF. Committee members agreed that measuring and reporting satisfaction with care helps patients and their families choose and trust a healthcare facility and can help facilities improve the quality of the care they provide.
- In the 2016 submission, the developer stated noted that “The definition of quality in a nursing facility has shifted from a focus on structure and process criteria to clinical outcomes, resident satisfaction, and quality of life” and “drivers for high satisfaction rates include competency of staff, care/concern of staff, and responsiveness of management”
- The developer stated “We have seen a philosophical change in healthcare that now includes the patient and their preferences as an integral part of the system of care” and noted that measuring patient satisfaction is required for person-centered care for three reasons:
    - Measuring satisfaction is necessary to understand patient preferences.
    - Measuring and reporting satisfaction with care helps patients and their families choose and trust a health care facility.
    - Satisfaction information can help facilities improve the quality of care they provide

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 included an analysis conducted during measure development that explored the value of the measure to patients through discussions with patients (n=40)
- Results suggest that patients found the questions in the survey to be important in gauging their satisfaction with the facilities.

Question for the Committee:

- *Is there at least one healthcare action that the provider can do to achieve a change in the measure results?*
- *This measure is derived from patient report. Does the target population value the measured outcome and finds it meaningful?*

Guidance from the Evidence Algorithm

PRO-based measure (Box 1) → Relationship between the outcome and at least one healthcare action is identified and supported by the rationale (Box 2) → 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 provided updated statistics broken out by quarter with each quarter representing a rolling 12-month period of data.
- Long Term Care Trend Tracker
  - Data covers 2016Q1-2019Q4
  - Number of SNFs ranges from 60-1641
  - Mean Satisfaction Rate ranges from 74-92% between quarters, but generally fluctuates between 80-83%.
  - SD ranges from 13-34%
- Vendor data from MA, NJ, PA, IL, NY providers
  - Data covers 2019Q1
  - Number of SNFs = 661
  - Mean Satisfaction Rate is 82%, SD 12%

Disparities

- Race – No statistically significant differences
  - By race, whites averaged a score of 83.2, Blacks or African-Americans averaged a score of 83.3, and Asians 83.4;
  - There were no observations for Native Hawaiians or other Pacific Islanders, American Indian or Alaskan Natives
- Education – No statistically significant differences

- By highest education level those with those high school but who did not graduate averaged 83.2;
- high school graduates averaged 83.5;
- those with some college or a 2-year degree averaged 82.5;
- 4 year college graduates averaged 83.4;
- those with more than 4 year college degree averaged 83.3

- Age
  - By age group, residents younger than 65 years old averaged 72.9;
  - those 65-74 averaged 82.7;
  - those 75-84 averaged 85;
  - those older than 85 averaged 85
- Gender
  - Males averaged a score of 81.1
  - Females averaged a score of 83.9
- Developer states that differences in satisfaction by SDS were not statistically significant. Moreover, research over the last 20 years has consistently found poorer care in facilities with high minority populations and that nursing homes remain segregated, with black patients concentrated in poorer-quality homes (as measured by staffing ratios, performance, and financial vulnerability).

Questions for the Committee:

- Is there a gap in care that warrants a national performance measure?
- If no disparities information is provided, 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 to Support Measure Focus: 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.

- No new studies, target population values outcome.
- Same comments as 2614.
- Evidence is provided to support the measure. Patients provided feedback on the value of the measure to them.
- Pass.
- Appropriate evidence.
- Target population values outcome assessed.
- Satisfaction with care remains important. Developers point to a sample of 40 persons who felt the questions were relevant.

- Evidence for focus is based on much the same info as submitted in 2016; would be helpful to have updated review of relationship between satisfaction and other outcomes.
- The Long Stay measure directly relates to the process being measured through responsiveness of management, care and competency of staff. There are two gaps for how the target population may value the measured outcome, process, or structure. The first gap is the collection of satisfaction from a dementia patient's loved-one's perspective and the second is a gap for satisfaction levels related to payment. Dementia residents with improved symptom management is correlated with competency of staff and directly related to satisfaction. Table 1a.2.1 Van Uden et al. (2013) In this case, dementia patients are not deemed able to answer satisfaction questions and are excluded in data collection. Loved ones are a key stakeholder and able to provide answers to satisfaction questions. So, while the evidence to support the measure is exists, the collection of responses from a key stakeholder is a gap in measurement. Gap 2 – Payment methods. Long-term nursing home averages $102,000 annually in the US. https://www.genworth.com/aging-and- you/finances/cost-of-care.html There is no evidence cited to correlate price, value, and satisfaction. Many times, the decision for placement is on access. "Placement decisions for many individuals entering nursing homes are made by case workers and hospital discharge planners. These individuals may have the best interest of the patient at heart, but they labor under a set of incentives in which locating an empty bed—in any facility that will accept the patient—is a strong priority. Even when family members are present, they too labor under the burden of needing to locate an available bed while lacking useful information on the comparative merits of different providers." The Changing Structure of the Nursing Home Industry and the Impact of Ownership on Quality, Cost, and Access, Catherine Hawes and Charles D. Phillips https://www.ncbi.nlm.nih.gov/books/NBK217907/ In service industries, satisfaction is a component of perceived value. A 2004 study by the Solvay Brussels School found that customers are more likely to develop a loyal, satisfied relationship with a business when products are priced reasonably. The lack of price as a function of satisfaction is a missing component in this study.

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?

- Gap provided.
- Same comments as 2614; gaps clear but would have expected more disparities and comparison to other long term care populations (any state data?); data tables or graphs would have been helpful.
- Yes. National measure is warranted as a means to measure satisfaction with care in facilities and provide benchmarking data.
- High.
- Evidence supports some gap.
- Solid performance gap demonstrated; social factor analyses did not show disparity but very few non-white patients in testing sample.
- No significant change since 2016 endorsement. Results are skewed to positive, in a sample of 223 facilities, only 18% scored 70/100 or less.
- Updates from several states; still opportunity for improvement; disparity data from initial submission; substantial racial and age disparities.
- Opportunity for improvement is demonstrated by data based on variation as shown in the histogram in Section 2b5.2.1 The distribution of summary scores indicates the scores can be used to differentiate facilities of varying levels of customer satisfaction quality. Bias from imputation was minimal due to the rate of the number of missing survey questions is considered low. In the testing of 7,307 residents the largest number of missing answers on a question was 355. The performance

gap does warrant a national performance measure. But, as designed disparities by subgroups cannot be clearly identified. The subgroup of Loved ones for dementia patients was not included. The data was not collected from this point of view. The data is also not cross-tabulated with payment method. It is unclear if Medicaid, Medicare and private pay patients have the same satisfaction levels. The description for elimination finance as a key domain does not adequately describe how the method for combining the component measures "fits" with the quality construct and rationale that they have articulated because it is based on healthcare literature and not on industry experience with patient satisfaction metrics. There is ample literature in multiple service industries that satisfaction is a function of quality, cost, and experience. Plus, without cross tabulation to payment methods the evaluation of disparities in care is limited.

Criteria 2: Scientific Acceptability of Measure Properties

2a. Reliability: Specifications and Testing

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

2c. For composite measures: empirical analysis support composite approach

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 Patient Experience and Function Staff

Full NQF Staff Evaluation

Staff Evaluation Summary:

Reliability

- Developer used the same testing from the 2016 submission
- Measure developer performed both data element level and score level reliability testing
- Data element reliability testing included test-retest analysis on a convenience sample of 100 patients
    - Developer calculated the distribution of responses by question in the original round of surveys, and then again in the follow-up surveys (they should be distributed similarly);

- Developer subsequently calculated the correlations between the original and follow-up responses by question (they should be highly correlated).

- The stability of the facility-level score was tested using bootstrapping with 10,000 repetitions of the facility score calculation.
  - Developer presented the percent of facility resamples where the facility score is within 1 percentage point, 3 percentage points, 5 percentage points, and 10 percentage points of the original score.

Questionnaire Item	Percent Agreement
1. In recommending this facility to your friends and family, how would you rate it overall?	97.6%
2. Overall, how would you rate the staff?	98.5%
3. How would you rate the care you receive?	98.0%

- Person/questionnaire level agreement showed very high levels of agreement and no statistically significant difference in the responses to each question.

		Re-Administered Response	
		Poor (1) or Average (2)	Good (3), Very Good (4), or Excellent (5)
Pilot Response	Poor (1) or Average (2)	98.75%	98.5%
	Good (3), Very Good (4), or Excellent (5)	98.75%	99%

- Measure level testing also demonstrated agreement
  - 14.18% of bootstrap repetition scores were within 1 percentage point of the score under the original pilot sample
  - 20.91% were within 3 percentage points
  - 33.50% were within 5 percentage points
  - 46.33% were within 10 percentage points

Validity

- Developer resubmitted validity testing from the previous submission in 2016.
- Validity testing of the CoreQ: Long-Stay Resident questionnaire included both data element level and score level testing.
- Data element level:

- Exploratory factor analysis (EFA) were used to further refine the pilot instrument. This was an iterative process that included using Eigenvalues from the principal factors (unrotated) and correlation analysis of the individual items.
- Face validity evaluated via literature review and review of 12 commonly used satisfaction surveys; also examined face validity of domains and the response scale, using 40 patients in 5 nursing homes. The Flesch-Kinkaid scale was used to determine if patients understood the questions.
- Correlation analysis and a factor analysis conducted.

- Measure score level
  - Convergent validity testing was performed. Developers examined correlation between the four items in the measure and all of the items on the pilot instrument. Also examined correlations between the CoreQ: Short Stay Discharge measure scores and i) measures of regulatory compliance and other quality metrics from the Certification and Survey Provider Enhanced Reporting (CASPER) data, ii) several other quality metrics from Nursing Home Compare, iii) risk adjusted discharge to community measure and iv) risk adjusted PointRight® Pro 30™ Rehospitalizations.

1. Assess the results(s) for establishing validity

Submission document: Testing attachment, section 2b2.3

- Data element level
  - Testing the Items for the CoreQ: Long-Stay Resident Questionnaire
    - EFA shows that one factor explains the common variance of the items. A single factor can be interpreted as the only "concept" being measured by those variables. This means that the instrument measures the global concept of satisfaction and not multiple areas of satisfaction. This supports the validity of the CoreQ instrument as measuring a single concept of "customer satisfaction". This testing indicates a high degree of criterion validity.
    - The percent of missing responses for the items is very low. The distribution of the summary score is wide. This is important for quality improvement purposes, as nursing facilities can use benchmarks.
  - Determine if a Sub-Set of Items Could Reliably be Used to Produce an Overall Indicator of Satisfaction (The Core Q: Long-Stay Resident measure).
    - The correlation of the 3-item CoreQ: Long-Stay Resident measure summary score (identified elsewhere in this document) with the overall satisfaction score (scored using all data and the same scoring metric) gave a value of 0.89.
    - The correlation score between the "CoreQ: Long-Stay Resident Measure" and all of the 18 items used in the Pilot instrument indicates that the satisfaction information is approximately the same if we had included either the 3 items or the 18 item Pilot questions.
- Score level
  - Developer states that the face validity testing shows the following:
    - The literature review shows that domains used in the Pilot CoreQ: Long-Stay Resident items have a high degree of both face validity and content validity.
    - Patients overall rankings show the general "domain" areas used indicates a high degree of both face validity and content validity. The results show that 100% of residents are able to complete the response format used.
    - The Flesch-Kinkaid scale score achieved for all questions indicates that respondents have a high degree of understanding of the items.

- Convergent Validity
  - The 13 Nursing Home Compare (NHC) Quality Indicators, Five Star ratings, and staffing levels all had a moderate to high level of correlation and in the direction predicted with the CoreQ: Long-Stay Resident measure. These correlations range from ± 0.100 to 0.47. The CoreQ: Long-Stay Resident measure is associated with these quality indicators, and always in the hypothesized direction.
  - The 8 CASPER Quality Indicators had a reasonable level of negative correlation with the CoreQ: Long-Stay Resident measure in the direction as expected (higher satisfaction is associated with better quality. These correlations range from -0.105 to -0.476. The CoreQ: Long-Stay Resident measure is associated with these quality indicators. This testing indicates a reasonable degree of construct validity and convergent validity.
  - The CoreQ: Long-Stay Resident measure is associated with these quality indicators, and always in the hypothesized direction (good correlates with good). In particular, as emphasized in the structure-process-outcome framework of the evidence section, the link between staffing and customer satisfaction is particularly high, as confirmed by the correlation coefficients 0.47 for RN hours per resident-day and 0.37 for total staffing hours per resident day. This testing indicates a reasonable degree of construct validity and convergent validity.

Questions for the Committee regarding reliability:

- Do you have any concerns that the measure can be consistently implemented (i.e., are measure specifications adequate)?
- Do you agree with the NQF staff assessment of the reliability testing provided by the developer?

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

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

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

2a1. Reliability-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?

- Concern re: implementation in non-English speakers, not clear tool has been translated/validated in any other languages
- No concerns.
- High.
- No concerns.
- Measure result reliability solid.
- Same risk model questions as in 2614.
- No significant change since 2016 endorsement.

- From initial submission - how often do data need to be updated?
- Based on the process used and the Source 2 analysis the measure produces consistent (reliable) and credible (valid) results about the quality of care when implemented as currently designed. The exceptions for whom to collect data e.g. risk/case-mix adjustment is an issue for accurate patient satisfaction results. The survey / sampling instructions limits responses from key stakeholders. The expert panel advised to exclude: Residents with dementia impairing their ability to answer the questionnaire defined as having a low BIMS score and Residents with a legal court appointed guardian. According to the study this eliminated 34% of residents who have poor cognition Page 21 version 7/1 Measure Testing (subcriteria 2a2, 2b1-2b6) These exclusions were applied because such residents were either unable to provide an independent response (e.g., residents who have poor cognition or a legal court appointed guardian) or residents whose answers "we could not be confident were accurate or unbiased (residents who have poor cognition and durable power of attorney))." It is clear from instruction note number 14 that "Risk factors that influence outcomes should not be specified as exclusions.

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

- No concerns.
- No change from endorsed measure.
- Not from initial submission, would like to see updates when available.
- Using the Measure evaluation Criteria for reliability and the sub criteria, the elimination of a key stakeholder, the loved-one for dementia, raises concerns about the reliability testing of the measure. The committee Guidebook for the NQF Measure Endorsement Process states that

exclusions need to be included in the repeatability/reproducibility of the patient-level data used in the measure. The guidebook states “such testing should be done for all “critical” data elements (i.e., those needed to calculate the measure score), or, at a minimum, for the numerator, denominator, and exclusions. “Pg. 46 It is clear that dementia patients are excluded from the measure and no data is evaluated regarding the loved-one perspective. It is not clear how “loved-ones” were eliminated as a “critical” data input.

- No.
- No concerns.
- No.
- No.
- No.

2b1. Validity -Testing: Do you have any concerns with the testing results?

- No.
- See 2614.
- No concerns.
- High.
- No.
- Same as 2614 - In addition to the absence of any addressing or mention of response bias, I am somewhat concerned about some measure exclusions - in particular, exclusion of patients readmitted to acute care facilities (a group they specifically leverage in their validity testing) - makes me concerned the measure is missing key populations; I am also concerned about the rarity of non-white patients and question the existence of disparities based on this limited population.
- Correlations with other quality metrics are modest, but acceptable.
- Not from initial submission - provided data on content, convergent validity.
- The validity measurement is insufficient. It does not pass the exclusion criteria. The elimination of data collection included 34% of residents who have poor cognition; 2% residents with hospice; and 4% residents with a legal court appointed guardian. Over a third of residents were excluded and no justification was give why loved-ones ranking is not included in the evaluation.

2b2-3. 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?

- Exclusions generally appropriate, excluding hospice patients initially surprised me but I understand the justification
- Same as 2614.
- No concerns.
- No threats.
- Acceptable.
- See above re exclusions; measure not risk adjusted for social risk and does not account for response bias.

- No change from endorsed measure.
- Exclusions justified in original submission; no risk adjustment.
- For risk adjustment, additional thought is needed for payee mix and input from stakeholders for dementia patients.

2b4-7. 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?

- No.
- Agree with NQF staff report (very detailed and thorough).
- No concerns.
- None.
- No.
- I think non-response bias is a huge potential threat to validity, not missing data among those who respond.
- Response rates are similar to other surveys of this population.
- No.
- Missing data from loved-ones is a threat to validity. In this patient population, eliminating input based on cognitive ability requires other sources to be evaluated for providing assessment.

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.

- The collection instrument is the CoreQ: Long Stay Family questionnaire and Resident Assessment Instrument Minimum Data Set (MDS) version 3.0.
- This is a patient satisfaction survey conducted via mailed survey.
- No fees required to use the measure; the developer did not indicate if there are fees associated with the use of the survey.

Questions for the Committee:

- How burdensome is the implementation of the measure to providers? To patients?
- Is the data collection strategy ready to be put into operational use?

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

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?

- No concerns, it is in use.

- Same as 2614 plus in this sample, the surveys would be completed while the resident is still receiving services. Wonder what precautions are being taken to ensure resident feels safe being honest with the survey?
- No concerns.
- Moderate.
- Agree with measure worksheet.
- Agree with rating of moderate - only 4 questions which is pretty short for PRO.
- Requires a survey, but efforts to obtain resident input is justified.
- 3 items, mailed - moderate feasibility.
- It is important to know who is answering the questions and with whom they are sitting. There is no data to determine how answers vary when a patient is sitting with a facility employee filling out the form or if they are alone or if they are with a loved-one. The data collection strategy should record this information.

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

- Professional Certification or Recognition Program
  - AHCA Quality Initiative
  - AHCA Quality Awards
- Quality Improvement (external benchmarking to organizations)
  - AHCA NCAL Long Term Care Trend Tracker
- Developer notes that a number of states are implementing the CoreQ survey inside of state incentive programs, including NJ, MA, TN, GA and others.

4a.2. Feedback on the measure by those being measured or others.

- Assistance with data and generally understanding the measure is provided through the open-source measure website where the public can find the manual (containing the measure algorithm) as well as the participating vendors (with their direct contacts).
- Feedback on the performance results and data is provided via a quarterly push report, called Top-Line, sent to all members who have access to the Long Term Care Trend Tracker (LTCTT).
- CoreQ report which is updated quarterly directly being fed data from the API that vendors use to upload CoreQ measure scores. Therefore, those that are choosing to participate in this, will automatically see their results on the benchmarking tool.
- All those that enter data or have vendors enter their data, obtain this feedback and resources.
- Although not a part of the systemic capture of data, patients and family members appreciate being asked about their satisfaction in a short questionnaire with the nursing home and the care provided.
- Other users such as the state agencies involved in the administration of the Medicaid quality incentive program as well as the quality initiative programs have lauded the small number of questions that are included in this measure. This is especially important as more states move to Medicaid value-based care with a person-centered care model.

Additional Feedback: None

***Questions for the Committee**:*

- How have the performance results been used to further the goal of high-quality, efficient healthcare?
- How has the measure been vetted in real-world settings by those being measured or others?

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 provided year-over-year data in the Performance Gap section. The first two quarters showed higher performance but with very few facilities in the summary data. Subsequent quarters tended to fluctuate between 80-84% without a consistent improvement trend.
- Developer states that they have been actively monitoring improvement of AHCA membership as part of the Quality Initiative
    - Members need to improve the measures by 10% from their baseline of 2017Q1 score or achieve a score of more than 90% (satisfaction rate) by March 2021.
    - The current iteration of the quality initiative kicked off in 2018. On average, approximately 10-12% of membership submits CoreQ data every quarter. Thus far, on average, 18% of the providers who nationally submitted data have met this goal for at least one of the CoreQ measures (SS discharge, or LS residents, or LS family). This represents facilities across all 50 states plus the District of Columbia.
- With regards to CoreQ LS resident, 11% of the total facilities in the nation that have submitted CoreQ data have met the goal of either having >90% satisfaction rate or at least a 10% improvement in the satisfaction rate since 2017Q1.
    - The states of AL, GA, IA, NH, RI, TN, WV, and WY have at least 20% of the SNFs that submitted data meet the quality initiative goal.

- CO, KS, MI, MT, NJ, and NM have at least 15% of the SNFs that submitted data meet the quality initiative goal.
- All but one state has at least a facility meet the quality initiative goal.

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 N/A

Potential harms N/A

Additional Feedback: None

Questions for the Committee:

- How can the performance results be used to further the goal of high-quality, efficient healthcare?
- Do the benefits of the measure outweigh any potential unintended consequences?

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

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

- In appropriate use.
- Same as 2614; there was mention of positive feedback on low number of questions. Do wonder about ability to comment and make improvements on the qualitative side of the resident feedback.
- The data is publicly reported and also used for accountability programs. Feedback is shared with the facilities and used to make changes.
- Pass.
- Nothing to add.
- Measure is in programmatic use.
- Developers report some increase in facilities reporting. Doesn't appear that performance on instrument significantly improved.
- Publicly reported.
- It is clear feedback is valued because a large vendor reported patients and family members writing in the margins of the survey that they appreciate being asked about their satisfaction in a short questionnaire with the nursing home and the care provided. The open- ended data is not collected and perhaps is some insight that the population would share additional data. This can further the goal of high-quality efficient healthcare. With transparency, it is noted that a peer-effect is nudging the submission of data. This substantiates the need to recording with whom the patient receives help with filling out the forms. For the elderly, they may feel pressure to be positive if their care provider is asking the questions.

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.

- In use.
- Same as 2614.
- Performance has been shown to increase based on data provided; no harms are noted.
- Moderate.
- Same as 2614: I am concerned about costs - direct and indirect - of implementing a new survey.
- I am concerned about low non-white response rate and the fact that measure does not account for response bias.
- Questions about specific elements of care might provide more detail for improvement. However, adding those items could be at the discretion of the facility in understanding its score.
- Minimal.
- The benefits of the measure outweigh any potential unintended consequences.

Criterion 5: Related and Competing Measures

Related or competing measures

- No longer NQF endorsed: 0692 Consumer Assessment of Health Providers and Systems (CAHPS®) Nursing Home Survey: Long-Stay Resident Instrument
- Developer notes that "The CoreQ: Long-Stay Resident measure does not conceptually address either the same measure focus or the same target population as any other NQF-endorsed measures."

Harmonization

N/A

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

5. 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?

- Competing measures mentioned.
- N/A.
- There was previously an NQF endorsed measure 0692 which is no longer used. No other measures were noted.
- No.
- No competing measure.
- N/A.
- The measures need to be harmonized with the 0692: Consumer Assessment of Health Providers and Systems (CAHPS®) Nursing Home Survey: Long-Stay Resident Instrument. At this time, no analyses have been conducted with CAHPS® such that a score representing satisfaction can be calculated. It is unclear why the three questions are not just added

to the CAHPS survey. It has been acknowledged that people are writing in the margins. Perhaps this reflects that the 50 question CAHPS survey is too long and this survey is too short.

Public and Member Comments

Comments and Member Support/Non-Support Submitted as of: Month/Day/Year

- **Of the XXX NQF members who have submitted a support/non-support choice:**
  - XX support the measure
  - YY do not support the measure

NQF Staff Scientific Acceptability Evaluation

Scientific Acceptability: Preliminary Analysis Form

Measure Number: 2615

Measure Title: CoreQ: Long-Stay Resident Measure

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**

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.)

RELIABILITY: SPECIFICATIONS

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

   Submission document: Specifications, items S.1-S.22

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

RELIABILITY: TESTING

Submission document: Specifications, testing attachment questions 1.1-1.4 and section 2a2

4. **Reliability testing level** ☒ **Measure score** ☒ **Data element** ☐ **Neither**
5. **Reliability testing was conducted with the data source and level of analysis indicated for this measure**
   ☒ **Yes** ☐ **No**
6. If score-level and/or data element reliability testing was NOT conducted or if the methods used were NOT appropriate, was **empirical VALIDITY testing** of patient-level data conducted?
   ☐ **Yes** ☐ **No**
7. **Assess the method(s) used for reliability testing**

   Submission document: Testing attachment, section 2a2.2

   - Developer used the same testing from the 2016 submission
   - Measure developer performed both data element level and score level reliability testing
   - Data element reliability testing included test-retest analysis on a convenience sample of 100 patients
     - Developer calculated the distribution of responses by question in the original round of surveys, and then again in the follow-up surveys (they should be distributed similarly);
     - Developer subsequently calculated the correlations between the original and follow-up responses by question (they should be highly correlated).
   - The stability of the facility-level score was tested using bootstrapping with 10,000 repetitions of the facility score calculation.
     - Developer presented the percent of facility resamples where the facility score is within 1 percentage point, 3 percentage points, 5 percentage points, and 10 percentage points of the original score.
8. **Assess the results of reliability testing**

   Submission document: Testing attachment, section 2a2.3

Questionnaire Item	Percent Agreement
In recommending this facility to your friends and family, how would you rate it overall?	97.6%
Overall, how would you rate the staff?	98.5%
How would you rate the care you receive?	98.0%

- Person/questionnaire level agreement showed very high levels of agreement and no statistically significant difference in the responses to each question.

		Re-Administered Response	
		Poor (1) or Average (2)	Good (3), Very Good (4), or Excellent (5)
Pilot Response	Poor (1) or Average (2)	98.75%	98.5%
	Good (3), Very Good (4), or Excellent (5)	98.75%	99%

- Measure level testing also demonstrated agreement
    - 14.18% of bootstrap repetition scores were within 1 percentage point of the score under the original pilot sample
    - 20.91% were within 3 percentage points
    - 33.50% were within 5 percentage points
    - 46.33% were within 10 percentage points

9. 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)

10. 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)

11. **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)

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

    Clear specifications and appropriately tested with good results. Measure displays a high degree of reliability across at the instrument and score level.

VALIDITY: ASSESSMENT OF THREATS TO VALIDITY

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

    Submission document: Testing attachment, section 2b2.

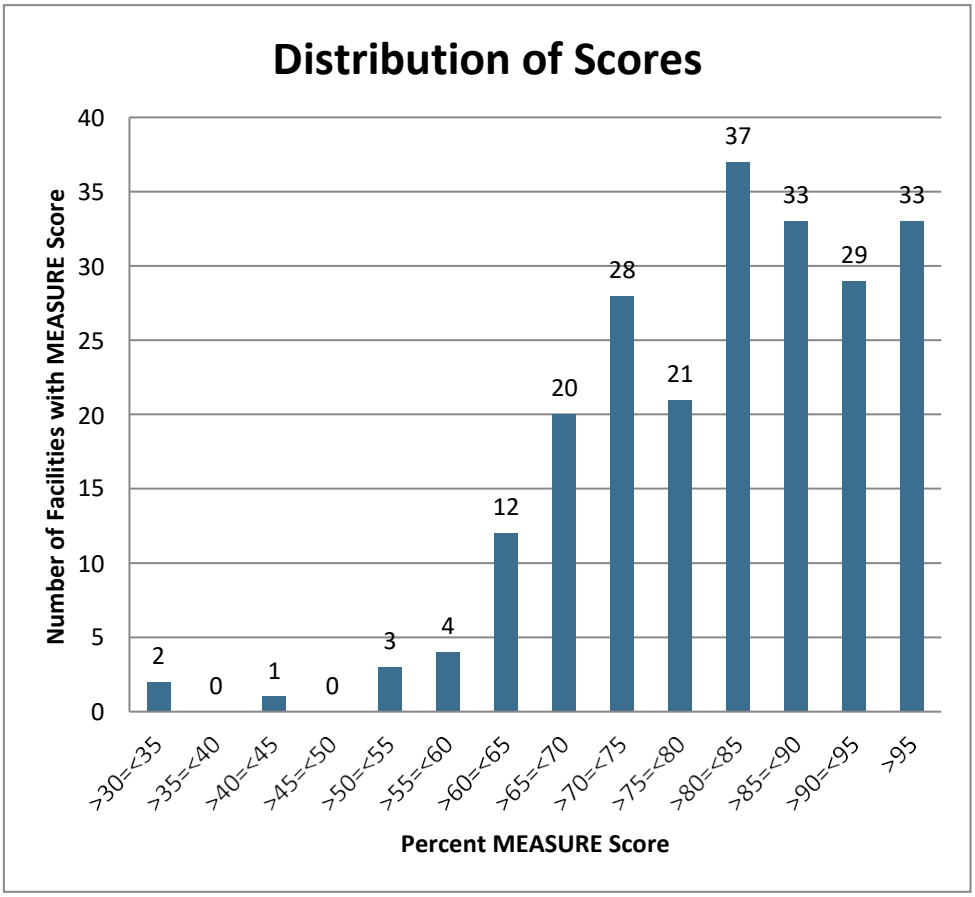
    - No concerns identified by staff; exclusions appear appropriate
    - Developer was advised by an expert panel to exclude patients who
        - Demonstrate cognitive impairment (i.e. residents with dementia impairing their ability to answer the questionnaire
        - Receive hospice care
        - Court appointed guardian
        - Less than 100 days of residence in SNF
        - Missing data points
        - Unusable data

- Developer noted that these exclusions are often used with satisfaction surveys. Developer was not able to calculate the mean CoreQ: Long-Stay Resident scores with and without the exclusions.
- The exclusion analysis included responses from 223 facilities (described elsewhere).
    - The exclusions were tracked and included 34% of residents with poor cognition; 2% hospice; and 4% with a legal court appointed guardian.

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

    Submission document: Testing attachment, section 2b4.

    The histogram below shows the distribution of the CoreQ Long-Stay Resident measure.



- The distribution of CoreQ Long-Stay Resident scores indicate a wide range, demonstrating that the scores can be used to differentiate facilities of varying levels of customer satisfaction quality.
- No concerns from staff.

15. **Please describe any concerns you have regarding comparability of results if multiple data sources or methods are specified.**

    Submission document: Testing attachment, section 2b5.

    - N/A

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

    Submission document: Testing attachment, section 2b6.

- Developer describes the following approach to assessing missing data:

- In calculating the CoreQ: Long-Stay Resident measure if 1 item of 3 is missing then imputation is used, and if 2 (or more) of the 3 items is missing, the respondent is excluded. The imputation method consists of using the average score from the items answered. The testing to identify the extent and distribution of missing data included examining the frequency of missing responses for each of the 3 CoreQ: Long-Stay Resident questionnaire items and the extent and distribution of missing data for more than one missing response for the items.
- The method of testing to identify if the performance results were biased included examining the correlation with the quality indicators (described above) when imputation was and was not used.

- From the testing of 7,307 residents (described in section 1.5) we found:
  - In recommending this facility to your friends and family, how would you rate it overall? That missing responses occurred in 4.86% (n=355) cases.
  - Overall, how would you rate the staff? Missing responses occurred in 4.64% (n=339) cases.
  - How would you rate the care you receive? Missing responses occurred in 4.56% (n=333) cases.
  - Two (or more) missing responses occurred in 123 cases. Thus, the degree of missing data was very small (=1.68%). Imputation was used in 904 cases or 12.37% of respondents.
  - Bias from imputation was minimal due to the rate of missingness being very low. The correlation with the quality indicators described above (i.e., restraint use, pressure ulcers, catheter use, antipsychotic use, antidepressant use, antianxiety use, use of hypnotics, and deficiency citations) was unchanged. When the respondents were removed from the analyses, the average Summary Scores remained the same.
- No concerns from NQF staff.

17. Risk Adjustment

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

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**

- Developer performed analyses that demonstrated that the educational makeup of the respondents or the racial makeup of the respondents does not influence the measure.

VALIDITY: TESTING

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

19. Method of establishing validity of the measure score:

☒ Face validity

☒ Empirical validity testing of the measure score

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

20. Assess the method(s) for establishing validity

Submission document: Testing attachment, section 2b2.2

- Developer resubmitted validity testing from the previous submission in 2016.
- Validity testing of the CoreQ: Long-Stay Resident questionnaire included both data element level and score level testing.
- Data element level:
    - Exploratory factor analysis (EFA) were used to further refine the pilot instrument. This was an iterative process that included using Eigenvalues from the principal factors (unrotated) and correlation analysis of the individual items.
    - Face validity evaluated via literature review and review of 12 commonly used satisfaction surveys; also examined face validity of domains and the response scale, using 40 patients in 5 nursing homes. The Flesch-Kinkaid scale was used to determine if patients understood the questions.
    - Correlation analysis and a factor analysis conducted.
- Measure score level
    - Convergent validity testing was performed. Developers examined correlation between the four items in the measure and all of the items on the pilot instrument. Also examined correlations between the CoreQ: Short Stay Discharge measure scores and i) measures of regulatory compliance and other quality metrics from the Certification and Survey Provider Enhanced Reporting (CASPER) data, ii) several other quality metrics from Nursing Home Compare, iii) risk adjusted discharge to community measure and iv) risk adjusted PointRight® Pro 30™ Rehospitalizations.

21. Assess the results(s) for establishing validity

Submission document: Testing attachment, section 2b2.3

- Data element level
    - Testing the Items for the CoreQ: Long-Stay Resident Questionnaire
        - EFA shows that one factor explains the common variance of the items. A single factor can be interpreted as the only "concept" being measured by those variables. This means that the instrument measures the global concept of satisfaction and not multiple areas of satisfaction. This supports the validity of the CoreQ instrument as measuring a single concept of "customer satisfaction". This testing indicates a high degree of criterion validity.
        - The percent of missing responses for the items is very low. The distribution of the summary score is wide. This is important for quality improvement purposes, as nursing facilities can use benchmarks.
    - Determine if a Sub-Set of Items Could Reliably be Used to Produce an Overall Indicator of Satisfaction (The Core Q: Long-Stay Resident measure).
        - The correlation of the 3-item CoreQ: Long-Stay Resident measure summary score (identified elsewhere in this document) with the overall satisfaction score (scored using all data and the same scoring metric) gave a value of 0.89.

        - The correlation score between the "CoreQ: Long-Stay Resident Measure" and all of the 18 items used in the Pilot instrument indicates that the satisfaction information is approximately the same if we had included either the 3 items or the 18 item Pilot questions

- Score level
    - Developer states that the face validity testing shows the following:
        - The literature review shows that domains used in the Pilot CoreQ: Long-Stay Resident items have a high degree of both face validity and content validity.
        - Patients overall rankings show the general "domain" areas used indicates a high degree of both face validity and content validity. The results show that 100% of residents are able to complete the response format used.
        - The Flesch-Kinkaid scale score achieved for all questions indicates that respondents have a high degree of understanding of the items.
    - Convergent Validity
        - The 13 Nursing Home Compare (NHC) Quality Indicators, Five Star ratings, and staffing levels all had a moderate to high level of correlation and in the direction predicted with the CoreQ: Long-Stay Resident measure. These correlations range from ± 0.100 to 0.47. The CoreQ: Long-Stay Resident measure is associated with these quality indicators, and always in the hypothesized direction.
        - The 8 CASPER Quality Indicators had a reasonable level of negative correlation with the CoreQ: Long-Stay Resident measure in the direction as expected (higher satisfaction is associated with better quality. These correlations range from -0.105 to -0.476. The CoreQ: Long-Stay Resident measure is associated with these quality indicators. This testing indicates a reasonable degree of construct validity and convergent validity.
        - The CoreQ: Long-Stay Resident measure is associated with these quality indicators, and always in the hypothesized direction (good correlates with good). In particular, as emphasized in the structure-process-outcome framework of the evidence section, the link between staffing and customer satisfaction is particularly high, as confirmed by the correlation coefficients 0.47 for RN hours per resident-day and 0.37 for total staffing hours per resident day. This testing indicates a reasonable degree of construct validity and convergent validity.

22. 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)

23. 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)

24. **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.)

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

ADDITIONAL RECOMMENDATIONS

26. **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.**

No concerns from staff

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

CoreQ_Long_Stay Evidence_Final.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)

NATIONAL QUALITY FORUM—Evidence (subcriterion 1a)

Measure Number (*if previously endorsed*)**:** 2615

Measure Title: CoreQ: Long Stay Resident Measure

Date of Submission: 4/9/2020

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

Outcome

☐ Outcome: Click here to name the health outcome

☒ Patient-reported outcome (PRO): Customer Satisfaction

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*): Click here to name the intermediate outcome

☐ Process: Click here to name what is being measured

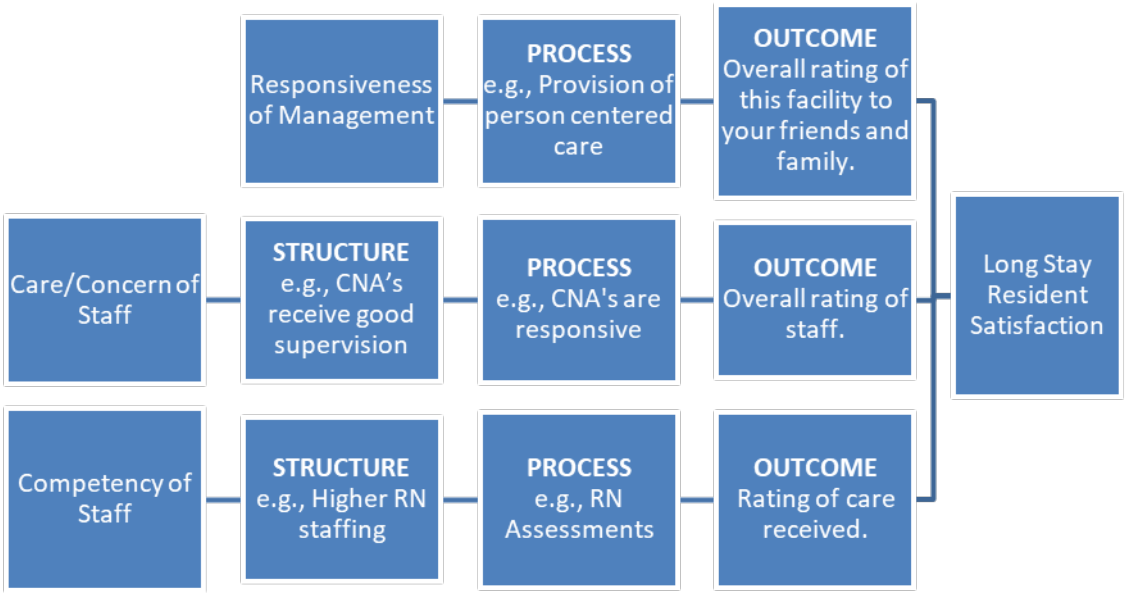
☐ Appropriate use measure: Click here to name what is being measured

☐ Structure: Click here to name the structure

☐ Composite: Click here to name what is being measured

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.

Satisfaction of long-stay residents can be looked at as the outcome for a number of structures and processes within skilled nursing care centers. Drivers for satisfaction include competency of staff, care/concern of staff, and responsiveness of management (National Research Corporation, 2014).



Castle, N.G. (2007). A literature review of satisfaction instruments used in long-term care settings. *Journal of Aging and Social Policy*, 19(2), 9-42.

Donabedian, A. (1985). Twenty years of research on the quality of medical care: 1964-1984. *Evaluation and the Health Professions,* 8, 243-65.

Donabedian, A. (1988). The quality of care. *Journal of the American Medical Association,* 260, 1743-1748.

Donabedian, A. (1996). Evaluating the quality of medical care. *Milbank Memorial Fund Quarterly*, 44(1), 166-203.

Glass, A. (1991). Nursing home quality: A framework for analysis. *Journal of Applied Gerontology*, 10(1), 5-18.

National Research Corporation. (2014). 2014 National Research Report Empowering Customer-Centric Healthcare Across the Continuum.

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.)

The meaningfulness of the measure was determined using residents (n=40) in five nursing facilities in the Pittsburgh region. All long-stay residents were cognitively intact. Permission to approach residents was given by facility management. Most residents (40 of 45) agreed to be interviewed. Each resident signed an informed consent. Apart from the informed consent, the interviews were anonymous. The interviews were not recorded, but notes were taken by the interviewer, Dr. Nicholas Castle. The interviews were conducted at sites that ensured confidentiality (e.g., resident rooms or private areas) and no staff were in the vicinity. Interviews were conducted in a standardized format with the same script for each resident. The interviews were used to assess the importance of domains used in the satisfaction measure. The items assessing overall satisfaction were shown to be extremely important using a scale from 1 as most important to 22 as least

important. Respondents could pick a maximum of 5 questions as most important. The CoreQ questions were ranked as follows:

1. In recommending this facility to your friends and family, how would you rate it overall? Of the 40 respondents, 35 ranked this question as most important.
2. Overall, how would you rate the staff? Of the 40 respondents, 35 ranked this question as most important.
3. How would you rate the care you receive? Of the 40 respondents, 34 ranked this question as most important.

****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.

The table below provides the structure and process drivers that influence long stay resident satisfaction.

Authors	***Structure or Process and Driver of Long Stay Satisfaction***	***Summary Statement showing structures, processes, interventions and services and influence short-stay discharge satisfaction.***	***Citation***
Reinhardt, et al., 2014	Process Care/concern of staff and competency of staff	Conversations regarding end-of-life care options with family members show higher overall satisfaction with care and more use of advance directives.	Reinhardt, J.P., Chichin, E., Posner, L., & Kassabian, S. (2014). Vital conversations with family in the nursing home: preparation for end-stage dementia care. *Journal Of Social Work In End-Of-Life & Palliative Care*. 10(2):112-26.
Van Uden et al. (2013).	Process Competency of staff	For nursing home residents with dementia improved symptom management is associated with higher satisfaction with care.	van Uden, N., Van den Block, L., van der Steen, J.T., Onwuteaka-Philipsen, B.D., Vandervoort, A., Vander Stichele, R., & Deliens, L. (2013). Quality of dying of nursing home residents with dementia as judged by relatives. *International Psychogeriatrics.* 25(10):1697-707.
Li et al. (2013).	Structure Responsiveness of management	Higher overall nursing home satisfaction scores were associated with higher nursing staffing levels and fewer deficiency citations.	Li, Y., Cai, X., Ye, Z., Glance, L.G., Harrington, C., & Mukamel, D.B. (2013). Satisfaction with Massachusetts nursing home care was generally high during 2005-09, with

			some variability across facilities. *Health Affairs*. 32(8):1416-25.
Crogan et al. (2013).	Structure Responsiveness of management	Improvements in a nursing home food delivery system were associated with higher overall satisfaction and improved resident health.	Crogan, N.L., Dupler, A.E., Short, R., & Heaton, G. (2013). Food choice can improve nursing home resident meal service satisfaction and nutritional status. *Journal of Gerontological Nursing*. 39(5):38-45.
Brownie & Nancarrow (2013).	Structure & Process Responsiveness of management and care/concern of staff	Implementation of person-centered care is associated with higher levels of satisfaction.	Brownie, S. & Nancarrow, S. (2013). Effects of person-centered care on residents and staff in aged-care facilities: a systematic review. *Clinical Interventions In Aging*. 8:1-10.
Authors	***Structure or Process and Driver of Long Stay Satisfaction***	***Summary Statement showing structures, processes, interventions and services and influence short-stay discharge satisfaction.***	***Citation***
Kleijer et al., 2014	Process Competency of staff	Residents perceive a low level of quality of care in centers where there is a high level of antipsychotic use.	Kleijer, B., Van Marum, R., Frijeters, D., Jansen, P., Ribbe, M., Egberts, A., & Heerdink, E. (2014). Variability between nursing homes in prevalence of antipsychotic use in patients with dementia. *International Psychogeriatrics,* 26(3), 363-371.
Kayser-Jones et al., 1999	Structure Responsiveness of management and care/concern of staff	Higher levels of RN and LPN staffing have been associated with better quality outcomes such as ADL maintenance and hydration. Centers that have a family council in addition to the required resident council have	Kayser-Jones, J., Schell, E.S., Poter, C., Barbaccia, J.C., & Shaw, H. (1999). Factors contributing to dehydration in nursing homes: Inadequate staffing and lack of professional supervision. *Journal of the American Geriatrics Society*, 47(10), 1187-1194.

		higher resident satisfaction.	

Castle, N.G. (2007). A literature review of satisfaction instruments used in long-term care settings. *Journal of Aging and Social Policy*, 19(2), 9-42.

Donabedian, A. (1985). Twenty years of research on the quality of medical care: 1964-1984. *Evaluation and the Health Professions,* 8, 243-65.

Donabedian, A. (1988). The quality of care. *Journal of the American Medical Association,* 260, 1743-1748.

Donabedian, A. (1996). Evaluating the quality of medical care. *Milbank Memorial Fund Quarterly*, 44(1), 166-203.

Glass, A. (1991). Nursing home quality: A framework for analysis. *Journal of Applied Gerontology*, 10(1), 5-18.

Kleijer, B., Van Marum, R., Frijeters, D., Jansen, P., Ribbe, M., Egberts, A., & Heerdink, E. (2014). Variability between nursing homes in prevalence of antipsychotic use in patients with dementia. *International Psychogeriatrics,* 26(3), 363-371.

Bishop, C., Weinberg, D., Leutz, W., Dossa, A., Pfefferle, S., & Zincavage, R. (2008). Nursing assistants' job commitment: Effect of nursing home organizational factors and impact on resident well-being. *The Gerontologist*, 48(1), 36-45.

Lucas, J.A., Lowe, T.J., Robertson, B., Akincigil, A., Sambamoorthi, Q., Bilder, S., Paek, E.K., & Crystal, S. (2007). The relationship between organizational factors and resident satisfaction with nursing home care and life. *Journal of Aging & Social Policy,* 19(2), 125-151.

Kayser-Jones, J., Schell, E.S., Poter, C., Barbaccia, J.C., & Shaw, H. (1999). Factors contributing to dehydration in nursing homes: Inadequate staffing and lack of professional supervision. *Journal of the American Geriatrics Society*, 47(10), 1187-1194.

Kane, R.L., & Kane, R.A. (2001). What older people want from long-term care, and how can they get it. *Health Affairs*, 20(6), 114-127.

Westat. Resident experience with nursing home care: A literature review.

1a.3. SYSTEMATIC REVIEW(SR) 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, prespecified 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.

Collecting satisfaction information from skilled nursing facility (SNF) patients is more important now than ever. We have seen a philosophical change in healthcare that now includes the patient and their preferences as an integral part of the system of care. The Institute of Medicine (IOM) endorses this change by putting the patient as central to the care system (IOM, 2001). For this philosophical change to person-centered care to succeed, we have to be able to measure patient satisfaction for these three reasons:

(1) Measuring satisfaction is necessary to understand patient preferences.

(2) Measuring and reporting satisfaction with care helps patients and their families choose and trust a health care facility.

(3) Satisfaction information can help facilities improve the quality of care they provide.

The implementation of person-centered care in SNFs has already begun, but there is still room for improvement. The Centers for Medicare and Medicaid Services (CMS) demonstrated interest in consumers' perspective on quality of care by supporting the development of the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey for patients in nursing facilities (Sangl et al., 2007).

Further supporting person-centered care and resident satisfaction are ongoing organizational change initiatives. These include: the Advancing Excellence in America's Nursing Homes campaign (2006), which lists person-centered care as one of its goals; Action Pact, Inc., which provides workshops and consultations with nursing facilities on how to be more person-centered through their physical environment and organizational structure; and Eden Alternative, which uses education, consultation, and outreach to further person-centered care in nursing facilities. All of these initiatives have identified the measurement of resident satisfaction as an essential part in making, evaluating, and sustaining effective clinical and organizational changes that ultimately result in a person-centered philosophy of care.

The importance of measuring resident satisfaction as part of quality improvement cannot be stressed enough. Quality improvement initiatives, such as total quality management (TQM) and continuous quality improvement (CQI), emphasize meeting or exceeding "customer" expectations. William Deming, one of the first proponents of quality improvement, noted that "one of the five hallmarks of a quality organization is knowing your customer's needs and expectations and working to meet or exceed them" (Deming, 1986). Measuring resident satisfaction can help organizations identify deficiencies that other quality metrics may struggle to identify, such as communication between a patient and the provider.

As part of the US Department of Commerce renowned Baldrige Criteria for organizational excellence, applicants are assessed on their ability to describe the links between their mission, key customers, and strategic position. Applicants are also required to show evidence of successful improvements resulting from their performance improvement system. An essential component of this process is the measurement of customer, or resident, satisfaction (Shook & Chenoweth, 2012).

The CoreQ: Long Stay questionnaire and measure can strategically help nursing facilities achieve organizational excellence and provide high quality care by being a tool that targets a unique and growing patient population. Over the past several decades, care in nursing facilities has changed substantially. Statistics show that more than half of all elders cared for in nursing homes are now discharged home (approximately 1.6 million residents; CMS, 2009). Moreover, when satisfaction information from current residents (i.e., long stay residents) is compared with those of elders discharged home, substantial differences exist (Castle, 2007). This indicates that long stay and short stay residents are different populations with different needs in the nursing facilities. Thus, the CoreQ: Long Stay questionnaire and measure are needed to improve the care for long stay SNF patients.

Moreover, improving the care for long stay nursing home patients is tenable. A review of the literature on satisfaction surveys in nursing facilities (Castle, 2007) concluded that substantial improvements in resident satisfaction could be made in many nursing facilities by improving care (i.e., changing either structural or process aspects of care). This was based on satisfaction scores ranging from 60 to 80% on average.

It is worth noting, few other generalizations could be made because existing instruments used to collect satisfaction information are not standardized. Thus, benchmarking scores and comparison scores (i.e., best in class) were difficult to establish. The CoreQ: Long Stay measure has considerable relevance in establishing benchmarking scores and comparison scores.

This measure's relevance is furthered by recent federal legislative actions. The Affordable Care Act of 2010 requires the Secretary of Health and Human Services (HHS) to implement a Quality Assurance & Performance Improvement Program (QAPI) within nursing facilities. This means all nursing facilities have increased accountability for continuous quality improvement efforts. In CMS's "QAPI at a Glance" document there are references to customer-satisfaction surveys and organizations utilizing them to identify opportunities for improvement. Lastly, the new "Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities" proposed rule includes language purporting the importance of satisfaction and measuring satisfaction. CMS states "CMS is committed to strengthening and modernizing the nation's health care system to provide access to high quality care and improved health at lower cost. This includes improving the patient experience of care, both quality and satisfaction, improving the health of populations, and reducing the per capita cost of health care." There are also other references in the proposed rule speaking to improving resident satisfaction and increasing person-centered care (Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities, 2015). The CoreQ: Long Stay measure has considerable applicability to both of these initiatives.

Castle, N.G. (2007). A literature review of satisfaction instruments used in long-term care settings. Journal of Aging and Social Policy, 19(2), 9-42.

CMS (2009). Skilled Nursing Facilities Non Swing Bed - Medicare National Summary. http://www.cms.hhs.gov/MedicareFeeforSvcPartsAB/Downloads/NationalSum2007.pdf.

CMS, University of Minnesota, and Stratis Health. QAPI at a Glance: A step by step guide to implementing quality assurance and performance improvement (QAPI) in your nursing home. https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/Downloads/QAPIAtaGlance.pdf.

Deming, W.E. (1986). Out of the crisis. Cambridge, MA. Massachusetts Institute of Technology, Center for Advanced Engineering Study.

Institute of Medicine (2001). Improving the Quality of Long Term Care. National Academy Press, Washington, D.C., 2001.

Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities; Department of Health and Human Services. 80 Fed. Reg. 136 (July 16, 2015) (to be codified at 42 CFR Parts 405, 431, 447, et al.).

MedPAC. (2015). Report to the Congress: Medicare Payment Policy. http://www.medpac.gov/documents/reports/mar2015_entirereport_revised.pdf?sfvrsn=0.

Sangl, J., Bernard, S., Buchanan, J., Keller, S., Mitchell, N., Castle, N.G., Cosenza, C., Brown, J., Sekscenski, E., and Larwood, D. (2007). The development of a CAHPS instrument for nursing home residents. Journal of Aging and Social Policy, 19(2), 63-82.

Shook, J., & Chenoweth, J. (2012, October). 100 Top Hospitals CEO Insights: Adoption Rates of Select Baldrige Award Practices and Processes. Truven Health Analytics. http://www.nist.gov/baldrige/upload/100-Top-Hosp-CEO-Insights-RB-final.pdf.

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.*

(Updated for Maintenance of Endorsement)

Below are the statistics requested in this question broken out but quarter, each quarter representing a rolling 12-month of data, akin to measures in the public domain. Section 1 contains data from Long Term Care Trend Tracker, whereas Section 2 contains data from a vendor on facilities in MA, NJ, PA, IL, NY (not included in Section 1).

For a more user-friendly view of these stats, please see appendix Table 1b.2.e and 1.b.2f (section 1 and 2, respectively).

Section 1: Data from Long Term Care Trend Tracker where all vendors upload CoreQ data

Survey dates in this dataset containing 16 quarters of data ranged from August 2016 to December 2019. The data is from Long Term Care Trend Tracker (https://www.ahcancal.org/research_data/trendtracker/Pages/default.aspx) where vendors and member user can upload data, and vendors can also upload non-member data.

2016Q1

Nr_SNFs:19 Mean Satisfaction Rate:89.25% STD:19.09% Min:33.30% Max:100.00% Q1:88.00% Q3:100.00% IQR:12.00% Total Nr. of Respondents:1265 Decile 1:41.80%Decile 2:88.00%Decile 3:88.90% Decile 4:93.30%Decile 5:95.70%Decile 6:100.00% Decile 7:100.00% Decile 8:100.00% Decile 9:100.00% Decile 10:100.00%

2016Q2

Nr_SNFs:63 Mean Satisfaction Rate:91.73% STD:13.63% Min:33.30% Max:100.00% Q1:88.90% Q3:100.00% IQR:11.10% Total Nr. of Respondents:1925 Decile 1:79.00%Decile 2:88.00%Decile 3:90.00% Decile 4:91.70%Decile 5:100.00% Decile 6:100.00% Decile 7:100.00% Decile 8:100.00% Decile 9:100.00% Decile 10:100.00%

2016Q3

Nr_SNFs:752 Mean Satisfaction Rate:80.08% STD:14.98% Min:24.20% Max:100.00% Q1:70.55% Q3:91.75% IQR:21.20% Total Nr. of Respondents:23847 Decile 1:60.00%Decile 2:66.70%Decile 3:73.90% Decile 4:77.80%Decile 5:81.80%Decile 6:85.10%Decile 7:90.00%Decile 8:94.10%Decile 9:100.00% Decile 10:100.00%

2016Q4

Nr_SNFs:968 Mean Satisfaction Rate:81.13% STD:15.53% Min:0.00% Max:100.00% Q1:72.20% Q3:93.20% IQR:21.00% Total Nr. of Respondents:29010 Decile 1:60.00%Decile 2:68.00%Decile 3:75.00% Decile 4:79.30%Decile 5:83.30%Decile 6:87.90%Decile 7:91.30%Decile 8:95.80%Decile 9:100.00% Decile 10:100.00%

2017Q1

Nr_SNFs:995 Mean Satisfaction Rate:81.07% STD:15.52% Min:0.00% Max:100.00% Q1:72.20% Q3:93.00% IQR:20.80% Total Nr. of Respondents:28640 Decile 1:60.00%Decile 2:68.20%Decile 3:75.00% Decile 4:78.95%Decile 5:83.30%Decile 6:87.50%Decile 7:91.30%Decile 8:95.50%Decile 9:100.00% Decile 10:100.00%

2017Q2

Nr_SNFs:1101 Mean Satisfaction Rate:81.25% STD:16.03% Min:0.00% Max:100.00% Q1:72.30% Q3:93.80% IQR:21.50% Total Nr. of Respondents:30562 Decile 1:60.00%Decile 2:68.20%Decile 3:75.00% Decile 4:79.50%Decile 5: 84.00% Decile 6:88.50% Decile 7:91.90%Decile 8:96.00% Decile 9: 100.00% Decile 10:100.00%

2017Q3

Nr_SNFs:690 Mean Satisfaction Rate:84.46% STD:16.44% Min:0.00% Max: 100.00% Q1:76.90% Q3:97.70% IQR:20.80% Total Nr. of Respondents: 16970 Decile 1:63.45% Decile 2:73.30%Decile 3:80.00%Decile 4:84.60%Decile 5:88.90%Decile 6:91.70%Decile 7:95.00% Decile 8:100.00% Decile 9:100.00% Decile 10:100.00%

2017Q4

Nr_SNFs:1101 Mean Satisfaction Rate:81.48% STD:17.56% Min:0.00% Max: 100.00% Q1:71.70% Q3:95.50% IQR:23.80% Total Nr. of Respondents:29991 Decile 1:60.00%Decile 2:69.20% Decile 3:75.00%Decile 4:80.00%Decile 5:84.60%Decile 6:88.90%Decile 7:92.70%Decile 8:100.00% Decile 9:100.00% Decile 10:100.00%

2018Q1

Nr_SNFs:1299 Mean Satisfaction Rate:81.34% STD:17.61% Min:0.00% Max: 100.00% Q1:72.00% Q3:95.20% IQR:23.20% Total Nr. of Respondents: 33632 Decile 1:60.00% Decile 2:69.20%Decile 3:75.00%Decile 4: 80.00% Decile 5:84.20%Decile 6:88.90%Decile 7:92.70% Decile 8:100.00% Decile 9:100.00% Decile 10:100.00%

2018Q2

Nr_SNFs:1318 Mean Satisfaction Rate:81.02% STD:19.05% Min:0.00% Max: 100.00% Q1:71.40% Q3:95.80% IQR:24.40% Total Nr. of Respondents: 33182 Decile 1:58.80% Decile 2:68.60%Decile 3:75.00%Decile 4:80.00%Decile 5:84.60%Decile 6:88.90%Decile 7:92.90% Decile 8:100.00% Decile 9:100.00% Decile 10:100.00%

2018Q3

Nr_SNFs:1300 Mean Satisfaction Rate:81.14% STD:19.58% Min:0.00% Max:100.00% Q1:71.40% Q3:97.15% IQR:25.75% Total Nr. of Respondents:31894 Decile 1:57.50%Decile 2:68.40%Decile 3:75.00% Decile 4:80.00%Decile 5:85.20%Decile 6:89.70%Decile 7:94.40%Decile 8:100.00% Decile 9:100.00% Decile 10:100.00%

2018Q4

Nr_SNFs:1123 Mean Satisfaction Rate:83.18% STD:20.56% Min:0.00% Max:100.00% Q1:76.00% Q3:100.00% IQR:24.00% Total Nr. of Respondents:23969 Decile 1:57.10%Decile 2:71.40%Decile 3:80.00% Decile 4:85.00%Decile 5:88.90%Decile 6:92.90%Decile 7:100.00% Decile 8:100.00% Decile 9:100.00% Decile 10:100.00%

2019Q1

Nr_SNFs:1120 Mean Satisfaction Rate:84.39% STD:20.34% Min:0.00% Max:100.00% Q1:78.60% Q3:100.00% IQR:21.40% Total Nr. of Respondents:24189 Decile 1:60.00%Decile 2:73.50%Decile 3:81.80% Decile 4:86.50%Decile 5:90.50%Decile 6:94.70%Decile 7:100.00% Decile 8:100.00% Decile 9:100.00% Decile 10:100.00%

2019Q2

Nr_SNFs:1216 Mean Satisfaction Rate:84.18% STD:20.35% Min:0.00% Max:100.00% Q1:77.80% Q3:100.00% IQR:22.20% Total Nr. of Respondents:26442 Decile 1:60.00%Decile 2:72.30%Decile 3:81.50% Decile 4:86.40%Decile 5:90.50%Decile 6:94.70%Decile 7:100.00% Decile 8:100.00% Decile 9:100.00% Decile 10:100.00%

2019Q3

Nr_SNFs:1641 Mean Satisfaction Rate:82.81% STD:19.55% Min:0.00% Max:100.00% Q1:75.00% Q3:100.00% IQR:25.00% Total Nr. of Respondents:39149 Decile 1:60.00%Decile 2:69.70%Decile 3:78.30% Decile 4:83.30%Decile 5:87.70%Decile 6:92.00%Decile 7:96.00%Decile 8:100.00% Decile 9:100.00% Decile 10:100.00%

2019Q4

Nr_SNFs:60 Mean Satisfaction Rate:73.72% STD:33.65% Min:0.00% Max:100.00% Q1:60.00% Q3:100.00% IQR:40.00% Total Nr. of Respondents:752 Decile 1: 0.00% Decile 2:50.00% Decile 3:66.70%Decile 4:77.50%Decile 5:90.10%Decile 6:97.50%Decile 7:100.00% Decile 8:100.00% Decile 9:100.00% Decile 10:100.00%

Section 2: Data from one of the vendors (non-Long Term Trend Tracker data) representing facilities in MA, NJ, PA, IL, NY

A. 2019Q1 Score (%):

a.

mean	81.59
min	43.00
max	100.00
Sdv	11.58
Q1	76.00
Q3	91.00
IQR	15.00
p10	63.00
p20	66.00
p30	81.00
p40	83.00
p50	84.00
p60	86.00
p70	89.00

p80 92.00

p90 93.00

p100 100.00

N of SNFs 661

B. 2019Q1 Response rate (%):

a.

mean 72.65%

min 13.04%

max 100.00%

Sdv 16.54%

Q1 64.29%

Q3 85.29%

IQR 21.01%

p10 47.83%

p20 60.00%

p30 66.67%

p40 72.31%

p50 76.74%

p60 80.77%

p70 83.93%

p80 86.57%

p90 89.47%

p100 100.00%

N of SNFs 661

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.

Not Applicable

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.*

We did not risk adjust the measure by sociodemographic status due to no statistically significant differences (at the 5% level) in the scores between the SDS categories. See Table 2b4.4b.b in the Testing section. By race, Whites averaged a score of 83.2, Blacks 83.3 and Asians 83.4; there were no observations for Native Hawaiians or other Pacific Islanders, American Indian or Alaskan Natives (Table 2b4.4b.c in the Testing section). By highest education level, those with some high school but who did not graduate averaged 83.2, high school graduates averaged 83.5, those with some college or a 2-year degree averaged 82.5, those with a 4-year college degree averaged 83.4, and those with more than a 4-year college degree averaged 83.3 (Table 2b4.4b.c

in the Testing section). By age group, residents younger than 65 years old averaged 72.9, those 65-74 averaged 82.7, those 75-84 averaged 85.0, and those older than 85 averaged 85.0 (Table 1b.4.a in the Appendix). Furthermore, by gender, males averaged 81.1 and females averaged 83.9 (Table 1b.4.b in the Appendix).

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

Multiple studies in the past twenty years have examined racial disparities in the care of nursing facility residents and have consistently found poorer care in facilities with high minority populations (Fennell et al., 2000; Mor et al., 2004; Smith et al., 2007). Work on racial disparities in nursing facilities' quality of care between elderly white and black residents within nursing facility has shown clearly that nursing homes remain relatively segregated and that specifically nursing home care can be described as a tiered system in which Blacks are concentrated in marginal-quality homes (Li, Ye, Glance & Temkin-Greener, 2014; Fennell, Feng, Clark & Mor, 2010; Li, Yin, Cai, Temkin-Greener, Mukamel, 2011; Chisholm, Weech-Maldonado, Laberge, Lin, & Hyer, 2013; Mor et al., 2004; Smith et al., 2007). Such homes tend to have serious deficiencies in staffing ratios, performance, and are more financially vulnerable (Smith et al, 2007; Chisholm et al., 2013). Based on a review of the nursing facility disparities literature, Konetzka and Werner concluded that disparities in care are likely related to this racial and socioeconomic segregation as opposed to within-provider discrimination (Konetzka and Werner 2009). This conclusion is supported, for example, by Grunier and colleagues who found that as the proportion of black residents in the nursing home increased the risk of hospitalization among all residents, regardless of race, also increased (Grunier et al., 2008). Thus, adjusting for racial status has the unintended effect of adjusting for poor quality providers not to differences due to racial status and not within-provider discrimination.

Lower satisfaction scores also likely increase as the proportion of black residents increases, indicating that the best measure of racial disparities in satisfaction rates is one that measures scores at the facility level. That is, ethnic and social economic status differences are related to inter-facility differences not to intra-facility differences in care. Therefore, the literature suggests that racial status should not be risk adjusted otherwise one is adjusting for the poor quality of the SNFs rather than differences due to racial status.

Chisholm L, Weech-Maldonado R, Laberge A, Lin FC, Hyer K. (2013). Nursing home quality and financial performance: does the racial composition of residents matter? Health Serv Res;48(6 Pt 1):2060–2080.

Fennell ML, Feng Z, Clark MA, Mor V. (2010). Elderly Hispanics more likely to reside in poor-quality nursing homes. Health Aff (Millwood);29(1):65–73.

Grabowski, D.C. (2004). The admission of Blacks to high-deficiency nursing homes. Medical Care 42(5): 456-464.

Gruneir, A., Miller, S. C., Feng, Z., Intrator, O., & Mor, V. (2008). Relationship between state Medicaid policies, nursing home racial composition, and the risk of hospitalization for black and white residents. Health Services Research, 43(3), 869-881.

Konetzka, R. T., & Werner, R. M. (2009). Review: Disparities in long-term care building equity into market-based reforms. Medical Care Research and Review, 66(5), 491-521.

Li Y, Yin J, Cai X, Temkin-Greener J, Mukamel DB. (2011). Association of race and sites of care with pressure ulcers in high-risk nursing home residents. JAMA;306(2):179–186.

Li Y, Ye Zhiqiu, Glance, Laurent & Temkin-Greener, Helena. (2014). Trends in family rating experience with care and racial disparities among Maryland nursing homes. Med Care, 52(7): 641-648.

Mor, V., Zinn, J., Angelelli, J., Teno, J. M., & Miller, S. C. (2004). Driven to tiers: socioeconomic and racial disparities in the quality of nursing home care. Milbank Quarterly, 82(2), 227-256.

Smith, D. B., Feng, Z., Fennell, M. L., Zinn, J. S., & Mor, V. (2007). Separate and unequal: racial segregation and disparities in quality across US nursing homes. Health Affairs, 26(5): 1448-1458.

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

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.)*

http://www.coreq.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:** CoreQ_Long_Stay_Resident_Collection_Instrument.docx

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.

No changes to the measure specifications since the last measure update. Since the last update, we have created a website (as specified in section S.1.) with information on all CoreQ measures.

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 is the sum of the individuals in the facility that have an average satisfaction score of =>3 for the three questions on the CoreQ: Long -Stay Resident questionnaire.

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).

The numerator includes all of the long-stay residents that had an average response =>3 on the CoreQ: Long Stay Resident questionnaire that do not meet any of the exclusions (see exclusions).

The calculation of an individual patient's average satisfaction score is done in the following manner:

-Respondents within the appropriate time window (see: S.5) and who do not meet the exclusions (See: S.11) are identified.

- A numeric score is associated with each response scale option on the CoreQ: Long-Stay Resident questionnaire (that is, Poor=1, Average=2, Good=3, Very Good=4, and Excellent=5).

- The following formula is utilized to calculate the individual's average satisfaction score. [Numeric Score Question 1 + Numeric Score Question 2 + Numeric Score Question 3]/3

-The number of respondents whose average satisfaction score >=3 are summed together and function as the numerator.

For residents with one missing data point (from the 3 items included in the questionnaire) imputation is used (representing the average value from the other two available questions). Residents with more than one missing data point, are not counted in the measure (i.e., no imputation is used for these residents since their responses are excluded). Imputation details are described in Section S.22.

No risk-adjustment is used (see S.13).

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

The denominator includes all of the residents that have been in the SNF for 100 days or more regardless of payer status; who received the CoreQ: Long-Stay Resident questionnaire (e.g. people meeting exclusions do not receive the questionnaire), who responded to the questionnaire within the two month time window, who did not have the questionnaire completed by somebody other than the resident, and who did not have more than one item missing.

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 includes all current individuals in the SNF on a given day who have been in the SNF for 100 days or more and respond to the CoreQ: Long-Stay Resident questionnaire and completed the survey within the two month time window (See: S.5).

Residents have up to 2 months to complete and return the survey. The length-of-stay is identified from nursing facility records (MDS item A1600 "Entry Date").

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

Exclusions made at the time of sample selection are the following: (1) Residents who have poor cognition defined by the BIMS score; (2) residents receiving hospice; (3) residents with a legal court appointed guardian; and (4) residents who have lived in the SNF for less than 100 days.

Additionally, once the survey is administered, the following exclusions are applied: a) surveys received outside of the time window (two months after the administration date) b) surveys that have more than one questionnaire item missing c) surveys from residents who indicate that someone else answered the questions for the resident. (Note this does not include cases where the resident solely had help such as reading the questions or writing down their responses.)

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.)*

Individuals are excluded based on information from the Minimum Data Set (MDS) 3.0 assessment.

(1) Residents who have poor cognition: Then the Brief Interview for Mental Status (BIMS), a well validated dementia assessment tool is used. BIMS ranges are 0-7 (lowest); 8-12; and 13-15 (highest). Residents with BIMS scores of equal or less than 7 are excluded. (MDS Section C0200-C0500 items are used) (Saliba, et al., 2012).

(2) Patients receiving or having received any hospice. This is recorded in the MDS as Hospice O0100K1 = 1 ("the patient was on hospice in the last 14 days while not a resident"), O0100K2 = 1 ("the patient was on hospice in the last 14 days while a resident"), A1800=07 ("entered from hospice"), or A2100=07 ("discharged to hospice").

(3) Patients with court appointed legal guardian for all decisions will be identified from nursing facility health information system.

(4) Residents who have lived in the SNF for less than 100 days will be identified from the MDS. This is recorded in the MDS (Section A1600, Entry Date).

(5) Residents that respond after the 2 month response period (see S.18, section 3.a on how this is determined).

(6) Residents whose responses were completed by someone other than the resident will be excluded. Identified from an additional question on the CoreQ: Long-Stay Resident questionnaire.

(7) Residents without usable data (defined as missing data for 2 or 3 of the survey questions).

Saliba D, Buchanan J, Edelen MO, Streim J, Ouslander J, Berlowitz D, Chodosh J.

J Am Med Dir Assoc. 2012 Sep;13(7):611-7. doi: 10.1016/j.jamda.2012.06.004. Epub 2012 Jul 15.

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.)*

No stratification is used.

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

No risk adjustment or risk stratification

If other:

S.12. Type of score:

Other (specify):

If other: Non-weighted score. Score is a percent.

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.)*

1.Identify the residents that have been residing in the SNF for 100 days or more. Length of stay so far is the MDS target date (TRGT_DT) - MDS admission date (A1900).

2. Take the residents that have been residing in the SNF for >=100 days and exclude the following:

a. Residents who have poor cognition defined as any residents with BIMS scores of 7 or lower. (MDS Section C0200-C0500 used) (Saliba, et al., 2012).

b. Patients receiving or having received any hospice. This is recorded in the MDS as Hospice O0100K1 = 1 ("the patient was on hospice in the last 14 days while not a resident"), O0100K2 = 1 ("the patient was on hospice in the last 14 days while a resident"), A1800=07 ("entered from hospice"), or A2100=07 ("discharged to hospice"). c. Residents with Court appointed legal guardian for all decisions will be identified from nursing facility health information system.

3. Administer the CoreQ: Long-stay Resident questionnaire (See S.25) to these individuals. The questionnaire should be administered to all residents in the SNF after exclusions in step 2 above. Communicate that residents have four weeks to respond to the survey. Note, we will include surveys received up to two months from administration but specify four weeks to help increase response rate and completion within a timely manner. This also allows providers to use follow-up strategy at 4 weeks to get responses by the 8 week cut off.

4.Create a tracking sheet with the following columns:

i. Data Administered

ii. Data Response Received

iii. Time to Receive Response ([Date Response Received – Date Administered])

5.Exclude any surveys received after 2 months from administration.

6.Exclude responses not completed by the intended recipient (e.g. questions were answered by a friend or family members (Note: this does not include cases where the resident solely had help such as reading the questions or writing down their responses).

7.Exclude responses that are missing data for 2 or 3 of the CoreQ questions.

8.All of the remaining surveys are totaled and become the denominator.

9.Combine the CoreQ: Long-Stay Resident questionnaire items to calculate a resident level score. Responses for each item should be given the following scores:

a.Poor = 1,

b.Average = 2,

c.Good = 3,

d.Very Good =4 and

e.Excellent = 5.

10.Impute missing data if only one of the three questions are missing data.

11.Calculate resident score from usable surveys.

a.Patient score= (Score for Item 1 + Score for Item 2 + Score for Item 3) / 3.

i.For example, a resident rates their satisfaction on the three CoreQ questions as excellent = 5, very good = 4, and good = 3. The resident's total score will be 5 + 4 + 3 for a total of 12. The resident total score (12) will then be divided by the number of questions (3), which equals 4.0. Thus the residents average satisfaction rating is 4.0. Since the resident's score is >3.0, this resident will be counted in the numerator.

b.Flag those patients with a score equal to or greater than 3.0. These residents will be included in the numerator.

12. Calculate the CoreQ: Long-Stay Resident Measure which represents the percent of residents with average scores of 3.0 or above. CoreQ: Long-Stay Resident Measure= ([number of respondents with an average score of =3.0] / [total number of respondents])*100.

13.No risk-adjustment is used.

Saliba, D., Buchanan, J., Edelen, M.O., Streim, J., Ouslander, J., Berlowitz, D, & Chodosh J. (2012). MDS 3.0: brief interview for mental status. Journal of the American Medical Directors Association, 13(7): 611-617.

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.

No sampling is used. 100% residents not meeting exclusions are to receive the survey. No proxy responses are allowed.

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.

1.Administer the CoreQ: Long-Stay Resident questionnaire to SNF residents who have resided in the SNF for >=100 days and who do not fall into one of the following exclusions:

a.Identify that the SNF resident has resided in the facility for >= 100 days. Using MDS (Section A1600, Entry Date).

b.Remove individuals with the following exclusions from the sample:

i.Residents who have poor cognition; Residents with BIMS scores of 7 are lower are excluded. (MDS Section C0200-C0500 used) (Saliba, et al., 2012).

ii.Patients receiving or having received any hospice. This is recorded in the MDS as Hospice O0100K1 = 1 (“the patient was on hospice in the last 14 days while not a resident”), O0100K2 = 1 (“the patient was on hospice in the last 14 days while a resident”), A1800=07 (“entered from hospice”), or A2100=07 (“discharged to hospice”).

iii.Residents with Court appointed legal guardian for all decisions will be identified from nursing facility health information system.

2.Administer the CoreQ: Long-Stay Resident questionnaire to residents.

3.Instruct residents that they must respond to the survey within 2 months.

4.The response rate is calculated based on the number of usable surveys returned divided by the number of surveys administered.

a.As stated in S.11, surveys with missing responses for two or more questions, surveys received outside of the time window (more than two months after administration date), and surveys who were completed by someone else other than the intended resident are excluded

b.A minimum response rate of 30% needs to be achieved for results to be reported for a SNF.

5.Regardless of response rate, SNFs must also achieve a minimum number of 20 usable questionnaires (e.g. denominator). If after 2 months, less than 20 usable questionnaires are received then a facility level satisfaction measure is not reported.

6.All the questionnaires that are received (other than those with more than one missing value; or those returned after 2 months; or those completed by another person other than the intended resident) must be used in the calculations.

Saliba, D., Buchanan, J., Edelen, M.O., Streim, J., Ouslander, J., Berlowitz, D, & Chodosh J. (2012). MDS 3.0: brief interview for mental status. Journal of the American Medical Directors Association, 13(7): 611-617.

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 collection instrument is the CoreQ: Long-Stay Resident questionnaire and exclusions are from the Resident Assessment Instrument Minimum Data Set (MDS) version 3.0.

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 in attached appendix at A.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)*

Post-Acute 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.)*

Not Applicable

2. Validity – See attached Measure Testing Submission Form

CoreQ_Long_Stay_Resident_Testing_Final_v7.1-637202270927926516.docx,CoreQ_Long_Stay_Testing_Final-637202271056533409.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.

No

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.

No

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.

No - This measure is not risk-adjusted

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

Measure Number (*if previously endorsed*)**:** 2615
Measure Title: CoreQ: Long-Stay Resident Measure
Date of Submission: 1/28/2020

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
☐ eMeasure (HQMF) implemented in EHRs	☐ eMeasure (HQMF) implemented in EHRs
☒ other: CoreQ: Long-Stay Resident questionnaire	☒ other: CoreQ: Long-Stay Resident questionnaire, Pilot CoreQ: Long-Stay Resident questionnaire, Nursing Home Compare and CASPER

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*).

First, the Pilot CoreQ: Long-Stay Resident questionnaire containing an extended list of questions included on the CoreQ: Long-Stay Resident questionnaire was utilized for reliability and validity testing.

Second, data from the CoreQ: Long-Stay Resident questionnaire was used to test the measure for reliability and validity.

Third, to validate the measure, we also utilized Certification and Survey Provider Enhanced Reporting (CASPER) Quality Indicators and data form Nursing Home Compare.

1.3. What are the dates of the data used in testing? June, 2014-September, 2014

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: Click here to describe	☒ other: Individual Resident

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, type); if a sample was used, describe how entities were selected for inclusion in the sample*)

The testing and analysis included three data sources, one of which had additional variables collected for a subset of respondents:

1. The Pilot CoreQ: Long-Stay Resident questionnaire was examined using responses from 1,714 residents from a national sample of nursing facilities.
    a. In addition, resident-level sociodemographic (SDS) variables were examined using this same sample of 1,714 residents (#1 above) in nursing facilities across the US.
2. Validity testing of the Pilot CoreQ: Long-Stay Resident questionnaire was examined using responses from 100 residents from the Pittsburgh area.
3. CoreQ: Long-Stay Resident measure was examined using 223 facilities and included responses from 7,307 residents. These nursing facilities were located in multiple states across the US.

Some basic descriptive characteristics of these facilities (data sources) are provided below in table 1.5.

Table 1.5: Descriptive Statistics of Centers Included in the Analyses

Data Source	Average Number of Licensed Beds	Average Daily Census	Sample Size of Residents (N)
Source 1	139	121	1,714
Source 2	202	188	100

Source 3	137	130	7,307

1.6. How many and which <u>patients</u> 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*)

Resident Level of Analysis

Data was used from the CoreQ: Long-Stay Resident questionnaire. The questionnaire was administered to all eligible long-stay residents (with the exclusions described in the Specifications section of this application). The testing and analyses included:

1. The Pilot CoreQ: Long-Stay Resident questionnaire was examined using responses from 1,714 residents from a national sample of nursing facilities. (Data #1)
    a. In addition, resident-level sociodemographic (SDS) variables were examined using this same sample of 1,714 residents (Data #1 above) in nursing facilities across the US.
2. Validity testing of the Pilot CoreQ: Long-Stay Resident questionnaire was examined using responses from 100 residents from the Pittsburgh area. (Data #2)
3. CoreQ: Long-Stay Resident questionnaire MEASURE was examined using 223 facilities and included responses from 7,307 residents. These nursing facilities were located in multiple states across the US. (Data #3)

The descriptive characteristics of the residents are given in the following table that includes information from all of the data used (the education level and race information comes only from the sample described above with 1,714 respondents, as this data was not collected for the other samples).

Table 1.6: Patient Demographics (all samples pooled)

DEMOGRAPHICS		**Percent**
How long were you a resident at this facility?	<6 Months	12%
	6Months-1Yr	18%
	1-2Yrs	25%
	2-3Yrs	17%
	>3yrs	28%
Are you male or female?	Male	35%
	Female	65%
What year were you born?	Average	1931
What is the highest grade or level of school that you have completed?	Some HS	24%
	HS or GED	44%
	Some College/ 2yr Degree	20%
	4yr College Degree	7%
	>4yr College Degree	4%
What is your race?	White	86%

	Black	6%
	Asian	2%
	Native Hawaiian	0%
	American Indian	7%

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.

We conducted two levels of testing in the development of the CoreQ: Long-Stay Resident measure. The first focused on testing (e.g., reliability, validity, exclusions) of the CoreQ: Long-Stay Resident questionnaire. The first source of data (pilot data) was utilized in developing and choosing the items to be included in the CoreQ: Long-Stay Resident questionnaire. This included using a questionnaire with 18 items. Below we call this the Pilot CoreQ: Long-Stay Resident questionnaire (i.e., Data #1, above). A subset of 100 residents from Data #1 was chosen in Data #2 to conduct a lagged re-administration of the same survey to measure agreement in response for the same resident regarding the same period of time.

Once the CoreQ: Long-Stay Resident questionnaire was developed, a second source of data was used to test the validity of the CoreQ: Long-Stay Resident measure (i.e., facility and summary score validity). This second data source is described above (i.e.223 facilities including responses from 7,307 residents [Data #3, above]).

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 following resident-level sociodemographic variables were available for analysis. For the distributions of these categories, see Tables 1.6 above.

- Age
  - Exact date of birth
- Sex
  - Male
  - Female
- Highest level of education
  - Some high school, but did not graduate
  - High school graduate or GED
  - Some college or 2 year degree
  - 4 year college graduate
  - More than 4 year college degree
- Race
  - White
  - Black or African American
  - Asian
  - Native Hawaiian or other Pacific Islander
  - American Indian or Alaskan Native.

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*)

We measured reliability at the: (1) data element level; (2) the person/questionnaire level; and, (3) at the measure (i.e., facility) level. More detail of each analysis follows.

(1) DATA ELEMENT LEVEL

To determine if the CoreQ: Long-Stay Resident questionnaire items were repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period, we re-administered the questionnaire to residents 1 month after their completion of the first survey. The Pilot CoreQ: Long-Stay Resident questionnaire had responses from 100 residents; we re-administered the survey to 50 of these same residents. The re-administered sample was a sample of convenience as they represented residents from the Pittsburgh area (the location of the team testing the questionnaire). To measure the agreement, we calculated first the distribution of responses by question in the original round of surveys, and then again in the follow-up surveys (they should be distributed similarly); and second, calculated the correlations between the original and follow-up responses by question (they should be highly correlated).

(2) PERSON/QUESTIONNAIRE LEVEL

Having tested whether the data elements matched between the pilot responses and the re-administered responses, we then examined whether the person-level results matched between the Pilot CoreQ: Long-Stay Resident questionnaire responses and their corresponding re-administered responses. In particular, we calculated the percent of time that there was agreement between whether or not the pilot response was poor, average, good, very good or excellent, and whether or not the re-administered response was poor, average, good, very good or excellent.

(3) MEASURE (FACILITY) LEVEL

Last, we measured stability of the facility-level measure when the facility's score is calculated using multiple "draws" from the same population. This measures how stable the facility's score would be if the underlying residents are from the same population but are subject to the kind of natural sample variation that occurs over time. We did this by bootstrap with 10,000 repetitions of the facility score calculation, and present the percent of facility resamples where the facility score is within 1 percentage point, 3 percentage points, 5 percentage points, and 10 percentage points of the original score calculated on the Pilot CoreQ: Long-Stay Resident questionnaire sample.

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*)

(1) DATA ELEMENT LEVEL

Table 2a2.3.a shows the four CoreQ: Long-Stay Resident questionnaire items, and the response per item for both the pilot survey of 100 residents and the re-administered survey of 50 residents. The responses in the pilot survey are not statistically significant from the re-administered survey. This shows that the data elements were highly repeatable and produced the same results a high proportion of the time when assessing the same population in the same time period.

Table 2a2.3.a: CoreQ: Long-Stay Resident Questionnaire Responses from the Pilot and Re-administered Survey

Questionnaire Item	Response	Percent [Pilot Survey (N=100)]	Percent [Re-Administered Survey (N=50)]
1. In recommending this facility to your friends and family, how would you rate it overall?	Poor	4%	4%
	Average	12%	12%
	Good	30%	29%
	Very Good	28%	27%
	Excellent	20%	34%
2. Overall, how would you rate the staff?	Poor	2%	3%
	Average	11%	10%
	Good	31%	32%
	Very Good	31%	32%
	Excellent	21%	20%
3. How would you rate the care you receive?	Poor	2%	2%
	Average	12%	13%
	Good	32%	32%
	Very Good	28%	28%
	Excellent	21%	22%

NO SIGNIFICANT DIFFERENCES AT p=0.01

Table 2a2.3.b shows the average of the percent agreement from the first survey score to the second survey score for each item in the CoreQ: Long-Stay Resident questionnaire. This shows very high levels of agreement.

Table 2a2.3.b: Average Percent Agreement between the Pilot and Re-administered Survey

Questionnaire Item	Percent Agreement
4. In recommending this facility to your friends and family, how would you rate it overall?	97.6%
5. Overall, how would you rate the staff?	98.5%

6. How would you rate the care you receive?	98.0%

(2) PERSON/QUESTIONNAIRE LEVEL

Table 2a2.3.c shows the CoreQ: Long-Stay Resident questionnaire items, and the agreement in response per item for both the PILOT survey of 100 residents compared with the re-administered survey of 50 residents. The person-level responses in the PILOT survey are not statistically significant from the re-administered survey. This shows that a high percent of time there was agreement between whether or not the pilot response was poor, average, good, very good or excellent, and whether or not the re-administered response was poor, average, good, very good or excellent. Table 2a2.3.d shows the agreement between the pilot and re-administered responses. In summary, 97% or more of the re-administered responses agreed with their corresponding pilot responses, in terms of whether or not they were rated in the categories of poor or average or good, very good or excellent.

Table 2a2.3.c: Average Percent Agreement between Responses per Item for the Pilot Survey and Re-Administered Survey

Questionnaire Item	Response	Percent Person-Level Agreement in Response for the Pilot Survey (N=100) vs. Re-Administered Survey (N=50)
1. In recommending this facility to your friends and family, how would you rate it overall?	Poor	97%
	Average	97%
	Good	96%
	Very Good	98%
	Excellent	99%
2. Overall, how would you rate the staff?	Poor	98%
	Average	97%
	Good	98%
	Very Good	96%
	Excellent	99%
3. How would you rate the care you receive?	Poor	99%
	Average	99%
	Good	98%
	Very Good	97%
	Excellent	98%

Table 2a2.3.d: Average Percent Agreement between Response Options for the Pilot Survey and Re-Administered Survey

		Re-Administered Response	
		Poor (1) or Average (2)	Good (3), Very Good (4), or Excellent (5)
Pilot Response	Poor (1) or Average (2)	98.75%	98.5%
	Good (3), Very Good (4), or Excellent (5)	98.75%	99%

(3) MEASURE (FACILITY) LEVEL

After having performed the 10,000-repetition bootstrap, 14.18% of bootstrap repetition scores were within 1 percentage point of the score under the original pilot sample, 20.91% were within 3 percentage points, 33.50% were within 5 percentage points, and 46.33% were within 10 percentage points.

2a2.4 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?*)

In summary, the measure displays a high degree of element-level, questionnaire-level, and measure (facility)-level reliability. First, the CoreQ: Long-Stay Resident questionnaire data elements were highly repeatable, with pilot and re-administered responses agreeing between 97% and 99% of the time depending on the question. That is, this produced the same results a high proportion of the time when assessed in the same population in the same time period. Second, the questionnaire level scores were also highly repeatable, with pilot and re-administered responses agreeing 98.5% of the time (or more). Third, a facility drawing residents from the same underlying population will only vary modestly. The 10,000-repetition bootstrap results show that the CoreQ: Long-Stay Resident measure scores from the same facility are moderately stable given the minimum sample size of 20 we set for this measure; and the maximum sample size was 122.

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)*

In the development of the CoreQ: Long-Stay Resident questionnaire, three sources of data were used to perform three levels of validity testing. These are described above in Section 1.5.

The first source of data (data from a sample of convenience collected near the researchers developing the questionnaire in Pittsburgh) was used in developing and choosing the format to be utilized in the CoreQ: Long-Stay Resident questionnaire (i.e., response scale).

The second source of data, was pilot data collected from a national sample of 1,714 residents. This data was used in choosing the items to be used in the CoreQ: Long-Stay Resident questionnaire (i.e., questionnaire items). This data was also used in examining resident-level sociodemographic (SDS) variables.

The third source of data (collected from 223 facilities) was used examine the validity of the CoreQ: Long-Stay Resident measure (i.e., facility and summary score validity). These residents / nursing facilities were from multiple states across the U.S.

Thus, the following sections describe this validity testing:
1. Validity Testing of the questionnaire format used in the CoreQ: Long-Stay Resident questionnaire (using data source 1, from above);
2. Testing the items for the CoreQ: Long-Stay Resident questionnaire (using data source 2, from above);
3. Testing to determine if a sub-set of items could reliably be used to produce an overall indicator of satisfaction (Core Q: Long-Stay Resident measure) (using data source 3, from above);
4. Validity testing for the CoreQ: Long-Stay Resident measure (also using data source 1, from above).

Validity Testing for the Questionnaire Format used in the CoreQ: Long-Stay Resident Questionnaire

A. The face validity of the domains used in the CoreQ: Long-Stay Resident questionnaire was evaluated via a literature review. The literature review was conducted to examine important areas of satisfaction for LTC residents. Specifically, the research team examined 12 commonly used satisfaction surveys and reports to determine the most valued domains when looking at satisfaction. These surveys were identified by completing internet searches in PubMed and Google. Key terms that were searched included: resident satisfaction, long-term care satisfaction, and elderly satisfaction.

B. The face validity of the domains was also examined using a focus group of residents. The overall ranking used was 1=Most important and 22=Least important. That is residents were asked to rank the domains from most important to least important. The respondents were residents (N=40) in five nursing facilities in the Pittsburgh region.

C. The face validity of the Pilot CoreQ: Long-Stay Resident questionnaire response scale was also examined. The respondents were residents (N=40) in five nursing facilities in the Pittsburgh region. The percent of respondents that stated they "fully understood" how the response scale worked, could complete the scale, AND in cognitive testing understood the scale was used.

D. The Flesch-Kinkaid scale (Streiner & Norman, 1995) was used to determine if respondent correctly understood the questions being asked.

Streiner, D. L. & Norman, G.R. (1995). Health measurement scales: A practical guide to their development and use. 2nd ed. New York: Oxford.

1. Testing the Items for the CoreQ: Long-Stay Resident Questionnaire

The second series of validity testing was used to further identify items that should be included in the CoreQ: Long-Stay Resident questionnaire. This analysis was important, as all items in a satisfaction measure should have adequate psychometric properties (such as low basement or ceiling effects). For this testing, (1) A pilot group of 40 residents was first used in focus groups; (2) a Pilot version of the CoreQ: Long-Stay Resident questionnaire survey was administered consisting of 18 items (N= 1,714 residents). The testing consisted of:

A. Residents were asked to rate the 18 different satisfaction questions related to their experience in SNFs. This was conducted with a pilot group of 40 residents in focus groups.

B. The Pilot CoreQ: Long-Stay Resident questionnaire items performance with respect to the distribution of the response scale and with respect to missing responses. (using 1,714 residents described above)

C. The intent of the Pilot instrument was to have items that represented the most important areas of satisfaction (as identified above) in a parsimonious manner. Additional analyses such as exploratory factor analysis (EFA) were used to further refine the pilot instrument. This was an iterative process that included using Eigenvalues from the principal factors (unrotated) and correlation analysis of the individual items. (using 1,714 residents described above)

2. To determine if a Sub-Set of Items could Reliably be used to Produce an Overall Indicator of Satisfaction (The Core Q: Long-Stay Resident Measure).

The CoreQ: Long-Stay Resident measure under development was meant to represent overall satisfaction with as few items as possible. The testing given below describes how this was achieved.

A. To support the construct validity that the idea that the CoreQ items measured a single concept of "satisfaction" – we performed a correlation analysis using all items in the instrument.

B. In addition, using all items in the instruments a factor analysis was conducted. Using the global items Q1 ("How satisfied are you with the facility?") the Cronbach's Alpha of adding the "best" additional item was examined.

3. *Validity Testing for the Core Q: Long-Stay Resident Measure.*

A. To determine if the 3 items in the CoreQ: Long-Stay Resident questionnaire were a reliable indicator of satisfaction, the correlation between these three items (the "CoreQ: Long-Stay Resident Measure") and ALL of the items on the Pilot CoreQ instrument was conducted.

B. We performed additional validity testing of the facility-level CoreQ: Long-Stay Resident measure by examining the correlations between the CoreQ: Long-Stay Resident measure scores and i) measures of regulatory compliance and other quality metrics from the Certification and Survey Provider Enhanced Reporting (CASPER) data, and ii) several other quality metrics from Nursing Home Compare. If the CoreQ Long Stay Family scores correlate negatively with the measures that decrease as they get better, and positively with the measures that increase as they get better, then this supports the validity of the CoreQ Long Stay Resident measure.

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

1. Validity Testing for the Questionnaire Format used in the CoreQ: Long-Stay Resident Questionnaire

A. The face validity of the domains used in the CoreQ: Long-Stay Resident questionnaire was evaluated via a literature review (described above).

The research team examined the surveys and reports to identify the different domains that were included. The research team scored the domains by simply counting if an instrument included the domain. Table 2b2.3.a gives the domains that were found throughout the search, as well as a score. An example is the domain clinical care, this was used in 10 out of the 12 surveys identified in the literature. An interpretation of this finding would be that items addressing clinical care are extremely important in satisfaction surveys. These domains were used in developing the pilot CoreQ: Long-Stay Resident questionnaire items.

Table 2b2.3.a: Survey Domain Score out of 12

Domain	Score out of 12
Food	11
Activities	10
Administration	10
Clinical Care	10
Staff Interaction	10
Choice and Decision Making	9
Facility Environment	9
Security and Safety	9
Overall	8
Staff Overall	7
Autonomy and Privacy	6
Housekeeping	6
Personal Care	6
Recommend facility	6
Resident to Resident Friendships	5
Family Involvement	4
Resident to Staff Friendships	4

Domain	Score out of 12
Spiritual	4
Confidence in Caregivers	3
Language and Communication	3
Personal Suite	3
Therapy	3
Care Access	2
Case Manager	2
Comfort	2
Maintenance	2
Move In	2
Non-Clinical Staff Services	2
Transitions	2
Transportation	2
Emergency Response	1
Finances	1
Time	1
Trust	1

B. The face validity of the domains was also examined using residents (described above). The following abbreviated table shows the rank of importance for each group of domains. The overall ranking used was 1=Most important and 22=Least important. The ranking of the 3 areas used in the CoreQ: Long-Stay Resident questionnaire are shown. Note, the food domain was ranked third – but was excluded from the CORE Q based on additional analyses showing that it was highly correlated with the overall domain; thus, it added little to the measure.

Table 2b2.3.b: Face Validity Abbreviated Results

Domain (Question)	Average Rank
OVERALL (In recommending this facility to your friends and family, how would you rate it overall?)	2
STAFF (Overall, how would you rate the staff?)	1
CARE (How would you rate the care you receive?)	4

C. The face validity of the pilot CoreQ: Long-Stay Resident questionnaire response scale was also examined (described above). Table 2b2.3.c gives the percent of respondents that stated they "fully understood" how the response scale worked, could complete the scale, AND in cognitive testing understood the scale.

Table 2b2.3.c: Resident Understanding of Response Scale

Scale Format	Residents
Yes – No	100%
Yes – Somewhat – No	100%
Always – Usually – Sometimes –Never	100%
Very happy – Somewhat happy – Unhappy	100%
Excellent – Good – Fair – Poor	100%
Very Good – Good – Average – Poor – Very Poor	100%
Very Satisfied – Satisfied – Neither Satisfied or Dissatisfied – Dissatisfied – Very Dissatisfied	100%
4 Point Satisfaction Scale (1=Very unsatisfied, 2=Unsatisfied, 3=Neutral, 4=Satisfied)	100%
5 Point Likert Scale (1=Poor, 2=Average, 3=Good, 4=Very Good, 5=Excellent)	100%
Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree	95%
5 Point Importance Scale (1=Very important, 5=Very unimportant)	95%
5 Point Expectancy Scale (1=Not met, 2=Nearly met, 3=Met, 4=Exceeded, 5=Far exceeded expectations)	90%
10 Point Satisfaction Scale (1=Poor, 10=Excellent)	90%
8 Point Satisfaction Scale (1=Very dissatisfied, 2=Dissatisfied, 3=Somewhat dissatisfied, 4=Neither satisfied nor dissatisfied, 5=Somewhat satisfied, 6=Satisfied, 7=Very satisfied, 8=No response)	85%

Note: Highlighted cell represents the scale used in the CoreQ.

D. The CoreQ: Long-Stay Resident questionnaire was purposefully written using simple language. No *a priori* goal for reading level was set, however a Flesch-Kinkaid scale score of six, or lower, is achieved for all questions.

2. Testing the Items for the CoreQ: Long-Stay Resident Questionnaire

A. Each resident was asked to rate on a scale of 1 to 10 (with 10 as the best) how important they thought the question was for evaluating the experience with SNF care. The three questions included in the COREQ were highly rated out of all the questions and in analysis of resident's responses to 18 questions. That is, these three items were shown to provide unique information to distinguish satisfaction with SNFs. Specifically, "In recommending this facility to your friends and family, how would you rate it overall?" had an average score of 9.69; "Overall, how would you rate the staff?" had an average score of 9.56; and, "How would you rate the care you receive?" had an average score of 9.5. This shows a very pervasive influence of the satisfaction items with the experience of SNF care. See Table 1c.5 (Appendix).

B. The pilot CoreQ: Long-Stay Resident questionnaire items are shown in Table 2b2.3.d in the appendix. It also shows that the items performed well with respect to the distribution of the response scale and with respect to missing responses.

C. Using all items in the instruments (excluding the global item Q1 ("How would you rate the facility?")) exploratory factor analysis (EFA) was used to evaluate the construct validity of the measure. The Eigenvalues from the principal factors (unrotated) are presented in the Table below. In this analysis, the first Eigenvalue is overwhelmingly greater than the second Eigenvalue, this supports the proposition that the CoreQ instrument is measuring a single global concept of customer satisfaction – rather than a number of sub-concepts of customer satisfaction. Sensitivity analyses using principal factors and rotating provide highly similar findings.

Table 2b2.3.e: Exploratory Factor Analysis Results

Factor	Eigenvalues
Factor 1	9.61
Factor 2	0.37

3. To determine if a Sub-Set of Items could be used to Produce an Overall Indicator of Satisfaction (The Core Q: Long-Stay Resident measure).

A. To support the construct validity that the idea that the CoreQ items measured a single concept of "satisfaction" – we performed a correlation analysis using all items in the instrument. The analysis identifies the pairs of CoreQ items with the highest correlations. The highest correlations are shown in the Table 2b2.3.f. Items with the highest correlation are potentially providing similar satisfaction information. Note, the table provides 6 sets of correlations, the analysis was conducted examining all possible correlations between items. Because items with the highest correlation were potentially gathering similar satisfaction information they could be eliminated from the instrument.

Table 2b2.3.f: CoreQ: Long-Stay Resident Questionnaire Example Item Correlations

Correlations (Ranked from high to low)	Question Pairs (Correlation Coefficient)
Highest Correlation	Q9-Q8 (0.74)
Next highest Correlation	Q9-Q6 (0.70)
Next highest Correlation	Q9-Q10 (0.70)
Next highest Correlation	Q6-Q24 (0.67)
Next highest Correlation	Q13-Q14 (0.67)
Next highest Correlation	Q6-Q10 (0.66)

C. In addition, using all items in the instrument a factor analysis was conducted. Using the global items Q1 ("How satisfied are you with the facility?") the Cronbach's Alpha of adding the "best" additional item is shown in the table below. Cronbach's alpha measures the internal consistency of the values entered into the factor analysis; a value of 0.7 or higher is generally considered acceptably high. The additional item(s) is considered best in the sense that it is most highly correlated with the existing item, and therefore provides little additional information about the same construct. So this analysis was also used to eliminate items. Note, the table again provides 7 sets of correlations, the analysis was conducted examining all possible correlations between items. See table 2b2.3.g.

Table 2b2.3.g: Secondary Correlation Analysis of CoreQ: Long-Stay Resident Discharge Questionnaire Items

Questions used in analysis	Correlation Coefficients

Q1 + Q10	0.85
Q1 + Q6	0.85
Q1 + Q9	0.85
Q1 + Q2 + Q6	0.85
Q1 + Q6 + Q9	0.85
Q1 + Q10 + Q6	0.86
Q1 + Q9 + Q10	0.86

Thus, using the correlation information and factor analysis 3 items representing the CoreQ: Long-Stay Resident questionnaire were identified.

4. *Validity Testing for the Core Q: Long-Stay Resident Measure.*

The overall intent of the analyses described above was to identify if a sub-set of items could reliably be used to produce an overall indicator of satisfaction, the CoreQ: Long-Stay Resident questionnaire.

A. The items were all scored according to the rules identified elsewhere. The same scoring was used in creating the 3 item CoreQ: Long-Stay Resident questionnaire summary score and the satisfaction score using the Pilot CoreQ: Long-Stay Resident questionnaire. The correlation was identified as having a value of 0.89. That is, the correlation score between actual the "CoreQ: Long-Stay Resident Measure" and all of the 18 items used in the Pilot instrument indicates that the satisfaction information is approximately the same if we had included either the 3 items or the 18 item Pilot instrument.

B. We performed additional validity testing of the facility-level CoreQ: Long-Stay Resident measure by measuring the correlations between the CoreQ: Long-Stay Resident measure scores and i) measures of regulatory compliance and other quality metrics from the Certification and Survey Provider Enhanced Reporting (CASPER) data, and ii) several other quality metrics from Nursing Home Compare.

CoreQ: Long-Stay Resident measure is the percentage of residents discharged from the facility within 100 days of admission from a hospital to the nursing facility who, on average for the three CoreQ items included in the measure, rated the facility >= 3. We measured satisfaction using resident's responses to the three items from the CoreQ: Long-Stay Resident questionnaire (see Table 2a2.3.a).

The summary score from the 3 CoreQ: Long-Stay Resident questionnaire items is calculated in the following way: Respondents answering poor are given a score of 1, average = 2, good =3, very good =4 and excellent =5. For the 3 questionnaire items the average score for the resident is calculated. The facility score represents the percent of residents with average scores of 3 or above. This score should be associated with quality. Therefore, for each facility in the sample the correlation with other quality indicators was examined.

(i) Relationship with CASPER Quality Indicators

Certification and Survey Provider Enhanced Reporting (CASPER) contains data collected as part of state/federal nursing home inspections. In short, nursing facilities that accept residents with Medicare and/or Medicaid payments are surveyed. This includes most (i.e., 97% [16,000 facilities]) nursing homes in the U.S. The survey process occurs approximately yearly, and includes the recording of many quality characteristics of the nursing home. These include restraint use; pressure ulcers; catheter use; antipsychotic use; antidepressant use; antianxiety use; and, use of hypnotics. These are commonly used quality indicators used for examining the quality of nursing homes.

In addition, when a nursing home is determined not to meet a certification minimum standard a deficiency citation is issued. These deficiency citations are also commonly used in the analyses of the quality of nursing homes. Approximately 180 deficiency citations exist and are grouped into 16 categories. These 16 categories group like areas together. They were developed by CMS and have considerable face validity; although, one limitation of using these categories is that they were not defined using empirical estimation (such as factor analysis).

Table 2b2.3.g: Correlation results between the CoreQ Long Stay Resident Questionnaire Measure Score and CASPER Quality Indicators

Quality Indicator	Correlation Coefficients with Satisfaction Summary Score	P-Value
Any Deficiency Citations	-0.396	0.05
Physical Restraint Use	-0.105	0.12
Pressure ulcers	-0.105	0.12
Catheterized	-0.115	0.09
Antipsychotic medications	-0.152	0.02
Antidepressant medications	-0.472	0.05
Antianxiety medications	-0.149	0.03
Hypnotic medications	-0.476	0.05

(ii) Relationship with Nursing Home Compare (NHC) Quality Indicators, Five Star ratings, and staffing levels

Nursing Home Compare (NHC) is a nursing home report card. After several years of pilot testing, the Centers for Medicare and Medicaid Services (CMS) released this report card on the world-wide web in November of 2002. Briefly, Nursing Home Compare provides information for facility location, structural factors (such as ownership), and staffing characteristics (such as registered nurse [RN] staffing levels). Most significantly, standardized quality information is presented in what are called Quality Measures (QMs). These are calculated from MDS information.

At the time period of for this study (i.e., 2014) CMS reported on 19 measures – these are called the core Quality Measures. The Quality Measures address specific areas of resident care, 5 are for short-stay residents and 14 are for long-stay residents. Long-stay measures are for those residents staying at a facility 3 months or more and short-stay measures are for residents staying at a facility less than 3 months. The long-stay measures are most pertinent to the CoreQ: Long-Stay Resident questionnaire; therefore, these were used in the analyses.

Nursing Home Compare also uses a five-star rating for facilities. This is based on information from the health inspection, direct care staffing, and the MDS quality measures. A five star facility is the highest score and a 1 star facility the lowest score. With respect to staffing, two measures are used: 1) RN hours per resident day; and 2) total staffing hours (RN+ LPN+ nurse aide hours) per resident day.

Table 2b2.3.h: Correlation Results between the CoreQ Long Stay Resident Questionnaire Measure Score and NHC Quality Indicators, Five Star Ratings, and Staffing Levels

Quality Indicator	Correlation Coefficients with Satisfaction Summary Score MEASURE	P-Value
Percent of long-stay residents experiencing one or more falls with major injury.	-0.13	0.12
Percent of long-stay residents with a urinary tract infection	-0.21	0.08
Percent of long-stay residents who self-report moderate to severe pain	-0.21	0.05
Percent of long-stay high-risk residents with pressure ulcers	-0.32	0.05
Percent of long-stay low-risk residents who lose control of their bowels or bladder	-0.10	0.19
Percent of long-stay residents who have/had a catheter inserted and left in their bladder	-0.46	0.02
Percent of long-stay residents who were physically restrained	-0.21	0.04
Percent of long-stay residents whose need for help with daily activities has increased	-0.24	0.05
Percent of long-stay residents who lose too much weight	-0.12	0.10
Percent of long-stay residents who have depressive symptoms	-0.15	0.10
Percent of long-stay residents assessed and given, appropriately, the seasonal influenza vaccine	0.41	0.06
Percent of long-stay residents assessed and given, appropriately, the pneumococcal vaccine	0.33	0.05
Percent of long-stay residents who are administered antipsychotic medications	0.12	0.09
Five-Star rating	0.42	0.03
RN hours per resident day	0.47	0.05
Total staffing hours	0.39	0.04

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?*)

1. Validity Testing for the Questionnaire Format used in the CoreQ: Long-Stay Resident Questionnaire

A. The literature review shows that domains used in the Pilot CoreQ: Long-Stay Resident questionnaire items have a high degree of both face validity and content validity.

B. Residents overall rankings, show the general "domain" areas used indicates a high degree of both face validity and content validity.

C. The results show that 100% of residents are able to complete the response format used. This testing indicates a high degree of both face validity and content validity.

D. The Flesch-Kinkaid scale score achieved for all questions indicates that respondents have a high degree of understanding of the item.

2. Testing the Items for the CoreQ: Long-Stay Resident Questionnaire

A. The percent of missing responses for the items is very low. The distribution of the summary score is wide. This is important for quality improvement purposes, as nursing facilities can use benchmarks etc.

B. EFA shows that one factor explains the common variance of the items. A single factor can be interpreted as the only "concept" being measured by those variables. This means that the instrument measures the global concept of satisfaction and not multiple areas of satisfaction. This supports the validity of the CoreQ instrument as measuring a single concept of "customer satisfaction". This testing indicates a high degree of criterion validity.

3. Testing to Determine if a Sub-Set of Items could Reliably be used to Produce an Overall Indicator of Satisfaction (The Core Q: Long-Stay Resident measure)

A. Using the correlation information of t*he Core Q: Long-Stay Resident questionnaire (18 items)* and the 3 items representing the CoreQ: Long-Stay Resident questionnaire a high degree of correlation was identified. This testing indicates a high degree of criterion validity.

B. EFA shows that one factor explains the common variance of the items. A single factor can be interpreted as the only "concept" being measured by those variables. This means that the instrument measures the global concept of satisfaction and not multiple areas of satisfaction. This supports the validity of the CoreQ instrument as measuring a single concept of "customer satisfaction". This testing indicates a high degree of criterion validity.

4. *Validity Testing for the Core Q: Long-Stay Resident Measure*

A. The correlation of the 3 item CoreQ: Long-Stay Resident measure summary score (identified elsewhere in this document) with the overall satisfaction score (scored using all data and the same scoring metric) gave a value of 0.89.

That is, the correlation score between actual the "CoreQ: Long-Stay Resident Measure" and all of the 18 items used in the Pilot instrument indicates that the satisfaction information is approximately the same if we had included either the 3 items or the 18 item Pilot questions.

This indicates that the CoreQ: Long-Stay Resident measure score adequately represents the overall satisfaction of the facility. This testing indicates a high degree of criterion validity.

B.

(i) Relationship with CASPER Quality Indicators

The 8 CASPER Quality Indicators all had a reasonable level of negative correlation with the CoreQ: Long-Stay Resident measure in the direction as expected (higher satisfaction is associated with better quality. These correlations range from -0.105 to -0.476. The CoreQ: Long-Stay Resident measure is associated with these quality indicators. This testing indicates a reasonable degree of construct validity and convergent validity.

(i) Relationship with Nursing Home Compare (NHC) Quality Indicators, Five Star ratings, and staffing levels

The 13 Nursing Home Compare (NHC) Quality Indicators, Five Star ratings, and staffing levels all had a moderate to high level of correlation and in the direction predicted with the CoreQ: Long-Stay Resident measure. These correlations range from ± 0.100 to 0.47. The CoreQ: Long-Stay Resident measure is associated with these quality indicators, and always in the hypothesized direction (good correlates with good). In particular, as emphasized in the structure-process-outcome framework of the evidence section, the link between staffing and customer satisfaction is particularly high, as confirmed by the correlation coefficients 0.47 for RN hours per resident-day and 0.37 for total staffing hours per resident day. This testing indicates a reasonable degree of construct validity and convergent validity.

As noted by Mor and associates (2003, p.41) "there is only a low level of correlation among the various measures of quality" In long term care settings. Castle and Ferguson (2010) also show the pattern of findings of quality indicators in nursing facilities is consistently moderate with respect to the correlations identified. The magnitude of correlations of the CoreQ with quality metrics are consistent with these findings in this setting.

2b2. EXCLUSIONS ANALYSIS

NA ☐ no exclusions — *skip to section 2b4*

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*)

To develop the CoreQ: Long-Stay Resident measure, we convened an expert panel to advise us on aspects such as which exclusions to apply to the measure with the goal to make sure as many residents who are capable of giving a response are included and that the voice of the resident is included not proxies.

The analysis of the impact exclusion had was performed on 223 nursing homes that have used the CoreQ: Long-Stay Resident measure. These facilities were included in multiple states across the US (this is data source 3, from above).

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*)

The expert panel advised us to exclude: 1) Residents with dementia impairing their ability to answer the questionnaire defined as having a low BIMS score; (2) residents receiving hospice care; and (3) Residents with a legal court appointed guardian.

[In addition we exclude; (4) Residents who have lived in the SNF for less than 100 days; (5) Respondents who have one or more missing data point (on the COREQ items); and (6) residents without usable data defined as missing data on 2 or 3 of the 3 questions.]

These exclusions are often used with satisfaction surveys (Sangl et al., 2007). Because the exclusions were based on individual's ability to answer questions and were also made in the pilot, we are not able to confirm if the exclusions actually made a difference to the scores, which is why we cannot calculate the mean CoreQ: Long-Stay Resident scores with and without the exclusions. However, the exclusions were made at the time of data collection, so we are able to report descriptive statistics regarding the number of exclusions made.

The exclusion analysis included responses from 223 facilities (described elsewhere). The exclusions were tracked and from these facilities included 34% of residents who have poor cognition; 2% residents with hospice; and 4% residents with a legal court appointed guardian.

Sangl, J., Bernard, S., Buchanan, J., Keller, S., Mitchell, N., Castle, N.G., Cosenza, C., Brown, J., Sekscenski, E., and Larwood, D. (2007). The development of a CAHPS instrument for nursing home residents. *Journal of Aging and Social Policy*, 19(2), 63-82.

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*)

These exclusions were applied because such residents were either unable to provide an independent response (e.g, residents who have poor cognition or a legal court appointed guardian) or for whom the burden of completing a questionnaire is inappropriate given their clinical situation and (e.g. hospice residents who are extremely sick and in the dying process), or residents whose answers we could not be confident were accurate or unbiased (residents who have poor cognition and durable power of attorney)). Therefore, the value of excluding these residents takes into account burden on respondents and their ability to answer the questions. Thus, it is not possible to obtain answers or estimates of answers from non-respondents.

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 2b5.

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

☒ **No risk adjustment or stratification**

☐ **Statistical risk model with** Click here to enter number of factors **risk factors**

☐ **Stratification by** Click here to enter number of categories **risk categories**

☐ **Other,** Click here to enter description

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.

No risk model used.

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.

No research (to date) has risk adjusted or stratified satisfaction information from nursing facilities. Testing on this was conducted as part of the development of the federal initiative to develop a CAHPS®[1] Nursing Home Survey to measure nursing home residents' experience (hereafter referred to as NHCAHPS). No empirical, theoretical, or stratified reporting of satisfaction information was recommended as the evidence showed that no clear relationship existed with respect to resident characteristics and the satisfaction scores.

RTI International, Harvard University, RAND Corporation. *CAHPS Instrument for Persons Residing in Nursing Homes,* Final Report to CMS, CMS Contract No. CMS-01-01176, Sept. 2003.

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?
Not Applicable.

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?
Not Applicable.

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.**

Analyses used to examine social (SDS) factors include: (1) the summary score for each of the 3 CoreQ: Long-Stay Resident questionnaire items; (2) the summary score for the CoreQ: Long-Stay Resident measure; and (3) the summary score from the CoreQ: Long-Stay Resident questionnaire measure (at the facility level).

(1) Summary Score for each of the 3 CoreQ: Long-Stay Resident Questionnaire Items

The summary score for each of the 3 CoreQ: Long-Stay Resident questionnaire items is calculated in the following way: Respondents answering poor are given a score of 1, average = 2, good =3, very good =4 and excellent =5. Correlation and T-test a**nalyses were** used to compare the SDS means with each other (See 2b4.4b.a1- 2b4.4b.a4). These analyses show that the individual item scores used in the CORE Q: Long-Stay Resident measure are not significantly different based on either education level or race. That is, the educational related to the scores for individual items.

Table 2b4.4b.a1: Mean CoreQ: Long-Stay Resident Distribution Item by Level of Education and Race

What is the highest grade or level of school that you have completed?	Respondents	**Q1 Mean**	**Q2 Mean**	**Q3 Mean**
Some high school, but did not graduate	***24% (n=360)***	3.62	3.63	2.81
High school graduate or GED	***44% (n=647)***	3.63	3.71	2.86
Some college or 2 year degree	***20% (n=301)***	3.51	3.59	2.73
4 year college graduate	***7% (n=106)***	3.52	3.79	2.86
More than 4 year college degree	***4% (n=63)***	3.71	3.97	2.98

Rank Correlation of items with education: none significant at p=0.05

TABLE 2B4.4B.A2: MEAN COREQ: LONG-STAY FAMILY RANK CORRELATION BY EDUCATION

	Question 1	Question 2	Question 3
Rank Correlation Coefficients	0.02	0.03	0.01

Note: Rank Correlation with Education – not significant at p=0.05

Table 2b4.4b.a3: Mean CoreQ: Long-Stay Resident Distribution Item by Level of Education and Race (continued)

What is your race?	Respondents	Q1 Mean	Q2 Mean	Q3 Mean
White	***85% (n=1265)***	3.61	3.71	2.83
Black or African-American	**6% (n=86)**	3.30	3.33	2.69
Asian	**2% (n=24)**	3.71	3.67	2.86
Native Hawaiian or other Pacific Islander	**0% (n=0)**	0	0	0
American Indian or Alaskan Native	**0% (n=0)**	0	0	0

RACE ITEMS: NONE SIGNIFICANTY DIFFERENT AT p=0.05

TABLE 2B4.4B.A4: MEAN COREQ: SHORT STAY DISCHARGE ITEM CORRELATION BY RACE

Comparison Groups	Correlation Q1 Mean	Correlation Q2 Mean	Correlation Q3 Mean
White vs. Black or African American	2.67	3.43	1.16
White vs. Asian	0.44	0.23	0.15
Black or African-American vs. Asian	1.17	1.49	0.75

Note: two sample t-tests, none significant at p=0.05

(2) Summary Score for the CoreQ: Long-Stay Resident Measure

The summary score for each of the 3 CoreQ: Long-Stay Resident questionnaire items is calculated in the following way: Respondents answering poor are given a score of 1, average = 2, good =3, very good =4 and excellent =5. For the 3 questionnaire items the average score for the resident is then calculated. Correlation and T-test a**nalyses were** used to compare the SDS means with each other (See Tables 2b4.4b.b1 – 2b4.4b.b3). These analyses show that the CORE Q: Long-Stay Resident measure score is not significantly different based on either education level or race of respondents. That is, the educational makeup of the respondents or the racial makeup of the respondents does not appear related to the measure score.

Table 2b4.4b.b: Mean CoreQ: Long-Stay Resident Distribution Measure by Level of Education

What is the highest grade or level of school that you have completed?	Respondents	Measure Score Mean
Some high school, but did not graduate	***24% (n=360)***	3.84
High school graduate or GED	***44% (n=647)***	3.83
Some college or 2 year degree	***20% (n=301)***	3.79
4 year college graduate	***7% (n=106)***	3.80
More than 4 year college degree	***4% (n=63)***	3.87

Rank Correlation of Measure Score with Education: Not Significant at p=0.05

Table 2b4.4b.b: Mean CoreQ: Long-Stay Resident Distribution Measure by Race

What is your race?	Respondents	Measure Score Mean
White	***85% (n=1265)***	3.84
Black or African-American	**6% (n=86)**	3.71
Asian	**2% (n=24)**	3.95
Native Hawaiian or other Pacific Islander	**0% (n=0)**	0
American Indian or Alaskan Native	**0% (n=0)**	0

Table 2b4.4b.b3 Mean CoreQ: Short Stay Discharge Item Correlation by Race

Comparison Groups	Correlation of Mean CoreQ Score
White vs. Black or African American	0.12*
White vs. Asian	0.16*
Black or African-American vs. Asian	0.75*

Note: *Not statistically significant at p=0.

***(3)* Summary score from the CoreQ: Long-Stay Resident Measure (at the facility level).**

The summary score for each of the 3 CoreQ: Long-Stay Resident questionnaire items is calculated in the following way: Respondents answering poor are given a score of 1, average = 2, good =3, very good =4 and excellent =5. For the 3 questionnaire items the average score for the resident is calculated. The facility score represents the percent of residents with average scores of 3 or above. A t-test a**nalysis was** used to compare the mean scores (See Table 2b4.4b.c). This analysis demonstrated the CORE Q: Long-Stay Resident measure is not significantly different based on either education level or race. That is, the educational makeup of the respondents or the racial makeup of the respondents does not appear related to the measure.

Table 2b4.4b.c: CoreQ: Long-Stay Resident Score with and without stratification for Education and Race

What is the highest grade or level of school that you have completed?	Respondents	Mean Score with SDS Characteristic	Mean Score without SDS Characteristic	Significance
Some high school, but did not graduate	***24% (n=360)***	82.3	83.2	n.s

High school graduate or GED	***44% (n=647)***	83.5	83.5	n.s
Some college or 2 year degree	***20% (n=301)***	83.3	82.5	n.s
4 year college graduate	***7% (n=106)***	83.6	83.4	n.s
More than 4 year college degree	***4% (n=63)***	82.9	83.3	n.s

N.S. = Not significant at p=0.05

Table 2b4.4b.c: CoreQ: Long-Stay Resident Score with and without stratification by Education and Race (Continued)

What is your race?	Respondents	Mean Score with SDS Characteristic	Mean Score without SDS Characteristic	Significance
White	***85% (n=1265)***	83.5	83.2	n.s
Black or African-American	**6% (n=86)**	83.6	83.3	n.s
Asian	**2% (n=24)**	83.2	83.4	n.s
Native Hawaiian or other Pacific Islander	**0% (n=0)**	0	0	0
American Indian or Alaskan Native	**0% (n=0)**	0	0	0

N.S. = Not significant at p=0.05

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*)

Not Applicable.

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*)**:**

Not Applicable.

2b3.7. Statistical Risk Model Calibration Statistics (*e.g., Hosmer-Lemeshow statistic*):

Not Applicable.

2b3.8. Statistical Risk Model Calibration – Risk decile plots or calibration curves:

Not Applicable.

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)? (i.*e., what do the results mean and what are the norms for the test conducted*)

Not Applicable.

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*)

Not Applicable.

2b4. IDENTIFICATION OF STATISTICALLY SIGNIFICANT & MEANINGFUL DIFFERENCES IN PERFORMANCE

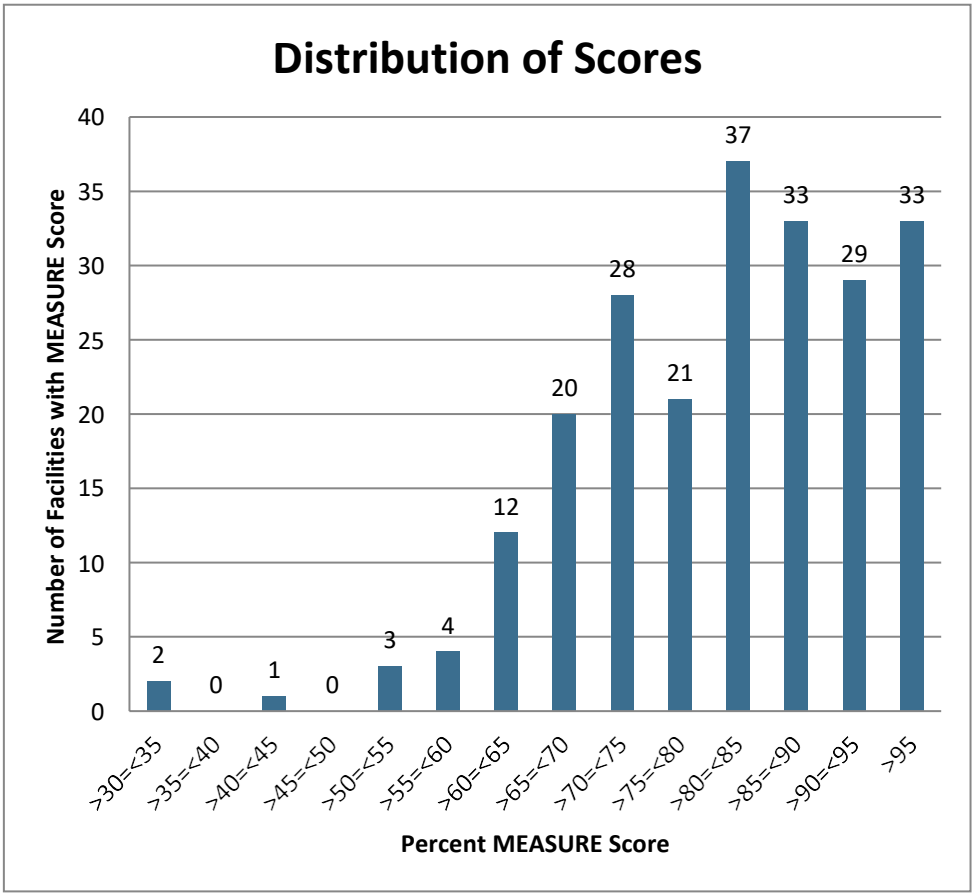
2b4.1. Describe the method for determining if statistically significant and clinically/practically meaningful differences in performance measure scores among the measured entities can be identified (*describe the steps—do not just name a method; what statistical analysis was used? Do not just repeat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

We performed an analysis to examine whether the CoreQ Long-Stay Resident measure captured clinically/practically meaningful differences between providers by producing a histogram of the scores for the providers in the CoreQ: Long-Stay Resident questionnaire sample (Figure 2b5.2.1).

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*)

The histogram below shows the distribution of the CoreQ Long-Stay Resident measure.

Figure 2b5.2.1: The distribution of the CoreQ Long-Stay Resident Measure



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?*)

The CoreQ Long-Stay Resident scores reflect practical and meaningful differences in quality between facilities. First, the histogram in Section 2b5.2 shows that the distribution of summary scores is quite wide, indicating the scores can be used to differentiate facilities of varying levels of customer satisfaction quality.

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 eMeasures). 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.***

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*)
Not Applicable.

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*)
Not Applicable.

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? (i.*e., what do the results mean and what are the norms for the test conducted*)
Not Applicable.

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 nonresponders) and how the specified handling of missing data minimizes bias (*describe the steps—do not just name a method; what statistical analysis was used*)
Three items are used in the CoreQ: Long-Stay Resident questionnaire. In calculating the CoreQ: Long-Stay Resident measure if 1 item of 3 is missing then imputation is used, and if 2 (or more) of the 3 items is missing, the respondent is excluded. The imputation method consists of using the average score from the items answered. The testing to identify the extent and distribution of missing data included examining the frequency of missing responses for each of the 3 CoreQ: Long-Stay Resident questionnaire items and the extent and distribution of missing data for more than one missing response for the items. The method of testing to identify if the performance results were biased included examining the correlation with the quality indicators (described above) when imputation was and was not used.

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; <u>if no empirical sensitivity analysis</u>, identify the approaches for handling missing data that were considered and pros and cons of each*)
As noted above, 3 items are used in the CoreQ: Long-Stay Resident questionnaire. In calculating the CoreQ: Long-Stay Resident measure if 1 item of 3 is missing then imputation is used, and if 2 (or more) of the 3 items is missing, the respondent is excluded. The imputation method consists of using the average score from the items answered. From the testing of 7,307 residents (described in section 1.5) we found:

1. In recommending this facility to your friends and family, how would you rate it overall?
That missing responses occurred in 4.86% (n=355) cases.
2. Overall, how would you rate the staff?
Missing responses occurred in 4.64% (n=339) cases.
3. How would you rate the care you receive?
Missing responses occurred in 4.56% (n=333) cases.

Two (or more) missing responses occurred in 123 cases. Thus, the degree of missing data was very small (=1.68%). Imputation was used in 904 cases or 12.37% of respondents.

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 nonresponders) 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*)

Bias from imputation was minimal due to the rate of missingness being very low. The correlation with the quality indicators described above (i.e., restraint use, pressure ulcers, catheter use, antipsychotic use, antidepressant use, antianxiety use, use of hypnotics, and deficiency citations) was unchanged. When the respondents were removed from the analyses, the average Summary Scores remained the same.

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: Satisfaction Survey

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**.

ALL data elements are in defined fields in a combination of 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).

Not applicable. In an effort to keep administrative burden low to encourage collection of satisfaction data, which is important in the field, there are no efforts to develop an eCQM.

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.

Maintenance of endorsement update:

There have been no reported difficulties. Providers, vendors, patients and family members (or designated party) have liked the fact that it is a short questionnaire. Patients and the family members (or designated party) have expressed appreciation that their satisfaction or lack thereof with the facility is being measures.

From initial endorsement:

Since the CoreQ: Long-Stay Resident measure has been created and utilized in testing and quality improvement, we have modified it in the following ways.

We conducted analyses on collecting data for the suggested 2 month time period. Even the smallest nursing facilities were able to achieve the 20 survey response goal identified above. We identified that a majority of nursing facilities (i.e., 90%) in our sample could achieve this response rate if given 2 months. Therefore, this recommendation was incorporated into the specifications (given above).

As part of the CoreQ: Long-Stay Resident measure development, existing satisfaction vendors were contacted (including MyInnerView, Symbria, and NRC) for input on the administration and sample selection used. With respect to administration, the 2 month window used for including completed surveys are currently often used standard time periods used in the industry. With respect to the sample selection, the exclusion criteria (i.e., residents with court appointed legal guardian for all decisions; residents on hospice; residents who have poor cognition) were well received by these vendors. In many cases most of these sample selection criteria are already used by the vendors.

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, licensing, or other requirements to use any aspect of the measure as specified (e.g., value/code set, risk model, programming code, and algorithm) exist.

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)

	Payment Program NJ Quality Incentive Payment Program https://www.spb.nj.gov/humanservices/doas/documents/NF%20Quality%20Incentive%20Payment%20Program%20October%202019%20Final.pdf TN (TennCare) Medicaid Quality Incentive Program n/a Georgia nursing home Medicaid Quality Incentive payment program n/a Professional Certification or Recognition Program AHCA NCAL Quality Initiative https://www.ahcancal.org/quality_improvement/qualityinitiative/Pages/default.aspx AHCA NCAL Quality Awards program https://066b40b5535506586917-68298049b65edbd7ec9f493f0b1c8eb3.ssl.cf2.rackcdn.com/ahca_1ecb9d979e9f049b2382b029da472a1c.pdf Quality Improvement (external benchmarking to organizations) AHCA NCAL Long Term Care Trend Tracker https://www.ahcancal.org/research_data/trendtracker/Pages/default.aspx Quality Improvement (Internal to the specific organization) Large Nursing Home Chain N/A Brookside Inn in CO https://www.youtube.com/watch?v=V5OcpyJDUkQ

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

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

Quality Awards

- Name: National Quality Award Program
- Purpose: This Baldrige-accredited award program seeks to recognize and help skilled nursing facilities and assisted living communities implement the Baldrige framework for performance excellence. The Baldrige framework emphasizes building systems and using data to understand and meet customer and patient needs. As such, silver and gold recipients must submit benchmarked patient satisfaction data in their application, and CoreQ is one of the acceptable measures. Regardless if an applicant receives an award, they receive a feedback report on their application, which discusses their approach, including deployment, learning, and integration of said approach, in understanding and meeting their patient needs. The goal of this feedback report is to help them improve their processes which would eventually lead to higher patient satisfaction and CoreQ scores.
- Geographic Area: There are currently 697 active silver quality award recipients and 44 gold recipients across the country. All recipients are listed online.

LTC Trend Tracker

- Name: LTC Trend Tracker
- Purpose: Provide an online tool for SNF and AL members to trend and benchmark their performance on CoreQ. In addition to have reports where users can login to access, there are PDF publications that are

pushed out to users via email with data for their specific facility, including CoreQ. These publications include CoreQ run charts to show their trend over time and whether they have met the Quality Initiative Goal of a 10% improvement since 2017 or achieved a high performance rate of greater than 90%.

- Geographic Area: All of the approximately 10,000 SNF members and 4,000 AL members have access to LTC Trend Tracker and thus these reports and publications.

The CoreQ: Short Stay Discharge measure is currently in use by a large nursing home chain for the purposes of quality improvement.

In addition, Massachusetts Senior Care is currently using the Measure for quality improvement. A total of 150 facilities in Massachusetts are collecting satisfaction data using of the CoreQ: Short Stay Discharge questionnaire. The CoreQ: Short Stay Discharge measure is calculated and distributed in a report card to each participant.

Furthermore, 27 national satisfaction vendors in the SNF and AL area have agreed to add the CoreQ to their questionnaires and calculate the measure. This is an increase from 10 vendors a few years ago. The following customer satisfaction vendors are using CoreQ (updated list is also found here: http://coreq.org/)

- Align
- A Place For Mom
- Blue Sky Creative
- Brighton Consulting Group
- Care Analytics
- Cortex Health Inc.
- The Doug Williams Group, Inc.
- Healthcare Academy (ReadyQ)
- Holleran
- inQ Experience Surveys
- Lighthouse Care Updates
- Market Research Answers (CareSat)
- Nexus Health Resources, Inc
- NRC Health
- Pinnacle
- Providigm/abaqis
- Qblue Surveys, Inc.
- Qualtrics
- Reputation.com
- Senior Living Alliance
- Sensight Surveys
- Service Trac
- Simplus Surveys
- Sky Care Media
- Sperduto & Associates, Inc.
- Symbria
- Viewpoint 2 Quality

We do not have counts of patients being surveyed and geographical representation from the vendors, however they represent the majority of customer satisfaction vendors currently doing SNF business in the United States.

In 2019, AHCA/NCAL began sharing reports with vendors on the data they have uploaded to LTC Trend Tracker on behalf of their client SNFs and ALs. The purpose of these reports was to show them trends on how many data submissions meet measure requirements, such as sample size and response rate. These reports were in addition to conference calls with the vendors to discuss best practices and potential issues with meeting CoreQ measure requirements.

A letter has been sent to all 10,000 AHCA SNF members indicating which vendors to date have agreed to add the CoreQ to their questionnaire and calculate the measure (see attached letter in appendix, section 4.a.1). A user's manual has been developed and is available on AHCA's website for all satisfaction survey vendors to use, in addition to the measures' specific website: http://coreq.org/.
AHCA and NCAL have also incorporated the CoreQ into their national Quality Initiative goals. AHCA represents nearly 10,000 of the 15,000 SNFs and provides feedback to all of its members on their satisfaction scores using the CoreQ. This has resulted in growing number of members and vendors collecting the data.

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?*)
Not applicable, see 4a.1.1.

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.*)

AHCA NCAL is in the midst of its the third Quality Initiative, laying out a series of quality improvement and reporting goals for the AHCA membership, which covers approximately 10,000 of all SNFs in the U.S. Among these goals is the improvement of both long-stay measures and the short-stay measure by 10% (baseline rate: 2017Q1), or achieving a rate of >90% by March 2021 (https://www.ahcancal.org/quality_improvement/qualityinitiative/Pages/Customer-Satisfaction.aspx).

Because it has been included in the Quality Initiative 2018-2021, AHCA's machinery for publicizing and encouraging the adoption of the tool has been activated, including AHCA's quality division spending a large number of staff hours working to accomplish this. Part of these initiatives are providing semi-annual quality initiative feedback reports through the LTC Trend TrackerSM to all the providers submitting data. The LTC Trend TrackerSM CoreQ report and upload feature within LTC Trend Tracker includes an API for vendors performing the survey on behalf of SNFs or individual users so that the aggregate CoreQ results will be immediately available to providers as they are collected. Given that LTC Trend TrackerSM is probably the leading method for SNFs to profile their quality and other data, the incorporation of CoreQ into LTC Trend Tracker means it has become the de facto standard for customer satisfaction surveys for the SNF industry. This is evident by having 7 large national satisfaction vendors in the SNF area now use the CoreQ in their questionnaires and calculate the measure.

We also continue working with states who require satisfaction measurement to incorporate the CoreQ into their process. In the state of New Jersey, the Long-stay resident and family measures are part of the Department of Human Services Quality Incentive Payment Program (https://www.spb.nj.gov/humanservices/doas/documents/NF%20Quality%20Incentive%20Payment%20Program%20October%202019%20Final.pdf), but we do not have any data on the count or the geographic distribution of this. The state of Massachusetts has included the CoreQ short stay as part of its current ongoing quality improvement initiatives on measuring satisfaction in SNFs. Tennessee uses the resident and family long-stay measures as part of their Medicaid quality incentive program, to align Medicaid payments with person-centered care initiatives. Similarly, the state of Georgia also uses these measures as part of the SNF Medicaid Quality incentive payment program. Many other states which are in the midst of developing or updating their Medicaid quality incentive payment programs are considering incorporating the long-stay CoreQ measures. AHCA has a presence in each state, and our state affiliates will be promoting the use of the CoreQ in those states that are collecting or considering collecting satisfaction.

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.

We provide these via different channels that will be discussed at length in 4a2.1.2. In short, these channels include: the CoreQ website (http://www.coreq.org/), Long-Term Care Trend Tracker (LTCTT, https://www.ahcancal.org/research_data/trendtracker/Pages/default.aspx), Quality Initiative Publications, Top-Line Publications, and various stakeholder meetings and advocacy efforts.

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.

Assistance with data and generally understanding the measure is provided through the open-source measure website (http://www.coreq.org/) where the public can find the manual (containing the measure algorithm) as well as the participating vendors (with their direct contacts).

Feedback on the performance results and data is provided via a quarterly push report, called Top-Line, sent to all members who have access to the Long Term Care Trend Tracker (LTCTT). They get an email notification when the data is updated. AHCA has held many webinars for membership on how to better understand all the data components. Further, if the providers being measured need assistance, there is a mailbox (LTCTT-specific) included in the push report, where providers may and do directly contact. We have also set up many FAQs and resources in the adult-learning website https://educate.ahcancal.org/

On LTCTT, we also have set up a CoreQ report which is updated quarterly directly being fed data from the API that vendors use to upload CoreQ measure scores. Therefore, those that are choosing to participate in this, will automatically see their results on the benchmarking tool. The tool is also interactive in allowing the user to see scores over time and allow them to benchmark themselves against whatever relevant peer is most pertinent (state, nation, MSA).

Further, because the CoreQ measures are part of the quality Initiative, all members and those who have access to LTCTT receive push semi-annual Quality Initiative Publications. Here too they can see run charts of their performance over time, as well as their state average and state rank for the published time period. Likewise, in this publication, we also provide different resources, two of which are the mailbox for LTCTT and a Quality Initiative-only mailbox, with designated staff continuously monitoring them.

All those that enter data or have vendors enter their data, obtain this feedback and resources.

Finally, in presentations with state affiliates and any other advocacy efforts (such as assistance with developing Medicaid quality incentives), we continue to advocate for the use of CoreQ.

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.

We are not sure what section 4d.1 refers to as it is not in this page, but in the even that you meant 4b.1, the following is the response:

Because all the data in 4b.1. is from providers who either have individually or through their vendor submitted data that meets the specifications for measurement, they are able to see their own performance (current and over time) via LTCTT (data source in 4b.1.). Additionally, because LTCTT allows for setting peer comparisons for benchmarking, these providers can also see data for whatever region they specify as pertinent (i.e. state, MSA, nation).

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

Because we do not administer the instruments, we have no way of measuring the feedback collected by residents and family members (or designated parties). It is the vendors who informally collect this feedback, but in favor of reducing the burden that patients and family members (or designated parties) may face, they keep the formal solicited CoreQ survey to only the tested questions. Therefore, any such feedback has been informal.

With regards to providers, we provide feedback via the channels mentioned in 4a2.1.1. They do not see an administrative burden since most of them have these instruments administered by vendors and calculated by

vendors and LTCTT. For those who cannot afford a vendor, Dr. Nick Castle (one of the developers of the measure) has volunteered to administer and collect their satisfaction measure.

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

Other users such as the state agencies involved in the administration of the Medicaid quality incentive program as well as the quality initiative programs have lauded the small number of questions that are included in this measure. This is especially important as more states move to Medicaid value-based care with a person-centered care model.

Additionally, to maintain transparency and increase awareness of the measures, we have presented abstracts and posters on all 5 CoreQ measures (SNF and AL) at various professional conferences: Academy health (2019), International Association of Gerontology and Geriatrics World Congress (2017), Gerontological Society of America (2019), see below.

Castle, N., Schwartz, L., Gifford, D. (2019, November) Using a Universal Satisfaction Score in Long-Term Care Settings. Paper presented at the annual meeting of the Gerontological Society of America, Austin TX.

Schwartz, L., Castle, N., Domi, M., Gifford, D. (2019, June). CoreQ: Development of a Universal Satisfaction Score for SNF and AL Residents and Families. Poster session presented at the Academy Health Annual Research Meeting, Washington, DC.

Castle, N. & Schwartz, L. (2017, July) Development of a Universal Satisfaction Score for Long-Term Care Facilities. Poster presented at the World Congress of the International Association of Gerontology and Geriatrics.

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.

Because feedback has been largely positive, we have not had a reason to believe that these measures needed to be modified.

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.

We have been actively monitoring improvement of membership because it has been part of the Quality Initiative (https://www.ahcancal.org/quality_improvement/qualityinitiative/Pages/default.aspx). Members need to improve the measures by 10% from their baseline of 2017Q1 score, or achieve a score of more than 90% (satisfaction rate) by March 2021. The current iteration of the quality initiative kicked off in 2018. On average, approximately 10-12% of membership submits CoreQ data every quarter. Thus far, on average, 18% of the providers who nationally submitted data have met this goal for at least one of the CoreQ measures (SS discharge, or LS residents, or LS family). This represents facilities across all 50 states plus the District of Columbia. We provide all facilities that submit this data and the state affiliates with their progress on semi-annual push reports.

With regards to CoreQ LS resident, 11% of the total facilities in the nation that have submitted CoreQ data have met the goal of either having >90% satisfaction rate or at least a 10% improvement in the satisfaction rate since 2017Q1. The states of AL, GA, IA, NH, RI, TN, WV, and WY have at least 20% of the SNFs that

submitted data meet the quality initiative goal. In GA and RI we observe close to 50% of the facilities that submit CoreQ data to meet the quality initiative. CO, KS, MI, MT, NJ, and NM have at least 15% of the SNFs that submitted data meet the quality initiative goal. All but one state have at least a facility meet the quality initiative goal.

These numbers are higher than those for the CoreQ short stay discharge measure, because it is easier to gather data and follow up on patients that reside in the facility. But these numbers would be higher if this measure was mandated by a federal initiative, since gathering patient experience and satisfaction is not currently measures in the post-acute domain.

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.

There were no negative consequences to individuals or populations identified during testing or evidence of unintended negative consequences to individuals or populations reported since the implementation of the CoreQ: Long-Stay Resident questionnaire or the measure that is calculated using this questionnaire. This is consistent with satisfaction surveys in general in nursing facilities. Many other satisfaction surveys are used in nursing facilities with no reported unintended consequences to patients or their families.

There are no potentially serious physical, psychological, social, legal, or other risks for patients. However, in some cases the satisfaction questionnaire can highlight poor care for some dissatisfied patients, and this may make them further dissatisfied.

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

A large vendor has reported patients and family members writing in the margins of the survey that they appreciate being asked about their satisfaction in a short questionnaire with the nursing home and the care provided, however, we don't systemic way of capturing this data. Another thing that we are noticing is the peer-effect in nudging the submission of data. Because the data is submitted on LTCTT allowing for providers to set benchmarks and peer comparisons, providers are nudging others in their larger organizations to submit data. Further, they continue to advocate for it through their local channels (state affiliates and conferences), because the more providers submit measurement data, the more robust their peer comparisons will be in LTCTT.

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.

Yes

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

0692 : Consumer Assessment of Health Providers and Systems (CAHPS®) Nursing Home Survey: Long-Stay Resident Instrument

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

The CoreQ: Long-Stay Resident measure does not conceptually address the same measure focus as any other NQF-endorsed measures, however it does conceptually address the same target population as another NQF-endorsed measure.

The Consumer Assessment of Health Providers and Systems (CAHPS®) Nursing Home Survey: Long-Stay Resident Instrument (NQF #0692) presented by the Agency for Healthcare Research and Quality received NQF approval over 4 years ago in Jan 24, 2012. This instrument is endorsed to collect resident satisfaction information and consists of a 50 item questionnaire. Our application also uses nursing home residents (The CoreQ: Long-Stay Resident measure) but consists of three items. No analyses have been conducted with CAHPS® such that a score representing satisfaction can be calculated. Whereas the CoreQ items are used to calculate this satisfaction score. Thus, the score from these items is used to provide standardized information on the overall resident satisfaction of the facility. The current CAHPS survey is not used in this way.

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.

The CoreQ: Long-Stay Resident measure does not conceptually address the same measure focus as any other NQF-endorsed measures, however it does conceptually address the same target population as another NQF-endorsed measure. The Consumer Assessment of Health Providers and Systems (CAHPS®) Nursing Home Survey: Long-Stay Resident Instrument (NQF #0692) presented by the Agency for Healthcare Research and Quality received NQF approval over 7 years ago in Jan 24, 2012. This instrument is endorsed to collect resident satisfaction information and consists of a 50 item questionnaire. Our application also uses nursing home residents (The CoreQ: Long-Stay Resident measure) but consists of three items. No analyses have been conducted with CAHPS® such that a score representing satisfaction can be calculated. Whereas the CoreQ items are used to calculate this satisfaction score. Thus, the score from these items is used to provide standardized information on the overall resident satisfaction of the facility. The current CAHPS survey is not used in this way.

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.)

Not Applicable

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: CoreQ_Long_Stay_Appendix_Final_updated_Jan2020-637136687505730243.docx

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): American Health Care Association

Co.2 Point of Contact: Courtney, Bishnoi, cbishnoi@ahca.org, 202-898-2857-

Co.3 Measure Developer if different from Measure Steward: American Health Care Association

Co.4 Point of Contact: Marsida, Domi, mdomi@ahca.org, 202-898-2807-

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.

The workgroup gave input, reviewing our suggested administration, required response rate, the manual, and exclusions.

Mary Tess Crotty, Genesis - Also helped provide feedback on the development process and the user manual. Additionally, she reviewed the analyses.

Matt O'Connor HCR Manor Care- Also helped provide feedback on the development process and the user manual. Additionally, he conducted some analyses and reviewed the analyses.

Judy Hoff, Health Care Academy

Rich Kortum, My Innerview/National Research Corporation

Peter Kramer, abaqis/Providigm

Ellen Kuebrich, abaqis/Providigm

Michael Johnson, ServiceTrac

Chris Magelby, Pinnacle

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: 2015

Ad.3 Month and Year of most recent revision: 10, 2015

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

Ad.5 When is the next scheduled review/update for this measure? 03, 2017

Ad.6 Copyright statement: None

Ad.7 Disclaimers: None

Ad.8 Additional Information/Comments: None