NATIONAL QUALITY FORUM

Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to sub criterion 1b).

Brief Measure Information

NQF #: 0676
Corresponding Measures:
De.2. Measure Title: Percent of Residents Who Self-Report Moderate to Severe Pain (Short Stay)
Co.1.1. Measure Steward: Centers for Medicare & Medicaid Services
De.3. Brief Description of Measure: This measure reports the percentage of short-stay residents in a nursing facility, who reported almost constant or frequent pain, and at least one episode of moderate to severe pain, or any very severe/horrible pain in the 5 days prior to the target assessment. This measure is based on data from the Minimum Data Set (MDS 3.0) OBRA, PPS, and/or discharge assessments during the selected quarter. Short-stay nursing facility residents are identified as those who have had 100 or fewer cumulative days of nursing facility care.

A separate measure (NQF #0677, Percent of Residents Who Self-Report Moderate to Severe Pain (Long Stay)) is used for residents who have had 101 or more cumulative days of nursing facility care.
1b.1. Developer Rationale: Pain is a subjective experience that is prevalent among nursing home residents, with research indicating that many residents experience frequent or persistent pain (Allcock, McGarry, & Elkan, 2002; Ferrell, Ferrell, & Osterweil, 1990; Ferrell, 1995; Moore, Boscardin, Steinman, & Schwarz, 2014; Won et al. 2004). Pain is often associated with adverse physical health outcomes, such as diminished functional status and impaired sleep (Cadogan et al., 2008; Monroe et al., 2014; Tse, Wan, & Vong, 2013). Literature demonstrates that pain is also associated with poor psychological health outcomes, such as depression and anxiety, social withdrawal, and reduced happiness and well-being (Ahn, 2012; Ahn & Horgas, 2013; Chen, Lin, Chen, & Liu, 2014; Landmark, Gran, & Kim, 2013; Reid, Eccleston, & Pillemer, 2015; Tse et al., 2013; Tosato et al., 2012). Furthermore, pain and pain-related health outcomes may substantially reduce residents' quality of life (Evangelista, Sackett, & Dracup, 2009; Monroe et al. 2014; National Nursing Home Quality Improvement Campaign, 2018).

Although pain may have a substantial, negative impact on nursing home residents, research suggests that deficits exist in pain detection and management in nursing homes (Cohen-Mansfield, 2008; Edelen & Saliba, 2010; Monroe et al., 2015; Monroe, Parish, & Mion, 2015), and that residents' pain is consistently undertreated (Institute of Medicine, 2015).

In addition, research indicates that performance gaps exist in pain management care within and across nursing homes. For example, pain detection and management may be inadequate within certain populations, including individuals with cognitive impairments (Burfield, Wan, Sole, & Cooper, 2012; Cohen-Mansfield, 2008; Cook, Niven, & Downs, 1999; Won et al., 1999) and with psychiatric disorders (Brennan & Soohoo, 2014), as well as among racial/ethnic minority residents (Hunnicutt, Ulbricht, Tjia, & Lapane, 2017). In a study of quality of pain management care among long-stay nursing home residents, Hunnicutt and colleagues found that quality, measured by opioid use, was higher in women than in men, and lower in racial/ethnic minorities and residents with severe cognitive impairments, compared to non-minorities and residents with no or mild impairments, respectively (Hunnicutt et al., 2018). Performance gaps described in the literature may indicate focus areas for targeted quality improvement efforts with respect to pain detection and management in nursing homes.

When pain is detected, nursing home providers may still undertreat pain (Institute of Medicine, 2015), or be reluctant to use stronger pain medications, such as opioids, to treat pain in older adults. For example, a qualitative study of primary care providers treating older adults for chronic, non-cancer pain found that the majority of providers were hesitant to prescribe opioids for pain relief due to "subjectivity of pain" (e.g., providers were unable to determine a physical reason for pain) and fear of causing harm to the patient (Spitz et al., 2011). However, results of a systematic review of short-term opioid therapy trials for non-cancer pain indicated that older adults had the same likelihood of benefitting from opioid therapies as younger adults, and that older age had an

inverse relationship to opioid misuse and abuse (Papaleontiou et al., 2010). Nursing home staff and residents may also normalize suffering as part of the aging process (Vaismoradi, Skär, Söderberg, & Bondas, 2016), resulting in a failure to sufficiently manage residents' pain. Additional training and education in both pharmacological and nonpharmacological approaches to pain management may better enable nursing home staff to address pain while emphasizing person-centered care and, thereby, reduce self-reported pain.

Given the impact of pain on nursing home residents, as well as evidence indicating gaps in provider knowledge and performance described above, pain detection and management in the nursing home population are of great interest to stakeholders, including the public, clinicians, researchers, and regulatory agencies (Swafford, Miller, Tsai, Herr, & Ersek, 2009). Pain management in nursing homes is central to the Omnibus Budget Reconciliation Act of 1987 (OBRA 87) mandate to promote "maximum practicable functioning" among residents, and failure to identify and address pain denies a resident the right to freedom from neglect, granted in OBRA 87 (Wiener, Freiman, & Brown, 2007). In addition, the National Nursing Home Quality Improvement Campaign has made the management of residents' pain one of its major goals (National Nursing Home Quality Improvement Campaign, 2018).

Given the prevalence of pain among nursing home residents and adverse health outcomes associated with pain, as well as performance gaps in pain assessment and management, pain among nursing home residents is a particularly important focus for quality measurement. Measuring and reporting rates of self-reported pain should encourage improvements in pain management care in nursing homes and ultimately, lead to a decline in resident self-reported pain.

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S.4. Numerator Statement: The numerator is the number of short-stay residents who are able to self-report with:

• A selected MDS assessment (OBRA admission, quarterly, annual or significant change/correction assessments or PPS 5-, 14-, 30-, 60-, or 90-day assessments, or readmission/return assessments OR Discharge assessment with or without return anticipated) during the selected quarter, AND

• Report almost constant or frequent pain AND at least one episode of moderate to severe pain in the 5 days prior to the assessment OR who report very severe/horrible pain of any frequency in the 5 days prior to the assessment.

S.6. Denominator Statement: The denominator is the total number of all short-stay residents in the nursing home who have an OBRA, PPS or discharge target assessment during the selected 6-month period and who do not meet the exclusion criteria.

S.8. Denominator Exclusions: A resident is excluded from the denominator if they did not meet the pain symptom conditions for the numerator AND any of the following conditions are true:

1) the resident cannot self-report OR

2) there are missing data in the responses to the relevant questions in the target assessment OR

3) the assessment indicates that the resident had pain or hurting at any time in the last 5 days, but the numeric pain intensity item indicates no pain.

If the facility sample includes fewer than 20 residents after all other resident-level exclusions are applied, then the facility is excluded from public reporting because of small sample size.

De.1. Measure Type: Outcome: PRO-PM
S.17. Data Source: Assessment Data
S.20. Level of Analysis: Facility

IF Endorsement Maintenance – Original Endorsement Date: Mar 03, 2011 **Most Recent Endorsement Date:** Sep 13, 2012

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? This is not applicable.

1. Evidence, Performance Gap, Priority – 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
NQF_0676_SS_Evidence_Form_04132018.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.

Yes

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.

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1b.2. Provide performance scores on the measure as specified (<u>current and over time</u>) 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.*
1.Current Measure Performance: Below we present the distribution of facility-level scores on this quality measure in Quarter 2 of

2017 (also presented in Table A1 of the appendix). Overall, 1,139,541 short-stay residents in 11,945 nursing facilities are included in the analysis. The national facility-level mean score for this measure in Quarter 2 of 2017 was 12.7% and the median score was 10.5%, suggesting a slight positive skew. The interquartile range for this measure was 14.6%. 9.0% of the facilities had a perfect score of 0%.

The distribution of facility-level score is described as follows:

k (facilities): 11,945
n (residents): 1,139,541
mean score: 12.7%
standard deviation: 10.6%
10th percentile: 0.7%
20th percentile: 3.2%
30th percentile: 5.3%
40th percentile: 8.0%
50th percentile: 10.5%
60th percentile: 13.6%
70th percentile: 16.9%
80th percentile: 21.1%
90th percentile: 27.3%
minimum: 0.0%
maximum: 83.4%
% of facilities with "perfect scores": 9.0%
Interquartile range: 14.6%

Source: RTI analysis of MDS 3.0 data for Quarter 2, 2017 (db361_request_q2627_676.log; db362_request_q2627_676.log)

2.Performance Over Time: Figure A1 in the appendix presents trends of the national mean and median for this measure for all available quarters (Q1 2011 – Q2 2017). The national facility-level mean and median scores have trended steadily downward since the adoption of the MDS 3.0, indicating a general improvement in performance over time. The mean score for this measure was 23.7% in Quarter 1 of 2011 and the median score was 22.9%. In Quarter 2 of 2017, the mean and median were 12.7% and 10.5%, respectively.

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.
This is not applicable (data are available and described in 1b2).

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 examined potential racial/ethnic disparities at both the resident and facility levels.

At the resident level, we compared the scores of this quality measure among different racial/ethnic groups. Table A2 in the appendix presents the percentage of residents who self-report moderate to severe pain among different racial/ethnic groups. The highest percentage of residents with self-reported pain was among White residents (12.6%), and the lowest rate among Asian residents (7.7%) followed closely by Hispanic residents (8.8%). Differences in the proportion of residents with self-reported pain by racial/ethnic group were found to be statistically significant (p<0.001). Table A4 in the appendix illustrates that these differences are generally consistent over time.

The facility-level analysis compares the facility scores on this measure in facilities with different proportion of non-White residents. We examined differences in the percent of residents who self-reported moderate to severe pain across two groups: facilities with

proportions of white residents that were greater than or equal to the median proportion (88.2%) among facilities with sufficient sample size to meet minimum public reporting requirements, and facilities with fewer white residents than the median (see Table A3 in the appendix). Facilities with a higher proportion of White residents had statistically significantly higher rates of self-reported moderate to severe pain (13.9% compared to 11.5%) (p-value < 0.001).

For information on disparities in self-reported pain related to sex, age, insurance-status, and cognitive independence, please refer to the risk adjustment analyses in the testing form.

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**
This is not applicable; performance data provided in 1b.4.

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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):*
 Safety

De.7. **Target Population Category** *(Check all the populations for which the measure is specified and tested if any):*
 Elderly, Populations at Risk, Populations at Risk : Individuals with multiple chronic conditions

S.1. **Measure-specific Web Page** *(Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)*
http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/NursingHomeQualityInits/NHQIQualityMeasures.html; please see "MDS 3.0 QM User's Manual" in Downloads section at the bottom of the page.

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.
No, this is not an instrument-based measure **Attachment:**

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.
Not an instrument-based measure

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.
This is not applicable.

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 number of short-stay residents who are able to self-report with:

•A selected MDS assessment (OBRA admission, quarterly, annual or significant change/correction assessments or PPS 5-, 14-, 30-, 60-, or 90-day assessments, or readmission/return assessments OR Discharge assessment with or without return anticipated) during the selected quarter, AND

•Report almost constant or frequent pain AND at least one episode of moderate to severe pain in the 5 days prior to the assessment OR who report very severe/horrible pain of any frequency in the 5 days prior to the assessment.

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).
Residents are counted if they are short-stay residents, defined as residents who have had 100 or fewer cumulative days of nursing facility care. Residents who return to the nursing home following a hospital discharge will not have their length of stay reset to zero. The numerator includes only short-stay residents who can self-report (J0200 = 1). The numerator is the count of residents who meet either or both of the following two conditions:

Condition 1:

Resident self-reports daily pain with at least one episode of moderate to severe pain. Both of the following conditions must be met:

Resident self-reports almost constant or frequent pain (J0400 = 1 or 2) in the 5 days prior to the target assessment.

AND

At least one episode of moderate to severe pain (J0600A = 05, 06, 07, 08, or 09 OR J0600B = 2 or 3) in the 5 days prior to the target assessment.

Condition 2:

Resident self-reports very severe/horrible pain of any frequency (J0600A = 10 OR J0600B = 4) in the 5 days prior to the target assessment.

Target assessments may be OBRA admission, quarterly, annual or significant change/correction assessments (A0310A = 01, 02, 03, 04, 05, 06) or PPS 5-, 14-, 30-, 60-, 90-day assessments (A0310B = 01, 02, 03, 04, 05, 06) or discharge assessment with or without return anticipated (A0310F = 10, 11).

For every calendar quarter (3-month period), the Centers for Medicare & Medicaid Services (CMS) select target assessments conducted during that quarter and the prior quarter (a total of six months) to calculate the measure for each nursing facility. For any resident with multiple episodes of care during the quarter, only the latest episode will be counted.

A target assessment is defined as the latest assessment that meets the following criteria: (a) it is contained within the resident's selected episode, (b) it has a qualifying reason for assessment, and (c) its target date is no more than 120 days before the end of the episode. (Note that a short-stay episode can span more than 100 calendar days because days outside of the facility are not counted in defining a 100-day or less short stay episode.)

An episode is defined as a period of time spanning one or more stays. An episode begins with an admission and ends with either (a) a discharge, or (b) the end of the target period, whichever comes first. Data are publicly reported on the Nursing Home Compare webpage and are weighted on an average of four target periods.

S.6. Denominator Statement *(Brief, narrative description of the target population being measured)*
The denominator is the total number of all short-stay residents in the nursing home who have an OBRA, PPS or discharge target assessment during the selected 6-month period and who do not meet the exclusion criteria.

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).
Residents are counted if they are short-stay residents, defined as residents who have had 100 or fewer cumulative days of nursing facility care. Residents who return to the nursing home following a hospital discharge will not have their length of stay reset to zero. The target population includes all short-stay residents with a target assessment (assessments may be OBRA admission, quarterly, annual or significant change/correction assessments (A0310A = 01, 02, 03, 04, 05, 06) or PPS 5-, 14-, 30-, 60-, 90-day assessments, or readmission/return assessments (A0310B = 01, 02, 03, 04, 05, 06) or discharge assessment with or without return anticipated (A0310F = 10, 11)) during the selected six month period (the quarter prior to the target quarter and the target quarter), and who can self-report (J0200 = 01), except for those who meet the exclusion criteria (specified in S.8 and S.9).

A description of the time period for the data included in this measure is provided in S.5 above.

S.8. Denominator Exclusions *(Brief narrative description of exclusions from the target population)*
A resident is excluded from the denominator if they did not meet the pain symptom conditions for the numerator AND any of the following conditions are true:

1) the resident cannot self-report OR

2) there are missing data in the responses to the relevant questions in the target assessment OR

3) the assessment indicates that the resident had pain or hurting at any time in the last 5 days, but the numeric pain intensity item indicates no pain.

If the facility sample includes fewer than 20 residents after all other resident-level exclusions are applied, then the facility is excluded from public reporting because of small sample size.

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.)*
A resident is excluded if they did not meet the pain symptom conditions for the numerator AND any of the following conditions are true:

1) pain assessment interview was not completed (J0200 = [0, -, ^]) OR

2)the pain presence item was not completed (J0300 = [09, -, ^]) OR

3)for residents with pain or hurting at any time in the last 5 days (J0300 = 1) any of the following are true:

3.1)pain frequency item was not completed (J0400 = [9, -, ^]);

3.2)neither of the pain intensity items were completed (J0600A = [99, ^, -] and J0600B = [99, ^, -]);

3.3)the numeric pain intensity item indicates no pain (J06000A = [00]).

If the facility sample includes fewer than 20 residents after all other resident-level exclusions are applied, then the facility is excluded from public reporting because of small sample size.

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.)*
This is not applicable.

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:**
Rate/proportion
If other:

S.13. **Interpretation of Score** *(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)*
Better quality = Lower 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.)*
Step 1: Identify the total number of short-stay residents with a selected target assessment (OBRA, PPS, or discharge) during the quarter who do not meet the exclusion criteria.

Step 2: Starting with the set of residents identified in Step 1, determine the total number of short-stay residents with a selected target assessment that meets the numerator inclusion criteria.

Step 3: Divide the result of Step 2 by the result of Step 1.

A description of the time period for the data included in this measure is provided in S.5 above.

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.
This is not applicable.

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.
This is not applicable; the measure is not based on a survey or instrument.

S.17. **Data Source** *(Check ONLY the sources for which the measure is SPECIFIED AND TESTED).*
If other, please describe in S.18.
 Assessment 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 data source is the Minimum Data Set (MDS) 3.0, and the collection instrument is the Resident Assessment Instrument (RAI)

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

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

S.21. **Care Setting** *(Check ONLY the settings for which the measure is SPECIFIED AND TESTED)*
 Other:Nursing Home, 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.)*
This is not applicable.

2. Validity – See attached Measure Testing Submission Form
NQF_0676_SS_Pain_Measure_Testing_Form_04.13.18_clean.docx

2.1 For maintenance of endorsement
Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.
Yes

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

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

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.**
Generated or collected by and used by healthcare personnel during the provision of care (e.g., blood pressure, lab value, diagnosis,

depression score)
If other:

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 electronic clinical data (e.g., clinical registry, nursing home MDS, home health OASIS)

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).
This is not applicable; all data elements used to calculate the measure are in defined fields in electronic clinical data. There are no current efforts to develop this measure as an eMeasure.

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.
The general data collection method for the MDS 3.0 is currently operational and mandatory for all Medicare/Medicaid certified nursing facilities; no issues are anticipated.

CMS provides coding direction for pain items in the MDS 3.0 via the RAI Manual and other mediums, for example, this YouTube video (https://www.youtube.com/watch?v=yD2Kz9hkQC0) explaining the MDS 3.0 coding of Section J.

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)*.
This is not applicable.

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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)

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

Public Reporting:
- Program and sponsor: Nursing Home Compare/CMS
- Purpose: Consumer information
- Geographic area and number and percentages of accountable entities and patients included: All United States Medicare/Medicaid certified nursing homes with eligible short-stay residents. In Quarter 2, 2017 there were 15,547 eligible facilities containing 1,177,526 residents eligible for inclusion in the measure; 11,945 facilities (76.8%) containing 1,139,541 residents (96.8%) had sufficient sample size (20 or more short-stay residents included in the denominator) to report on this measure.

Quality Improvement with Benchmarking (external benchmarking to multiple organizations):
- Program and sponsor: CASPER /CMS
- Purpose: Quality improvement
- Geographic area and number and percentages of accountable entities and patients included: All United States Medicare/Medicaid certified nursing homes with eligible short-stay residents. In Quarter 2, 2017 there were 15,547 eligible facilities containing 1,177,526 residents eligible for inclusion in the measure.

Quality Improvement (Internal to the specific organization):
- Program and sponsor: CASPER /CMS
- Purpose: Quality improvement
- Geographic area and number and percentages of accountable entities and patients included: All United States Medicare/Medicaid certified nursing homes with eligible short-stay residents. In Quarter 2, 2017 there were 15,547 eligible facilities containing 1,177,526 residents eligible for inclusion in the measure.

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?*)
This is not applicable.

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.*)
This is not applicable.

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.
This quality measure (NQF #0676, Percent of Residents Who Self-Report Moderate to Severe Pain (Short Stay)) is part of the Nursing Home Quality Initiative (NHQI). Information on this measure is available to both nursing home providers and to the public.

All Medicare and/or Medicaid certified nursing home providers may view their performance results for this and other NHQI measures via the Certification and Survey Provider Enhanced Reports (CASPER) system. These CASPER MDS 3.0 QM reports are intended to provide nursing home providers with feedback on their quality measure scores, helping them to improve the quality of

care delivered. CASPER MDS 3.0 reports also include Resident-Level Quality Measure Reports, which allow providers to identify the residents that trigger a particular quality measure (by scanning a column of interest and looking for the residents with an "X") and to identify residents who trigger multiple quality measures. Providers can use this information to target residents for quality improvement activities. Quality measure reports are also available to state surveyors and facility staff through the CASPER reporting system.

Consumers, including current and prospective nursing home residents and their families/caregivers, may access nursing home scores on this quality measure via the Nursing Home Compare website (https://www.medicare.gov/NursingHomeCompare/About/nhcinformation.html).

Further, providers have an opportunity to review their performance prior to public reporting on the Nursing Home Compare websites via Review & Correct Reports also provided in CASPER, which allow providers to identify potential errors in data submission or other information and request an update. Detailed instructions on how to view and interpret reports, including an explanation of differences between the quality measure reports and publicly reported information, are provided in the CASPER Reporting MDS Provider Users Guide, Section 11.

CMS provides technical users' guides (https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/CertificationandComplianc/Downloads/usersguide.pdf) on how the quality measures are used in the 5-star rating system, as well as a Help Line, which is accessible by telephone and email, to answer provider questions about the NHQI quality measures and reporting requirements.

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.**
The CASPER reports are available to providers on-demand with quality measure data updated monthly. Nursing Home Compare reports the rolling average of four quarters for the quality measure, comparing each nursing home's score to both the state and national average; providers can preview this information before it is publicly reported.

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.
CMS is committed to receiving ongoing feedback on measures implemented as part of the NHQI. CMS takes into consideration feedback and input on measure performance and implementation through the appropriate sub-regulatory communication channels, including but not limited to: NQF public comment periods held as part of endorsement processes; feedback from providers on the Nursing Home Compare Help Desk and feedback from the provider community on Open Door Forums (ODFs).

Additionally, in 2009, as part of the transition from the MDS 2.0 to the MDS 3.0, RTI and CMS convened an in-person Technical Expert Panel (TEP) to review and discuss recommendations offered by RTI about whether to retain, revise, replace, or retire each of the 19 publicly reported nursing home quality measures. Two of the recommendations presented were to replace both previously existing pain measures, Percent of Residents with Pain (Post-acute Care) and Percent of Residents with Pain (Chronic Care) with new short-stay and long-stay measures based on MDS 3.0 items that use resident self-reports of pain. The 15 TEP members included persons with expertise in skilled nursing home care, research, quality measurement and resident advocacy and with involvement in organizations including the American Association of Nurse Assessment Coordinators (AANAC), the American Medical Directors Association (AMDA), and the American Health Care Association (AHCA). Please see Appendix Table B1 Transition of Publicly Reported Nursing Home Measures to MDS 3.0 Technical Expert Panel Participants (January 2009) for a full list of TEP members and their organizations. During the meeting, the TEP members were engaged in discussion surrounding the measures and expressed opinions regarding the proposed recommendations for each measure. Following the discussion, the TEP members were asked to vote on whether to retain, revise, replace, or retire each measure.

4a2.2.2. **Summarize the feedback obtained from those being measured.**
14 of the 15 TEP members, which included representatives from various provider organizations as described above, voted to replace the existing Percent of Residents with Pain (Post-Acute Care) measure with the new measure based on MDS 3.0 data items. The TEP members generally viewed the resident self-report in the proposed measure as an improvement to the previous measure which was based solely on staff assessments. The majority of the TEP members raised concerns regarding the proposed measure's assessment of resident pain using the 14-day assessment. The TEP members generally agreed that the measure should report resident pain earlier than at 14 days and be constructed so that the 14-day assessment could be compared with data collected as a part of the 5-

day assessment.

4a2.2.3. Summarize the feedback obtained from other users
None.

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.
The 2009 TEP members' concerns described above were taken into consideration in the development of the short stay pain measure. Regarding the concern that the measure should assess pain earlier than at the 14 days, NQF #0676 was modified to include resident data from the 5-day assessment.

CMS will continue to take all feedback into account for future measure refinement.

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.
Progress (trends in performance results, number and percentage of people receiving high-quality healthcare)

 - Figure A1 in the appendix presents trend of the national mean and median for this measure across all available quarters (Q1 2011 – Q2 2017). The national facility-level mean and median scores have trended steadily downward since the adoption of the MDS 3.0, indicating a general improvement in performance over time. The mean score for this measure was 23.7% in Quarter 1 of 2011 and the median score was 22.9%. In Quarter 2 of 2017, the mean and median were 12.7% and 10.5%, respectively.

Geographic area and number and percentages of accountable entities and patients included:

 - United States Medicare/Medicaid certified nursing homes with eligible short-stay residents. In Quarter 2, 2017 there were 15,547 eligible facilities containing 1,177,526 residents eligible for inclusion in the measure; 11,945 facilities (76.8%) containing 1,139,541 residents (96.8%) had sufficient sample size (20 or more short-stay residents included in the denominator) to report on this measure.

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.
As described in the evidence form submission, measuring self-reported pain may encourage nursing homes to improve pain detection and management, and related areas of care. Public reporting may further encourage quality improvement by enabling providers to compare their performance to other providers, and consumers to select nursing homes with better performance (i.e., lower scores) on this patient-reported outcome, thereby allowing current and future nursing home residents and their caregivers to make more informed decisions about their care.

The MDS 3.0 items used in this measure collect data on pain using self-report, the gold standard for pain assessment, while the previous MDS 2.0 recorded only the nursing facility staff assessment of pain (Saliba & Buchanan, 2008). Evidence suggests that, prior to the implementation of the MDS 3.0 pain items, pain among nursing home residents may have been underestimated, as staff assessment of pain has been found to be lower as compared to self-reported pain (Berry & Dahl, 2000; Jones et al., 2006; Saliba & Buchanan, 2008). Improvements to assessment of pain may result in a short-term increase in measured pain prevalence. For

example, in a 2-year study in Missouri, Russell and colleagues found that nursing homes that engaged in quality improvement activities related to pain assessment and management had worse performance on quality indicators for pain (Russell, Madsen, Flesner, & Rantz, 2010). However, in the long term, better pain detection should, ultimately, lead to improvements in pain management and lower pain at the next assessment. RTI analyses provided in 2b1.3 show a decreasing trend in average facility-level scores for this measure over time.

Several factors may impact resident response regarding their characterization of their self-reported pain. Some residents may over-report pain severity or frequency to ensure adequate/continuing pain relief (Won et al., 2004; Zullo et al., 2018). Residents who over-report pain severity or frequency may, subsequently, receive higher doses of analgesic medications, or receive stronger medications, such as opioids. Although literature suggests that this is unlikely (Spitz et al., 2011; Papaleontiou et al., 2010), providers may need to be aware that pain assessment using self-report could increase potential for addiction or misuse/abuse behaviors. Conversely, research suggests that older adults may be reluctant to take analgesic medications and opioids due in part to fears of addiction (Berry & Dahl, 2000; Spitz et al., 2011; Jones et al., 2006). There is a possibility that these residents may underreport pain. Alternatively, residents may accurately self-report their pain levels; however, residents who prefer nonpharmacological treatments rather than high strength pharmacological treatments may have higher pain levels. This quality measure is unable to control for patient preferences in pain management like those in the aforementioned example, as the MDS 3.0 does not have the necessary items for this.

Overall, while self-reported pain is the gold standard for pain assessment, there are several challenges for both providers and patients with regard to self-reporting pain. Appropriate assessment and management of pain may be difficult for providers due in part to the subjectivity of pain (Spitz et al., 2011), variation in thresholds for pain (Sawyer, Lillis, Bodner, & Allman, 2007), and differences in preferences for and response to pharmacological and non-pharmacological treatments (Mack, Hunnicutt, Jesdale, Ulbricht, & Lapane, 2017; Robinson-Lane & Vallerand, 2018). Further, patients may under or over report pain in anticipation of pain treatment. In addition, initial efforts on behalf of providers to improve assessment of pain may increase the measured prevalence of pain, however, this prevalence should decrease following the management of newly identified pain. Overall, assessing self-reported pain requires providers to interact with residents, and to base pain management care on residents' goals and wishes, promoting person-centeredness in the nursing home (Koren, 2010).

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4b2.2. Please explain any unexpected benefits from implementation of this measure.
Please see 4b2.1

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5. Comparison to Related or Competing Measures

If a measure meets the above criteria <u>and</u> 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)
0166 : HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems) Survey
0177 : Improvement in pain interfering with activity
0420 : Pain Assessment and Follow-Up
0677 : Percent of Residents Who Self-Report Moderate to Severe Pain (Long Stay)
1634 : Hospice and Palliative Care -- Pain Screening
1637 : Hospice and Palliative Care -- Pain Assessment

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

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?
Yes

5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.
The nursing home quality measure, Percent of Residents Who Self-Report Moderate to Severe Pain (Long Stay), NQF #0677. This outcome measure has the same specifications as NQF #0676 aside from the target population and risk adjustment (NQF #0676 is not risk adjusted while NQF #0677 is risk adjusted). Both measures focus on the self-reported moderate to severe pain of nursing home residents, and the numerators for both measures are calculated using the same criteria. However, while NQF #0676 targets short-stay nursing home residents, NQF #0677 targets nursing home long-stay residents. Having separate measures for these target

populations is appropriate because short-stay residents may be more frequently admitted from the hospital and may tend to have more pain than long-stay populations, for instance, due to recent surgery. Risk adjustment is not used to calculate the short-stay measure as there is a substantial reportability issue related to risk adjustment for this population (discussed in detail in testing form submission for NQF #0676). There is no difference in data collection burden between these two measures.   The HCAHPS measure (NQF #0166), based on the HCAHPS survey, a 32-item survey instrument completed by hospital patients about their experience of care during their hospital stay, produces 11 publicly reported measures. One of these composite measures reports the percentage of adult inpatients who reported how often their pain was controlled. While this measure is related to NQF #0676, in that both measures address pain, these measures have different target populations (hospital inpatients vs. nursing home residents) and have different measure foci (patient experience of pain control vs. resident experience of pain and its severity).   NQF #0177, Improvement in pain interfering with activity measures the percentage of home health episodes of care during which the frequency of the patient's pain when moving around improved. While this measure is related in that it addresses patient experience of pain, the target population differs from NQF #0676 (home health patients vs. nursing home residents). Additionally, this measure focuses on improvement of pain while NQF #0676 addresses resident self-reported pain.   NQF #0420, Pain Assessment Prior to Initiation of Patient Therapy measures the percentage of patients aged 18 years and older with documentation of pain assessment using standardized tools. While both NQF #0420 and NQF #0676 address pain assessment, NQF #0420 is a claims-based, process measure (NQF #0676 is an outcome measure) which addresses physician assessment of pain in the outpatient setting using standardized tools.   Measures NQF #1634 (Hospice and Palliative Care – Pain Screening) and NQF #1637 (Hospice and Palliative Care – Pain Assessment) have similar measure foci (patients who screen positive for pain) as measure NQF #0676; however, these process measures specifically target hospices or palliative care patients. NQF #0676 is necessary to address pain in nursing home resident populations.

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.)
This is not applicable. There are no competing measures.

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:** 0676_NQF_Appendix_SS_Pain_04.16.18-636594838721189224.pdf

Contact Information

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Co.3 Measure Developer if different from Measure Steward: RTI International
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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.
See Appendix Table B1 Transition of Publicly Reported Nursing Home Measures to MDS 3.0 Technical Expert Panel Participants (January 2009) for a list of workgroup or panel member names and organizations.

This technical expert panel met during 2 days in January 2009 to make recommendations regarding the transition of nursing home

quality measures from MDS 2.0 to MDS 3.0 prior to the original submission of these MDS 3.0 quality measures to NQF for endorsement.

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.2 Year the measure was first released: 2002
Ad.3 Month and Year of most recent revision: 09, 2017
Ad.4 What is your frequency for review/update of this measure? Endorsement maintenance every 3 years; annual maintenance every year.
Ad.5 When is the next scheduled review/update for this measure? 09, 2019

Ad.6 Copyright statement: This is not applicable.
Ad.7 Disclaimers: This is not applicable.

Ad.8 Additional Information/Comments: This is not applicable.