This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

**TAP/Workgroup (if utilized)**: Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

**Note**: If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).

**Steering Committee**: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

**Evaluation ratings of the extent to which the criteria are met**
- **C**: Completely (unquestionably demonstrated to meet the criterion)
- **P**: Partially (demonstrated to partially meet the criterion)
- **M**: Minimally (addressed BUT demonstrated to only minimally meet the criterion)
- **N**: Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
- **NA**: Not applicable (only an option for a few subcriteria as indicated)

---

**MEASURE DESCRIPTIVE INFORMATION**

**De.1 Measure Title**: Percent of Residents Who Lose Too Much Weight (Long-Stay)

**De.2 Brief description of measure**: This measure updates CMS’ current QM on patients who lose too much weight. This measure captures the percentage of long-stay residents who had a weight loss of 5% or more in the last month or 10% or more in the last 6 months who were not on a physician-prescribed weight-loss regimen noted on an MDS assessment (which may be an annual, quarterly, significant change or significant correction MDS assessment) during the selected quarter (3-month period). In order to address seasonal variation, the proposed measure uses a two-quarter average for the facility. Long-stay residents are those who have been in nursing care at least 100 days. The measure is restricted to this population, which has long-term care needs, rather than the short-stay population who are discharged within 100 days of admission.

**De.3 If included in a composite or paired with another measure, please identify composite or paired measure**

**De.4 National Priority Partners Priority Area**: Population health

**De.5 IOM Quality Domain**: Safety

**De.6 Consumer Care Need**: 

---

**CONDITIONS FOR CONSIDERATION BY NQF**

Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:

**A.** The measure is in the public domain or an intellectual property (measure steward agreement) is signed. Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.

**A.1** Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?

**Yes**

---

Rating: **C**=Completely; **P**=Partially; **M**=Minimally; **N**=Not at all; **NA**=Not applicable
**A.2 Indicate if Proprietary Measure (as defined in measure steward agreement):**

**A.3 Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary

**A.4 Measure Steward Agreement attached:**

B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section

**C. The intended use of the measure includes both public reporting and quality improvement.**

► Purpose: Public reporting, Internal quality improvement

**D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement.**

**D.1 Testing:** Yes, fully developed and tested

**D.2 Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes

(for NQF staff use) Have all conditions for consideration been met?

Staff Notes to Steward (if submission returned):

Staff Notes to Reviewers (issues or questions regarding any criteria):

Staff Reviewer Name(s): TAP/Workgroup Reviewer Name:

Steering Committee Reviewer Name:

---

**1. IMPORTANCE TO MEASURE AND REPORT**

Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria (evaluation criteria)

<table>
<thead>
<tr>
<th>1a. High Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>(for NQF staff use) Specific NPP goal:</td>
</tr>
<tr>
<td>1a.1 Demonstrated High Impact Aspect of Healthcare: Patient/societal consequences of poor quality</td>
</tr>
</tbody>
</table>

| 1a.3 Summary of Evidence of High Impact: Nursing facility residents often have chronic diseases and functional impairments that impair proper nutrition and hydration (1, 2, 3) and require interventions by facility staff. (1) Elderly individuals with weight loss are at higher risk for functional decline, hip fracture (4, 5, 6) and mortality. (7, 8, 9, 10, 11, 12, 13) Consequences of weight loss also may include: muscle wasting, infections, and increased risk of pressure ulcers. Detecting and preventing weight loss is central to ensure appropriate nutritional intake. Prevalence estimates of poor nutrition and unintentional weight loss among people in institutions vary from 2% to 41% (14); dehydration is also common. (15) Using MDS 2.0 data for April-June 2009, the national prevalence of too much weight loss in nursing facilities was 9.2%, ranging from a low of an average of 7.0% in Alaska to a high of an average of 11.4% in North Carolina. (16) The national percentage of too much weight loss fluctuated somewhat between 2003 and 2009, with a modest downward trend. (17) Preliminary testing of the MDS 3.0 using a sample of nursing facilities estimated a prevalence of too much weight loss that was virtually the same as that estimated using the MDS 2.0 (8.3% vs. 8.0%) (18). Malnutrition in nursing facilities is a problem in other... |

<table>
<thead>
<tr>
<th>1a.</th>
<th>C</th>
<th>P</th>
<th>M</th>
<th>N</th>
<th>N</th>
</tr>
</thead>
</table>

Comment [KP1]: 1a. The measure focus addresses:

- a specific national health goal/priority identified by NQF’s National Priorities Partners; OR
- a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).
Various chronic illnesses are associated with malnutrition, including cancer, diabetes, depression, and COPD. (19) Medications, oral health problems (such as missing teeth), dysphagia, and dementia can complicate nutrition and hydration. Between 40% and 60% of nursing facility residents have swallowing disorders, often related to dementia. (20) Medications may cause nausea, anxiety, constipation, and lack of appetite. Depression has been identified as the “most common reversible illness” associated with malnutrition. (2)

Dehydration is a major factor in weight loss in perhaps 10% of nursing home residents. (21, 22, 23) The Council for Nutritional Clinical Strategies in Long-Term Care, an expert panel of interdisciplinary thought leaders representing academia and the medical community, derived a structured approach aimed at improving management of malnutrition in long-term care settings, using literature review and consensus development. The Clinical Guide to Prevent and Manage Malnutrition in Long-Term Care is based on a best-evidence approach to the management of nutritional problems in long-term care. The recommendations were determined by consensus process by the Council for Nutritional Clinical Strategies in Long-Term Care, and clinical triggers were reviewed by an independent GSA peer-review committee. The parameters for identifying malnutrition in nursing facilities were derived from OBRA 1987 guidelines including involuntary weight loss of greater than 5% in 30 days or 10% in 180 days, which is used as the trigger in this quality measure. (24)

1c.1 Relationship to Outcomes (For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population): A loss of 5% or more of body weight in one month or 10% or more over 6 months is usually considered unhealthy. (1) Too much weight loss can make a person weak, change how medicine works in the body, or cause the skin to break down which can lead to pressure ulcers. Too much weight loss may mean that the resident is ill, refuses to eat, is depressed, or has a medical problem that makes eating difficult (like weakness caused by a stroke). It could also mean that the resident is not being fed properly; that their medical care is not being properly managed; or that the nursing facilities' nutrition program is poor. To help prevent unhealthy weight loss, it is important that the resident's diet be balanced and nutritious, and that staff spend enough time feeding residents who cannot feed themselves. With the increase in obesity, it may be necessary for some residents to lose weight for medical reasons. In these cases, the medical staff may plan in advance for the resident to lose weight on a special weight loss program, but the person should not lose more than 5% of body weight in one month. The current MDS weight-loss quality indicator was found to be reliable in differentiating nursing facilities with a lower prevalence of weight loss from those with a higher prevalence. There were significantly more residents at risk for weight loss in high-weight-loss nursing facilities according to multiple measures, most notably low oral intake as measured by the MDS and direct observations by research staff. One care process that consistently differentiated care in low-weight-loss nursing facilities from that in high-weight-loss nursing facilities across all-risk group comparisons was the presence of verbal prompting or social interaction during meals. Specifically, staff in low-weight-loss nursing facilities provided verbal prompting and social interaction during meals to a significantly greater proportion of all participants and, in particular, to participants at risk for weight loss. (2)

Weight loss is also associated with increased risk of mortality, functional ability and transfer to a higher level of nursing facility care. (3, 4).


1c.2-3. Type of Evidence: Observational study, Randomized controlled trial, Systematic synthesis of research, Expert opinion

1c.4 Summary of Evidence (as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome): Health services and care processes can help to prevent or alleviate excessive weight loss. However, decreased absorption and changed metabolisms may limit the effectiveness of simply increasing nutritional intake. (1) For nursing facility residents who are depressed, some antidepressants, such as mirtazapine, have been found to promote weight gain, although there are often negative side effects. (2, 3, 4) Appetite stimulants may be effective, although there is little evidence on their use with older people and they have not been approved by the Food and Drug Administration for use with the nursing home population. (5, 6)

Better quality and more palatable meals can also address unplanned weight loss. Unduly restrictive diets are associated with unintended weight loss because they often limit favorite foods and are often unappetizing. (6) In recognition of this problem, the American Dietetic Association recommends less restrictive diets in long-term care facilities in order to improve overall quality of life and nutritional status. (7)

Augmenting nutritional intake with oral supplements is common in nursing facilities. (8, 9, 10) Supplements may be less effective than theoretically possible because they are often not given as frequently as intended and staff do not spend adequate time assisting residents in taking them. (11) A Cochrane meta-analysis found that supplementation produces a small but consistent weight gain in older people. (12) Supplements may also reduce mortality in undernourished older people.
Positive relationships between nursing facility staff and residents, the physical environment, and overall staffing levels and training can help improve nutritional status. Communication between staff and residents, verbal prompting and positive reinforcement, and adequate time for meals increase food consumption. (13, 14, 15, 16, 17, 18, 19, 20, 21) Noisy, chaotic, and institutional dining rooms are associated with low consumption of food and drink. (14, 22, 23)

Studies find that nursing facility organizational factors affect nutritional intake. For example, facilities with higher staff/resident ratios have higher nutritional intake because staff can spend more time helping residents eat. (17, 22) Some interventions that successfully improve food and fluid intake require substantially more staff time than is typically provided. (18) Training on effective feeding techniques to aid residents, especially with dementia, is often inadequate for certified nursing assistants to know what they can do to aid the residents. (16, 21, 24, 25)

1c.5 Rating of strength/quality of evidence (also provide narrative description of the rating and by whom):
Several reviews of the evidence on weight loss among nursing facility residents have been conducted (1, 6, 26) but they did not formally rate the evidence. The reviews cite a number of studies that evaluate strategies to increase nutritional intake. Despite these studies, Sloane et al. (6) argue that “the evidence addressing many of these issues (concerning weight loss) is limited” (p. 476), and Morley (1) contends that “there are minimal intervention studies demonstrating a salutary effect of reversal of weight loss” (p. 201).

The Cochrane meta-analysis of nutritional supplements included randomized and quasi-randomized trials, with the exception of groups recovering from cancer treatment or in critical care. (12) Although a total of 62 trials with 10,187 randomized participants were included, the authors characterized most of the studies as having poor study quality. A clinical guideline on “unintentional weight loss in the elderly” developed by the University of Texas School of Nursing rates the quality of most of the evidence as “fair” (evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies, generalizability to routine practice, or indirect nature of the evidence on health outcomes) using the U.S. Preventive Services Task Force (USPSTF) rating system. (27) They rate the strength of most of their recommendations as “B" (recommendation that clinicians provide the service to eligible patients; there is at least fair evidence that the service can improve health outcomes but concludes that the benefits outweigh harms). The American Dietetic Association (7) adopted a policy statement that calls for “liberalization of the diet prescription,” but the background document, while providing numerous references, does not rate the evidence or the recommendation.

1c.6 Method for rating evidence: The rating by the University of Texas School of Nursing uses the system developed by the USPSTF.

1c.7 Summary of Controversy/Contradictory Evidence: There are at least three areas of controversy. First, some observers, such as Morley (1) stress the biological and disease basis for weight loss among older people in nursing facilities, which may limit the effectiveness of interventions designed purely to increase resident nutritional intake as a method of maintaining weight. Second, the nursing facility industry generally favors the use of “paid feeding assistants,” staff who are not fully trained as certified nursing assistants, to assist at mealtimes in nursing facilities, while consumer groups prefer an increase in overall facility staffing to increase nutritional intake as a method of maintaining weight. (10) Noisy, chaotic, and institutional dining rooms are associated with low consumption of food and drink. (14, 22, 23)


1c.9 Quote the Specific guideline recommendation (including guideline number and/or page number):
The recommendation from the American Dietetic Association (1) is:
"It is the position of the American Dietetic Association (ADA) that the quality of life and nutritional status of older residents in long-term care facilities may be enhanced by liberalization of the diet prescription. The association advocates the use of qualified dietetics professionals to assess and evaluate the need for medical nutrition therapy according to each person’s individual medical condition, needs, desires, and rights.”

The recommendations of the University of Texas’ School of Nursing clinical guideline has 41 recommendations related to non-pharmacological and pharmacological therapy.(2)
### 1c.10 Clinical Practice Guideline Citation:


### 1c.12 Rating of strength of recommendation (also provide narrative description of the rating and by whom):

A clinical guideline on "unintentional weight loss in the elderly" developed by the University of Texas' School of Nursing (1) rates the strength of most of their recommendations as "B" (recommendation that clinicians provide the service to eligible patients; there is at least fair evidence that the service can improve health outcomes but concludes that the benefits outweigh harms). They use the USPSTF rating system. 1. University of Texas, School of Nursing. Unintentional weight loss in the elderly. Austin, TX: University of Texas, School of Nursing. 2006. (A summary of the guideline is available at the National Guideline Clearinghouse, http://www.guideline.gov/summary/summary.aspx?doc_id=9435/.)

### 1c.13 Method for rating strength of recommendation (if different from USPSTF system, also describe rating and how it relates to USPSTF):

They use the USPSTF rating system.

### 1c.14 Rationale for using this guideline over others:

This is not applicable. Guideline is not being recommended over others.

### TAP/Workgroup:

What are the strengths and weaknesses in relation to the subcriteria for Importance to Measure and Report?

<table>
<thead>
<tr>
<th>Rating</th>
<th>1 Yes</th>
<th>N No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steering Committee: Was the threshold criterion, Importance to Measure and Report, met?</td>
<td>Y Yes</td>
<td>N No</td>
</tr>
</tbody>
</table>

### 2. 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. (evaluation criteria)

<table>
<thead>
<tr>
<th>Eval Rating</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.1 Do you have a web page where current detailed measure specifications can be obtained?</td>
<td>Y Yes</td>
</tr>
<tr>
<td>S.2 If yes, provide web page URL:</td>
<td></td>
</tr>
</tbody>
</table>

### 2a. MEASURE SPECIFICATIONS

#### 2a.1 Numerator Statement (Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome):

The numerator is the number of nursing home residents with an MDS assessments (which may be an annual, quarterly, significant change or significant correction MDS assessment) that indicate a weight loss of 5% or more of resident’s body weight in the last 30 days or 10% or more in the last 6 months that is not a result of a physician-prescribed weight-loss regimen.

#### 2a.2 Numerator Time Window (The time period in which cases are eligible for inclusion in the numerator):

Numerator data come from MDS assessment (which may be an annual, quarterly, significant change or significant correction assessment) conducted over the last two quarters to adjust for seasonal variation.

Comment [K7]: USPSTF grading system http://www.ahrq.gov/clinic/uspstf/grades.htm: A - The USPSTF recommends the service. There is high certainty that the net benefit is substantial. B - The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. C - The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. D - The USPSTF recommends against providing the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. E - The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.
2a.3 Numerator Details (All information required to collect/calculate the numerator, including all codes, logic, and definitions):
Residents are counted if they are long-stay residents, defined as residents whose length of stay is greater than 100 days. Residents who return to the nursing home following a hospital discharge will not have their stay reset to zero. Residents are counted if a weight loss of 5% or more of their body weight in the last month or a weight loss of 10% or more of their body weight over the last 6 months who were not on a physician-prescribed weight-loss regimen. Nursing facility residents with this condition have K0300=2 (weight loss) checked on the MDS 3.0. The numerator counts the number of MDS assessments (which may be an annual, quarterly, significant change, significant correction or discharge assessments) that report too much weight loss over the last two quarters divided by two. The measure averages over two quarters to obtain a rate for a single quarter.

2a.4 Denominator Statement (Brief, text description of the denominator - target population being measured):
The denominator uses MDS assessments (which may be an annual, quarterly, significant change or significant correction assessments), except for residents with only an admission (OBRA) assessment and residents for whom data on weight loss is missing. Residents with only an admission (OBRA) assessment are excluded because they have not been in the facility long enough to have had weight loss assessed or attributed to care in the facility.

2a.5 Target population gender: Female, Male
2a.6 Target population age range: The target population includes long-stay residents of all ages in the nursing facility.

2a.7 Denominator Time Window (The time period in which cases are eligible for inclusion in the denominator):
All assessments of nursing facility residents over the last two quarters, with the exception of admission assessments and assessments with missing data.

2a.8 Denominator Details (All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions):
Residents are counted if they are long-stay residents defined as residents whose length of stay is greater than 100 days. Residents who return to the nursing home following a hospital discharge will not have their day count reset to zero. The denominator consists of all assessments of long-stay residents over the last two quarters, except admission (OBRA) assessments and those for which data on weight loss are missing, divided by 2. Dividing by two creates an average for a single quarter. Residents who only have an admission (OBRA) assessment are excluded because the measure is a change score that cannot be calculated until the resident has been in the facility for at least a month. Admission (OBRA) assessments are conducted within 14 days of admission. Similarly, it is not possible to assess the weight-loss experience of residents for whom data are missing. An admission (OBRA) assessment is identified by the MDS 3.0 item A0310.A=01 (type of assessment).

2a.9 Denominator Exclusions (Brief text description of exclusions from the target population):
An assessment is excluded from the denominator if the MDS assessment was conducted within 14 days of admission (OBRA) (A0310 = 01) or if there is missing data in the responses to K0300 (weight loss) of the MDS 3.0. Facilities with fewer than 30 residents are excluded from public reporting because of small sample size.

2a.10 Denominator Exclusion Details (All information required to collect exclusions to the denominator, including all codes, logic, and definitions):
If the MDS is an admission (OBRA) assessment (A0310 = 01) or there are missing data on the MDS 3.0 for item K0300 (weight loss), then the assessment is excluded.

2a.11 Stratification Details/Variables (All information required to stratify the measure including the stratification variables, all codes, logic, and definitions):
The measure is limited to long-stay residents for two reasons. First, many short-stay residents were admitted to the nursing home directly from the hospital; some of the weight loss of short-stay residents may be associated with the conditions and services associated with the hospitalization and not as a result of the care provided by the nursing home. Second, the measure cannot be calculated on short-stay nursing home residents in a way that is comparable to long-stay residents. Short stay nursing home residents are residents who are discharged within 100 days of admission. The measure captures the percentage of residents who had a weight loss of 5% or more of their body weight in the last month or a weight loss of 10% or more of their body weight over the last 6 months who were not on a physician-prescribed weight-loss regimen. Nursing facility residents with this condition have K0300=2 (weight loss) checked on the MDS 3.0. The numerator counts the number of MDS assessments (which may be an annual, quarterly, significant change, significant correction or discharge assessments) that report too much weight loss over the last two quarters divided by two. The measure averages over two quarters to obtain a rate for a single quarter.

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.
### 2a.12-13 Risk Adjustment Type
No risk adjustment necessary

### 2a.13 Risk Adjustment Methodology/Variables
(List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method):

### 2a.15-17 Detailed risk model available Web page URL or attachment:

### 2a.18-19 Type of Score: Ratio

### 2a.20 Interpretation of Score:

### 2a.21 Calculation Algorithm (Describe the calculation of the measure as a flowchart or series of steps):

1. Determine the number of long-stay nursing facility residents who have lost too much weight over the last two quarters (K0300 = 2 on the MDS 3.0). Divide the number by two.
2. Determine the number of nursing home assessments over the last two quarters, excluding admission (OBRA) assessments (A0310 = 01) or where data on weight loss are missing (K0300 on the MDS 3.0). Divide the number by two.
3. Divide the result of Step 1 by the result of Step 2.

### 2a.22 Describe the method for discriminating performance (e.g., significance testing):

Because the computed scores are not estimates, but include all residents who meet the measure criteria, in terms of discriminating performance, the computed scores can be used to make valid comparisons.

### 2a.23 Sampling (Survey) Methodology
If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate):

This is not applicable.

### 2a.24 Data Source
(Identify the source(s) for which the measure is specified and tested)

Electronic clinical data

### 2a.25 Data source/data collection instrument
(Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.):

Nursing Home MDS 3.0

### 2a.26-28 Data source/data collection instrument reference web page URL or attachment:


### 2a.29-31 Data dictionary/code table web page URL or attachment:


### 2a.32-35 Level of Measurement/Analysis
(Check the level(s) for which the measure is specified and tested)

Population: national, Facility/Agency

### 2a.36-37 Care Settings
(Check the setting(s) for which the measure is specified and tested)

Nursing home (NH) /Skilled Nursing Facility (SNF)

### 2a.38-41 Clinical Services
(Healthcare services being measured, check all that apply)

### TESTING/ANALYSIS

<table>
<thead>
<tr>
<th>2b. Reliability testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2b.1 Data/sample (description of data/sample and size): Four studies addressed reliability of the weight loss measure. First, testing of the reliability of MDS 3.0 data items underlying the too much weight loss quality measure as well as a comparison with the MDS 2.0 quality measures was conducted by RAND as part of the MDS 3.0 development process. (1) A representative sample of for-profit and not-for-profit facilities and hospital-based and free-standing facilities was recruited for the study, which included 71 community nursing facilities in 8 states, 19 Veterans Affairs (VA) nursing facilities, and 1,390 nursing facility residents for the weight-loss measure.</td>
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</table>
quality measure.

Second, the University of Colorado used national facility-level quality measure data from 2003 Quarter 3 (Q3) through 2006 Q3 which came from the Quality Improvement and Evaluation System (QIES) MDS Express Reports on the CMS intranet; Online Survey, Certification, and Reporting (OSCAR) data related to facility characteristics (e.g., state, resident census, number of beds, staffing) and certification survey results were downloaded from QIES Workbench. (2) A 10% random sample of all Medicare-certified nursing facilities was also downloaded from MDS assessment records. Analyses were based on complete MDS data from January 2005 through March 2006, as well as nearly complete data for April 2006 and partial data for May and June 2006.

Third, the MDS 2.0 measure item and the existing measure were tested by the Data Assessment and Verification (DAVE 2) Project, which used a nationwide sample of randomly selected nursing homes using MDS assessments for the period April 1 to December 31, 2006. (3) DAVE 2 performed 173 two-stage reviews.

Fourth, the study by Simmons et al. (4) included 16 skilled nursing facilities from Southern California: 11 nursing facilities in the lower quartile (25th percentile or lower) and 5 nursing facilities in the upper quartile (75th percentile or higher) on the weight loss quality measure. A total of 400 long-term residents were included.


2b.2 Analytic Method (type of reliability & rationale, method for testing):
Four studies assessed the reliability of the weight loss measure. First, the national test of MDS 3.0 items examined agreement between assessors (reliability). (1) Quality Improvement Organizations (QIOs) were employed to identify gold-standard (research) nurses and recruit community nursing facilities to participate in the national evaluation. The gold-standard nurses were trained in the MDS 3.0 instrument and in turn trained a facility nurse from each participating nursing facility in their home states. Residents participating in the test were selected to capture a representative sample of short- and long-stay residents. Quality measures using the MDS 2.0 and the MDS 3.0 were calculated and then compared, with correlations and Kappas calculated.

Second, in terms of measure stability, which is not exactly the same reliability, but is a related concept, the University of Colorado examined the percentage of facilities that had a change in ranking from one quarter to the next of at least three deciles. (2) This indicator of stability was computed for each of the twelve pairs of adjacent quarters for which data were available (2003 Q3 through 2006 Q2).

Third, the DAVE 2 Project used a two-stage cluster sample design to examine the reliability of MDS 2.0 reporting. (3) Trained nurse reviewers selected a current resident with a recent assessment performed by the nursing facility within the last 14 days. In the first stage of this review, the nurse reviewer conducted a blind reassessment of the resident using standard MDS assessment and coding procedures (examination of the medical record, observation of the resident, interview of staff, resident, and family, and use of coding criteria). In the second stage of this assessment (Stage 2), the DAVE 2 nurse reviewer’s assessment was compared to the corresponding nursing facility assessment and each discrepancy was reconciled, with the nursing facility assessor and the nurse reviewer agreeing on the appropriate response. In addition to data entering the facility MDS code, the DAVE 2 code, and the reconciled code into the MDS-QC data entry software, the DAVE 2 nurse reviewer entered a “reason code” to attribute the cause of the discrepancy, per MDS item reviewed, to an established list of reasons.

As part of the DAVE 2 project, Abt Associates used two methods to assess the reliability of the MDS 2.0 quality measures. First, for each MDS data element, the discrepancy rate between the reconciled and original facility
assessments was assessed. Second, Abt reported the rate of discrepancies between each quality measure computed from facility data and its counterpart computed from reconciled data. Discrepancies in the weight loss quality measure computation occur when the facility and reconciled data generate different results with regard to (1) the triggering/nontriggering of the measure or (2) the inclusion/exclusion of a case from computation of the measure.

Fourth, in Simmons et al. (4), research staff calculations of weight loss were compared with MDS documentation of weight loss and Kappa statistics calculated.


2b.3 Testing Results (reliability statistics, assessment of adequacy in the context of norms for the test conducted):
Four studies assessed the reliability of the weight loss measure. First, in their testing of the MDS 3.0, RAND compared the results on the nursing facility quality measures using the MDS 3.0 and the MDS 2.0, both at the individual resident level and at the facility level. First, at the resident level, the rate for weight loss using the MDS 2.0 was 8.3% and using the MDS 3.0 was 8.0%, with 96.1% agreement; the Kappa was 0.74, and the correlation was 0.74. Kappa is a statistical measure of inter-rater agreement ranging from 0.0 to 1.0. A rating of 0.74 is considered “substantial agreement.” At the facility level, the MDS 2.0 rate was 8.6% and the MDS 3.0 rate was 8.3, with a correlation of 0.87.

Second, in terms of measure stability, the University of Colorado examined the percentage of facilities that had a change in ranking from one quarter to the next of at least three deciles. This indicator of stability was computed for each of the twelve pairs of adjacent quarters for which data were available (2003 Q3 through 2006 Q3). For weight loss, 35.4% of facilities had a change of three deciles or more from one quarter to the next quarter. The range of stability measures across the 12 comparisons was small (i.e., the difference between the maximum and minimum values), indicating that the level of measure stability is quite constant over time. For too much weight loss, the minimum percentage was 34.2%, and the maximum percentage was 36.1%.

Third, as part of the DAVE 2 project, Abt Associates used two methods to assess the reliability of the MDS 2.0 quality measures. For each MDS data element, the rate of discrepancies between the reconciled and original facility assessments was calculated. For too much weight loss, the two-stage review discrepancy rate was 3.6%. In addition, Abt reported the rate of discrepancies between each quality measure computed from facility data and its counterpart computed from reconciled data. Discrepancies in the too much weight loss quality measure computation occurred when the facility and reconciled data generated different results with regard to the measure or the inclusion/exclusion of a case from computation of the measure. For weight loss, the two-stage discrepancy rate was 23.9%. Nurse reviewers reportedly found some nursing facility staff were not using the instructions from the MDS manual to calculate weight loss correctly. Reported weight had accuracy problems because some staff were not aware that weights should be rounded upward to the nearest whole pound. Other observers have suggested that poor calibration of the scales may have contributed to the problem.

Fourth, in the study by Simmons, the calculations of weight loss by research staff and recorded in the MDS showed good agreement across all nursing facilities (Kappa = 0.64, P<.001). Kappa is a measure of inter-rater agreement, ranging from 0.00 to 1.00; 0.64 is considered “substantial agreement.” There was higher agreement within nursing homes with a low prevalence of weight loss than in nursing homes with a high prevalence of weight loss.
Two studies addressed the validity of the weight loss quality measure. First, the analyses conducted by the University of Colorado use national facility-level quality measure data from 2003 Q3 through 2006 Q3 came from the QIES MDS Express Reports on the CMS intranet; OSCAR data related to facility characteristics (e.g., state, resident census, number of beds, staffing) and certification survey results were downloaded from QIES Workbench. (1) A 10% random sample of all Medicare-certified nursing facilities was also downloaded from MDS assessment records. Analyses were based on complete MDS data from January 2005 through March 2006, as well as nearly complete data for April 2006 and partial data for May and June 2006.

Second, the study by Simmons et al. (2) used 16 skilled nursing facilities from Southern California: 11 nursing facilities in the lower quartile (25th percentile or lower) and five nursing homes in the upper quartile (75th percentile or higher) on the weight loss quality measure. A total of 400 long-term residents were included.

meals to a significantly greater proportion of all residents and, in particular, to participants at risk for weight loss than staff in high weight loss facilities (53% vs. 16%). In both high weight loss and low weight loss facilities, most residents needing feeding assistance did not receive it.


2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
The measure excludes admission assessments and assessments for which data on weight loss are missing. The exclusion of residents with only an admissions assessment is because the measure is a change score which cannot be calculated until the resident has been in the facility for at least a month. Admission assessments are conducted within 14 days of admission. Similarly, it is not possible to assess the weight loss experience of residents for whom data are missing. An admission assessment is when the MDS 3.0 at A0310 = 01 (type of assessment). Missing data is determined if there are no data on the MDS 3.0 for K0300 (weight loss).

2d.2 Citations for Evidence:
This is not applicable.

2d.3 Data/sample (description of data/sample and size): This is not applicable.

2d.4 Analytic Method (type analysis & rationale):
This is not applicable.

2d.5 Testing Results (e.g., frequency, variability, sensitivity analyses):
This is not applicable.

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample (description of data/sample and size): The analyses conducted by the University of Colorado use national facility-level quality measure data from 2003 Q3 through 2006 Q3 came from the QIES MDS Express Reports on the CMS intranet; OSCAR data related to facility characteristics (e.g., state, resident census, number of beds, staffing) and certification survey results were downloaded from QIES Workbench.(1) A 10% random sample of all Medicare-certified nursing facilities was also downloaded from MDS assessment records. Analyses were based on complete MDS data from January 2005 through March 2006, as well as nearly complete data for April 2006 and partial data for May and June 2006.


2e.2 Analytic Method (type of risk adjustment, analysis, & rationale):
Multivariate logistic regression

2e.3 Testing Results (risk model performance metrics):
Attempts by the University of Colorado to develop a risk adjustment methodology were unsuccessful; the risk adjustment model had an R-square of less than 1% at the facility and resident levels, meaning that the model explained virtually none of the variance in the weight loss measure.(1)


2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: The measure is not risk adjusted, although the measure partitions nursing home resident assessments into short-term or post-acute
care and long-stay assessments. Attempts by the University of Colorado to develop a risk adjustment methodology were unsuccessful; their risk adjustment model had an R-square of less than 1% at the facility and at the resident levels, meaning that the model explained virtually none of the variance in the weight loss measure. (1) Weight loss is common among people who are dying, but prospective identification of those residents is difficult and unreliable (2, 3, 4, 5).

The measure applies only to long-stay assessments. The exclusion of residents with only an admission (OBRA) assessment is because the measure is a change score which cannot be calculated on only one weight assessment.


2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use (description of data/sample and size): Brega et al. used data came from national facility-level quality measure data from 2003 Q3 through 2006 Q3 came from the QIES MDS Express Reports on the CMS intranet; OSCAR data related to facility characteristics (e.g., state, resident census, number of beds, staffing) and certification survey results were downloaded from QIES Workbench. (1) A 10% random sample of all Medicare-certified nursing facilities was also downloaded from MDS assessment records. Analyses were based on complete MDS data from January 2005 through March 2006, as well as nearly complete data for April 2006 and partial data for May and June 2006.


2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance (type of analysis & rationale):

- **Step 1:** Determine the number of long-stay nursing home residents who have lost too much weight over the last two quarters (K0300 = 2 on the MDS 3.0). Divide the number by two.
- **Step 2:** Determine the number of nursing facility assessments over the last two quarters, excluding admission (OBRA) assessments (A0310 = 01) or where data on weight loss are missing (K0300 on the MDS 3.0). Divide the number by two.
- **Step 3:** Divide the result of Step 1 by the result of Step 2.

2f.3 Provide Measure Scores from Testing or Current Use (description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance):

An analytical team at the University of Colorado Health Sciences Center examined the triggering rates for the measure at the facility level. (1) The measure scores from testing or current use (Description of scores, e.g., distribution by quartile, mean, median, standard deviation, etc.; identification of statistically significant and meaningfully differences in performance) are attached. For 13,836 facilities, the mean rate was 8.5% with a standard deviation of 5.0%. The attached Table 1: Measure Variability Across Facilities, reports the full results of the analysis.

### 2g. Comparability of Multiple Data Sources/Methods

2g.1 Data/sample (description of data/sample and size): This is not applicable.

2g.2 Analytic Method (type of analysis & rationale): This is not applicable.

2g.3 Testing Results (e.g., correlation statistics, comparison of rankings): This is not applicable.

### 2h. Disparities in Care

2h.1 If measure is stratified, provide stratified results (scores by stratified categories/cohorts): The measure is not stratified by race, ethnicity, income, or rural/urban location. As noted above, it is limited to long-stay residents.

2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:

While MDS 3.0 collects data on the resident’s race, there are no current plans to stratify the measure by race or any other characteristic.

### TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for Scientific Acceptability of Measure Properties?

Steering Committee: Overall, to what extent was the criterion, Scientific Acceptability of Measure Properties, met?

Rationale:

### 3. USABILITY

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)

### 3a. Meaningful, Understandable, and Useful Information

3a.1 Current Use: In use

3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large) (If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years):


3a.3 If used in other programs/initiatives (If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years):

CMS expects that the weight loss quality measure will be used by nursing facilities as a tool to improve quality of care by maintaining the weight of nursing facility residents. Quality measure data are also used by surveyors to identify problem areas when they inspect nursing homes.

Testing of Interpretability (Testing that demonstrates the results are understood by the potential users)
for public reporting and quality improvement)

3a.4 Data/sample (description of data/sample and size): A recent study by Castle examined whether consumers could accurately interpret the quality of care information given for all the measures reported by Nursing Home Compare. (1)

An initial sample of 8,000 family members with elders living in one of 200 randomly selected nursing facilities was used. (1) In each facility one family member (or significant other) was identified as the family contact person for each of 40 residents by nursing home staff. A total of 615 facilities were approached before the target of 200 participating facilities was achieved, giving a facility participation rate of 33%. From these 200 facilities, a total of 4,754 surveys were returned (i.e., family response rate = 59%).


3a.5 Methods (e.g., focus group, survey, QI project):
A comprehension index was developed to examine whether the information contained in Nursing Home Compare for each quality measure was understood by family members. (1)


3a.6 Results (qualitative and/or quantitative results and conclusions):
The study found that 31% of the consumers used the Internet in choosing a nursing facility; 12% recalled using Nursing Home Compare for each quality measure was understood by family members. (1)


3b/3c. Relation to other NQF-endorsed measures

3b.1 NQF # and Title of similar or related measures:
This measure is intended to replace NQF #0191 Residents who lose too much weight, because the data source has changed; the MDS 2.0, the data source for NQF #0191, is being replaced with the MDS 3.0. (for NQF staff use) Notes on similar/related endorsed or submitted measures:

3b. Harmonization
If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population):
3b.2 Are the measure specifications harmonized? If not, why?

3c. Distinctive or Additive Value
3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:
The current measure is being retired due to the change in the data source. This proposed measure will replace it.

5.1 If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for Usability?

Steering Committee: Overall, to what extent was the criterion, Usability, met?
### Rationale:
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)

### 4. FEASIBILITY

#### 4a. Data Generated as a Byproduct of Care Processes
*How are the data elements that are needed to compute measure scores generated?*

- **Data generated as byproduct of care processes during care delivery** (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition).
- Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)

#### 4b. Electronic Sources
*Are all the data elements available electronically? (elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims)*

- **No**

#### 4c. Exclusions
*Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?*

- **No**

#### 4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences
*Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.*

- As part of the DAVE 2 project, Abt Associates assessed the reliability of the MDS 2.0 quality measures. Nurse reviewers reportedly found some nursing home staff were not using the instructions from the manual to calculate weight loss correctly. Reported weight had accuracy problems because some staff were not aware that weights should be rounded upward to the nearest whole pound. Other observers have suggested that difficulties obtaining accurate weights may exist because of poor calibration of the scales.


#### 4e. Data Collection Strategy/Implementation
*Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/implementation issues:*

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Comment [KP26]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Comment [KP27]: 4b. The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

Comment [KP28]: 4c. Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

Comment [KP29]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

Comment [KP30]: 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).
The general data collection method for the MDS 2.0 is currently in use. However, the MDS 3.0 will be implemented starting in October 2010.

4e.2 Costs to implement the measure (costs of data collection, fees associated with proprietary measures): Data are collected as part of an existing, legally-mandated process with no additional cost expected.

4e.3 Evidence for costs: This is not applicable.

4e.4 Business case documentation: The proposed measure relies on data from the MDS 3.0. As there is no change in the data collection method for the MDS 3.0 as compared with its predecessor, the MDS 2.0, we do not anticipate any additional burden to nursing facilities. MDS 2.0, and soon to be MDS 3.0, data are collected as part of an existing, federally mandated process used for payment and quality monitoring purposes.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for Feasibility? 4

Steering Committee: Overall, to what extent was the criterion, Feasibility, met?

Rationale:

RECOMMENDATION

(for NQF staff use) Check if measure is untested and only eligible for time-limited endorsement.

Steering Committee: Do you recommend for endorsement?

Comments:

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 Organization
Centers for Medicare & Medicaid Services, 7500 Security Boulevard, Mail Stop S3-02-01, Baltimore, Maryland, 21244-1850

Co.2 Point of Contact
Judith, Tobin, PT, MBA, Judith.Tobin@cms.hhs.gov, 410-786-6892

Measure Developer if different from Measure Steward
Co.3 Organization
RTI International, 1440 Main Street, Suite 310, Waltham, Massachusetts, 02451-1623

Co.4 Point of Contact
Roberta, Constantine, RN, MBA, PhD, rconstantine@rti.org, 781-434-1711

Co.5 Submitter if different from Measure Steward POC
Roberta, Constantine, RN, MBA, PhD, rconstantine@rti.org, 781-434-1711-, RTI International

Co.6 Additional organizations that sponsored/participated in measure development

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members’ names and organizations.
<table>
<thead>
<tr>
<th><strong>Describe the members’ role in measure development.</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>See Table 2: Nursing Home Quality Measures Technical Expert Panel (January 2009).</td>
<td></td>
</tr>
<tr>
<td>This technical expert panel met during 2 days in January 2009 to review an environment scan of the current quality measures and make recommendations regarding their transition from MDS 2.0 to MDS 3.0.</td>
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</tbody>
</table>

**Ad.2 If adapted, provide name of original measure:** This measure was adapted from the measure of the same name derived from MDS 2.0 data.

**Ad.3-5 If adapted, provide original specifications URL or attachment**


**Measure Developer/Steward Updates and Ongoing Maintenance**

| **Ad.6 Year the measure was first released:** | 2002 |
| **Ad.7 Month and Year of most recent revision:** | 02, 2010 |
| **Ad.8 What is your frequency for review/update of this measure?** | Every 3 years. |
| **Ad.9 When is the next scheduled review/update for this measure?** | 02, 2013 |

**Ad.10 Copyright statement/disclaimers:**

**Ad.11 -13 Additional Information web page URL or attachment:** Attachment Lose Too Much Weight tables_FINAL.doc

**Date of Submission (MM/DD/YY):** 10/11/2010