NATIONAL QUALITY FORUM

Measure Submission and Evaluation Worksheet 5.0

This form contains the information submitted by measure developers/stewards, organized according to NQF's measure evaluation criteria and process. The evaluation criteria, evaluation guidance documents, and a blank online submission form are available on the submitting standards web page.

NQF #: 0526   **NQF Project:** Care Coordination Project
(for Endorsement Maintenance Review) **Original Endorsement Date:** Mar 31, 2009   **Most Recent Endorsement Date:** Mar 31, 2009

BRIEF MEASURE INFORMATION
De.1 Measure Title: Timely Initiation of Care
Co.1.1 Measure Steward: Centers for Medicare & Medicaid Services
De.2 Brief Description of Measure: Percentage of home health episodes of care in which the start or resumption of care date was either on the physician-specified date or within 2 days of the referral date or inpatient discharge date, whichever is later.
2a1.1 Numerator Statement: Number of home health episodes of care in which the start or resumption of care date was either on the physician-specified date or within 2 days of the referral date or inpatient discharge date, whichever is later.
2a1.4 Denominator Statement: All home health episodes other than those covered by generic denominator exclusions.
2a1.8 Denominator Exclusions: No measure-specific exclusions.
1.1 Measure Type: Process **2a1. 25-26 Data Source:** Electronic Clinical Data **2a1.33 Level of Analysis:** Facility **1.2-1.4 Is this measure paired with another measure?** No **De.3 If included in a composite, please identify the composite measure** (*title and NQF number if endorsed*): N/A

STAFF NOTES (*issues or questions regarding any criteria*)
Comments on Conditions for Consideration:
Is the measure untested? Yes☐ No☐ If untested, explain how it meets criteria for consideration for time-limited endorsement:
1a. Specific national health goal/priority identified by DHHS or NPP addressed by the measure (*check De.5*): 5. Similar/related endorsed or submitted measures (*check 5.1*): Other Criteria:
Staff Reviewer Name(s):

1. IMPACT, OPPORTUNITY, EVIDENCE - IMPORTANCE TO MEASURE AND REPORT
Importance to Measure and Report is a threshold criterion that must be met in order to recommend a measure for endorsement. All three subcriteria must be met to pass this criterion. See guidance on evidence. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria)
1a. High Impact: H☐ M☐ L☐ I☐

(*The measure directly addresses a specific national health goal/priority identified by DHHS or NPP, or some other high impact aspect of healthcare.*)

De.4 Subject/Topic Areas (*Check all the areas that apply*):
De.5 Cross Cutting Areas (*Check all the areas that apply*):   Care Coordination

1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, Patient/societal consequences of poor quality

1a.2 If "Other," please describe:

1a.3 Summary of Evidence of High Impact (*Provide epidemiologic or resource use data*):
1a.3. Summary of Evidence of High Impact (Provide epidemiologic or resource use data)
By definition, timely initiation of care means "percentage of home health episodes of care in which the start or resumption of care date was either on the physician-specified date or within 2 days of the referral date or inpatient discharge date, whichever is later."
Based on current evidence, 11.4% of patients do not receive their first home health care visit within the required time frame.
There is evidence from research that patients who are seen by home health care on the day of hospital discharge generally have better clinical outcomes but also were more likely to be rehospitalized (1). One of the challenges, however, is that there is not good agreement between home health care clinical records (OASIS) and hospital claims (2) when hospital claims are considered the most accurate data source (sensitivity and specificity of 54.9% and 45.0%, respectively), suggesting that home health care agencies may not have accurate data if they rely on patient and family report.

1a.4 Citations for Evidence of High Impact cited in 1a.3: (1)   Nuccio E, Richard AA. Do delays in initiation of home healthcare services following hospital discharge affect patient outcomes? Home Healthc Nurse 2010; 28(8):500-507.
(2)   Wolff JL, Meadow A, Weiss CO, Boyd CM, Leff B. Medicare home health patients´ transitions through acute and post-acute care settings. Med Care 2008; 46(11):1188-1193.

1b. Opportunity for Improvement: H☐ M☐ L☐ I☐
(*There is a demonstrated performance gap - variability or overall less than optimal performance*)

1b.1 Briefly explain the benefits (improvements in quality) envisioned by use of this measure:
Continued reporting of this measure is important for home health care agencies to use to identify the rates at which they provide timely care. While the research findings are complex, there is a trend that more timely provision of care is associated with better clinical outcomes, indicating the value of reporting of this measure.

1b.2 Summary of Data Demonstrating Performance Gap (*Variation or overall less than optimal performance across providers*):
[*For Maintenance – Descriptive statistics for performance results for this measure - distribution of scores for measured entities by quartile/decile, mean, median, SD, min, max, etc.*]

HHA Ave.	StDev	Min	10th	25th	50th	75th	90th	Max
88.3%	11.58	0	75%	85%	91%	96%	99%	1.000

1b.3 Citations for Data on Performance Gap: [*For Maintenance – Description of the data or sample for measure results reported in 1b.2 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*]
Date(s): 7/1/2010 – 6/30/2011   Data/Sample: Calculated measure as reported on Home Health Compare. Home Health Compare reports this measure for Medicare certified agencies with at least 20 quality episodes to which the measure applies that have submitted OASIS C assessments for at least 6 months of the 12 month reporting period. Of the 11,236 agencies that are listed on Home Health Compare, 9,853 agencies met the criteria for public reporting (20 episodes and 6 months of data).
Information about downloading the Home Health Compare Database is available at:
http://www.medicare.gov/HomeHealthCompare/Resources/Download-Database.aspx

1b.4 Summary of Data on Disparities by Population Group: [*For Maintenance –Descriptive statistics for performance results for this measure by population group*]
National Rate (episodes level) = 89.49%

Age	<65	65-74	75-84	85-110
% Timely-Care	88.43	90.37	89.75	89.07

Race   White   Black   Hispanic Other
% Timely-Care   90.05   86.73   89.27   89.24

Gender   Male   Female
% Timely-Care   90.09   89.14

There appear to be no disparities based on age or gender. Blacks are slightly less likely to have timely initiation of care than other racial groups, albeit their rate of timely initiation is still quite high (nearly 87%).

1b.5 Citations for Data on Disparities Cited in 1b.4: [*For Maintenance – Description of the data or sample for measure results reported in 1b.4 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*]
Data date(s): 7/1/2010 – 6/30/2011
Data/Sample: OASIS-C data from Medicare certified agencies. The measure is calculated for 99.99% of all quality episodes (only 62 episodes out of 5.78 million episodes had missing data). Outcomes for agencies with at least 20 quality episodes and 6 months of data in a 12-month period for a quality measure are publicly reported.

1c. Evidence (*Measure focus is a health outcome OR meets the criteria for quantity, quality, consistency of the body of evidence.*)
Is the measure focus a health outcome?   Yes☐ No☐   If not a health outcome, rate the body of evidence.

Quantity: H☐ M☐ L☐ I ☐   Quality: H☐ M☐ L☐ I ☐   Consistency: H☐ M☐ L☐ I ☐

Quantity	Quality	Consistency	Does the measure pass subcriterion1c?
M-H	M-H	M-H	Yes☐
L	M-H	M	Yes☐ IF additional research unlikely to change conclusion that benefits to patients outweigh harms: otherwise **No**☐
M-H	L	M-H	Yes☐ IF potential benefits to patients clearly outweigh potential harms: otherwise **No**☐
L-M-H	L-M-H	L	No ☐

Health outcome – rationale supports relationship to at least one healthcare structure, process, intervention, or service	Does the measure pass subcriterion1c? Yes☐ IF rationale supports relationship

1c.1 Structure-Process-Outcome Relationship *(Briefly state the measure focus, e.g., health outcome, intermediate clinical outcome, process, structure; then identify the appropriate links, e.g., structure-process-health outcome; process- health outcome; intermediate clinical outcome-health outcome)*:
Process - health outcome
Timely initiation of care should lead to quicker identification and resolution of patient problems that drive use of hospital and emergent/urgent care.

1c.2-3 Type of Evidence *(Check all that apply)*:
Selected individual studies (rather than entire body of evidence)

1c.4 Directness of Evidence to the Specified Measure *(State the central topic, population, and outcomes addressed in the body of evidence and identify any differences from the measure focus and measure target population)*:
The evidence is directly applicable to home health care patients. There is one study on timely initiation of care in home health care that examines whether the time frame for initiating care influences acute care hospitalization, emergent care, and selected outcome measures (improvement in bathing, transferring, ambulation /locomotion, management of oral medications, and dyspnea) (1). There were 1.9 million care episodes included in the study. The time frames studied included home health care admission/resumption of care the same day as hospital discharge, one day later, two days later or more than two days. The findings were mixed: patients who had a resumption of care (returning to home health care following a hospital stay) were more likely to have an acute care hospitalization and emergent care visit compared to those with a start of care (new to home health care). Additionally, patients with a same day time frame (seen by home health care the same day as the hospital discharge) were more likely to have an acute care hospitalization but also more likely to improve in the other outcomes (with the exception of dyspnea). In general, there was some

association between shorter delays in initiation of care and better outcomes although the findings are complex.

1c.5 Quantity of Studies in the Body of Evidence *(Total number of studies, not articles)*: One

1c.6 Quality of Body of Evidence (*Summarize the certainty or confidence in the estimates of benefits and harms to patients across studies in the body of evidence resulting from study factors. Please address: a) study design/flaws; b) directness/indirectness of the evidence to this measure (e.g., interventions, comparisons, outcomes assessed, population included in the evidence); and c) imprecision/wide confidence intervals due to few patients or events)*: Because of the size of the population examined (1.9 millions care episodes), there is confidence that the findings are relevant and apply to home health care patients. There were no intervention studies specific to home health care patients identified in the literature review/environmental scan for this measure.

1c.7 Consistency of Results across Studies *(Summarize the consistency of the magnitude and direction of the effect):* As there was one study, it is impossible to appraise consistency.

1c.8 Net Benefit *(Provide estimates of effect for benefit/outcome; identify harms addressed and estimates of effect; and net benefit - benefit over harms)*:
In general, the outcomes are positive with shorter delays or more prompt initiation of care. There are more benefits than harms in providing more timely care.

1c.9 Grading of Strength/Quality of the Body of Evidence. Has the body of evidence been graded? No

1c.10 If body of evidence graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias: N/A

1c.11 System Used for Grading the Body of Evidence: Other

1c.12 If other, identify and describe the grading scale with definitions: N/A

1c.13 Grade Assigned to the Body of Evidence: N/A

1c.14 Summary of Controversy/Contradictory Evidence: No controversies or contradictory evidence identified.

1c.15 Citations for Evidence other than Guidelines*(Guidelines addressed below)*:
Nuccio E, Richard AA. Do delays in initiation of home healthcare services following hospital discharge affect patient outcomes? Home Healthc Nurse 2010; 28(8):500-507.

1c.16 Quote verbatim, <u>the specific guideline recommendation</u> *(Including guideline # and/or page #)*:
No guidelines on this topic for home health care patients or community dwelling older people.

1c.17 Clinical Practice Guideline Citation: N/A

1c.18 National Guideline Clearinghouse or other URL: N/A

1c.19 Grading of Strength of Guideline Recommendation. Has the recommendation been graded? No

1c.20 If guideline recommendation graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:

1c.21 System Used for Grading the Strength of Guideline Recommendation: Other

1c.22 If other, identify and describe the grading scale with definitions: NA

1c.23 Grade Assigned to the Recommendation: N/A

1c.24 Rationale for Using this Guideline Over Others: N/A

Based on the NQF descriptions for rating the evidence, what was the developer's assessment of the quantity, quality, and consistency of the body of evidence?
1c.25 Quantity: Low   **1c.26** Quality: High **1c.27** Consistency: Moderate

Was the threshold criterion, *Importance to Measure and Report*, met?
(*1a & 1b must be rated moderate or high and 1c yes*)   Yes☐ No☐
Provide rationale based on specific subcriteria:

For a new measure if the Committee votes NO, then STOP.
For a measure undergoing endorsement maintenance, if the Committee votes NO because of 1b. (no opportunity for improvement), it may be considered for continued endorsement and all criteria need to be evaluated.

2. RELIABILITY & 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. (evaluation criteria)
Measure testing must demonstrate adequate reliability and validity in order to be recommended for endorsement. Testing may be conducted for data elements and/or the computed measure score. Testing information and results should be entered in the appropriate field. Supplemental materials may be referenced or attached in item 2.1. See guidance on measure testing.

S.1 Measure Web Page *(In the future, NQF will require measure stewards to provide a URL link to a web page where current detailed specifications can be obtained)*. Do you have a web page where current detailed specifications for this measure can be obtained? Yes

S.2 If yes, provide web page URL: https://www.cms.gov/HomeHealthQualityInits/Downloads/HHQITechnicalDocOfMeasures.pdf

2a. RELIABILITY. Precise Specifications and Reliability Testing: H☐ M☐ L☐ I☐

2a1. Precise Measure Specifications. (*The measure specifications precise and unambiguous.*)

2a1.1 Numerator Statement *(Brief, narrative description of the measure focus or what is being measured about the target population, e.g., cases from the target population with the target process, condition, event, or outcome)*:
Number of home health episodes of care in which the start or resumption of care date was either on the physician-specified date or within 2 days of the referral date or inpatient discharge date, whichever is later.

2a1.2 Numerator Time Window *(The time period in which the target process, condition, event, or outcome is eligible for inclusion)*:
Time Window: Current CMS systems report data on episodes that start and end within a rolling 12 month period, updated quarterly.

2a1.3 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, codes with descriptors, and/or specific data collection items/responses)*:
Number of home health patient episodes of care where at start of episode:
-        (M0100) Reason for Assessment = 1 (Start of care) AND
-        (M0030) Start of care date equals (M0102) Physician-ordered Start of Care Date, or
-        (M0030) Start of care date minus (M0104) Date of Referral is less than 3 days, or
-        (M0030) Start of care date minus (M1005) Inpatient Discharge Date is less than 3 days
PLUS
Number of home health patient episodes of care where at start of episode:
-        (M0100) Reason for Assessment = 3 (Resumption of care) AND
-        (M0032) Resumption of care date equals (M0102) Physician-ordered Resumption of Care Date, or
-        (M0032) Resumption of care date minus (M0104) Date of Referral is less than 3 days, or
-        (M0032) Resumption of care date minus (M1005) Inpatient Discharge Date is less than 3 days

2a1.4 Denominator Statement *(Brief, narrative description of the target population being measured)*:
All home health episodes other than those covered by generic denominator exclusions.

2a1.5 **Target Population Category** *(Check all the populations for which the measure is specified and tested if any)*: Adult/Elderly Care

2a1.6 **Denominator Time Window** *(The time period in which cases are eligible for inclusion)*:
Time Window: Current CMS systems report data on episodes that end within a rolling 12 month period, updated quarterly.

2a1.7 **Denominator Details** (*All information required to identify and calculate the target population/denominator such as definitions, codes with descriptors, and/or specific data collection items/responses)*:
Number of home health patient episodes of care, defined as:
A start/resumption of care assessment OASIS-C((M0100) Reason for Assessment = 1 (Start of care) or 3 (Resumption of care)) paired with a corresponding discharge/transfer assessment ((M0100) Reason for Assessment = 6 (Transfer to inpatient facility – not discharged), 7 (Transfer to inpatient facility – discharged), 8 (Death at home), or 9 (Discharge from agency)), other than those covered by generic denominator exclusions.

2a1.8 **Denominator Exclusions** *(Brief narrative description of exclusions from the target population)*:
No measure-specific exclusions.

2a1.9 **Denominator Exclusion Details** *(All information required to identify and calculate exclusions from the denominator such as definitions, codes with descriptors, and/or specific data collection items/responses)*:
Measure-Specific Exclusions: None
Generic Exclusions: Medicare-certified home health agencies are currently required to collect and submit OASIS data only for adult (aged 18 and over) non-maternity Medicare and Medicaid patients who are receiving skilled home health care. Therefore, maternity patients, patients less than 18 years of age, non-Medicare/Medicaid patients, and patients who are not receiving skilled home services are all excluded from the measure calculation. However, the OASIS items and related measures could potentially be used for other adult patients receiving services in a community setting, ideally with further testing. The publicly-reported data on CMS' Home Health Compare web site also repress cells with fewer than 20 observations, and reports for home health agencies in operation less than six months.

2a1.10 **Stratification Details/Variables** *(All information required to stratify the measure results including the stratification variables, codes with descriptors, definitions, and/or specific data collection items/responses)*:
Not stratified.

2a1.11 **Risk Adjustment Type** *(Select type. Provide specifications for risk stratification in 2a1.10 and for statistical model in 2a1.13)*: No risk adjustment or risk stratification   **2a1.12** **If "Other," please describe:**

2a1.13 **Statistical Risk Model and Variables** *(Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development should be addressed in 2b4.)*:
N/A - process measure - not risk adjusted.

2a1.14-16 **Detailed Risk Model Available at Web page URL** (or attachment). Include coefficients, equations, codes with descriptors, definitions, and/or specific data collection items/responses. Attach documents only if they are not available on a webpage and keep attached file to 5 MB or less. NQF strongly prefers you make documents available at a Web page URL. Please supply login/password if needed:

2a1.17-18. **Type of Score:** Rate/proportion

2a1.19 **Interpretation of Score** *(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)*: Better quality = Higher score

2a1.20 **Calculation Algorithm/Measure Logic** *(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; aggregating*

data; risk adjustment; etc.):
Calculation algorithm available in the Technical Specifications at:
https://www.cms.gov/HomeHealthQualityInits/Downloads/HHQITechnicalDocOfMeasures.pdf

2a1.21-23 Calculation Algorithm/Measure Logic Diagram URL or attachment:
URL
https://www.cms.gov/HomeHealthQualityInits/Downloads/HHQITechnicalDocOfMeasures.pdf

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2a1.24 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):
Not applicable, completion of OASIS-C assessments is mandated by CMS and all completed assessments are used to calculate measure

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2a1.25 Data Source *(Check all the sources for which the measure is specified and tested)*. If other, please describe:
 Electronic Clinical Data

2a1.26 Data Source/Data Collection Instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*): OASIS-C

2a1.27-29 Data Source/data Collection Instrument Reference Web Page URL or Attachment: URL
https://www.cms.gov/HomeHealthQualityInits/Downloads/HHQIOASISCAllTimePoint.pdf

2a1.30-32 Data Dictionary/Code Table Web Page URL or Attachment:
URL
https://www.cms.gov/OASIS/Downloads/oasisp200.zip

2a1.33 Level of Analysis (*Check the levels of analysis for which the measure is specified and tested)*: Facility

2a1.34-35 Care Setting *(Check all the settings for which the measure is specified and tested)*: Home Health

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2a2. Reliability Testing. (*Reliability testing was conducted with appropriate method, scope, and adequate demonstration of reliability.*)

2a2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
All agencies with at least 20 quality episodes beginning and ending between 1/1/2010 and 12/31/2010 were included in the reliability analysis, because only information for agencies with at least 20 episodes is publicly reported. Of these, 9,048 agencies met the threshold for the measure Timely Initiation of Care. For the national analysis, a beta-binomial distribution was fitted using all agencies. For the HHR (hospital referral region) analysis described below, separate beta-binomials were fitted for each of 306 HHRs, using only those agencies in the HHR. It is worth noting that even the agencies that are in HRRs with only two agencies have high reliability scores, because these small HRR agencies tend to service many episodes relative to the rest of the country.

2a2.2 Analytic Method *(Describe method of reliability testing & rationale)*:
Based on guidance received from NQF in April 2011, we conducted additional reliability analysis of this measure using the beta-binomial method described in "The Reliability of Provider Profiling: A Tutorial" by John L. Adams. The beta-binomial method was developed for provider level measures reported as rates, and it allows one to calculate an agency level "reliability score," interpreted as the percent of variance due to the difference in measure score among providers. Thus, a reliability score of .80 signifies that 80% of the variance is due to differences among providers, and 20% of the variance is due to measurement error or sampling uncertainty. A high reliability score implies that performance on a measure is unlikely to be due to measurement error or insufficient sample size, but rather due to true differences between the agency and other agencies. Each agency receives an agency specific reliability score which depends on both agency size, agency performance on the measure, and measure variance for the relevant comparison group of agencies.
In addition to calculating reliability scores at the national level, we also calculated agency reliability scores at the level of hospital

referral regions (HRRs), because the HRR grouping more adequately captures the types of comparisons health care consumers are likely to make. HRRs are region designations determined in the Dartmouth Atlas of Health Care study, and they represent regional health care markets for tertiary medical care that generally requires the service of a major referral center. They are aggregated hospital service areas (HSAs) and thus aggregated local health care markets. The HRRs are used to determine categories of sufficient size to make comparisons while still capturing the local set of HHA choices available to a beneficiary.

2a2.3 Testing Results *(Reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
Distribution of Within National Reliability Scores

Mean	0.938
Min	0.514
10th	0.823
25th	0.923
50th	0.973
75th	0.992
90th	0.997
Max	1.00

The distribution of national reliability scores (percent of variance due to the difference in measure score among providers at the national level) shows that at least 75% of agencies have a reliability score greater than 0.923, implying that their performance can likely be distinguished from other agencies (i.e., performance on this measure is unlikely to be due to measurement error or insufficient sample size, but is instead due to true differences between the agency and other agencies as it substantially exceeds within agency variation).
Distribution of Within HHR Reliability Scores

Mean	0.922
Min	0.250
10th	0.788
25th	0.899
50th	0.963
75th	0.988
90th	0.996
Max	1.00

The distribution of HRR reliability scores (percent of variance due to the difference in measure score among providers at the HRR level) for this measure also shows that at least 75% of agencies have a reliability score greater than 0.899, suggesting that between agency variation substantially exceeds within agency variation.

2b. VALIDITY. Validity, Testing, <u>including all Threats to Validity</u>:   H☐ M☐ L☐ I☐

2b1.1 Describe how the measure specifications *(measure focus, target population, and exclusions)* **are consistent with the evidence cited in support of the measure focus** *(criterion 1c)* **and identify any differences from the evidence:**
The measure focus is consistent with the evidence that initiation of home health services within 2 days of referral or hospital discharge leads to quicker identification and resolution of patient problems that drive use of hospital and emergent/urgent care. The target population and exclusions are based primarily on limitations related to data collection on the home health population.

2b2. Validity Testing. (*Validity testing was conducted with appropriate method, scope, and adequate demonstration of validity.*)

2b2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
OASIS-C quality episodes from 1/1/2010 – 9/30/2010 for all beneficiaries at Medicare Certified agencies. A 20% sample (about 500,000 episodes), chosen at random, was used to identify patient characteristics correlated to outcomes. A different 20% sample was used to validate the predictive models.

2b2.2 Analytic Method *(Describe method of validity testing and rationale; if face validity, describe systematic assessment)*:
Predictive Validity assessment:
Two outcome measures that could potentially be clinically related to this measure were selected from measures that are currently calculated as part of the Outcome-based Quality Improvement and Potentially Avoidable Event home health reports. One outcome that was expected to be related with Timely Initiation of Care was Acute Care Hospitalization. Prompt home visits following a home health care referral may identify issues that can be addressed early in the episode, potentially averting a hospitalization.   The

relationship between Timely Initiation of Care and Improvement in Bathing was also examined, as bathing is a complex functional activity, requiring transfer skills and large motor and fine motor abilities. A prompt home visit following a home health care referral would be expected to identify persons with impairment in these skills and abilities with plans for remediation or improvement through restorative nursing or rehabilitation therapy where indicated. For each of the identified outcome measures, preliminary prediction models using most the Agency Patient-Related Characteristic Report variables except race were developed. A bivariate relationship (95% confidence interval using logistic regression) and the relationship between the TLE PBQI measure and the preliminary risk adjusted target outcome measure (95% confidence interval using logistic regression) were computed.

Face validity assessment:
In December 2010, a Technical Expert Panel (TEP) was convened to review the analysis conducted on the home health measures that received NQF time limited endorsement, and asked to rate face validity.

2b2.3 Testing Results *(Statistical results, assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment)*:
Observed Outcome (Improvement in Bathing) v. Process Measure
Bivariate Relationship, 95% CI (Odds Ratio): 1.297 – 1.352
Risk Adjusted Outcome, 95% CI (Odds Ratio): 1.149 – 1.201
Expected Relationship? Yes

Observed Outcome (OASIS Acute Care Hospitalization) v. Process Measure
Bivariate Relationship, 95% CI (Odds Ratio): 1.134 - 1.176
Risk Adjusted Outcome, 95% CI (Odds Ratio): 1.006 – 1.047
Expected Relationship? No

These results demonstrated a relationship between the Timely Initiation of Care measure and Improvement in Bathing (95% confidence interval using logistic regression). They are consistent with the published literature showing improved improvements in activities of daily living (ADLs) but not with a reduction in Acute Care Hospitalization (ACH)(see section 1b). Members of the Technical Expert Panel convened to review the measures in December 2010 noted that agencies may be more likely to initiate care quickly for those patients perceived to be more acute and therefore more prone to hospitalization. They also noted that patients that have a delayed start of care and return to the hospital before home health care is initiated are not captured. These factors may explain the lack of relationship between timely care initiation and a reduction in ACH.
Most 2010 TEP members who rated this measure on face validity (7 of 10) assessed it as completely meeting the validity criteria and one additional member rated it as partially meeting the validity criteria.

POTENTIAL THREATS TO VALIDITY. (*All* *potential threats to validity were appropriately tested with adequate results.*)

2b3. Measure Exclusions. (*Exclusions were supported by the clinical evidence in 1c or appropriately tested with results demonstrating the need to specify them.*)

2b3.1 Data/Sample for analysis of exclusions *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
N/A There are no measure-specific exclusions.
Generic Exclusions: As noted in the Denominator Exclusion Details, OASIS data are only collected for particular types of patients. The exclusion of patients who are omitted from OASIS data collection (e.g., those who are non-Medicare/Medicaid, under 18, receiving maternity-related or non-skilled services only) is not based on research evidence but because the measure cannot be calculated due to data limitations.

2b3.2 Analytic Method (*Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference)*:
N/A - no measure specific exclusions

2b3.3 Results *(Provide statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses):*
N/A - no measure specific exclusions

2b4. Risk Adjustment Strategy. (*For outcome measures, adjustment for differences in case mix (severity) across measured entities was appropriately tested with adequate results.*)

2b4.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
N/A - this is a process measure

2b4.2 Analytic Method (*Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables)*:
N/A - this is a process measure

2b4.3 Testing Results *(Statistical risk model: Provide quantitative assessment of relative contribution of model risk factors; risk model performance metrics including cross-validation discrimination and calibration statistics, calibration curve and risk decile plot, and assessment of adequacy in the context of norms for risk models. Risk stratification: Provide quantitative assessment of relationship of risk factors to the outcome and differences in outcomes among the strata)*:
N/A - this is a process measure

2b4.4 If outcome or resource use measure is not risk adjusted, provide rationale and analyses to justify lack of adjustment: N/A - this is a process measure

2b5. Identification of Meaningful Differences in Performance. (*The performance measure scores were appropriately analyzed and discriminated meaningful differences in quality.*)

2b5.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
Date(s): 7/1/2010 – 6/30/2011   Data/Sample: Calculated measure as reported on Home Health Compare. Home Health compare reports this measure for Medicare certified agencies with at least 20 quality episodes to which the measure applies that have submit OASIS C assessments for at least 6 months of the 12 month reporting period. Of the 11,236 agencies that are listed on Home Health Compare, 9,853 agencies met the criteria for public reporting (20 episodes and 6 months of data). Information about downloading the Home Health Compare Database is available at:
http://www.medicare.gov/HomeHealthCompare/Resources/Download-Database.aspx

2b5.2 Analytic Method *(Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance)*:
Percentile data based on agency level data were analyzed to determine the inter-quartile range and the 90th vs. 10th percentile differences.

2b5.3 Results *(Provide measure performance results/scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:

HHA Ave.	StDev	Min	10th	25th	50th	75th	90th	Max
88.3%	11.58	0	75%	85%	91%	96%	99%	1.000

Inter-quartile range (75th – 25th) = 96 – 85 = 11%
90th – 10th percentile = 99 – 75 = 24%

There is a disparity in performance between the highest vs. lowest performing agencies.

2b6. Comparability of Multiple Data Sources/Methods. (*If specified for more than one data source, the various approaches result in comparable scores.*)

2b6.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
N/A - Single data source, OASIS C

2b6.2 Analytic Method *(Describe methods and rationale for testing comparability of scores produced by the different data sources specified in the measure)*:
N/A - Single data source, OASIS C

2b6.3 Testing Results *(Provide statistical results, e.g., correlation statistics, comparison of rankings; assessment of adequacy in the context of norms for the test conducted)*:
N/A - Single data source, OASIS C

2c. Disparities in Care: H☐ M☐ L☐ I☐ NA☐ *(If applicable, the measure specifications allow identification of disparities.)*

2c.1 If measure is stratified for disparities, provide stratified results *(Scores by stratified categories/cohorts)*: N/A - no significant disparities identified

2c.2 If disparities have been reported/identified (e.g., in 1b), but measure is not specified to detect disparities, please explain:
N/A - no significant disparities identified

2.1-2.3 Supplemental Testing Methodology Information:

Steering Committee: Overall, was the criterion, *Scientific Acceptability of Measure Properties*, met?
(*Reliability and Validity must be rated moderate or high*) Yes☐ No☐
Provide rationale based on specific subcriteria:

If the Committee votes No, STOP

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**)

C.1 Intended Purpose/ Use *(Check all the purposes and/or uses for which the measure is intended)*: Public Reporting, Quality Improvement with Benchmarking (external benchmarking to multiple organizations)

3.1 Current Use *(Check all that apply; for any that are checked, provide the specific program information in the following questions)*: Public Reporting, Quality Improvement with Benchmarking (external benchmarking to multiple organizations)

3a. Usefulness for Public Reporting: H☐ M☐ L☐ I☐
(*The measure is meaningful, understandable and useful for public reporting.*)

3a.1. Use in Public Reporting - disclosure of performance results to the public at large *(If used in a public reporting program, provide name of program(s), locations, Web page URL(s)).* If not publicly reported in a national or community program, state the reason AND plans to achieve public reporting, potential reporting programs or commitments, and timeline, e.g., within 3 years of endorsement: [*For Maintenance – If not publicly reported, describe progress made toward achieving disclosure of performance results to the public at large and expected date for public reporting; provide rationale why continued endorsement should be considered.*]
Public Reporting: Medicare Home Health Compare
http://www.medicare.gov/HomeHealthCompare/search.aspx

3a.2.Provide a rationale for why the measure performance results are meaningful, understandable, and useful for public reporting. If usefulness was demonstrated (e.g., focus group, cognitive testing), describe the data, method, and results: The CMS Center for Medicare contracted with L&M Policy Research (L&M) to help ensure that measures on the Home Health Compare (HHC) website are easy to understand and meet the needs of consumers.
L&M possesses extensive knowledge of public health care issues and is experienced in qualitative and quantitative research methods and health services management and operations, including health communications. L & M also has plain language experts that are skilled in crafting straightforward language that allows CMS to provide beneficiaries, caregivers, health care professionals, and information intermediaries a better understanding of information on choice tools, such as HHC, which allows for more informed decisions on health related issues.
L&M's work during 2009-2010 with CMS includes an environmental scan of home health public reporting initiatives and a literature

review of published and unpublished research relating to consumers' comprehension and use of home health quality measures. L&M independently convened its external advisory workgroup, comprised of representatives of consumer advocacy organizations, professional associations, quality improvement professionals, and experts in public reporting, to provide guidance on the organization, content, and usability of the home health measures website.

3.2 Use for other Accountability Functions (payment, certification, accreditation). If used in a public accountability program, provide name of program(s), locations, Web page URL(s):

3b. Usefulness for Quality Improvement: H☐ M☐ L☐ I☐
(*The measure is meaningful, understandable and useful for quality improvement.*)

3b.1. Use in QI. If used in quality improvement program, provide name of program(s), locations, Web page URL(s):
[*For Maintenance – If not used for QI, indicate the reasons and describe progress toward using performance results for improvement*].
Quality Improvement: Home Health Quality Initiatives
https://www.cms.gov/HomeHealthQualityInits/01_Overview.asp#TopOfPage

3b.2. Provide rationale for why the measure performance results are meaningful, understandable, and useful for quality improvement. If usefulness was demonstrated *(e.g., QI initiative),* describe the data, method and results:
Data contained in the Home Health OBQI reports on the proportion of care episodes in which the home health care was initiated in a timely manner provides agencies with a tool to evaluate the quality of their care and investigate how changes to processes of care impact patient outcomes related to timely care.

Overall, to what extent was the criterion, *Usability,* met? H☐ M☐ L☐ I☐
Provide rationale based on specific subcriteria:

4. FEASIBILITY

Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. **(evaluation criteria)**

4a. Data Generated as a Byproduct of Care Processes: H☐ M☐ L☐ I☐

4a.1-2 How are the data elements needed to compute measure scores generated? *(Check all that apply).*
Data used in the measure are:
generated by and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition

4b. Electronic Sources: H☐ M☐ L☐ I☐

4b.1 Are the data elements needed for the measure as specified available electronically *(Elements that are needed to compute measure scores are in defined, computer-readable fields)*: ALL data elements are in a combination of electronic sources

4b.2 If ALL data elements are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources:

4c. Susceptibility to Inaccuracies, Errors, or Unintended Consequences: H☐ M☐ L☐ I☐

4c.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measurement identified during testing and/or operational use and strategies to prevent, minimize, or detect. If audited, provide results:
Inaccuracies may result either due to confusion on the part of the clinician completing the OASIS or intentionally, to manipulate scores on quality measures. CMS has created and disseminated manuals and training materials to maximize accurate reporting of this data. Data accuracy could be audited through a review of medical records for evidence of relevant orders and implementation.

All home health agencies serving adult, non-maternity Medicare and/or Medicaid patients must submit their OASIS assessment data to their respective state OASIS repository in a standard format. The repository software passes each incoming OASIS assessment record through an extensive set of quality edits. These include internal range and logic checks that assure that assessment items include only allowable values and that they are consistent with each other. When there are significant errors in

an assessment, it is not accepted by the repository and the erroneous data are not available to be included in any published quality information. Data accuracy is also supported by the state survey process. Surveyors use OASIS to characterize each agency's caseload and to select sample patients to be interviewed. They also review and assess the accuracy of the agency's OASIS assessments. In addition, CMS payment contractors assess the accuracy of a sample of the OASIS assessments as part of their medical review processes. We are unable to provide results of these audit activities as we do not currently have access to the findings of the CMS surveyors, the data repository or CMS contractors regarding OASIS data accuracy.

4d. Data Collection Strategy/Implementation: H☐ M☐ L☐ I☐

A.2 Please check if either of the following apply (*regarding proprietary measures*):
4d.1 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 and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues (*e.g., fees for use of proprietary measures*):
OASIS data are collected by the home health agency during the care episode as part of the Conditions of Participation, and transmitted electronically to the state and CMS national OASIS repository. No issues regarding availability of data, missing data, timing or frequency of data collection, patient confidentiality, time or cost of data collection, feasibility or implementation have become apparent since OASIS-C was implemented 1/1/2010.

Overall, to what extent was the criterion, *Feasibility*, met? H☐ M☐ L☐ I☐
Provide rationale based on specific subcriteria:

OVERALL SUITABILITY FOR ENDORSEMENT

Does the measure meet all the NQF criteria for endorsement? Yes☐ No☐
Rationale:

If the Committee votes No, STOP.
If the Committee votes Yes, the final recommendation is contingent on comparison to related and competing measures.

5. COMPARISON TO RELATED AND COMPETING MEASURES

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

5.1 If there are related measures (*either same measure focus or target population)* or competing measures *(both the same measure focus and same target population*), list the NQF # and title of all related and/or competing measures:

5a. Harmonization

5a.1 If this measure has EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):
Are the measure specifications completely harmonized?

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

5b. Competing Measure(s)

5b.1 If this measure has 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)*:

CONTACT INFORMATION

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

Co.2 **Point of Contact:** Robin, Dowell, BSN, robin.dowell@cms.hhs.gov, 410-786-0060-

Co.3 **Measure Developer if different from Measure Steward:** Acumen LLC, 500 Airport Blvd, Suite 365, Burlingame, California, 94010

Co.4 **Point of Contact:** Keziah, Cook, PhD, kcook@acumenllc.com, 650-558-8882-247

Co.5 **Submitter:** Deborah, Deitz, BSN, Deborah_deitz@abtassoc.com, 617-520-3039-, Abt Associates Inc

Co.6 **Additional organizations that sponsored/participated in measure development:**
Abt Associates, Inc.
Case Western Reserve University
University of Colorado at Denver, Division of Health Care Policy and Research

Co.7 **Public Contact:** Robin, Dowell, BSN, robin.dowell@cms.hhs.gov, 410-786-0060-, Centers for Medicare & Medicaid Services

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ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**
In December 2010, a Technical Expert Panel (TEP) was convened to review the analysis conducted on the home health measures that received NQF time limited endorsement (including Timely Initiation of Care). The TEP was comprised of individuals selected by CMS for their expertise and perspectives related to the panel objectives, from a pool of individuals who were nominated in response to the September 2010 Call for TEP notice.

2010 HH TLE Measure Review TEP Members:
Mary Carr RN, MPH - Associate Director for Regulatory Affairs, National Association of Home Care and Hospice
Rick Fortinsky, PhD- Professor of Medicine, Physicians Health Services Endowed Chair in Geriatrics and Gerontology, UConn Center for Health Services Research
Barbara Gage, PhD - Deputy Director of Aging, Disability, and Long-term Care, Post-Acute Care Research Lead, Research Triangle Institute
Margherita Labson, R.N., Executive Director for the Home Care Program at The Joint Commission
Steve Landers MD, MPH - Director, Center for Home Care and Community Rehabilitation, Cleveland Clinic
Bruce Leff, MD – Associate Director, Elder House Call Program,
Barbara McCann, MSW - Chief Industry Officer, Interim Health Care
Jennifer S. Mensik PhD, RN, NEA-BC, FACHE - Director, Clinical Practices and Research, Banner Health, Arizona and Western Regions
Dana Mukamel, Professor, Department of Medicine, Division of General Internal Medicine & Primary Care, University of California, Irvine & Senior Fellow, Health Policy Research Institute, Irvine, California
Robert J. Rosati Ph.D - Vice President, Clinical Informatics, Visiting Nurse Service of New York, Center for Home Care Policy and Research
Judy Sangl Sc.D. – Health Scientist Administrator, Agency for Healthcare Research and Quality (AHRQ), Center for Patient Safety and Quality Improvement (CQuIPS), Rockville, MD

Ad.2 **If adapted, provide title of original measure, NQF # if endorsed, and measure steward. Briefly describe the reasons for adapting the original measure and any work with the original measure steward:**

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.3 **Year the measure was first released:** 2010
Ad.4 **Month and Year of most recent revision:** 10, 2008
Ad.5 **What is your frequency for review/update of this measure?** Annual
Ad.6 **When is the next scheduled review/update for this measure?** 09, 2012

Ad.7 Copyright statement:
Ad.8 Disclaimers:
Ad.9 Additional Information/Comments:
Date of Submission (*MM/DD/YY*): 01/13/2012