

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 #: 0443	NQF Project: Neurology Project
(for Endorsement Maintenance Review)	
Original Endorsement Date: Jul 31, 2008 Most Recent Endorsement Date: Jul 31, 2008 Last Updated Date: Jul 24, 2013	
BRIEF MEASURE INFORMATION	
De.1 Measure Title: Functional Communication Measure: Swallowing	
Co.1.1 Measure Steward: American Speech-Language-Hearing Association	
De.2 Brief Description of Measure: This measure describes the change in functional communication status subsequent to speech-language pathology treatment of patients who exhibit difficulty in swallowing.	
2a1.1 Numerator Statement: Number of stroke patients who make progress as defined by an increase of one or more levels on the Swallowing Functional Communication Measure (FCM).	
2a1.4 Denominator Statement: Number of stroke patients scored on the Swallowing Functional Communication Measure.	
2a1.8 Denominator Exclusions: Patients discharged from speech-language pathology services after only one treatment session. Patients who are not candidates for memory treatment as demonstrated by the highest level of functioning on admission (Level 7 on the Swallowing Functional Communication Measure).	
1.1 Measure Type: Outcome 2a1. 25-26 Data Source: Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry, Paper Medical Records 2a1.33 Level of Analysis: Clinician : Group/Practice, Facility, Integrated Delivery System	
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):	

STAFF NOTES <i>(issues or questions regarding any criteria)</i>
Comments on Conditions for Consideration:
Is the measure untested? Yes <input type="radio"/> No <input checked="" type="radio"/> 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): [Neurology](#), [Neurology : Stroke/Transient Ischemic Attack \(TIA\)](#)

De.5 Cross Cutting Areas (Check all the areas that apply): [Functional Status](#)

1a.1 Demonstrated High Impact Aspect of Healthcare: [Affects large numbers, Frequently performed procedure](#)

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

1a.3 Summary of Evidence of High Impact (Provide epidemiologic or resource use data):

In 2011, the National Outcomes Measurement System for Speech-Language Pathology received data on 15,114 episodes of care involving stroke patients who received speech-language pathology services. Of these, 7,240 (47.9%) were treated for swallowing disorders.

Additionally, a number of studies on the prevalence of dysphagia estimate the range from 25%-70% in patients who have experienced stroke (Howden, 2004; Marik & Kaplan, 2003; Mann, Hankey, & Cameron, 2000; Schlep et al., 2004; Martino et al., 2005). Martino et al. (2005) has also reported a consistently high incidence of dysphagia and pneumonia in patients with stroke.

A systematic review by Teasell et al. (2009) investigated swallowing impairments in the acute phase of stroke and reported the incidence of dysphagia ranged from 19% to 45%. Two trials (DePippo et al. 1994, Gottlieb et al. 1996) assessed swallowing upon rehabilitation to a rehabilitation unit. The incidences of dysphagia were 61% and 28%, respectively.

1a.4 Citations for Evidence of High Impact cited in 1a.3: [Source: unpublished data, National Outcomes Measurement System, ASHA \(2012\)](#)

[Teasell, R. W., Foley, N. C., et al. \(2009\). Evidence-Based Review of Stroke Rehabilitation. Retrieved from http://www.ebrsr.com](#)

[DePippo et al., \(1994\) Dysphagia therapy following stroke: A controlled trial. Neurology, 44, 1655-1660.](#)

[Gottlieb et al., \(1006\). Validation of the 50 ml3 drinking test for evaluation of poststroke dysphagia. Disabil Rehabil, 18, 529-532.](#)

[Howden, C.W. \(2004, September 6\). Management of acid-related disorders in patients with dysphagia. American Journal of Medicine, 117 \(5A\): 44S-48S](#)

[Marik, P.E., & Kaplan, D. \(2003, July\). Aspiration pneumonia and dysphagia in the elderly. Chest, 124 \(1\): 328-336](#)

[Mann, G., Hankey, G.J., & Cameron, D. \(2000\). Swallowing disorders following acute stroke: Prevalence and diagnostic accuracy. Cerebrovascular Disease, 10, 380-386.](#)

[Schlep, A.O., Cola, P.C., Gatto, A.R., et. al. \(2004, June\). Incidence of oropharyngeal dysphagia associated with stroke in a regional hospital in Sao Paulo State-Brazil. \[article in Portuguese\]. Arquivos de Neuro-Psiquiatria, 62 \(2B\): 503-506.](#)

[Martino, R., Foley, N., Bhogal, S., et. al. \(2005, December\). Dysphagia after stroke: Incidence, diagnosis, and pulmonary complications. Stroke: A Journal of Cerebral Circulation, 36 \(12\): 2756-2763.](#)

1b. Opportunity for Improvement: **H● M● L● I●**

See Guidance for Definitions of Rating Scale: H=High; M=Moderate; L=Low; I=Insufficient; NA=Not Applicable

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(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:

This measure is one of 15 similar measures used in the National Outcomes Measurement System (NOMS). Sites participating in NOMS have access to data reports comparing the outcomes seen in their patients with similar sites across the country, as identification of opportunities for improvement is one of the most important uses of the measure(s).

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.]*
Patient-level

Patient profile	% of patients making progress
Patients at Level 1 on Admission (n=15,267)	62.6
Patients at Level 2 on Admission (n=10,863)	67.9
Patients at Level 3 on Admission (n=49,290)	86.3
Patients at Level 4 on Admission (n=46,175)	79.7
Patients at Level 5 on Admission (n=33,120)	64.5
Patients at Level 6 on Admission (n=17,124)	41.0

Facility-level

Patients at Level 1 on Admission	% of patients making progress	% of facilities
<10%	0.0	
10 – 19%	0.0	
20 – 29%	0.0	
30 – 39%	0.0	
40 – 49%	3.1	
50 – 59%	12.5	
60 – 69%	30.4	
70 – 79%	25.4	
80 – 89%	18.1	
>90%	10.6	

Patients at Level 2 on Admission	% of patients making progress	% of facilities
<10%	0.0	
10 – 19%	0.0	
20 – 29%	0.0	
30 – 39%	0.0	
40 – 49%	12.0	
50 – 59%	12.9	
60 – 69%	28.7	
70 – 79%	20.0	
80 – 89%	13.8	
>90%	12.5	

Patients at Level 3 on Admission

% of patients making progress	% of facilities
<10%	0.0
10 – 19%	0.0
20 – 29%	1.3
30 – 39%	0.0
40 – 49%	5.1
50 – 59%	19.4
60 – 69%	26.5
70 – 79%	17.6
80 – 89%	15.7
>90%	14.5

Patients at Level 4 on Admission	
% of patients making progress	% of facilities
<10%	0.0
10 – 19%	0.0
20 – 29%	0.0
30 – 39%	0.0
40 – 49%	2.7
50 – 59%	19.9
60 – 69%	33.9
70 – 79%	21.6
80 – 89%	10.7
>90%	11.1

Patients at Level 5 on Admission	
% of patients making progress	% of facilities
<10%	0.0
10 – 19%	0.0
20 – 29%	1.9
30 – 39%	4.4
40 – 49%	4.7
50 – 59%	20.2
60 – 69%	24.1
70 – 79%	20.5
80 – 89%	14.5
>90%	9.4

Patients at Level 6 on Admission	
% of patients making progress	% of facilities
<10%	0.0
10 – 19%	0.0
20 – 29%	4.8
30 – 39%	1.8
40 – 49%	12.3
50 – 59%	16.1
60 – 69%	22.9
70 – 79%	18.2
80 – 89%	17.3

>90% 6.5

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]

Source: unpublished data, National Outcomes Measurement System, ASHA 2000-2011

1b.4 Summary of Data on Disparities by Population Group: [For Maintenance –Descriptive statistics for performance results for this measure by population group]

This is evidence that demonstrates disparity in care/outcomes among populations related to the measure focus: swallowing.

Population Characteristics	% of patients with increased score at discharge	Statistical Significance (between the groups)
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Gender: male	69%	p = 0.56
Gender: female	70%	

Race: American Indian/Alaska Nat.	74%	p = 0.34
Race: Asian	72%	
Race: black or African-American	70%	
Race: Hawaiian/Pacific Islander	75%	
Race: white	69%	

Insurance: Medicaid	74%	p < 0.001
Insurance: Medicare	67%	
Insurance: Veterans' Administration	74%	
Insurance: private	81%	
Insurance: self-pay	76%	

Score on Measure at Admission: 1	69%	p < 0.001
Score on Measure at Admission: 2	75%	
Score on Measure at Admission: 3	70%	
Score on Measure at Admission: 4	68%	
Score on Measure at Admission: 5	72%	
Score on Measure at Admission: 6	63%	

Diagnosis: neoplasm	66%	p < 0.001
Diagnosis: mental disorder	56%	
Diagnosis: anoxia	81%	
Diagnosis: encephalopathy	71%	
Diagnosis: CNS disease	65%	
Diagnosis: cerebrovascular disease	72%	
Diagnosis: respiratory disease	65%	
Diagnosis: hemorrhage/injury	79%	

Age at Admission: <60	80%	p<0.001
Age at Admission: 60 – 69	75%	
Age at Admission: 70 - 79	69%	
Age at Admission: 80 – 89	64%	
Age at Admission: 90+	58%	

N = 98,313

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]

Source: unpublished data, National Outcomes Measurement System, ASHA (2007)

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 subcriterion 1c?
M-H	M-H	M-H	Yes <input type="radio"/>
L	M-H	M	Yes <input type="radio"/> IF additional research unlikely to change conclusion that benefits to patients outweigh harms: otherwise No <input type="radio"/>
M-H	L	M-H	Yes <input type="radio"/> IF potential benefits to patients clearly outweigh potential harms: otherwise No <input type="radio"/>
L-M-H	L-M-H	L	No <input type="radio"/>

Health outcome – rationale supports relationship to at least one healthcare structure, process, intervention, or service

Does the measure pass subcriterion 1c?
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):

As this is strictly an outcome measure and the processes are not stipulated or even implied, the types of evidence requested in this section are not directly relevant. Supporting evidence that the target outcome measure has been influenced by one or more clinical interventions is as follows:

1c.2-3 Type of Evidence (Check all that apply):

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):

N/A

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

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): N/A

1c.7 Consistency of Results across Studies (Summarize the consistency of the magnitude and direction of the effect): N/A

1c.8 Net Benefit (*Provide estimates of effect for benefit/outcome; identify harms addressed and estimates of effect; and net benefit - benefit over harms*):
N/A

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: N/A

1c.15 Citations for Evidence other than Guidelines(*Guidelines addressed below*):
N/A

1c.16 Quote verbatim, the specific guideline recommendation (*Including guideline # and/or page #*):
N/A

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: N/A

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: High **1c.26** Quality: High **1c.27** Consistency: High

1c.28 Attach evidence submission form:

1c.29 Attach appendix for supplemental materials:

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:

<http://www.asha.org/uploadedFiles/members/research/NOMS/NQFMeasureSpecifications.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 stroke patients who make progress as defined by an increase of one or more levels on the Swallowing Functional Communication Measure (FCM).

2a1.2 Numerator Time Window (*The time period in which the target process, condition, event, or outcome is eligible for inclusion*):

The standard time period for measuring progress is admission to discharge from speech-language pathology services. Level of analysis completed is up to the user (e.g., monthly, quarterly, yearly). For example, differences in length of stay and size of facility in terms of how many patients are being treated may impact the date range.

Additionally, if treatment for a particular FCM is completed prior to discharge from the SLP caseload, the date of the final session during which that FCM was treated serves as the completion date for determining the period of time over which progress is measured.

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*):

Patients, 16 years of age or older, receiving a minimum of two treatment sessions.

Swallowing Functional Communication Measure:

LEVEL 1: Individual is not able to swallow anything safely by mouth. All nutrition and hydration is received through non-oral means (e.g., nasogastric tube, PEG).

LEVEL 2: Individual is not able to swallow safely by mouth for nutrition and hydration, but may take some consistency with consistent maximal cues in therapy only. Alternative method of feeding required.

LEVEL 3: Alternative method of feeding required as individual takes less than 50% of nutrition and hydration by mouth, and/or swallowing is safe with consistent use of moderate cues to use compensatory strategies and/or requires maximum diet restriction.

LEVEL 4: Swallowing is safe, but usually requires moderate cues to use compensatory strategies, and/or the individual has moderate diet restrictions and/or still requires tube feeding and/or oral supplements.

LEVEL 5: Swallowing is safe with minimal diet restriction and/or occasionally requires minimal cueing to use compensatory strategies. The individual may occasionally self-cue. All nutrition and hydration needs are met by mouth at mealtime.

LEVEL 6: Swallowing is safe, and the individual eats and drinks independently and may rarely require minimal cueing. The individual usually self-cues when difficulty occurs. May need to avoid specific food items (e.g., popcorn and nuts), or require additional time (due to dysphagia).

LEVEL 7: The individual's ability to eat independently is not limited by swallow function. Swallowing is safe and efficient for all consistencies. Compensatory strategies are effectively used when needed.

2a1.4 Denominator Statement (Brief, narrative description of the target population being measured):
Number of stroke patients scored on the Swallowing Functional Communication Measure.

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

2a1.6 Denominator Time Window (The time period in which cases are eligible for inclusion):
Open.

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):

LEVEL 1: Individual is not able to swallow anything safely by mouth. All nutrition and hydration is received through non-oral means (e.g., nasogastric tube, PEG).

LEVEL 2: Individual is not able to swallow safely by mouth for nutrition and hydration, but may take some consistency with consistent maximal cues in therapy only. Alternative method of feeding required.

LEVEL 3: Alternative method of feeding required as individual takes less than 50% of nutrition and hydration by mouth, and/or swallowing is safe with consistent use of moderate cues to use compensatory strategies and/or requires maximum diet restriction.

LEVEL 4: Swallowing is safe, but usually requires moderate cues to use compensatory strategies, and/or the individual has moderate diet restrictions and/or still requires tube feeding and/or oral supplements.

LEVEL 5: Swallowing is safe with minimal diet restriction and/or occasionally requires minimal cueing to use compensatory strategies. The individual may occasionally self-cue. All nutrition and hydration needs are met by mouth at mealtime.

LEVEL 6: Swallowing is safe, and the individual eats and drinks independently and may rarely require minimal cueing. The individual usually self-cues when difficulty occurs. May need to avoid specific food items (e.g., popcorn and nuts), or require additional time (due to dysphagia).

2a1.8 Denominator Exclusions (Brief narrative description of exclusions from the target population):
Patients discharged from speech-language pathology services after only one treatment session. Patients who are not candidates for memory treatment as demonstrated by the highest level of functioning on admission (Level 7 on the Swallowing Functional Communication Measure).

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):
Self-Explanatory.

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):
N/A

2a1.11 Risk Adjustment Type (Select type. Provide specifications for risk stratification in 2a1.10 and for statistical model in 2a1.13): Stratification by risk category/subgroup **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.):

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.*):
[Numerator divided by denominator.](#)

2a1.21-23 Calculation Algorithm/Measure Logic Diagram URL or attachment:

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):
[Minimum sample size = 25 patients per year](#)

2a1.25 Data Source (*Check all the sources for which the measure is specified and tested*). If other, please describe:
[Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry, Paper Medical Records](#)

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.*): [National Outcomes Measurement System for speech-language pathology](#)

2a1.27-29 Data Source/data Collection Instrument Reference Web Page URL or Attachment:
[Attachment](#)
[NOMS_Data_Collection_Forms-634714912909121468.pdf](#)

2a1.30-32 Data Dictionary/Code Table Web Page URL or Attachment:
[Attachment](#)
[Adult_NOMS_User_Guide_2007-634714913059746468.pdf](#)

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

Clinician : Group/Practice, Facility, Integrated Delivery System

2a1.34-35 Care Setting (*Check all the settings for which the measure is specified and tested*): Ambulatory Care : Clinician Office/Clinic, Ambulatory Care : Outpatient Rehabilitation, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility : Inpatient Rehabilitation Facility, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility

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*):

The data sample consisted of 1648 speech pathologists who compared ratings of 17 vignettes to a gold standard (expert panel ratings).

2a2.2 Analytic Method (*Describe method of reliability testing & rationale*):

Two datasets were used to evaluate the psychometric quality of the FCMs (i.e., swallowing, motor speech, voice, fluency, swallowing, spoken language comprehension, spoken language expression, writing, reading, attention, memory, pragmatics). Study 1 was a reliability study that compared the ratings of 17 vignettes by 1648 speech pathologists to a gold standard (expert panel ratings).

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

As was indicated above, reliability was assessed across FCMs by comparing the scores of “17 hypothetical vignettes from 1648 trained professionals to a gold standard scoring provided by a committee of professionals” (see pages 6 – 7 and Table 2 on page 7 in the 2002 psychometric report). Rates of agreement with the gold standard exceeded 80% for all 17 vignettes, and, in many cases, the rate of agreement was beyond 90%. “These results suggest that the FCM criteria can be applied to the theoretical patient with an extremely high degree of agreement with a gold standard and with other speech pathologists. This pattern would seem to rule out a high degree of random slippage in the system indicating a high degree of reliability in the instruments.”

In addition to reliability testing, each speech-language pathologist (SLP) participating in NOMS, must complete the self-study training program and take the SLP User Registration Test prior to initiating the data collection process. In the SLP User Registration Test, the clinician scores a series of case histories using the applicable FCM(s) and must receive a score of 80% or greater to be approved for participation.

2b. VALIDITY. Validity, Testing, including all Threats to Validity: 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:**

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*):

The data sample consisted of 1648 speech pathologists who compared ratings of 17 vignettes to a gold standard (expert panel ratings).

2b2.2 Analytic Method (*Describe method of validity testing and rationale; if face validity, describe systematic assessment*):

Two datasets were used to evaluate the psychometric quality of the FCMs (i.e., swallowing, motor speech, voice, fluency, swallowing, spoken language comprehension, spoken language expression, writing, reading, attention, memory, pragmatics). Validity was evaluated in study 2. Study 2 was a set of ongoing evaluations of treated clients that included baseline and follow-up speech-language pathologists' evaluations (as assessed by the FCMs), and consumers' ratings of satisfaction.

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):*

The correlational analysis found some evidence of convergent, discriminant, and construct validity of the FCMs and the consumer's satisfaction rating.

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):* Patients discharged from speech-language pathology services after only one treatment session. Patients who are not a candidate for swallowing treatment as demonstrated by the highest level of functioning at admission (Level 7 on the Swallowing Functional Communication Measure).

2b3.2 Analytic Method *(Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference):*

N/A

2b3.3 Results *(Provide statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses):*

N/A

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):*

7,240 patients from 1,494 providers

2b4.2 Analytic Method *(Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables):*

Regression analysis

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):*

Regression analysis included patient age, patient gender, patient race, patient ethnicity, co-morbidities, and time post-stroke. No regression coefficients of at least .05 were observed. Patients are stratified by severity, as measured by the patient's score on this measure at admission. The reason for this is that this is an ordinal, rather than interval, measure, meaning that the difference between a score of 2 and a score of 3 on this measure is not readily quantifiable, nor can it be assumed to be the equivalent distance as, for example, between a 4 and a 5.

2b4.4 If outcome or resource use measure is not risk adjusted, provide rationale and analyses to

justify lack of adjustment: As stated above (See 2b4.3)

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):

7,240 patients from 1,494 providers

2b5.2 Analytic Method (Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance):

Significance testing

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

Patient Level

Of the 7,240 patients referenced in 1a.3., 2,425 (33.5%) failed to make any progress on this measure.

Clinician Level (5 clinicians selected at random)

% of a clinician's patients making measurable progress, among patients scored at a level 2 at admission

Clinician ID	% patients making progress
12056427	93.6%
12059947	90.2%
14005432	74.5%
00828186	99.1%
12014057	83.0%

Facility Level (5 Facilities selected at random)

% of a facility's patients making measurable progress, among patients scored at a level 2 at admission

Facility ID	% patients making progress
05063001	90.0%
03131320	83.3%
18002001	100.0%
42131746	80.9%
40135624	85.7%

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

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

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

2c. Disparities in Care: H M L I N A (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](#)

2c.2 If disparities have been reported/identified (e.g., in 1b), but measure is not specified to detect disparities, please explain:
[N/A](#)

2.1-2.3 Supplemental Testing Methodology Information:

[Attachment](#)

[2002_Psychometric_Adult_FCMs_Validation-634727679906409951.pdf](#)

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 Actual/Planned Use (*Check all the planned uses for which the measure is intended*): [Public Reporting](#), [Quality Improvement \(Internal to the specific organization\)](#)

3.1 Current Use (*Check all that apply; for any that are checked, provide the specific program information in the following questions*): [Public Reporting](#), [Payment Program](#), [Quality Improvement \(Internal to the specific organization\)](#)

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.]*

[Medicare Physician Quality Reporting System \(https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/index.html?redirect=PQRS/\)](https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/index.html?redirect=PQRS/)

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 Functional Communication Measures \(FCMs\) began development in 1994 by ASHA's Task Force on Treatment Outcomes and Cost Effectiveness. This Task Force along with the National Center for Treatment Effectiveness in Communication Disorders \(NCTECD\) worked during 1994-1997 to develop the National Outcomes Measurement System \(NOMS\) and its performance measures, the Functional Communication Measures \(FCMs\) for the Adult Healthcare Component. These measures were field tested across the continuum of healthcare settings and then refined by committees of clinical experts. The following process was used in the development of each FCM and seven-point rating process:](#)

- ASHA solicited input via publications, communication with larger health care facilities, presentations and other public input regarding specific treatment areas on which FCMS should be based.
- Speech-language pathologists with a wide variety of clinical expertise were appointed to an advisory group that met to discuss the target measures. The goal of the advisory group was to identify those patient characteristics that would impact each of these measures, and the typical sequence through which patient's progress on their way to fully-restored functionality.
- Based on input from the advisory groups the FCMs were revised and follow-up conference calls with advisory group members were convened until consensus was reached.
- Face validity of each FCM was established through peer review with 100-150 certified speech-language pathologists once the advisory group agreed on the draft.
- After face-validity was established, the measures were field tested across the continuum of healthcare settings including acute care hospitals, acute care rehabilitation units, inpatient rehabilitation hospitals, skilled nursing facilities, and other outpatient settings.
- Analysis was performed on the feedback from field-test sites. Based on these results, the FCMs were revised, peer-reviewed and sent again for field testing. The peer-review, field testing and revision process was repeated until consensus was reached on the face validity of each measure.
- Scenarios were developed for each FCM for the purposes of reliability testing. For pre-implementation reliability testing, patient case histories at various levels of functioning were randomly selected and scored on the FCMs by 50 – 100 SLPs. A minimum of 80% reliability of scoring was needed.
- A non-random sample of members was chosen to score scenarios.
- Further revisions of the FCMs were made based on scenario scoring.
- The peer-review, field testing and revision process was repeated until a final FCM was approved.
- The FCMs were finalized and implemented into NOMS.
- Each SLP participating in NOMS, must complete the self-study training program and take the SLP User Registration Test prior to initiating the data collection process. In the SLP User Registration Test, the SLP scores a series of case histories using the applicable FCM(s) and must receive a score of 80% or greater to be approved for participation.

In addition, in regards to indirect evidence of interpretability and usefulness, NOMS participant attrition rates have averaged less than 7% per year since establishment in 1998.

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): [ASHA's National Outcomes Measurement System \(NOMS\)](#) can provide SLPs with tools for objective measurement of functional progress as mandated by the new 2011 home health rule.

Source: Skrine, R. & Brown, J. (2011, March 15). Home Care Rule Will Take Effect on April 1. The ASHA Leader.

<http://www.asha.org/Publications/leader/2011/110315/Home-Care-Rule-Will-Take-Effect-on-April-1/>

In regards to payment, the Centers for Medicare and Medicaid Services (CMS) has recommended that speech-language pathologists use ASHA's National Outcomes Measurement System (NOMS) to document a patient's functional improvement and justify services eligible for the Medicare therapy cap exceptions process. Of four CMS-approved assessment tools, NOMS is the only one that accounts for communication and swallowing. For more information, please visit the following site: <http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/MM5478.pdf>.

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].

Use in QI Measures are useful for both public reporting and for quality improvement. Organizations use facility and national data for benchmarking purposes. Anecdotally, organizations have reported that data is used to analyze patterns of care and areas of care in need of improvement.

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:

See 3b.2

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:

Automated logic checks built into electronic reporting to registry.

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

A.2 Please check if either of the following apply (regarding proprietary measures): Proprietary measure

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):

All costs borne by the American Speech-Language-Hearing Association.

Overall, to what extent was the criterion, Feasibility, met? H M L I

Provide rationale based on specific subcriteria:

OVERALL SUITABILITY FOR ENDORSEMENT
<p>Does the measure meet all the NQF criteria for endorsement? Yes <input type="radio"/> No <input checked="" type="radio"/></p> <p>Rationale:</p> <p>If the Committee votes No, STOP.</p> <p>If the Committee votes Yes, the final recommendation is contingent on comparison to related and competing measures.</p>

5. COMPARISON TO RELATED AND COMPETING MEASURES
<p>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.</p>
<p>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:</p> <p>0442 : Functional Communication Measure: Writing</p> <p>0444 : Functional Communication Measure: Spoken Language Expression</p> <p>0445 : Functional Communication Measure: Spoken Language Comprehension</p> <p>0446 : Functional Communication Measure: Reading</p> <p>0447 : Functional Communication Measure: Motor Speech</p> <p>0448 : Functional Communication Measure: Memory</p> <p>0449 : Functional Communication Measure: Attention</p>
5a. Harmonization
<p>5a.1 If this measure has EITHER the same measure focus OR the same target population as <u>NQF-endorsed measure(s)</u>: Are the measure specifications completely harmonized? Yes</p> <p>5a.2 If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden:</p>
5b. Competing Measure(s)
<p>5b.1 If this measure has both the same measure focus and the same target population as NQF-endorsed measure(s):</p> <p>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):</p> <p>The additional measures are for the same population (i.e., stroke) but a different outcome (e.g., reading) is measured using the same procedures.</p>

CONTACT INFORMATION
<p>Co.1 Measure Steward (Intellectual Property Owner): American Speech-Language-Hearing Association, 2200 Research Blvd. #245, Rockville, Maryland, 20850</p>
<p>Co.2 Point of Contact: Robert, Mullen, rmullen@asha.org, 301-296-8745-</p>
<p>Co.3 Measure Developer if different from Measure Steward: American Speech-Language-Hearing Association, 2200 Research Blvd. #245, Rockville, Maryland, 20850</p>

Co.4 Point of Contact: Robert, Mullen, rmullen@asha.org, 301-296-8745-
Co.5 Submitter: Robert, Mullen, rmullen@asha.org, 301-296-8745-, American Speech-Language-Hearing Association
Co.6 Additional organizations that sponsored/participated in measure development:
Co.7 Public Contact: Robert, Mullen, rmullen@asha.org, 301-296-8745-, American Speech-Language-Hearing Association

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.
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: Ad.4 Month and Year of most recent revision: Ad.5 What is your frequency for review/update of this measure? Ad.6 When is the next scheduled review/update for this measure?
Ad.7 Copyright statement:
Ad.8 Disclaimers:
Ad.9 Additional Information/Comments:
Date of Submission (MM/DD/YY): 05/04/2012