



Measure Information

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

Brief Measure Information

NQF #: 2864

Corresponding Measures:

De.2. Measure Title: CSTK-01: National Institutes of Health Stroke Scale (NIHSS) Score Performed for Ischemic Stroke Patients

Co.1.1. Measure Steward: The Joint Commission

De.3. Brief Description of Measure: Proportion of ischemic stroke patients age 18 years or older for whom an initial NIHSS score is performed prior to any acute recanalization therapy (i.e., intra-venous (IV) thrombolytic (t-PA) therapy, or intra-arterial (IA) thrombolytic (t-PA) therapy, or mechanical endovascular reperfusion (MER) therapy) in patients undergoing recanalization therapy and documented in the medical record, or documented within 12 hours of arrival at the hospital emergency department in patients who do not undergo recanalization therapy.

This is the first in a set of measures developed for Joint Commission Comprehensive Stroke Certification. Although it is not required that these measures are reported in conjunction with each other, The Joint Commission develops measures in sets in order to provide as comprehensive a view of quality for a particular clinical topic as possible.

1b.1. Developer Rationale: A neurological examination of all patients presenting to the hospital emergency department with warning signs and symptoms of stroke should be a top priority and performed in a timely fashion. Use of a standardized stroke scale or scoring tool ensures that the major components of the neurological examination are evaluated. Clinical practice guidelines from the American Heart Association/American Stroke Association recommend The National Institutes of Health Stroke Scale (NIHSS) as the preferred scoring tool for this purpose (Jauch, 2013). Scores obtained aid in the initial diagnosis of the patient, facilitate communication among healthcare professionals, and identify patient eligibility for various interventions and the potential for complications.

S.4. Numerator Statement: Ischemic stroke patients for whom an initial NIHSS score is performed prior to any acute recanalization therapy in patients undergoing recanalization therapy and documented in the medical record, OR documented within 12 hours of arrival at the hospital emergency department in patients who do not undergo recanalization therapy.

S.6. Denominator Statement: Ischemic stroke patients.

S.8. Denominator Exclusions: • Patients less than 18 years of age

- Patients who have a Length of Stay greater than 120 days
- Patients with Comfort Measures Only documented on the day of or day after hospital arrival
- Patients admitted for Elective Carotid Intervention
- Patients who do not undergo recanalization therapy and are discharged within 12 hours of arrival at this hospital

De.1. Measure Type: Process

S.17. Data Source: Electronic Health Records, Paper Medical Records

S.20. Level of Analysis: Facility, Other

IF Endorsement Maintenance – Original Endorsement Date: Sep 23, 2016 **Most Recent Endorsement Date:** Sep 23, 2016

IF this measure is included in a composite, NQF Composite#/title:

IF this measure is paired/grouped, NQF#/title:

De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret

results? Not applicable

1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. **Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.**

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form

[CSTK-01_Measure_Evidence_6.5.docx](#)

1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?

Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. Please use the most current version of the evidence attachment (v7.1). Please use red font to indicate updated evidence.

1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- Disparities in care across population groups.

1b.1. Briefly explain the rationale for this measure (e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)

If a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and answer the composite questions.

A neurological examination of all patients presenting to the hospital emergency department with warning signs and symptoms of stroke should be a top priority and performed in a timely fashion. Use of a standardized stroke scale or scoring tool ensures that the major components of the neurological examination are evaluated. Clinical practice guidelines from the American Heart Association/American Stroke Association recommend The National Institutes of Health Stroke Scale (NIHSS) as the preferred scoring tool for this purpose (Jauch, 2013). Scores obtained aid in the initial diagnosis of the patient, facilitate communication among healthcare professionals, and identify patient eligibility for various interventions and the potential for complications.

1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. (This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

Pilot Test Findings:

During the six-month pilot test (October 1, 2012 – March 31, 2013), sixty-six sites submitted data for 10,218 completed patient records. For this measure, 4686 cases were assigned an ICD-9-CM Principal Diagnosis Code for ischemic stroke at discharge, and 3356 of these cases were captured in the numerator population. The performance rates varied widely across sites for this measure with results ranging from a low of 0% to a high of 100%. The average rate for all sites collecting data for this measure was 72%, indicating a potential performance gap of approximately 28% if the optimal rate is 100%.

In January, 2015, The Joint Commission implemented data collection for the comprehensive stroke (CSTK) measure set to meet performance measurement requirements for its Comprehensive Stroke Certification Program. Below is the specified level of analysis for CSTK-01 NIHSS Score Performed for Ischemic Stroke Patients for the two quarters of data received to date for this measure.

1Q 2015: 3750 denominator cases; 4536 numerator cases; 38 hospitals; 0.82762 national aggregate rate; 0.84306 mean of hospital rates; 0.15344 standard deviation; 0.96591 90th percentile rate; 0.94709 75th percentile rate/upper quartile; 0.88883 50th percentile rate/median rate; 0.79592 25th percentile rate/lower quartile; and, 0.64103 10th percentile rate.

2Q 2015: 6786 denominator cases; 5740 numerator cases; 50 hospitals; 0.83112 national aggregate rate; 0.85148 mean of hospital rates; 0.17241 standard deviation; 0.95628 90th percentile rate; 0.93636 75th percentile rate/upper quartile; 0.88877 50th percentile rate/median rate; 0.81231 25th percentile rate/lower quartile; and, 0.73039 10th percentile rate.

1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.

Citation:

Fonarow, GC, Reeves MJ, Smith EE, Saver JL, Zhao X, Olson DW, Hernandez AF, Peterson ED, Schwamm LH. Characteristics, performance measures, and in-hospital outcomes of the first one million stroke and transient ischemic attack admissions in Get With The Guidelines-Stroke.

Summary:

Data analyzed: GWTG-Stroke Program 2003 to 2009; 1392 U.S. hospitals; 1,000,000 patients. Study limitations: It was not possible to account for stroke severity in these analyses because the NIHSS is inconsistently documented in the database, and so NIHSS inclusion in the multivariable models may have introduced significant selection bias. Circ Cardiovasc Qual Outcomes. 2010;3:291-302.

1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. (*This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.*) For measures that show high levels of performance, i.e., "topped out", disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

This is the initial submission of this measure.

1b.5. If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4

Karve SJ, Balkrishnan R, Mohammad YM, Levine DA. Racial/ethnic disparities in emergency department waiting time for stroke patients in the United States. J Stroke Cerebrovasc Dis. 2011 Jan-Feb;20(1):30-40.

Data analyzed: 1997-2000 and 2003-2005; national sample; 543 ischemic and hemorrhagic stroke patients. Race was significantly associated with emergency department waiting time (EDWT) > 10 min (whites, 55% [referent]; blacks, 70% [P=.03]; Hispanics, 62% [P=.53]. These differences persisted after adjustment (blacks: odds ratio [OR]=2.08, 95% confidence interval [CI] = 1.05-4.09; Hispanics: OR=1.07, 95% CI=0.52-2.22. Blacks, but not Hispanics, had significantly longer EDWT than whites. The longer EDWT in black stroke patients may lead to treatment delays and suboptimal stroke care.

Bhattacharya P, Mada F, Salowich-Palm L, Hinton S, Millis S, Watson SR, Chaturvedi S, Rajamani K. Department of neurology and Stroke Program, Wayne State University School of Medicine, Detroit, Michigan. Are racial disparities in stroke care still prevalent in certified stroke centers? J Stroke Cerebrovasc Dis. 2013. 22(4):383-388.

A retrospective chart review of 574 patients (25.1% African American) with ischemic stroke admitted to five Joint Commission certified primary stroke centers and five non-certified hospitals was conducted. Whites were more likely to arrive by emergency transport services (65.5% vs. 51.1%; P= 0.004) to be evaluated by a stroke team (19.1% vs. 7.7%; P=0.001), and to have documented National Institutes of Health Stroke Scale (NIHSS) score (40.2% vs. 29.9%; P=0.03); however, the number of white and black patients who received IV t-PA was not statistically different (2.1% in African Americans, 3.5% in Caucasians; P=0.40).

Boehme AK, Siegler JE, Mullen KT, Albright KC, Lyerly MJ, Monlezun DJ, Jones EM, Tanner R, Gonzales NR, Beasley TM, Grotta JC, Savitz SI, Martin-Schild S. Racial and gender differences in stroke severity, outcomes, and treatment in patients with acute ischemic stroke. J Stroke Cerebrovasc Dis. 2014. 23;4:e255-e261.

Data analyzed: between 2004 and 2011; 2 academic medical centers in the United states; 4925 patients. NIHSS on admission,

median (range): 7 (0-40), black men (n=953) and 6 (0-40), white men (n=1626), $P=.2748$; 7 (0-40), black women (n=989) and 8 (0-40), white women (n=1357), $P=.0144$; 4-Group comparison P value $<.0001$. Median NIHSS score on admission was significantly different across all 4 groups due to a significant difference in admission NIHSS score between black women and white women. The difference in admission NIHSS score was not significant between black men and white men. After adjusting for age and glucose on admission in the analysis of variance model, the difference in admission NIHSS score between white women and black women was no longer significant ($P=.1673$).

Newman-Toker DE, Moy E, Valente E, Coffey R, Hines AL. Missed diagnosis of stroke in the emergency department: a cross-sectional analysis of a large population-based sample. *Diagnosis*. 2014; 1(2):155-166.

Cross-sectional analysis using linked inpatient discharge and ED visit records from the 2009 Healthcare Cost and Utilization Project State Inpatient Databases and 2008-2009 State ED Databases across nine U.S. states. The overall prevalence of misdiagnosis followed by delayed hospital admission after ED discharge ranges between 1.2% (probable missed strokes) and 12.7% (potential missed strokes) of all stroke admissions. Missed ischemic strokes (n=1435) and transient ischemic attack (n=402) were linked to nonspecific presenting symptoms of headache or dizziness. Bedside methods for identifying high-risk patients offer evidence-based, cost-effective strategies to reduce misdiagnosis. Odds of probable misdiagnosis were lower among men (OR 0.75), older individuals (18-44 years [base]; 45-64:OR 0.43; 65-74:OR 0.28; > 75:OR 0.19), and Medicare (OR 0.66) or Medicaid (OR 0.70) recipients compared to privately insured patients. Odds were higher among Blacks (OR 1.18), Asian/Pacific Islanders (OR 1.29), and Hispanics (OR 1.30). Odds were higher in non-teaching hospitals (OR 1.45) and hospitals with low-volume ED visits.

Leira EC, Hess DC, Torner JC, Adams HP Jr. Rural-urban differences in acute stroke management practices. *Arch Neurol*. 2008;65(7):887-891.

A PubMed search was conducted to identify all articles from 1997-2007 that addressed acute stroke, paramedics, ambulances, emergency services, and interhospital transportation pertaining to U.S. rural, urban, or nonurban environment. Expertise and training of rural paramedics and lack of consultant neurologists were two identified problems. The researchers concluded that acute stroke management practices in rural areas are sub-optimal, which creates an unacceptable health disparity between urban stroke patients and their rural counterparts, who constitute 25% of the U.S. population. A "hub-and-spoke" system, in which a large comprehensive system provides multimodal assistance to a group of rural hospitals, is an efficient way to organize and improve support.

Gebhardt JG, Norris TE. Acute stroke care at rural hospitals in Idaho: challenges in expediting stroke care. *The Journal of Rural Health*. 2006;22(1):88-91.

Using a standardized questionnaire, a telephone survey of hospital staff at 21 rural hospitals in Idaho was performed. The survey focused on acute stroke care practices and strategies to expedite stroke care. The median number of stroke patients each year was 23.3. Approximately 67% of hospitals had implemented a clinical pathway for stroke and 80.0% had provided staff with stroke-specific training. No hospitals surveyed had a designated stroke team.

Okon NJ, Rodriguez DV, Dietrich DW, Oser CS, Blades LL, Burnett AM, Russell JA, Allen MJ, Chasson L, Helgeson SD, Gohdes D, Harwell TS. Availability of diagnostic and treatment services for acute stroke in frontier counties in Montana and Northern Wyoming. *The Journal of Rural Health*. 2006;22(3):237-241.

In 2004, hospital medical directors or their designees were mailed a survey about the availability of diagnostic technology, programs, and personnel for acute stroke care. Fifty-eight of 67 (87%) hospitals responded to the survey; 79% were located in frontier counties with an average bed size of 18 (11SD). Of the hospitals in frontier counties, 44% reported emergency medical services pre-hospital stroke identification programs, 39% had 24-hour computed tomography capability, 44% had an emergency department stroke protocol, and 61% had a recombinant tissue plasminogen activator protocol.

2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.**

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. Subject/Topic Area (check all the areas that apply):
Neurology : Stroke/Transient Ischemic Attack (TIA)

De.6. Non-Condition Specific(check all the areas that apply):
Care Coordination, Health and Functional Status : Change

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

S.1. Measure-specific Web Page (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)

https://www.jointcommission.org/specifications_manual_joint_commission_national_quality_core_measures.aspx

S.2a. If this is an eMeasure, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

[This is not an eMeasure Attachment:](#)

S.2b. Data Dictionary, Code Table, or Value Sets (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

[No data dictionary Attachment:](#)

S.2c. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

[No, this is not an instrument-based measure Attachment:](#)

S.2d. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

[Not an instrument-based measure](#)

S.3.1. For maintenance of endorsement: Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.

[Yes](#)

S.3.2. For maintenance of endorsement, please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.

[Updates were made to the data element Discharge Time.](#)

[ICD-10 codes were updated to reflect the ICD-10 code updates for Fiscal Year \(FY\) 2018.](#)

S.4. Numerator Statement (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.

IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Ischemic stroke patients for whom an initial NIHSS score is performed prior to any acute recanalization therapy in patients undergoing recanalization therapy and documented in the medical record, OR documented within 12 hours of arrival at the hospital emergency department in patients who do not undergo recanalization therapy.

S.5. Numerator Details (All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Nine data elements are used to calculate the numerator. Data elements and definitions:

- Arrival Date - The earliest documented month, day, and year, the patient arrived at the hospital.
- Arrival Time - The earliest documented time (military time) the patient arrived at the hospital.
- ICD-10-PCS Other Procedure Code Date – The month, date, and year when the other procedure(s) was performed.
- ICD-10-PCS Other Procedure Code Time - The time (military time) when the other procedure(s) was performed.
- ICD-10-PCS Principal Procedure Code Date – The month, date, and year when the principal procedure was performed.
- ICD-10-PCS Principal Procedure Code Time - The time (military time) when the principal procedure was performed.
- Initial NIHSS Score Date – The month, date, and year the NIHSS score was first performed at the hospital.
- Initial NIHSS Score Performed – Documentation of the first National Institutes of Health Stroke Scale (NIHSS) score that was done at this hospital. The NIHSS measures several aspects of brain function, including consciousness, vision, sensation, movement, speech, and language. The NIHSS serves several purposes, but its main use in clinical medicine is during the assessment of whether or not the degree of disability caused by a given stroke merits treatment with t-PA. Score documentation may range from 0 to 42. Allowable Values: Yes or No/UTD.
- Initial NIHSS Score Time - The time (military time) for which the NIHSS score was first performed at the hospital.

Patients are eligible for the numerator population when the ICD-10-PCS Principal or Other Procedure Date and ICD-10-PCS Principal or Other Procedure Time minus the Initial NIHSS Score Date and Initial NIHSS Score Time are greater than or equal to zero minutes, OR the Initial NIHSS Score Date and Initial NIHSS Score Time minus the Arrival Date and Arrival Time are greater than or equal to zero minutes and less than or equal to 720 minutes.

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

Ischemic stroke patients.

S.7. Denominator Details (All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)

IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Included Populations:

- Discharges with ICD-10-CM Principal Diagnosis Code for ischemic stroke as defined in Appendix A, Table 8.1

11 data elements are used to calculate the denominator. Data elements and definitions:

- Admission Date: The month, day, and year of admission to acute inpatient care.
- Birthdate: The month, day, and year the patient was born.
- Comfort Measures Only: Comfort Measures Only refers to medical treatment of a dying person where the natural dying process is permitted to occur while assuring maximum comfort. It includes attention to the psychological and spiritual needs of the patient and support for both the dying patient and the patient's family. Comfort Measures Only is commonly referred to as "comfort care" by the general public. It is not equivalent to a physician order to withhold emergency resuscitative measures such as Do Not Resuscitate (DNR). Allowable Values: 1 (Day 0 or 1); 2 (Day 2 or after); 3 (Timing unclear); 4 (Not documented/UTD).
- Direct Admission – Documentation that the patient was transferred from another acute care facility and taken directly to the operating room or interventional suite prior to hospital admission, or admitted directly to intensive care or other unit of the hospital. Allowable Values: Yes or No/UTD.
- Discharge Date - The month day and year the patient was discharged from acute care, left against medical advice or expired during the stay.
- Discharge Time – The documented time (military time) the patient was discharged from acute care, left against medical advice or expired during the stay.
- ED Patient - Documentation that the patient received care in a dedicated emergency department of the facility. Allowable Values: Yes or No/UTD.
- Elective Carotid Intervention - Documentation demonstrates that the current admission is solely for performance of an elective carotid intervention (e.g., elective carotid endarterectomy, angioplasty, carotid stenting). Allowable Values: Yes or No/UTD.
- ICD-10-PCS Other Procedure Codes: The International Classification of Diseases, Tenth Revision, Master Code Table (ICD-10-PCS) codes identifying all significant procedures other than the principal procedure.
- ICD-10-CM Principal Diagnosis Code: The International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) code associated with the diagnosis established after study to be chiefly responsible for occasioning the admission of the patient for this hospitalization.
- ICD-10-CM Principal Procedure Code: The International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) code that identifies the principal procedure performed during this hospitalization. The principal procedure is the procedure performed for definitive treatment rather than diagnostic or exploratory purposes, or which is necessary to take care of a complication.

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

- Patients less than 18 years of age
- Patients who have a Length of Stay greater than 120 days
- Patients with Comfort Measures Only documented on the day of or day after hospital arrival
- Patients admitted for Elective Carotid Intervention
- Patients who do not undergo recanalization therapy and are discharged within 12 hours of arrival at this hospital

S.9. Denominator Exclusion Details *(All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*

- Patients less than 18 years of age.
 - o Patient age (in years) equals Admission Date minus Birthdate.
- Patients who have a Length of Stay greater than 120 days.
 - o Length of Stay (in days) equals Discharge Date minus Admission Date.

- Patients with Comfort Measures Only documented on the day of or day after hospital arrival:
 - o Physician/APN/PA documentation of comfort measures only (hospice, comfort care, etc.) when the earliest day of documented CMO was on the day of arrival (Day 0) or Day after arrival (Day 1).
- Patients admitted for Elective Carotid Intervention:
 - o Elective Carotid Intervention includes procedures of the head and neck as defined in Appendix A, Table 8.3 Carotid Intervention Procedures when medical record documentation also states that the reason for the patient's admission to the hospital was for the performance of that procedure and not for the treatment of acute ischemic stroke.
 - o An elective admission is documented as a pre-planned or scheduled admission to the hospital.
- Patients who do not undergo recanalization therapy and are discharged within 12 hours of hospital arrival.
 - o Within 12 hours of hospital arrival equals Discharge Date and Discharge Time minus Arrival Date and Arrival Time for patients who do not have an ICD-10-PCS Principal or Other Procedure Code as defined in Appendix A, Table 8.1a Thrombolytic Agent Procedures or Table 8.1b Mechanical Endovascular Reperfusion Therapy Procedures.

S.10. Stratification Information (Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)

Not Applicable

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

No risk adjustment or risk stratification

If other:

S.12. Type of score:

Rate/proportion

If other:

S.13. Interpretation of Score (Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)

Better quality = Higher score

S.14. Calculation Algorithm/Measure Logic (Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)

Comprehensive Stroke (CSTK) Initial Patient Population Algorithm

Variable Key: Patient Age, Initial Patient Population Reject Case Flag, Length of Stay, Sub-Population 1 Flag, Sub-Population 2 Flag, and Sub-Population 3 Flag.

1. Start CSTK Initial Patient Population logic sub-routine. Process all cases that have successfully reached the point in the Transmission Data Processing Flow: Clinical which calls this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Transmission Data Processing Flow: Clinical.

2. Check ICD-10-CM Principal Diagnosis Code

a. If the ICD-10-CM Principal Diagnosis Code is not on Table 8.1 and 8.2, the patient is not in the CSTK Initial Patient Population and is not eligible to be sampled for the CSTK measure set. Set the Initial Patient Population Reject Case Flag to equal Yes. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.

b. If the ICD-10-CM Principal Diagnosis Code is on Table 8.1 or 8.2, continue processing and proceed to the Patient Age calculation.

3. Calculate Patient Age. Patient Age, in years, is equal to the Admission Date minus the Birthdate. Use the month and day portion of admission date and birthdate to yield the most accurate age.

4. Check Patient Age

#2864 CSTK-01: National Institutes of Health Stroke Scale (NIHSS) Score Performed for Ischemic Stroke Patients, Last Updated: Jun 11, 2020

- a. If the Patient Age is less than 18 years, the patient is not in the CSTK Initial Patient Population and is not eligible to be sampled for the CSTK measure set. Set the Initial Patient Population Reject Case Flag to equal Yes. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
 - b. If the Patient Age is greater than or equal to 18 years, continue processing and proceed to Length of Stay Calculation.
5. Calculate the Length of Stay. Length of Stay, in days, is equal to the Discharge Date minus the Admission Date.
6. Check Length of Stay
- a. If the Length of Stay is greater than 120 days, the patient is not in the CSTK Initial Patient Population and is not eligible to be sampled for the CSTK measure set. Set the Initial Patient Population Reject Case Flag to equal Yes. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
 - b. If the Length of Stay is less than or equal to 120 days, the patient is in the CSTK Initial Patient Population.
7. Set the Initial Patient Population Reject Case Flag to equal No. Continue processing and proceed to the ICD-10-CM Principal Diagnosis Code to determine the CSTK sub-population.
8. Initialize Sub-Population 1 Flag, Sub-Population 2 Flag and Sub-Population 3 Flag to No.
9. Check ICD-10-CM Principal Diagnosis Code
- a. If the ICD-10-CM Principal Diagnosis Code is on 8.2, the patient is in the CSTK Sub-Population 3 and is eligible to be sampled for the CSTK Sub-Population 3. Set Sub-Population 3 Flag to Yes. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
 - b. If the ICD-10-CM Principal Diagnosis Code is on 8.1, continue processing and proceed to ICD-10-PCS Principal Or Other Procedure Codes.
 - i. If at least one ICD-10-PCS Principal or Other Procedure Codes is on Table 8.1a or 8.1b, the patient is in the CSTK Sub-Population 2 and is eligible to be sampled for the CSTK Sub-Population 2. Set Sub-Population 2 Flag to Yes. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
 - ii. If none of the ICD-10-PCS Principal Or Other Procedure Codes are on Table 8.1a or 8.1b, the patient is in the CSTK Sub-Population 1 and is eligible to be sampled for the CSTK Sub-Population 1. Set Sub-Population 1 Flag to Yes. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.

CSTK-01: National Institutes of Health Stroke Scale (NIHSS) Score Performed for Ischemic Stroke Patients

Numerator: Ischemic stroke patients for whom a NIHSS score is performed prior to any acute recanalization therapy in patients undergoing recanalization therapy and documented in the medical record, OR documented within 12 hours of hospital arrival for patients who do not undergo recanalization therapy.

Denominator: Ischemic stroke patients who arrive at this hospital emergency department (ED)

Variable Key: Timing I, Timing II, Timing III

1. Start processing. Run cases that are included in the Comprehensive Stroke (CSTK) Initial Patient Population and pass the edits defined in the Transmission Data Processing Flow: Clinical through this measure.
2. Check ICD-10-CM Principal Diagnosis Code
 - a. If ICD-10-CM Principal Diagnosis Code is not on Table 8.1, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Stop processing.
 - b. If ICD-10-CM Principal Diagnosis Code is on Table 8.1, continue processing and proceed to ED Patient.
3. Check ED patient
 - a. If ED Patient is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If ED Patient equals No, continue processing and proceed to step 4 to check Direct Admission.
 - c. If ED Patient equals Yes, continue processing and proceed to step 5 to check Comfort Measures Only.

4. Check Direct Admission

- a. If Direct Admission is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If Direct Admission equals No, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Stop processing.
- c. If Direct Admission equals Yes, continue processing and proceed to Comfort Measures Only.

5. Check Comfort Measures Only

- a. If Comfort Measures Only is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If Comfort Measures Only equals 1, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Stop processing.
- c. If Comfort Measures Only equals 2, 3, or 4, continue processing and proceed to Elective Carotid Intervention.

6. Check Elective Carotid Intervention

- a. If Elective Carotid Intervention is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If Elective Carotid Intervention equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Stop processing.
- c. If Elective Carotid Intervention equals No, continue processing and proceed to Initial NIHSS Score Performed.

7. Check Initial NIHSS Score Performed

- a. If Initial NIHSS Score Performed is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If Initial NIHSS Score Performed equals No, the case will proceed to a Measure Category Assignment of D and will be in the measure population. Stop processing.
- c. If Initial NIHSS Score Performed equals Yes, continue processing and proceed to Initial NIHSS Score Date.

8. Check Initial NIHSS Score Date

- a. If Initial NIHSS Score Date is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If Initial NIHSS Score Date equals Unable to Determine (UTD), the case will proceed to a Measure Category Assignment of D and will be in the measure population. Stop processing.
- c. If Initial NIHSS Score Date equals a Non-Unable to be Determined (non-UTD), continue processing and proceed to Initial NIHSS Score Time.

9. Check Initial NIHSS Score Time

- a. If Initial NIHSS Score Time is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If Initial NIHSS Score Time equals Unable to Determine (UTD), the case will proceed to a Measure Category Assignment of D and will be in the measure population. Stop processing.
- c. If Initial NIHSS Score Time equals a Non-Unable to be Determined (non-UTD), continue processing and proceed to ICD-10-PCS Principal or Other Procedure Codes.

10. Check ICD-10-PCS Principal or Other Procedure Codes

- a. If all missing or none ICD-10-PCS Principal or Other Procedure Codes is on Table 8.1a or 8.1b, continue processing and proceed to step 14 and check Discharge Date.
- b. If any ICD-10-PCS Principal or Other Procedure Codes is on Table 8.1a or 8.1b, continue processing and proceed to ICD-10-PCS Principal or Other Procedure Code Date.

11. Check ICD-10-PCS Principal or Other Procedure Code Date

- a. If ICD-10-PCS Principal or Other Procedure Code Date is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If ICD-10-PCS Principal or Other Procedure Code Date equals Unable to Determine (UTD), the case will proceed to a Measure Category Assignment of D and will be in the measure population. Stop processing.

c. If ICD-10-PCS Principal or Other Procedure Code Date equals a Non-Unable to be Determined (non-UTD), continue processing and proceed to ICD-10-PCS Principal or Other Procedure Code Time.

12. Check ICD-10-PCS Principal or Other Procedure Code Time

- a. If ICD-10-PCS Principal or Other Procedure Code Time is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If ICD-10-PCS Principal or Other Procedure Code Time equals Unable to Determine (UTD), the case will proceed to a Measure Category Assignment of D and will be in the measure population. Stop processing.
- c. If ICD-10-PCS Principal or Other Procedure Code Time equals a Non-Unable to be Determined (non-UTD), continue processing and proceed to the Timing I calculation.

13. Calculate Timing I. Timing I, in minutes, is equal to ICD-10-PCS Principal or Other Procedure Code Date and ICD-10-PCS Principal or Other Procedure Code Time minus the Initial NIHSS Score Date and Initial NIHSS Score Time.

- a. If the time in minutes is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If the time in minutes is less than zero, the case will proceed to a Measure Category Assignment of D and will be in the measure population. Stop processing.
- c. If the time in minutes is greater than or equal to zero, the case will proceed to a Measure Category Assignment of E and will be in the numerator population. Stop processing.

14. Check Discharge Date

- a. If Discharge Date is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If Discharge Date equals Unable to Determine (UTD), the case will proceed to a Measure Category Assignment of D and will be in the measure population. Stop processing.
- c. If Discharge Date equals a Non-Unable to be Determined (non-UTD), continue processing and proceed to Discharge Time.

15. Check Discharge Time

- a. If Discharge Time is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If Discharge Time equals Unable to Determine (UTD), the case will proceed to a Measure Category Assignment of D and will be in the measure population. Stop processing.
- c. If Discharge Time equals a Non-Unable to be Determined (non-UTD), continue processing and proceed to Arrival Date.

16. Check Arrival Date

- a. If Arrival Date is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If Arrival Date equals Unable to Determine (UTD), the case will proceed to a Measure Category Assignment of D and will be in the measure population. Stop processing.
- c. If Arrival Date equals a Non-Unable to be Determined (non-UTD), continue processing and proceed to Arrival Time.

17. Check Arrival Time

- a. If Arrival Time is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If Arrival Time equals Unable to Determine (UTD), the case will proceed to a Measure Category Assignment of D and will be in the measure population. Stop processing.
- c. If Arrival Time equals a Non-Unable to be Determined (non-UTD), continue processing and proceed to the Timing II calculation.

18. Calculate Timing II. Timing II, in minutes, is equal to the Discharge Date and the Discharge Time minus the Arrival Date and Arrival Time.

- a. If the time in minutes is less than zero, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If the time in minutes is greater than or equal to zero and less than 720, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Stop processing.
- c. If the time in minutes is greater than or equal to 720, continue processing and proceed to the Timing III calculation.

19. Calculate Timing III. Timing III, in minutes, is equal to the Initial NIHSS Score Date and the Initial NIHSS Score Time minus the Arrival Date and Arrival Time.

- a. If the time in minutes less than zero, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If the time in minutes is greater than 720, the case will proceed to a Measure Category Assignment of D and will be in the measure population. Stop processing.
- c. If the time in minutes is greater than or equal to zero and less than or equal to 720, the case will proceed to a Measure Category Assignment of E and will be in the numerator population. Stop processing.

S.15. Sampling (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)

IF an instrument-based performance measure (e.g., PRO-PM), identify whether (and how) proxy responses are allowed.

Hospitals that choose to sample have the option of sampling quarterly or sampling monthly. A hospital may choose to use a larger sample size than is required. Hospitals whose Initial Patient Population size is less than the minimum number of cases per quarter for the measure set cannot sample. Regardless of the option used, hospital samples must be monitored to ensure that sampling procedures consistently produce statistically valid and useful data. Due to exclusions, hospitals selecting sample cases MUST submit AT LEAST the minimum required sample size.

Two sub-populations make-up the Initial Patient Population for the CSTK-01 measure. The CSTK 1-Ischemic Stroke Without Procedure sub-population sampling group includes patients admitted to the hospital for inpatient acute care if they have: an ICD-10-CM Principal Diagnosis Code as defined in Appendix A, Table 8.1, a Patient Age (Admission Date – Birthdate) > 18 years and a Length of Stay (Discharge Date - Admission Date) = 120 days. The CSTK 2-Ischemic Stroke with IV t-PA, IA t-PA, or MER sub-population sampling group includes patients admitted to the hospital for inpatient acute care if they have: ICD-10-CM Principal Diagnosis Code as defined in Appendix A, Table 8.1 AND ICD-10-PCS Principal or Other Procedure Codes as defined in Appendix A, Table 8.1a OR Table 8.1b, a Patient Age (Admission Date – Birthdate) > 18 years and a Length of Stay (Discharge Date - Admission Date) less than or equal to 120 days. Both sampling groups must be sampled to meet the minimum sampling requirement for CSTK-01.

Quarterly Sampling

The Quarterly Sample Size “n”, i.e., Minimum Required Sample Size, is based on the Initial Patient Population Size “N” for both CSTK sub-population 1 and sub-population 2. Hospitals performing quarterly sampling for the CSTK-01 measure must ensure that its Initial Patient Population and sample size meet the following conditions for each sub-population sampling group:

Example:

o A hospital’s ischemic stroke patient population size is 200 patients during the second quarter. Fifty (50) ischemic stroke patients had a procedure for thrombolysis or mechanical clot removal. The required quarterly sample size for the CSTK-01 measure is a minimum of 84 cases (42 cases from Table 1 plus 42 cases from Table 2 equals 84).

Quarterly Sample Size Based on CSTK Sub-population 1 for Ischemic Stroke (Table 1):

Sub-Population 1: If “N” > 420, then ‘n’ 84

Minimum Required Sample Size: 84 records

Sub-Population 1: If “N” 211-419, then ‘n’ 20%

Minimum Required Sample Size: 20% of Sub-Population records

Sub-Population 1: If “N” 43-210, then ‘n’ 42

Minimum Required Sample Size: 42 records

Sub-Population 1: If “N” < 42, then ‘n’ 100%

Minimum Required Sample Size: No sampling; 100% Sub-Population records required

Quarterly Sample Size Based on CSTK Sub-population 2 for Ischemic Stroke with IV t-PA, IA t-PA, or MER (Table 2):

Sub-Population 2: If “N” > 420, then ‘n’ 84

Minimum Required Sample Size: 84 records

Sub-Population 2: If “N” 211-419, then ‘n’ 20%

Minimum Required Sample Size: 20% of Sub-Population records

Sub-Population 2: If “N” 43-210, then ‘n’ 42

Minimum Required Sample Size: 42 records

Sub-Population 2: If “N” < 42, then ‘n’ 100%

Minimum Required Sample Size: No sampling; 100% Sub-Population records required

Monthly Sampling

The Monthly Sample Size “n”, i.e., Minimum Required Sample Size, is based on the Initial Patient Population Size “N” for both CSTK sub-population 1 and sub-population 2. Hospitals performing monthly sampling for the CSTK-01 measure must ensure that its Initial Patient Population and sample size meet the following conditions for each sub-population sampling group:

Example:

o A hospital’s ischemic stroke patient population size is 200 patients during March. Twenty (20) ischemic stroke patients had a procedure for thrombolysis or mechanical clot removal. The required sample size for the CSTK-01 measure is a minimum of 42 cases for the month (28 cases from Table 4 plus 14 cases from Table 5 equals 42).

Monthly Sample Size Based on CSTK Sub-population 1 for Ischemic Stroke (Table 4):

Sub-Population 1: If “N” > 140, then ‘n’ 28

Minimum Required Sample Size: 28 records

Sub-Population 1: If “N” 71-140, then ‘n’ 20%

Minimum Required Sample Size: 20% of Sub-Population records

Sub-Population 1: If “N” 15-70, then ‘n’ 14

Minimum Required Sample Size: 14 records

Sub-Population 1: If “N” < 14, then ‘n’ 100%

Minimum Required Sample Size: No sampling; 100% Sub-Population records required

Monthly Sample Size Based on CSTK Sub-population 2 for Ischemic Stroke with IV t-PA, IA t-PA, or MER (Table 5):

Sub-Population 2: If “N” > 140, then ‘n’ 28

Minimum Required Sample Size: 28 records

Sub-Population 2: If “N” 71-140, then ‘n’ 20%

Minimum Required Sample Size: 20% of Sub-Population records

Sub-Population 2: If “N” 15-70, then ‘n’ 14

Minimum Required Sample Size: 14 records

Sub-Population 2: If “N” < 14, then ‘n’ 100%

Minimum Required Sample Size: No sampling; 100% Sub-Population records required

S.16. Survey/Patient-reported data (If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)

Specify calculation of response rates to be reported with performance measure results.

Not Applicable

S.17. Data Source (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.18.

Electronic Health Records, Paper Medical Records

S.18. Data Source or Collection Instrument (Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data are collected.)

IF instrument-based, identify the specific instrument(s) and standard methods, modes, and languages of administration.

A web-based data collection tool was developed by The Joint Commission for the pilot test process. Currently, hospitals have the flexibility of creating their own tool modeled after the pilot tool or they may develop their own data collection tools using the data element dictionary and allowable values specified in the implementation guide. Hospitals also have the option of selecting a vendor-developed data collection tool which has been verified by The Joint Commission.

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

No data collection instrument provided

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

Facility, Other

S.21. Care Setting (Check ONLY the settings for which the measure is SPECIFIED AND TESTED)

Inpatient/Hospital

If other:

S.22. COMPOSITE Performance Measure - Additional Specifications (Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)

Not Applicable

2. Validity – See attached Measure Testing Submission Form

[2864_MeasureTesting_MSf6.5.docx](#)

2.1 For maintenance of endorsement

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

2.2 For maintenance of endorsement

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

2.3 For maintenance of endorsement

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

3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

3a.1. Data Elements Generated as Byproduct of Care Processes.

Generated or collected by and used by healthcare personnel during the provision of care (e.g., blood pressure, lab value, diagnosis, depression score), Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims), Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry), Other

If other: Data element allowable values are selected, either manually or electronically, from clinical and coded data available in medical record documentation. All medical record documentation is used in the abstraction process. Vendor data collection tools are used to import data elements needed for measure rate calculation.

3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

3b.1. To what extent are the specified data elements available electronically in defined fields (i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields) Update this field for **maintenance of endorsement**.

Some data elements are in defined fields in electronic sources

3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources. For **maintenance of endorsement**, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

The Joint Commission recognizes that not all hospitals currently have the capacity to abstract this measure electronically, so offers a chart-abstracted version which allows for data capture from unstructured data fields. The Joint Commission plans to retool the measure for capture from electronic sources within the next several years.

3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.

Attachment:

3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

3c.1. Required for maintenance of endorsement. Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.

IF instrument-based, consider implications for both individuals providing data (patients, service recipients, respondents) and those whose performance is being measured.

This measure was collected during a 6 month pilot process for Joint Commission Comprehensive Stroke Certification. It was learned via discussions and written pilot evaluation materials that there were some issues related to data abstraction of the following data element:

- Initial NIHSS Score Performed
- o Clarification was requested regarding the use of modified NIHSS scores and scores estimated from documented components in the absence of a total documented NIHSS score.

These issues related to data abstraction have been easily resolved through clarification of guidelines for abstraction.

Based on feedback from the pilot sites, the measure algorithm was modified to add the following data elements:

- Direct Admission
- o Addition of this data element was requested to capture in the denominator population those stroke patients transferred from another acute care facility and taken directly to the interventional suite or operating room, bypassing the emergency department prior to hospital admission.

- Comfort Measures Only
- o Addition of this data element was requested to exclude stroke patients who are Comfort Measures Only on the day of or day after hospital arrival.

The measure algorithm was further modified to remove the following data element:

- Warning Signs of Symptoms of Stroke
- o Removal of this data element was requested because it was redundant with the principal diagnosis of ischemic stroke, consistently abstracted “Yes”, and increased abstraction burden.

Other information impacting the feasibility and implementation of the measure was also obtained from the pilot process and is summarized as follows:

Staff Training and Education:

To prepare for and support continuous data collection throughout the pilot test, a total of ten hours was spent on staff training and education. Training was accomplished via two 2-hour webinars and monthly conference calls with pilot site participants.

Case Identification/Medical Record Retrieval:

Case identification was not a problem; cases were identified by the ICD-9-CM principal diagnosis codes for ischemic stroke. Record retrieval time varied depending on the type of medical record. On average, 10 minutes were spent for record retrieval with more time spent to retrieve a paper record than electronic health record.

Case Selection:

For the pilot test of the measure, sampling was allowed. The sampling methodology was modified post-pilot to balance the inclusion of ischemic stroke patients who do not undergo recanalization therapy and those ischemic stroke patients who receive IV or IA thrombolytic therapy or mechanical reperfusion therapy in the denominator population.

Data Abstraction:

Medical record review to abstract all data elements required for the measure set averaged 45 minutes per record. Time spent on record review varied with case complexity and the number of procedures and interventions performed, as well as, the number of data elements collected for the measure. In general, ischemic stroke cases required more time for review than did hemorrhagic stroke cases.

Data abstraction was primarily done by nurses, (e.g., Registered Nurse(s) with a quality improvement background, Stroke Coordinators, and Advanced Practice Nurses). Some pilot sites reported that the abstractor reviewed the record with the medical director or neurologist at least initially to identify documentation of measure specific data elements. Data specialists or administrative staff were utilized to enter abstracted data into the on-line data collection tool.

Cost of Data Abstraction:

Using 2012 national wage averages, it is estimated that the cost per case to abstract for this measure was approximately \$3.50

3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified (e.g., value/code set, risk model, programming code, algorithm).

This measure is one in a set of measures implemented with discharges effective January 1, 2015 for Joint Commission Comprehensive Stroke Certification. There are no fees or licensing requirements to use the Joint Commission performance measures, all of which are in the public domain.

4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

4.1. Current and Planned Use

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)
Public Reporting	<p>Public Health/Disease Surveillance Paul Coverdell National Acute Stroke Registry http://www.cdc.gov/dhbsp/programs/stroke_registry.htm</p> <p>Quality Improvement (Internal to the specific organization) Disease-Specific Care Certification for Comprehensive Stroke Centers http://www.jointcommission.org/certification/dsc_home.aspx</p>

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

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting
- Name of program and sponsor: Disease-Specific Care Certification for Comprehensive Stroke Centers; The Joint Commission
- Purpose: A certification program that recognizes the specific capabilities of hospitals that treat the most complex stroke cases.
- Geographic area and number and percentage of accountable entities and patients included: Nationwide; 95 hospitals
- Name of program and sponsor: Paul Coverdell National Acute Stroke Registry; Centers for Disease Control and Prevention
- Purpose: A national registry that measures, tracks, and improves the quality of care and access to care for stroke patients from onset of stroke symptoms through rehabilitation and recovery; decreases rate of premature death and disability from stroke; eliminates disparities in care; supports the comprehensive stroke system across the continuum of care; improves access to rehabilitation and opportunities for recovery after stroke; and, increases the workforce capacity and scientific knowledge of stroke care within stroke systems of care
- Geographic area and number and percentage of accountable entities and patients included: 11 states; 403 hospitals (CDC, 2014)

4a1.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons? (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)

Not Applicable

4a1.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement. (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)

Not Applicable

4a2.1.1. Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.

How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

Not applicable. Not seeking endorsement + designation at this time.

4a2.1.2. Describe the process(es) involved, including when/how often results were provided, what data were provided, what

educational/explanatory efforts were made, etc.

Not applicable. Not seeking endorsement + designation at this time.

4a2.2.1. Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.

Describe how feedback was obtained.

Not applicable. Not seeking endorsement + designation at this time.

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

Not applicable. Not seeking endorsement + designation at this time.

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

Not applicable. Not seeking endorsement + designation at this time.

4a2.3. Describe how the feedback described in 4a2.2.1 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.

Not applicable. Not seeking endorsement + designation at this time.

Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b1. Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)

If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

Not Applicable

4b2. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4b2.1. Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.

There were no unintended negative consequences reported or detected during testing or since implementation of the measure specifications.

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

5. Comparison to Related or Competing Measures

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

5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

No

<p>5.1a. List of related or competing measures (selected from NQF-endorsed measures)</p>
<p>5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.</p>
<p>5a. Harmonization of Related Measures The measure specifications are harmonized with related measures; OR The differences in specifications are justified</p> <p>5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s): Are the measure specifications harmonized to the extent possible?</p> <p>5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden. Not applicable</p>
<p>5b. Competing Measures The measure is superior to competing measures (e.g., is a more valid or efficient way to measure); OR Multiple measures are justified.</p> <p>5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s): Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.) Not applicable</p>

<p>Appendix</p>
<p>A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed. Available at measure-specific web page URL identified in S.1 Attachment:</p>
<p>Contact Information</p>
<p>Co.1 Measure Steward (Intellectual Property Owner): The Joint Commission Co.2 Point of Contact: JohnMarc, Alban, jalban@jointcommission.org, 630-792-5304- Co.3 Measure Developer if different from Measure Steward: The Joint Commission Co.4 Point of Contact: Ann, Watt, awatt@jointcommission.org, 630-792-5944-</p>
<p>Additional Information</p>
<p>Ad.1 Workgroup/Expert Panel involved in measure development Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development. The role of the Technical Advisory Panel was to provide advisory oversight in the literature review, measure construct and content, review of testing results, and endorsement of draft and finalized measures. Additionally they may be called upon in the future to provide measure content oversight and updates.</p>

Technical Advisory Panel

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Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: 2015

Ad.3 Month and Year of most recent revision: 08, 2015

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

Ad.5 When is the next scheduled review/update for this measure? 02, 2016

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Ad.8 Additional Information/Comments: