



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 #: 0507

Corresponding Measures:

De.2. Measure Title: Diagnostic Imaging: Stenosis Measurement in Carotid Imaging Reports

Co.1.1. Measure Steward: American College of Radiology (ACR)

De.3. Brief Description of Measure: Percentage of final reports for carotid imaging studies (neck magnetic resonance angiography (MRA), neck computerized tomographic angiography (CTA), neck duplex ultrasound, carotid angiogram) performed that include direct or indirect reference to measurements of distal internal carotid diameter as the denominator for stenosis measurement

1b.1. Developer Rationale: There is wide variation in the use of methods for stenosis calculation, which may also lead to variation in the appropriateness of carotid intervention. Since the degree of stenosis is an important element of the decision for carotid intervention, characterization of the degree of stenosis needs to be standardized. Requiring that stenosis calculation be based on a denominator of distal internal carotid diameter or, in the case of duplex ultrasound, velocity measurements that have been correlated to angiographic stenosis calculation based on distal internal carotid diameter, makes the measure applicable to both imaging and duplex studies.

S.4. Numerator Statement: Final reports for carotid imaging studies that include direct or indirect reference to measurements of distal internal carotid diameter as the denominator for stenosis measurement

S.6. Denominator Statement: All final reports for carotid imaging studies (neck MRA, neck CTA, neck duplex ultrasound, carotid angiogram) performed

S.8. Denominator Exclusions: No Denominator Exclusions or Denominator Exceptions

De.1. Measure Type: Process

S.17. Data Source: Claims, Registry Data

S.20. Level of Analysis: Clinician : Individual

IF Endorsement Maintenance – Original Endorsement Date: Oct 28, 2008 **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? This measure is not included in a composite.

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

[2021_NQF_Evidence_Attachment_195_8.docx](#), [0507_Evidence_MSF5.0_Data_2012_Final_Submission.doc](#)

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.

No

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.

There is wide variation in the use of methods for stenosis calculation, which may also lead to variation in the appropriateness of carotid intervention. Since the degree of stenosis is an important element of the decision for carotid intervention, characterization of the degree of stenosis needs to be standardized. Requiring that stenosis calculation be based on a denominator of distal internal carotid diameter or, in the case of duplex ultrasound, velocity measurements that have been correlated to angiographic stenosis calculation based on distal internal carotid diameter, makes the measure applicable to both imaging and duplex studies.

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.*

-2012: Performance Rate: 16.85, # of patients included: 726555, # of physicians: 3186920, Min: 0.54, Max: 100, Interquartile range: 50

-2013: Performance Rate: 24.91, # of patients included: 769239, # of physicians: 54732, Min: 0.63, Max: 100, Interquartile range: 31.25

-2014: Performance Rate: 81.57, # of patients included: 772456, # of physicians: 18141, Min: 0.69, Max: 100, Interquartile range: 19.35

-2015: Performance Rate: 86.32, # of patients included: 982806, # of physicians: 15095, Min: 100, Max: 100, Interquartile range: 0, Std Deviation: 0

-2016: Performance Rate: 92.35, # of patients included: 1387545, # of physicians: 17722, Min: 2.11, Max: 100, Interquartile range: 7.83, Std Deviation: 16.46

-2017: Performance Rate: 95.32, # of patients included: 1627953, # of physicians: 12713, Min: 1.27, Max: 100, Interquartile range: 4, Std Deviation: 14.98

-2018: Performance Rate: 97.78, # of patients included: 2464418, # of physicians: 10231, Min: 0.06, Max: 100, Interquartile range: 1.11, Std Deviation: 11.81

Scores by decile: Decile 3 (0.38 - 99.27), Decile 4 (99.28 - 99.83), Decile 5 (99.84 - 99.99), Decile 10 (100).

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.

There is sufficient performance data.

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.*

CMS does not provide patient information to measure stewards when providing performance data, such as race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability, for disparities analysis. The ACR has provided articles on disparities within carotid artery imaging below.

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

There is limited research on disparities within carotid imaging. It is important to evaluate imaging use disparity to understand the reasons for widely reported disparities in CEA and Stenting. The ACR has identified two articles have that highlighted some disparities within carotid imaging in minority populations.

Cheng et al. (2012) conducted a retrospective cohort study on veterans hospitalized with ischemic stroke at 127 Veteran Administration (VA) hospitals in 2007. The sample consisted of 1,534 white patients and 628 black patients. Nearly 40% of all black patients were admitted to 1 of 13 minority-serving hospitals. No racial disparity in receipt of carotid artery imaging was detected within nonminority serving hospitals. However, the predicted probability of receiving carotid artery imaging for white patients at nonminority serving hospitals (89.7%, 95% CI [87.3%, 92.1%]) was significantly higher than both white patients (78.0% [68.3%, 87.8%]) and black patients (70.5% [59.3%, 81.6%]) at minority serving hospitals. Cheng et al. discuss the difficulties of applying some commonly noted explanations for disparities, such as perceived risk of imaging and clinician-patient interaction (cultural competency/shared decision-making). Since carotid imaging involved very little interaction with the patient and is typically ordered without patient input, the impact of imaging bias was greatly mitigated. The researchers do believe that site of care should be explored as an explanation of disparities by race or ethnicity if the comparison groups are obtaining medical care from different facilities. The omission of carotid artery imaging in a patient with a new ischemic stroke represents poor quality of care because eligibility for more aggressive treatment options is not ascertained.

Martin et al. (2012) conducted a study on the variation in the receipt of diagnostic carotid imaging among elderly black and white fee-for-service Medicare beneficiaries hospitalized with a primary discharge diagnosis of ischemic stroke. Patients were randomly selected; data were obtained from medical record review by two clinical data abstraction centers using computerized abstraction tools. Patient age, sex, race and medical history were recorded. A total of 19,639 elderly ischemic stroke patients were included in the analyses; 10% (n= 1,974) were identified as black, 57% were women, and the mean age was 78.2 ± 7.3 years. Black patients were more likely to be women, to be younger, and to have a history of stroke, diabetes, and/or hypertension. White patients were more likely to have prior TIA, atrial fibrillation, heart disease and/or myocardial infarction than black patients. Overall, 69.6% of patients received at least one diagnostic carotid imaging test. Duplex ultrasounds were performed in 64.7%, MRA in 11.5%, and catheter angiography in 3.4% of patients. Black ischemic stroke patients were less likely to receive diagnostic carotid imaging than white patients, although the difference was small, and only significant after risk adjustment. There was no difference in the proportion having carotid endarterectomy after adjustment for degree of carotid artery stenosis and other clinical factors. Martin et al. note that racial differences in CEA rates have been documented using Medicare administrative claims data, as well as in other national data and statewide hospital discharge information. There is greater utilization of CEA among white as compared with black patients. Clinical characteristics that may confound the association between black and white race and receipt of the operation, such as the degree of stenosis, were not assessed. The lack of information related to the degree of stenosis in these studies may explain the discrepancy between their results and that of the present analysis.

Rather than addressing NASCET method utilization, a critical element of the measure, the papers underscore the racial/ethnic disparities associated with diagnostic imaging. Under-treatment, an implication of underdiagnosis, may result from under-utilizing clinically indicated carotid imaging and/or standardized methods for calculating the degree of stenosis. Guidelines for screening will assist with asymptomatic high-risk populations.

Cheng EM, Keyhani S, Ofner S, et al. Lower use of carotid artery imaging at minority-serving hospitals. *Neurology*. 2012;79(2):138-144. doi:10.1212/WNL.0b013e31825f04c5

Martin K, Naert L, Goldstein L, et al. Comparing the Use of Diagnostic Imaging and Receipt of Carotid Endarterectomy in Elderly Black and White Stroke Patients. *Journal of Stroke and Cerebrovascular Diseases*, Volume 21, Issue 7. 2012. <https://doi.org/10.1016/j.jstrokecerebrovasdis.2011.02.002>.

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

De.6. Non-Condition Specific(check all the areas that apply):

Care Coordination, Safety

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

Children, 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.acr.org/-/media/ACR/NOINDEX/Measures/2021_Measure_195_MIPSCQM.pdf

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)

Attachment Attachment: 2021_measure_195_MIPSCQM.pdf

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

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

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

Not an instrument-based measure

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

No

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

no major changes

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).

Final reports for carotid imaging studies that include direct or indirect reference to measurements of distal internal carotid diameter as the denominator for stenosis measurement

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).

Definition:

“Direct or indirect reference to measurements of distal internal carotid diameter as the denominator for stenosis measurement” – includes direct angiographic stenosis calculation based on the distal lumen as the denominator for stenosis measurement OR an equivalent validated method referenced to the above method (e.g., for duplex ultrasound studies, velocity parameters that correlate with anatomic measurements that use the distal internal carotid lumen as the denominator for stenosis measurement).

Numerator Instructions:

For duplex imaging studies the reference is indirect, since the degree of stenosis is inferred from velocity parameters and cross referenced to published or self-generated correlations among velocity parameters and results of angiography or other imaging studies which serve as the gold standard. In Doppler ultrasound, the degree of stenosis can be estimated using Doppler parameter of the peak systolic velocity (PSV) of the internal carotid artery (ICA), with concordance of the degree of narrowing of the ICA lumen. Additional Doppler parameters of ICA-to-common carotid artery (CCA) PSV ratio and ICA end-diastolic velocity (EDV) can be used when degree of stenosis is uncertain from ICA PSV. (Grant et al, 2003)

Measure performance is met when study methodology is identified and findings are reported as a percentage or range of percentages of carotid stenosis. Documented findings of “No Stenosis” determined through NASCET or comparable methodology also meet measure performance. A short note can be made in the final report, such as:

A short note can be made in the final report, such as:

- “Severe left ICA stenosis of 70-80% by NASCET criteria” or
- “Severe left ICA stenosis of 70-80% by criteria similar to NASCET” or
- “70% stenosis derived by comparing the narrowest segment with the distal luminal diameter as related to the submitted measure of arterial narrowing” or
- “Severe stenosis of 70-80% - validated velocity measurements with angiographic measurements, velocity criteria are extrapolated from diameter data as defined by the Society of Radiologists in Ultrasound Consensus Conference Radiology 2003; 229;340-346”.

In a small number of denominator cases the distal ICA may not be viewed e.g. an innominate artery or common carotid injection. Performance would be met if there is documentation, for example, that indicates “stenosis measurements are made with reference to the distal lumen”, as a matter of process and consistent practice method.

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

All final reports for carotid imaging studies (neck MRA, neck CTA, neck duplex ultrasound, carotid angiogram) performed

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).

This measure is to be submitted each time a carotid imaging study is performed during the performance period for all patients, regardless of age. There is no diagnosis associated with this measure. Eligible clinicians who provide the professional component of diagnostic imaging studies of the carotids will submit this measure.

Denominator Criteria (Eligible Cases) for Claims and Registry:

Patient procedure during the performance period (CPT): 36221, 36222, 36223, 36224, 37215, 37216*, 37217, 37218, 70498, 70547, 70548, 70549, 93880, 93882

DENOMINATOR NOTE: (*) Signifies that this CPT Category I code is a non-covered service under the Medicare Part B Physician Fee Schedule (PFS). These non-covered services should be counted in the denominator population for MIPS CQMs

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

No Denominator Exclusions or Denominator Exceptions

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.)

None

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.)

We encourage the results of this measure to be stratified by race, ethnicity, gender, and primary language, and have included these variables as recommended data elements to be collected.

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.)

To calculate performance rates:

- 1) Find the patients who meet the initial patient population (ie, the general group of patients that the performance measure is designed to address).
- 2) From the patients within the initial patient population criteria, find the patients who qualify for the denominator (ie, the specific group of patients for inclusion in a specific performance measure based on defined criteria). Note: in some cases the initial patient population and denominator are identical.
- 3) From the patients within the denominator, find the patients who qualify for the Numerator (ie, the group of patients in the denominator for whom a process or outcome of care occurs). Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator

If the patient does not meet the numerator, this case represents a quality failure.

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

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

This measure is not based on a sample or survey.

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.

N/A

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

If other, please describe in S.18.

Claims, Registry Data

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

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

Not applicable

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)

Clinician : Individual

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

Inpatient/Hospital, Outpatient Services

If other:

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

This is not a composite measure.

2. Validity – See attached Measure Testing Submission Form

[NQF_Testing_Attachment_2021.docx](#)

2.1 For maintenance of endorsement

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

Yes

2.2 For maintenance of endorsement

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

Yes

2.3 For maintenance of endorsement

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

No - This measure is not risk-adjusted

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.

Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry)

If other:

3b. Electronic Sources

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

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

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 data elements are manually abstracted from the radiology report. The ACR is working to enable extraction of free text from radiology reports using Artificial Intelligence (AI) and Natural Language Processing (NLP).

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.

During the measures' operational use, some users reported minor difficulties regarding the numerator, (i.e. data needed to meet the numerator). Updates clarifying the measure's definitions and instructions for capturing the numerator were incorporated, based on feedback from the MIPS program.

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).

Not applicable.

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	Payment Program Merit Based Incentives Payment System

qpp.cms.gov
 Merit Based Incentives Payment System
 qpp.cms.gov

Quality Improvement (Internal to the specific organization)
 ACR Quality Improvement
 nrdr.acr.org

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

This measure is used in the CMS Payment Program (Merit-based Incentive Payment System) for accountability and reimbursement. Over 10,000 physicians and approximately 2.4 million patients are included in the program for this measure. A variety of geographic areas in the United States are measured. Measurement is performed at the individual and group levels.

This measure is also used for quality improvement within the ACR registries.

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

This is an accountability measure and used in the CMS quality and payment programs.

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.)

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.

The measure specifications are updated annually and are included in the CMS Quality Payment Program for MIPS. The measure is reported via claims and registry as MIPS # 195 or Quality ID #195. Detailed specifications are publicly available on the CMS resource library.

Assistance with interpretation for this measure is provided through the ACR help desk and through the CMS help desk. Users can submit their questions and receive a response from ACR staff within 72 hours

Performance results are provided in two ways. First, through Qualified Clinical Data Registries (QCDRs). Users upload the measure data to the QCDR. Quarterly, measure users may compare their performance on this measure against CMS performance benchmarks. To view performance results online, users must have an active account within the QCDR. The second method for which data is provided is through CMS' annual MIPS Feedback Reports. The feedback reports, aggregated at a high-level, are also based on CMS performance benchmarks (calculated in deciles). CMS Feedback Reports are nonspecific and not necessarily indicative of an individual clinician's performance.

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.

Feedback is provided quarterly to all QCDR participants reporting this quality measure. Feedback is based on CMS performance benchmarks, which are calculated in deciles. These reports are nonspecific and not necessarily indicative of an individual clinician's performance.

ACR educational webinars are conducted bimonthly to explain measure requirements and interpretation of performance results.

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.

Feedback is obtained through email, the ACR help desk, the CMS quality help desk, and CMS contractor QMMS. Feedback has been positive.

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

Feedback on this measure has been primarily clarifying questions on how to report certain cases, such as ones with no stenosis. Overall, radiologists agree that having a standardized method for calculating stenosis is a valuable tool in stroke imaging.

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

No other feedback has been provided from entities other than individuals that could report the measure.

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.

This feedback is considered during the annual measure specification update process with CMS. The ACR Metrics Committee reviews feedback for measure changes.

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.

Performance data shows significant improvement for this measure.

4b2. Unintended Consequences

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

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

We are not aware of any unintended consequences related to this measurement.

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

Implementing this measure has created more standardization for carotid imaging results. This measure also supports communication between radiologists and referring physicians.

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.</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.)</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): American College of Radiology (ACR) Co.2 Point of Contact: Karen, Campos, kcampos@acr.org, 800-227-5463-5848 Co.3 Measure Developer if different from Measure Steward: American College of Radiology (ACR) Co.4 Point of Contact: Karen, Campos, kcampos@acr.org, 800-227-5463-5848</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. List of Work Group Members: William Golden, MD (Co-Chair) (internal medicine) David Seidenwurm (Co-chair) (diagnostic radiology) Michael Bettmann, MD</p>

Dorothy Bulas, MD (pediatric radiology)
Rubin I. Cohen, MD, FACP, FCCP, FCCM
Richard T. Griffey, MD, MPH (emergency medicine)
Eric J. Hohenwarter, MD (vascular interventional radiology)
Deborah Levine, MD, FACP (radiology/ultrasound)
Mark Morasch, MD (vascular surgery)
Paul Nagy, MD, PhD (radiology)
Mark R. Needham, MD, MBA (family medicine)
Hoang D. Nguyen (diagnostic radiology/payer representative)
Charles J. Prestigiacomo, MD, FACS (neurosurgery)
William G. Preston, MD, FAAN (neurology)
Robert Pyatt, Jr., MD (diagnostic radiology)
Robert Rosenberg, MD (diagnostic radiology)
David A. Rubin, MD (diagnostic radiology)
B Winfred (B.W.) Ruffner, MD, FACP (medical oncology)
Frank Rybicki, MD, PhD, FAHA (diagnostic radiology)
Cheryl A. Sadow, MD (radiology)
John Schneider, MD, PhD (internal medicine)
Gary Schultz, DC, DACR (chiropractic)
Paul R. Sierzenski, MD, RDMS (emergency medicine)
Michael Wasyluk, MD (orthopedic surgery)

Diagnostic Imaging Measure Development Work Group Staff

American College of Radiology: Judy Burleson, MHSA; Alicia Blakey, MS

American Medical Association-convened Physician Consortium for Performance Improvement: Mark Antman, DDS, MBA; Kathleen Blake, MD, MPH; Kendra Hanley, MS; Toni Kaye, MPH; Marjorie Rallins, DPM; Kimberly Smuk, RHIA; Samantha Tierney, MPH; Stavros Tsipas, MA

National Committee for Quality Assurance: Mary Barton, MD

PCPI measures are developed through cross-specialty, multi-disciplinary work groups. All medical specialties and other health care professional disciplines participating in patient care for the clinical condition or topic under study must be equal contributors to the measure development process. In addition, the PCPI strives to include on its work groups individuals representing the perspectives of patients, consumers, private health plans, and employers. This broad-based approach to measure development ensures buy-in on the measures from all stakeholders and minimizes bias toward any individual specialty or stakeholder group. All work groups have at least two co-chairs who have relevant clinical and/or measure development expertise and who are responsible for ensuring that consensus is achieved and that all perspectives are voiced.

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: 2007

Ad.3 Month and Year of most recent revision: 08, 2020

Ad.4 What is your frequency for review/update of this measure? These measures are updated each year.

Ad.5 When is the next scheduled review/update for this measure? 08, 2021

Ad.6 Copyright statement: COPYRIGHT:

The Measure is not a clinical guideline, does not establish a standard of medical care, and has not been tested for all potential applications.

The Measure, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes, e.g., use by health care providers in connection with their practices. Commercial use is defined as the sale, license, or distribution of the Measure for commercial gain, or incorporation of the Measure into a product or service that is sold, licensed or distributed for commercial gain.

Commercial uses of the Measure require a license agreement between the user and the American College of Radiology (ACR).

Neither ACR nor its members shall be responsible for any use of the Measure.

The PCPI's and AMA's significant past efforts and contributions to the development and updating of the Measures are acknowledged. ACR is solely responsible for the review and enhancement ("Maintenance") of the Measure as of August 1, 2020.

ACR encourages use of the Measure by other health care professionals, where appropriate.

THE MEASURE AND SPECIFICATIONS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND.

©2020 American College of Radiology. All Rights Reserved. Applicable FARS/DFARS Restrictions Apply to Government Use.

Limited proprietary coding may be contained in the Measure specifications for convenience. A license agreement must be entered prior to a third party's use of Current Procedural Terminology (CPT[®]) or other proprietary code set contained in the Measures. Any other use of CPT or other coding by the third party is strictly prohibited. ACR and its members disclaim all liability for use or accuracy of any CPT or other coding contained in the specifications.

CPT[®] contained in the Measures specifications is copyright 2004-2020 American Medical Association. LOINC[®] copyright 2004-2020 Regenstrief Institute, Inc. SNOMED CLINICAL TERMS (SNOMED CT[®]) copyright 2004-2020. The International Health Terminology Standards Development Organisation (IHTSDO). ICD-10 is copyright 2020 World Health Organization. All Rights Reserved.

Ad.7 Disclaimers: See copyright statement above.

Ad.8 Additional Information/Comments: Coding/Specifications updates occur annually. The ACR has a formal measurement review process that stipulates regular (usually on a three-year cycle, when feasible) review of the measures. The process can also be activated if there is a major change in scientific evidence, results from testing or other issues are noted that materially affect the integrity of the measure. Additionally, this measure is updated annually for coding changes and reviewed by CMS' contractor QMMS.