Measure #195 (NQF 0507): Radiology: Stenosis Measurement in Carotid Imaging Reports –
National Quality Strategy Domain: Effective Clinical Care

2015 PQRS OPTIONS FOR INDIVIDUAL MEASURES:
CLAIMS, REGISTRY

DESCRIPTION:
Percentage of final reports for carotid imaging studies (neck magnetic resonance angiography [MRA], neck computed
tomography 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

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

Measure Reporting via Claims:
CPT codes are used to identify patients who are included in the measure’s denominator. CPT Category II codes are
used to report the numerator of the measure.

When reporting the measure via claims, submit the listed CPT procedure codes and the appropriate CPT Category II
code OR the CPT Category II code with the modifier. The reporting modifier allowed for this measure is: 8P- reason
not otherwise specified.

Measure Reporting via Registry:
CPT codes are used to identify patients who are included in the measure’s denominator. The listed numerator
options are used to report the numerator of the measure.

The quality-data codes listed do not need to be submitted for registry-based submissions; however, these codes may
be submitted for those registries that utilize claims data. There are no allowable performance exclusions for this
measure.

DENOMINATOR:
All final reports for carotid imaging studies (neck MR angiography [MRA], neck CT angiography [CTA], neck duplex
ultrasound, carotid angiogram) performed

Denominator Criteria (Eligible Cases):
Patient encounter during the reporting period (CPT): 36222, 70498, 70547, 70548, 70549, 93880, 93882

NUMERATOR:
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

Numerator Instructions: This measure requires that the estimate of stenosis included in the report of the
imaging study employ a method such as the North American Symptomatic Carotid Endarterectomy Trial
(NASCET) method for calculating the degree of stenosis. The NASCET method calculates the degree of
stenosis with reference to the lumen of the carotid artery distal to the stenosis.

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) 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 reported 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”.

**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 (eg, 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 Quality-Data Coding Options for Reporting Satisfactorily:**
Reference to Measurements of Distal Internal Carotid Diameter as the Denominator for Stenosis Measurement Referenced

*Performance Met: CPT II 3100F:*
Carotid imaging study report (includes direct or indirect reference to measurements of distal internal carotid diameter as the denominator for stenosis measurement)

**OR**
Measurements of Distal Internal Carotid Diameter not Referenced, Reason not Otherwise Specified

*Append a reporting modifier (8P) to CPT Category II code 3100F to report circumstances when the action described in the numerator is not performed and the reason is not otherwise specified.*

*Performance Not Met: 3100F with 8P:*
Carotid imaging study report did not include direct or indirect reference to measurements of distal internal carotid diameter as the denominator for stenosis measurement, reason not otherwise specified

**RATIONALE:**
Accurate assessment of the degree of carotid artery stenosis is essential to guiding proper treatment decisions for patients with carotid artery disease. Trials have demonstrated the ability of the degree of carotid artery stenosis to predict which patients will receive the greatest benefit from surgical intervention. To ensure accurate assessment of stenosis, it is important to use a standardized, validated approach. Rothwell et al demonstrated significant differences between measurements of stenosis made using different methods of measurement.

**CLINICAL RECOMMENDATION STATEMENTS:**
The panel recommended that the NASCET method of carotid stenosis measurement should be used when angiography is used to correlate the US findings. (USDSR, 2003)

When MRA techniques are used for determining carotid stenosis, the report should reflect the methodology and reference the criteria for percent stenosis outlined in the NASCET. Also, the percent stenosis must be calculated using the distal cervical ICA diameter, where the walls are parallel, for the denominator. Similar to CTA, MRA with attention to the acquisition parameters and post-processing techniques can provide cross sectional measurements of stenosis that correlate with properly performed NASCET estimates of percent stenosis obtained with catheter
angiography. In the setting of near occlusion, it may not be accurate to calculate percent stenosis ratios in the presence of post-stenotic arterial diameter decrease. Some MRA techniques may not be amenable to quantitative measurements, in which case qualitative assessment of stenosis should be provided. (ACR-ASNR-SNIS-SPR, 2010)