



Carotid Reports Dictionary

Data Abstraction Instructions:

This report dictionary contains the definitions for measures in the carotid report, carotid M&M report, carotid follow-up reports, and the Health Outcomes dashboard.

Many of these measures are the same but reporting CAS or CEA procedures only. When the definition contains "X procedure" the procedure is either a CAS or CEA depending on which measure you are viewing.

Measures for follow-up outcomes:

- For any follow-up form to be counted as complete and included in the follow-up report, either Alive or Dead is entered for Current Living Status.
- The Discharge Status of Death will exclude forms due at 30-days from the numerator and denominator.
- The Discharge Status of Death OR Current Living Status of Dead on the 30-Day follow-up form will exclude forms due at 1-year from the numerator and denominator.
- The Current Living Status of Dead on the 1-Year follow-up form will count that form as complete.

Updated with the 2026 Q2 report release.

ACE Inhibitors

Numerator: The number of completed carotid follow-up forms that have Yes entered for ACE Inhibitors.

Denominator: The number of completed carotid follow-up forms that have either Yes or No entered for ACE Inhibitors.

ACE Inhibitors Compliance

Numerator: The number of completed carotid follow-up forms that have Yes entered for ACE Inhibitors and the patient was discharged on an ACE Inhibitor.

Denominator: The number of completed carotid follow-up forms that have either Yes or No entered for ACE Inhibitors and the patient was discharged on an ACE Inhibitor.

ASA and Clopidogrel

Numerator: The number of discharges containing X procedure where the patient is taking both Aspirin and Clopidogrel (Plavix) within 30 days of hospital admission.

Denominator: The total number of discharges containing X procedure.

Exclusion: A contraindication to Aspirin or Clopidogrel (Plavix).

Access Site

Numerator: The number of CAS procedures where X was used as the procedural arterial access site.

Denominator: The total number of CAS procedures.

Acute Evolving Stroke

Numerator: The number of X procedures where the patient had an acute evolving stroke with ischemia that was ongoing and progressing at the time of the procedure.

Denominator: The total number of X procedures.

Additional Procedures (CAS)

Numerator: The number of completed CAS follow-up forms that have Yes entered for Additional Procedures.

Denominator: The number of completed CAS follow-up forms

Note: Additional Procedures = A CAS or CEA was performed, post-discharge, on the same vessel as original procedure.

CAS (CAS)

Numerator: The number of completed CAS follow-up forms where a CAS was performed, post-discharge, on the same vessel as the original CAS.

Denominator: The number of completed CAS follow-up forms where Yes is entered for Additional Procedures.

Note: Additional Procedures = A CAS or CEA was performed, post-discharge, on the same vessel as the original procedure.

CEA (CAS)

Numerator: The number of completed CAS follow-up forms where a CEA was performed, post-discharge, on the same vessel as the

original CAS.

Denominator: The number of completed CAS follow-up forms where Yes is entered for Additional Procedures.

Note: Additional Procedures = A CAS or CEA was performed, post-discharge, on the same vessel as the original procedure.

Antiplatelets (ex ASA)

Numerator: The number of completed carotid follow-up forms that have Yes entered for antiplatelets.

Denominator: The number of completed carotid follow-up forms that have either Yes or No entered for antiplatelets.

Exclusion: A contraindication to Antiplatelets.

Note: This measure does not include aspirin.

Antiplatelets (ex ASA) Compliance

Numerator: The number of completed carotid follow-up forms that have Yes entered for antiplatelets, and the patient was discharged on an antiplatelet.

Denominator: The number of completed carotid follow-up forms that have either Yes or No entered for antiplatelets, and the patient was discharged on an antiplatelet.

Exclusion: A contraindication to Antiplatelets. Note: This measure does not include aspirin.

Any Neuro Event Prior to Procedure

Numerator: The number of X procedures where a neuro event occurred prior to the procedure within any timeframe.

Denominator: The total number of X procedures.

TIA

Numerator: The number of X procedures where a TIA occurred prior to the procedure.

Denominator: The total number of X procedures where a neuro event occurred prior to the procedure.

Ischemic Stroke

Numerator: The number of X procedures where an ischemic stroke occurred prior to the procedure.

Denominator: The total number of X procedures where a neuro event occurred prior to the procedure.

Hemorrhagic Event

Numerator: The number of X procedures where an intracranial hemorrhage or a hemorrhagic stroke occurred prior to the procedure.

Denominator: The total number of X procedures where a neuro event occurred prior to the procedure.

Any Opioids @ Discharge

Numerator: The number of discharges containing X procedure where an opioid of any type was prescribed or continued at discharge.

Denominator: The total number of discharges containing X procedure.

Arteriotomy Patch Used

Numerator: The number of CEA procedures where an arteriotomy patch was used.

Denominator: The total number of CEA procedures.

Aspirin (Follow-up)

Numerator: The number of completed carotid follow-up forms that have Yes entered for aspirin.

Denominator: The number of completed carotid follow-up forms that have either Yes or No entered for aspirin.

Exclusion: A contraindication to Aspirin.

Aspirin (X Procedure)

Numerator: The number of discharges containing X procedure where the patient is taking Aspirin within 30 days of hospital admission.

Denominator: The total number of discharges containing X procedure.

Exclusion: A contraindication to aspirin.

Aspirin (admission)

Numerator: The number of discharges with a carotid procedure where the patient is taking ASA within 30 days of hospital admission.

Denominator: The total number of discharges with a carotid procedure.

Exclusions: A contraindication to ASA.

Aspirin (discharge)

Numerator: The number of discharges with a carotid procedure where ASA is ordered or continued at discharge.

Denominator: The total number of discharges with a carotid procedure.

Exclusions: A contraindication to ASA.

Aspirin Compliance

Numerator: The number of completed carotid follow-up forms that have Yes entered for aspirin and the patient was discharged on aspirin.

Denominator: The number of completed carotid follow-up forms that have either Yes or No entered for aspirin and the patient was discharged on aspirin.

Exclusion: A contraindication to Aspirin.

Asymptomatic (CAS)

Numerator: The number of CAS procedures where the patient was asymptomatic prior to the procedure.

Denominator: The total number of CAS procedures.

Note: Asymptomatic is defined as No entered for Target Lesion Symptomatic within 6 months.

Asymptomatic (CEA)

Numerator: The number of CEA procedures the patient is asymptomatic before the procedure.

Denominator: The total number of CEA procedures.

Note: Asymptomatic is defined as No entered for Target Lesion Symptomatic within 6 months.

Average Age (mean, stdev)

Calculates the average (mean) age of patients as of the admission date. No denominator.

Beta Blockers (admission)

Numerator: The number of discharges with a carotid procedure where the patient is taking a beta blocker within 30 days of hospital admission.

Denominator: The total number of discharges with a carotid procedure.

Beta Blockers (discharge)

Numerator: The number of discharges with a carotid procedure where a beta blocker is ordered or continued at discharge.

Denominator: The total number of discharges with a carotid procedure.

Beta Blockers

Numerator: The number of completed carotid follow-up forms that have Yes entered for beta blockers.

Denominator: The number of completed carotid follow-up forms that have either Yes or No entered for beta blockers.

Beta Blockers Compliance

Numerator: The number of completed carotid follow-up forms that have Yes entered for beta blockers and the patient was discharged on a beta blocker.

Denominator: The number of completed carotid follow-up forms that have either Yes or No entered for beta blockers and the patient was discharged on a beta blocker.

CAS w/Distinct Lesions

Numerator = The number of CAS procedures where distinct lesions were treated.

Denominator = The total number of CAS procedures.

CAS w/Single Lesion

Numerator = The number of CAS procedures where a single lesion was treated.

Denominator = The total number of CAS procedures.

CEA Opioid naïve patients prescribed >4 opioid pills at discharge

Numerator: The number of opioid naïve CEA discharges prescribed >4 opioid pills at discharge. CEA discharges where Not Documented is entered for Opioid Quantity Prescribed are **included** in the numerator.

Denominator: The total number of opioid naïve CEA discharges.

Exclusion: CEA discharges concurrent with CABG.

Please note: Opioid naïve is defined as No entered for Pre-operative opioid use.

CT Angiography (performed/total)

Numerator: The number of X procedures where a CT Angiography (CTA) was performed pre procedure.

Denominator: The total number of X procedures.

CVD/TIA

Numerator: The number of discharges with a carotid procedure where the patient has a history of stroke, TIA, carotid stenosis, CEA, or CAS.

Denominator: The total number of discharges with a carotid procedure.

Carotid Composite 30-Day Mortality/MI/TIA-Stroke

Numerator: The number of carotid procedures that have Yes entered for death, myocardial injury, or TIA-Stroke is entered on the 30-day follow-up form.

Denominator: The total number of carotid procedures Yes or No entered for death, myocardial injury, or TIA-Stroke on the 30-day follow-up form.

Carotid Duplex Ultrasound (performed/total)

Numerator: The number of X procedures where a duplex ultrasound performed pre procedure.

Denominator: The total number of X procedures.

Clopidogrel (Plavix)

Numerator: The number of discharges containing X procedure where a patient is taking Clopidogrel (Plavix) within 30 days of hospital admission.

Denominator: The total number of discharges containing X procedure.

Exclusion: A contraindication to Clopidogrel (Plavix).

Clopidogrel (admission)

Numerator: The number of discharges with a carotid procedure where the patient is taking clopidogrel (Plavix) within 30 days of hospital admission.

Denominator: The total number of discharges with a carotid procedure.

Exclusion: A contraindication to clopidogrel (Plavix).

Clopidogrel (discharge)

Numerator: The number of discharges with a carotid procedure where clopidogrel (Plavix) is ordered or continued at discharge.

Denominator: The total number of discharges with a carotid procedure.

Exclusion: A contraindication to clopidogrel (Plavix).

Combined Death/Myocardial Infarction/Stroke

Numerator: The number of discharges containing X procedure which meet at least one of the following criteria:

1. A New Stroke occurred during the procedure or after the procedure and before discharge.
2. A Death occurred during the procedure or hospital encounter.
3. A Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI occurred post procedure.

Denominator: The total number of discharges containing X procedure.

Contrast Volume (mean, stdev)

Mean (average) and standard deviation of Contrast Volume used during CAS procedures.

Exclusion: CAS procedures where Contrast Volume is not documented.

Coronary Artery Disease (CAD)

Numerator: The number of discharges with a carotid procedure where the patient has a history of CAD.

Denominator: The total number of discharges with a carotid procedure.

Cranial Nerve Injury

Numerator: The number of CEA procedures where a Cranial Nerve Injury occurred.

Denominator: The total number of discharges with a CEA procedure.

Current Living Status (Dead)

Numerator: The number of completed carotid follow-up forms that have Dead entered for Current Living Status.

Denominator: The number of completed carotid follow-up forms.

Current Living Status

Numerator: The number of completed carotid follow-up forms that have X response entered for Current Living Status.

Denominator: The number of completed carotid follow-up forms.

Current Smoker

Numerator: The number of discharges with an elective carotid procedure where the patient smoked cigarettes, cigars, pipe, or chewed tobacco within one month prior to arrival to the hospital.

Denominator: The total number of discharges with an elective carotid procedure.

Exclusion from numerator and denominator: Death during procedure, death post-procedure, or death at discharge.

Death (Discharge Status)

Numerator: The number of discharges with a carotid procedure with Death as Discharge Status.

Denominator: The total number of discharges with a carotid procedure.

Death (Outcomes)

Numerator: The number of discharges with a carotid procedure where a death occurred during the procedure or hospital encounter.

Denominator: The total number of discharges with a carotid procedure.

Death at 30 Days

Numerator: The number of discharges with X procedure where a death occurred within 30 days of the procedure end date.

Denominator: The number of 30-Day X follow-up forms.

Diabetes Mellitus

Numerator: The number of discharges with a carotid procedure where the patient has a history of any type of diabetes at any time in their life.

Denominator: The total number of discharges with a carotid procedure.

Discharge Status

Numerator: The number of discharges with a carotid procedure with X discharge status.

Denominator: The total number of discharges with a carotid procedure.

Discharges

The total number of discharges that contain a carotid procedure. The numerator and denominator are the same.

Duplex US completed prior to Asx CEA (P4P)

Numerator: The number of asymptomatic CEA procedures where an ultrasound was performed within six months prior to the procedure.

Denominator: The total number of asymptomatic CEA procedures.

Goal: $\geq 90\%$

Note: Asymptomatic is defined as No entered for Target Lesion Symptomatic within 6 months.

Duplex US completed prior to Asx CEA (P4P) Goal Graph

For each hospital, calculate the percentage of discharges meeting the duplex ultrasound before asymptomatic CEA criteria. This is the same as the definition for Duplex US completed prior to Asx CEA (P4P) on the Pre Imaging Studies (CEA) page. Goal $\geq 90\%$.

Elective Asymptomatic CEA not discharged home by post-op day 2

Numerator: The number of discharges with an elective CEA procedure that are asymptomatic and have a post procedure LOS >3.

Denominator: The number of discharges with an elective CEA procedure that are asymptomatic.

Exclusions:

- CEAs performed concurrently with CABG Indication of Urgent Cardiac Surgery within 30 days
- An intra-operative or post- operative complication
- CEAs performed with any other VS or carotid procedure within the same discharge

Embololic Protection Model

Numerator: The number of CAS procedures with X Embolic Protection Device Model name.

Denominator: The number of CAS procedures where the Embolic Protection Device was Successfully Deployed during the procedure.

Carotid stenting procedures performed for distinct lesions are excluded from the numerator and denominator.

Embololic Protection Successfully Deployed

Numerator: The number of CAS procedures where the Embolic Protection Device was Successfully Deployed.

Denominator: The total number of CAS procedures.

Carotid stenting procedures performed for distinct lesions are excluded from the numerator and denominator.

Ever Smoked

Numerator: The number of discharges with an elective carotid procedure where the patient smoked any time in their life.

Denominator: The total number of discharges with an elective carotid procedure.

Exclusion from numerator and denominator: Death during procedure, death post-procedure, or death at discharge.

Female Gender

Numerator: The number of female patients.

Denominator: The total number of discharges with a carotid procedure.

Final % Stenosis (mean, stdev)

Mean (average) and standard deviation of the Final % Stenosis at the end of the CAS procedure.

Exclusions:

- CAS procedures where the Final % Stenosis is not documented.
- CAS procedures performed for distinct lesions.

Forms Completed

Numerator: The number of carotid follow-up forms that were completed, as of the date the report was run, with Alive or Dead entered for Current Living Status.

Denominator: The number of carotid follow-up Forms Due.

Note:

- A discharge status of Death or Current Living Status of Dead will exclude the discharge from the numerator and denominator.

30-Day Follow-up Forms Completed goal is $\geq 80\%$

1-Year Follow-up Forms Completed goal is $\geq 80\%$

Forms Due

The number of follow-up forms due, as of the date the report is generated.

At 30 days: The numerator is the total number of Carotid (CEA and CAS) follow-up forms due in the given time period. The denominator is the total number of Carotid (CEA and CAS) discharges in the given time period. A discharge status of Death excludes the form from the numerator and denominator.

At 1 year: The numerator is the total number of Carotid (CEA and CAS) follow-up forms due in the given time period. The denominator is the total number of Carotid (CEA or CAS) discharges in the given time period. A discharge status of Death or Current Living Status of Dead on the 30-day follow-up form excludes the form from the numerator and denominator.

See the Forms Completed definition for the definition of a completed form.

Hyperlipidemia

Numerator: The number of discharges with a carotid procedure where the patient has a history of hyperlipidemia.

Denominator: The total number of discharges with a carotid procedure.

Hypertension

Numerator: The number of discharges with a carotid procedure where the patient has a history of hypertension.

Denominator: The total number of discharges with a carotid procedure.

Length of Stay (mean, median, stdev)

The average (mean), median, and standard deviation of length of stay for X procedures. Length of stay is calculated as date of discharge minus the admission date, plus one day.

Note: All length of stay calculations count a same-day discharge as a stay of one day.

Lost to Follow-up

Numerator: The number of completed carotid follow-up forms where Unknown is entered for Current Living Status.

Denominator: The number of completed carotid follow-up forms where Dead or Alive or Unknown is entered for Current Living Status.

Exclusion: Discharge status of death.

MR Angiography (performed/total)

Numerator: The number of X procedures where a MR Angiography (MRA/MRI) was performed pre procedure.

Denominator: The total number of X procedures.

Male Gender

Numerator: The number of male patients.

Denominator: The total number of discharges with a carotid procedure.

Monitoring During Procedure

Numerator: The number of CEA procedures where Yes was entered for Monitoring During Procedure.

Denominator: The total number of CEA procedures.

Type of Monitoring During Procedure

Numerator: The number of CEA procedures where X type of monitoring is used during the procedure.

Denominator: The total number of CEA procedures where Yes is entered for Monitoring During Procedure.

Myocardial Infarction (Carotid report)

Numerator: The number of X procedures where a Myocardial Infarction (MI) occurred post procedure and before discharge.

Denominator: The total number of discharges with an X procedure.

Note: MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.

Myocardial Infarction (M&M report)

Numerator: The number of discharges with a carotid procedure where a myocardial infarction (MI) occurred post procedure and before discharge.

Denominator: The total number of discharges with a carotid procedure.

Note: MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.

Myocardial Infarction at 30 Days (CEA)

Numerator: The number of discharges with a CEA procedure where a MI occurred within 30 days of the procedure end date.

Denominator: The number of 30-Day CEA follow-up forms.

Note: Myocardial Infarction is a Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.

Myocardial Infarction at 30 days (CAS)

Numerator: The number of discharges with a CAS procedure where a MI occurred within 30 days of the procedure end date.

Denominator: The number of 30-Day CAS follow-up forms.

Note: Myocardial Infarction is a Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.

New Opioid Prescriptions ≤ 4 Pills - Endarterectomy

Numerator: Number of opioid naïve CEA discharges with an opioid prescription at discharge of ≤ 4 pills. CEA discharges where Not Documented is marked for Quantity prescribed are excluded from the numerator.

Denominator: Number of opioid naïve CEA discharges.

Exclusions from the numerator and denominator.

- CEA performed concurrently with CABG.
- Discharge status of death.

Please note: Opioid naïve is defined as no opioids taken by the patient >30 days before admission to the hospital.

New Opioids @ Discharge

Numerator: The number of discharges containing an X procedure where the patient did not take an opioid within 30 days of hospital admission and an opioid was prescribed at discharge.

Denominator: The total number of discharges containing X procedure.

New Stroke or TIA (CAS)

Numerator: The number of CAS procedures where a new stroke or new TIA occurred during or after the procedure and before discharge.

Denominator: The total number of discharges with a CAS procedure.

New Stroke (CAS)

Numerator: The number of CAS procedures where a new stroke occurred during or after the procedure and before discharge.

Denominator: The total number of discharges with a CAS procedure.

Asymptomatic (New Stroke)

Numerator: The number of CAS procedures where the patient was asymptomatic prior to the procedure and a new stroke occurred during or after the procedure and before discharge.

Denominator: The total number of CAS procedures where a new stroke occurred during or after the procedure and before discharge.

Note: Asymptomatic is defined as No entered for Target Lesion Symptomatic within 6 months.

Symptomatic (New Stroke)

Numerator: The number of CAS procedures where the patient was symptomatic prior to the procedure and a new stroke occurred during or after the procedure and before discharge.

Denominator: The total number of CAS procedures where a new stroke occurred during or after the procedure and before discharge.

Note: Symptomatic is defined as Yes entered for Target Lesion Symptomatic within 6 months.

New TIA (CAS)

Numerator: The number of CAS procedures where a new TIA occurred during or after the procedure and before discharge.

Denominator: The total number of discharges with a CAS procedure.

Unknown (CAS)

Numerator: The number of CAS procedures where a new stroke or new TIA occurred in an unknown or unspecified location. This new neurological event occurred during the procedure or after the procedure and before discharge.

Denominator: The total number of discharges with a CAS procedure.

Asymptomatic (New TIA)

Numerator: The number of CAS procedures where the patient was asymptomatic prior to the procedure and a new TIA occurred during or after the procedure and before discharge.

Denominator: The total number of CAS procedures where a new TIA occurred during or after the procedure and before discharge.

Note: Asymptomatic is defined as No entered for Target Lesion Symptomatic within 6 months.

Symptomatic (New TIA)

Numerator: The number of CAS procedures where the patient was symptomatic prior to the procedure and a new TIA occurred during or after the procedure and before discharge.

Denominator: The total number of CAS procedures where a new TIA occurred during or after the procedure and before discharge.

Note: Symptomatic is defined as Yes entered for Target Lesion Symptomatic within 6 months.

New Stroke or TIA (CAS) Graph

For each hospital, calculate the percentage of discharges meeting the CAS New Stroke or TIA criteria. This is the same as the definition for New Stroke or TIA (CAS) on the Outcomes (CAS) page. There is not a goal line for this graph.

Each graph will be a bar plot. On the x axis, each hospital is listed. On the y axis, X metric is listed.

The hospitals on the report graphs are blinded, meaning they are not listed by their hospital code number. For convenience, we also color the bar representing the specific hospital that pertains to that report.

New Stroke or TIA (CEA)

Numerator: The number of CEA procedures where a new stroke or new TIA occurred during or after the procedure and before discharge.

Denominator: The total number of discharges with a CEA procedure.

New Stroke (CEA)

Numerator: The number of CEA procedures where a new stroke occurred during or after the procedure and before discharge.

Denominator: The total number of discharges with a CEA procedure.

Asymptomatic (New Stroke)

Numerator: The number of CEA procedures where the patient was asymptomatic prior to the procedure and a new stroke occurred during or after the procedure and before discharge.

Denominator: The total number of CEA procedures where a new stroke occurred during or after the procedure and before discharge.

Note: Asymptomatic is defined as No entered for Target Lesion Symptomatic within 6 months.

Symptomatic (New Stroke)

Numerator: The number of CEA procedures where the patient was symptomatic prior to the procedure and a new stroke occurred during or after the procedure and before discharge.

Denominator: The total number of CEA procedures where a new stroke occurred during or after the procedure and before discharge.

Note: Symptomatic is defined as Yes entered for Target Lesion Symptomatic within 6 months.

New TIA (CEA)

Numerator: The number of CEA procedures where a new TIA occurred during the procedure and before discharge.

Denominator: The total number of discharges with a CEA procedure.

Asymptomatic (New TIA)

Numerator: The number of CEA procedures where the patient was asymptomatic prior to the procedure and a new TIA occurred during or after the procedure and before discharge.

Denominator: The total number of CEA procedures where a new TIA occurred during or after the procedure and before discharge.

Note: Asymptomatic is defined as No entered for Target Lesion Symptomatic within 6 months.

Symptomatic (New TIA)

Numerator: The number of CEA procedures where the patient was symptomatic prior to the procedure and a new TIA occurred during or after the procedure and before discharge.

Denominator: The total number of CEA procedures where a new TIA occurred during or after the procedure and before discharge.

Note: Symptomatic is defined as Yes entered for Target Lesion Symptomatic within 6 months.

Unknown (CEA)

Numerator: The number of CEA procedures where a new stroke or new TIA occurred in an unknown or unspecified location. This new neurological event occurred during the procedure or after the procedure and before discharge.

Denominator: The total number of discharges with a CEA procedure.

New Stroke or TIA (CEA) Graph

For each hospital, calculate the percentage of discharges meeting the CEA New Stroke or TIA criteria. This is the same as the definition for [New Stroke or TIA \(CEA\)](#) on the Outcomes (CEA) page. There is not a goal line for this graph.

Each graph will be a bar plot. On the x axis, each hospital is listed. On the y axis, X metric is listed.

The hospitals on the report graphs are blinded, meaning they are not listed by their hospital code number. For convenience, we also color the bar representing the specific hospital that pertains to that report.

No Anti-Platelet at Discharge

Numerator: The number of discharges containing a CEA or CAS procedure where at least one of the following medications was not prescribed or continued at discharge:

- Aspirin
- Clopidogrel (Plavix)
- Prasugrel (Effient)
- Ticagrelor (Brilinta)
- Cilostazol (Pletal)

Denominator: The total number of discharges containing a CEA or CAS procedure.

Exclusions:

- Death during the procedure or post procedure
- The patient was discharged to Hospice, An Other Acute Care Hospital, or Left AMA
- A contraindication to Aspirin and Plavix and none of the following medications were given:
 - Effient
 - Brilinta
 - Cilostazol
- Indication of Trauma

No Duplex US before Asx CEA

Numerator = The number of asymptomatic CEA procedures where a carotid duplex ultrasound was not performed within six months of the procedure.

Denominator = The total number of asymptomatic CEA procedures.

No Statin at DC

Numerator: The number of discharges containing a CEA or CAS procedure where a statin or PCSK9 inhibitor is not prescribed or continued at discharge. Denominator: The total number discharges containing a CEA or CAS procedure.

Exclusions:

- Contraindication to a statin if no statin is prescribed
- Discharge status of
 - Hospice
 - Death
 - Left Against Medical Advice
 - Discharged to Other Acute Care Hospital

Opioids @ Admission

Numerator: The number of discharges containing X procedure where the patient is taking an opioid within 30 days before hospital admission.

Denominator: The total number of discharges containing X procedure.

Patient Still Taking Opioid

Numerator: The number of completed X follow-up forms where the patient is taking the same opioid as prescribed at discharge or is taking a new opioid/dose.

Denominator: The total number of completed X 30-day follow-up forms.

Same as Discharge

Numerator: The number of completed X 30-Day follow-up forms where the patient is taking the same opioid as was prescribed at discharge.

Denominator: The total number of completed X 30-day follow-up forms where the patient is taking the same opioid as prescribed at discharge or is taking a new opioid/dose.

New Opioid/Dose

Numerator: The number of completed X 30-Day follow-up forms where the patient is taking a new opioid/dose.

Denominator: The total number of completed X 30-day follow-up forms where the patient is taking the same opioid as prescribed at discharge or is taking a new opioid/dose.

Patients Enrolled

The number of discharges containing a carotid procedure for the report timeframe. The numerator and denominator are the same value, so the percentage will always be 100%. This value acts as a baseline for the other indicators in the report.

Persistent Hypotension

Numerator: The number of CEA procedures where persistent hypotension occurred post procedure.

Denominator: The total number of discharges with a CEA procedure.

Post Procedure Length of Stay (mean, median, stdev)

The average (mean), median, and standard deviation of length of stay post-op for X procedure. Length of stay post-op is calculated as the discharge date minus the procedure end date, plus one day.

Pre Procedure % Stenosis (mean, stdev)

Mean (average) and standard deviation of the value entered for Pre Procedure % Stenosis.

Pre-Procedure Smoking Cessation

Numerator: The number of current smokers who had an elective carotid procedure and at least 2 of 3 smoking cessation interventions (Physician-delivered advice, Pharmacotherapy, Referral to smoking counseling services) were implemented prior to the date of admission.

Denominator: The number of current smokers who had an elective carotid procedure.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Physician Delivered Advice (Pre-Procedure)

Numerator: The number of current smokers who had an elective carotid procedure and the provider recommended the patient quit smoking prior to the date of admission.

Denominator: The number of current smokers who had an elective carotid procedure. Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Pt Refused Physician Delivered Advice (Pre-Procedure)

Numerator: The number of current smokers who had an elective carotid procedure and the patient refused to quit smoking prior to the date of admission.

Denominator: The number of current smokers who had an elective carotid procedure and the provider recommended the patient quit smoking prior to the date of admission.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Pharmacotherapy (Pre-Procedure)

Numerator: The number of current smokers who had an elective carotid procedure and the provider recommended pharmacotherapy prior to the date of admission.

Denominator: The number of current smokers who had an elective carotid procedure.

Exclusion:

Death during procedure or post-procedure.
Current smokers of non-tobacco products.

Pt Refused Pharmacotherapy (Pre-Procedure)

Numerator: The number of current smokers who had an elective carotid procedure and the patient refused pharmacotherapy prior to the date of admission.

Denominator: The number of current smokers who had an elective carotid procedure and the provider recommended pharmacotherapy prior to the date of admission.

Exclusion:

Death during procedure or post-procedure.
Current smokers of non-tobacco products.

Referral to Smoking Counseling Services (Pre-Procedure)

Numerator: The number of current smokers who had an elective carotid procedure and the provider referred the patient to a smoking counseling service prior to the date of admission.

Denominator: The number of current smokers who had an elective carotid procedure.

Exclusion:

Death during procedure or post-procedure.
Current smokers of non-tobacco products.

Pt Refused Referral to Smoking Counseling Services (Pre-Procedure)

Numerator: The number of current smokers who had an elective carotid procedure and the patient refused the referral to a smoking counseling service prior to the date of admission.

Denominator: The number of current smokers who had an elective carotid procedure and the provider referred the patient to a smoking counseling service prior to the date of admission.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Preadmission Living Location

Numerator: The number of carotid discharges with X preadmission living location.

Denominator: The total number of discharges with a carotid procedure.

Race

Numerator: The number of carotid discharges with X race.

Denominator: The total number of discharges with a carotid procedure.

Re-Explore After Closure

Numerator: The number of CEA procedures where the incision was reopened for exploration.

Denominator: The total number of CEA procedures.

Reperfusion Symptoms

Numerator: The number of CEA procedures where an outcome of hyperperfusion syndrome occurred.

Denominator: The total number of discharges with a CEA procedure.

Restenosis in Target Vessel after Prior CEA (CAS)

Numerator: The number of CAS procedures where Restenosis of the Target Vessel occurred after a prior CEA procedure of the same vessel.

Denominator: The total number of CAS procedures.

Carotid stenting procedures performed for distinct lesions are excluded from the numerator and denominator.

Restenosis in Target Vessel after prior CAS (CEA)

Numerator: The number of CEA procedures where Restenosis of the Target Vessel occurred after a prior CAS procedure of the same vessel.

Denominator: The total number of CEA procedures.

Restenosis in Target Vessel after prior CEA (CEA)

Numerator: The number of CEA procedures where Restenosis of the Target Vessel occurred after a prior CEA procedure of the same vessel.

Denominator: The total number of CEA procedures.

Restenosis of Target Vessel after Prior CAS (CAS)

Numerator: The number of CAS procedures where Restenosis of the Target Vessel occurred after a prior CAS procedure of the same vessel.

Denominator: The total number of CAS procedures.

Carotid stenting procedures performed for distinct lesions are excluded from the numerator and denominator.

Return to OR

Numerator: The number of CEA procedures where the patient returned to the OR, post procedure, for an event relating to the CEA.

Denominator: The total number of discharges with a CEA procedure.

Bleeding

Numerator: The number of CEA procedures where Bleeding is the reason for the Return to OR.

Denominator: The total number of CEA procedures where the patient returned to the OR, post procedure, for an event relating to the CEA.

Neurologic Event

Numerator: The number of CEA procedures where a Neurological Event is the reason for the Return to OR.

Denominator: The total number of CEA procedures where the patient returned to the OR, post procedure, for an event relating to the CEA.

Technical Defect Requiring Repair

Numerator: The number of CEA procedures where a Technical Defect Requiring Repair is the reason for the Return to OR.

Denominator: The total number of CEA procedures where the patient returned to the OR, post procedure, for an event relating to the CEA.

Shunt Used

Numerator: The number of CEA procedures where a shunt was used during the procedure.

Denominator: The total number of CEA procedures.

Slow Flow

Numerator: The number of CAS procedures where slow flow occurred during the procedure.

Denominator: The total number of discharges with a CAS procedure.

Smoking (Follow-up)

Numerator: The number of current smokers who had an elective carotid procedure and are still smoking during follow-up.

Denominator: The number of current smokers who had an elective carotid procedure and either Yes or No is entered for Smoking on the follow-up form.

Exclusions: Current smokers who only use non-tobacco products.

Smoking Cessation

The Smoking Cessation section combines Pre-procedure Smoking Cessation and Smoking Cessation at Discharge.

Numerator: The number of current smokers who had an elective carotid procedure and at least 2 of 3 smoking cessation interventions (Physician-delivered advice, Pharmacotherapy, Referral to smoking counseling services) were implemented before the hospital admission date or at discharge.

Denominator: The number of current smokers who had an elective carotid procedure.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Physician Delivered Advice

Numerator: The number of current smokers who had an elective carotid procedure and the provider recommended the patient quit smoking prior to the date of admission or at discharge.

Denominator: The total number of current smokers who had an elective carotid procedure

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Pt Refused Physician Delivered Advice

Numerator: The number of current smokers who had an elective carotid procedure and refused to quit smoking prior to the date of admission or at discharge.

Denominator: The total number current smokers who had an elective carotid procedure and the provider recommended the patient quit smoking prior to the date of admission or at discharge.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Pharmacotherapy

Numerator: The number of current smokers who had an elective carotid procedure and the provider recommended pharmacotherapy prior to the date of admission or at discharge.

Denominator: The total number of current smokers who had an elective carotid procedure.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Pt Refused Pharmacotherapy

Numerator: The number of current smokers who had an elective carotid procedure and the patient refused pharmacotherapy prior to the date of admission or at discharge.

Denominator: The total number of current smokers who had an elective carotid procedure and the provider recommended pharmacotherapy prior to the date of admission or at discharge.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Referral to Smoking Counseling Services

Numerator: The number of current smokers who had an elective carotid procedure and the patient refused pharmacotherapy prior to the date of admission or at discharge.

Denominator: The total number of current smokers who had an elective carotid procedure.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Pt Refused Referral to Smoking Counseling Services

Numerator: The number of current smokers who had an elective carotid procedure and the patient refused the referral to a smoking counseling service prior to the date of admission or at discharge.

Denominator: The number of current smokers who had an elective carotid procedure and the provider referred the patient to a smoking counseling service prior to the date of admission or at discharge.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Smoking Cessation Rates - Received Stop Smoking Counseling

Numerator: The number of current smokers who received smoking cessation counseling at discharge.

Denominator: The total number of current smokers.

Exclusions:

- Death during the procedure or post-procedure.

Smoking Cessation Since DC (Follow-up)

Numerator: The number of current smokers who had an elective carotid procedure and No is entered for Smoking on the follow-up form.

Denominator: The number of current smokers who had an elective carotid procedure and either Yes or No is entered for Smoking on the follow-up form.

Smoking Cessation at DC

Numerator: The number of current smokers who had an elective carotid procedure and at least 2 of 3 smoking cessation interventions (Physician-delivered advice, Pharmacotherapy, Referral to smoking counseling services) were implemented at discharge.

Denominator: The number of current smokers who had an elective carotid procedure.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Physician Delivered Advice (Discharge)

Numerator: The number of current smokers who had an elective carotid procedure and the provider recommended the patient quit smoking at discharge.

Denominator: The number of current smokers who had an elective carotid procedure.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Pt Refused Physician Delivered Advice (Discharge)

Numerator: The number of current smokers who had an elective carotid procedure and the patient refused to quit smoking at discharge.

Denominator: The number of current smokers who had an elective carotid procedure and the provider recommended the patient quit

smoking at discharge.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Pharmacotherapy (Discharge)

Numerator: The number of current smokers who had an elective carotid procedure and the provider recommended pharmacotherapy at discharge.

Denominator: The number of current smokers who had an elective carotid procedure.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Pt Refused Pharmacotherapy (Discharge)

Numerator: The number of current smokers who had an elective carotid procedure the patient refused pharmacotherapy at discharge.

Denominator: The number of current smokers who had an elective carotid procedure and the provider recommended pharmacotherapy at discharge.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Referral to Smoking Counseling Services (Discharge)

Numerator: The number of current smokers who had an elective carotid procedure and the provider referred the patient to a smoking counseling service at discharge.

Denominator: The number of current smokers who had an elective carotid procedure.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Pt Refused Referral to Smoking Counseling Services (Discharge)

Numerator: The number of current smokers who had an elective carotid procedure the patient refused the referral to a smoking counseling service at discharge.

Denominator: The number of current smokers who had an elective carotid procedure and the provider referred the patient to a smoking counseling service at discharge.

Exclusion:

- Death during procedure or post-procedure.
- Current smokers of non-tobacco products.

Statin (X Procedure)

Numerator: The number of discharges containing X procedure where the patient was taking a statin within 30 days of hospital admission.

Denominator: The number of discharges containing X procedure.

Exclusion: A contraindication to a statin.

Statin (admission)

Numerator: The number of discharges with a carotid procedure where the patient is taking a statin within 30 days of hospital admission.

Denominator: The total number of discharges with a carotid procedure.

Exclusion: A contraindication to statins.

Statin (discharge)

Numerator: The number of discharges with a carotid procedure where a statin is ordered or continued at discharge.

Denominator: The total number of discharges with a carotid procedure.

Exclusion: A contraindication to statins.

Statins (Follow-up report)

Numerator: The number of completed carotid follow-up forms that have Yes entered for statins.

Denominator: The number of completed carotid follow-up forms that have either Yes or No entered for statins.

Exclusion: A contraindication to Statins.

Statins Compliance (Follow-up report)

Numerator: The number of completed carotid follow-up forms that have Yes entered for statins and the patient was discharged on a statin.

Denominator: The number of completed carotid follow-up forms that have either Yes or No entered for statins and the patient was discharged on a statin.

Exclusion: A contraindication to Statins.

Stent Diameter (mean, stdev)

Mean (average) and standard deviation of the Stent Diameter implanted during the CAS procedure.

Exclusions:

- CAS procedures where the Stent Diameter is not documented.
- CAS procedures performed for distinct lesions.

Stent Implanted

Numerator: The number of CAS procedures where a stent was implanted.

Denominator: The total number of CAS procedures.

Note: Carotid stenting procedures performed for distinct lesions are excluded from the numerator and denominator.

Stent Length (mean, stdev)

Mean (average) and standard deviation of the length of the stent that was implanted during the CAS procedure.

Exclusions:

- CAS procedures where the length of the stent was not documented.
- CAS procedures performed for distinct lesions.

Stroke at 30 Days (CAS)

Numerator: The number of discharges with a CAS procedure where a new stroke occurred within 30 days of the procedure end date.

Denominator: The number of 30-Day CAS follow-up forms.

Stroke at 30 Days (CEA)

Numerator: The number of discharges with a CEA procedure where a new stroke occurred within 30 days of the procedure end date.

Denominator: The number of 30-Day CEA follow-up forms.

Surgical Procedure Terminated

Numerator: The number of CEA procedures where the surgical procedure was terminated.

Denominator: The total number of CEA procedures.

Symptomatic (CAS)

Numerator: The number of CAS procedures where the patient was symptomatic prior to the procedure.

Denominator: The total number of CAS procedures.

Note: Symptomatic is defined as Yes entered for Target Lesion Symptomatic within 6 months.

Symptomatic (CEA)

Numerator: The number of CEA procedures the patient is symptomatic before the procedure.

Denominator: The total number of CEA procedures.

Note: Symptomatic is defined as Yes entered for Target Lesion Symptomatic within 6 months .

TCAR

Numerator: The number of CAS procedures that were TCARs.

Denominator: The total number of CAS procedures.

TIA / Stroke (M&M report)

Numerator: The number of discharges with a carotid procedure where a new stroke or new TIA occurred during the procedure or after the procedure and before discharge.

Denominator: The total number of discharges with a carotid procedure.

Target Carotid Vessel (Left)

Numerator: The number of X procedures where the procedure was performed on a vessel on the patient's left side.

Denominator: The total number of X procedures.

Target Carotid Vessel (Right)

Numerator: The number of X procedures where the procedure was performed on a vessel on the patient's right side.

Denominator: The total number of X procedures.

Target Lesion Location (Bifurcation)

Numerator: The number of CAS procedures where the Target Lesion involves the carotid bifurcation.

Denominator: The total number of CAS procedures.

Note: Carotid stenting procedures performed for distinct lesions are excluded from the numerator and denominator.

Target Lesion Location (Isolated CCA)

Numerator: The number of CAS procedures where the Target Lesion is isolated to the common carotid artery and does not extend to or involve the carotid bifurcation.

Denominator: The total number of CAS procedures.

Note: Carotid stenting procedures performed for distinct lesions are excluded from the numerator and denominator.

Target Lesion Location (Isolated ICA)

Numerator: The number of CAS procedures where the Target Lesion is isolated to the internal carotid artery and does not extend to or involve the carotid bifurcation.

Denominator: The total number of CAS procedures.

Note: Carotid stenting procedures performed for distinct lesions are excluded from the numerator and denominator.

Target Lesion Symptomatic within past 6 months

Numerator: The number of X procedures where the patient had neurologic symptoms related to the target lesion within six months

before the procedure.

Denominator: The total number of X procedures.

Total CAS w/follow-up

Numerator: The number of completed CAS follow-up forms.

Denominator: The number of CAS follow-up forms that are due.

Neuro Deficit since Discharge (CAS)

Numerator: The number of completed CAS follow-up forms where Yes is entered for Neurologic Deficit Occurred Since Discharge.

Denominator: The number of completed CAS follow-up forms where either Yes or No is entered for Neurologic Deficit Occurred Since Discharge.

Deficit < 24 hours, Resolved (CAS)

Numerator: The number of completed CAS follow-up forms where Yes is entered for Neurologic Deficit Occurred Since Discharge and "Deficit occurred and resolved w/in 24 hours" is selected.

Denominator: The number of completed CAS follow-up forms where Yes is entered for Neurologic Deficit Occurred Since Discharge.

Deficit > 24 hours, Resolved (CAS)

Numerator: The number of completed CAS follow-up forms where Yes is entered for Neurologic Deficit Occurred Since Discharge and "Deficit occurred and duration was greater than 24 hours but completely resolved" is selected.

Denominator: The number of completed CAS follow-up forms where Yes is entered for Neurologic Deficit Occurred Since Discharge.

Deficit > 24 hours, Not Resolved (CAS)

Numerator: The number of completed CAS follow-up forms where Yes is entered for Neurologic Deficit Occurred Since Discharge and "Persistent deficit occurred, lasted greater than 24 hours, and did not completely resolve" is selected.

Denominator: The number of completed CAS follow-up forms where Yes is entered for with Neurologic Deficit Occurred Since Discharge.

MI (CAS)

Numerator: The number of completed CAS follow-up forms where the patient was readmitted to the hospital for a myocardial infarction post procedure.

Denominator: The number of completed CAS follow-up forms that have either Yes or No entered for MI.

Note: MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.

Total CEA w/follow-up

Numerator: The number of completed CEA follow-up forms.

Denominator: The number of CEA follow-up forms that are due.

Additional Procedures (CEA)

Numerator: The number of completed CEA follow-up forms that have Yes entered for Additional Procedures.

Denominator: The number of completed CEA follow-up forms.

Note: Additional Procedures = A CAS or CEA was performed, post-discharge, on the same vessel as the original procedure.

CAS (CEA)

Numerator: The number of completed CEA follow-up forms where a CAS was performed, post-discharge, on the same vessel as the original CEA.

Denominator: The number of completed CEA follow-up forms where Yes is entered for Additional Procedures.

Note: Additional Procedures = A CAS or CEA was performed, post-discharge, on the same vessel as the original procedure.

CEA (CEA)

Numerator: The number of completed CEA follow-up forms where a CEA was performed, post-discharge, on the same vessel as the original CEA.

Denominator: The number of completed CEA follow-up forms where Yes is entered for Additional Procedures.

Note: Additional Procedures = A CAS or CEA was performed, post-discharge, on the same vessel as the original procedure.

Neuro Deficit since Discharge (CEA)

Numerator: The number of completed CEA follow-up forms where Yes is entered for Neurologic Deficit Occurred Since Discharge.

Denominator: The number of completed CEA follow-up forms where either Yes or No is entered for Neurologic Deficit Occurred Since Discharge.

Deficit < 24 hours, Resolved (CEA)

Numerator: The number of completed CEA follow-up forms where Yes is entered for Neurologic Deficit Occurred Since Discharge and "Deficit occurred and resolved w/in 24 hours" is selected.

Denominator: The number of completed CEA follow-up forms where Yes is entered for Neurologic Deficit Occurred Since Discharge.

Deficit > 24 hours, Resolved (CEA)

Numerator: The number of completed CEA follow-up forms Yes is entered for Neurologic Deficit Occurred Since Discharge and "Deficit occurred and duration was greater than 24 hours but completely resolved" is selected.

Denominator: The number of completed CEA follow-up forms where Yes is entered for Neurologic Deficit Occurred Since Discharge.

Deficit > 24 hours, Not Resolved (CEA)

Numerator: The number of completed CEA follow-up forms where Yes is entered for Neurologic Deficit Occurred Since Discharge and "Persistent deficit occurred, lasted greater than 24 hours, and did not completely resolve" is selected.

Denominator: The number of completed CEA follow-up forms where Yes is entered for Neurologic Deficit Occurred Since Discharge.

MI (CEA)

Numerator: The number of completed CEA follow-up forms where the patient was readmitted to the hospital for a myocardial infarction post procedure.

Denominator: The number of completed CEA follow-up forms where either Yes or No is entered for MI.

Note: MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.

Cranial Nerve Injury (CEA)

Numerator: The number of completed CEA follow-up forms where the patient had a cranial nerve injury related to the CEA.

Denominator: The number of completed CEA follow-up forms where either Yes or No is entered for Cranial Nerve Injury.

Resolved (CEA)

Numerator: The number of completed CEA follow-up forms where the cranial nerve injury was resolved.

Denominator: The number of completed CEA forms where the patient had a cranial nerve injury related to the CEA.

Persistent (CEA)

Numerator: The number of completed CEA follow-up forms where the Cranial Nerve Injury was persistent.

Denominator: The number of completed CEA follow-up forms where the patient had a cranial nerve injury related to the CEA.

Transient Monocular Blindness

Numerator: The number of CAS procedures where Transient Monocular Blindness occurred pre procedure.

Denominator: The total number of CAS procedures.

Type of Carotid Procedure (Conventional)

Numerator: The number of CEA procedures where "conventional" was entered for Type of Carotid Procedure.

Denominator: The total number of CEA procedures.

Type of Carotid Procedure (Eversion)

Numerator: The number of CEA procedures where "eversion technique" was entered for Type of Carotid Procedure.

Denominator: The total number of CEA procedures.

Vascular Access Complications

Numerator: The number of CAS procedures where a vascular access complication occurred.

Denominator: The total number of discharges with a CAS procedure.

Vascular Closure Type

Numerator: The number of CAS procedures where X was used for the Vascular Closure Type.

Denominator: The total number of CAS procedures.