



## **Carotid Report Dictionary**

# Table of Contents

Demographics .....	6
Discharges .....	6
Average Age (mean, stdev) .....	6
Female Gender .....	6
Male Gender.....	6
Race.....	6
Preadmission Living Location .....	6
Discharge Status .....	6
Death (DS) .....	6
Patient History.....	7
Ever Smoked.....	7
Current Smoker .....	7
Smoking Cessation.....	7
Physician Delivered Advice.....	7
Pt Refused Physician Delivered Advice .....	7
Nicotine Replacement Therapy (NRT) .....	7
Pt Refused Nicotine Replacement Therapy (NRT) .....	8
Referral to Smoking Counseling Services .....	8
Pt Refused Referral to Smoking Counseling Services .....	8
Pre-Procedure Smoking Cessation.....	8
Physician Delivered Advice (Pre-Procedure).....	8
Pt Refused Physician Delivered Advice (Pre-Procedure).....	9
Nicotine Replacement Therapy (NRT) (Pre-Procedure) .....	9
Pt Refused Nicotine Replacement Therapy (NRT) (Pre-Procedure) .....	9
Referral to Smoking Counseling Services (Pre-Procedure).....	9
Pt Refused Referral to Smoking Counseling Services (Pre-Procedure).....	9
Smoking Cessation at DC.....	9
Physician Delivered Advice (Discharge).....	10
Pt Refused Physician Delivered Advice (Discharge).....	10
Nicotine Replacement Therapy (NRT) (Discharge) .....	10
Pt Refused Nicotine Replacement Therapy (NRT) (Discharge) .....	10
Referral to Smoking Counseling Services (Discharge).....	10
Pt Refused Referral to Smoking Counseling Services (Discharge).....	10
Hyperlipidemia.....	11
Hypertension .....	11
Diabetes Mellitus .....	11
CVD/TIA .....	11
Coronary Artery Disease (CAD) .....	11
Medications.....	11
Aspirin (admission) .....	11

Aspirin (discharge).....	11
Beta Blockers (admission).....	11
Beta Blockers (discharge).....	12
Statin (admission).....	12
Statin (discharge).....	12
Clopidogrel (admission).....	12
Clopidogrel (discharge).....	12
Opioids.....	12
Opioids @ Admission (CEA).....	12
Any Opioids @ Discharge (CEA).....	12
New Opioids @ Discharge (CEA).....	12
Pre Imaging Studies (CAS).....	13
Carotid Duplex Ultrasound (performed/total).....	13
CT Angiography (performed/total).....	13
MR Angiography (performed/total).....	13
Indications (CAS).....	13
Any Neuro Event Prior to Procedure (CAS).....	13
TIA.....	13
Ischemic Stroke.....	13
Hemorrhagic Event.....	13
Target Lesion Symptomatic within past 6 months.....	13
Acute Evolving Stroke.....	14
Transient Monocular Blindness.....	14
Asymptomatic.....	14
Restenosis in Target Vessel after prior CAS.....	14
Restenosis in Target Vessel after prior CEA.....	14
Procedure Details (CAS).....	14
Target Carotid Vessel (Right).....	14
Target Carotid Vessel (Left).....	14
Target Lesion Location (Isolated CCA).....	14
Target Lesion Location (Isolated ICA).....	15
Target Lesion Location (Bifurcation).....	15
TCAR.....	15
Pre Procedure % Stenosis (mean, stdev).....	15
Embolic Protection Successfully Deployed.....	15
Embolic Protection Model.....	15
Stent Implanted.....	15
Stent Diameter (mean, stdev).....	15
Stent Length (mean, stdev).....	15
Final % Stenosis (mean, stdev).....	16
Contrast Volume (mean, stdev).....	16
Access Site.....	16

Vascular Closure Type.....	16
Outcomes (CAS).....	16
Death .....	16
Myocardial Injury .....	16
New Stroke or TIA (CAS) .....	16
New Stroke (CAS).....	16
Asymptomatic (New Stroke) .....	16
Symptomatic (New Stroke).....	17
New TIA (CAS) .....	18
Asymptomatic (New TIA).....	18
Symptomatic (New TIA).....	18
Unknown (CAS) .....	18
Combined Death/MI/Stroke (CAS).....	18
Slow Flow.....	18
Vascular Access Complications .....	18
Post Procedure Length of Stay (mean, median, stdev).....	18
Length of Stay (mean, median, stdev).....	19
Pre Imaging Studies (CEA) .....	19
Carotid Duplex Ultrasound (performed/total).....	19
CT Angiography (performed/total).....	19
MR Angiography (performed/total).....	19
Indications (CEA).....	19
Any Neuro Event Prior to Procedure (CEA).....	19
TIA.....	19
Ischemic Stroke .....	19
Hemorrhagic Event .....	20
Target Lesion Symptomatic within past 6 months .....	20
Acute Evolving Stoke.....	20
Asymptomatic.....	20
Restenosis in Target Vessel after prior CAS .....	20
Restenosis in Target Vessel after prior CEA .....	20
Procedure Details (CEA).....	20
Target Carotid Vessel (Right).....	20
Target Carotid Vessel (Left) .....	20
Type of Carotid Procedure (Conventional) .....	21
Type of Carotid Procedure (Eversion) .....	21
Monitoring During Procedure .....	21
Type of Monitoring During Procedure .....	21
Shunt Used.....	21
Arteriotomy Patch Used.....	21
Surgical Procedure Terminated .....	21
Re-Explore After Closure.....	21

Outcomes (CEA).....	21
Death .....	21
Myocardial Injury .....	22
New Stroke or TIA (CEA) .....	22
New Stroke (CEA).....	22
Asymptomatic (New Stroke) .....	22
Symptomatic (New Stroke) .....	22
New TIA (CEA) .....	22
Asymptomatic (New TIA).....	22
Symptomatic (New TIA).....	22
Unknown (CEA) .....	23
Combined Death/Myocardial Injury/Stroke (CEA) .....	23
Cranial Nerve Injury.....	23
Persistent Hypotension.....	23
Reperfusion Symptoms .....	23
Return to OR.....	23
Bleeding.....	23
Neurologic Event.....	23
Technical Defect Requiring Repair .....	24
Post Procedure Length of Stay (mean, median, stdev).....	24
Length of Stay (mean, median, stdev).....	24
Elective asymptomatic CEA not discharged home by post-op day 2.....	24
Carotid Report Graphs .....	24
Elective asymptomatic CEA not discharged home by post-op day 2 - Goal <8.0% .....	24
New Stroke or TIA (CAS) .....	24
New Stroke or TIA (CEA) .....	24

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## Demographics

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The demographic data listed below exists at the discharge level, not at the procedure level. In each of these consider only discharges in which there was at least one carotid procedure. (CAS or CEA)

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## Discharges

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

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## Average Age (mean, stdev)

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

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## Female Gender

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Numerator: The number of female patients.

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

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## Male Gender

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Numerator: The number of male patients.

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

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## Race

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Numerator: The number of carotid discharges with X race.

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

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## Preadmission Living Location

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

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

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## Discharge Status

---

Numerator: The number of discharges with X discharge status.

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

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## Death (DS)

---

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

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

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## Patient History

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### Ever Smoked

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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.

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### Current Smoker

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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.

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### Smoking Cessation

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

Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and at least 2 of 3 smoking cessation interventions (Physician-delivered advice, Nicotine replacement therapy, Referral to smoking counseling services) were implemented before the hospital admission date, during the hospitalization or at the time of discharge.

Denominator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

### Physician Delivered Advice

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Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider recommended the patient quit smoking prior to the date of admission, during the hospitalization or at discharge.

Denominator: The total number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

### Pt Refused Physician Delivered Advice

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Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the patient refused the provider's recommendation to quit smoking prior to the date of admission, during the hospitalization or at discharge.

Denominator: The total number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider recommended the patient quit smoking prior to the date of admission, during the hospitalization or at discharge.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

### Nicotine Replacement Therapy (NRT)

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Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider recommended NRT prior to the date of admission, during the hospitalization, or at discharge.

Denominator: The total number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

### **Pt Refused Nicotine Replacement Therapy (NRT)**

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Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the patient refused the NRT prior to the date of admission, during the hospitalization, or at discharge.

Denominator: The total number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider recommended NRT prior to the date of admission, during the hospitalization, or at discharge.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

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### **Referral to Smoking Counseling Services**

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Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider referred the patient to a smoking counseling service prior to the date of admission, during the hospitalization, or at discharge.

Denominator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

### **Pt Refused Referral to Smoking Counseling Services**

---

Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the patient refused the referral to a smoking counseling service prior to the date of admission, during the hospitalization, or at discharge.

Denominator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider referred the patient to a smoking counseling service prior to the date of admission, during the hospitalization, or at discharge. .

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

### **Pre-Procedure Smoking Cessation**

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Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and at least 2 of 3 smoking cessation interventions (Physician-delivered advice, Nicotine replacement therapy, Referral to smoking counseling services) were implemented prior to the date of admission.

Denominator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

### **Physician Delivered Advice (Pre-Procedure)**

---

Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider recommended the patient quit smoking prior to the date of admission.

Denominator: The total number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco.



---

### **Pt Refused Physician Delivered Advice (Pre-Procedure)**

---

Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, chews tobacco and the patient refused the provider's recommendation to quit smoking prior to the date of admission.

Denominator: The total number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider recommended the patient quit smoking prior to the date of admission.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

### **Nicotine Replacement Therapy (NRT) (Pre-Procedure)**

---

Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider recommended NRT prior to the date of admission.

Denominator: The total number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

### **Pt Refused Nicotine Replacement Therapy (NRT) (Pre-Procedure)**

---

Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the patient refused NRT prior to the date of admission.

Denominator: The total number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider recommended NRT prior to the date of admission.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

### **Referral to Smoking Counseling Services (Pre-Procedure)**

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Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider referred the patient to a smoking counseling service prior to the date of admission.

Denominator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

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

---

Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the patient refused the referral to a smoking counseling service prior to the date of admission.

Denominator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider referred the patient to a smoking counseling service prior to the date of admission.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

### **Smoking Cessation at DC**

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Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and at least 2 of 3 smoking cessation interventions (Physician-delivered advice, Nicotine replacement therapy, Referral to smoking counseling services) were implemented during the hospitalization or at discharge.

Denominator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

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## Physician Delivered Advice (Discharge)

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Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider recommended the patient quit smoking during the hospitalization or at discharge.

Denominator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

## Pt Refused Physician Delivered Advice (Discharge)

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Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the patient refused to quit smoking during the hospitalization or at discharge.

Denominator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider recommended the patient quit smoking during the hospitalization or at discharge.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

## Nicotine Replacement Therapy (NRT) (Discharge)

---

Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider recommended NRT during the hospitalization or at discharge.

Denominator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

## Pt Refused Nicotine Replacement Therapy (NRT) (Discharge)

---

Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the patient refused NRT during the hospitalization or at discharge.

Denominator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider recommended NRT during the hospitalization or at discharge.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

## Referral to Smoking Counseling Services (Discharge)

---

Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider referred the patient to a smoking counseling service during the hospitalization or at discharge.

Denominator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

---

## Pt Refused Referral to Smoking Counseling Services (Discharge)

---

Numerator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the patient refused the referral to a smoking counseling service during the hospitalization or at discharge.

Denominator: The number of discharges with an elective carotid procedure where the patient currently smokes cigarettes, cigars, pipe, or chews tobacco and the provider referred the patient to a smoking counseling service during the hospitalization or at discharge.

Exclusion: Death during procedure, death post-procedure, or death at discharge.

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## Hyperlipidemia

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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.

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## Hypertension

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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.

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## Diabetes Mellitus

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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.

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## CVD/TIA

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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.

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## Coronary Artery Disease (CAD)

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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.

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## Medications

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### Aspirin (admission)

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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)

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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.

---

### Beta Blockers (admission)

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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. Exclusion: A contraindication to beta blockers.

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## Beta Blockers (discharge)

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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.

Exclusions: A contraindication to beta blockers.

---

## Statin (admission)

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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.

---

## Clopidogrel (admission)

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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).

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## Opioids

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### Opioids @ Admission (CEA)

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

Denominator: The total number of discharges containing a CEA.

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### Any Opioids @ Discharge (CEA)

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

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

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### New Opioids @ Discharge (CEA)

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

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

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## **Pre Imaging Studies (CAS)**

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### **Carotid Duplex Ultrasound (performed/total)**

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Numerator: The number of CAS procedures where a duplex ultrasound was performed within 6 months prior to admission.

Denominator: The total number of CAS procedures.

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### **CT Angiography (performed/total)**

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Numerator: The number of CAS procedures where a CT Angiography (CTA) was performed within 6 months prior to admission.

Denominator: The total number of CAS procedures.

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### **MR Angiography (performed/total)**

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Numerator: The number of CAS procedures where a MR Angiography (MRA/MRI) was performed within 6 months prior to admission.

Denominator: The total number of CAS procedures.

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## **Indications (CAS)**

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### **Any Neuro Event Prior to Procedure (CAS)**

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

Denominator: The total number of CAS procedures.

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### **TIA**

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Numerator: The number of CAS procedures where a TIA occurred pre procedure.

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

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### **Ischemic Stroke**

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

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

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### **Hemorrhagic Event**

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

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

---

### **Target Lesion Symptomatic within past 6 months**

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Numerator: The number of CAS procedures where the patient had neurologic symptoms related to the target lesion within six months before the procedure.

Denominator: The total number of CAS procedures.

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## Acute Evolving Stroke

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Numerator: The number of CAS 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 CAS procedures.

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## Transient Monocular Blindness

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

Denominator: The total number of CAS procedures.

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## Asymptomatic

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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, Acute Evolving Stroke, and Transient Monocular Blindness.

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## Restenosis in Target Vessel after prior CAS

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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.

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## Restenosis in Target Vessel after prior CEA

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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.

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## Procedure Details (CAS)

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### Target Carotid Vessel (Right)

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

Denominator: The total number of CAS procedures.

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### Target Carotid Vessel (Left)

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

Denominator: The total number of CAS procedures.

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### Target Lesion Location (Isolated CCA)

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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.

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## Target Lesion Location (Isolated ICA)

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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.

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## Target Lesion Location (Bifurcation)

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

Denominator: The total number of CAS procedures.

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## TCAR

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Numerator: The number of CAS procedures that were TCARs.

Denominator: The total number of CAS procedures.

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## Pre Procedure % Stenosis (mean, stdev)

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

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## Embolic Protection Successfully Deployed

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

Denominator: The total number of CAS procedures.

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## Embolic Protection Model

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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.

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## Stent Implanted

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

Denominator: The total number of CAS procedures.

---

## Stent Diameter (mean, stdev)

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

Exclusion: CAS procedures where the Stent Diameter is not documented.

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## Stent Length (mean, stdev)

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

Exclusion: CAS procedures where the length of the stent was not documented.

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## Final % Stenosis (mean, stdev)

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

Exclusion: CAS procedures where the Final % Stenosis is not documented.

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## Contrast Volume (mean, stdev)

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

Exclusion: CAS procedures where Contrast Volume is not documented.

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## Access Site

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

Denominator: The total number of CAS procedures.

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## Vascular Closure Type

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

Denominator: The total number of CAS procedures.

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## Outcomes (CAS)

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### Death

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Numerator: The number of CAS procedures where a death occurred during the procedure or hospital encounter.

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

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### Myocardial Injury

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Numerator: The number of CAS procedures where a STEMI or NSTEMI occurred post procedure and before discharge.

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

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### New Stroke or TIA (CAS)

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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, Acute Evolving Stroke, and Transient Monocular Blindness.

---

### **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, Acute Evolving Stroke, and Transient Monocular Blindness.

---

## **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.

---

## **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, Acute Evolving Stroke, and Transient Monocular Blindness.

---

## **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, Acute Evolving Stroke, and Transient Monocular Blindness.

---

## **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.

---

## **Combined Death/MI/Stroke (CAS)**

---

Numerator: The number of discharges containing a CAS 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 STEMI or NSTEMI occurred post procedure.

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

---

## **Slow Flow**

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

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

---

## **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.

---

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

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The average (mean), median, and standard deviation of length of stay post-op for a CAS procedure. Length of stay post-op is calculated as the discharge date minus the procedure end date +1.

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---

## Length of Stay (mean, median, stdev)

---

The average (mean), median, and standard deviation of length of stay for CAS procedures. Length of stay is calculated as date of discharge minus the admission date +1.

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

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## Pre Imaging Studies (CEA)

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### Carotid Duplex Ultrasound (performed/total)

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

Denominator: The total number of CEA procedures.

---

### CT Angiography (performed/total)

---

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

Denominator: The total number of CEA procedures.

---

### MR Angiography (performed/total)

---

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

Denominator: The total number of CEA procedures.

---

## Indications (CEA)

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### Any Neuro Event Prior to Procedure (CEA)

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Numerator: The number of CEA procedures where a neuro event occurred prior to the procedure.

Denominator: The total number of CEA procedures.

---

### TIA

---

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

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

---

### Ischemic Stroke

---

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

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

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## Hemorrhagic Event

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

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

---

## Target Lesion Symptomatic within past 6 months

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Numerator: The number of CEA procedures where the patient had neurologic symptoms in the past six months related to the target lesion.

Denominator: The total number of CEA procedures.

---

## Acute Evolving Stroke

---

Numerator: The number of CEA 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 CEA procedures.

---

## Asymptomatic

---

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 and Acute Evolving Stroke.

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## Restenosis in Target Vessel after prior CAS

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

Denominator: The total number of CEA procedures.

---

## Restenosis in Target Vessel after prior CEA

---

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

Denominator: The total number of CEA procedures.

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## Procedure Details (CEA)

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### Target Carotid Vessel (Right)

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

Denominator: The total number of CEA procedures.

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### Target Carotid Vessel (Left)

---

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

Denominator: The total number of CEA procedures.

---

## **Type of Carotid Procedure (Conventional)**

---

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

Denominator: The total number of CEA procedures.

---

## **Type of Carotid Procedure (Eversion)**

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

Denominator: The total number of CEA procedures.

---

## **Monitoring During Procedure**

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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**

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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.

---

## **Shunt Used**

---

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

Denominator: The total number of CEA procedures.

---

## **Arteriotomy Patch Used**

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

Denominator: The total number of CEA procedures.

---

## **Surgical Procedure Terminated**

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

Denominator: The total number of CEA procedures.

---

## **Re-Explore After Closure**

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

Denominator: The total number of CEA procedures.

---

## **Outcomes (CEA)**

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### **Death**

---

Numerator: The number of CEA procedures where a death occurred during the procedure or death or hospital encounter.

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

---

## Myocardial Injury

---

Numerator: The number of CEA procedures where a STEMI or NSTEMI occurred post procedure.

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

---

## 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 and Acute Evolving Stroke.

---

## 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 and Acute Evolving Stroke.

---

## New TIA (CEA)

---

Numerator: The number of CEA procedures where a new TIA occurred during after 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 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 and Acute Evolving Stroke.

---

## 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 and Acute Evolving Stroke.

---

## 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.

---

## Combined Death/Myocardial Injury/Stroke (CEA)

---

Numerator: The number of discharges containing a CEA 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 STEMI or NSTEMI occurred post procedure.

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

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## Cranial Nerve Injury

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

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

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## Persistent Hypotension

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

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

---

## 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.

---

## Return to OR

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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

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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.

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## 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.

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## Technical Defect Requiring Repair

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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.

---

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

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The mean, median, and standard deviation of length of stay post-op for a CAS procedure. Length of stay post-op is calculated as the discharge date minus the procedure end date +1.

---

## Length of Stay (mean, median, stdev)

---

The mean, median, and standard deviation of length of stay for CAS procedures. Length of stay is calculated as date of discharge minus the admission date +1.

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

---

## Elective asymptomatic CEA not discharged home by post-op day 2

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Numerator: The number of discharges with an elective CEA procedure that are asymptomatic and have a post procedure LOS >3. LOS is calculated as the discharge date minus the date of procedure +1.

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
- 

## Carotid Report Graphs

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Each graphs 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.

If the metric has a goal, a horizontal line will be drawn on the graph to indicate where the goal lies.

---

## Elective asymptomatic CEA not discharged home by post-op day 2 - Goal <8.0%

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For each hospital, calculate the percentage of discharges meeting the CEA LOS criteria. This is the same as the definition for [Elective asymptomatic CEA not discharged home by post-op day 2 \(P4P\)](#) on the Outcomes (CEA) page.

**Goal <8.0%**

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## New Stroke or TIA (CAS)

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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.

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## New Stroke or TIA (CEA)

---

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.

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