Cohere Medicare Advantage Policy - Carotid Endarterectomy (CEA)

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Other Notices:

Guideline Information:

Specialty Area: Cardiovascular Disease
Guideline Name: Carotid Endarterectomy (CEA)

Date of last literature review: 03/17/2025
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Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17 yo)

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Medical Necessity Criteria

Service: Carotid Endarterectomy (CEA)

Benefit Category

Not applicable.

Related CMS Documents

Please refer to the CMS Medicare Coverage Database for the most current applicable CMS National Coverage.

- There are no applicable NCDs and/or LCDs for carotid endarterectomy (CEA).

Recommended Clinical Approach

Carotid endarterectomy (CEA) is a surgical procedure involving the removal of fat deposits, plaques, or the artery itself in patients whose carotid arteries may have been narrowed by atherosclerosis or carotid artery stenosis.[1] Carotid artery disease is a condition in which the carotid arteries, which supply blood to the brain, become narrowed or blocked. Symptoms of carotid artery disease include stroke or brief stroke-like attacks, and other symptoms may include weakness or numbness in the face or extremities, temporary loss of vision, speech disorders, or spatial neglect.[2] Patients with symptomatic carotid artery disease may be candidates for CEA to minimize the risk of recurrent stroke.[3] CEA is often recommended over maximal medical therapy in patients who are at low risk for surgery.[4] Patients with asymptomatic carotid artery disease may be candidates for carotid endarterectomy (CEA) to reduce the risk of stroke.[3]

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of carotid endarterectomy (CEA). This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals

reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Surgical complications of CEA that have been reported include hypertension hypotension, hemorrhage, acute arterial occlusion, stroke, myocardial ischemia or infarction, venous thromboembolism, cranial nerve palsy, infection, arterial restenosis, and death. Preoperative clinical conditions and comorbidities contribute to cases of stroke or death during this procedure.[5]
- As with any surgical procedure, there is risk of incision site infection as well as adverse reactions to anesthesia or other medications used.[6]
- Delays or denials in surgical treatment, especially after a symptomatic event, can increase the risk of stroke and potentially worsen other patient outcomes.[7]
- Increased healthcare costs and complications from the inappropriate use of emergency services or additional treatments.

The clinical benefits of using these criteria include:

- Improved patient outcomes through timely and appropriate access to a CEA procedure.[6,7]
- Reduction in complications and adverse effects from unnecessary procedures, such as carotid artery stenting.[7]
- CEA can reduce the risk of recurrent or subsequent stroke.[6,7] This procedure offers improved blood flow to the brain and can improve neurological function.
- Addressing the underlying causes of stenosis and carotid artery disease can help prevent future strokes or ischemic attacks. For example, lifestyle factors such as a healthy diet and physical activity are essential for preventing recurrent stroke.[8]
- Timely performance of the CEA after a symptomatic event can maximize benefits and prevent recurrent stroke.[4,6,7]
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are

employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

- ➔ A **carotid endarterectomy (CEA)** is appropriate if **ANY** of the following is **TRUE**[6]:
  - ◆ The patient is symptomatic (defined as a stroke or transient ischemic attack [TIA] within 6 months, ideally within 14 days), with **ALL** of the following[4,8–10]:
    - Ipsilateral moderate (50–69%) to severe (70-99%) extracranial internal carotid artery stenosis as documented by **ANY** of the following:
      - ○ Catheter-based imaging (e.g., angiography); **OR**
      - ○ Non-invasive imaging (e.g., carotid duplex scan, magnetic resonance angiogram [MRA], or CT angiogram [CTA]); **AND**
  - ◆ The patient is asymptomatic (defined as never having a stroke or TIA or had one more than 6 months ago), with **ALL** of the following[8,9]:
    - Greater than or equal to 70% extracranial internal carotid artery stenosis as documented by **ANY** of the following:
      - ○ Catheter-based imaging (e.g., angiography); **OR**
      - ○ Non-invasive imaging (e.g., carotid duplex scan, magnetic resonance angiogram [MRA], or CT angiogram [CTA]).

Non-Indications

- ➔ A **carotid endarterectomy (CEA)** is not considered appropriate if **ANY** of the following is **TRUE**[6]:

- The patient has an implantable device that sends electrical signals to the carotid artery (e.g., Barostim); **OR**
- Occlusion of the contralateral internal carotid artery; **OR**
- Severe disability caused by cerebral infarction that precludes preservation of useful function.

Level of Care Criteria

Inpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
35301	Carotid thromboendarterectomy by neck incision

Disclaimer: G, S, I, and N Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Medical Evidence

Vasavada et al (2023) conducted a review to compare carotid endarterectomy (CEA) and carotid artery stenting (CAS) using research conducted between 2015 and 2023. The authors conducted a meta-analysis and systematic review using quantitative and qualitative approaches. Results of the meta-analysis indicate that CEA demonstrates better outcomes in terms of stroke events and the combined incidence of stroke or death. Conversely, CAS shows a lower incidence of myocardial infarctions compared to CEA. Overall, CEA appears to be more effective in reducing stroke events and the combined incidence of stroke or death, while CAS is associated with fewer cases of myocardial infarctions.[1]

Mohd et al (2023) analyze treatment modalities encompassing medical and surgical options such as CEA and CAS. The selection between surgical intervention and conservative management hinges on individual patient characteristics and risk profiles. The authors review the pathophysiology of carotid artery stenosis, associated risk factors, the importance of timely diagnosis and treatment, and the approaches of CEA and CAS. Evidence indicates that CEA offers notable advantages to patients with moderate to severe stenosis. Efficacy appears limited in patients exhibiting less than 50% stenosis. CEA demonstrates pronounced efficacy among patients with severe stenosis, particularly in cases of high-grade severity. The advantage of CEA diminishes with prolonged intervals following the initial ischemic event, with a more notable effect observed in female patients. Recent guidelines for secondary stroke prevention recommend scheduling CEA within a two-week window for individuals who have encountered a transient ischemic attack (TIA) or minor stroke.[1,2]

AbuRahma et al (2022) performed a meta-analysis of the guidelines published by the Society for Vascular Surgery. The guidelines were based on several randomized trials comparing CEA and CAS. Since then, additional studies and systematic reviews have been published to reaffirm the importance of medical management alongside surgical interventions. Key areas explored were CEA versus maximal medical therapy for low-risk patients and CEA versus transfemoral CAS for low-surgical risk patients with symptomatic carotid artery stenosis greater than 50%. The guidelines also

address the timing of carotid intervention for patients presenting with acute stroke, screening for carotid artery stenosis in asymptomatic patients, and the optimal sequence of intervention for patients with combined carotid and coronary artery disease (CAD). The primary treatment for symptomatic low-risk surgical patients (with stenosis of 50–99% and asymptomatic patients with stenosis of 70–99%) is CEA. The perioperative CEA risk of stroke and death in asymptomatic patients should be less than 3% to ensure benefits. For patients with recent stable stroke, carotid revascularization is considered appropriate for those with greater than 50% stenosis and should be performed once the patient is neurologically stable after 48 hours but less than 14 days after symptom onset. For patients requiring both CEA and coronary artery bypass grafting, CEA is suggested before or concurrent with coronary artery bypass grafting to reduce the risk of stroke and stroke/death potentially. The sequencing of intervention depends on clinical presentation and institutional experience.[4]

Routine screening for asymptomatic carotid artery stenosis in patients without cerebrovascular symptoms or significant risk factors is not recommended unless significant stenosis is detected.[4] For asymptomatic patients, social and demographic factors such as age, sex, life expectancy, and comorbidities should be carefully considered prior to carotid revascularization. Surgical benefits for asymptomatic patients may now be less than previously anticipated in earlier randomized trials (from the 1990s and 2000s), and the 3% complication rate should be interpreted with consideration for current advances in medical therapy.[6]

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Clinical Guideline Revision History/Information

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