Cohere Medicare Advantage Policy - Percutaneous Coronary Intervention (PCI)/ Angioplasty/Stent

Clinical Guidelines for Medical Necessity Review

Version: 3
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Important Notices

Notices & Disclaimers:

GUIDELINES ARE SOLELY FOR COHERE'S USE IN PERFORMING MEDICAL NECESSITY REVIEWS AND ARE NOT INTENDED TO INFORM OR ALTER CLINICAL DECISION-MAKING OF END USERS.

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Other Notices:

Policy Information:

Specialty Area: Cardiovascular Disease
Policy Name: Cohere Medicare Advantage Policy - Percutaneous Coronary Intervention (PCI)/Angioplasty/Stent
Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17 yo)

Table of Contents

Medical Necessity Criteria

Service: Percutaneous Coronary Intervention (PCI)/Angioplasty/Stent

Related CMS Documents

Please refer to the CMS Medicare Coverage Database for the most current applicable CMS National Coverage.[1-4]

- Local Coverage Determination (LCD). Percutaneous coronary intervention (L33623)
  - Billing and coding: Percutaneous coronary intervention (A56823)
- Local coverage determination (LCD): Percutaneous coronary interventions (L34761)
  - Billing and Coding: Percutaneous coronary intervention (A57479)

Description

Coronary artery revascularization (percutaneous coronary intervention [PCI] versus coronary artery bypass graft surgery [CABG]) can occur in a number of clinical settings, including medical emergencies such as an acute myocardial infarction or an acute coronary syndrome, in contrast to less urgent environments, such as in stable ischemic heart disease. In the latter scenario, a PCI is typically performed during a heart catheterization for a symptomatic, significant stenosis or blockage that is refractory to optimal medical therapy or to improve survival.[5]

Coronary angiography remains the default method to define coronary anatomy and characterize the severity of coronary arterial stenoses. A visually estimated diameter stenosis severity of greater than or equal to 70% for non–left main disease and greater than or equal to 50% for left main disease has been used to define significant stenosis and to guide revascularization strategy. An angiographically intermediate coronary stenosis is defined as a diameter stenosis severity of 40-69% and generally warrants additional investigation to assess physiological significance.[5]

Coronary computed tomography angiography (CCTA) is gaining acceptance as an alternative to coronary angiography to define coronary anatomy.

Medical Necessity Criteria

Indications

A **percutaneous coronary intervention (PCI), angioplasty, or stent** is considered appropriate if **ANY** of the following is **TRUE**:

- For the management of **ANY** of the following:
  - Coronary artery disease (CAD) with **ANY** of the following:
    - Acute coronary syndrome (e.g., acute MI, unstable angina)[1,2]; **OR**
    - Polymorphic ventricular tachycardia (VT); **OR**
    - Ventricular fibrillation (VF); **OR**
    - Recent cardiac arrest; **OR**
    - New onset severe left ventricle dysfunction (ejection fraction less than or equal to 35%)[6]; **OR**
    - Prior to transcatheter aortic valve replacement (TAVR)[5,6]; **OR**
  - History of significant obstructive atherosclerotic disease as defined by **ANY** of the following[1,2,5]:
    - Left main artery stenosis with **ANY** of the following[7]:
      - Stenosis greater than or equal to 50% by invasive angiography; **OR**
      - Minimum lumen area of less than 6 mm squared by intravascular ultrasound (IVUS); **OR**
      - Minimum lumen diameter of less than 2.8 mm by IVUS; **OR**
    - Non-left main artery stenosis greater than or equal to 70% by invasive angiography; **OR**
    - Intermediate non-left main artery stenosis (40-69% by invasive angiography) with fractional flow reserve (FFR) less than 0.80 or iFR less than 0.89; **OR**
  - Restenosis of a coronary artery previously treated with an intra-coronary stent or another revascularization procedure (50% or greater restenosis)[1,2]; **OR**
  - Acute ST-elevation myocardial infarction (STEMI)[8]; **OR**
  - The patient has had a prior heart transplant and now has severe cardiac allograft vasculopathy (as diagnosed by coronary angiography/intravascular ultrasound) with proximal, discrete lesion(s)[6,9]; **OR**

- Intravascular ultrasound (IVUS) or intracoronary ultrasound (ICUS), as indicated by **ANY** of the following[1,2]:
  - Need to assess the extent of coronary stenosis if equivocal on angiography; **OR**
  - Need to evaluate patency and integrity of the coronary artery post-intervention; **OR**
- Intravascular Doppler velocity and/or pressure-derived coronary flow reserve measurement is needed, and the degree of stenosis within a vessel must be assessed.[1,2]

*NOTE: Ischemic equivalent: Examples include, but are not limited to, pain, pressure, tightness, or discomfort in the chest, shoulders, arms, neck, back, upper abdomen, or jaw; new ECG abnormalities; or other symptoms/findings suggestive of CAD. Clinical presentations in the absence of chest pain (e.g., dyspnea with exertion, fatigue, or reduced/worsening effort tolerance) consistent with CAD may also be considered an ischemic equivalent.[10]

Non-Indications

A **percutaneous coronary intervention (PCI), angioplasty, or stent** is not considered appropriate if **ANY** of the following is **TRUE**:

- Repeat diagnostic catheterization service without **ANY** of the following[1]:
  - New clinical event; **OR**
  - Change in symptomatology; **OR**
  - Results from an examination or other test; **OR**
  - Before completion of the staged intervention; **OR**
- Right heart catheterization and insertion of a Swan-Ganz catheter (unless medically necessary) when performed incident to a diagnostic catheterization before the intervention, as this is not generally medically necessary for a PCI[1,2]; **OR**
- Standby services of a surgeon or anesthesiologist[1,2]; **OR**
- The patient can be managed medically[2]; **OR**
- Stable ischemic heart disease with **ALL** of the following:
  - The patient has an unprotected left main CAD with unfavorable anatomy for PCI; **AND**
  - The patient is a good candidate for coronary artery bypass graft surgery (CABG); **OR**
- The patient has diabetes and multivessel CAD with the involvement of the LAD, and is an appropriate candidate for CABG (CABG with LIMA to LAD is

recommended over PCI to reduce mortality and repeat revascularizations).[5]

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
92920	Percutaneous transluminal coronary angioplasty into single major coronary artery
92928	Percutaneous transcatheter insertion of stent into single major coronary artery
92937	Percutaneous transluminal revascularization of a single coronary artery bypass graft with angioplasty
92943	Percutaneous transluminal revascularization of chronic total occlusion of a single coronary artery branch with atherectomy, angioplasty, and insertion of stent
C9600	Percutaneous transcatheter placement of drug eluting intracoronary stent(s), with coronary angioplasty when performed; single major coronary artery or branch
C9604	Percutaneous transluminal revascularization of or through coronary artery bypass graft (internal mammary, free arterial, venous), any combination of drug-eluting intracoronary stent, atherectomy and angioplasty, including distal protection when performed; single vessel
C9607	Percutaneous transluminal revascularization of chronic total occlusion, coronary artery, coronary artery branch, or coronary artery bypass graft, any combination of drug-eluting intracoronary stent, atherectomy and angioplasty; single vessel

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS' required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.

The potential clinical harms of using these criteria for the **management of conditions stemming from narrowed or blocked coronary arteries or for heart transplant recipients with severe cardiac allograft vasculopathy** may include:

- Adverse effects from delayed or denied treatment, such as delays or denials in the use of percutaneous coronary interventions (PCI), angioplasty, and stent procedures, can lead to increased symptoms and complications, especially in patients with severe coronary artery disease (CAD). The guideline published in 2021 by the American College of Cardiology (ACC), the American Heart Association (AHA), and the Society for Cardiovascular Angiography and Interventions (SCAI) emphasized the importance of timely intervention to prevent adverse outcomes in patients with significant heart conditions.[5] The use of PCI for obstructive coronary stenoses in asymptomatic patients has been debated as the efficacy is unknown. Wakabayashi et al. (2010) performed a comparative study (n=1944) of outcomes at 1-year following elective PCI in patients with stable CAD. The authors noted a correlation between asymptomatic patients and an increased risk of mortality at 1-year following PCI.[11]

The clinical benefits of using these criteria for the **management of conditions stemming from narrowed or blocked coronary arteries or for heart transplant recipients with severe cardiac allograft vasculopathy** may include:

- Improved patient selection, resulting in better long-term outcomes. Ensuring timely and appropriate access to PCI procedures for the patients selected for the best outcomes. The goal is to provide accurate

diagnostics and effective treatment planning, reducing the risk of complications and improving overall patient health. The guidelines for the management of coronary disease emphasize the diagnostic accuracy of imaging and monitoring procedures in managing patients with heart conditions.[6,12]

The potential clinical harms of using these criteria for **revascularization** may include:

- Adverse effects from delayed or denied treatment include increased healthcare costs and complications stemming from inappropriate use of emergency services and additional treatments.[5,7]

The clinical benefits of using these criteria for **revascularization or for candidates for coronary artery bypass surgery with diabetes and multivessel CAD with the involvement of the left anterior descending artery (LAD)** may include:

- Improved patient selection, resulting in better long-term outcomes. Proper use of PCI criteria helps to avoid unnecessary interventions and their associated risks, thus safeguarding patient health. Guidelines support the necessity of appropriate diagnostic and treatment procedures to prevent unnecessary healthcare utilization.[5,7,13]

Medical Evidence

In 2024, the Society for Cardiovascular Angiography and Interventions (SCAI) issued an expert consensus on treating patients with ST-elevation myocardial infarction (STEMI) through percutaneous coronary intervention (PCI). The authors acknowledge the complexity of managing multivessel disease, present in about half of patients with STEMI, and therefore recommend complete revascularization with treatment of the non-infarct stenosis. At the time of authorship of the statement, the existing guidelines recommend staged PCI among stable patients, although research in this area is ongoing with respect to the optimal timing of resolution of non-culprit lesions.[8]

Virani et al. (2023) developed a clinical practice guideline for the management of patients with chronic coronary artery disease (CAD) for the American Heart Association (AHA) and the American College of Cardiology (ACC). Revascularization is a strong recommendation in patients with life-limiting angina who are currently on guideline-based medical therapy (GDMT) and with significant coronary artery stenoses. Due to higher survival rates, coronary artery bypass grafting (CABG) is recommended over PCI in patients with CAD with significant left main artery involvement associated with high-complexity CAD.[6]

In 2021, the ACC, AHA, and SCAI published a clinical practice guideline for coronary artery revascularization. Surgical revascularization is indicated for patients with significant left main disease. Percutaneous revascularization is a reasonable option to improve survival compared with medical therapy in selected patients with low to medium anatomic complexity of CAD and left main disease that is suitable for revascularization. In patients with stable ischemic heart disease, normal left ventricular ejection fraction, and triple vessel CAD, surgical revascularization may be reasonable, and the percutaneous revascularization survival benefit is uncertain.[5]

References

1. Centers for Medicare & Medicaid Services (CMS). Local Coverage Determination (LCD). Percutaneous coronary intervention (L33623). Revision Effective Date November 7, 2019. https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?LCDId=33623

2. Centers for Medicare & Medicaid Services (CMS). Local coverage determination (LCD): Percutaneous coronary interventions (L34761). Revision Effective Date December 28, 2023. https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lcdid=34761

3. Centers for Medicare & Medicaid Services (CMS). Billing and coding: Percutaneous coronary intervention (A56823). Revision Effective Date October 1, 2023. https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleId=56823

4. Centers for Medicare & Medicaid Services (CMS). Billing and coding: Percutaneous coronary intervention (A57479). Revision Effective Date October 1, 2023. https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleid=57479

5. Lawton J, Tamis-Holland J, Bangalore S, et al. 2021 ACC/AHA/SCAI guideline for coronary artery revascularization: A report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. *J Am Coll Cardiol*. 2022 Jan 18;79(2):e21-e129. doi:10.1016/j.jacc.2021.09.006. Erratum in: *J Am Coll Cardiol*. 2024 Aug 20;84(8):771. doi:10.1016/j.jacc.2024.07.010; *J Am Coll Cardiol*. 2022 Apr 19;79(15):1547. doi:10.1016/j.jacc.2022.03.330

6. Faroux L, Villecourt A, Metz D. The management of coronary artery disease in TAVR Patients. *J Clin Med*. 2023 Nov 16;12(22):7126. doi:10.3390/jcm12227126

7. Patel MR, Calhoon JH, Dehmer GJ, et al. ACC/AATS/AHA/ASE/ASNC/SCAI/SCCT/STS 2017 appropriate use criteria for coronary revascularization in patients with stable ischemic heart disease: A report of the American College of Cardiology Appropriate Use Criteria Task Force, American Association for ThoracicSurgery, American Heart Association, American Society of Echocardiography, American Society of Nuclear Cardiology, Society for Cardiovascular Angiography and Interventions, Society of Cardiovascular Computed Tomography, and Society of Thoracic Surgeons. *J Am Coll Cardiol*. 2017 May 2;69(17):2212-2241. doi:10.1016/j.jacc.2017.02.001

8. Tamis-Holland JE, Abbott JD, Al-Azizi K, et al. SCAI expert consensus statement on the management of patients with STEMI referred for primary PCI. *JSCAI.* 2024 Oct 7:102294. doi:10.1016/j.jscai.2024.102294

9. Luc JG, Choi JH, Rizvi SS, et al. Percutaneous coronary intervention versus coronary artery bypass grafting in heart transplant recipients with coronary allograft vasculopathy: A systematic review and meta-analysis of 1,520 patients. *Ann Cardiothorac Surg*. 2018 Jan;7(1):19-30. doi:10.21037/acs.2018.01.10

10. Patel MR, Bailey SR, Bonow RO, et al. ACCF/SCAI/AATS/AHA/ASE/ASNC/HFSA/HRS/SCCM/SCCT/SCMR/STS 2012 appropriate use criteria for diagnostic catheterization. *J Am Coll Cardiol*. 2012 May 29;59(22):1995-2027. doi:10.1016/j.jacc.2012.03.003

11. Wakabayashi K, Delhaye C, Maluenda G, et al. Prognosis of asymptomatic coronary artery disease after percutaneous coronary intervention. *Am J Cardiol*. 2010 Jun 1;105(11):1507-12. doi:10.1016/j.amjcard.2010.01.008

12. Roffi M, Patrono C, Collet J, et al. 2015 ESC guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation: Task Force for the Management of Acute Coronary Syndromes in Patients Presenting without Persistent ST-Segment Elevation of the European Society of Cardiology (ESC). *Eur Heart J.* 2016 Jan 14;37(3):267-315. doi:10.1093/eurheartj/ehv320

13. Neumann F, Sousa-Uva M, Ahlsson A, et al. 2018 ESC/EACTS guidelines on myocardial revascularization. *Eur Heart J.* 2019 Jan 7;40(2):87-165. doi:10.1093/eurheartj/ehy394. Erratum in: *Eur Heart J*. 2019 Oct 1;40(37):3096. doi:10.1093/eurheartj/ehz507

Clinical Guideline Revision History/Information

Original Date: June 3, 2024		
Review History		
Version 2	06/11/2024	422.101 Disclaimer Added
Version 3	05/22/2025	Annual review. Added indication for “acute ST-elevation myocardial infarction (STEMI).” Added indication for “prior heart transplant with severe cardiac allograft vasculopathy.” Revised Harms & Benefits section. Added non-indications as specified by CMS 2023, 2019; Lawton et al., 2021. Literature review - Medical Evidence section updated (Tamis-Holland, 2024).