



Left and Right Cardiac Catheterization – Single Service

Clinical Guidelines for Medical Necessity Review

Version: 2.0
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Important Notices

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Guideline Information:

Specialty Area: Cardiology

Guideline Name: Left and Right Cardiac Catheterization (Single Service)

Literature review current through: 11/17/2023

Document last updated: 11/17/2023

Type: ☒ Adult (18+ yo) | ☐ Pediatric (0-17yo)

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Care Path Services & Medical Necessity Criteria

Service: Left and Right Cardiac Catheterization

General Guidelines

- **Units, Frequency, & Duration:** None.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach:** A left and right catheterization is invasive, with more risks than other tests (e.g., CCTA or Stress Echo). It is appropriate when there is a high likelihood of coronary artery disease (CAD) with the additional need for a hemodynamic assessment. Unless the clinical situation is emergent or progressive, non-invasive testing (e.g., cardiac computed tomography angiography (CCTA) or stress testing with or without accompanying echo or isotope imagery) should precede a direct catheterization if the primary assessment is for CAD.¹⁻² The addition of a right cardiac catheterization to a left cardiac catheterization is needed for a hemodynamic assessment when evaluating valvular heart disease, cardiomyopathies, or pericardial disease.
- **Exclusions:** Non-emergent cardiac catheterization should be performed at a facility that offers coronary intervention and has the staffing and lab availability for a percutaneous coronary intervention (PCI) if indicated. Unless there are objective findings at the time of catheterization that make intervention uncertain, intervention should occur at the time of the catheterization.³

Medical Necessity Criteria

Indications

- **Left and Right cardiac catheterization** is considered appropriate if **ANY** of the following is **TRUE**¹⁻⁷:
- ◆ Preoperative assessment before valvular surgery; **OR**
 - ◆ Left ventricular dysfunction out of proportion to the severity of the valvular disease; **OR**
 - ◆ Pulmonary hypertension out of proportion to the severity of the valvular disease; **OR**
 - ◆ Suspected or clinical uncertainty between constrictive vs. restrictive physiology; **OR**
 - ◆ Suspected pericardial tamponade; **OR**

- ◆ Suspected cardiomyopathy (LV ejection fraction (LVEF) less than 40%) of unknown etiology with symptoms; **OR**
- ◆ The patient is being considered for or has received a heart transplant; **OR**
- ◆ Patients with stable ischemic heart disease who develop symptoms and signs of heart failure; **OR**
- ◆ Depressed LV function (ejection fraction less than 40%) and moderate risk criteria on noninvasive testing with demonstrable ischemia.

Non-Indications

→ **Left and Right cardiac catheterization** may not be considered appropriate if **ANY** of the following is **TRUE**:

- ◆ Acute or chronic kidney disease; **OR**
- ◆ Coagulopathy; **OR**
- ◆ Fever; **OR**
- ◆ Systemic infection; **OR**
- ◆ Uncontrolled arrhythmia; **OR**
- ◆ Uncontrolled hypertension; **OR**
- ◆ Uncompensated heart failure; **OR**
- ◆ Radiopaque contrast agent allergies in patients who have not been appropriately premedicated; **OR**
- ◆ Pregnancy; **OR**
- ◆ Normal coronary angiogram or CCTA within the last two years and with no stenosis or plaque (For certain left heart catheterization scenarios); **OR**
- ◆ Normal stress test (given adequate stress) within the last year (for certain left heart catheterization scenarios)

Site of Service Criteria

Inpatient or outpatient.

Procedure Codes (HCPCS/CPT)

| HCPCS Code | Code Description/Definition |
|------------|--|
| 93453 | Combined right and left heart catheterization with intraprocedural injection for left ventriculography |
| 93456 | Catheter placement in coronary artery for coronary angiography, with intraprocedural injection for coronary angiography, imaging supervision, and interpretation, with right heart catheterization |
| 93457 | Catheter placement in coronary artery for coronary |

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| | angiography, with intraprocedural injection for coronary angiography, imaging supervision, and interpretation, with catheter placement in bypass graft, with intraprocedural injection for bypass graft angiography and right heart catheterization |
| 93460 | Catheter placement in coronary artery for coronary angiography, with intraprocedural injection for coronary angiography, imaging supervision, and interpretation, with right and left heart catheterization |
| 93461 | Catheter placement in coronary artery for coronary angiography, with intraprocedural injection for coronary angiography, imaging supervision, and interpretation, with right and left heart catheterization, catheter placement in bypass graft, with bypass graft angiography |

Medical Evidence

National and Professional Organizations

A selection of guidelines and criteria that reference heart catheterization have been published by the following organizations:

- American Association for Thoracic Surgery (ATS)
- American College of Cardiology Foundation (ACCF)
- American Heart Association (AHA)
- American Society of Echocardiography (ASEC)
- American Society of Nuclear Cardiology (ASNC)
- European Society of Cardiology (ESC)
- Heart Failure Society of America (HFSA)
- Heart Rhythm Society (HRS)
- Society for Cardiovascular Angiography and Interventions (SCAI)
- Society for Cardiovascular Magnetic Resonance (SCMR)
- Society of Cardiovascular Computed Tomography (SCCT)
- Society of Critical Care Medicine (SCCM)
- Society of Thoracic Surgeons (STS)

To access the documents below, consult the Reference section.

- *Appropriate Use Criteria for Diagnostic Catheterization* – ACCF, SCAI, AHA, ASEC, ATS, ASNC, HFSA, HRS, SCCM, SCCT, SCMR, and the STS¹
- *Appropriate Use Criteria for Multimodality Imaging in Valvular Heart Disease* – ACC/AATS/AHA/ASE/ASNC/HRS/SCAI/SCCT/SCMR/STS⁵
- *Guideline for the Diagnosis and Treatment of Patients with Hypertrophic Cardiomyopathy* – AHA/ACC⁶
- *Guideline for the Evaluation and Diagnosis of Chest Pain* – AHA/ACC/ASE/Chest/SAEM/SCCT/SCMR²
- *Guideline for the Management of Patients with Valvular Heart Disease* – ACC/AHA⁴
- *Guidelines for the Diagnosis and Management of Chronic Coronary Syndromes* – ESC⁷
- *Staging of Multivessel Percutaneous Coronary Interventions* – SCAI³

References

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2. Gulati M, Levy PD, Mukherjee D, et al. 2021 AHA/ACC/ASE/Chest/Saem/SCCT/SCMR guideline for the evaluation and diagnosis of chest pain. *Journal of the American College of Cardiology*. October 2021. doi:10.1016/j.jacc.2021.07.053
3. J.C. Blankenship, I.D. Moussa, C.C. Chambers, *et al.* Staging of multivessel percutaneous coronary interventions: an expert consensus statement from the Society for Cardiovascular Angiography and Interventions. *Catheter Cardiovasc Interv*, 79 (2012), pp. 1138–1152
4. Otto CM, Nishimura RA, Bonow RO, et al. 2020 ACC/AHA guideline for the management of patients with valvular heart disease: A report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. *Circulation*. 2021 Feb 2;143(5):e72–e227. doi: 10.1161/CIR.0000000000000923. PMID: 33332150.
5. Doherty JU, Kort S, Mehran R, et al. ACC/AATS/AHA/ASE/ASNC/HRS/SCAI/SCCT/SCMR/STS 2019 appropriate use criteria for multimodality imaging in the assessment of cardiac structure and function in nonvalvular heart disease: A report of the American College of Cardiology Appropriate Use Criteria Task Force, American Association for Thoracic Surgery, American Heart Association, American Society of Echocardiography, American Society of Nuclear Cardiology, Heart Rhythm Society, Society for Cardiovascular Angiography and Interventions, Society of Cardiovascular Computed Tomography, Society for Cardiovascular Magnetic Resonance, and the Society of Thoracic Surgeons. *J Thorac Cardiovasc Surg*. 2019 Apr;157(4):e153–e182. doi: 10.1016/j.jtcvs.2018.12.061. PMID: 30635178.
6. Ommen SR, Mital S, Burke MA, et al. 2020 AHA/ACC guideline for the diagnosis and treatment of patients with hypertrophic cardiomyopathy: A report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. *Circulation*. 2020 Dec 22;142(25):e558–e631. doi: 10.1161/CIR.0000000000000937. PMID: 33215931.
7. Knuuti J, Wijns W, ESC Scientific Document Group, et al. 2019 ESC Guidelines for the diagnosis and management of chronic coronary syndromes. *Eur Heart J*. 2020 Jan 14;41(3):407–477. doi: 10.1093/eurheartj/ehz425. PMID: 31504439.

Clinical Guideline Revision History/Information

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