



Magnetic Resonance Imaging (MRI), Cardiac – Single Service

Clinical Guidelines for Medical Necessity Review

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Guideline Information:

Specialty Area: Diagnostic Imaging

Guideline Name: Magnetic Resonance Imaging (MRI) - Cardiac (Single Service)

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

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Medical Necessity Criteria

Service: Magnetic Resonance Imaging (MRI), Cardiac

General Guidelines

- **Imaging Modality:** Cardiac MRI is an excellent tool for anatomic and functional evaluation. While not a primary replacement for echocardiography, the benefits of MRI over CT include improved soft tissue characterization, lack of radiation, and ability to image patients with iodinated contrast allergy.¹
- **Criteria for Subsequent Requests:** Surveillance of a known high-risk condition, monitoring disease (e.g., valvular dysfunction, hypokinesia, etc.), progression or response to therapy/procedure, monitoring potential indolent neoplasm, or evaluation of new or recurrent condition in concordance with diagnosis-specific guidelines.
- **Recommended Clinical Approach:** Cardiac MRI offers exquisite anatomic detail and can also provide valuable functional information through various sequences. While not a first-line imaging modality, it proves highly useful when structural abnormalities (congenital or acquired) or functional deficiencies require further investigation of the heart and pericardial structures.¹
- **Exclusions:** MR chest and MRA chest are covered under separate guideline documents.

Medical Necessity Criteria

Indications

- **Cardiac MRI** is considered appropriate if **ANY** of the following is **TRUE**:
- ◆ The patient has **ANY** of the following clinical presentation findings:
 - Chest pain of suspected cardiac origin²; **OR**
 - Dyspnea of suspected cardiac origin³; **OR**
 - Suspected pulmonary hypertension; **OR**
 - Presyncope or syncope of suspected cardiac origin; **OR**
 - Suspected infective endocarditis or its complications not diagnosable by other imaging modalities; **OR**
 - Known or suspected congenital heart disease; **OR**
 - ◆ The patient has **ANY** of the typical clinical assessment findings:
 - Known or suspected congenital heart disease; **OR**

- Intermediate to high probability of coronary artery disease; **OR**
- Suspected hypertrophic cardiomyopathy; **OR**
- Suspected infiltrative cardiomyopathy (e.g., amyloidosis, hemochromatosis); **OR**
- Suspected or confirmed new-onset heart failure⁴; **OR**
- Cardiac valve dysfunction, stenosis, or regurgitation; **OR**
- Pericardial disease; **OR**
- Cardiac or para cardiac mass; **OR**
- Myocardial viability assessment.

Non-Indications

→ **Cardiac MRI** may not be considered appropriate if **ANY** of the following is **TRUE**:

- ◆ Personal/family history of allergic reaction to gadolinium contrast media (e.g., anaphylaxis); **OR**
- ◆ Chronic kidney disease or acute kidney injury (glomerular filtration rate less than 30 mL/min/1.73m² (or 0.5 mL/sec/1.73m²); **OR**
- ◆ Neurosurgical clips; **OR**
- ◆ Conditional, legacy, or unsafe implants, pacemakers, or replacement cardiac valves; **OR**
- ◆ Metallic foreign body in orbits/other critical area or within the field of view and obscuring area of concern; **OR**
- ◆ Claustrophobia (potentially treatable with pre-medications).

Site of Service Criteria

Inpatient or Outpatient.

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
75557	Cardiac magnetic resonance imaging (MRI) without contrast material, for evaluation of morphology and function
75559	Cardiac magnetic resonance imaging (MRI) with stress imaging, without contrast material, for evaluation of morphology and function
75561	Cardiac magnetic resonance imaging (MRI) without

	contrast material, followed by contrast material and further sequences, for evaluation of morphology and function
75563	Cardiac magnetic resonance imaging (MRI) with stress imaging, without contrast material, followed by contrast material and further sequences, for evaluation of morphology and function
C9762	Cardiac magnetic resonance imaging for morphology and function, quantification of segmental dysfunction; with strain imaging
C9763	Cardiac magnetic resonance imaging for morphology and function, quantification of segmental dysfunction; with stress imaging
S8042	MRI Low Field

Medical Evidence

The following have been published by national and specialty organizations on the topic of cardiovascular imaging:

- *2019 Appropriate Use Criteria for Multimodality Imaging in the Assessment of Cardiac Structure and Function in Nonvalvular Heart Disease* was published in partnership with the American College of Cardiology (ACC) Appropriate Use Criteria Task Force, American Association for Thoracic Surgery (AATS), American Heart Association (AHA), American Society of Echocardiography (ASE), American Society of Nuclear Cardiology (ASNC), Heart Rhythm Society (HRS), Society for Cardiovascular Angiography and Interventions (SCAI), Society of Cardiovascular Computed Tomography (SCCT), Society for Cardiovascular Magnetic Resonance (SCMR), and the Society of Thoracic Surgeons (STS)³
- The American College of Radiology (ACR), the North American Society for Cardiovascular Imaging (NASCI), and the Society for Pediatric Radiology (SPR) published the following practice parameters:
 - *Performance and Interpretation of Cardiac Magnetic Resonance Imaging (MRI)*⁴
 - *Performance of Quantification of Cardiovascular Computed Tomography (CT) and Magnetic Resonance Imaging (MRI)*⁵
- *SCMR Position Paper on Clinical Indications for Cardiovascular Magnetic Resonance* was published by the Society for Cardiovascular Magnetic Resonance (SCMR)⁶

References

1. American College of Radiology (ACR). Cardiovascular appropriateness criteria. <https://www.acr.org/Clinical-Resources/ACR-Appropriateness-Criteria>.
2. Doherty JU, Kort, Mehran R, Schoenhagen P, Soman P. 2019 appropriate use criteria for multimodality imaging in nonvalvular heart disease. Published January 7, 2019. Accessed December 4, 2023. <https://www.acc.org/latest-in-cardiology/ten-points-to-remember/2019/01/04/18/00/2019-auc-for-multimodality-imaging-in-nonvalvular-heart-disease>.
3. Writing Group Members, Doherty JU, Kort S, 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 Am Soc Echocardiogr. 2019 May;32(5):553-579. doi: 10.1016/j.echo.2019.01.008. PMID: 30744922
4. American College of Radiology (ACR). Practice and interpretation of cardiac magnetic resonance imaging (MRI). Published 2021. <https://www.acr.org/-/media/ACR/Files/Practice-Parameters/MR-Cardiac.pdf>.
5. American College of Radiology (ACR). Practice parameter for the performance of quantification of cardiovascular computed tomography (CT) and magnetic resonance imaging (MRI). Published 2022. <https://www.acr.org/-/media/ACR/Files/Practice-Parameters/Quant-CardiacCT-MR.pdf>.
6. Leiner T, Bogaert J, Friedrich MG, et al. SCMR position paper (2020) on clinical indications for cardiovascular magnetic resonance. J Cardiovasc Magn Reson. 2020 Nov 9;22(1):76. doi: 10.1186/s12968-020-00682-4. PMID: 33161900; PMCID: PMC7649060.

Clinical Guideline Revision History/Information

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