Evolent Clinical Guideline ~~028~~7297 for Heart Magnetic Resonance Imaging (MRI)

Guideline ~~or Policy~~ Number: Evolent_CG_~~028~~7297	Applicable Codes	
"Evolent" refers to Evolent Health LLC and Evolent Specialty Services, Inc. 		
Original Date: January 2026	**Last Revised Date:** July 2025	**Implementation Date:** January 2026

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STATEMENT

General Information

- *It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.*
- *Where a specific clinical indication is not directly addressed in this guideline, medical necessity determination will be made based on widely accepted standard of care criteria. These criteria are supported by evidence-based or peer-reviewed sources such as medical literature, societal guidelines and state/national recommendations.*
- *The guideline criteria in the following sections were developed utilizing evidence-based and peer-reviewed resources from medical publications and societal organization guidelines as well as from widely accepted standard of care, best practice recommendations.*

Purpose

~~CMR~~Cardiac magnetic resonance imaging (CMR) is an imaging modality used to assess cardiac or vascular anatomy, function, perfusion, and tissue characteristics in a single examination. In lesions affecting the right heart, CMR provides excellent visualization and volume determination regardless of right ventricular (RV) shape. This is particularly useful in patients with congenital heart disease.

Special Note

Since many cardiac patients have cardiac implanted electrical devices, the risk of CMR to the patient and the device must be weighed against the benefit to the patient in terms of clinical value in optimal management. [1–4]~~)~~.

See ~~**Legislative Requirements**~~legislative language for specific mandates in ~~Washington~~**Washington** State

Clinical Reasoning

All criteria are substantiated by the latest evidence-based medical literature. To enhance transparency and reference, Appropriate Use (AUC) scores, when available, are diligently listed alongside the criteria.

In instances where an AUC has not been established through prior publication, we adhere to a standardized practice of assigning an AUC score of 6. This score is determined by considering variables that ensure the delivery of patient-centered care in line with current guidelines, with a focus on achieving benefits that outweigh associated risks. This approach aims to maintain a robust foundation for decision-making and underscores our commitment to upholding the highest standards of care. [5–9]

INDICATIONS FOR CARDIAC MAGNETIC RESONANCE

Cardiomyopathy & Heart Failure [10–12]

- To assess systolic and diastolic function in the evaluation of a newly diagnosed cardiomyopathy (**AUC Score 7**) [10]
- Suspected infiltrative disease such as amyloidosis, sarcoidosis, [13] iron overload (i.e., ~~),~~ hemochromatosis~~,~~ or resulting from frequent transfusions), or endomyocardial fibrosis if PET has not been performed (**AUC Score 8**) [10]
- Monitoring of response to chelation therapy for myocardial iron overload (see **Background** section) [13]
- Suspected inherited or acquired cardiomyopathy (**AUC Score 7**) [10]
- Diagnosis of acute myocarditis, with suspicion based upon new, unexplained findings such as:
  - Rise in troponin not clearly due to acute myocardial infarction
  - Change in ECG suggesting acute myocardial injury or pericarditis, without evident myocardial infarction
- Assessment of hypertrophic cardiomyopathy (HCM) [14] (**AUC Score 8**) [10]
  - When TTE is inadequate for diagnosis, management, or operative planning, or when tissue characterization (degree of fibrosis) will impact indications for ~~ICD~~implantable cardioverter-defibrillator (ICD)
  - For patients with left ventricular hypertrophy (LVH) when there is a suspicion of alternative diagnoses, including infiltrative or storage disease as well as athlete's heart
  - For patients with obstructive HCM in whom the autonomic mechanism of obstruction is inconclusive on echocardiography, CMR is indicated for selection and planning of SRT (septal reduction therapy)
  - For patients with HCM, repeat imaging on a periodic basis (every 3-5 years) for the purpose of SCD risk stratification to evaluate changes in ~~LGE, EF,~~late gadolinium enhancement (LGE), ejection fraction (EF), development of apical aneurysm or LV wall thickness
- Arrhythmogenic right ventricular cardiomyopathy to aid in identification and diagnosis (assessment of myocardial fat, fibrosis, and RV tissue characteristics), based upon reason for suspicion, such as:
  - Nonsustained ventricular tachycardia (VT)
  - Unexplained syncope
  - ECG abnormalities
  - First-degree relatives with positive genotype for ~~ARVD~~arrhythmogenic right ventricular dysplasia (ARVD)

- Noncompaction cardiomyopathy to aid in the diagnosis (measurement of compacted to noncompacted myocardium) when ~~TTE~~transthoracic echocardiography (TTE) is suggestive
- Viability assessment when Single Positron Emission Tomography (SPECT~~,~~), Positron Emission Tomography (PET) or Dobutamine Echo has provided "equivocal or indeterminate" results
- Clinical symptoms and signs consistent with a cardiac diagnosis known to cause presyncope/syncope (including, but not limited to, hypertrophic cardiomyopathy) (**AUC Score 7**) [10]
- Pulmonary hypertension in the absence of severe valvular disease (**AUC Score 7**) [10]
- Cardiomyopathy
  - Hemosiderosis
  - Restrictive cardiomyopathy (**AUC Score 7**) [10]
  - Cardio toxic chemotherapy

Valvular Heart Disease

- Evaluation of valvular stenosis, regurgitation, or valvular masses when ~~transthoracic echocardiography (~~TTE~~)~~ is inadequate (**AUC Score 7**) [15]
- Pre-TAVR assessment if the patient has not undergone cardiac computed tomography (CT) [16]
- Prior to transcatheter mitral valve intervention, when TTE and transesophageal echocardiography (TEE) result in uncertain assessment of the severity of mitral regurgitation [17,18]
- Suspected clinically significant bioprosthetic valvular dysfunction and inadequate images from TTE and TEE (**AUC Score 7**) [15]

Evaluation of Intra- and Extra-Cardiac Structures

- Initial evaluation of cardiac mass, suspected tumor or thrombus, or potential cardiac source of emboli (**AUC Score 7**) [10]
- Re-evaluation of intracardiac mass when findings would change therapy; no prior imaging in the last three months (**AUC Score 7**) [10]
- Evaluation of pericardial disease to provide structural and functional assessment and differentiate constrictive vs restrictive physiology (**AUC Score 8**) [10]
- Assessment of left ventricular pseudoaneurysm, when TTE was inadequate
- Identification and characteristics of coronary aneurysms or anomalous coronary arteries (**AUC Score 7**) [10]

Pre-procedure Evaluation for Closure of ASD or PFO (AUC Score 7) [10]

- For assessment of atrial septal anatomy and atrial septal aneurysm
- For assessment of suitability for percutaneous device closure

Assessment Following LAA Occlusion

- For surveillance at 45 days or FDA guidance, if TEE or Heart CT was not done, to assess:
  - Device stability
  - Device leaks
  - To exclude device migration

Pre-Ablation Planning

- Evaluation of left atrium and pulmonary veins prior to radiofrequency ablation for atrial fibrillation, if cardiac CT has not been done

Aortic Pathology

- CT, MR, or echocardiogram can be used for screening and follow-up, with CT and MR preferred for imaging beyond the proximal ascending thoracic aorta (**AUC Score 8**) [10]
- Screening of first-degree relatives with a history of thoracic aortic aneurysm or dissection (**AUC Score 7**) [10]
- Six-month follow-up after initial diagnosis of thoracic aortic aneurysm to measure rate of change
- Annual follow-up for an enlarged thoracic aortic aneurysm (usually defined as > 4.4.cm)
- Biannual (2x/year) follow-up of enlarged aortic root or showing growth rate ≥ 0.5 cm/year
- Screening of first-degree relative with a bicuspid aortic valve
- Re-evaluation (<1 y) of the size and morphology of the aortic sinuses and ascending aorta in patients with a bicuspid AV and an ascending aortic diameter > 4 cm with 1 of the following:
  - Aortic diameter > 4.5 cm
  - Rapid rate of change in aortic diameter
  - Family history (first-degree relative) of aortic dissection
- Patients with Turner's syndrome annually if an abnormality exists; if initial study normal, can have imaging every 5 - 10 years [19]
- Evaluation in patients with known or suspected connective tissue disease or genetic condition that predispose to aortic aneurysm or dissection, such as Marfan syndrome,

Ehlers-Danlos or Loeys-Dietz syndrome (at the time of diagnosis and 6 months thereafter), followed by annual imaging (can be done more frequently if > 4.5 cm or rate of growth > 0.5 cm/year- up to twice per year) (**AUC Score 8**) [10]

Congenital Heart Disease

For all indications below, either CT or CMR can be done:

- All lesions: evaluation prior to planned repair and evaluation for change in clinical status and/or new concerning signs or symptoms
- Patent Ductus Arteriosus: routine surveillance (1-2 years) in a patient with postprocedural aortic obstruction (**AUC Score 7**) [20]
- In the absence of prior imaging documenting congenital heart disease, a cardiac MRI is appropriate for anomalous pulmonary venous drainage and pulmonary outflow tract obstruction
- Eisenmenger Syndrome and Pulmonary Hypertension associated with congenital heart disease (CHD) (**AUC Score 7**) [20]
    - Evaluation due to change in pulmonary arterial hypertension-targeted therapy
    - Initial evaluation with suspicion of pulmonary hypertension following CHD surgery
- Aortic Stenosis or Regurgitation:
    - Routine surveillance (6-12 months) in a child with aortic sinus and/or ascending aortic dilation with increasing size (**AUC Score 8**) [20]
    - Routine surveillance (2–3 years) in a child with aortic sinus and/or ascending aortic dilation with stable size (CMR only) (**AUC Score 7**) [20]
- Aortic Coarctation and Interrupted Aortic Arch: (**AUC Score 8**) [20]
    - In the absence of prior imaging documenting congenital heart disease, a cardiac MRI is appropriate for suspected Coarctation (**AUC Score 8**) [20]
    - Routine surveillance (3–5 years) in a child or adult with mild aortic coarctation
    - Post procedure (surgical or catheter-based) routine surveillance (3–5 years) in an asymptomatic patient to evaluate for aortic arch aneurysms, in-stent stenosis, stent fracture, or endoleak
- Coronary anomalies
- Tetralogy of Fallot:
    - Postoperative routine surveillance (2–3 years) in a patient with pulmonary regurgitation and preserved ventricular function (CMR only) (**AUC Score 7**) [20]
    - Routine surveillance (2–3 years) in an asymptomatic patient with no or mild sequelae (CMR only) (**AUC Score 7**) [20]
    - Routine surveillance (2–3 years) in a patient with valvular or ventricular dysfunction, right ventricular outflow tract obstruction, branch pulmonary artery stenosis, arrhythmias, or presence of an RV-to-pulmonary artery (PA) conduit (**AUC Score**

8) [20]

- Double Outlet Right Ventricle: Routine surveillance (3–5 years) in an asymptomatic patient with no or mild sequelae (CMR only)
- D-Loop Transposition of the Great Arteries (postoperative):
  - Routine surveillance (3–5 years) in an asymptomatic patient (**AUC Score 7**) [20]
  - Routine surveillance (1–2 years) in a patient with dilated aortic root with increasing size, or aortic regurgitation (**AUC Score 8**) [20]
  - Routine surveillance (3–12 months) in a patient with ≥ moderate systemic AV valve regurgitation, systemic RV dysfunction, left ventricular outflow (LVOT) obstruction, or arrhythmias
- Congenitally Corrected Transposition of the Great Arteries: (**AUC Score 7**) [20]
  - Unrepaired: routine surveillance (3–5 years) in an asymptomatic patient
  - Postoperative: routine surveillance (3–5 years) in an asymptomatic patient
  - Postoperative anatomic repair: routine surveillance (6–12 months) in a patient with valvular or ventricular dysfunction, right or left ventricular outflow tract obstruction, or presence of an RV-to-PA conduit
  - Postoperative physiological repair with VSD closure and/or LV-to-PA conduit: routine surveillance (3–12 months) in a patient with ≥ moderate systemic AV valve regurgitation, systemic RV dysfunction, and/or LV-to-PA conduit dysfunction
- Truncus Arteriosus: routine surveillance (1–2 years) in an asymptomatic child or adult with ≥ moderate truncal stenosis and/or regurgitation (**AUC Score 7**) [20]
- Single-Ventricle Heart Disease:
  - Postoperative routine surveillance (1–2 years) in an asymptomatic patient
  - Routine surveillance (1–2 years) in an asymptomatic adult postoperative Stage 2 palliation (CMR only) (**AUC Score 7**) [20]
- Ebstein's anomaly and Tricuspid Valve dysplasia (only CMR indicated):
  - Evaluation prior to planned repair and evaluation for change in clinical status and/or new concerning signs or symptoms (**AUC Score 7**) [20]
- Pulmonary Stenosis (only CMR indicated) (**AUC Score 7**) [20]
  - Unrepaired: routine surveillance (3–5 years) in an asymptomatic adult with PS and pulmonary artery dilation
  - Postprocedural (surgical or catheter-based): routine surveillance (1–3 years) in an asymptomatic adult with moderate or severe sequelae
- Pulmonary Atresia (postprocedural complete repair): routine surveillance (1–3 years) in an asymptomatic adult with ≥ moderate sequelae (**AUC Score 7**) [20]

Coronary Artery Disease Evaluation

CMR, which is done pharmacologically, is used for the assessment of coronary artery disease, and can be performed if the patient would otherwise be a candidate for a pharmacologic MPI.

- If the patient can walk and is having ~~an~~ myocardial perfusion imaging (MPI) for another reason (left bundle branch block (LBBB~~,~~), coronary artery bypass graft (CABG~~,~~), etc.), MPI is chosen over CMR
- Assessment of LV wall motion to identify patients with akinetic segments that would benefit from coronary revascularization
- To identify the extent and location of myocardial necrosis in patients with chronic or acute ischemic heart disease
- Follow-up of known CAD
    - Coronary stenosis of unclear significance on previous coronary angiography [12,21]
- To diagnose microvascular dysfunction in patients with persistent stable anginal chest pain with suspected ischemia and nonobstructive coronary artery disease (INOCA) as documented in provider notes (no MPI diversion required). [22]

~~COMBINATION~~IMAGING IN KNOWN GENETIC CONDITIONS

- ADPKD (Autosomal Dominant Polycystic Kidney Disease) AND family history of thoracic aortic dissection [23]:
    - Every 2 years (including at diagnosis)

    NOTE: Either cardiac MRI or chest MRI, not both
- Beta-Thalassemia [24]:
    - Annually
- Fabry disease [25]:
    - At diagnosis
- Hemochromatosis [26]:
    - Every 6 months (including at diagnosis)

COMBINATION STUDIES WITH HEART MRI

Chest MRA and Heart MRI

- When medical necessity criteria indications are met for each Chest MRA (see Evolent Clinical Guideline ~~022-2~~2021 for Chest ~~MRA~~Magnetic Resonance Angiography (MRA)) and Heart MRI or CT (see Evolent Clinical Guideline ~~025~~7296 for Heart Computed

Tomography (CT)) (such as for certain congenital malformations when evaluation of extra cardiac and cardiac structures are needed)

LEGISLATIVE ~~REQUIREMENTS~~LANGUGAGE

~~State of~~ Washington ~~(23)~~

~~*Health Technology Clinical Committee 20211119A*~~

20211119A – Use of Cardiac Magnetic Resonance Angiography (CMRA) in Adults and Children *(27)*

Number and coverage topic:

~~20211119A~~20212229A **–** Use of Cardiac Magnetic Resonance Angiography (CMRA) in Adults and Children

HTCC coverage determination:

CMRA is a **covered benefit** for adults or children with known or suspected coronary vessel anomalies or congenital heart disease.

CMRA is a **covered benefit with conditions** for stable symptomatic adults with known or suspected coronary artery disease (CAD~~)~~).

HTCC reimbursement determination:

Limitations of coverage: CMRA should not be a first line diagnostic tool in patients with stable symptoms consistent with CAD. CMRA is covered with conditions for stable symptomatic adults with known or suspected CAD when the following conditions are met:

- In consultation with a cardiologist, and
- The patient is unable to tolerate or safely participate in other noninvasive anatomic or functional testing.

CMRA is not a covered service in coronary artery bypass graft (CABG) patients without CAD symptoms, or in those requiring cardiac lead placement unless cardiac vascular anomalies are suspected.

Non-covered indicators:

N/A

~~**Notes**:~~

~~Out of scope/data not reviewed for this decision:~~

- ~~Cardiac stress MRI~~

CODING AND STANDARDS

~~Coding~~

~~CPT~~ Codes

+0698T, 75557, 75559, 75561, 75563, +75565~~, +0698T~~

Applicable Lines of Business

☒	CHIP (Children's Health Insurance Program)
☒	Commercial
☒	Exchange/Marketplace
☒	Medicaid
☒	Medicare Advantage

BACKGROUND

General Overview ~~(24)~~(28)

- CMR in CAD (21,29,30)~~25,26)~~ is often required when transthoracic echocardiography (TTE) and transesophageal echocardiography (TEE) provide inadequate imaging data.
- Stress CMR for assessment of coronary artery disease (CAD) is performed pharmacologically either as a vasodilator perfusion imaging with gadolinium contrast or dobutamine inotropic wall motion (ventriculography).
- With respect to CAD evaluation, since CMR is only pharmacologic (non-exercise stress), and stress echocardiography (SE) or myocardial perfusion imaging (MPI) provide similar information about CAD:
  - Requests for stress CMR require diversion to exercise SE first, and to exercise MPI second.
  - Exemptions for the diversion to SE or exercise MPI:
    - If body habitus or marked obesity (e.g., BMI ≥ 40) would interfere significantly with imaging with SE and MPI ~~(27)~~(31)
    - Evaluation of young (< 55 years old) patients with documented complex CAD, who are likely to need frequent non-invasive coronary ischemia evaluation and/or frequent radiation exposure from other testing ~~(28)~~(32)

- Heart magnetic resonance imaging (MRI) is an imaging method that uses powerful magnets and radio waves to create pictures of the heart. It does not use radiation (x-rays).

Myocardial Iron Overload (13)

- T2* MRI imaging measures myocardial relaxation time (measured in milliseconds (ms)), which is inversely related to iron content (lower T2*= increased iron load)
- Frequency of surveillance imaging during treatment (i.e., chelation therapy) is based on T2* values:
  - >20 ms: every other year
  - 10-20 ms: annually
  - <10 ms: every 6 months

AUC Score

A reasonable diagnostic or therapeutic procedure care can be defined as that for which the expected clinical benefits outweigh the associated risks, enhancing patient care and health outcomes in a cost-effective manner~~.~~ (5)~~.~~ . (6)

- Appropriate Care - Median Score 7-9
- May be Appropriate Care - Median Score 4-6
- Rarely Appropriate Care - Median Score 1-3

Definitions

- Stable patients without known CAD fall into 2 categories ~~:~~ (21,29,30)~~.~~ ~~25,26)~~
  - **Asymptomatic**, for whom global risk of CAD events can be determined from coronary risk factors, using calculators available online
  - **Symptomatic,** for whom we estimate the pretest probability that their chest-related symptoms are due to clinically significant (≥ 50%) CAD (below):
- The THREE Types of Chest Pain or Discomfort
  - **Typical Angina (Definite)** is defined as including all **3** characteristics:
    - Substernal chest pain or discomfort with characteristic quality and duration
    - Provoked by exertion or emotional stress
    - Relieved by rest and/or nitroglycerine
  - **Atypical Angina (Probable)** has only **2** of the above characteristics
  - **Nonanginal Chest Pain/Discomfort** has only **0 - 1** of the above characteristics
- The medical record should provide enough detail to establish the type of chest pain. From those details, the pretest probability of obstructive CAD is estimated from the **Diamond Forrester Table** below, recognizing that in some cases multiple additional coronary risk factors could increase pretest probability ~~:~~ (21)~~:~~

Diamond Forrester Table ~~(29,30)~~(33,34)

Age (Years)	Gender	Typical/ Definite Angina Pectoris	Atypical/ Probable Angina Pectoris	Nonanginal Chest Pain
≤ 39	Men	Intermediate	Intermediate	Low
	Women	Intermediate	Very low	Very low
40 – 49	Men	High	Intermediate	Intermediate
	Women	Intermediate	Low	Very low
50 – 59	Men	High	Intermediate	Intermediate
	Women	Intermediate	Intermediate	Low
≥ 60	Men	High	Intermediate	Intermediate
	Women	High	Intermediate	Intermediate

Very low: < 5% pretest probability of CAD, usually not requiring stress evaluation

Low: 5 - 10% pretest probability of CAD

Intermediate: 10% - 90% pretest probability of CAD

High: > 90% pretest probability of CA

- For additional information on stress imaging, please refer to Evolent Clinical Guideline ~~024~~7312 for Myocardial Perfusion Imaging.

Acronyms/Abbreviations

ARVD/C: Arrhythmogenic right ventricular dysplasia/cardiomyopathy

ASD: Atrial septal defect

CABG: Coronary artery bypass grafting surgery

CAD: Coronary artery disease

CMR: Cardiac magnetic resonance (imaging)

CT: Computed tomography

ECG: Electrocardiogram

EF: Ejection fraction

HCM: Hypertrophic cardiomyopathy

ICD: Implantable cardioverter-defibrillator

LAA: Left atrial appendage

LBBB: Left bundle-branch block

LGE: Late gadolinium enhancement

LV: Left ventricle

LVH: Left ventricular hypertrophy

LVOT: Left ventricular outflow

MPI: Myocardial perfusion imaging

MR: Mitral regurgitation

MR(I): Magnetic resonance (imaging)

PA: Pulmonary artery

PET: Positron emission tomography

PFO: Patent foramen ovale

PS: Pulmonary stenosis

RV: Right ventricle

SCD: Sudden cardiac death

SE: Stress echocardiography

SRT: Septal reduction therapy

TAVR: Transcatheter Aortic Valve Replacement

TTE: Transthoracic Echo

TEE: Transesophageal Echo

VT: Ventricular tachycardia

SUMMARY OF EVIDENCE

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 (10)

Study Design: The study is a report developed by the American College of Cardiology Appropriate Use Criteria Task Force, along with several other cardiovascular societies. It aims to provide appropriate use criteria (AUC) for multimodality imaging in nonvalvular heart disease. The clinical scenarios (indications) were developed by a diverse writing group and scored by an independent rating panel using standardized methodology.

Target Population: The target population includes patients with nonvalvular heart disease, encompassing various conditions such as heart failure, diseases of the aorta and pericardium, and any disorder involving abnormal cardiac structure or function excluding valvular diseases.

Key Factors:

Clinical Scenarios: The document covers 102 clinical scenarios representing patient presentations encountered in everyday practice. These scenarios were developed based on the most current American College of Cardiology/American Heart Association Clinical Practice Guidelines.

Imaging Modalities: The study evaluates multiple imaging modalities, including transthoracic echocardiography (TTE), transesophageal echocardiography (TEE), cardiovascular magnetic resonance imaging (CMR), computed tomography (CT), and others.

Appropriateness Ratings: Each clinical scenario was rated on a scale of 1 to 9, with scores of 7 to 9 indicating that a modality is considered appropriate, scores of 4 to 6 indicating that a modality may be appropriate, and scores of 1 to 3 indicating that a modality is considered rarely appropriate.

Objective: The primary objective is to provide a framework for the assessment of these scenarios by practices that will improve and standardize physician decision-making.

ACC/AATS/AHA/ASE/ASNC/HRS/SCAI/SCCT/SCMR/STS 2017 Appropriate Use Criteria for Multimodality Imaging in Valvular Heart Disease [15]

Study Design: The study was conducted by the American College of Cardiology (ACC) Appropriate Use Criteria Task Force in collaboration with several other professional organizations, including the 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 Society of Thoracic Surgeons. The study aimed to develop AUC for multimodality imaging in the diagnosis and management of VHD.

Target Population: The target population includes patients with valvular heart disease, encompassing a wide range of clinical scenarios from asymptomatic patients at risk of developing VHD to patients with severe symptoms requiring surgical intervention. The study also addresses the use of imaging modalities in patients undergoing transcatheter aortic valve replacement (TAVR) and percutaneous mitral valve repair.

Key Factors

Clinical Scenarios: The study developed 92 clinical scenarios representing patient presentations encountered in everyday practice. These scenarios were evaluated and rated by an independent rating panel on a scale of 1 to 9.

Imaging Modalities: The study assessed the appropriateness of various imaging modalities, including transthoracic echocardiography (TTE), transesophageal echocardiography (TEE), cardiac computed tomography (CCT), cardiovascular magnetic resonance imaging (CMR), and others.

Rating System: The clinical scenarios were rated as Appropriate (scores 7-9), May Be Appropriate (scores 4-6), or Rarely Appropriate (scores 1-3) based on the expected incremental information, combined with clinical judgment, and the expected negative consequences.

Methodology: The study used a standardized methodology to develop the clinical scenarios and indications, which were reviewed and critiqued by the parent AUC Task Force and numerous external reviewers1. The scenarios were then rated by an independent panel to ensure an appropriate balance of specialized expertise and general practice.

ACC/AHA/ASE/HRS/ISACHD/SCAI/SCCT/SCMR/SOPE 2020 Appropriate Use Criteria for Multimodality Imaging During the Follow-Up Care of Patients With Congenital Heart Disease [20]

Study Design: The study was conducted by the American College of Cardiology Solution Set Oversight Committee and Appropriate Use Criteria Task Force, along with several other cardiovascular societies. It involved the development of appropriate use criteria (AUC) for multimodality imaging during the follow-up care of patients with congenital heart disease (CHD). The criteria were developed using guidelines, clinical trial data, and expert opinion in the field of CHD. The writing group developed 324 clinical indications, which were separated into 19 tables according to the type of cardiac lesion. These scenarios were presented to an independent panel for rating, with each being scored on a scale of 1 to 9, with 1 to 3 categorized as "Rarely Appropriate," 4 to 6 as "May Be Appropriate," and 7 to 9 as "Appropriate".

Target Population: The target population includes both pediatric and adult patients with established congenital heart disease. The criteria address cardiac imaging in adult and pediatric patients with established CHD, focusing on evaluation before and after cardiac surgery or catheter-based intervention, routine surveillance, and evaluation of new-onset signs or symptoms.

Key Factors:

Indications: The study developed 324 clinical indications related to the follow-up care of patients with CHD. These indications were categorized into 19 tables based on the type of cardiac lesion.

Imaging Modalities: The study evaluated the use of various noninvasive cardiac imaging modalities, including transthoracic echocardiography (TTE), transesophageal echocardiography (TEE), cardiovascular magnetic resonance (CMR), cardiovascular computed tomography (CCT), stress imaging, and lung scan.

Rating System: Each clinical scenario was rated on a scale of 1 to 9, with 1 to 3 categorized as "Rarely Appropriate," 4 to 6 as "May Be Appropriate," and 7 to 9 as "Appropriate." The ratings were based on clinical practice guidelines, expert opinion, and available evidence.

Outcomes: The study aimed to provide guidance to clinicians in the care of patients with established CHD by identifying reasonable imaging modality options for evaluation and surveillance. It also aimed to serve as an educational and quality improvement tool to identify patterns of care and reduce the number of rarely appropriate tests in clinical practice.

ANALYSIS OF EVIDENCE

Shared Findings [10,15,20]**:**

1. **Appropriate Use Criteria (AUC)**: All three articles focus on the development and application of Appropriate Use Criteria for multimodality imaging in different contexts of heart disease. They emphasize the importance of standardized methodology and evidence-based guidelines to improve patient care and outcomes.
2. **Multimodality Imaging**: Each article discusses the use of various imaging modalities such as transthoracic echocardiography (TTE), transesophageal echocardiography (TEE), cardiovascular magnetic resonance (CMR), cardiovascular computed tomography (CCT), and stress imaging. They highlight the strengths and limitations of these modalities in different clinical scenarios.
3. **Evaluation and Surveillance**: The articles address the need for routine surveillance and evaluation of patients with heart disease, whether valvular, non-valvular, or congenital. They provide guidelines on the frequency and appropriateness of imaging tests based on patient symptoms, clinical status, and specific heart conditions.

POLICY HISTORY

~~*Summary*~~

Date	Summary
July 2025	• This guideline merges two Evolent guidelines with identical clinical criteria: ECG 7297-01 for Heart MRI and ECG 028 for Heart MRI into Evolent Clinical Guideline 7297 for Heart Magnetic Resonance Imaging (MRI) ○ This guideline also merges Procedure Codes from these two Evolent guidelines • Added new bullet-point to the General Statement section • Added indications for myocardial iron overload and imaging in known genetic conditions • Checked the Medicare Advantage box in the Applicable Lines of Business table • Added a Summary of Evidence and Analysis of Evidence • Updated references

LEGAL AND COMPLIANCE

Guideline Approval

Committee

Reviewed / Approved by Evolent Specialty Services Clinical Guideline Review Committee

Disclaimer

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Evolent Clinical Guidelines are comprehensive and inclusive of various procedural applications for each service type. Our guidelines may be used to supplement Medicare criteria when such criteria is not fully established. When Medicare criteria is determined to not be fully established, we only reference the relevant portion of the corresponding Evolent Clinical Guideline that is applicable to the specific service or item requested in order to determine medical necessity.

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