Cohere Medical Policy - Transthoracic Echocardiogram (TTE)

Clinical Policy for Medical Necessity Review

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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:

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Policy Information:

Specialty Area: Cardiovascular Disease
Policy Name: Cohere Medical Policy - Transthoracic Echocardiogram (TTE)
Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17 yo)

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Medical Necessity Criteria

Service: Transthoracic Echocardiogram (TTE)

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a recent clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
    - The medical necessity of each individual request
    - Why prior imaging or procedures were inconclusive or why additional/follow-up studies are needed
    - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the

patient's primary symptoms can be adequately assessed with a single study or procedure.

Description

A transthoracic echocardiogram (TTE) is a noninvasive diagnostic test that uses ultrasound to generate images of the heart.[1] A small probe is placed on the outside of the patient's chest, and sound waves are emitted, generating live, moving images of the heart and providing information on the health and functioning of heart structures, including the myocardium, valves, pericardium, coronary arteries, and great vessels.[2] Following the test, a detailed report is generated that is used to guide clinical decision-making.

Medical Necessity Criteria

Indications

Transthoracic echocardiogram (TTE) is considered appropriate if **ANY** of the following is **TRUE**[3-5]:

- The patient has chest pain (or ischemic equivalent) and clinical evidence of valvular, pericardial, primary myocardial disease, or congenital heart disease; **OR**
- The patient has chest pain (or ischemic equivalent) and an additional sign or symptom, including shortness of breath, abnormal electrocardiogram (ECG), palpitations, transient ischemic attack (TIA), stroke, or a peripheral embolism; **OR**
- The patient has syncope or pre-syncope[3]; **OR**
- Prior testing (e.g., chest radiography, ECG, cardiac biomarkers) suggested heart disease or structural heart abnormality; **OR**
- There is a suspicion of hypertensive heart disease; **OR**
- The patient requires evaluation of right ventricular function with suspected pulmonary hypertension or pulmonary embolism; **OR**
- The patient has known or suspected infective endocarditis[6]; **OR**
- The patient requires re-evaluation for asymptomatic valvular heart disease with normal left ventricular function, including **ANY** of the following:
  - Aortic or mitral regurgitation with **ANY** of the following frequency limitations:

        - The patient has mild disease: no more than one echocardiogram every 3-5 years; **OR**
        - The patient has moderate disease: no more than one echocardiogram every 1-2 years; **OR**
        - The patient has severe disease: no more than one echocardiogram every 6 months to 1 year; **OR**
    - Aortic stenosis with **ANY** of the following frequency limitations:
        - The patient has mild disease (maximum aortic jet velocity [Vmax] is 2.0-2.9 m/s): no more than one echocardiogram every 3-5 years; **OR**
        - The patient has moderate disease (Vmax is 3.0-3.9 m/s): no more than one echocardiogram every 1-2 years; **OR**
        - The patient has severe disease (Vmax is greater than or equal to 4 m/s): no more than one echocardiogram every 6 months to 1 year; **OR**
    - Mitral stenosis with **ANY** of the following frequency limitations:
        - The patient has mild disease (mitral valve [MV] area is greater than 1.5 cm^2): no more than one echocardiogram every 3-5 years; **OR**
        - The patient has moderate disease (MV area is 1.0 to 1.5 cm^2): no more than one echocardiogram every 1-2 years; **OR**
        - The patient has severe disease (MV area is less than 1 cm^2): no more than one echocardiogram every 1 year; **OR**
- The patient has known heart failure and has had clinically significant symptom or treatment changes; **OR**
- The patient has newly diagnosed left bundle branch block (LBBB); **OR**
- The patient has frequent premature ventricular contractions (PVCs) (greater than 15%) without other evidence of heart disease; **OR**
- The patient has nonsustained ventricular tachycardia (VT); **OR**
- The patient has sustained VT, ventricular fibrillation (VF), or cardiac arrest; **OR**
- The patient has a new onset of atrial fibrillation or atrial flutter; **OR**
- The patient has any form or degree of conduction disease and clinical evidence of valvular, pericardial, or primary myocardial disease; **OR**
- The patient has atrioventricular (AV) block with suspicion of reduced ventricular function at an initial or follow-up evaluation; **OR**
- The patient has AV block with abnormal findings (including chest radiography, ECG, or physical exam) suggesting structural heart disease; **OR**

- The patient has AV block and a history of congenital heart disease; **OR**
- The patient has any form of conduction disease and an additional sign or symptom including chest pain, shortness of breath, palpitations, TIA, stroke, or peripheral embolic event; **OR**
- The patient is post-valvular intervention, including **ANY** of the following:
  - In patients with a bioprosthetic surgical valve, TTE at 5 and 10 years and then annually after implantation is reasonable, even in the absence of a change in clinical status[3]; **OR**
  - After valve replacement, a female patient planning pregnancy and no TTE within the past year[3]; **OR**
  - Patient with bioprosthetic transcatheter aortic replacement (TAVR) and no TTE within the past year[3]; **OR**
- TTE as routine surveillance in an asymptomatic or stable symptomatic patient if **ANY** of the following is **TRUE**[3]:
  - Every 3-5 years and the patient has **ANY** of the following:
    - Stage A (at risk) valve regurgitation; **OR**
    - Stage B (mild) valve regurgitation; **OR**
  - Every 1-2 years and the patient has moderate (stage B) valvular heart disease (VHD); **OR**
  - Every 1 year and the patient has asymptomatic severe (stage C1) aortic stenosis (AS); **OR**
  - Every 6-12 months and the patient has asymptomatic severe (stage C1) mitral regurgitation (MR); **OR**
  - After control of systemic hypertension and **ALL** of the following:
    - The patient has low-flow low-gradient severe AS; **AND**
    - Normal left ventricular ejection fraction (LVEF); **OR**
  - Repeat imaging at an interval of less than 1 year and **ANY** of the following:
    - **ALL** of the following:
      - Bicupsid aortic valve (AV); **AND**
      - Aortic diameter greater than 4.5 cm; **OR**
    - Aortic diameter greater than 4.0 and **ANY** of the following:
      - Rapid rate of change in aortic diameter; **OR**
      - Family history of aortic dissection; **OR**
- The patient is considered pediatric or has documented congenital heart disease and **ANY** of the following[7]:
  - The patient is undergoing initial imaging and **ANY** of the following:

        - Abnormal fetal echocardiogram; **OR**
        - Concerning maternal history during pregnancy; **OR**
        - Signs, symptoms, physical findings, or abnormal test results suggestive of congenital heart disease; **OR**
        - Systemic or genetic disorders associated with heart disease; **OR**
        - Family history of heritable heart disease; **OR**
        - The procedure is to establish a baseline before receiving a therapy that affects cardiac function; **OR**
    - The patient is undergoing a follow-up study and **ANY** of the following:
        - Established congenital heart disease (CHD) before and after therapeutic intervention; **OR**
        - Established CHD with potential for change in chamber size, hemodynamics, ventricular function, or valvar function; **OR**
        - Established acquired heart disease; **OR**
        - Systemic or genetic disorders with associated heart disease; **OR**
        - Familial cardiomyopathy; **OR**
        - Pulmonary hypertension; **OR**
        - The patient is receiving therapy with known potential adverse effects on cardiac structure or function; **OR**
- Repeat imaging (defined as a repeat request following recent imaging of the same anatomic region with the same or similar modality) will be considered reasonable and necessary if **ALL** of the following are **TRUE**:
    - There are no established guidelines; **AND**
    - **ANY** of the following:
        - There are new or worsening symptoms not addressed in the guidelines, such that repeat imaging would influence treatment; **OR**
        - There is a need for a one-time clarifying follow-up of a prior indeterminate finding; **OR**
        - In the absence of change in symptoms, there is an established need for monitoring which would influence management.

Non-Indications

Transthoracic echocardiogram (TTE) is not considered appropriate if **ANY** of the following is **TRUE**:

- The patient has undergone advanced imaging of the same body part within 3 months without undergoing treatment or developing new or worsening symptoms[8]; **OR**

- Routine echocardiogram in a patient without known cardiovascular disease with no clinical changes; **OR**
- Routine echocardiogram for known, asymptomatic valvular heart disease more frequently than listed above; **OR**
- Routine echocardiogram in a known heart failure patient without any significant clinical changes, treatment changes that may affect cardiac function, or plans for invasive procedures/device therapy.

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
93303	Transthoracic echocardiography for congenital cardiac anomalies; complete
93304	Transthoracic echocardiography for congenital cardiac anomalies; follow-up or limited study
93306	Echocardiography, transthoracic, real-time with image documentation (2D), includes M-mode recording, when performed, complete, with spectral Doppler echocardiography, and with color flow Doppler echocardiography
93307	Echocardiography, transthoracic, real-time with image documentation (2D), includes M-mode recording, when performed, complete, without spectral or color Doppler echocardiography
93308	Echocardiography, transthoracic, real-time with image documentation (2D), includes M-mode recording, when performed, follow-up or limited study
C8921	Transthoracic echocardiography with contrast, or without contrast followed by with contrast, for

	congenital cardiac anomalies; complete
C8922	Transthoracic echocardiography with contrast, or without contrast followed by with contrast, for congenital cardiac anomalies; follow-up or limited study
C8923	Transthoracic echocardiography with contrast, or without contrast followed by with contrast, real-time with image documentation (2d), includes m-mode recording, when performed, complete, without spectral or color doppler echocardiography
C8924	Transthoracic echocardiography with contrast, or without contrast followed by with contrast, real-time with image documentation (2d), includes m-mode recording, when performed, follow-up or limited study
C8929	Transthoracic echocardiography with contrast, or without contrast followed by with contrast, real-time with image documentation (2d), includes m-mode recording, when performed, complete, with spectral doppler echocardiography, and with color flow doppler echocardiography

Medical Evidence

In 2024 Lopez et al. published guidelines for performing a comprehensive pediatric transthoracic echocardiogram for the American Society of Echocardiography (ASE).[7] These guidelines contained technical information on the optimal performance of TTE in children, including views, z-score calculation, contrast use, segmental protocols, and the calculation of several 2- and 3-dimensional measurements. The guidelines also contained recommendations for clinical scenarios that warrant TTE in pediatric patients. These recommendations include TTE for children with suspected heart disease, congenital heart disease, genetic disorders with a known cardiac component, and a significant family history of cardiovascular disease.

Doherty and colleagues (2017) developed a multi-society appropriate use criteria document for multimodality imaging in valvular heart disease. TTE is considered the examination of choice (appropriate) for initial evaluation of asymptomatic patients with any of several conditions, including unexplained murmur, history of rheumatic heart disease, and first-degree family history of a bicuspid aortic valve. In the examination of patients with clinical signs or symptoms, TTE may be appropriate for arrhythmias and presyncope as well as assessment of volume status in a critically ill patient with an established cause of respiratory failure. TTE is also recommended in other instances such as syncope, hemodynamic instability, heart failure, endocarditis with positive blood cultures, and respiratory failure. TTE was rated as appropriate for evaluation of valvular mass, stage A valvular heart disease (VHD), mild or moderate VHD, some forms of severe VHD, and valve replacement or repair evaluations. In pre-transcatheter aortic valve replacement (TAVR) evaluation, TTE is deemed appropriate only for assessment and number of valve cusps and degree of calcification, and appropriate during intra and post-procedural evaluations. In mitral valve repair, TTE is deemed appropriate to determine patient eligibility, after a procedure, for certain intraprocedural evaluation situations.[3]

In the 2011 appropriate use criteria for echocardiography document (American College of Cardiology, American Society of Echocardiography,

American Heart Association, et al.) Douglas et al. address the appropriate use of TTE, transesophageal echocardiography (TEE), and stress echocardiography. The application of the 2007 appropriate use criteria were stated to have been evaluated in academic medical centers, Veterans Affairs hospitals, and community settings. It was found that only 11-16% of TTE applications were unclassified, meaning that most TTEs ordered were captured by acceptable use criteria (AUC) indications (87-91%). It was found that the most commonly reported appropriate indications for TTE included initial evaluation of symptoms potentially caused by suspected cardiac etiology.[4]

In a 2011 study, McDermott and colleagues concluded that TTE was a sufficiently sensitive screening test for native valve infective endocarditis for patients with normal heart valves. Infectious endocarditis was defined as high-grade continuous bacteremia with heart valve vegetation. Patients with pacemakers, defibrillators, and prosthetic heart valves were excluded. 2218 TEEs were reviewed, with 87 having a preceding TTE. For 12 out of 15 patients with abnormal heart valves, a transesophageal echocardiogram (TEE) did not increase diagnostic yield. [6]

References

1. American Heart Association. The connection between heart valve disease & echocardiograms. American Heart Association; 2020. https://www.heart.org/-/media/Files/Professional/Quality-Improvement/Target-Aortic-Stenosis/EchoResultsOnePager-English.pdf
2. Douglas PS, Carabello BA, Lang RM, et al. 2019 ACC/AHA/ASE key data elements and definitions for transthoracic echocardiography: A report of the American College of Cardiology/American Heart Association Task Force on Clinical Data Standards (Writing Committee to Develop Cardiovascular Endpoints Data Standards) and the American Society of Echocardiography [published correction appears in J Am Coll Cardiol. 2019 Aug 13;74(6):827. doi: 10.1016/j.jacc.2019.07.017.]. *J Am Coll Cardiol*. 2019;74(3):403-469. doi:10.1016/j.jacc.2019.02.027
3. Doherty JU, Kort S, Mehran R, et al. ACC/AATS/AHA/ASE/ASNC/HRS/SCAI/SCCT/SCMR/STS 2017 Appropriate use criteria for multimodality imaging in valvular heart disease. *J Am Coll Cardiol.* 2017;70(13):1647-1672. doi:10.1016/j.jacc.2017.07.732
4. Douglas PS, Garcia MJ, Haines DE, et al. ACCF/ASE/AHA/ASNC/HFSA/HRS/SCAI/SCCM/SCCT/SCMR 2011 appropriate use criteria for echocardiography: A report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, American Society of Echocardiography, American Heart Association, American Society of Nuclear Cardiology, Heart Failure Society of America, Heart Rhythm Society, Society for Cardiovascular Angiography and Interventions, Society of Critical Care Medicine, Society of Cardiovascular Computed Tomography, and Society for Cardiovascular Magnetic Resonance. *J Am Coll Cardiol.* 2011:57:1126–66.
5. Bennett S, Stout M, Ingram TE, et al. Clinical indications and triaging for adult transthoracic echocardiography: A consensus statement by the British Society of Echocardiography in collaboration with the British Heart Valve Society. *Echo Res Pract*. 2022:9(5):1-16. https://doi.org/10.1186/s44156-022-00003-8.

6. McDermott BP, Cunha BA, Choi D, et al. Transthoracic echocardiography (TTE): Sufficiently sensitive screening test for native valve infective endocarditis (IE). *Heart Lung*. 2011:40(4):358-360. doi:10.1016/j.hrtlng.2010.07.007.
7. Lopez L, Saurers DL, Barker PCA, et al. Guidelines for performing a comprehensive pediatric transthoracic echocardiogram: Recommendations from the American Society of Echocardiography. *J Am Soc Echocardiogr*. 2024;37(2):119-170. doi:10.1016/j.echo.2023.11.015
8. Wasser EJ, Prevedello LM, Sodickson A, et al. Impact of a real-time computerized duplicate alert system on the utilization of computed tomography. *JAMA Intern Med*. 2013;173(11):1024-1026. doi: 10.1001/jamainternmed.2013.543. PMID: 23609029.

Policy Revision History/Information

Original Date: September 21, 2022		
Review History		
Version 2	3/22/2024	Annual review and policy restructure.
Version 3	10/31/2024	Edited repeat imaging criteria language.
Version 4	07/31/2025	Annual review. Added criteria for pediatric TTE. Defined frequent premature ventricular contractions as greater than 15%. Added criteria for TTE as routine surveillance in an asymptomatic or stable symptomatic patient. Refined criteria for repeat imaging in the absence of established guidelines. Literature review - Medical Evidence section updated (Lopez et al., 2024; American Heart Association, 2020).