Cohere Medicare Advantage Policy - Transesophageal Echocardiography (TEE)

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Guideline Information:

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Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17yo)

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Medical Necessity Criteria

Service: Transesophageal Echocardiography (TEE)

Benefit Category

Not Applicable.

Please Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.

Related CMS Documents

Please refer to CMS Medicare Coverage Database for the most current applicable CMS National Coverage.[1-5]

- Local Coverage Determination (LCD). Transesophageal Echocardiography (TEE) L34337
- Local Coverage Determination (LCD). Transesophageal Echocardiography (TEE) L33579
- Local Coverage Determination (LCD). Transesophageal Echocardiography (TEE) L35016
- Local Coverage Determination (LCD). Transesophageal Echocardiogram (L33756)
- Local Coverage Determination (LCD). Echocardiography (37379)
- Billing and Coding: Transesophageal Echocardiography (TEE) (A52868)
- Billing and Coding: Transesophageal Echocardiography (TEE) (A56505)
- Billing and Coding: Transesophageal Echocardiography (A56625)
- Billing and Coding: Transesophageal Echocardiogram (A57179)

Recommended Clinical Approach

Transesophageal echocardiography (TEE) provides a more comprehensive evaluation of the presence of intracardiac thrombus in the setting of prolonged episodes of atrial fibrillation or episodes of indefinite duration. Compared to transthoracic echo imaging, its superior visualization of the left atrial appendage can assess the safety of both outpatient elective cardioversions and acute inpatient cardioversions. TEE is also valuable for evaluating other heart structures, including better imaging of mitral valve

function and the atrial septum, both of which can have clinical significance for a patient with atrial fibrillation.

Transesophageal echocardiography (TEE) can be useful for valvular disease patients when transthoracic echocardiography results are inconclusive or discordant with history and physical exam. TEE is particularly useful in patients with mitral regurgitation to assess mitral leaflet anatomy when considering the mitral leaflet repair or MitraClip procedure feasibility. TEE is also useful in assessing the presence of infective endocarditis and/or left atrial thrombus. TEE is an integral part of minimally invasive valve interventions, including TAVR and MitraCLip procedures.

Transesophageal echocardiography (TEE) can identify the cause of stroke by detecting potential intrathoracic sources of embolism. TEE is more expensive, more invasive, and takes longer to perform than TTE, but it is more sensitive, especially for patent foramen ovale and left atrial appendage.

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of Transesophageal Echocardiography (TEE). This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Esophageal injury or gastric trauma, as a result of the insertion and manipulation of the ultrasound probe.[6,7]
- Laryngeal injuries such as vocal cord trauma, compression of airway structure, and inadvertent tracheal intubation.[6,7]
- Individuals with esophageal abnormalities, or massive cardiomegaly, may be at higher risk of TEE-related complications, as these are predisposing factors for esophageal injury.[8]
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Transesophageal echocardiograms are not limited by the challenges inherent in transthoracic ultrasound techniques, including patient positioning, limited acoustic windows, and the need to perform other interventions such as chest compressions in critically ill patients.[9]
- Compared to transthoracic echocardiogram (TTE), TEE offers improved image quality, and may permit better visualization of the interatrial septum, mitral valve, left atrium, and pulmonary veins.[10] This higher resolution facilitates the definitive detection of vegetations, thrombi, masses, and intracardiac shunts. The superior imaging afforded by TEE also allows for the precise localization of valvular and paravalvular defects.[11]
- Intraoperative TEE imaging can provide valuable real-time feedback to surgical teams during procedures.[12]
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

➔ **Transesophageal echocardiography (TEE)** is considered appropriate if **ANY** of the following is **TRUE**:
- ◆ The patient has mitral valve disease, and **ANY** of the following is **TRUE**:
  - An assessment of the cause of mitral regurgitation is necessary; **OR**
  - TEE is necessary to decide between mitral valve repair or replacement; **OR**

- To evaluate known or suspected valvular heart disease when transthoracic echocardiogram (TTE) provides insufficient or discordant information; **OR**
- The patient has known or suspected endocarditis, and a TTE does not document endocarditis[13]; **OR**
- Re-evaluation of complex endocarditis; **OR**
- Evaluation of bacteremia without a known source; **OR**
- Evaluation of known or suspected prosthetic valve endocarditis otherwise obscured because of reverberations and other image artifacts related to mechanical or other non-native valves during TTE; **OR**
- Evaluation of suspected prosthetic valve dysfunction when therapeutic decisions are critical and TTE is inconclusive or when the left atrium must be well-visualized; **OR**
- Suspected thrombi or emboli and **ANY** of the following:
    - Evaluation of the left atrium and atrial appendage for clot, when clot is not visualized on TTE; **OR**
    - Evaluation for an atrial septal defect, patent foramen ovale or atrial septal aneurysm with clot; **OR**
    - Evaluation of the mitral valve in patients with a history of emboli; **OR**
- Visualization of left atrial masses when needed to provide therapeutic direction; **OR**
- When cardiac mass lesions are suspected and cannot be visualized on TTE and TEE is needed to determine a management strategy; **OR**
- To assess pericardial effusion when surface studies do not provide adequate information; **OR**
- Known or suspected aortic pathological conditions and diseases of the great vessels and **ANY** of the following[14]:
    - Adequate visualization of the aortic root is insufficient with TTE; **OR**
    - Identification of aortic dissection, aortic ulceration, atherosclerotic plaque, and mural thrombotic material[15]; **OR**
    - Visualization of **ANY** of the following[13]:
        - Descending thoracic aortic aneurysms; **OR**
        - Superior vena cava and diagnosing various congenital and acquired abnormalities, including, but not limited, to vena caval thrombosis; **OR**
        - The proximal inferior vena cava, vena caval dilation and detection of thrombosis or extension of tumors from the inferior vena cava to the right-heart chambers; **OR**
        - All four pulmonary veins; **OR**

    - The heart and great vessels following blunt trauma to the chest, including, but not limited to, rupture or transsection of the aorta, acute dissection, hematoma; **OR**
    - When needed to assist in the decision-making prior to aortic valve operative intervention; **OR**
- To assess complications of congenital heart surgery, visualization of shunt flow across atrial-septal defects, guidance of clamshell device to close atrial-septal defects, diagnosis of cor triatriatum, and detection of pulmonary valve abnormalities[14]; **OR**
- For **ANY** of the following patient populations:
    - Patients with congenital heart disease postoperatively where fibrosis, echo opaque patches and prostheses, inadequate penetration, and acoustical shadowing can result in incomplete TTE data; **OR**
    - Patients in which TTE is technically inadequate or anatomic definition is incomplete; **OR**
    - Patients in whom a more precise definition of atrial, outflow tract, and proximal pulmonary vascular anomalies by TEE can be critical to management strategies; **OR**
    - Critically ill patient for whom TTE is otherwise contraindicated or inadequate; **OR**
    - Patients with persistent hypoxemia having suspected right-to-left shunt; **OR**
    - Patients with complications of myocardial infarction including, but not limited to, ruptured septum, papillary muscle, or free wall; **OR**
    - Hemodynamically unstable patients in whom TTE images are suboptimal; **OR**
    - Brain-dead patients being considered as cardiac donors;
    - Patients with persistent unexplained fever when endocarditis or myocardial abscess is suspected and TTE is non-diagnostic[16]; **OR**
- Guidance during percutaneous cardiac interventions, including, but not limited to, **ANY** of the following[13]:
    - Creation of shunts; **OR**
    - Placement of septation devices; **OR**
    - Valvuloplasty procedures; **OR**
    - Endomyocardial biopsy; **OR**
    - Electrophysiologic studies/procedures; **OR**
    - Placement of septal or atrial appendage occluders; **OR**
    - Percutaneous valve replacement; **OR**
- Intraoperative evaluation to assess prosthetic, repaired, or reconstructed valve function, or the integrity and function of complex congenital heart repairs; **OR**

- Intraoperative evaluation to assess the integrity of the cardiopulmonary circulation in patients during lung or heart-lung transplants; **OR**
- Intraoperative assessment for the presence of an outflow tract obstruction or the presence or repair of an intracardiac shunt; **OR**
- Intraoperative assessment of wall motion abnormalities in the case of acute deterioration in the patient's status, once the chest has been closed; **OR**
- For patients in cardioversion for whom **ANY** of the following apply;
    - They require urgent cardioversion and for whom extended pre-cardioversion anticoagulation is not desirable; **OR**
    - Who have had prior cardioembolic events thought to be related to intra-atrial thrombus; **OR**
    - For whom anticoagulation is contraindicated and for whom a decision about cardioversion will be influenced by TEE results; **OR**
    - Patients with an intra-atrial thrombus that has been demonstrated in previous TEE; **OR**
- Doppler color flow velocity mapping in addition to echocardiogram when examination could contribute significant information to patient's condition or treatment plan; **OR**
- 3-dimensional echo when billed with TEE for **ANY** of the following:
    - Possible valve surgical repair is necessary to assess the mechanism and severity of a disease prior to a required surgery; **OR**
    - The pre-operative planning of valve repair for multiple etiologies of mitral regurgitation[16]; **OR**
    - In the assessment of mitral stenosis and the accurate calculation of mitral valve area[10]; **OR**
    - Pre-operative planning for diagnosis and treatment of atrial septal defects; **OR**
    - Pre-operative and intraoperative planning for interventional cardiac procedures (eg, transcatheter placement of occluders for atrial septal defects or patent foramen ovales, or paravalvular dehiscence or leaks); **OR**
    - Intraoperative mapping for atrial ablation procedures; **OR**
    - Evaluation of tricuspid valve disease; **OR**
- Repeat imaging (defined as repeat request following recent imaging of the same anatomic region with the same modality), in the absence of established guidelines, will be considered reasonable and necessary if **ANY** of the following is **TRUE**:
    - New or worsening symptoms, such that repeat imaging would influence treatment; **OR**

- 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

➔ **Transesophageal Echocardiography (TEE)** is not considered appropriate if **ANY** of the following is **TRUE**:

- ◆ Another imaging modality (e.g., CT, MRI) is requested simultaneously to evaluate for intracardiac thrombus; **OR**
- ◆ The patient has a history of esophageal pathology (e.g., stricture, malignancy, fistula, diverticulum), recent surgery of the esophagus, active GI bleeding, esophageal varices (relative), or prior surgery (relative); **OR**
- ◆ The patient has suspected atrioesophageal fistula following atrial fibrillation ablation; **OR**
- ◆ The patient has a history of undiagnosed dysphagia; **OR**
- ◆ Routine TEE for a patient with a prosthetic valve; **OR**
- ◆ The purpose is to screen for structural cardiac abnormalities in the absence of an established diagnosis, sign, or symptom; **OR**
- ◆ Routine reassessment of global and regional left ventricular function, especially if TTE is technically adequate.

Level of Service

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description/Definition
93312	Real time transesophageal echocardiography with 2-dimensional (2D) image documentation, M-mode recording, probe placement, image acquisition, interpretation, and report
93313	Real time transesophageal echocardiography with 2-dimensional (2D) image documentation and placement of transesophageal probe only
93314	Interpretation and report only of real time transesophageal echocardiography with 2-dimensional (2D) image documentation and image acquisition
93315	Transesophageal echocardiography (TEE) with probe placement, image acquisition, interpretation, and report

93316	Transesophageal echocardiography (TEE) for placement of transesophageal probe only
93317	Interpretation and report only of transesophageal echocardiography (TEE) with image acquisition
93318	Real time transesophageal echocardiography (TEE) with probe placement, 2-dimensional (2D) image acquisition and interpretation
93355	Transesophageal echocardiography (TEE) for guidance of transcatheter closure of left atrial appendage, with quantitative measurements, probe manipulation, interpretation and report
C8925	Transesophageal echocardiography (tee) with contrast, or without contrast followed by with contrast, real time with image documentation (2d) (with or without m-mode recording); including probe placement, image acquisition, interpretation and report
C8926	Transesophageal echocardiography (tee) with contrast, or without contrast followed by with contrast, for congenital cardiac anomalies; including probe placement, image acquisition, interpretation and report
C8927	Transesophageal echocardiography (tee) with contrast, or without contrast followed by with contrast, for monitoring purposes, including probe placement, real time 2-dimensional image acquisition and interpretation leading to ongoing (continuous) assessment of (dynamically changing) cardiac pumping function and to therapeutic measures on an immediate time basis

Medical Evidence

Garg et al. (2016) reviewed 1581 direct current cardioversion cases at the Cleveland Clinic between January 1996 and December 2012, to assess the risk of thromboembolism in patients within 48 hours of atrial fibrillation onset without prior therapeutic anticoagulation. This risk was compared to patients being treated with anticoagulants. In Group 1, TEE was performed before 33 cardioversions, with six reporting mild to moderate smoke (spontaneous echocardiographic contrast suggesting low blood flow velocities that may lead to thromboembolic events) and no thrombus or severe smoke noted. Group 2 patients received 11 TEEs before cardioversions with three revealing mild to moderate smoke. Two neurological events were experienced within 30 days of cardioversion in Group 3 patients, in which 140 of the cardioversions were preceded by TEE reporting mild to moderate smoke and five with severe smoke, with no patients having left atrial thrombus. The study concluded that there exists a significantly greater risk of thromboembolic events in patients undergoing electrical cardioversion within 48 hours of becoming symptomatic and no therapeutic anticoagulation.[17]

Joglar and colleagues (2024) developed the 2023 guideline for the diagnosis and management of atrial fibrillation for the American College of Cardiology and the American Heart Association. Evaluated studies recommended TEE to assess for successful closure of the left atrial appendage (LAA), most notably presence of thrombus or leakage around the area of closure. Based upon the ACUTE trial (Assessment of Cardioversion Using Transesophageal Echocardiography), precardioversion anticoagulation for at least 3 weeks is recommended.[18]

In the 2017 appropriate use criteria for multimodality imaging in valvular heart disease, Doherty et al. state that TEE is rarely appropriate for initial evaluation of an asymptomatic patient, and in symptomatic patients, may be appropriate in the setting of suspected acute mitral or aortic regurgitation as well as respiratory failure or hypoxemia of uncertain etiology. TEE is stated to be appropriate for suspected infectious endocarditis of native or prosthetic valves, endocardial leads, positive blood cultures or new murmur. The committee stated that TEE is also appropriate for suspected cardiac mass, tumor or embolus, in certain cases of mitral and aortic regurgitation, and further evaluation of valvular masses. A number of other evidence-based appropriateness recommendations may be found in the guideline.[19]

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Clinical Guideline Revision History/Information

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Version 1.1	3/18/2025	• Updated policy per CMS revisions for 11/24/24 • Updated Effective date • Updated Links and Bookmarks