Cohere Medicare Advantage Policy - Stress Echocardiogram

Clinical Guidelines for Medical Necessity Review

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Important Notices

Notices & Disclaimers:

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Other Notices:

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Medical Necessity Criteria

Service: Stress Echocardiogram

Benefit Category

Not applicable.

Related CMS Documents

Please refer to CMS Medicare Coverage Database for the most current applicable CMS National Coverage.[33-48]

- Local Coverage Determination (LCD). Cardiology Non-Emergent Outpatient Stress Testing (L35083).
- Local Coverage Determination (LCD). Cardiology Non-Emergent Outpatient Stress Testing (L38396).
- Local Coverage Determination (LCD). Echocardiography (L37379).
- Local Coverage Determination (LCD). Transthoracic Echocardiography (TTE). (L33577).
- Local Coverage Determination (LCD). Echocardiography (L34338).
- Local Coverage Determination (LCD). Echocardiography for Myocardial Perfusion (L38786).
- Local Coverage Determination (LCD). Cardiovascular Stress Testing, Including Exercise and/or Pharmacological Stress and Stress Echocardiography (L34324).
- Local Coverage Determination (LCD). Cardiovascular Stress Testing, Including Exercise and/or Pharmacological Stress and Stress Echocardiography (L36889).
- Billing and Coding: Cardiology Non-Emergent Outpatient Stress Testing (A46423)
- Billing and Coding: Cardiology Non-Emergent Outpatient Stress Testing (A56952)
- Billing and Coding: Echocardiography (A56625)
- Billing and Coding: Transthoracic Echocardiography (TTE) (A56781)
- Billing and Coding: Transthoracic Echocardiography (TTE) (A57306)
- Billing and Coding: Echocardiography for Myocardial Perfusion (A58503)
- Billing and Coding: Cardiovascular Stress Testing, Including Exercise and/or Pharmacological Stress and Stress Echocardiography (A57183)
- Billing and Coding: Cardiovascular Stress Testing, Including Exercise and/or Pharmacological Stress and Stress Echocardiography (A57184)

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

Recommended Clinical Approach

Stress echocardiography is a diagnostic tool which provides an overview of cardiac structure and function. It is used to evaluate a variety of clinical presentations, most commonly patients with chest pain (or ischemic equivalent) and intermediate (16%-50%) or high (>50%) pretest probability of coronary artery disease (CAD) based on the Pre-test probability of CAD (CAD consortium) calculator .[1,2,7] Physicians can use either exercise or pharmacologic agents (i.e., dobutamine) as the stress mechanism. Patients who cannot exercise or who exercise submaximally should undergo a pharmacologic stress echo. Stress echo results in no radiation exposure and is typically lower cost than myocardial perfusion imaging (MPI-SPECT). Other advantages of stress echo compared to MPI-SPECT include shorter patient time commitment, and additional information on cardiac structures (valves, ascending aorta, pericardial space). Stress echocardiography has lower diagnostic accuracy in patients with limited acoustic windows.[2-4]

In patients with valvular heart disease, stress echocardiography is a useful modality to assess a patient's functional capacity, ventricular function, and severity of valve dysfunction during exercise. This information may be useful in determining the need for and timing of surgical or interventional treatments. Stress echo is well-tolerated in the pediatric population and is often a preferred modality, as it requires no sedation, needle sticks, or radiation exposure and has been completed in children as young as six.[25] The absence of radiation is of particular importance among groups which require serial screening - including transplant recipients, patients with history of radiation to the chest, and patients with a history of Kawasaki Disease.[25]

Avoid performing stress cardiac imaging or advanced non-invasive imaging in the initial evaluation of patients without cardiac symptoms unless high-risk markers are present.[5] In patients with known coronary artery disease (CAD) [documented myocardial infarction (MI), coronary revascularization, anatomic imaging with either obstructive (≥50% stenosis) or non-obstructive (<50% stenosis)]and stable symptoms, intensification of preventative measures for those with non-obstructive CAD or optimization of guideline-directed medical therapy (GDMT: includes the use of beta blockers, calcium channel blockers, long-acting nitrates, and/or ranolazine for those

with obstructive CAD should be performed with an assessment of the response and consideration to defer testing.[7]

Evaluation of Clinical Benefits and Potential Harms

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of stress echo. 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:

- There are deleterious side effects associated with stress echo which, while rare, represent a risk of the procedure. These include chest pain, severe hypertension, irregular heartbeat, dizziness, nausea, fatigue and - very rarely - heart attack.[31]
- Increased healthcare costs and complications from the inappropriate use of additional interventions.[32]

The clinical benefits of using these criteria include:

- Less invasive: stress echo is comparatively better tolerated than other similar, more invasive modalities, including the previous gold standard of DSA. Less invasive imaging is generally associated with a better safety profile and improved patient satisfaction.
- Increased visibility: In comparison to other similar modalities, stress echo is able to provide greater anatomic visibility (i.e. - valvular pathology, appearance of the ascending aorta and pericardium).[25]
- Pediatric accessibility: Stress echo represents an imaging modality that is well-tolerated by the pediatric population as it requires no sedation, intravenous line placement, or exposure to radiation.[25]
- 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

- ➔ **Stress echocardiogram** is considered appropriate if **ANY** of the following are **TRUE**[6,33-48]:
  - ◆ The patient has new, recurrent, or worsening cardiac or anginal equivalent symptoms and **ANY** of the following:
    - Physical inability to reach maximum exercise workload; **OR**
    - Uninterpretable ECG with **ANY** of the following:
      - Complete Left Bundle Branch Block (LBBB); **OR**
      - Ventricular paced rhythm; **OR**
      - Pre-excitation pattern (e.g., Wolff-Parkinson-White); **OR**
      - Greater than 1 mm ST segment depression; **OR**
      - Left ventricular hypertrophy (LVH) with repolarization abnormalities; OR
      - Patient on digoxin therapy; **OR**
    - History of CAD based on prior anatomic evaluation of the coronary arteries or a history of CABG/PCI; **OR**
    - Syncope (abrupt, transient, complete loss of consciousness) with an intermediate (ASCVD risk 7.5% to 20%) or high CHD risk (greater than 20%) (ATP III risk criteria), or an intermediate or high CAD risk (greater than or equal to 16%) on the Pre-test probability of CAD (CAD consortium) AND cardiac etiology is suspected based on initial evaluation, including history, physical examination, or ECG[8]; **OR**
    - Known or suspected ventricular arrhythmia [frequent PVCs (greater than 30 PVCs per hour), non-sustained ventricular tachycardia, sustained ventricular tachycardia, ventricular fibrillation]; **OR**

- Prior normal or submaximal exercise stress test with suspicion of a false negative result; **OR**
- Prior equivocal or borderline testing where ischemia remains a concern; **OR**
- Taking beta blocker, calcium channel blocker, and/or antiarrhythmic medication and documentation supports that adequate workload may not be attainable to enable a fully diagnostic exercise study; **OR**
- History of false positive exercise stress test (e.g., one that is abnormal, but the abnormality does not appear to be due to macrovascular CAD); **OR**
- Evaluation of chest pain syndrome in patients with **ANY** of the following:
    - Intermediate to high pre-test probability for CAD based on the Pre-test probability of CAD (CAD consortium) calculator; **OR**
    - Prior revascularization; **OR**
    - Elevated cardiac troponins, Non-ST segment elevation MI [NSTEMI]; **OR**
- Patients with hypertrophic cardiomyopathy (HCM); **OR**

◆ New-onset atrial fibrillation with no prior cardiac evaluation; **OR**

◆ Patients with established CAD who experienced an acute coronary syndrome (ACS) event (STEMI, NSTEMI, unstable angina) within the past 90 days provided that they did not undergo coronary angiography at the time of the acute event and are currently clinically stable and able to exercise; **OR**

◆ **ALL** of the following are **TRUE**:

- Disease condition(s) associated with CAD (e.g., atherosclerotic abdominal aortic aneurysm, peripheral vascular disease, carotid artery disease, chronic renal failure); **AND**
- No stress imaging evaluation performed within the preceding 2 years; **OR**

◆ Patients without cardiac symptoms and **ANY** of the following:

- Elevated cardiac troponin; **OR**
- Underwent a PCI (with stent) procedure more than 2 years prior with no evaluation for CAD in the past 2 years; **OR**

- Underwent a CABG more than 5 years prior with no evaluation for CAD in the past 2 years; **OR**

- New, recurrent, or worsening left ventricular dysfunction/congestive heart failure; **OR**
- Myocardial viability assessment with significant ischemic ventricular dysfunction (suspected hibernating myocardium) and persistent symptoms or heart failure such that revascularization would be considered; **OR**
- Preoperative testing before intermediate or high risk surgery[(Table 1),28] and **ANY** of the following:
  - Planned solid organ transplant (renal, pancreas, combined renal pancreas, liver, lung, or intestinal); **OR**
  - No known or suspected heart disease[A,28] and **ALL** of the following:
    - No recent (3-8 months) testing; **AND**
    - New or worsening possible cardiac symptoms; **AND**
    - Functional status less than 4 METS and **ANY** of the following:
      - High risk vascular surgery[(Table 1)] or high risk nonvascular surgery[(Table 1)]; **OR**
      - Intermediate risk vascular surgery[(Table 1)]; **OR**
      - Intermediate risk nonvascular surgery[(Table 1)] with at least an intermediate(16% or greater) pre-test probability of obstructive CAD by the CAD Consortium Calculator; **OR**
  - Known or suspected heart disease[B,28] and **ANY** of the following:
    - No recent (3-8 months)stress testing and **ANY** of the following:
      - High risk vascular surgery[(Table 1)] or high risk nonvascular surgery[(Table 1)]; **OR**
      - Intermediate risk vascular surgery and **ANY** of the following:
        - Greater than 4 METS and **ALL** of the following:
          - Without new or worsening possible cardiac symptoms; **AND**

        - Revised Cardiac Risk Index of 3 or greater (intermediate or high risk); **OR**
            - Less than 4 METS with or without new or worsening possible cardiac symptoms; **OR**
            - Greater than 4 METS with new or worsening possible cardiac symptoms; **OR**
        - ◆ Intermediate nonvascular surgery(Table 1) and **ANY** of the following:
            - Less than 4 METS with or without possible cardiac symptoms; **OR**
            - Greater than 4 METS with new or worsening possible cardiac symptoms; **OR**
    - Low risk vascular or nonvascular surgery(Table 1) planned and **ANY** of the following:
        - ◆ New or worsening possible cardiovascular symptoms; **OR**
        - ◆ Revised Cardiac Risk Index of 3 or greater (intermediate or high risk); **OR**
- Prior cardiac stress testing within 3 to 8 months and **ANY** of the following:
    - High risk vascular surgery(Table 1) with risk factors that physician feels warrant repeat testing; **OR**
    - New findings on TTE such as new wall motion abnormalities, new significant valvular disease or significant drop in ejection fraction; **OR**
    - New or worsening possible cardiovascular symptoms; **OR**
- ◆ Coronary calcium Agatston score greater than 400; **OR**
- ◆ Planned solid-organ transplant when no cardiac evaluation has been performed within the past year; **OR**
- ◆ Planned treatment with interleukin 2 products; **OR**
- ◆ For the evaluation of **ANY** of the following:
    - Moderate to severe valvular heart disease; **OR**
    - Suspected pulmonary artery hypertension; **OR**

- Re-evaluation of exercise-induced pulmonary hypertension to evaluate response to therapy; **OR**

◆ Detection and quantification of dynamic left ventricular outflow tract (LVOT) obstruction in the absence of resting LVOT in patients with HCM; **OR**

◆ Evaluation for transplant coronary artery disease (TCAD) or cardiac allograft vasculopathy (CAV) after organ transplantation; **OR**

◆ Coronary stenosis, as documented by **ANY** of the following:
- Coronary angiography with stenosis greater than 50%; **OR**
- CCTA with stenosis greater than 40%; **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.

[A]**No Known or Suspected Heart Disease by History, Exam, or Electrocardiogram[28]:** Heart disease is not suspected based on history of no prior cardiac event, lack of cardiac risk factors, or prior cardiac testing indicating no ischemic heart disease, VHD, or HF. Exam does not suggest underlying heart disease by lack of murmurs, other than functional, and no signs of cardiac decompensation (i.e, rales, edema not explained by other causes, or S3 gallop). ECG does not show prior myocardial infarction, left ventricular hypertrophy, LBBB, or atrial fibrillation. B-type natriuretic peptide (BNP) or proBNP, if measured, is normal.

[B]**Known or Suspected Heart Disease by History, Exam, or Electrocardiogram[28]:** PCI, CABG, prior infarct, cardiac risk factors (HTN, HLD, DM, tobacco use, FHx premature CAD), disease conditions associated with atherosclerosis (PAD, carotid disease, abdominal aneurysm, stroke due to atherosclerosis), prior cardiac testing showing

CAD, heart failure, moderate or severe valvular disease, rales, old infarct on EKG, LVH with repolarization changes, LBBB or atrial fibrillation. There may be prior evidence of biomarker elevation (troponin, proBNP) in the absence of other explanatory findings. B-type natriuretic peptide (BNP) or proBNP, if measured, is more than 3x the upper limit of normal.

Table 1. Definitions of Low, Intermediate, and High-Risk Surgery[28]

	Surgical Risk Level		
Specialty	**Low**	**Intermediate**	**High**
Vascular	1. Carotid stenting (monitored anesthesia care) 2. Renal artery stenosis angioplasty or stent 3. Vein stripping	1. Infra-inguinal peripheral angioplasty/stent 2. Carotid stenting (carotid approach, general anesthesia) 3. Open carotid endarterectomy 4. Above or below knee amputation	1. Abdominal aortic aneurysm repair 2. Aorto-femoral bypass graft 3. Thoracic aortic aneurysm repair 4. Infra-inguinal open peripheral revascularization
General	1. Laparoscopic appendectomy 2. Hemorrhoidectomy	1. Open appendectomy 2. Ostomy procedures 3. Inguinal/umbilical hernia repair 4. Laparoscopic lysis of adhesions/obstruction 5. Laparoscopic cholecystectomy 6. Laparoscopic colon resection, segmental, for tumor	1. Laparoscopic bariatric surgery 2. Open cholecystectomy 3. Hepatic radiofrequency ablation tumor ablation 4. Splenectomy 5. Open colonic segmental resection tumor 6. Laparoscopic colonic abdominal perineal resection 7. Open lysis of adhesions/bowel obstruction 8. Esophageal Heller myotomy 9. Nissen fundoplication 10. Cancer resection (gastric pull-through) 11. Open bariatric surgery 12. Pancreatic/Whipple resection

			13. Gastric resection (tumor/ulcer) 14. Hepatic segmental resection 15. Colonic open abdominal perineal resection
Endocrine	1. Thyroidectomy 2. Parathyroidectomy	1. Adrenalectomy 2. Pheochromocytoma resection	-
Ortho.	1. Shoulder arthroscopy 2. Knee arthroscopy 3. Ankle arthroscopy 4. Closed joint reduction	1. Shoulder arthroplasty 2. Hip fracture pinning	1. Hip/ankle/knee arthroplasty
Thoracic	-	1. Pleural procedures (decortication, pleurodesis) 2. VATS lung biopsy 3. VATS wedge/lobe resection 4. Thymectomy	1. Open wedge/lobe resection 2. Tracheal surgery 3. Lung reduction 4. Pneumonectomy
Neuro-functional	1. Deep brain stimulator placement 2. Seizure mapping procedures	-	-
Neuro-intracranial	-	1. Hydrocephalus shunt/repair 2. Subdural drainage 3. Transsphenoidal resection	1. Intracranial tumor resection 2. Open intracranial aneurysm resection 3. Acoustic neuroma/cranial nerve tumor resection
Neuro/ Ortho. Spine	-	1. Laminectomy	1. Spinal fusion 2. Extreme lateral interbody fusion procedures (abdominal)
Genito-urinary	1. Transurethral prostate resection 2. Transurethral bladder tumor resection 3. Ureteral stents 4. Nephrostomy	1. Bladder repair	1. Radical retropubic prostatectomy 2. Nephrectomy 3. Cystectomy

	5. Extracorporeal shock wave lithotripsy		
Gyn.	1. Vaginal hysterectomy 2. Diagnostic gynecologic procedures (laparoscopy)	1. Total abdominal hysterectomy 2. Bilateral salpingo-oophorectomy	-
Breast	1. Diagnostic breast surgery (lumpectomy, node dissection) 2. Simple mastectomy	1. Complex breast surgery	-
Plastic Surgery	1. Hand 2. Cosmetic procedures	1. Reconstructive flaps 2. Post-bariatric repair abdominoplasty	-
Ear, Nose, Throat	1. Diagnostic laryngoscopy 2. Diagnostic esophagoscopy	1. Nasal septal procedures 2. Functional endoscopic sinus surgery	1. Head/neck cancer dissection (with/without laryngectomy)
Oral & Maxillofacial Surgery	1. Jaw reduction	1. Temporomandibular procedures/osteotomy	-
Podiatry	1. Arthroplasty 2. Toe amputation 3. Bunion procedure	-	-
Eye	1. Cataract repair 2. Retinal surgery 3. Eye muscle surgery		
Organ Transplant	-	-	1. Renal Transplant 2. Pancreas Transplant 3. Kidney-Pancreas Combined Transplant 4. Liver 5. Lung 6. Intestinal

Non-Indications

- ➔ **Stress echo** is not considered appropriate if the patient has **ANY** of the following: [6,16-21,33-48]:
  - ◆ Routine screening in asymptomatic patients with **ANY** of the following, unless under specific conditions as outlined above:
    - Diabetes mellitus; **OR**
    - Preoperative evaluation for low risk nonvascular surgery; **OR**
  - ◆ Routine screening of patients beyond the first cardiac stress test in the absence of a documented change in condition (i..e. - new symptoms or progression of existing symptoms); **OR**
  - ◆ **ALL** of the following:
    - Low pretest probability of CAD; **AND**
    - Interpretable ECG; **AND**
    - Ability to exercise; **OR**
  - ◆ **ANY** of the following:
    - Recent (2-4 days) acute MI; **OR**
    - High risk unstable angina; **OR**
    - Uncontrolled arrhythmia causing symptoms or hemodynamic compromise; **OR**
    - Critical aortic stenosis; **OR**
    - Decompensated or uncontrolled congestive heart failure; **OR**
    - Systolic blood pressure (BP) at rest greater than 200 mmHG or diastolic BP at rest greater than 110 mmHg; **OR**
    - Acute pulmonary embolus or pulmonary infarction; **OR**
    - Acute myocarditis or pericarditis; **OR**
    - Acute aortic dissection.

Level of Care Criteria

Outpatient.

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
93350	Real time transthoracic echocardiography with 2-dimensional (2D) image documentation during rest and cardiovascular stress test using treadmill and pharmacologically induced stress, with interpretation and

	report
93351	Real time transthoracic echocardiography with 2-dimensional (2D) image documentation during rest and cardiovascular stress test using treadmill, bicycle exercise and pharmacologically induced stress, with interpretation and report, including performance of continuous electrocardiographic monitoring, with physician supervision
C8928	TTE w or w/o fol w/con,stress
C8930	TTE w or w/o contr, cont ecg

Medical Evidence

Pellikka et al. (2020) and the American Society of Echocardiography published a range of echocardiography guidelines for the detection and risk assessment of stable ischemic heart disease, made in accordance with the 2015 American College of Cardiology/American Heart Association clinical practice guidelines.[25] Stress echocardiography was found to be appropriate as a noninvasive diagnostic and surveillance modality for a variety of pediatric and adult cardiac conditions. In follow-up testing for new or worsening symptoms, stress echo testing was appropriate for patients with suspected stable CAD. Stress echo is also the preferred imaging tool for patients with unexplained dyspnea on exertion. Stress echo is appropriate following revascularization with new cardiac symptoms, especially if refractory to guideline-directed medical therapy (GDMT). Stress echo is uncommonly recommended for preoperative evaluation for noncardiac surgery in this guideline, as well as rarely recommended prior to exercise prescription for cardiac rehabilitation. The absence of radiation makes this imaging modality particularly attractive for pediatric patients, women with indications for noninvasive imaging, serial imaging scenarios, and patients with a history of radiation to the chest. Additionally, stress echo is preferred to studies such as CMR, which involves gadolinium administration, for certain patient subsets - such as those with kidney disease.[25]

In 2021, Gulati and colleagues developed a multi-society guideline for the evaluation and diagnosis of chest pain. Stress echocardiography was recommended by the committee for determining a range of chest pain etiologies including pericardial effusion, stress cardiomyopathy, and hypertrophic cardiomyopathy. Stress echo may also be utilized to define ischemia severity and for risk stratification after acute coronary syndrome has been ruled out.[7]

Stout et al. (2019) collaborated on behalf of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines to develop the 2018 AHA/ACC guideline for the management of adults with congenital heart disease (ACHD). Based upon the evidence, a strong recommendation was made to limit and monitor radiation exposure during imaging of patients with ACHD due to the potential for multiple

exposures in these patients. Exercise stress testing is considered reasonable for patients with subaortic stenosis to measure exercise capacity, stress-induced arrhythmias and ischemia. Patients with transposition of the great arteries with arterial switch are recommended to have baseline serial imaging and offered if the patient is symptomatic following arterial switch.[10]

In the 2020 ACC/AHA guideline for the management of patients with valvular heart disease, Otto et al. state that it is reasonable to use low-dose dobutamine stress echocardiography in patients with suspected low-flow, low gradient severe aortic stenosis with normal left ventricular ejection fraction (stage D3). Stress echocardiography is also recommended in the diagnosis of chronic secondary mitral regurgitation, as well as pre- and during pregnancy evaluation in women with native valvular heart disease.[11]

A number of recent articles provided recommendations for several common clinical scenarios. Gulati et al. (2021) provided insights into the evaluation and diagnosis of chest pain, Winchester et al (2023) provided appropriate use criteria (AUC) for the detection and risk assessment of chronic coronary disease, and Doherty et al. (2024) updated a previous AUC document for the cardiovascular evaluation for nonemergency, noncardiac surgery, focusing more on ischemic heart disease, valvular heart disease and heart failure (rather than cardiovascular disease in general) and their relation to the risks associated with various types of surgery (solid organ transplant, vascular, non-vascular).[7,8,28]

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