

Cardio Policy:

Stress Echocardiography

POLICY NUMBER UM CARDIO_1123	SUBJECT Stress Echocardiography with or without doppler		DEPT/PROGRAM UM Dept	PAGE 1 OF 5
DATES COMMITTEE REVIEWED 07/22/11, 12/12/12, 03/10/14, 05/21/14, 05/15/15, 08/12/15, 11/28/16, 12/21/16, 10/10/17, 02/13/19, 03/08/19, 04/08/19, 09/11/19, 12/11/19, 05/13/20, 01/13/21, 03/10/21, 06/09/21, 08/11/21, 02/09/22, 07/13/22, 12/14/22, 02/01/23, 05/10/23, 12/20/23	APPROVAL DATE December 20, 2023	EFFECTIVE DATE December 22, 2023	COMMITTEE APPROVAL DATES 07/22/11, 12/12/12, 03/10/14, 05/21/14, 05/15/15, 08/12/15, 11/28/16, 12/21/16, 10/10/17, 02/13/19, 03/08/19, 04/08/19, 09/11/19, 12/11/19, 05/13/20, 01/13/21, 03/10/21, 06/09/21, 08/11/21, 02/09/22, 07/13/22, 12/14/22, 02/01/23, 05/10/23, 12/20/23	
PRIMARY BUSINESS OWNER: UM		COMMITTEE/BOARD APPROVAL Utilization Management Committee		
URAC STANDARDS HUM v8: UM 1-2; UM 2-1	NCQA STANDARDS UM 2		ADDITIONAL AREAS OF IMPACT	
CMS REQUIREMENTS	STATE/FEDERAL REQUIREMENTS		APPLICABLE LINES OF BUSINESS Commercial, Exchange, Medicaid	

I. PURPOSE

Indications for determining medical necessity for Stress Echocardiography with or without doppler.

II. DEFINITIONS

Stress echocardiography is an exercise stress test which utilizes echocardiography to provide information on exercise tolerance, ischemic burden, and structural heart disease including valvular disease and provides analysis of left ventricular function.

Cardiac Doppler ultrasound is a form of ultrasound that can detect and measure blood flow. Doppler ultrasound depends on the Doppler Effect, a change in the frequency of a wave resulting from the motion of a reflector, the red blood cell. There are three types of Doppler ultrasound performed during a cardiac Doppler examination:

- A. Pulsed Doppler
- B. Continuous wave Doppler
- C. Color flow Doppler

High global CAD risk is defined as 10 -year CAD risk of greater than 20%. CAD equivalents (e.g., DM, PAD) can also define high-risk.

10- year CAD risk (%) is defined based on the risk factors- Sex, Age, Race, Total Cholesterol, HDL- Cholesterol, Systolic Blood Pressure, and Treatment for High Blood Pressure, Diabetes Mellitus, and Smoker.

An appropriate diagnostic or therapeutic procedure is one in which the expected clinical benefit exceeds the risks or negative consequences of the procedure by a sufficiently wide margin such that

the procedure is generally considered acceptable or reasonable care. The ultimate objective of AUC is to improve patient care and health outcomes in a cost-effective manner but is not intended to ignore ambiguity and nuance intrinsic to clinical decision making.

Appropriate Care - Median Score 7-9

May be Appropriate Care - Median Score 4-6

Rarely Appropriate Care - Median Score 1-3

Guideline directed medical therapy (GDMT) are outlined by joint American College of Cardiology (ACC)/American Heart Association (AHA) in cardiovascular clinical practice guidelines as Class I recommendation. These are maximally tolerated medications for a cardiovascular condition, when prescribed, have shown to improve healthcare outcomes such as survival along with significant reduction in major adverse cardiovascular events and hospitalization. For all recommended drug treatment regimens, the prescriber should confirm the dosage with product insert material and carefully evaluate for contraindications and interactions^{11,12,13,14,15,16,17,18,19}.

III. POLICY

Indications for approving a request for medical necessity are:

- A. The patient has symptoms which require further investigation by stress testing and the patient has a significantly abnormal baseline EKG or patient is on a medication (such as digoxin), which would make interpretation of a standard exercise test (without imaging) inaccurate. No imaging stress test within the last 6 months. **(AUC Score 8)**^{1,2,4,5,6}
- B. The patient has abnormal or non-diagnostic standard exercise test and stress echocardiography is being performed to evaluate stress induced cardiac abnormality. No imaging stress test within the last 6 months. **(AUC Score 8)**^{1,2,4,5,6}
- C. Evaluation of a patient who has an abnormal or non-diagnostic standard (“plain”) exercise test (i.e., unable to reach 75-100% of their age predicted maximal heart rate by physiologic exercise) or has a recent ventricular wall motion abnormality demonstrated by another imaging modality and stress echo is being performed in order to determine if the patient has myocardial ischemia. No recent imaging stress test within the last 12 months. **(AUC Score 8)**^{1,2,4,5,6}
- D. Stress echocardiography is done in a patient with newly diagnosed CAD or congestive heart failure to evaluate the extent of myocardial ischemia or to assess myocardial viability using Dobutamine infusion during test. No recent imaging stress test. **(AUC Score 9)**^{1,2,4,5,6}
- E. Stress Echocardiography with Doppler to evaluate symptoms, exercise capacity and the hemodynamic consequences of mitral or aortic valve disease, especially in patients with severe valve disease who deny symptoms or present equivocal symptoms. No imaging stress test within the last 6 months. **(AUC Score 7)**^{1,2,4,5,6}
- F. Stress Echocardiography is appropriate in a patient who has not undergone revascularization and has a prior abnormal exercise stress test or Coronary Calcium Agatston Score greater than 100. No stress echocardiogram within the last 6 months. **(AUC Score 7)**^{1,3,4,5}
- G. Stress Echocardiography may be appropriate in a patient who is asymptomatic or has stable symptoms with a prior Coronary Calcium Agatston Score greater than 400 **(AUC Score 8)**^{1,3,4,5} or has high global CAD risk with Coronary Calcium Agatston Score 100-400 **(AUC Score 7)**^{1,3,4,5} no imaging stress test within the last 6 months.

- H. Stress Echocardiography is appropriate as a follow up testing in a patient with new or worsening symptoms and has obstructive CAD on invasive coronary angiography or abnormal Coronary Calcium Agatston Score greater than 100. No imaging stress test within the last 6 months **(AUC Score 8)**^{1,3,4,5}
- I. Evaluation with a Stress Echocardiography test may be considered in an asymptomatic patient who has had CABG greater than or equal to 5yrs with a stress test performed greater than or equal to 2 years **(AUC SCORE 7)**^{1,2,3,4,5} or had PCI greater than or equal to 3 years with a stress test performed greater than or equal to 2 years. **(AUC Score 7)**^{1,2,4,5,6}
- J. Stress Echocardiography is appropriate in patients with unknown or low functional capacity (less than 4 METS), with greater than 1 clinical risk factor and or had a normal stress test done greater than or equal to 6 months, for pre-op evaluation in vascular surgery or organ transplant. **(AUC Score 8)**^{1,2,4,5,6}
- K. Stress Echocardiography is indicated in symptomatic patients with high risk CAD risk factors and/or who are also suspected to have pulmonary hypertension, to rule out underlying coronary ischemia with no prior stress test within the last 6 months. **(AUC Score 7)**^{1,2,4,5,6}
- L. In patients with suspected low-flow, low-gradient severe AS with reduced LVEF (Stage D2), low-dose dobutamine stress testing with echocardiographic or invasive hemodynamic measurements is reasonable to further define severity and assess contractile reserve. **(AUC Score 6)**^{2,3,6}
- M. Apart from the specific scenarios indicated above, stress testing of asymptomatic individuals is reasonable when there are other signs of cardiac pathology e.g., new EKG abnormalities, new wall motion abnormalities on an echo, or a new decrease in LVEF as detected by another modality. **(AUC Score 7)**^{1,2,4,5,6}
- N. Stress echo is appropriate to perform for cardiovascular risk stratification, prior to any organ transplant. No stress echo done within the last 6 months. **(AUC SCORE 7)**^{2,8,9,10,11}

Limitations:

- A. Requests for services that are part of a surveillance protocol for patients who are involved in a clinical trial are considered out of scope (OOS) for New Century Health and cannot be reviewed.
- B. Before stress echocardiography can be considered for CAD and/or mitral valve disease the following must be considered: Predicted or observed lack of adequate response to maximally tolerated GDMT^{12,13,14,15,16,17,18,19,20,21}

IV. PROCEDURE

- A. To review a request for medical necessity, the following items must be submitted for review:
 - 1. Progress note that prompted request
 - 2. Recent EKG (within 10 days), if available
 - 3. Most recent Stress test/ECHO report
- B. Primary codes appropriate for this service: Stress Echo without doppler – 93351, Stress Echo with doppler-93351, 93320, 93325; Stress echo as per 93351, but without continuous electrocardiographic monitoring - 93350

V. APPROVAL AUTHORITY

- A. Review – Utilization Management Department

- B. Final Approval – Utilization Management Committee

VI. ATTACHMENTS

- A. None

VII. REFERENCES

1. Centers for Medicare and Medicaid Services. Florida. Local Coverage Determination (LCD) (L38396). Cardiology – non-emergent outpatient testing. Retrieved from <https://www.cms.gov> [Accessed December 19, 2023].
2. Centers for Medicare and Medicaid Services. Illinois Local Coverage Determination (LCD) (L33577). Transthoracic Echocardiography. Retrieved from <https://www.cms.gov> [Accessed December 19, 2023].
3. Catherine M. Otto, et al. 2020 ACC/AHA Guideline for the Management of Patients With Valvular Heart Disease: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. *J Am Coll Cardiol*. 2021 Feb, 77 (4) e25–e197
4. Pamela S. Douglas, et al. ACCF/ASE/ACEP/AHA/ASNC/SCAI/SCCT/SCMR 2008 appropriateness criteria for stress echocardiography: a report of the American College of Cardiology Foundation Appropriateness Criteria Task Force, American Society of Echocardiography, American College of Emergency Physicians, American Heart Association, American Society of Nuclear Cardiology, Society for Cardiovascular Angiography and Interventions, Society of Cardiovascular Computed Tomography, and Society for Cardiovascular Magnetic Resonance endorsed by the Heart Rhythm Society and the Society of Critical Care Medicine. *Journal of the American College of Cardiology*. March 2008. Volume 51, Issue 11, Pages 1127-1147.
5. Wolk MJ, et al. ACCF/AHA/ASE/ASNC/HFSA/HRS/SCAI/SCCT/SCMR/STS 2013 multimodality appropriate use criteria for the detection and risk assessment of stable ischemic heart disease: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, American Heart Association, American Society of Echocardiography, American Society of Nuclear Cardiology, Heart Failure Society of America, Heart Rhythm Society, Society for Cardiovascular Angiography and Interventions, Society of Cardiovascular Computed Tomography, Society for Cardiovascular Magnetic Resonance, and Society of Thoracic Surgeons. *Journal of the American College of Cardiology*. 2014 Feb, Volume 63, Issue 4, Pages 380-406.
6. Robert C. Hendel MD, FACC, FAHA, et al. Appropriate use of cardiovascular technology: 2013 ACCF appropriate use criteria methodology update: a report of the American College of Cardiology Foundation appropriate use criteria task force. *Journal of the American College of Cardiology*. March 2013, Volume 61, Issue 12, Pages 1305-1317.
7. NCQA UM 2023 Standards and Elements.
8. Pre- Renal Transplant Risk Stratification. *J Am Coll Cardiol Img*. 2018 Jun, 11 (6) 855–858. <https://doi.org/10.1016/j.jcmg.2017.08.001>
9. DeBolle SA, Ochieng IA, Saha AK, Sung RS. Evaluation of the Effectiveness of Screening for Iliac Arterial Calcification in Kidney Transplant Candidates. *Ann Transplant*. 2020 Sep 15;25:e922178. doi: 10.12659/AOT.922178. PMID: 32929057; PMCID: PMC7518019.
10. Chadban, Steven J. BMed, PhD1Gregory A. MD, MSc15,* . KDIGO Clinical Practice Guideline on the Evaluation and Management of Candidates for Kidney Transplantation. *Transplantation*: April 2020 - Volume 104 - Issue 4S1 - p S11-S103.
11. Martin, P., DiMartini, A., Feng, S., Brown, R., Jr. and Fallon, M. (2014), Evaluation for liver transplantation in adults: 2013 practice guideline by the American Association for the Study of

Liver Diseases and the American Society of Transplantation. *Hepatology*, 59: 1144-1165.
<https://doi.org/10.1002/hep.26972>

12. Hideyuki Kawashima, et.al. Impact of Optimal Medical Therapy on 10-Year Mortality After Coronary Revascularization. On behalf of the SYNTAX Extended Survival Investigators. *J Am Coll Cardiol*. 2021 Jul, 78 (1) 27–38
13. Amsterdam EA, et al. 2014 AHA/ACC Guideline for the Management of Patients with Non-STElevation Acute Coronary Syndromes: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol*. 2014 Dec 23;64(24):e139-e228.
14. Levine GN, et al. 2016 ACC/AHA Guideline Focused Update on Duration of Dual Antiplatelet Therapy in Patients with Coronary Artery Disease. *Circulation*. 2016 Sep 6;134(10):e123-55.
15. David J. Maron, M.D., Judith S. Hochman, M.D et.al- ISCHEMIA Research Group. Initial Invasive or Conservative Strategy for Stable Coronary Disease- *N Engl J Med* 2020; 382:1395-407. DOI: 10.1056/NEJMoa1915922.
16. William E. Boden, M.D. et. Al; Optimal Medical Therapy with or without PCI for Stable Coronary Disease. Clinical Outcomes Utilizing Revascularization and Aggressive Drug Evaluation – COURAGE. *N Engl J Med* 2007; 356:1503-1516. DOI: 10.1056/NEJMoa070829.
17. Natasha K Wolfe et.al. The independent reduction in mortality associated with guideline-directed medical therapy in patients with coronary artery disease and heart failure with reduced ejection fraction. *European Heart Journal - Quality of Care and Clinical Outcomes*, qcaa032.
<https://doi.org/10.1093/ehjqcco/qcaa032>.
18. Bonow RO, et al. 2020 Focused Update of the 2017 ACC Expert Consensus Decision Pathway on the Management of Mitral Regurgitation: A Report of the American College of Cardiology Solution Set Oversight Committee. *J Am Coll Cardiol*. 2020 May 5;75(17):2236-2270.
19. Coats AJS, et al. The management of secondary mitral regurgitation in patients with heart failure: a joint position statement from the Heart Failure Association (HFA), European Association of Cardiovascular Imaging (EACVI), European Heart Rhythm Association (EHRA), and European Association of Percutaneous Cardiovascular Interventions (EAPCI) of the ESC. *Eur Heart J*. 2021 Mar 18;42(13):1254–69.
20. Maddox TM, et al. 2021 Update to the 2017 ACC Expert Consensus Decision Pathway for Optimization of Heart Failure Treatment: Answers to 10 Pivotal Issues About Heart Failure With Reduced Ejection Fraction: A Report of the American College of Cardiology Solution Set Oversight Committee. *J Am Coll Cardiol*. 2021 Feb 16;77(6):772-810.