New Century Health

Cardio Policy:

Myocardial Perfusion Imaging-Exercise Nuclear Stress Testing

POLICY NUMBER UM CARDIO_1084	**SUBJECT** Myocardial Perfusion Imaging-Exercise Nuclear Stress Testing		**DEPT/PROGRAM** UM Dept	**PAGE 1 OF 5**
DATES COMMITTEE REVIEWED 04/01/11, 08/25/11, 11/07/12, 03/10/14, 05/21/14, 05/17/15, 08/12/15, 11/23/16, 12/21/16, 10/10/17, 09/17/18, 02/13/19, 02/21/19, 05/08/19, 07/24/19, 12/11/19, 05/13/20, 01/13/21, 03/10/21, 05/12/21, 07/14/21, 08/12/21, 07/13/22	**APPROVAL DATE** July 13, 2022	**EFFECTIVE DATE** July 29, 2022	**COMMITTEE APPROVAL DATES** 04/01/11, 08/25/11, 11/07/12, 03/10/14, 05/21/14, 05/17/15, 08/12/15, 11/23/16, 12/21/16, 10/10/17, 09/17/18, 02/13/19, 02/21/19, 05/08/19, 07/24/19, 12/11/19, 05/13/20, 01/13/21, 03/10/21, 05/12/21, 07/14/21, 08/12/21, 07/13/22	
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 myocardial perfusion imaging (MPI).

II. DEFINITIONS

Myocardial perfusion imaging is used primarily for the evaluation of coronary artery disease and determining prognosis. Myocardial perfusion imaging is a cardiac radionuclide imaging procedure that evaluates blood flow to the cardiac muscle during rest or stress. Stress may be provided by exercise or with pharmacologic agents. A variety of radionuclides may be used, including Technetium tc-99M sestamibi, thallium201 and Technetiumtc-99M tetrofosmin.

For those patients who are unable to complete the exercise protocol without achieving 75-100% of predicted maximal heart rate, a pharmacological nuclear stress test is recommended. This testing method uses a drug to mimic the response of the cardiovascular system to exercise. Adenosine, Persantine, Dobutamine, or Regadenoson are vasodilators used in pharmacological nuclear stress testing. A gamma camera is used to record images in planar or tomographic (single photon emission computed tomography, SPECT) projections.

High global CAD risk is defined as 10-year CAD risk of >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

III. POLICY

Indications for approving a request for medical necessity are:

A. Evaluation of a patient that has chest pain, other symptoms, or signs suggestive of coronary artery disease, and the patient has an abnormal baseline EKG (RBBB, LBBB, IVCD, LVH, Atrial fibrillation, marked resting ST segment changes) or is on a cardiac glycoside (Digoxin) or other medication which would make interpretation of a standard exercise test inaccurate and without an imaging stress test performed within the last 6 months. **(AUC Score 8)**[1,2,3,4,5]

B. Evaluation of a patient who has symptoms suggestive of angina (chest pain, shortness of breath, dyspnea on exertion) who represents a high-risk for having ASCAD based on cardiac risk factors and possibly with a normal EKG. **(AUC Score 8)**[1,2,3,4,5]

C. Evaluation of a patient that has an abnormal or recent non-diagnostic standard exercise test (i.e., unable to reach 75-100% of their age predicted maximal heart rate by physiologic exercise) or has ventricular wall motion abnormality recently demonstrated by another imaging modality and myocardial perfusion imaging is being performed to determine if the patient has myocardial ischemia. No imaging stress test within the last 6 months. **(AUC Score 8)**[1,2,3,4,5]

D. Evaluation of a patient that has known coronary artery disease (or recent myocardial infarction) and myocardial perfusion imaging is being done to determine the functional significance of/or the extent of myocardial ischemia (or scar) resulting from coronary artery disease or to assess myocardial viability. No prior imaging stress test within the last 3 months. **(AUC Score 9)**[1,2,3,4,5]

E. Testing is being performed to evaluate a patient with known or suspected exercise induced arrhythmias, sustained VT, frequent PVC's, syncope and prior to initiation of antiarrhythmic therapy in high global CAD risk patients. No imaging stress test within the last 6 months. **(AUC Score 7)**[1,2,3,4,5]

F. Asymptomatic Patient or has stable symptoms, with a high global CAD risk and prior Coronary Calcium Agatston Score between 100-400 **(AUC Score 7)** or with Agatston Score >400 **(AUC Score 8)**[1,2,3,4,5] regardless of risk factors, may be appropriate to follow -up with MPI with no imaging stress test within the last 12 months.

G. Testing in a symptomatic patient with abnormal Coronary Calcium Agatston Score >100 is appropriate and no imaging stress test within the last 6 months. **(AUC Score 7)**[1,2,3,4,5]

H. Testing in a patient with non-diagnostic (prior <90days) Coronary Computed Tomography Angiography results and there is concern for obstructive CAD is appropriate. No imaging stress test within the last 12 months. **(AUC Score 7)**[1,2,3,4,5]

I. Follow up testing in a patient with new or worsening symptoms with abnormal Coronary Calcium Agatston Score > 100 is appropriate. No imaging stress test done within the last 3 months. **(AUC Score 8)**[1,2,3,4,5]

J. Stress Imaging is appropriate in a patient who has recently undergone cardiovascular intervention (CABG or PCI) to evaluate the effectiveness of the intervention. No imaging stress test done within the last 3 months. **(AUC Score 7)**[1,2,3,4,5]

K. Evaluation with a nuclear stress test may be considered in an asymptomatic patient who has had CABG ≥ 5 years and with stress test performed ≥ 2 years **(AUC Score 7)** or had PCI ≥ 3 years with stress test performed ≥ 2 years. **(AUC Score 6)**[1,2,3,4,5]

L. Evaluation of a patient with known CAD or who had PCI or CABG and has developed new signs and symptoms suggestive of progression of coronary artery disease. No imaging stress test within the last 6 months **(AUC Score 8)**[1,2,3,4,5]

M. Evaluation of a patient that has developed congestive heart failure and a silent MI is suspected. No imaging stress test within the last 3 months. **(AUC Score 8)**[1,2,3,4,5]

N. Evaluation of a patient that has a ventricular wall motion abnormality demonstrated by another imaging modality and perfusion imaging is needed to further evaluate the abnormality. No imaging stress test within the last 6 months. **(AUC Score 8)**[1,2,3,4,5]

O. Evaluation of a patient that has severe peripheral vascular disease and is a candidate for peripheral vascular reperfusion by PTA or bypass surgery and myocardial perfusion imaging is being done pre-operatively because there is a concern of possible significant coronary artery disease. No imaging stress test within the last 12 months **(AUC Score 8)**[1,2,3,4,5]

P. Preoperative evaluation of cardiac risk for noncardiac surgery (thoracic, major abdominal or for organ transplant) in patients with significant moderate to high-risk for cardiac disease and no imaging stress test within the last 6 months. **(AUC Score 8)**[1,2,3,4,5]

Q. Dual Isotope Imaging can be used to assess myocardial viability and should be considered in patients with prior MI or heart failure only. No imaging stress test within the last 12 months. **(AUC Score 7)**[1,2,3,4,5]

R. Patient with coronary artery anomaly (repaired or unrepaired) and no imaging stress test within the last 12 months. **(AUC Score 8)**[1,2,3,4,5]

S. Exercise MPI is indicated in patient who is asymptomatic but has an abnormal EKG that is suggestive for ischemia or another acute cardiac event, and who can exercise. **(AUC Score 7)**[1,2,3,4,5]

T. 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)**[1,2,3,4,5]

U. Please refer to *UM_1175 Perioperative Cardiovascular Evaluation Before Surgery* and *UM_1119 Pharmacological Nuclear Stress Test and Myocardial Perfusion Imaging* if a request is received for pre- operative cardiac clearance prior to noncardiac and cardiovascular related surgery.

Limitations:

A. Exercise MPI is not routinely indicated in an asymptomatic patient with high global CAD risk, with interpretable EKG and is able to exercise as part of CAD risk assessment.[1,2,3,4,5]

B. 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.

IV. PROCEDURE

A. In order to review a request for medical necessity, the following items must be submitted for review:
   1. Progress notes that prompted request
   2. Recent EKG (within 10 days), if available
   3. Most recent stress test
   4. Most recent echocardiogram (if applicable)

B. Primary codes appropriate for this service: 78451, 78452, 78453, 78454, 78466, 78468, 78469, 78472, 78473, 78481, 78483, 93015, 93016, 93017, 93018, A9505/A9502/A9500. CPT codes for Dual Isotopes: A9505, A9502, or A9505, A9500

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: exercise stress test, stress echo, MPI SPECT, and cardiac PET. Retrieved from https://www.cms.gov March 15, 2020.
2. Brindis RG, Douglas PS, Hendel RC, et al. ACCF/ASNC appropriateness criteria for single-photon emission computed tomography myocardial perfusion imaging (SPECT MPI): a report of the American College of Cardiology Foundation Quality Strategic Directions Committee Appropriateness Criteria Working Group and the American Society of Nuclear Cardiology endorsed by the American Heart Association. Journal of the American College of Cardiology. Oct 2005, Volume 46, Issue 8, Pages 1587- 605.
3. Hendel RC, et al. ACCF/ASNC/ACR/AHA/ASE/SCCT/SCMR/SNM 2009 Appropriate Use Criteria for Cardiac Radionuclide Imaging: A Report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the American Society of Nuclear Cardiology, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the Society of Cardiovascular Computed Tomography, the Society for

Cardiovascular Magnetic Resonance, and the Society of Nuclear Medicine. Journal of the American College of Cardiology. June 2009, Volume 53, Issue 23, Pages 2201-29.

4. 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.
5. Robert C. Hendel MD, FACC, FAHA, FASNC, 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.
6. NCQA UM 2022 Standards and Elements.