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Subject: Cardiac Nuclear Imaging (Myocardial Perfusion Imaging)

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DESCRIPTION:

Myocardial perfusion imaging (MPI), also known as a nuclear stress test is a non-invasive imaging test that shows how well blood flows through (perfuses) heart muscle. It can show areas of the heart muscle that aren't getting enough blood flow and how well the heart muscle is pumping.

POSITION STATEMENT:

Myocardial perfusion imaging (MPI) **meets the definition of medical necessity** for the following:

Suspected coronary artery disease (CAD)

Symptomatic members without known CAD for any of the following:

- Low or intermediate pretest probability and unable to exercise
- High pretest probability
- Repeat testing in member with new or worsening symptoms and negative result at least one year prior and meets one of the above criteria.

Asymptomatic members without known CAD for any of the following:

- Previously unevaluated ECG evidence of possible myocardial ischemia including substantial ischemic ST segment or T wave abnormalities
- Previously unevaluated pathologic Q waves
- Unevaluated complete left bundle branch block.

Inconclusive CAD evaluation within the past 2 years and obstructive CAD remains a concern for any of the following:

- Exercise stress ECG with low-risk Duke treadmill score ≥ 5 (member's current symptoms indicate an intermediate or high pretest probability)
- Exercise stress ECG with an intermediate Duke treadmill score
- Intermediate coronary computed tomography angiography (CCTA) (e.g., 30-70% lesions)
- Non-diagnostic exercise stress test with inability to achieve target heart rate (THR)
- An indeterminate (equivocal, borderline, or discordant) evaluation by prior stress imaging (SE or CMR) within the past 2 years.

Follow-up of members post coronary revascularization (PCI or CABG) for any of the following:

- Asymptomatic follow-up stress imaging (MPI or SE)
Note: At a minimum of 2 years post coronary artery bypass grafting (CABG), or percutaneous coronary intervention (PCI), (whichever is later), is appropriate only for members with a history of silent ischemia, or a history of a prior left main stent.
- For members with high occupational risk (e.g., associated with public safety, airline and boat pilots, bus and train drivers, bridge and tunnel workers/toll collectors, police officers, firefighters)
- New, recurrent, or worsening symptoms post coronary revascularization, if stress imaging (MPI or SE) will alter management.

Follow-up of known CAD

Follow-up of asymptomatic or stable symptoms in member when last invasive or non-invasive assessment of coronary disease showed hemodynamically significant CAD (ischemia on stress test or $\text{FFR} \leq 0.80$ or stenosis $\geq 70\%$ of a major vessel), over two years ago, without intervening coronary revascularization is an appropriate indication for stress imaging (MPI or SE) if it will alter management.

Special diagnostic conditions requiring coronary evaluation for any of the following:

- Prior acute coronary syndrome without invasive or non-invasive coronary evaluation
- Newly diagnosed systolic heart failure ($\text{EF} < 50\%$) with symptoms or signs of ischemia unless invasive coronary angiography immediately planned
- $\text{LVEF} \leq 50\%$ requiring myocardial viability assessment to assist with decisions regarding coronary revascularization
- Ventricular arrhythmias
- Prior to Class IC antiarrhythmic drug initiation (propafenone or flecainide) and annually in intermediate and high global risk members
- Assessment of hemodynamic significance of one of the following documented conditions:
 - Anomalous coronary arteries
 - Myocardial bridging of coronary artery.
- Coronary aneurysms in Kawasaki's disease or due to atherosclerosis
- Following radiation therapy to the anterior or left chest, at 5 years post initiation and every 5 years thereafter.

Prior to elective noncardiac surgery

- The member has at least one of the following cardiac complication risk factors:

- Ischemic heart disease
- History of stroke or transient ischemic attack (TIA)
- History of congestive heart failure or ejection fraction $\leq 35\%$
- Diabetes mellitus requiring insulin
- Creatinine ≥ 2.0 mg/dl

AND

- The member has limited functional capacity (< 4 METS), such as one of the following:
 - Unable to take care of their activities of daily living (ADLs) or ambulate
 - Unable to walk 2 blocks on level ground
 - Unable to climb 1 flight of stairs

AND

- There has not been a conclusive stress evaluation, CTA or heart catheterization within the past year; and the results of such a test would likely substantially alter therapy and/or preclude proceeding with the intended surgery.

Planning for solid organ transplantation

- Preoperative MPI for solid organ transplantation, if there has not been a conclusive stress evaluation, CTA or heart catheterization within the past year and with ≥ 3 of the following risk factors:
 - Age > 60
 - Smoking
 - Hypertension
 - Dyslipidemia
 - Left ventricular hypertrophy
 - > 1 year on dialysis (for renal transplant members)
 - Diabetes mellitus
 - Prior ischemic heart disease.

Post cardiac transplant for any of the following:

- Annually, for the first five years post cardiac transplantation, in a member not undergoing invasive coronary arteriography
- After the first five years post cardiac transplantation, members with documented transplant vasculopathy can be screened annually if the risk of annual invasive coronary arteriography is not acceptable (e.g., high risk of contrast nephropathy) or not desired.

Additional Information:

Global Risk of Cardiovascular Disease (coronary disease (CAD))

Global risk of CAD is defined as the probability of manifesting cardiovascular disease over the next 10 years and refers to asymptomatic members without known cardiovascular disease. It should be determined using one of the cardiac risk calculators below. A high risk is considered greater than 20% risk of a cardiovascular event over the ensuing 10 years. High global risk by itself generally lacks

scientific support as an indication for stress imaging. There are rare exemptions, such as members requiring IC antiarrhythmic drugs, who might require coronary risk stratification prior to initiation of the drug, when global risk is moderate or high.

CAD Risk—Low: 10-year absolute coronary or cardiovascular risk less than 10%.

CAD Risk—Moderate: 10-year absolute coronary or cardiovascular risk between 10% and 20%.

CAD Risk—High: 10-year absolute coronary or cardiovascular risk of greater than 20%.

Duke Treadmill Score

- The equation for calculating the Duke treadmill score (DTS) is, $DTS = \text{exercise time in minutes} - (5 \times \text{ST deviation in mm or } 0.1 \text{ mV increments}) - (4 \times \text{exercise angina score})$, with angina score being 0 = none, 1 = non limiting, and 2 = exercise-limiting.
- The score typically ranges from -25 to +15. These values correspond to low-risk (with a score of $\geq +5$), intermediate risk (with scores ranging from -10 to +4), and high-risk (with a score of ≤ -11) categories.

Stable patients without known CAD fall into 2 categories (asymptomatic and symptomatic):

- Asymptomatic, for whom global risk of CAD events can be determined from coronary risk factors, using online cardiac risk calculator (see Reimbursement Information section).
- Symptomatic, for whom we estimate the pretest probability that their chest-related symptoms are due to clinically significant CAD.

Once the type of chest pain has been established from the medical record, the pretest probability of significant CAD is estimated from the Diamond Forrester score for pretest probability of coronary artery disease (see below Table 1), recognizing that additional coronary risk factors could increase pretest probability.

Determination of Pretest Probability for Coronary Artery Disease (CAD)

Table 1: Determination of Pretest Probability for Coronary Artery Disease Based on Age, Sex, and Symptoms (Source: American College of Cardiology Criteria for Pretest Probability of Coronary Artery Disease (CAD)).

The following risk assessment may be used to determine pre-test probability of coronary artery disease.

Age (years)	Gender	Typical/Definite Angina Pectoris	Atypical/Probable Angina Pectoris	Non-anginal Chest Pain	Asymptomatic
≤ 39	Men	Intermediate	Intermediate	Low	Very low
	Women	Intermediate	Very low	Very low	Very low
40 – 49	Men	High	Intermediate	Intermediate	Low
	Women	Intermediate	Low	Very low	Very low
50 – 59	Men	High	Intermediate	Intermediate	Low
	Women	Intermediate	Intermediate	Low	Very low
≥ 60	Men	High	Intermediate	Intermediate	Low
	Women	High	Intermediate	Intermediate	Low
Very low: Less than 5% pretest probability of CAD Low: Between 5% and 10% pretest probability of CAD Intermediate: Between 10% and 90% pretest probability of CAD High: Greater than 90% pretest probability of CAD					

Adapted from: Wolk MJ, Bailey SR, Doherty JU 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. Journal of the American College of Cardiology 2014; 63(4): 380-406.

Taylor AJ, Cerqueira M, Hodgson JM, et al. ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR 2010 appropriate use criteria for cardiac computed tomography. Journal of the American College of Cardiology 2010;56(22):1864-1894.

Online cardiac risk calculator and assessment tools

Members who have already manifested cardiovascular disease are already at high global risk and are not applicable to the calculators.

The links for the online cardiac risk calculator and assessment tools are to an outside source and is provided for your convenience. Use of the links and related calculator and assessment tools are subject to the terms and conditions of the website and is not warranted, maintained or affiliated with Florida Blue.

Framingham Risk Score Calculator

<http://www.medcalc.com/heartrisk.html>

Reynolds Risk Score (Can use if no diabetes. Unique for use for family history.)

<http://www.reynoldsriskscore.org/>

Pooled Cohort Risk Assessment Equations

<http://clincalc.com/Cardiology/ASCVD/PooledCohort.aspx>

ACC/AHA Risk Calculator

<http://tools.acc.org/ASCVD-Risk-Estimator-Plus/#!/calculate/estimate/>

MESA Risk Calculator (With addition of coronary artery calcium score, for CAD-only risk.)

<https://www.mesa-nhlbi.org/MESACHDRisk/MesaRiskScore/RiskScore.aspx>

Abbreviations:

AAD - Antiarrhythmic drug

ADLs - Activities of daily living

Bpm - Beats per minute

CAD - Coronary artery disease

CCTA - Coronary computed tomographic angiography

CTA - Computed tomographic angiography

DTS - Duke treadmill score

ECG- Electrocardiogram

FFR - Fractional flow reserve

IVUS - Intravascular ultrasound

LBBB - Left bundle-branch block

LVH - Left ventricular hypertrophy

MI - Myocardial infarction

MESA - Multi-Ethnic Study of Atherosclerosis

MET - Metabolic equivalents (of exercise)/Estimated metabolic equivalent of exercise

MPI- Myocardial perfusion imaging

PFT - Pulmonary function test

PVCs - Premature ventricular contractions

SE- Stress echocardiography

TIA - Transient ischemic attack

VF - Ventricular fibrillation

VT - Ventricular tachycardia

WPW - Wolf Parkinson White

BILLING/CODING INFORMATION:

CPT Coding:

78451	Myocardial perfusion imaging, tomographic (SPECT) (including attenuation correction, qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); single study, at rest or stress (exercise or pharmacologic)
78452	Myocardial perfusion imaging, tomographic (SPECT) (including attenuation correction, qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); multiple studies, at rest and/or stress (exercise or pharmacologic and/or redistribution and/or rest reinjection)
78453	Myocardial perfusion imaging, planar (including qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); single study, at rest or stress (exercise or pharmacologic)
78454	Myocardial perfusion imaging, planar (including qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); multiple studies, at rest and/or stress (exercise or pharmacologic) and or redistribution and/or rest reinjection
78466	Myocardial imaging, infarct avid, planar; qualitative or quantitative
78468	Myocardial imaging, infarct avid, planar; with ejection fraction by first pass technique
78469	Myocardial perfusion imaging; tomographic SPECT with or without quantification
78481	Cardiac blood pool imaging, (planar), first pass technique; single study, at rest or with stress (exercise and/or pharmacologic), wall motion study plus ejection fraction, with or without quantification
78483	Cardiac blood pool imaging, (planar), first pass technique; multiple studies, at rest and with stress (exercise and/or pharmacologic), wall motion study plus ejection fraction, with or without quantification

REIMBURSEMENT INFORMATION:

Re-imaging due to technically limited exam is the responsibility of the imaging provider.

LOINC Codes:

The following information may be required documentation to support medical necessity: physician history and physical, physician progress notes, plan of treatment and reason for cardiac nuclear imaging (myocardial perfusion imaging).

Documentation Table	LOINC Codes	LOINC Time Frame Modifier Code	LOINC Time Frame Modifier Codes Narrative
Physician history and physical	28626-0	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Attending physician progress note	18741-9	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Plan of treatment	18776-5	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim

Radiology reason for study	18785-6	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology comparison study-date and time	18779-9	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology comparison study observation	18834-2	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology-study observation	18782-3	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology-impression	19005-8	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology study-recommendation (narrative)	18783-1	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim

PROGRAM EXCEPTIONS:

Federal Employee Plan (FEP): Follow FEP guidelines.

Medicare Advantage products:

The following Local Coverage Determination (LCD) was reviewed on the last guideline reviewed date: Cardiology Non-emergent Outpatient Stress Testing (L38396) is located at fcso.com

No National Coverage Determination (NCD) was found at the time of the last guideline reviewed date.

If this Medical Coverage Guideline contains a step therapy requirement, in compliance with Florida law 627.42393, members or providers may request a step therapy protocol exemption to this requirement if based on medical necessity. The process for requesting a protocol exemption can be found at [Coverage Protocol Exemption Request](#).

DEFINITIONS:

Ejection fraction (EF): the proportion, fraction or percentage of blood pumped out of the heart with each beat. An EF is 55 percent or higher.

Electrocardiogram (EKG, ECG): a test that records the electrical activity of the heart that is used in diagnosing some heart abnormalities.

Electrocardiogram (ECG)-uninterpretable: ECGs with resting ST-segment depression (less than or equal to 1.10 mV), complete left bundle-branch block (LBBB), pre-excitation Wolff-Parkinson-White syndrome (WPW) or paced rhythm.

ST segment: on an electrocardiogram, the interval from the end of ventricular depolarization (QRS complex) to the onset of ventricular repolarization (T wave).

ST segment elevation myocardial infarction (STEMI): subcategories of acute coronary syndrome (ACS).

Stress test: a heart monitoring test to discover how well the heart works usually performed via physical exercise, and sometimes via pharmaceuticals.

Wolff-Parkinson-White syndrome: the association of paroxysmal tachycardia or atrial fibrillation with pre-excitations; used synonymously with pre-excitation, also, called WPWs.

RELATED GUIDELINES:

[Computed Tomography to Detect Coronary Artery Calcification, 04-70450-02](#)
[Multiple-Gated Acquisition \(MUGA\) Scan, 04-78000-21](#)

OTHER:

None applicable.

REFERENCES:

1. Anderson JL, Adams CD, Antman EM et al. ACC/AHA 2007 guidelines for the management of patients with unstable angina/non ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines for the Management of Patients With Unstable Angina/Non ST-Elevation Myocardial Infarction): developed in collaboration with the American College of Emergency Physicians, the Society for Cardiovascular Angiography and Interventions, and the Society of Thoracic Surgeons: endorsed by the American Association of Cardiovascular and Pulmonary Rehabilitation and the Society for Academic Emergency Medicine. *Circulation* 2007; 116(7): 652-726.
2. Berman DS, Hachamovitch R, Shaw LJ et al. Roles of nuclear cardiology, cardiac computed tomography, and cardiac magnetic resonance: Noninvasive risk stratification and a conceptual framework for the selection of noninvasive imaging tests in patients with known or suspected coronary artery disease. *Journal of Nuclear Medicine* 2006; 47(7): 1107-1118.
3. Braunwald E, Antman EM, Beasley JW et al. ACC/AHA guidelines for the management of patients with unstable angina and non-ST-segment elevation myocardial infarction. a report of the American College of Cardiology/ American Heart Association Task Force on Practice Guidelines (committee on the management of patients with unstable angina). *Journal of the American College of Cardiology* 2000; 36(3): 975-1061.
4. Braunwald E, Jones RH, Mark DB et al. Diagnosing and managing unstable angina. Agency for Health Care Policy and Research. *Circulation* 1994; 90(1): 613-622.
5. Bunch TJ, Chandrasekaran K, Gersh BJ et al. The prognostic significance of exercise-induced atrial arrhythmias. *Journal of the American College of Cardiology* 2004; 43(7): 1236-1240.
6. Cha YM, Lee GK, Klarich KW et al. Premature ventricular contraction-induced cardiomyopathy a treatable condition. *Circulation Arrhythmia and Electrophysiology* 2012; 5:229-236.
7. Douglas PS, Hendel RC, Peterson ED et al. ACCF/ASNC Appropriateness Criteria for Single-Photon Emission Computed Tomography Myocardial Perfusion Imaging (SPECT MPI), 2005.
8. Fernández-Lozano I, Brugada J. Right bundle branch block: are we looking in the right direction? *European Heart Journal* 2013; 34: 86-88.
9. Fihn SD, Gardin JM, Abrams J et al. 2012 ACCF/AHA/ACP/AATS/PCNA/SCAI/STS guideline for the diagnosis and management of patients with stable ischemic heart disease. a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines, and the American College of Physicians, American Association for Thoracic Surgery, Preventive Cardiovascular Nurses Association, Society for Cardiovascular Angiography and Interventions, and Society of Thoracic Surgeons. *Circulation* 2012; 126: e354-e741.
10. Fleisher LA, Fleischmann KE, Auerbach AD et al. 2014 ACC/AHA Guideline on Perioperative Cardiovascular Evaluation and Management of Patients Undergoing Noncardiac Surgery. a report of

the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *Journal of the American College of Cardiology* 2014; 64(22): e77-e137.

11. Futterman LG, Lemberg L. The clinical significance of experience-induced ventricular arrhythmias. *American Journal of Critical Care* 2006; 15(4): 431-435.
12. Gibbons RJ, Balady FJ, Beasley JW et al. ACC/AHA Guidelines for Exercise Testing: Executive Summary. a Report of the American College of Cardiology/ American Heart Association Task Force on Practice Guidelines (Committee on Exercise Testing). *Journal of the American College of Cardiology* 2002; 40(8): 1531-1540.
13. Goff DC, Lloyd-Jones DM, Bennett G et al. 2013 ACC/AHA Guideline on the Assessment of Cardiovascular Risk. a Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *Circulation* 2014; 129 [suppl. 2]: S74-S75.
14. Goff DC, Lloyd-Jones DM, Bennett G et al. 2013 ACC/AHA Guideline on the Assessment of Cardiovascular Risk. a Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *Journal of the American College of Cardiology* 2014; 63(25): 2937-2959.
15. Hansen CL, Goldstein RA, Akinboboye OO et al. ASNC imaging guidelines for nuclear cardiology procedures: myocardial perfusion and function: single photon emission computed tomography 2007; 14: e39-e60.
16. Hendel RC, Berman DS, Di Carli MF et al. ACCF/ASNC/ARC/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: endorsed by the American College of Emergency Physicians. *Circulation* 2009; 119(22): e561-e587.
17. Jeevanantham V, Manne K, Sengodan M et al. Predictors of coronary artery disease in patients with left bundle branch block who undergo myocardial perfusion imaging. *Cardiology Journal* 2009; 16(4): 321-326.
18. Kavousi M, Leening MJG, Nanchen D et al. Comparison of Application of the ACC/AHA Guidelines, Adult Treatment Panel III Guidelines, and European Society of Cardiology Guidelines for Cardiovascular Disease Prevention in a European Cohort. *Journal of American Medical Association* 2014; 311(14): 1416-1423.
19. Klocke FJ, Baird MG, Bateman TM et al. ACC/AHA/ASNC Guidelines for the Clinical Use of Cardiac Radionuclide Imaging-Executive Summary. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (ACC/AHA/ASNC committee to revise the 1995 guidelines for the clinical use of cardiac radionuclide imaging). *Circulation* 2003; 108: 1404-1418.
20. Machac J. Cardiac positron emission tomography imaging. *Semin Nucl Med.* 2005 Jan;35(1):17-36. [Abstract]
21. Montalescot G, Sechtem U, Achenbach S et al. 2013ESC guidelines on the management of stable coronary artery disease. The Task Force on the management of stable coronary artery disease of the European Society of Cardiology. *European Heart Journal* 2013; 34: 2949-3003.
22. Moya A, Sutton R, Ammirati F et al. Guidelines for the diagnosis and management of syncope (version 2009). The Task Force for the diagnosis and management of syncope of the European Society of Cardiology (ESC). *European Heart Journal* 2009; 30: 2631-2671.
23. Patel MR, Calhoon JH, Dehmer GJ et al. ACC/AATS/AHA/ASE/ASNC/SCAI/SCCT/STS 2017 Appropriate Use Criteria for Coronary Revascularization in Patients With Stable Ischemic Heart Disease: A Report of the American College of Cardiology Appropriate Use Criteria Task Force, American Association for Thoracic Surgery, American Heart Association, American Society of Echocardiography, American Society of Nuclear Cardiology, Society for Cardiovascular Angiography

and Interventions, Society of Cardiovascular Computed Tomography, and Society of Thoracic Surgeons. J Am Coll Cardiol 2017 May 2; 69(17):2212-2241.

24. Reiffel JA, Camm AJ, Belardinelli L et al. The HARMONY Trial: combined Ranolazine and Dronedarone in the management of paroxysmal atrial fibrillation: mechanistic and therapeutic synergism. Circ Arrhythm Electrophysiol 2015 Oct;8(5):1048-1056.
25. Ridker PM, Buring JE, Fifi N. Development and validation of improved algorithms for the assessment of global cardiovascular risk in women: the Reynolds risk score. Journal of the American Medical Association 2007; 297(6): 611-619. Schwartz PJ, Crotti L. QTc behavior during exercise and genetic testing for the long-QT syndrome. Circulation 2011; 124(20): 2181-4.
26. Strauss HW, Miller DD, Wittry MD, et al. Procedure guideline for myocardial perfusion imaging 3.3. J Nucl Med Technol. 2008 Sep;36(3):155-61. Taylor AJ, Cerqueira M, Hodgson JM, et al. ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR 2010 appropriate use criteria for cardiac computed tomography. Journal of the American College of Cardiology 2010;56(22):1864-1894.
27. Taylor AJ, Cerqueira M, Hodgson JM, et al. ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR 2010 appropriate use criteria for cardiac computed tomography. Journal of the American College of Cardiology 2010;56(22):1864-1894.
28. Valenta I, Schindler TH. PET-determined myocardial perfusion and flow in coronary artery disease characterization. J Med Imaging Radiat Sci. 2024 Jun;55(2S):S44-S50.
29. Wolk MJ, Bailey SR, Doherty JU 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; 63(4): 380-406.
30. Yancy CW, Jessup M, Bozkurt B et al. 2017 ACC/AHA/HFSA Focused Update of the 2013 ACCF/AHA Guideline for the Management of Heart Failure: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Failure Society of America. Circulation 2017;136(6):e137-e161.

COMMITTEE APPROVAL:

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy and Coverage Committee on 07/23/26.

GUIDELINE UPDATE INFORMATION:

07/01/07	New Medical Coverage Guideline.
12/15/07	2008 ICD-9 CM update. Added ICD-9 diagnosis 414.2 for CPT codes 78460, 78461, 78464, 78465, 78469, 78472, 78473, 78481, 78483, 78494, and 78496. Added 440.4 for CPT codes 78460, 78461, 78464, 78465, and 78469. Medicare Advantage, added ICD-9 diagnosis 414.2 and 440.4 for CPT codes 78460, 78461, 78464, and 78465; and added ICD-9 diagnosis 414.2 for CPT codes 78472, 78473, 78481, 78483, 78494, and 78496.
01/21/08	Updated Program Exceptions.
05/15/08	Scheduled review. No change in position statements. Deleted ICD-9 diagnosis codes that support medical necessity. Updated references.
05/21/09	Removed Federal Employee Plan (FEP) from Florida Blue Radiology Management program exception statement. Added FEP program exception statement: FEP is excluded from the National Imaging Associates (NIA) review; follow FEP guidelines.
07/01/09	Updated Florida Blue Radiology Management program exception; added BlueSelect.

01/01/10	Annual HCPCS coding update: deleted 78460, 78461, 78464, 78465, 78478, and 78480; added 78451, 78452, 78453, and 78454. Revised Florida Blue Radiology Management program exception, and updated the references.
05/15/10	Revised position statement. Added Medicare Advantage program exception. Updated references.
09/15/11	Scheduled review; revised guideline name, deleted “radionuclide” and added “nuclear”. Revised position statements. Revised reimbursement information. Updated Medicare Advantage products program exception. Updated definitions. Updated references.
10/01/11	Revision; formatting changes.
01/15/13	Annual review; revised position statements, added criteria for: evaluation for suspected CAD, detection of CAD, evaluation for known CAD and risk assessment (acute coronary syndrome, post revascularization, viability/ischemia-ischemic cardiomyopathy). Revised Medicare Advantage products program exception (format changes). Updated references.
01/01/14	Review. Updated program exception.
07/08/15	Updated program exception.
10/15/16	Revision; Removed cardiac blood pool imaging from subject. Revised position statement. Deleted codes (78472, 78473, 78494 and 78496). Revised reimbursement information and program exceptions. Updated related guidelines and references.
12/15/17	Revision; format changes.
05/15/18	Revision; revised position statement. Revised suspected coronary artery disease (CAD): asymptomatic high global risk. Deleted syncope; coronary artery disease (CAD) in the presence of other new cardiac concerns. Updated references.
03/15/20	Review/revision. Revised and expanded indications and criteria. Revised: description, format, position statement, definitions and abbreviations. Updated references.
05/15/22	Review/revision. Revised description. Revised and expanded indications and criteria. Updated references.
07/01/22	Revision to Program Exceptions section.
07/08/23	Review: Position statements and references updated.
08/15/24	Review; no change in position statement. Updated references.
03/15/26	Position statements maintained.
08/15/26	Review; no change in position statement.