

Department of Origin: Integrated Healthcare Services	Effective Date: 12/03/24
Approved by: Medical Policy Quality Management Subcommittee	Date Approved: 12/03/24
Clinical Policy Document: Nuclear Medicine, Cardiac Positron Emission Tomography (PET), Cardiac PET/ Computed Tomography	Replaces Effective Clinical Policy Dated: 12/12/23
Reference #: MC/L023	Page: 1 of 4

PURPOSE:

The intent of this clinical policy is to ensure services are medically necessary.

Please refer to the member's benefit document for specific information. To the extent there is any inconsistency between this policy and the terms of the member's benefit plan or certificate of coverage, the terms of the member's benefit plan document will govern.

POLICY:

Benefits must be available for health care services. Health care services must be ordered by a provider. Health care services must be medically necessary, applicable conservative treatments must have been tried, and the most cost-effective alternative must be requested for coverage consideration.

GUIDELINES:

Requests for cardiac PET (positron emission tomography) (PET) or cardiac PET/CT (computed tomography) imaging - Must satisfy the following: I or II

- I. Evaluation of known or suspected coronary artery disease to assess perfusion (PET using rubidium-82 [Rb-82] or N-13 ammonia done at rest or with pharmacological stress) – must satisfy any of the following: A – C (CPTs 78430, 78431, 78491, 78492)
 - A. Is used in place of, but not in addition to, a single photon emission computed tomography (SPECT) in persons with conditions that may cause attenuation problems with SPECT – must satisfy any of the following: 1 - 2
 1. Individual is obese (eg, BMI 30 kg/m² or higher); or
 2. Individual has large breasts, breast implants, mastectomy, chest wall deformity, pleural or pericardial effusion.
 - B. SPECT myocardial perfusion scan or stress echocardiogram has been performed and the findings are inconclusive, or no viable myocardium evident; or
 - C. For assessment of coronary artery disease after heart transplantation.
- II. Evaluation of myocardial viability, cardiac sarcoid or infection (FDG-PET [fluorodeoxy-D-glucose]) – must satisfy any of the following: A – D
 - A. Assessment of myocardial viability – must satisfy any of the following: 1 - 3 (CPTs 78429, 78459)
 1. Known or suspected ischemic cardiomyopathy with left ventricular ejection fraction (LVEF) less than 35%; or

To determine myocardial viability prior to re-vascularization – must satisfy any of the following: a – b

 - a. As a primary or initial diagnostic study; or
 - b. Following an inconclusive SPECT.
 2. Chronic secondary mitral regurgitation, and member is a candidate for revascularization if viable myocardium identified.

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- B. Cardiac sarcoid - must satisfy any of the following: 1 – 2
 - 1. To monitor response to therapy for an established cardiac sarcoid (CPTs 78429, 78459); or
 - 2. To identify established or strongly suggested cardiac sarcoid (CPTS 78432, 78433)
- C. Suspected prosthetic heart valve endocarditis – must satisfy all of the following: 1 – 3 (CPT 78429)
 - 1. Clinical suspicion of endocarditis; and
 - 2. Echocardiogram is nondiagnostic; and
 - 3. Prosthetic valve implanted more than 3 months prior.
- D. Suspected LVAD driveline infection - must satisfy any of the following: 1 – 2 (CPT 78429)
 - 1. CT findings are nonspecific and metal device artifacts of the driveline itself affects sensitivity; or
 - 2. Other studies and examination remain inconclusive.

EXCLUSIONS (not limited to):

Refer to member's Certificate of Coverage or Summary Plan Description

BACKGROUND:

Positron emission tomography – computed tomography (PET/CT) scans are performed at rest or with pharmacological stress for noninvasive imaging of the perfusion of the heart for the diagnosis and management of patients with known or suspected coronary artery disease. Rubidium-82 chloride and nitrogen-13 ammonia are the most common PET/CT radiopharmaceuticals for MPI, and fluorine-18- 2-fluoro-2-deoxy-D-glucose (FDG) is the standard for myocardial metabolic imaging.

The primary goals of cardiac PET/CT imaging include evaluation of perfusion, function, viability, inflammation, anatomy, and risk stratification for cardiac-related events such as myocardial infarction and death. Maximum diagnostic accuracy of cardiac PET/CT is achieved when images are interpreted in conjunction with other relevant imaging, clinical information, and laboratory data.

The identification of members with partial loss of heart muscle movement or hibernating myocardium is important in selecting candidates with compromised ventricular function to determine appropriateness for re-vascularization. Diagnostic tests such as FDG-PET distinguish between dysfunctional but viable myocardial tissue and scar tissue in order to affect the management decisions in members with ischemic cardiomyopathy and left ventricular dysfunction.

Absolute quantitation of myocardial blood flow (AQMBF) imaging is an additional physiological assessment during a pharmacologic stress/rest PET or PET/CT myocardial perfusion imaging. Following stress/rest PET or PET/CT myocardial perfusion imaging, images for PET myocardial perfusion imaging are acquired to allow quantitation of AQMBF. The report quantifies in ml/g/min for rest, stress, and indexed/reserve flow for each coronary bed and for the global left ventricular. Performance of quantitation of myocardial blood flow by cardiac PET is currently non-standardized between different vendor products.

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Prior Authorization: Yes, per network provider agreement

CODING:

CPT® or HCPCS

78429 Myocardial imaging, positron emission tomography (PET), metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), single study; with concurrently acquired computed tomography transmission scan

78430 Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); single study, at rest or stress (exercise or pharmacologic), with concurrently acquired computed tomography transmission scan

78431 Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); multiple studies at rest and stress (exercise or pharmacologic), with concurrently acquired computed tomography transmission scan

78432 Myocardial imaging, positron emission tomography (PET), combined perfusion with metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), dual radiotracer (eg, myocardial viability);

78433 Myocardial imaging, positron emission tomography (PET), combined perfusion with metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), dual radiotracer (eg, myocardial viability); with concurrently acquired computed tomography transmission scan

78459 Myocardial imaging, positron emission tomography (PET), metabolic evaluation

78491 Myocardial imaging, positron emission tomography (PET), perfusion; single study at rest or stress

78492 Myocardial imaging, positron emission tomography (PET), perfusion; multiple studies at rest and/or stress

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2. Clinical Policy: Coverage Determination Guidelines MP/C009
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- Written information in other formats (large print, audio, accessible electronic formats, other formats)

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PO Box 59052
Minneapolis, MN 55459-0052
Phone: 1.800.940.5049 (TTY: 763.847.4013)
Fax: 763.847.4010
customerservice@preferredone.com

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U.S. Department of Health and Human Services
200 Independence Avenue, SW
Room 509F, HHH Building
Washington, D.C. 20201
1-800-368-1019, 800-537-7697 (TDD)

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200 Independence Avenue, SW
Room 509F, HHH Building
Washington, D.C. 20201
1-800-368-1019, 800-537-7697 (TDD)

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