

Department of Origin: Integrated Healthcare Services	Effective Date: 12/12/23
Approved by: Medical Policy Quality Management Subcommittee	Date Approved: 12/05/23
Clinical Policy Document: Nuclear Medicine, Cardiac Positron Emission Tomography (PET), Cardiac PET/ Computed Tomography	Replaces Effective Clinical Policy Dated: 12/06/22
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; or
 - B. SPECT myocardial perfusion scan or stress echocardiogram has been performed and the findings are inconclusive, or no viable myocardium evident;
 - 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.

Department of Origin: Integrated Healthcare Services	Effective Date: 12/12/23
Approved by: Medical Policy Quality Management Subcommittee	Date Approved: 12/05/23
Clinical Policy Document: Nuclear Medicine, Cardiac Positron Emission Tomography (PET), Cardiac PET/ Computed Tomography	Replaces Effective Clinical Policy Dated: 12/06/22
Reference #: MC/L023	Page: 2 of 4

- 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.

Department of Origin: Integrated Healthcare Services	Effective Date: 12/12/23
Approved by: Medical Policy Quality Management Subcommittee	Date Approved: 12/05/23
Clinical Policy Document: Nuclear Medicine, Cardiac Positron Emission Tomography (PET), Cardiac PET/ Computed Tomography	Replaces Effective Clinical Policy Dated: 12/06/22
Reference #: MC/L023	Page: 3 of 4

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

CPT codes copyright 2023 American Medical Association. All Rights Reserved. CPT is a trademark of the AMA. The AMA assumes no liability for the data contained herein.

REFERENCES:

1. Integrated Healthcare Services Process Manual: UR015 Use of Medical Policy and Criteria
2. Clinical Policy: Coverage Determination Guidelines MP/C009
3. American College of Radiology Practice Parameter. ACR–ACNM–SNMMI–SPR–STR PRACTICE PARAMETER FOR THE PERFORMANCE OF CARDIAC POSITRON EMISSION TOMOGRAPHY - COMPUTED TOMOGRAPHY (PET/CT). Revised 2023 (Resolution 23). Retrieved from: <https://www.acr.org/Clinical-Resources/Practice-Parameters-and-Technical-Standards>. <https://www.acr.org/-/media/ACR/Files/Practice-Parameters/CardiacPET-CT.pdf> Accessed 09-11-23.
4. American Society of Nuclear Medicine and Society of Nuclear Medicine and Molecular Imaging Joint Position Statement on the Clinical Indications for Myocardial Perfusion PET. ASNC/SNMMI POSITION STATEMENT. 2016. Retrieved from: <https://www.asnc.org/files/Guidelines%20and%20Quality/ASNCandSNMMIJointPETPositionPaper2016.pdf>. Accessed 09-11-23.
5. Einstein AJ, Moser KW, Thompson RC, et al. Radiation Dose to Patients from Cardiac Diagnostic Imaging. *Circ*. 2007;116(11):1290-1305. doi:10.1161/circulationaha.107.688101.
6. Youssef G, Mylonas I, Leung E, et al. The Use of 18F-FDG PET in the Diagnosis of Cardiac Sarcoidosis: A Systematic Review and Metaanalysis Including the Ontario Experience. *J Nucl Med*. <http://jnm.snmjournals.org/content/53/2/241.long>. Published February 1, 2012.
7. Blankstein R, Osborne M, Naya M, et al. Cardiac Positron Emission Tomography Enhances

Department of Origin: Integrated Healthcare Services	Effective Date: 12/12/23
Approved by: Medical Policy Quality Management Subcommittee	Date Approved: 12/05/23
Clinical Policy Document: Nuclear Medicine, Cardiac Positron Emission Tomography (PET), Cardiac PET/ Computed Tomography	Replaces Effective Clinical Policy Dated: 12/06/22
Reference #: MC/L023	Page: 4 of 4

- Prognostic Assessments of Patients with Suspected Cardiac Sarcoidosis. *J Am Coll Cardiol*. 2014;63(4):329-336. doi:10.1016/j.jacc.2013.09.022.
8. Habib G, Lancellotti P, Antunes MJ, et al. 2015 ESC Guidelines for the management of infective endocarditis. *Eur Heart J*. 2015;36(44):3075-3128. doi:10.1093/eurheartj/ehv319.
 9. Swart LE, Gomes A, Scholtens AM, et al. Improving the Diagnostic Performance of 18 Fluorodeoxyglucose Positron-Emission Tomography/Computed Tomography in Prosthetic Heart Valve Endocarditis. *Circ*. 2018;138(14):1412-1427. doi:10.1161/circulationaha.118.035032.
 10. Kim J, Feller ED, Chen W, Liang Y, Dilsizian V. FDG PET/CT for Early Detection and Localization of Left Ventricular Assist Device Infection. *J Am Coll Cardiol Img*. 2019;12(4):722-729. doi:10.1016/j.jcmg.2018.01.024.
 11. Tam MC, Patel VN, Weinberg RL, et al. Diagnostic Accuracy of FDG PET/CT in Suspected LVAD Infections. *J Am Coll Cardiol Img*. 2020;13(5):1191-1202. doi:10.1016/j.jcmg.2019.04.024.
 12. Harnett DT, Hazra S, Maze R, et al. Clinical performance of Rb-82 myocardial perfusion PET and Tc99m-based SPECT in patients with extreme obesity. *J Nucl Cardiol*. 2017;26(1):275-283. doi:10.1007/s12350-017-0855-6.
 13. Blankstein R, Cooper LT. Management and prognosis of cardiac sarcoidosis. (Topic 113686, Version 13.0; last updated: 06/10/2021). In: Dardas TF, ed. *UpToDate*. Waltham, Mass.: UpToDate; 2023. www.uptodate.com. Accessed 09-21-23.
 14. Blankstein R, Stewart GC. Clinical manifestations and diagnosis of cardiac sarcoidosis. (Topic 4922, Version 23.0; last updated: 12/06/21) In: Dardas TF, ed. *UpToDate*. Waltham, Mass.: UpToDate; 2023. www.uptodate.com. Accessed 09-21-23.

DOCUMENT HISTORY:

Created Date: 10/19/20
Reviewed Date: 09/08/21, 09/07/22, 09/07/23
Revised Date: 09/24/21, 10/13/23

PreferredOne Community Health Plan Nondiscrimination Notice

PreferredOne Community Health Plan (“PCHP”) complies with applicable Federal civil rights laws and does not discriminate on the basis of race, color, national origin, age, disability, or sex. PCHP does not exclude people or treat them differently because of race, color, national origin, age, disability, or sex.

PCHP:

Provides free aids and services to people with disabilities to communicate effectively with us, such as:

- Qualified sign language interpreters
- Written information in other formats (large print, audio, accessible electronic formats, other formats)

Provides free language services to people whose primary language is not English, such as:

- Qualified interpreters
- Information written in other languages

If you need these services, contact a Grievance Specialist.

If you believe that PCHP has failed to provide these services or discriminated in another way on the basis of race, color, national origin, age, disability, or sex, you can file a grievance with:

Grievance Specialist
PreferredOne Community Health Plan
PO Box 59052
Minneapolis, MN 55459-0052
Phone: 1.800.940.5049 (TTY: 763.847.4013)
Fax: 763.847.4010
customerservice@preferredone.com

You can file a grievance in person or by mail, fax, or email. If you need help filing a grievance, a Grievance Specialist is available to help you.

You can also file a civil rights complaint with the U.S. Department of Health and Human Services, Office for Civil Rights, electronically through the Office for Civil Rights Complaint Portal, available at <https://ocrportal.hhs.gov/ocr/portal/lobby.jsf>, or by mail or phone at:

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)

Complaint forms are available at <http://www.hhs.gov/ocr/office/file/index.html>.

Language Assistance Services

ATTENTION: If you do not speak English, language assistance services, free of charge, are available to you. Call 1.800.940.5049 (TTY: 763.847.4013).

ATENCIÓN: si habla español, tiene a su disposición servicios gratuitos de asistencia lingüística. Llame al 1.800.940.5049 (TTY: 763.847.4013).

LUS CEEV: Yog tias koj hais lus Hmoob, cov kev pab txog lus, muaj kev pab dawb rau koj. Hu rau 1.800.940.5049 (TTY: 763.847.4013).

XIYYEEFFANNAA: Afaan dubbattu Oroomiffa, taiaaajila gargaarsa afaanij, kanfaltiidhaan ala, ni argama. Bilbilaa 1.800.940.5049 (TTY: 763.847.4013).

CHÚ Ý: Nếu bạn nói Tiếng Việt, có các dịch vụ hỗ trợ ngôn ngữ miễn phí dành cho bạn. Gọi số 1.800.940.5049 (TTY: 763.847.4013).

注意：如果您使用繁體中文，您可以免費獲得語言援助服務。請致電 1.800.940.5049 (TTY: 763.847.4013)。

ВНИМАНИЕ: Если вы говорите на русском языке, то вам доступны бесплатные услуги перевода. Звоните 1.800.940.5049 (телетайп: 763.847.4013).

ໂປດຊາບ: ຖ້າວ່າທ່ານເວົ້າພາສາລາວ, ການບໍລິການຊ່ວຍເຫຼືອດ້ານພາສາ, ໂດຍບໍ່ເສຍຄ່າ, ແມ່ນມີພ້ອມໃຫ້ທ່ານ. ໂທ 1.800.940.5049 (TTY: 763.847.4013).

ማስታወሻ: የሚገኙት ቋንቋ አማርኛ ከሆነ የትርጉም እርዳታ ድርጅቶች፣ በነጻ ሊያግኝዎት ተዘጋጅተዋል፡ ወደ ሚከተለው ቁጥር ይደውሉ፡ 1.800.940.5049 (መለያማት ለተሳናቸው፡ 763.847.4013)፡

ဟ်သ့ဟ်သး- နမၤကတိၤ ကသီၤ ကျိၣ်အယိၤ, နမၤန့ၣ် ကျိၣ်အတၢ်မၤစၢၤလၢ တလၢၣ်ဘျဉ်လၢၣ်စၢၤ နီၣ်တမံၤဘၣ်သ့န့ၣ်လီၤ. ကိး 1.800.940.5049 (TTY: 763.847.4013).

ACHTUNG: Wenn Sie Deutsch sprechen, stehen Ihnen kostenlos sprachliche Hilfsdienstleistungen zur Verfügung. Rufnummer: 1.800.940.5049 (TTY: 763.847.4013).

ប្រយ័ត្ន៖ បើសិនជាអ្នកនិយាយ ភាសាខ្មែរ, សេវាជំនួយផ្នែកភាសា ដោយមិនគិតល្បួល គឺអាចមានសំរាប់អ្នក។ ចូរ ទូរស័ព្ទ 1.800.940.5049 (TTY: 763.847.4013)។

ملحوظة: إذا كنت تتحدث اذكر اللغة، فإن خدمات المساعدة اللغوية تتوافر لك بالمجان. اتصل برقم 1.800.940.5049 (رقم هاتف الصم والبكم: 763.847.4013).

ATTENTION : Si vous parlez français, des services d'aide linguistique vous sont proposés gratuitement. Appelez le 1.800.940.5049 (TTY: 763.847.4013).

주의: 한국어를 사용하시는 경우, 언어 지원 서비스를 무료로 이용하실 수 있습니다. 1.800.940.5049 (TTY: 763.847.4013), 번으로 전화해 주십시오.

PAUNAWA: Kung nagsasalita ka ng Tagalog, maaari kang gumamit ng mga serbisyo ng tulong sa wika nang walang bayad. Tumawag sa 1.800.940.5049 (TTY: 763.847.4013).

PreferredOne Insurance Company Nondiscrimination Notice

PreferredOne Insurance Company ("PIC") complies with applicable Federal civil rights laws and does not discriminate on the basis of race, color, national origin, age, disability, or sex. PIC does not exclude people or treat them differently because of race, color, national origin, age, disability, or sex.

PIC:

Provides free aids and services to people with disabilities to communicate effectively with us, such as:

- Qualified sign language interpreters
- Written information in other formats (large print, audio, accessible electronic formats, other formats)

Provides free language services to people whose primary language is not English, such as:

- Qualified interpreters
- Information written in other languages

If you need these services, contact a Grievance Specialist.

If you believe that PIC has failed to provide these services or discriminated in another way on the basis of race, color, national origin, age, disability, or sex, you can file a grievance with:

Grievance Specialist
PreferredOne Insurance Company
PO Box 59212
Minneapolis, MN 55459-0212
Phone: 1.800.940.5049 (TTY: 763.847.4013)
Fax: 763.847.4010
customerservice@preferredone.com

You can file a grievance in person or by mail, fax, or email. If you need help filing a grievance, a Grievance Specialist is available to help you.

You can also file a civil rights complaint with the U.S. Department of Health and Human Services, Office for Civil Rights, electronically through the Office for Civil Rights Complaint Portal, available at <https://ocrportal.hhs.gov/ocr/portal/lobby.jsf>, or by mail or phone at:

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)

Complaint forms are available at <http://www.hhs.gov/ocr/office/file/index.html>.

Language Assistance Services

ATTENTION: If you do not speak English, language assistance services, free of charge, are available to you. Call 1.800.940.5049 (TTY: 763.847.4013).

ATENCIÓN: si habla español, tiene a su disposición servicios gratuitos de asistencia lingüística. Llame al 1.800.940.5049 (TTY: 763.847.4013).

LUS CEEV: Yog tias koj hais lus Hmoob, cov kev pab txog lus, muaj kev pab dawb rau koj. Hu rau 1.800.940.5049 (TTY: 763.847.4013).

XIYEEFFANNAA: Afaan dubbattu Oroomiffa, tajaajila gargaarsa afaanii, kanfaltiidhaan ala, ni argama. Bilbilaa 1.800.940.5049 (TTY: 763.847.4013).

CHÚ Ý: Nếu bạn nói Tiếng Việt, có các dịch vụ hỗ trợ ngôn ngữ miễn phí dành cho bạn. Gọi số 1.800.940.5049 (TTY: 763.847.4013).

注意：如果您使用繁體中文，您可以免費獲得語言援助服務。請致電 1.800.940.5049 (TTY: 763.847.4013)。

ВНИМАНИЕ: Если вы говорите на русском языке, то вам доступны бесплатные услуги перевода. Звоните 1.800.940.5049 (телетайп: 763.847.4013).

បំពេញ: ប្រសិនបើ អ្នកនិយាយភាសាខ្មែរ, សេវាជំនួយភាសា ដោយមិនគិតថ្លៃ គឺអាចមានសំរាប់អ្នក។ ហៅ 1.800.940.5049 (TTY: 763.847.4013).

ማስታወሻ: የሚናገሩት ቋንቋ አማርኛ ከሆነ የትርጉም እርዳታ ድርጅቶች፡ በነጻ ሊያገኙበት ተዘጋጅተዋል፡ ወደ ሚከተለው ቁጥር ይደውሉ 1.800.940.5049 (ማስማት ለተሳናቸው: 763.847.4013) .

ဟံသာဝတီ: နမူနာတို့ ကညီ ကျိအသိ, နမူနာ ကျိအတိအကျတို့ တလက်တလက်စွာ နှိမ့်တံ့သည့်လို့လိ။ ကိ: 1.800.940.5049 (TTY: 763.847.4013).

ACHTUNG: Wenn Sie Deutsch sprechen, stehen Ihnen kostenlos sprachliche Hilfsdienstleistungen zur Verfügung. Rufnummer: 1.800.940.5049 (TTY: 763.847.4013).

ប្រយ័ត្ន: បើសិនជាអ្នកនិយាយភាសាខ្មែរ, សេវាជំនួយភាសា ដោយមិនគិតថ្លៃ គឺអាចមានសំរាប់អ្នក។ ហៅ 1.800.940.5049 (TTY: 763.847.4013).

ملحوظة: إذا كنت تتحدث اذكر اللغة، فإن خدمات المساعدة اللغوية تتوافر لك بالمجان. اتصل برقم 1.800.940.5049 (رقم هاتف الصم والبكم: 763.847.4013).

ATTENTION : Si vous parlez français, des services d'aide linguistique vous sont proposés gratuitement. Appelez le 1.800.940.5049 (TTY: 763.847.4013).

주의: 한국어를 사용하시는 경우, 언어 지원 서비스를 무료로 이용하실 수 있습니다. 1.800.940.5049 (TTY: 763.847.4013). 번으로 전화해 주십시오.

PAUNAWA: Kung nagsasalita ka ng Tagalog, maaari kang gumamit ng mga serbisyo ng tulong sa wika nang walang bayad. Tumawag sa 1.800.940.5049 (TTY: 763.847.4013).