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Developed By: Medical Criteria Committee	

Csaba Mera M.D.

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Description:

Positron emission tomography, also called a PET scan, is a type of nuclear imaging study. Nuclear imaging scans use radioactive materials called radiopharmaceuticals or radiotracers which can be injected into a vein, swallowed or inhaled as a gas. The radiotracer accumulates in the organ or area of the body that is being examined and gives off energy in the form of gamma rays. This energy is then detected by a gamma camera or a PET scanner. These devices work together with a computer to measure the amount of radiotracer absorbed by the body and to produce pictures that offer details on both the structure and function of organs and tissues. Through these images, important body functions such as blood flow, oxygen use and glucose metabolism can be assessed and measured to help doctors identify abnormal from normal functioning organs and tissues.

Many PET scans are performed on equipment that combines both PET and CT scanners. The combined PET/CT scans may provide a more accurate diagnosis and better pinpoint the location of abnormal metabolic activity within the body than when the two scans are performed separately.

Criteria:

- I. ODS will cover PET or PET/CT up to plan limitations for evaluation of any of the following known or suspected malignancies:
 - A. Bone cancer
 - B. Brain cancer
 - C. Breast cancer
 - D. Cervical cancers
 - E. Colorectal cancer
 - F. Esophageal cancer
 - G. Gastric cancer
 - H. Head and neck cancer
 - I. Kidney cancer
 - J. Liver cancer
 - K. Lung cancer
 - L. Lymphoma
 - M. Melanoma
 - N. Multiple myeloma
 - O. Ovarian cancer
 - P. Pancreatic cancer
 - Q. Soft tissue sarcoma
 - R. Testicular cancer
 - S. Thyroid cancer

- II. ODS will cover PET or PET/CT up to plan limitations for any other suspected or known malignancy when the findings on other imaging studies are inconclusive and/or the results of the PET will be the deciding factor in determining treatment or surgical intervention.

- III. ODS will cover PET up to plan limitations for the following conditions:

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- A. Assessing myocardial viability prior to a revascularization procedure when SPECT imaging is inconclusive.
- B. Assessing perfusion of the heart in members with known or suspected coronary artery disease when PET is performed in lieu of SPECT imaging or when SPECT is inconclusive
- C. Pre-surgical evaluation for the purpose of localization of a focus of refractory seizure activity.

NOTE: PET scan without CT is adequate to evaluate the brain and myocardium. PET/CT is considered experimental and investigational for cardiac and neurologic indications.

- IV. ODS considers PET scans experimental and investigational for other indications, including but not limited to any of the following, because its diagnostic value has not been established in peer reviewed medical literature:
 - A. Routine screening of asymptomatic members
 - B. Fever of unknown origin
 - C. Stroke
 - D. Psychiatric disorders, including depression, schizophrenia, obsessive-compulsive disorder
 - E. Attention deficit/hyperactivity disorder
 - F. Autism or pervasive developmental disorders
 - G. Developmental disorders
 - H. Dementias including Alzheimer's
 - I. Autoimmune disorders, including Behcet's syndrome and lupus erythematosus
 - J. Parkinson's disease
 - K. Substance abuse, including the CNS effects of alcohol, cocaine and heroine
 - L. Chronic fatigue syndrome

Information to be Submitted with Pre-Authorization Request:

- Medical records from the ordering physician documenting the clinical indications for which the PET scan is being ordered and reports from other imaging studies if applicable.

Applicable CPT/HCPC:

Note: this list may not be all inclusive

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
78608	Brain imaging, positron emission tomography (PET); metabolic evaluation
78609	Brain imaging, positron emission tomography (PET); perfusion evaluation
78811	Positron emission tomography (PET) imaging; limited area
78812	Positron emission tomography (PET) imaging; skull base to mid-thigh
78813	Positron emission tomography (PET) imaging; whole body
78814	Positron emission tomography (PET) with concurrently acquired computed tomography (CT) for attenuation correction and anatomical localization; limited area.
78815	Positron emission tomography (PET) with concurrently acquired computed tomography (CT) for attenuation correction and anatomical localization; skull base to mid-thigh
78816	Positron emission tomography (PET) with concurrently acquired computed tomography (CT) for attenuation correction and anatomical localization; whole body.

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G0235	PET imaging, any site, not otherwise specified
G0252	PET imaging, full and partial-ring PET scanners only for initial diagnosis of breast cancer and/or surgical planning for breast cancer (e.g. initial staging of axillary lymph nodes)
S8085	Fluorine-18 fluorodeoxyglucose (F-18 FDG) imaging using dual-head coincidence detection system (nondedicated PET scan)

References:

- Nanni C, Rubello D, Fanti S, et al. Role of 18F-FDG-PET and PET/CT imaging in thyroid cancer. Biomed Pharmacother. 2006 Sep;60(8):409-13.
- Higashi K, Matsunari I, Ueda Y, et al. Value of whole-body FDG PET in management of lung cancer. Ann Nucl Med. 2003 Feb;17(1):1-14.
- Coleman RE. PET in lung cancer. J Nucl Med. 1999 May;40(5):814-20.
- Hellwig D, Baum RP, Kirsch C. FDG-PET/CT and conventional nuclear medicine procedures in the evaluation of lung cancer: A systematic review. Nuklearmedizin. 2009;48(2):59-69. Epub 2009 Jan 14.
- Facey K, Bradbury I, Laking G, et al. Overview of the clinical effectiveness of positron emission tomography imaging in selected cancers. Health Technol Assess. 2007 Oct;11(44):iii-iv, xi-267.
- Duch J, Fuster D, Munoz M, et al. (18)F-FDG PET/CT for early prediction of response to neoadjuvant chemotherapy in breast cancer. Eur J Nucl Med Mol Imaging. 2009 Mar 27. (Epub ahead of print)
- Herholz K, Carter SF, Jones M. Positron emission tomography imaging in dementia. Br J Radiol. 2007 Dec;80 Spec No 2:S160-7.
- Kao CH, Lan JL, ChangLai SP, et al. The role of FDG-PET, HMPAO-SPET and MRI in the detection of brain involvement in patients with systemic lupus erythematosus. Eur J Nucl Med. 1999 Feb;26(2):129-34.
- Henry TR, Van Heertum RL. Positron emission tomography and single photon emission computed tomography in epilepsy care. Semin Nucl Med. 2003 Apr;33(2):88-104.
- Berman DS, Hachamovitch R, Shaw LJ, et al. Roles of nuclear cardiology, cardiac computed tomography, and cardiac magnetic resonance: assessment of patients with suspected coronary artery disease. J Nucl Med. 2006 Jan;47(1):74-82.
- Physician Advisors