



Status

Active

Medical and Behavioral Health Policy

Section: Radiology

Policy Number: V-27

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Blue Cross and Blue Shield of Minnesota medical policies do not imply that members should not receive specific services based on the recommendation of their provider. These policies govern coverage and not clinical practice. Providers are responsible for medical advice and treatment of patients. Members with specific health care needs should consult an appropriate health care professional.

POSITRON EMISSION TOMOGRAPHY (PET)

Description: Positron emission tomography (PET) is a diagnostic imaging procedure that assesses the level of metabolic activity and perfusion in various organ systems of the human body. Images are obtained from positron emitting radioactive tracer substances (radiopharmaceuticals) that are usually administered intravenously to the patient. Commonly used radiopharmaceuticals include ammonia ($^{13}\text{NH}_3$), rubidium chloride ($^{82}\text{RbCl}$), and 2-(^{18}F) fluoro-2-deoxy-d-glucose (FDG).

PET/CT refers to the imaging technique that combines the functional information from PET with the anatomical information from CT into one set of images. The PET and CT images are either "fused" by a software package that superimposes two digital images together or are processed simultaneously by combined PET/CT scanners.

NOTE: Previous separate medical policies on different applications of PET (cardiac, oncologic, and miscellaneous) have been combined into this policy.

Definitions: **Oncologic Applications**

Initial Treatment Strategy:

- Diagnosis - The period of time between considering the possibility of malignancy and confirmation via biopsy of tissue.
- Staging - The period of time after diagnosis and before the initiation of therapy, during which the location and extent of malignancy is determined so that the most appropriate therapy may be planned.

Subsequent Treatment Strategy:

- Restaging and Monitoring - The period of time after completion of initial therapy, when significant new or worsening clinical signs or symptoms suggesting disease progression or worsening may require re-assessment. Restaging also includes determining the extent of malignancy following completion of a full course of

treatment.

Early Treatment Response Assessment:

The period of time during short-term therapy (e.g., during cycle(s) of chemotherapeutic agents and/or a course of radiation therapy) and prior to the completion of a course of treatment. The proposed purpose of the PET scan at this particular interval is to determine whether the treatment being given should be maintained or changed. This treatment strategy is referred to as “risk-adapted” or response-adapted” treatment, but does not include assessing response during use of long-term-agents, such as tamoxifen. (See definition of Restaging and Monitoring).

Surveillance:

The period of time after initial and subsequent therapy has been completed, when there are no new or worsening symptoms, physical findings, lab tests, or other imaging tests suggesting recurrence or progression of malignancy.

Policy:

I. Cardiac Applications

- A. Positron emission tomography (PET) or positron emission tomography/computed tomography (PET/CT) may be considered **MEDICALLY NECESSARY** for the following indications:
 - 1. **Myocardial perfusion** assessment and diagnosis of coronary artery disease in patients with either of the following indications:
 - a. Indeterminate SPECT; OR
 - b. The patient’s body type or physique is expected to lead to an indeterminate SPECT (e.g., BMI ≥ 35 kg/m², chest wall deformity, breast implant)
 - 2. **Myocardial viability** assessment in patients with severe left ventricular dysfunction, as a technique to determine candidacy for cardiac surgery.
 - 3. **Suspected cardiac sarcoidosis** assessment in patients with a medical contraindication to magnetic resonance imaging (MRI) (e.g., patients with pacemakers, automatic implanted cardioverter-defibrillators, or other metal implants).
- B. PET or PET/CT is considered **INVESTIGATIVE** for all other cardiac applications, due to a lack of evidence demonstrating an impact on improved health outcomes.

II. Oncologic Applications

A. Initial Treatment Strategy:

- 1. PET or PET/CT may be considered **MEDICALLY NECESSARY** as an **Initial Treatment Strategy (Diagnosis and Staging)** for known or suspected malignancy when the following criteria are met:
 - a. One (1) PET or PET/CT for solitary pulmonary nodule, myeloma, and all solid malignant tumors (except those

listed below as INVESTIGATIVE) when the test is needed to determine the location and/or extent of the suspected or proven malignancy in order to make at least one of the following determinations:

- Whether or not the patient is an appropriate candidate for an invasive diagnostic or therapeutic procedure; OR
- The optimal anatomic location for an invasive procedure; OR
- The anatomic extent of malignancy, when recommended therapy reasonably depends on the extent of malignancy

AND

- b. Other standard imaging modalities (e.g., CT, MRI, or ultrasound) are either not indicated or are unable to conclusively provide the required information.
2. PET or PET/CT is considered **INVESTIGATIVE** as an **Initial Treatment Strategy (Diagnosis and Staging)** for all other non-solid primary tumors and the following solid primary malignant tumors:
 - a. Prostate
 - b. Kidney
 - c. Bladder, urinary
 - d. Basal and squamous cell skin cancers

B. Subsequent Treatment Strategy

1. PET or PET/CT may be considered **MEDICALLY NECESSARY** as a **Subsequent Treatment Strategy (Restaging and Monitoring)** for known or suspected malignancies when the following criteria are met:
 - a. PET or PET/CT for myeloma and all solid primary malignant tumors (except those listed below as INVESTIGATIVE) when the test is performed after completion of initial therapy for malignancy and the imaging results are required to assess therapeutic success, in order to establish the need for any subsequent therapy, by determining at least one of the following:
 - Presence or extent of residual disease; or
 - Presence or extent of recurrent disease; or
 - Presence or extent of metastasis; or
 - Other assessment of tumor response

AND

- b. Other standard imaging modalities (e.g., CT, MRI, or ultrasound) are either not indicated or unable to conclusively provide the required information.
2. PET or PET/CT is considered **INVESTIGATIVE** when used as a **Subsequent Treatment Strategy (Restaging and Monitoring)** for all other non-solid primary tumors and the following solid primary malignant tumors:
 - a. Prostate

- b. Kidney
- c. Bladder, urinary
- d. Basal and squamous cell skin cancers
- e. Small cell lung
- f. Pancreas
- g. Solitary pulmonary nodule
- C. PET or PET/CT for **early treatment response assessment**, also referred to as interim PET, (i.e., involving comparison of PET images before treatment and at some interval during the initial course of treatment) is considered **INVESTIGATIVE** due to a lack of evidence demonstrating an impact on improved health outcomes.
- D. PET or PET/CT as a **surveillance** tool for patients with cancer or with a history of cancer when there are no new or worsening symptoms, physical findings, lab tests, or other imaging tests suggesting recurrence or progression of malignancy is considered **INVESTIGATIVE** due to a lack of evidence demonstrating an impact on improved health outcomes.

III. **Miscellaneous Applications**

- A. PET or PET/CT may be considered **MEDICALLY NECESSARY** for the following indications:
 - 1. Localization of epileptic seizure focus in patients with complex partial epileptic seizures who are candidates for resections of a suspected epileptogenic focus and who:
 - a. Have not responded to standard medical treatment; AND
 - b. Have undergone conventional techniques for seizure localization which suggested, but did not conclusively determine, seizure focus.
 - 2. Diagnosis of chronic osteomyelitis.
- B. PET or PET/CT is considered **INVESTIGATIVE** for the diagnosis or evaluation of all other non-cardiac and non-oncologic conditions or disorders not identified in III.A.1 or III.A.2, including but not limited to all behavioral health disorders.

Coverage:

Blue Cross and Blue Shield of Minnesota medical policies apply generally to all Blue Cross and Blue Plus plans and products. Benefit plans vary in coverage and some plans may not provide coverage for certain services addressed in the medical policies.

Medicaid products and some self-insured plans may have additional policies and prior authorization requirements. Receipt of benefits is subject to all terms and conditions of the member's summary plan description (SPD). As applicable, review the provisions relating to a specific coverage determination, including exclusions and limitations. Blue Cross reserves the right to revise, update and/or add to its medical policies at any time without notice.

For Medicare NCD and/or Medicare LCD, please consult CMS or

National Government Services websites.

Refer to the Pre-Certification/Pre-Authorization section of the Medical Behavioral Health Policy Manual for the full list of services, procedures, prescription drugs, and medical devices that require Pre-certification/Pre-Authorization. Note that services with specific coverage criteria may be reviewed retrospectively to determine if criteria are being met. Retrospective denial of claims may result if criteria are not met.

Coding:

The following codes are included below for informational purposes only, and are subject to change without notice. Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement.

CPT:

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 Tumor imaging, positron emission tomography (PET); limited area (e.g., chest, head/neck)

78812 Tumor imaging, positron emission tomography (PET); skull base to mid-thigh

78813 Tumor imaging, positron emission tomography (PET); whole body

78814 Tumor imaging, positron emission tomography (PET) with concurrently acquired CT for attenuation correction and anatomical localization; limited area (e.g., chest, head/neck)

78815 Tumor imaging, positron emission tomography (PET) with concurrently acquired CT for attenuation correction and anatomical localization; skull base to mid-thigh

78816 Tumor imaging, positron emission tomography (PET) with concurrently acquired CT for attenuation correction and anatomical localization; whole body

HCPCS:

A9552 Fluorodeoxyglucose F-18 FDG, diagnostic, per study dose, up to 45 millicuries

G0219 PET imaging whole body; melanoma for non-covered indications

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)

**Policy
History:**

Developed September 11, 2013

Most recent history:

Reviewed August 13, 2014

**Cross
Reference:**

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