Texas Children's	Positron Emission Tomography (Positron Emission Tomography (PET Scan Guidelines)	
Guideline # 6196	***Categories*** Clinical →Care Management CM, TCHP Guidelines, Utilization Management UM	***This Guideline Applies To:*** Texas Children's Health Plan ***Document Owner*** Bhavana Babber

GUIDELINE STATEMENT:

Texas Children's Health Plan (TCHP) performs authorization of all PET scans.

DEFINITIONS:

- **Positron Emission Tomography (PET)** is an imaging modality that produces an image of the body's soft structures, including metabolic and/or chemical information.

PRIOR AUTHORIZATION GUIDELINES

1. All requests for prior authorization for PET scans are received via online submission, fax, phone or mail by the Utilization Management Department and processed during normal business hours.

2. The Utilization Management professional receiving the request evaluates the submitted information to determine if the documentation supports the PET scan request as an eligible service.

3. To request prior authorization for PET scan, the following documentation must be provided:

3.1. Diagnosis

3.2. Treatment history

3.3. Treatment plan

3.4. Medications that the member is currently taking

3.5. Previous imaging results

3.6. Signed physician order for the ordered test

4. PET scan is considered medically necessary in the following situations:

4.1. Neurological:

4.1.1. Identification or localization of seizure foci in individuals who are surgical candidates for neurosurgical treatment of intractable epilepsy.

4.2. Musculoskeletal:

4.2.1. To diagnose chronic osteomyelitis of the axial skeleton.

4.3. Infectious:

4.3.1. Evaluation of fever of unknown origin using 18F fluorodeoxyglucose positron emission with computed tomography in adults when diagnosis is not evident based on a diagnostic workup that has already included:

4.3.1.1. Comprehensive history and examination

4.3.1.2. Comprehensive laboratory testing to include: complete blood count, urinalysis and culture; electrolyte panel, liver enzymes, erythrocyte sedimentation rate, and C-reactive protein level testing, blood cultures, lactate dehydrogenase, creatine kinase, rheumatoid factor, antinuclear antibodies, Human immunodeficiency virus and appropriate region-specific serologic testing (e.g., cytomegalovirus, Epstein-Barr virus, tuberculosis)

4.3.1.3. Imaging that may include chest radiography, abdominal and pelvic ultrasonography or computed tomography

4.3.2. Evaluation of fever of unknown origin using 18F fluorodeoxyglucose positron emission with computed tomography in critically ill children with complex underlying disease when diagnosis is not evident based on a diagnostic workup that has already included:

4.3.2.1. Comprehensive history and examination

4.3.2.2. Comprehensive laboratory testing to include: complete blood count, urinalysis and culture; electrolyte panel, liver enzymes, erythrocyte sedimentation rate, and C-reactive protein level testing, blood cultures, lactate dehydrogenase, creatinine kinase, rheumatoid factor, antinuclear antibodies, Human immunodeficiency virus and appropriate region-specific serologic testing (e.g., cytomegalovirus, Epstein-Barr virus, tuberculosis)

4.3.2.3. Imaging that may include chest radiography, abdominal and pelvic ultrasonography or computed tomography

4.4. Cardiac

4.4.1. PET is considered **medically necessary** for the following cardiac conditions when results of the PET scan can reasonably be expected to influence clinical management of the individual's condition:

4.4.1.1. To assess myocardial viability in those with severe global left ventricular dysfunction to determine candidacy for a cardiac surgery procedure including coronary artery bypass grafting (CABG), percutaneous

transluminal coronary angioplasty (PTCA) and transplantation;
Or

4.4.1.2. To assess myocardial perfusion in the diagnosis of coronary artery disease when any of the following are present:

4.4.1.2.1. Unavailable or inconclusive single photon emission computed tomography (SPECT) or stress echocardiogram; ***Or***

4.4.1.2.2. Body habitus or other conditions for which SPECT or stress echocardiogram may have attenuation problems, (for example, body mass index [BMI] of greater than or equal to 40 kg/m2, large breasts, left mastectomy, breast implant, chest wall deformity, left pleural or pericardial effusion, circulatory problems in inferior-septal areas of the heart) or other technical difficulty (extensive prior myocardial infarction); ***Or***

4.4.1.2.3. Conditions for which angiography may be associated with high risk for morbidity (for example, allergy to contrast medium, poor arterial access, significant renal dysfunction).
Or

4.4.1.3. To assess suspected cardiac sarcoidosis when magnetic resonance imaging (MRI) is contraindicated.

4.5. Oncologic

4.5.1. PET scan is considered medically necessary when used for ***diagnosis*** or ***staging*** of cancer when ALL (1, 2, and 3) of the following criteria are met:

4.5.1.1. Imaging results are required to determine at least one of the following:

4.5.1.1.1. Whether the individual is a candidate for an invasive diagnostic ***Or*** therapeutic procedure of an internal body structure (for example, biopsy of a pancreas lesion not merely a superficial lymph node); ***Or***

4.5.1.1.2. The appropriate anatomic location for an invasive procedure; ***Or***

4.5.1.1.3. The extent of malignancy when recommended therapy, (for example, local vs. systemic therapy, use of neo-adjuvant therapy) reasonably depends upon the extent of malignancy;
AND

4.5.1.2. More standard imaging modalities, (for example, CT, MRI, or ultrasound) are either not indicated or unable to conclusively provide the required information;
AND

4.5.1.3. The tumor in question is a suspected or proven malignancy from any of the following primary locations:

- Anal cancer

- Appendix
- Brain
- Breast (except initial staging of axillary lymph nodes); ***Or***
- Cervix
- Chordoma
- Colorectal
- Esophageal
- Ewing sarcoma and osteosarcoma
- Fallopian tube
- Gastric
- Gastrointestinal stromal tumors
- Head and neck cancers (excluding cancers of the central nervous system and thyroid cancer)
- Lung
- Lymphoma
- Melanoma
- Merkel cell carcinoma
- Mesothelioma
- Multiple myeloma and plasmacytomas
- Musculoskeletal
- Neuroblastoma
- Neuroendocrine tumors
- Non-small cell lung carcinoma
- Occult primary cancers
- Ovarian cancer
- Pancreatic cancer
- Paraneoplastic syndrome
- Penile cancer
- Primary peritoneal cancer
- Small cell lung carcinoma
- Small bowel adenocarcinoma
- Soft tissue sarcoma
- Solitary pulmonary nodules
- Testicular cancer
- Thymic malignancies
- Thyroid cancer (excluding metastatic thyroid cancer).
- Cancer of Unknown Primary;
- Suspected Paraneoplastic Syndrome.

4.5.2. PET scan is considered medically necessary when used for ***restaging Or monitoring*** of cancer when ALL (1, 2, 3, 4 and 5) of the following criteria are met:

4.5.2.1. Initial therapy has been completed.
AND

4.5.2.2. Imaging results are required to assess therapeutic success, in order to establish the need for, or scope of, any subsequent therapy, by determining at least one of the following:

4.5.2.2.1. Presence or extent of residual disease; ***Or***

4.5.2.2.2. Presence or extent of recurrent disease; ***Or***

4.5.2.2.3. Presence or extent of metastasis; ***Or***

4.5.2.2.4. Other assessment of tumor response.
AND

4.5.2.3. More standard imaging modalities (for example, CT, MRI, or ultrasound) are either not indicated or provided inconclusive results.
AND

4.5.2.4. The tumor in question is a primary malignancy from any of the following locations:

- Brain; ***Or***
- Breast; ***Or***
- Cervix; ***Or***
- Colorectal; ***Or***
- Esophageal; ***Or***
- Head and Neck (excluding Central Nervous System & Thyroid); ***Or***
- Lung – Non-Small Cell (NSCLC); ***Or***
- Lymphoma: Hodgkin's or Non-Hodgkin's; ***Or***
- Melanoma; ***Or***
- Myeloma; ***Or***
- Musculoskeletal (including Soft Tissue Sarcoma); ***Or***
- Neuroblastoma; ***Or***
- Neuroendocrine Tumor, poorly differentiated; ***Or***
- Ovarian; ***Or***
- Testicular; ***Or***
- Thyroid.
  AND

4.5.2.5. When prior PET scan has been performed, the results demonstrated hypermetabolic uptake by the tumor (if no prior PET or prior PET positive, then this criterion is met).

4.5.3. PET scan, with or without PET/CT fusion, is considered medically necessary for ***other (not included in the lists in section A or B) malignancies*** if ALL of the following criteria are met:

4.5.3.1. Imaging results are required to determine at least one of the following:

4.5.3.1.1. Whether the individual is a candidate for an invasive diagnostic ***Or*** therapeutic procedure of an internal body structure (for example, biopsy of a pancreas lesion not merely a superficial lymph node); ***Or***

4.5.3.1.2. The appropriate anatomic location for an invasive procedure; ***Or***

4.5.3.1.3. The extent of malignancy when recommended therapy, (for example, local vs. systemic therapy, use of neo-adjuvant therapy) reasonably depends upon the extent of malignancy; ***Or***

4.5.3.1.4. When major surgery or curative local high-dose radiation is being recommended, and a PET or PET/CT scan may identify the presence of metastatic disease that may change management of the individual; ***Or***

4.5.3.1.5. After completion of initial therapy for malignancy, imaging results are required to assess therapeutic success, in order to establish the need for, or scope of, any subsequent therapy, by determining at least one of the following:

4.5.3.1.5.1. Presence or extent of residual disease; ***Or***

4.5.3.1.5.2. Presence or extent of recurrent disease; ***Or***

4.5.3.1.5.3. Presence or extent of metastasis; ***Or***

4.5.3.1.5.4. Other assessment of tumor response.
AND

4.5.3.2. More standard imaging modalities, (for example, CT, MRI, or ultrasound) are either not indicated or unable to conclusively provide the required information.
AND

4.5.3.3. Imaging is NOT for any of the following clinical situations (or scenarios):

4.5.3.3.1. Diagnosis or staging for ovarian cancer or testicular cancer; ***Or***

4.5.3.3.2. Restaging or monitoring for small cell lung cancer (SCLC) or pancreatic cancer.

4.5.4. Interim Scanning is considered medically necessary in the following situations

4.5.4.1. Non-Hodgkin's lymphoma (NHL), other than follicular lymphoma, is considered medically necessary no more frequently than every two cycles of chemotherapy to a maximum of 3 times during a treatment course when needed to guide treatment decision making.

4.5.4.2. For Hodgkin's lymphoma (HL), other than stage Ia HL, interim PET is considered medically necessary no more frequently than every two cycles of chemotherapy to a maximum of 3 times during a treatment course when needed to guide treatment decision making.

4.5.5. ***Intermittent surveillance*** (see Definitions section) scanning for Ewing Sarcoma is considered medically necessary.

5. All other uses of PET scan with or without PET/CT fusion, other than as set forth above, are considered **investigational and not medically necessary** including, but not limited to, the following:

5.1. Malignancies that do not meet the criteria in the Medically Necessary sections above; ***Or***

5.2. Interim PET scanning to evaluate response to treatment during a course of treatment except when criteria above are met; (Note: Interim PET scanning is not considered restaging.); ***Or***

5.3. Screening for any malignancies in an individual not yet diagnosed with cancer, other than as described in the criteria for "Solitary Pulmonary Nodule" above; ***Or***

5.4. Surveillance of asymptomatic individuals, except for Ewing Sarcoma (without abnormal physical findings, lab tests, or other imaging findings related to malignancy recurrence) after completion of therapy for malignancy; ***Or***

5.5. Alzheimer's disease and other dementias (for example, multi-infarct dementia, fronto-temporal dementia) using beta amyloid (β-amyloid) or other PET tracers; ***Or***

5.6. Cerebrovascular disease, (for example, carotid artery disease, aneurysms, arteriovascular malformations, ischemic cerebrovascular disease or assessment of arterial vasospasm subsequent to subarachnoid hemorrhage); ***Or***

5.7. Autism Spectrum Disorders; ***Or***

5.8. Parkinson's Disease.

5.9. PET scanning of the bone using Sodium fluoride F 18 (NaF-18) is considered **investigational and not medically necessary** for all applications including, but not limited to, the evaluation of suspected metastasis to bone.

5.10. PET scanning of the prostate using C-11 choline radiotracer or any other radiopharmaceutical, (such as FDG-PET) is considered **investigational and not medically necessary** for all applications, including, but not limited to, initial staging, confirming the diagnosis, restaging or monitoring for recurrence of prostate cancer.

5.11. The use of PET Mammography (PEM) for the detection of breast cancer or subsequent monitoring of breast cancer is considered **investigational and not medically necessary.**

6. Requests that do not meet the criteria established by this procedure will be referred to a TCHP Medical Director/Physician Reviewer for review and the Denial Policy will be followed.

7. Preauthorization is based on medical necessity and not a guarantee of benefits or eligibility. Even if preauthorization is approved for treatment or a particular service, that authorization applies only to the medical necessity of treatment or service. All services are subject to benefit limitations and

exclusions. Providers are subject to State and Federal Regulatory compliance and failure to comply may result in retrospective audit and potential financial recoupment.

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