# Evolent Clinical Guideline 070-1 for PET Scan

| Guideline or Policy Number: | Applicable Codes | |
|---|---|---|
| Evolent_CG_070-1 | | |
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# STATEMENT

## General Information

*It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.*

*Where a specific clinical indication is not directly addressed in this guideline, medical necessity determination will be made based on widely accepted standard of care criteria. These criteria are supported by evidence-based or peer-reviewed sources such as medical literature, societal guidelines and state/national recommendations.*

## Purpose

Oncologic PET is generally indicated for biopsy-proven cancer or strongly suspected cancer based on other diagnostic testing. The appropriateness of an ordered PET/CT study is dependent on the type of cancer and which radiopharmaceutical will be used for the PET/CT.

## Special Note

~~***Adult and Pediatric Malignancies***~~

~~ONCOLOGICAL PET IS INDICATED FOR BIOPSY-PROVEN CANCER **OR** STRONGLY SUSPECTED CANCER BASED ON OTHER DIAGNOSTIC TESTING. The appropriateness of an ordered PET/CT study is dependent on which radiopharmaceutical will be used for the PET/CT.~~

### *Legislative Requirements*

See **Legislative Requirements** for specific mandates in the State of Washington

See **Legislative Requirements** for specific mandates in the State of Arkansas

# INDICATIONS

## Bone Tumors & Sarcomas

### *Angiosarcoma* (1)

- Initial Staging
  - Indicated

        - Chest CT, CT or MRI of the primary site, Brain MRI **AND** whole spine MRI are indicated in addition to PET
- Restaging
    - Indicated
        - Chest CT, CT or MRI of the primary site, Brain MRI **AND** whole spine MRI are indicated in addition to PET

### *Chondrosarcoma* (2)

- Initial Staging
    - **NOT** Indicated
- Restaging
    - **NOT** Indicated

### *Chordoma* (2)

- Initial Staging
    - With prior indeterminate imaging
- Restaging
    - With ~~accelerated CLL or to guide biopsy with~~ prior indeterminate imaging ~~(includes negative CT with rising tumor markers or if conventional imaging documents mets, IF clearly considering resection~~

### *Clear Cell Sarcoma* (1)

- Initial Staging
    - Indicated
        - Chest CT **AND** CT or MRI of the primary site are indicated in addition to PET
- Restaging
    - Indicated
        - ~~Kaposi~~Chest CT **AND** CT or MRI of the primary site are indicated in addition to PET

### *Epithelioid* Sarcoma (1)

- Initial Staging

- Indicated
  - Chest CT **AND** CT or MRI of the primary site are indicated in addition to PET

- Restaging
  - Indicated
    - Chest CT **AND** CT or MRI of the primary site are indicated in addition to PET

## *Ewing Sarcoma* [2]

- Initial Staging
  - Indicated
    - Chest CT **AND** CT or MRI of the primary site are indicated in addition to PET
- Restaging
  - Indicated
    - Chest CT **AND** CT or MRI of the primary site are indicated in addition to PET
- Surveillance
  - For patients with a history of metastatic disease, indicated every 3 months for 2 years, then every 4 months up to year 3 post completion of treatment
    - CT or MRI of the primary site are indicated in addition to PET

## *Giant Cell Tumor of Bone* [2]

- Initial Staging
  - Not Indicated
- Restaging
  - Not Indicated

## *Malignant Peripheral Nerve Sheath Tumor (MPNST)* [1]

- Initial Staging - biopsy confirmed diagnosis (regardless of NF1 Status)
  - Indicated if considering neoadjuvant therapy **OR**
  - With prior indeterminate imaging
    - Chest CT **AND** CT or MRI of the primary site are indicated in addition to PET for both indications
- Initial Staging - suspected diagnosis in setting of known Neurofibromatosis Type 1 (NF1)

- Indicated if there is concern for malignant transformation of neurofibroma to MPNST based on **ANY** of the following:
  - Change in conventional imaging (e.g. growth or change in characteristics of mass) **OR**
  - Change in texture on exam **OR**
  - Change in symptoms (new or worsening pain)
- Restaging (for confirmed MPNST, regardless of NF1 status)
  - Indicated if being treated with chemotherapy **OR**
  - With prior indeterminate imaging
    - Chest CT **AND** CT or MRI of the primary site are indicated in addition to PET for either restaging indication

## *Myxoid/Round* Cell *Liposarcoma* [1]

- Initial Staging
  - Indicated
    - Chest CT, CT or MRI of the primary site, Brain MRI **AND** whole spine MRI are indicated in addition to PET
- Restaging
  - Indicated
    - Chest CT, CT or MRI of the primary site, Brain MRI **AND** whole spine MRI are indicated in addition to PET

## *Osteosarcoma* [2]

- Initial Staging
  - Indicated
    - Chest CT **AND** CT or MRI of the primary site are indicated in addition to PET
- Restaging
  - Indicated
    - Chest CT **AND** CT or MRI of the primary site are indicated in addition to PET

## *Rhabdomyosarcoma* [1]

- Initial Staging
  - Indicated

        - Chest CT **AND** CT or MRI of the primary site are indicated in addition to PET
- Restaging
    - Indicated
        - Chest CT **AND** CT or MRI of the primary site are indicated in addition to PET

### *Soft Tissue Sarcoma - All Other Histologies* [(1)]

- Initial Staging
    - Indicated if considering neoadjuvant therapy **OR**
    - With prior indeterminate imaging
        - Chest CT **AND** CT or MRI of the primary site are indicated in addition to PET
- Restaging
    - Indicated if being treated with chemotherapy **OR**
    - With prior indeterminate imaging
        - Chest CT **AND** CT or MRI of the primary site are indicated in addition to PET

## Breast Cancer [(3)]

### *FDG PET*

- Initial Staging
    - With prior indeterminate imaging
- Restaging
    - With prior indeterminate imaging

### *Special Tracer PET (FES/Cerianna)*

- Initial Staging
    - Not Indicated
- Restaging
    - **FES** (Fluoroestradiol F 18 or Cerianna®) is indicated for recurrent or metastatic breast cancer when all of the following are present:
        - Biopsy of recurrent or metastatic site is inconclusive or unable to be performed **AND**
        - ER status is needed to make a treatment decision

# CNS Cancers [4]

## *All Histologies*

When an oncologic PET using FDG (using CPT codes 78811 and 78814) is requested for a primary brain malignancy, it should be reordered as a Brain PET (CPT 78608).

When a tracer other than FDG is used (such as SSTR (dotatate) for meningioma), the CPT codes covered by this guideline (78811 and 78814) apply when medical necessity is met (see indications below) rather than the Brain PET code (CPT code 78608).

**NOTE**: See non-malignant disease section for amyloid/dementia

## *Meningioma*

- Special Tracer PET: **SSTR** (Dotatate) PET
  - Initial Staging:
    - Indicated after Brain MRI is insufficient or indeterminant for diagnosis
  - Restaging
    - Indicated after Brain MRI is insufficient or indeterminant for detection of residual or recurrent disease

**NOTE**: See above all histologies section regarding FDG

## *Primary CNS Lymphoma*

- Initial Staging:
  - Indicated
    - Brain MRI **AND** whole spine MRI are indicated in addition to PET
- Restaging:
  - Indicated
    - Brain MRI **AND** whole spine MRI are indicated in addition to PET

# Gastrointestinal Tract Cancers

## *Anal Carcinoma [5]*

- Initial Staging
  - With prior indeterminate imaging **OR**
  - For radiation planning (to define radiation field)

- Restaging
  - With prior indeterminate imaging **OR**
  - For radiation planning (to define radiation field) **OR**
  - Following radiation if PET was used prior to radiation

**NOTE**: Normal pelvic lymph nodes are often not seen on imaging. When pelvic lymph nodes are visualized on imaging, even if normal in size, that finding raises concern for disease spread and can be considered indeterminate.

## *Colon Cancer* [(6)]

- Initial Staging
  - With prior indeterminate imaging **OR**
  - For potentially surgically curable metastatic disease **OR**
  - When image-guided liver-directed therapies are being considered

  **NOTE**: When there are known or suspected liver metastases, Abdomen MRI is indicated in addition to PET
- Restaging
  - With prior indeterminate imaging (including discordance between tumor markers (CEA) and imaging) **OR**
  - For potentially surgically curable metastatic disease **OR**
  - When image-guided liver-directed therapies are being considered

  **NOTE**: When there are known or suspected liver metastases, Abdomen MRI is indicated in addition to PET

## *Esophageal & EJ Junction Cancers* [(7)]

- Initial Staging
  - Indicated after initial workup with CT/MRI if no evidence of metastatic disease on imaging
- Restaging
  - Stages I-III: Indicated
    - NOTE: Following chemoradiation PET is indicated 5-8 weeks after completion of therapy
  - Stage IV: With prior indeterminate imaging

## *Gastric Cancer* [8]

- Initial Staging
  - Indicated after initial workup with CT/MRI if no evidence of metastatic disease on imaging
- Restaging
  - Localized Disease:
    - Indicated when PET was used for initial staging **OR**
    - With prior indeterminate imaging
  - Metastatic Disease:
    - With prior indeterminate imaging

## *Gastrointestinal Stromal Tumors* [9]

- Initial Staging
  - With prior indeterminate imaging
- Restaging
  - With prior indeterminate imaging **OR**
  - 2-4 weeks after initiation of TKI (tyrosine kinase inhibitor) therapy

## *Rectal Cancer* [10]

- Initial Staging
  - With prior indeterminate imaging **OR**
  - For potentially surgically curable metastatic disease **OR**
  - When image-guided liver-directed therapies are being considered

  **NOTE**: When there are known or suspected liver metastases, Abdomen MRI is indicated in addition to PET
- Restaging
  - With prior indeterminate imaging (including discordance between tumor markers (CEA) and imaging) **OR**
  - For potentially surgically curable metastatic disease **OR**
  - When image-guided liver-directed therapies are being considered

  **NOTE**: When there are known or suspected liver metastases, Abdomen MRI is indicated in addition to PET

### *Small Bowel Adenocarcinoma* [11]

- Initial Staging
  - With prior indeterminate imaging
- Restaging
  - With prior indeterminate imaging

## Genitourinary Cancers

### *Bladder Cancer* [12]

- Initial Staging
  - Non-muscle invasive bladder cancer (NMIBC):
    - **NOT** indicated
  - Muscle-invasive bladder cancer (MIBC):
    - Indicated when prior imaging is suggestive of disease outside of the urinary tract (imaging does not need to be inconclusive)
- Restaging
  - Non-muscle invasive bladder cancer (NMIBC):
    - **NOT** indicated
  - Muscle-invasive bladder cancer (MIBC):
    - With prior indeterminate imaging **OR**
    - Prior to surgical intervention (including cystectomy and potentially surgically curable metastatic disease)

### *Kidney Cancer* [13]

- Initial Staging
  - **NOT** indicated
- Restaging
  - **NOT** Indicated

### *Prostate Cancer* [14]

- **FDG PET**
  - Initial Staging:

- **NOT** indicated unless small cell variant is present on biopsy

- Restaging: ~~Not~~
  - **NOT** indicated unless small cell variant is present on biopsy

- ~~**Special Tracer** PET~~

- ~~Prostate Cancer* – (~~**PSMA** ~~PET Indicated for initial staging ONLY of non-metastatic Gleason 8, 9, 10 disease (or grade group 3, 4 or 5 disease))~~ **PET**

  - ~~PSMA Tracers (such as F18 piflufolastat (Pylarify®), GA 68 PSMA-11, GA 68 gozetotide (Locametz®), and GA 68 gozetotide (Illuccix®))~~

  - Initial Staging (PSMA is the ONLY tracer ~~potentially approvable~~appropriate for initial staging)
    - ~~PSMA PET is indicated~~Indicated for ~~initial staging~~**ANY** of ~~non-metastatic~~the following:
      - Patients with very high risk, high risk, ~~and~~or unfavorable intermediate risk prostate cancer (see **NOTE** below) **OR**
      - ~~Pelvic~~With prior imaging that is indeterminate for either lymph node involvement or metastatic disease **AND** clarification of that finding will change treatment

      - ~~Pelvis~~ MRI ~~may be indicated concurrently if needed (~~for surgical planning ~~(PSMA is the preferred tracer, others include Axumin® and 11-Choline~~

        - ~~PMSA PET is indicated in the following situations~~

          - ~~Post-radical prostatectomy~~

            - ~~For PSA persistence: detectable PSA (0.1ng/mL or greater) at 3 months post-operatively (only one level required)~~

            - ~~For rising PSA on two or more occasions **OR** a rise to > 0.1ng/mL if was previously undetectable~~

          - ~~For Known metastatic disease with progression on treatment and either:~~

            - ~~Rising PSA (on two consecutive levels)~~

            - ~~Disease progression on imaging (i.e., bone scan)~~

        - ~~A single restaging PSMA PET 12 weeks after treatment with radioligand therapy (Lu-177/Pluvicto~~) is indicated

      - ~~**Prostate Cancer**~~ in addition to PET ~~: PSMA is the only approvable tracer~~ for ~~initial staging. Risk groups are determined by the Gleason Score (on pathology report), PSA, clinical stage (by exam (digital rectal exam (DRE) and/or imaging such as pelvis MRI). This information may also be expressed as a grade group. The three risk~~

groups for which PSMA PET is indicated are: very high risk, high risk and unfavorable intermediate risk. Any of the following criteria place the patient into one of these risk groups and PSMA PET may be approved for initial staging:any above indication

**NOTE**: Any of the following criteria make PSMA PET indicated for initial staging:

- Gleason score 8, 9 or 10
- Primary pattern 4 (Gleason 4+3=7)
- PSA > 20 **AND** Gleason score 3+3=6 or higher
- PSA > 10 **AND** Gleason score 3+4=7
- PSA > 10 **AND** Gleason score 3+3=6 **AND** clinical stage ≥ T2b
- Clinical stage ≥ T3a **AND** Gleason score 3+3=6 or higher
- Clinical stage ≥ T2b **AND** Gleason score 3+4=7 or higher
- ≥ 50% of cores positive for cancer in a random, non-targeted prostate biopsy
- Grade group 3, 4 or 5 disease

**NOTE**: When **active surveillance** was selected as the initial plan of care, PSMA PET is indicated when the disease progresses to very high risk, high risk or unfavorable intermediate risk using the most recent Gleason score/biopsy result, clinical stage and PSA level.

**NOTE**: A biopsy typically needs to be done confirmingconfirms the diagnosis of prostate cancer prior to PSMA PET. If the PSA is > 50, when there is no clinical concern for infection nor has there been recent instrumentation **AND** there is an intent to treat the patient for prostate cancer without biopsy confirmation, PSMA PET can be considered. Situations where this may be reasonable are when the biopsy poses significant risk (i.e., anticoagulation or significant comorbidity) **OR** if treatment is urgently needed (such as spinal cord compromise from metastases).approved.

- Restaging (PSMA):
  - Post Radical Prostatectomy
    - Indicated for **ANY** of the following:
      - PSA persistence defined as detectable PSA (0.1ng/mL or greater) at 3 months post-operatively (only one level required) **OR**
      - Rising PSA on two or more occasions **OR**
      - PSA rise to > 0.1ng/mL if PSA was previously undetectable
        - **NOTE**: PSMA PET is indicated at biochemical recurrence but not to monitor rising PSA if that PET is negative
  - Post Radiation
    - Indicated with rising PSA above the nadir on two or more occasions (two separate levels above nadir required)

        - ◆ **NOTE**: PSMA PET is indicated at biochemical recurrence but not to monitor rising PSA if that PET is negative
    - ■ Known Metastatic Disease
        - □ With prior indeterminate imaging **OR**
        - □ Discordance between imaging and PSA (i.e. rising PSA with stable imaging or stable PSA with progression on imaging)
    - ■ Radioligand therapy (Lu-177/Pluvicto)
        - □ Indicated for **ANY** of the following:
            - ◆ When under consideration for radioligand therapy **OR**
            - ◆ Following completion of treatment with radioligand therapy **OR**
            - ◆ Discordance between imaging and PSA
- **Special Tracer (Axumin or Choline) PET**
    - Initial Staging
        - ■ Not indicated
    - Restaging
        - ■ When the restaging criteria above are met (depending on the clinical scenario/prior treatment) **AND**
        - ■ Prior indeterminate imaging is provided

**NOTE**: PET with Axumin or Choline can be considered on a case-by-case basis when a medical reason is given why that tracer would be used instead of PSMA

## *Penile Cancer* [15]

- Initial Staging
    - With prior indeterminate imaging **OR**
    - With suspected inguinal lymph node positive disease (based on imaging or exam)
- Restaging
    - With prior indeterminate imaging **OR**
    - With suspected inguinal lymph node positive disease (based on imaging or exam)

## *Testicular Cancer* [16]

- Initial Staging

- With prior indeterminate imaging when retroperitoneal dissection is under consideration and extent of disease needs clarification

- Restaging
  - Non-seminoma:
    - **NOT** indicated
  - Pure seminoma:
    - With prior indeterminate imaging **OR**
    - With a residual mass > 3cm with a normal AFP and b-hcg **AND** it has been at least 6 weeks since completion of chemotherapy

**NOTE**: If this PET is equivocal or borderline for residual disease, an additional repeat PET >6 weeks later is appropriate to identify patients that can be safely observed without additional surgery. If a persistently FDG-avid mass is present on the second PET, resection or biopsy is recommended.

# Gynecological Cancers

## *Cervical Cancer (including small cell neuroendocrine carcinoma of the cervix (NECC))* [17]

- Initial Staging
  - Indicated
    - Pelvis MRI is indicated in addition to PET
- Restaging
  - Indicated
- Surveillance
  - Indicated for stage III or higher in the first 2 years following treatment

## *Uterine Sarcoma* [18]

- Initial Staging
  - With prior indeterminate imaging
- Restaging
  - With prior indeterminate imaging

## *Endometrial Cancer* [18]

- Initial Staging
  - With prior indeterminate imaging
- Restaging
  - With prior indeterminate imaging

## *Gestational Trophoblastic Neoplasia* [19]

- Initial Staging
  - With prior indeterminate imaging **OR**
  - Potentially surgically curable metastatic disease
- Restaging
  - With prior indeterminate imaging **OR**
  - Potentially surgically curable metastatic disease **OR**
  - At completion of chemotherapy when hCG is not a reliable marker
- Surveillance
  - Every 6-12 months for up to 3 years post completion of treatment when hCG is not a reliable marker

## *Ovarian, Fallopian Tube, and Primary Peritoneal Cancer* [20]

- Initial Staging
  - With prior indeterminate imaging
- Restaging
  - With prior indeterminate imaging (including discordance between tumor markers ~~(CA 125~~ and imaging)

## *Vulvar Cancer* [21]

- Initial Staging
  - Prior indeterminate imaging **OR**
  - If ≥ T2 tumor (extension beyond vulva/perineum) **OR**
  - When sentinel lymph node biopsy is positive **OR**
  - When metastases are suspected

- Restaging
  - Prior indeterminate imaging **OR**
  - Once 3-6 months after completion of primary therapy **OR**
  - When recurrence or metastatic disease is suspected

## Head & Neck Cancer [22]

- Initial Staging
  - Indicated
    - Neck CT (or MRI) **AND** CT (or MRI) of the primary site of disease are indicated in addition to PET
- Restaging
  - Indicated
    - Neck CT (or MRI) **AND** CT (or MRI) of the primary site of disease are indicated in addition to PET
    - If the end of therapy PET demonstrates possible residual disease, one additional PET is appropriate ≥ 6 weeks after end-of-therapy PET as it may help identify those patients who can be safely observed without additional cancer-directed treatment

## Leukemias & Lymphomas

### *Acute Lymphoblastic Leukemia (ALL) (Pediatric and Adult)* [23,24]

- Initial Staging
  - For lymphomatous extramedullary disease (on exam or prior conventional imaging)
- Restaging
  - For lymphomatous extramedullary disease (on exam or prior conventional imaging)

### *Acute Myeloid Leukemia (AML) (Pediatric and Adult)* [25]

- Initial Staging
  - If suspected extramedullary involvement (myeloid sarcoma) (on exam or prior conventional imaging)
- Restaging

- If suspected extramedullary involvement (myeloid sarcoma) (on exam or prior conventional imaging)

## *B-Lymphoblastic Lymphoma (Adult)* [26]

- Initial Staging
  - Indicated
    - Brain MRI is indicated in addition to PET
- Restaging
  - Indicated

## *B-Lymphoblastic Lymphoma (Pediatric)* [27]

- Initial Staging
  - Indicated
    - Neck CT, Chest CT **AND** Abdomen and Pelvis CT are indicated in addition to PET
- Restaging
  - Indicated
    - Neck CT, Chest CT **AND** Abdomen and Pelvis CT are indicated in addition to PET

**NOTE**: This portion of the guideline should be applied to patients treated at a pediatric institution on a pediatric protocol which can include young adults into their 20's.

## *Burkitt Lymphoma (Adult)* [26]

- Initial Staging
  - Indicated
- Restaging
  - Indicated

## *Burkitt Lymphoma (Pediatric)* [27]

- Initial Staging
  - Indicated

        - Neck CT, Chest CT **AND** Abdomen and Pelvis CT are indicated in addition to PET
- Restaging
    - Indicated
        - Neck CT, Chest CT **AND** Abdomen and Pelvis CT are indicated in addition to PET

**NOTE**: This portion of the guideline should be applied to patients treated at a pediatric institution on a pediatric protocol which can include young adults into their 20's.

## *Castleman's Disease* [26]

- Initial Staging
    - Indicated
- Restaging
    - Indicated

## *Chronic Lymphocytic Leukemia (CLL) and Small Lymphocytic Lymphoma (SLL)* [28]

- Initial Staging
    - For suspected high-grade transformation **OR**
    - To guide biopsy with prior indeterminate imaging
- Restaging
    - With accelerated CLL **OR**
    - To guide biopsy with prior indeterminate imaging

## *Chronic Myeloid Leukemia (CML)* [29]

- Initial Staging
    - **NOT** Indicated
- Restaging
    - **NOT** Indicated

## *Diffuse Large B Cell Lymphoma (Adult)* [26]

- Initial Staging

- Indicated
- Restaging
  - Indicated
- Surveillance
  - When a site of disease was previously visualized on a PET Scan but not conventional imaging, PET is indicated every 6 months for 2 years

## *Diffuse Large B Cell Lymphoma (Pediatric)* [27]

- Initial Staging
  - Indicated
    - Neck CT, Chest CT **AND** Abdomen and Pelvis CT are indicated in addition to PET
- Restaging
  - Indicated
    - Neck CT, Chest CT **AND** Abdomen and Pelvis CT are indicated in addition to PET

**NOTE**: This portion of the guideline should be applied to patients treated at a pediatric institution on a pediatric protocol which can include young adults into their 20's.

## *Follicular lymphoma* [26]

- Initial Staging
  - Indicated
- Restaging
  - Indicated
- Surveillance
  - When a site of disease was previously visualized on a PET Scan but not conventional imaging, PET is indicated every 6 months for 2 years

## *Mantle cell lymphoma* [26]

- Initial Staging
  - Indicated
- Restaging
  - Indicated

## *Hodgkin Lymphoma (Pediatric and Adult)* [30,31]

- Initial Staging
  - Indicated
    - Neck CT, Chest CT **AND** Abdomen and Pelvis CT are indicated in addition to PET
- Restaging
  - Indicated
    - Dedicated CT scans of the original sites of disease are indicated in addition to PET
      - One repeat PET is appropriate if the end of treatment PET was positive (Deauville Score 4-5)

## *Kaposi Sarcoma* [32]

- Initial Staging
  - If concerns for coexisting Kaposi sarcoma-associated herpesvirus (KSHV) associated inflammatory cytokine syndrome (KICS), multicentric Castleman disease, or KSHV+ lymphoma
- Restaging
  - Not Indicated

## *Post-Transplant Lymphoproliferative Disease* [26]

- Initial Staging
  - Indicated
    - Brain MRI is indicated in addition to PET
- Restaging
  - Indicated

## *Primary Mediastinal Large B-Cell Lymphoma (Pediatric)* [27]

- Initial Staging
  - Indicated
    - Neck CT, Chest CT **AND** Abdomen and Pelvis CT are indicated in addition to PET
- Restaging

- Indicated
  - Neck CT, Chest CT **AND** Abdomen and Pelvis CT are indicated in addition to PET

**NOTE**: This portion of the guideline should be applied to patients treated at a pediatric institution on a pediatric protocol which can include young adults into their 20's.

### *T Cell Lymphomas* [33]

- Initial Staging
  - Indicated
- Restaging
  - Indicated

**NOTE**: This includes the following types of T-cell lymphoma: PTCL-NOS, Enteropathy-associated T-cell lymphoma (EATL), monomorphic epitheliotropic intestinal T-cell lymphoma (MEITL), ALCL ALK positive, ACLC ALK negative, Angioimmunoblastic T-cell lymphoma (AITL), follicular helper T-cell lymphoma, angioimmunoblastic type nodal TFH cell lymphoma, Follicular T-cell lymphoma, Breast Implant-Associated ALCL, T Cell Prolymphocytic Leukemia, T-Lymphoblastic lymphoma, Hepatosplenic T cell lymphoma, Extranodal NK/T-cell lymphoma

### *Waldenstrom Macroglobulinemia/Lymphoplasmacytic Lymphoma* [34]

- Initial Staging
  - **NOT** Indicated
- Restaging
  - **NOT** Indicated

## Liver & Hepatobiliary Cancers

### *Ampullary Adenocarcinoma* [35]

- Initial Staging
  - With prior indeterminate imaging **OR**
  - If high-risk features are present (markedly elevated CA 19-9 or CEA, large primary tumors, large regional lymph nodes, excessive weight loss and/or extreme pain)
- Restaging

- With prior indeterminate imaging **OR**
- For pre-surgical evaluation

### *Biliary Tract Cancers* [36]

- Initial Staging
  - With prior indeterminate imaging
- Restaging
  - With prior indeterminate imaging

### *Hepatocellular Carcinoma* [37]

- Initial Staging
  - With prior indeterminate imaging
- Restaging
  - With prior indeterminate imaging

### *YTTRIUM-90 (Y90)*

**Y90 PET SCAN:** Indicated when performed immediately after treatment of liver malignancy (primary or metastatic). The Y90 treatment is also the tracer for this and PET is performed within 24 hours of treatment (while Y90 is still detectible) to confirm the final distribution of the Y90. PET.

## Lung Cancers

### *Non-Small Cell Lung Cancer* [38]

- Initial Staging
  - Indicated
    - Brain MRI is indicated in addition to PET
- Restaging
  - Indicated for **ANY** of the following:
    - Pre-surgical evaluation **OR**
      - Chest CT is indicated in addition to PET
    - Suspected or confirmed recurrence/progression **OR**

        - Brain MRI is indicated in addition to PET
    - Indeterminate findings on conventional imaging **OR**
    - End of treatment evaluation

### *Small Cell Lung Cancer* [39]

- Initial staging (all patients)
    - Indicated if needed to clarify extent of disease
- Restaging
    - With prior indeterminate imaging **OR**
    - For radiation planning

## Lung Nodules

When a lung nodule is seen on low dose CT or standard Chest CT without known malignancy), PET is indicated for **ANY** of the following:

- If the solid component of the dominant nodule (either solitary or clearly dominant) is ≥ 8mm **OR**
- If there is a part solid/mixed nodule with the solid component 6 mm or larger **OR**
- If there is a mixed nodule (i.e., ground glass and solid nodule) with the solid component of the nodule ≥ 4mm on LDCT when there has been **EITHER**
    - Interval growth of the solid component of at least 1.5mm **OR**
    - Interval development of a new mixed nodule with the solid nodule component ≥ 4mm

## Neuroendocrine & Adrenal Tumors [40]

### *Adrenocortical Carcinoma*

- FDG PET
    - Adrenal (other than pheochromocytoma/paraganglioma)
        - Initial Staging:
            - Indicated when conventional imaging and biochemical evaluation are highly suggestive of adrenocortical carcinoma
        - Restaging:
            - With prior indeterminate imaging

**NOTE**: Features of an adrenal mass on conventional imaging that are suspicious for adrenocortical carcinoma (ACC) include: size > 4 cm, homogenous mass with irregular margins and/or local invasion. If there is no history of another primary malignancy and these features are present on imaging, then PET is reasonable. If there is a history of another primary tumor and a metastasis is suspected, biopsy should be done first to determine tissue type. A biochemical evaluation is also done to evaluate for other tumor types (such as pheochromocytoma) for which a different tracer (such as dotatate) may be more appropriate.

## *Paraganglioma and Pheochromocytoma*

- **Special Tracer SSTR (Dotatate) PET**
  - Initial Staging
    - Indicated when there is a high clinical suspicion based on imaging and biochemical evaluation prior to biopsy **OR**
    - For biopsy proven disease
  - Restaging
    - Indicated when progression or recurrence is known or suspected (based on labs and/or conventional imaging) **OR**
    - SSRT directed therapy is being considered **OR**
    - With prior indeterminate imaging
- **FDG PET**
  - Initial Staging
    - If negative initial staging SSTR PET
  - Restaging
    - Prior indeterminate imaging **OR**
    - With bone-dominant disease **OR**
    - If FDG PET positive at diagnosis **AND** progression or recurrence is known or suspected (based on labs and/or conventional imaging)

## *Well-Differentiated Neuroendocrine Tumors (NET)*

**Special Tracer SSTR (Dotatate) PET**

- Initial Staging:
  - Indicated
    - Abdomen MRI (liver) is indicated in addition to PET
- Restaging:

- With prior indeterminate imaging **OR**
- With symptoms, laboratory or imaging findings of progression **OR**
- When considering SSTR-directed therapy
  - Abdomen MRI (liver) is indicated in addition to PET for all restaging indications

**FDG PET**

- Initial Staging:
  - Indicated for high-grade well-differentiated NET **AND**
  - With a high Ki67 (≥ 55%) **AND**
  - Negative initial staging SSTR PET
    - Abdomen MRI (liver) is indicated in addition to PET
- Restaging:
  - Indicated when there is prior indeterminate imaging **OR** progression (see above) **AND** either of the following:
    - Recent negative SSTR PET **OR**
    - Prior positive FDG PET
      - Abdomen MRI (liver) is indicated in addition to PET for all restaging indications

## *Poorly Differentiated Neuroendocrine Tumors*

- **FDG PET**
  - Initial Staging
    - Indicated
      - Abdomen MRI (liver) is indicated in addition to PET
  - Restaging
    - With prior indeterminate imaging **OR**
    - With symptoms, laboratory or imaging findings of progression
      - Abdomen MRI (liver) is indicated in addition to PET for both restaging indications
- **Special Tracer SSTR (Dotatate) PET**
  - Initial Staging
    - **NOT** Indicated
  - Restaging
    - **NOT** Indicated

**NOTE**: This includes large cell neuroendocrine carcinoma of the lung, mixed neuroendocrine tumors, extra-pulmonary small cell carcinoma (i.e. primary site of disease is not in the lung). See **small cell lung cancer** for primary site of disease in the lung. See **cervical cancer** for primary site of disease in the cervix.

# Non-Malignant Disease

## *Dementia* [41,42,43]

- Special Tracer PET
  - Amyloid PET for evaluation for mild cognitive impairment or dementia in the following situations:
    - Detection of early Alzheimer's disease **OR**
    - Differentiation between Alzheimer's, dementia with Lewy body disease (DLB) and frontotemporal lobal degeneration (FTD) **OR**
    - Assessment for the presence of beta amyloid plaque in Alzheimer's disease when being considered for treatments that target beta-amyloid plaque

  **AND ALL** the following criteria are met (criteria apply to **ANY** of the above 3 indications):
    - Brain MRI is insufficient or indeterminant **AND**
    - Objective measures demonstrate objective impairment (MMSE/MoCA < 26 or mild cognitive impairment on neuropsychological testing) **AND**
    - Full lab evaluation (thyroid function tests, CBC, CMP including LFTs and B12) has been completed and if abnormal, have been treated and cognitive difficulty persists **AND**
    - Medication side effects[44] and medical causes, such as vascular or traumatic or inflammatory etiologies have been excluded

  **NOTE**: Brain CT is an alternative to brain MRI when MRI is contraindicated or cannot be performed for detection and differentiation but **NOT** for treatment planning as MRI is a prerequisite to beta-amyloid targeted treatment

## *Sarcoidosis*

- Known sarcoidosis:
  - **ONLY** if conventional testing (CXR, CT and inflammatory serology) are indeterminate for known sarcoid to determine:
    - If treatment might be helpful **OR**
    - Extent of disease, if it will potentially change management **OR**
    - Response to treatment

- Suspected sarcoidosis:
  - To determine most suitable site to biopsy

### *Vasculitis*

- In limited circumstances for patients with known vasculitis, PET is indicated after conventional imaging (MRA/CTA/MR/CT) is insufficient to determine treatment

## Other Malignancies

### *Castleman's Disease* [26]

- Initial Staging
  - Indicated
- Restaging
  - Indicated

### *Histiocytic Neoplasms* [45]

- Langerhan's cell histiocytosis, Erdheim Chester disease, Rosai-Dorfman disease
  - Initial Staging
    - Indicated
  - Restaging
    - Indicated
  - Surveillance
    - Every 3-6 months for 2 years then annually

### *Melanoma: Uveal* [46]

- Initial Staging
  - **NOT** indicated
- Restaging
  - **NOT** indicated

## *Merkel Cell Carcinoma* [(47)]

- Initial Staging
  - Indicated
- Restaging
  - Indicated

## *Mesothelioma: Peritoneal* [(48)]

- Initial Staging
  - Indicated
- Restaging
  - Indicated

## *Mesothelioma: Pleural* (49)

- Initial Staging
  - Indicated
    - Chest CT is indicated in addition to PET
- Restaging
  - Indicated
    - Chest CT is indicated in addition to PET

**NOTE**: The evaluation of recurrent pleural effusion and/or pleural thickening includes CT chest, thoracentesis and pleural biopsy. The diagnostic sensitivity of this investigation is 70-75%. If the first biopsy is non-diagnostic, there is a higher chance that subsequent biopsies will be non-diagnostic, thus a PET to guide subsequent biopsy is reasonable in this situation.

## *Neuroblastoma* (50)

- Initial Staging
  - Indicated when tumors are not avid on MIBG or there are discordant findings between MIBG and anatomic imaging
    - Due to the complexity of these tumors and the young age of patients, multiple overlapping imaging studies and modalities are often necessary in addition to PET.

        - Neuroblastoma tumors often encase vasculature, vascular imaging is appropriate if requested in addition to standard cross-sectional imaging and PET.
- Restaging
    - Indicated when FDG PET was used for initial staging or if MIBG has become indeterminate or discordant
        - Due to the complexity of these tumors and the young age of patients, multiple overlapping imaging studies and modalities are often necessary in addition to PET.
        - Neuroblastoma tumors often encase vasculature, vascular imaging is appropriate if requested in addition to standard cross-sectional imaging and PET.
- Surveillance
    - If PET is used for functional imaging evaluation in place of MIBG during treatment, surveillance PET is appropriate every 3-6 months for 1 year, then every 6 months for 1 year, then annually
        - Due to the complexity of these tumors and the young age of patients, multiple overlapping imaging studies and modalities are often necessary in addition to PET.

**NOTE**: Functional imaging with Iodine 123 ($^{123}$I-MIBG) is routinely used as the standard functional imaging modality in this disease given the high specificity and sensitivity to identify metastatic disease.

## *Occult Primary* [51]

- Initial Staging
    - With prior indeterminate imaging
- Restaging
    - With prior indeterminate imaging

    **NOTE**: The typical evaluation for a suspected metastatic malignancy with an unknown primary includes CT of the Chest, Abdomen and Pelvis **AND** a biopsy of the site of disease.

## *Post Transplant Lymphoproliferative Disorder (PTLD)* [26]

- Initial Staging
    - Indicated when the diagnosis is made **OR**
    - If suspected based on abnormal physical exam, abnormal imaging or abnormal labs (i.e., significantly elevated or rising viral titers)

- Restaging
  - Indicated

## *Thymomas & Thymic Carcinomas* [52]

- Initial Staging:
  - Indicated
- Restaging:
  - Indicated

## *Thyroid Carcinoma* [53]

**Papillary, Follicular, Oncocytic and Poorly Differentiated:**

- Initial Staging:
  - **NOT** Indicated
- Restaging Following Total/Completion Thyroidectomy and/or Radioiodine Ablation (RAI) for **ANY** of the following:
  - With known or suspected metastases (based on laboratory or imaging findings) **AND** I-123/131 is negative **OR**
  - With rising or new Tg Antibody **OR**
  - **Oncocytic** thyroid cancer following thyroidectomy if **ANY** of the following are present:
    - Tumor > 2 cm
    - ≥ 1 focus of vascular invasion
    - Any positive lymph node (≥ cN1)
    - Gross extension outside thyroid
    - Positive margin
    - Postop Tg ≥ 1 ng/mL
- Recurrence:
  - Indicated when recurrence is suspected based on laboratory or imaging findings **AND**
  - I-123/131 is negative (or was previously negative in the setting of known disease)

**Anaplastic or De-Differentiated:**

- Initial Staging:

- Indicated

- Restaging:
  - Indicated

**Medullary:**

- **Special Tracer** SSTR (dotatate) PET:
  - Initial Staging:
    - Indicated
  - Restaging:
    - Indicated when tumor markers (calcitonin and/or CEA) are rising **AND** conventional imaging is negative
  - Recurrence:
    - Indicated when tumor markers (calcitonin and/or CEA) are rising **AND** conventional imaging is negative
- FDG PET
  - Initial Staging:
    - **NOT** indicated
  - Restaging:
    - **NOT** indicated

## *Wilms Tumor* [54]

- Initial Staging:
  - With prior indeterminate imaging
- Restaging:
  - With prior indeterminate imaging

## *YTTRIUM-90 (Y90)*

**Y90 PET SCAN:** Indicated when performed immediately after treatment of liver malignancy (primary or metastatic). The Y90 treatment is also the tracer for this and PET is performed within 24 hours of treatment (while Y90 is still detectible) to confirm the final distribution of the Y90 PET.

## Pancreatic Cancer [55]

- Initial Staging
  - With prior indeterminate imaging **OR**
  - Prior to neoadjuvant therapy and surgical resection is being considered **OR**
  - With any of the following high-risk features:
    - Borderline resectable disease
    - Markedly elevated CA19-9 (>180 U/ml)
    - Largely primary tumor/lymph nodes
    - Very symptomatic (jaundice, symptomatic gastric outlet obstruction, venous thromboembolism, extreme pain and excessive weight loss)
- Restaging
  - With prior indeterminate imaging **OR**
  - For pre-surgical evaluation

## Plasma Cell Dyscrasias

### *MGUS* [56]

- Initial Staging
  - **NOT** Indicated
- Restaging
  - **NOT** Indicated

**NOTE**: Whole Body Low Dose CT is used rather than PET - see CG_063 (Unlisted Study) under Unlisted CT

### *Multiple Myeloma* [56]

- Initial Staging:
  - Indicated
- Restaging on Active Treatment (including following Bone Marrow Transplant (BMT) or CAR-T treatment):
  - Indicated

**NOTE**: For individuals receiving Bone Marrow Transplant (BMT) or CAR-T treatment PET is indicated prior to treatment and at 1 month, 3 months **AND** 6 months post-treatment

- Surveillance: Indicated annually (indefinitely)

### *Smoldering Myeloma* [56]

- Initial Staging:
  - Indicated
- Restaging:
  - Indicated when there are symptoms and/or laboratory findings to suggest progression

### *Solitary Plasmacytoma* [56]

- Initial Staging:
  - Indicated
- Restaging:
  - Indicated
- Surveillance:
  - When initial staging or restaging on treatment was with PET, PET is indicated during surveillance at the following intervals:
    - 3 months after completion of treatment then
    - Annually up to 5 years

### *Systemic Light Chain Amyloidosis* [57]

- Initial Staging:
  - Indicated
- Restaging:
  - Indicated

## Skin Cancers

### *Basal Cell Skin Cancer* [58]

- Initial Staging
  - **NOT** Indicated
- Restaging
  - **NOT** Indicated

### *Melanoma: Cutaneous* [59]

- Initial Staging
  - Indicated if considering systemic treatment with immunotherapy (typically stage IIB or higher)
- Restaging
  - Indicated for patients receiving systemic treatment with immunotherapy **OR**
  - For workup of local satellite/in-transit and/or nodal recurrences
- Surveillance
  - For select patients with primary disease in the extremities **OR** previous disease only able to be seen on PET, surveillance imaging is indicated in place of CT scans every 3-12 months for 2 years, then every 6-12 months for 3 years

### *Squamous Cell Skin Cancer* [60]

- Initial Staging
  - Indicated when lymph node or metastatic site has been biopsied and shows disease spread
- Restaging
  - Indicated when lymph node or metastatic site has been biopsied and shows disease spread

# LEGISLATIVE REQUIREMENTS

### *State of Washington* [61]

- Washington State
  - Washington State Health Care Authority Health Technology Assessment 20181116B Positron Emission Tomography (PET) scans for lymphoma
    - PET scans (i.e., PET with computed tomography or PET/CT) for lymphoma is a covered benefit with conditions.
    - An initial staging scan is covered followed by up to three (3) scans per active occurrence of lymphoma:
      - When used to assess a response to chemotherapy, scans should not be done any sooner than three (3) weeks after completion of any chemotherapy cycle, except for advanced stage Hodgkin's lymphoma, after four (4) cycles of ABVD chemotherapy.

- When used to assess response to radiation therapy, scans should not be done any sooner than eight (8) weeks after completion of radiation or combined chemotherapy and radiation therapy.

- Relapse: Covered when relapse is suspected in the presence of clinical symptoms or other imaging findings suggestive of recurrence
- Surveillance: Not covered

Washington State Health Care Authority oversees the Apple Health (Medicaid) program and the Public Employees Benefits Board (PEBB) Program

### *State of Arkansas* [(62)]

- Arkansas State
  - State of Arkansas 93rd General Assembly Regular Session 2021 House Bill 1357 an act to continue care for the protection of cancer survivors; concerning coverage for Positron Emission Tomography under a health benefit plan to screen for or diagnose cancer in certain patients; and for other purposes. Arkansas Code Title 23, Chapter 79, Subchapter 1, is amended to add an additional section to read as follows: 25 23-79-164. Coverage for positron emission tomography:
    - A healthcare insurer that offers a health benefit plan in this state shall provide coverage for positron emission tomography to screen for or to diagnose cancer in a patient upon the recommendation of the patient's physician when the patient has a prior history of cancer (subsection (b))
    - Benefits under subsection (b) of this section are subject to any health benefit plan provisions that apply to other services covered by the health benefit plan

# CODING AND STANDARDS

## Coding

### *CPT Codes*

78811, 78812, 78813, 78814, 78815, 78816

## Applicable Lines of Business

| | |
|---|---|
| ☒ | CHIP (Children's Health Insurance Program) |
| ☒ | Commercial |
| ☒ | Exchange/Marketplace |
| ☒ | Medicaid |
| ☐ | Medicare Advantage |

# BACKGROUND

## *Definitions*

- **INITIAL STAGING** refers to imaging that is performed after the diagnosis of cancer is made, and generally before any treatment**.**
- **RESTAGING** refers to imaging that is performed during treatment to determine response to treatment/monitor treatment, a single end of treatment study done within 6 months of completion of treatment, or when there is clinical concern for recurrence (i.e., new imaging, new signs, rising labs/tumor markers or symptoms relative to type of cancer and entire clinical picture). Recurrence is not required to be biopsy proven.
    - **ACTIVE TREATMENT** includes chemotherapy, immunotherapy, radiation, as well as patients on "maintenance therapy" who have known, or existing, metastatic disease being held in check by this treatment.Imaging is typically performed 6-12 weeks after surgery
    - Imaging is typically performed**SUBSEQUENT TREATMENT STRATEGY:**
    - For restaging or monitoring response during active treatment (including immunotherapy), and/or a single evaluation after completion/cessation of therapy. The interval should ideally be 6-12 weeks after surgery, and 12 weeks after radiation (to avoid false positive findings that can be caused by treatment changes or healing).
        - A valid clinical reason explaining why the interval needs to be shorter than ideal must be present
        - PET/CT can be performed 1 - 3 weeks after neoadjuvant chemotherapy or neoadjuvant chemoradiation if done for presurgical planning to evaluate for distant metastatic disease or to evaluate known metastatic disease located in areas separate from the site(s) being radiated.
    - When an end of treatment PET scan performed at an appropriate post-treatment interval (see above) shows indeterminate findings, one additional repeat PET in 3 months is indicated.
    - Common exceptions are noted in the guideline. If not noted in the guideline, a valid clinical reason explaining why the interval needs to be shorter is needed.
- **TREATMENT** includes chemotherapy, immunotherapy, radiation, as well as patients on "maintenance therapy" who have known, or existing, metastatic disease being controlled by this treatment. Allogenic bone marrow transplant and CART T-cell therapy should be considered 'active' treatment for at least 6 months after infusion/transplant and as such can be approved at 30 days, 100 days, and 6 months after the most recent infusion.
- **INDETERMINATE IMAGING:**
    - When indeterminate imaging is required prior to PET, this typically means conventional imaging (CT, MRI, OR Nuclear Medicine Scan (i.e. bone scan))

shows a finding that is indeterminate **AND** clarification of that finding with PET will potentially change management.

- ~~When PET is not indicated for a cancer type in the guideline (i.e. literature does not support the use of PET), PET is not indicated even if indeterminate imaging is provided.~~ The information provided should clearly explain why conventional imaging is insufficient to determine treatment or management ~~and includes situations such as the following:~~ .
    - ~~New or residual masses described as indeterminate on conventional imaging~~
- Biopsy guidance:
    - To determine the best location to biopsy either within a tumor that has necrosis on imaging **OR**
    - To determine the best location to biopsy when there are findings on standard imaging that would require a significantly invasive procedure (such as laparoscopic or open surgical procedures) **AND** malignancy is highly suspected based on imaging.
- When previous conventional imaging has been shown to be negative, yet a concurrent PET scan was positive (i.e. conventional imaging was falsely negative/ missed lesions seen on PET), we do not require repeat conventional imaging prior to every subsequent PET because conventional imaging was already shown to be insufficient. Appropriate interval criteria should still be met.

~~● **SURVEILLANCE PET** is generally not approvable. Surveillance means no active treatment, no current suspicion of recurrence and occurs 6 months or more after completion of treatment. Generally, this would be accepted only when ordered by the treating oncologist or clearly at their recommendation (not as routine follow-up ordered by PCP). Possible exceptions for the following indications only:~~

- ~~Ewing's Sarcoma and Osteosarcoma in patients specified as high risk: every 3 months for 2 years, then every 4 months up to year 3 post completion of treatment.~~
- ~~Small Cell Neuroendocrine Cervical every 3-6 months for the first 2 years post completion of treatment~~
- ~~Diffuse Large B Cell Lymphoma when disease was only seen previously on PET: every 6 months for 2 years, then one at 12 months up to year 3 post completion of treatment.~~
- ~~Gestational trophoblastic disease when hCG is not a reliable marker every 6-12 months for up to 3 years post completion of treatment~~
- ~~Histiocytic neoplasms every 3-6 months for the first 2 years post completion of treatment~~
- ~~Melanoma (stage 2b-4) specified as high risk every 3-12 months for 2 years, then every 6-12 months, up to 5 years after initial diagnosis~~

- ~~Solitary plasmacytoma (up to 3 yrs. after the diagnosis of plasmacytoma)~~

## *Further Information*

**PET with CONTRAINDICATIONS to contrasted CT AND MRI**:
~~When PET is requested for restaging due to the inability to image with contrasted conventional imaging, indeterminate non-contrasted studies must be provided prior to consideration of PET.~~ The inability to image with contrasted conventional imaging includes contraindications to both CT (such as chronic renal failure with GFR < 30 **OR** significant iodinated contrast allergy) **AND** to MRI (such as gadolinium allergy, implanted device that is not MRI compatible, or GFR <40). When requested for surveillance due to the above reasons, PET can be considered during the time that the highest risk of recurrence for that cancer (typically the first two years after completion of treatment).

**PET/MR**: When PET/MR can be considered per the guideline, if the criteria are met for PET for that cancer and the plan is to do a PET/MR rather than a PET/CT, the PET scan can be approved. In the same way a separate approval for total body CT is not needed when a PET/CT is requested, a separate approval for the total body MR is not typically needed. However, until a PET/MR CPT code is implemented, unlisted MR in addition to PET can be considered on a case-to-case basis.

~~**PET IN COMBINATION WITH DEDICATED SITE-SPECIFIC MR (OR CT): DISTINCT FROM PET/MR, WHEN PET IS NEEDED IN ADDITION TO A DEDICATED SITE-SPECIFIC MRI (OR CT), TWO AUTHORIZATIONS MAY BE ISSUED: ONE FOR THE PET SCAN AND ONE FOR THE SITE-SPECIFIC MRI (OR CT). CLEAR INDICATIONS FOR BOTH MUST BE PROVIDED.**~~

~~**STAGING: STAGING FOR CANCER IS CANCER-SPECIFIC AND IS TYPICALLY BASED ON THE TNM SYSTEM OF STAGING. T STAGE REFERS TO THE EXTENT OF THE MAIN (PRIMARY) TUMOR. N STAGE REFERS TO THE EXTENT OF SPREAD TO LYMPH NODES. M STAGE REFERS TO WHETHER OR NOT THE CANCER HAS METASTASIZED TO OTHER PARTS OF THE BODY. CLINICAL STAGE (SUCH AS CT2B) IS DETERMINED BY PHYSICAL EXAM, IMAGING AND POSSIBLY BIOPSY. PATHOLOGIC STAGE (SUCH AS PT2B) IS DETERMINED AFTER THE TUMOR HAS BEEN RESECTED. CERTAIN CANCERS HAVE ADDITIONAL INFORMATION THAT IS NEEDED TO STAGE THE PATIENT (SUCH AS PSA LEVEL IN PROSTATE CANCER).**~~

# POLICY HISTORY

## *Summary*

| Date | Summary |
|---|---|
| August 2024 | • Reorganized:<br>  ○ Grouped similar cancer types together (e.g. leukemias and lymphomas, gynecological cancers)<br>• Revised indeterminate imaging and contraindications to conventional imaging sections<br>• Addition of the use of Amyloid PET for early Alzheimer's<br>• Updated:<br>  ○ Surveillance PET section added to disease type where appropriate<br>  ○ Combination imaging added to disease type where appropriate<br>  ○ Following Cancers to be consistent with updated version of NCCN<br>  ■ Adrenal: added indications in limited circumstances<br>  ■ Ampullary adenocarcinoma: added section<br>  ■ Anal carcinoma: added indications for radiation planning<br>  ■ Bone tumors: added combination imaging recommendations, removed age restrictions on PET |

| | |
|---|---|
| | ■ Cervical cancer: added neuroendocrine small cell carcinoma of the cervix, added surveillance indication<br>■ Gastrointestinal stromal tumor: added indication for 2-4 weeks after initiation of TKI (tyrosine kinase inhibitor) therapy<br>■ Gestational trophoblastic neoplasia: added indication for potentially surgically curable metastatic disease<br>■ Lymphoma: added clarification by sub-type of lymphoma, added indications for combination imaging in pediatric patients, added surveillance indications<br>■ Melanoma: added indication for patients considering or receiving systemic treatment with immunotherapy<br>■ Neuroblastoma: added surveillance indications<br>■ Neuroendocrine: added detail regarding what is needed for restaging in SSTR section<br>■ Non-malignant disease: added dementia section,<br>■ Non-small cell lung cancer: added qualifiers to restaging indications (Indicated for any of the following: pre-surgical evaluation, suspected or confirmed progression/recurrence, indeterminate findings on conventional imaging, end of treatment evaluation)<br>■ Penile cancer: added indication for suspected inguinal lymph node positive disease (based on imaging or exam)<br>■ Pheochromocytoma/Paraganglioma: separated from general neuroendocrine tumors, added clarification to indications for FDG tracer vs. SSTR tracer<br>■ Prostate cancer: Reorganized section to include all tracers, updated restaging indications<br>■ Rectal cancer: separated from colon cancer<br>■ Small cell lung cancer: clarified initial staging indication to indicated if needed to clarify extent of disease<br>■ Soft tissue sarcomas: added specific indications for sub-categories of soft tissue sarcoma (angiosarcoma, clear cell sarcoma, epithelioid sarcoma, malignant peripheral nerve sheath sarcoma (MPNST), myxoid/round cell liposarcoma), added combination imaging recommendations, removed age restrictions on PET<br>■ Systemic light chain amyloidosis: added section<br>■ Testicular cancer: added initial staging indication for all histologies for prior indeterminate imaging when retroperitoneal dissection is under consideration and extent of disease needs clarification |

| | |
|---|---|
| | ■ Vulvar cancer: added indications for when sentinel lymph node biopsy is positive and when metastases are suspected |
| May 2023 | ● Reorganized:<br>○ Cancers where the guidance is straightforward into a list for ICRs and non-PET PCRs can approve/deny<br>○ Definitions to background<br>● Revised indeterminate imaging and contraindications to conventional imaging sections<br>● Updated:<br>○ Surveillance PET section with additional guidance<br>○ Following Cancers to be consistent with updated version of NCCN<br>■ Adrenal: added indications in limited circumstances<br>■ Breast: changed to requiring inconclusive imaging and added a restaging indication for FES PET in special tracer section<br>■ Colorectal: added liver directed therapy and potentially curable M1 disease to restaging<br>■ Esophageal: initial staging clarified as indicated for non-metastatic, restaging changed from indicated to following chemoradiation or with indeterminate imaging<br>■ Small cell lung cancer: clarified staging in background section, limited stage: changed restaging to prior to radiation or with indeterminate imaging; for extensive stage: added indication for indeterminate imaging in initial staging, added indication when radiation is planned for restaging<br>■ Melanoma: added indication for satellite/in-transit and dermal melanomas that lack epidermal involvement<br>■ Neuroendocrine: separated types of NET, changed wording for poorly differentiated and well differentiated high grade in FDG section; added detail re what is needed for restaging in SSTR section<br>■ Renal: changed to not indicated<br>■ Skin squamous cell: added indication for biopsy proven lymph node positive and metastatic disease<br>■ Sarcoma: separated rhabdomyosarcoma as indicated (remainder require inconclusive imaging if > 30 yo)<br>■ Thyroid: moved most of detail into background section, made indications consistent with current NCCN guidance<br>■ MPNST: Added indication in section for NF1<br>■ Prostate cancer: Moved detail for initial staging and non-PSMA tracers into background; updated restaging indications |

| | |
|---|---|
| | ● Regrouped the following Cancers in the table to coincide with grouping in NCCN:<br>○ Biliary Tract<br>○ Bone Cancers<br>○ Uterine Cancers<br>● Added TNM explanation and cancer-specific background sections when needed for additional<br>● General information moved to the beginning of the guideline with added statement on clinical indications not addressed in this guideline |

# LEGAL AND COMPLIANCE

## Guideline Approval

### *Committee*

**Reviewed / Approved by Evolent Specialty Clinical Guideline Review Committee**

## Disclaimer

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