

Navigating Nuclear Medicine: Understanding Proper Documentation and Coding

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Agenda

- Introduction to Nuclear Medicine
- Terminology
- Types of Studies:
 - Diagnostic Imaging
 - Therapeutic
 - PET Imaging
- Coverage Considerations
- Documentation Tips

Sources/References



What is Nuclear Medicine Imaging?

- Nuclear Medicine Imaging is a method of producing images by detecting radiation in the body after a radioactive tracer is given to the patient
- Diagnostic Nuclear Medicine
- Therapeutic Nuclear Medicine
- NM imaging evaluates function of body structures
- May be done over multiple days

Nuclear Medicine Terminology

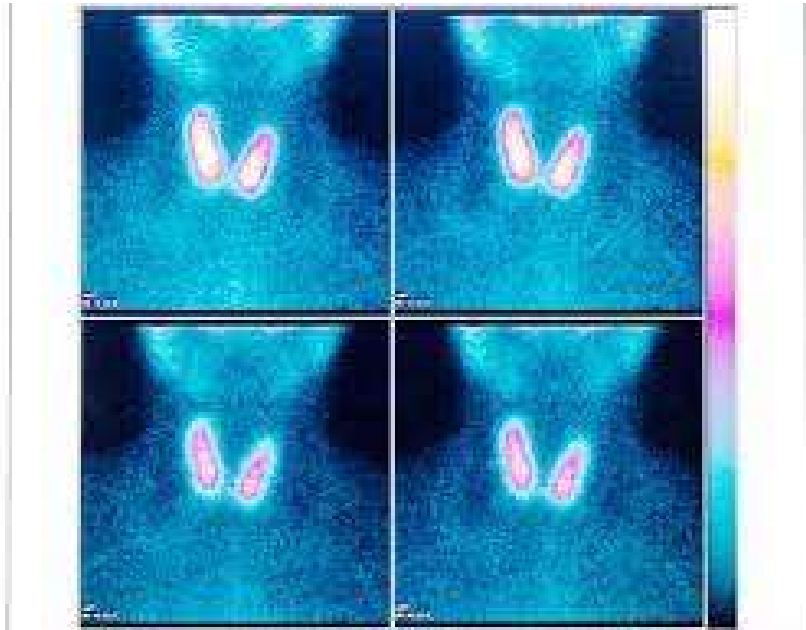
- **Radiopharmaceutical/Radiotracer/Radioisotopes-** Radioactive material used to diagnose dysfunction in body tissue
- **Uptake-**evaluates amount of radioactivity in a specific area
- **Planar Imaging-**Two dimensional image
- **SPECT(Single Photon Emission Computed Tomography)-**Tomographic/Multiplanar imaging
- **Attenuation Correction-**mechanism to remove soft tissue artifact from SPECT images
- **PET (Positron Emission Tomography)-**Assesses perfusion and metabolic activity in organs

Nuclear Medicine Coding Basics

- Injection of the radiopharmaceutical is integral to the NM procedure and not separately billed
- In office/global setting, the radiopharmaceutical is separately billable with the appropriate HCPCS Level II code
- Key Factors in NM coding:
 - Is the study diagnostic or therapeutic?
 - What organ/body structure is being evaluated?
 - What type of imaging was performed?
 - Was uptake performed?
 - When were the images taken?
 - What type of radiopharmaceutical was used?
 - Were additional drugs given to the patient?

Nuclear Medicine-Endocrine System

- Thyroid, Parathyroid, Adrenal
- CPT Codes 78012-78099
- Common RP: Technetium, Thallium, Iodine



Nuclear Medicine-Endocrine System

- Thyroid Studies
 - Diagnose neoplasm, hyper/hypothyroidism
 - May be scan/uptake or both
 - May be done over the course of multiple hours or days
 - Do not unbundle uptake and imaging if both done on the same DOS

THYROID	
78012	Thyroid uptake, single or multiple
78013	Thyroid imaging (including vascular flow, when performed)
78014	Thyroid imaging (including vascular flow, when performed); with single or multiple uptake(s)
78015	Thyroid carcinoma metastases imaging; limited area
78016	Thyroid carcinoma metastases imaging; with additional studies
78018	Thyroid carcinoma metastases imaging; whole body
78020+	Thyroid carcinoma metastases uptake

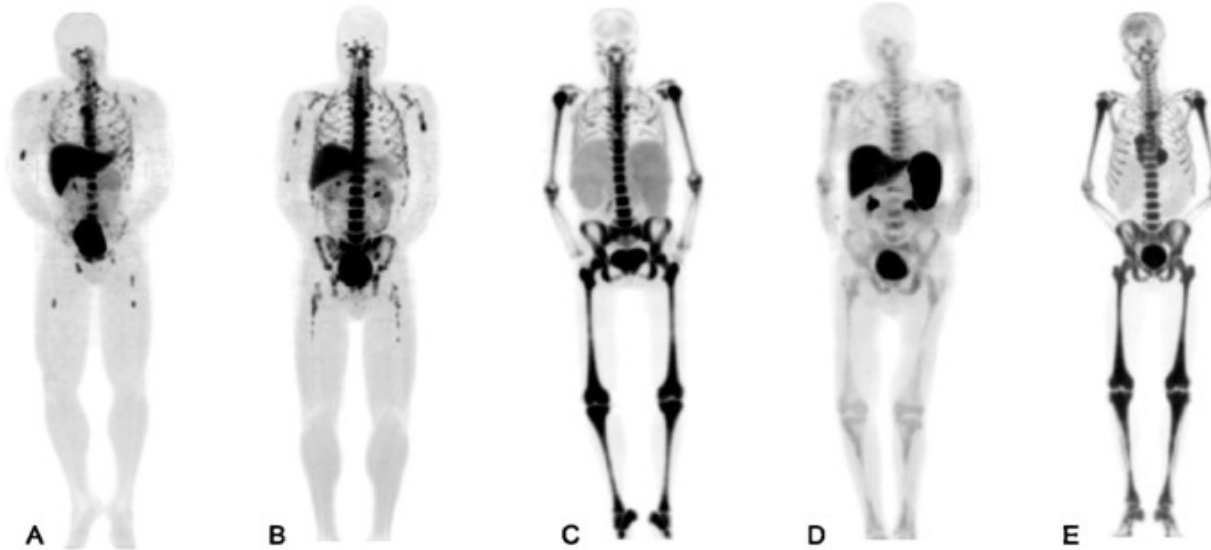
Nuclear Medicine-Endocrine System

- Parathyroid imaging typically done to diagnose neoplasm/metastasis
- Adrenal imaging done to detect neuroendocrine tumors

PARATHYROID	
78070	Parathyroid planar imaging
78071	Parathyroid planar; with tomographic (SPECT)
78072	Parathyroid planar imaging; with tomographic (SPECT), and concurrently acquired computed tomography (CT) for anatomical localization
OTHER STUDIES	
78075	Adrenal imaging
78099	Unlisted endocrine procedure, diagnostic nuclear medicine

Nuclear Medicine Hematopoietic, Reticuloendothelial, & Lymphatic System

- Bone marrow, Plasma/Blood Cells, Spleen, Lymph nodes
- CPT Codes 78102-78199
- Common RP: Technetium, Iodine, Chromium, Indium



Nuclear Medicine Hematopoietic, Reticuloendothelial, & Lymphatic System

- Bone marrow scanning detects active functioning marrow and any abnormalities

BONE MARROW IMAGING	
78102	Bone marrow imaging; limited area
78103	Bone marrow imaging; multiple areas
78104	Bone marrow imaging; whole body

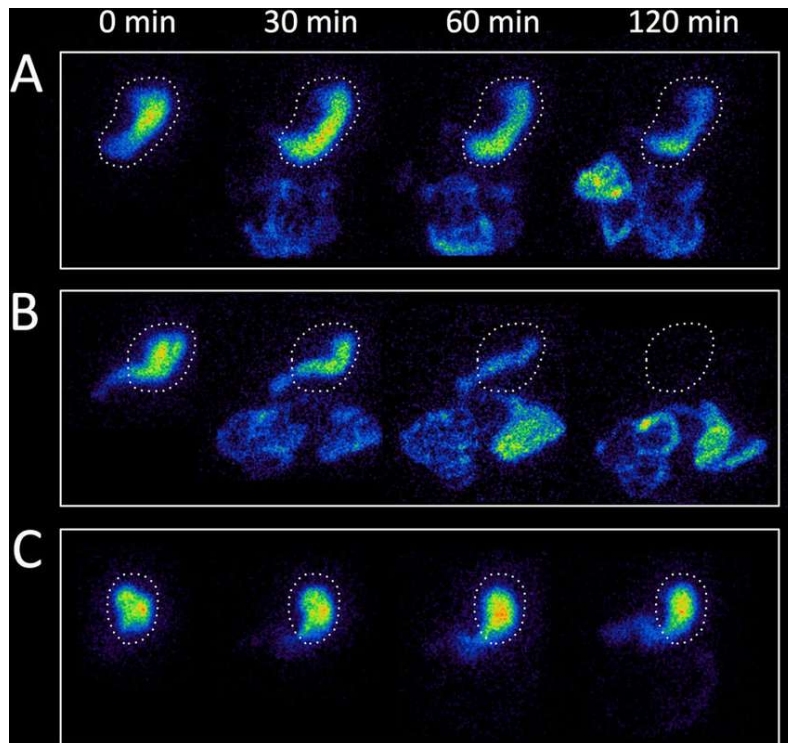
Nuclear Medicine Hematopoietic, Reticuloendothelial, & Lymphatic System

- Lymphoscintigraphy
 - 78195-Includes the injection AND imaging
 - 38792-Injection with no imaging
 - Never report both together
 - If SPECT imaging is done, report 788XX

BLOOD	
78130	Red cell survival study
78185	Spleen imaging only, with or without vascular flow
LYMPHATICS	
78195	Lymphatics and lymph nodes imaging
38792	Injection, radiotracer, for identification of sentinel node
OTHER	
78199	Unlisted hematopoietic, reticuloendothelial and lymphatic procedure, diagnostic nuclear medicine

Nuclear Medicine Gastrointestinal System

- Liver/Biliary, GI tract
- CPT Codes 78201-78299
- Common RP: Technetium, Cobalt, Indium



Nuclear Medicine Gastrointestinal System

- Liver/Spleen:
 - Assess liver/spleen perfusion/Diagnose hemangiomas
 - If only spleen is imaged report 78185
- Biliary:
 - Commonly called HIDA scan
 - Assess biliary function, Identify bile leaks, cholecystitis
 - Use of a fatty meal is not considered pharmacologic intervention

LIVER/SPLEEN/BILIARY	
78201	Liver imaging; static only
78202	Liver imaging; with vascular flow
78215	Liver and spleen imaging; static only
78216	Liver and spleen imaging; with vascular flow
78226	Hepatobiliary system imaging, including gallbladder when present
78227	Hepatobiliary system imaging, including gallbladder when present; with pharmacologic intervention, including quantitative measurement(s) when performed

Nuclear Medicine Gastrointestinal System

- GI tract-salivary glands, esophagus, stomach
 - Diagnose salivary function and potential lesions
 - Diagnose gastric motility issues
 - Evaluate reflux

GI TRACT	
78230	Salivary gland imaging
78231	Salivary gland imaging; with serial images
78232	Salivary gland function study
78258	Esophageal motility
78261	Gastric mucosa imaging
78262	Gastroesophageal reflux study
78264	Gastric emptying imaging study (e.g., solid, liquid, or both)
78265	Gastric emptying imaging study (e.g., solid, liquid, or both); with small bowel transit
78266	Gastric emptying imaging study (e.g., solid, liquid, or both); with small bowel and colon transit, multiple days

Nuclear Medicine Gastrointestinal System

- GI System-Other studies
- Detection of H Pylori infection
- Diagnose GI bleeds

GI OTHER	
78267	Urea breath test, C-14 (isotopic); acquisition for analysis
78268	Urea breath test, C-14 (isotopic); analysis
78278	Acute gastrointestinal blood loss imaging
78290	Intestine imaging (e.g., ectopic gastric mucosa, Meckel's localization, volvulus)
78291	Peritoneal-venous shunt patency test (e.g., for LeVeen, Denver shunt)
78299	Unlisted gastrointestinal procedure, diagnostic nuclear medicine

Nuclear Medicine Musculoskeletal System

- Bones/joints
- CPT Codes 78300-78399
- Common RP: Technetium
- Detect/Diagnose malignancy, osteomyelitis, stress fractures
- Whole body-top of head to at least level of knees
- If whole body and three phase are both performed only report code 78315 (CPT Assistant Jan 2002)

78300	Bone and/or joint imaging; limited area
78305	Bone and/or joint imaging; multiple areas
78306	Bone and/or joint imaging; whole body
78315	Bone and/or joint imaging; 3 phase study
78399	Unlisted musculoskeletal procedure, diagnostic nuclear medicine

Nuclear Medicine Cardiovascular System

- Heart, blood vessels
- CPT codes 78428-78499
- Common RP: Technetium, Thallium, Rubidium, Iodine
- Types of Procedures:
 - Myocardial Perfusion/Cardiac Stress Testing
 - Venous Thrombosis Imaging
 - Myocardial Infarct imaging
 - Cardiac Blood Pool Imaging
 - Myocardial PET
 - Other cardiac/vascular studies
- If performing and billing for the cardiovascular stress testing, report 93015-93018

Nuclear Medicine Cardiovascular System

- Myocardial Perfusion-detects ischemic/infarct cardiac tissue
- Rest/Stress/Redistribution
- Tomographic/Planar
- Single/multiple studies

MYOCARDIAL PERFUSION

78451	Myocardial perfusion imaging, tomographic (SPECT); single study, at rest or stress
78452	Myocardial perfusion imaging, tomographic (SPECT); multiple studies, at rest and/or stress and/or redistribution and/or rest reinjection
78453	Myocardial perfusion imaging, planar; single study, at rest or stress
78454	Myocardial perfusion imaging, planar; multiple studies, at rest and/or stress and/or redistribution and/or rest reinjection

Nuclear Medicine Cardiovascular System

- Differentiates acute/chronic venous thrombosis

VENOUS THROMBOSIS IMAGING

78456	Acute venous thrombosis imaging, peptide
78457	Venous thrombosis imaging, venogram; unilateral
78458	Venous thrombosis imaging, venogram; bilateral

Nuclear Medicine Cardiovascular System

- Evaluates myocardial infarction several days after an acute event

MYOCARDIAL INFARCT IMAGING

78466	Myocardial imaging, infarct avid, planar; qualitative or quantitative
78468	Myocardial imaging, infarct avid, planar; with ejection fraction by first pass technique
78469	Myocardial imaging, infarct avid, planar; tomographic SPECT with or without quantification

Nuclear Medicine Cardiovascular System

- Evaluates ventricular function
- MUGA
- Planar/SPECT
- Single/Multiple

CARDIAC BLOOD POOL IMAGING	
78472	Cardiac blood pool imaging, gated equilibrium; planar, single study at rest or stress, wall motion study plus ejection fraction
78473	Cardiac blood pool imaging, gated equilibrium; multiple studies, wall motion study plus ejection fraction, at rest and stress
78481	Cardiac blood pool imaging (planar), first pass technique; single study, at rest or with stress, wall motion study plus ejection fraction
78483	Cardiac blood pool imaging (planar), first pass technique; multiple studies, at rest and with stress, wall motion study plus ejection fraction
78494	Cardiac blood pool imaging, gated equilibrium, SPECT, at rest
78496+	Cardiac blood pool imaging, gated equilibrium, single study, at rest, with right ventricular ejection fraction by first pass technique

Nuclear Medicine Cardiovascular System

- Assesses heart failure
- Category III

MYOCARDIAL INNERVATION	
0330T	Myocardial sympathetic innervation imaging, planar qualitative and quantitative assessment
0332T	Myocardial sympathetic innervation imaging, planar qualitative and quantitative assessment; with tomographic SPECT
OTHER CARDIAC STUDIES	
78499	Unlisted cardiovascular procedure, diagnostic nuclear medicine

Nuclear Medicine Respiratory System

- V/P or V/Q scans
- CPT Codes 78579-78599
- Common RP: Technetium(MAA, Xenon, DTPA)
- Evaluate air movement and blood circulation in lungs, diagnose pulmonary emboli, preoperative testing for candidates for removal of lung/lung tissue
- These codes are planar imaging; if SPECT or SPECT CT is performed refer to 788XX

VENTILATION/PERFUSION

78579

Pulmonary ventilation imaging (e.g., aerosol or gas)

78580

Pulmonary perfusion imaging (e.g., particulate)

78582

Pulmonary ventilation (e.g., aerosol or gas) and perfusion imaging

QUANTITATIVE DIFFERENTIAL VENTILATION/PERFUSION

78597

Quantitative differential pulmonary perfusion, including imaging when performed

78598

Quantitative differential pulmonary perfusion and ventilation (e.g., aerosol or gas), including imaging when performed

UNLISTED

78599

Unlisted respiratory procedure, diagnostic nuclear medicine

Nuclear Medicine Central Nervous System

- Brain, spinal cord, CSF
- CPT Codes 78600-78699
- Common RP: Technetium, Indium, Iodine
- Detect brain death, evaluate seizures, dementia

BRAIN STUDIES	
78600	Brain imaging, less than 4 static views
78601	Brain imaging, less than 4 static views; with vascular flow
78605	Brain imaging, minimum 4 static views
78606	Brain imaging, minimum 4 static views; with vascular flow
78610	Brain imaging, vascular flow only

Nuclear Medicine Central Nervous System

- CSF Studies
 - Evaluate for CSF leaks and abnormalities
 - Injection/LP codes may be separately billed
- Other Studies

CSF STUDIES	
78630	Cerebrospinal fluid flow, imaging (not including introduction of material); cisternography
78635	Cerebrospinal fluid flow, imaging (not including introduction of material); ventriculography
78645	Cerebrospinal fluid flow, imaging (not including introduction of material); shunt evaluation
78650	Cerebrospinal fluid leakage detection and localization
OTHER CNS STUDIES	
78660	Radiopharmaceutical dacryocystography
78699	Unlisted nervous system procedure, diagnostic nuclear medicine

Nuclear Medicine Genitourinary System

- Kidneys, Ureters, Bladder, Testicles
- CPT Codes 78700-78799
- Common RP: Technetium, Iodine
- Assess for renal flow and function, renal hypertension, urinary problems

KIDNEYS	
78700	Kidney imaging morphology
78701	Kidney imaging morphology; with vascular flow
78707	Kidney imaging morphology; with vascular flow and function, single study without pharmacological intervention
78708	Kidney imaging morphology; with vascular flow and function, single study, with pharmacological intervention
78709	Kidney imaging morphology; with vascular flow and function, multiple studies, with and without pharmacological intervention
78725	Kidney function study, non-imaging radioisotopic study

Nuclear Medicine Genitourinary System

- VCUG/VCU
- Assess for ureteral reflux, voiding problems
- If provider also performs the injection procedure see codes 51701, 51702, 51703

URETERS/BLADDER	
78730+	Urinary bladder residual study
78740	Ureteral reflux study (radiopharmaceutical voiding cystogram)
OTHER STUDIES	
78761	Testicular imaging with vascular flow
78799	Unlisted genitourinary procedure, diagnostic nuclear medicine

Nuclear Medicine Other Diagnostic

- Evaluate Abscess, Tumor, Infection
- CPT Codes 78800-78999
- Common RP: Indium, Technetium, Thallium, Iodine, Gallium, Xenon, Labeled WBC
- Codes are Based on:
 - Type of Imaging:
 - Planar/Tomo/SPECT/SPECT CT
 - Timing/Intervals
 - Single/Multiple Days
 - Areas Imaged:
 - Single/Multiple Areas/Whole Body
- If an organ specific codes exist, review those prior to selecting a code from this series

Nuclear Medicine Other Diagnostic

PLANAR	
78800	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s); planar, single area, single day imaging
78801	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s); planar, 2+ areas, 1 or more days imaging or single area imaging over 2 or more days
78802	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s); planar, whole body, single day imaging
78804	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s); planar, whole body, requiring 2+ days imaging

Nuclear Medicine Other Diagnostic

- If whole body (78802/78804) is performed in addition to SPECT or SPECT/CT both codes may be reported

SPECT

78803	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s); tomographic (SPECT), single area or acquisition, single day imaging
78831	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s); tomographic (SPECT), minimum 2 areas or separate acquisitions (e.g., lung ventilation and perfusion), single day imaging, or single area or acquisition over 2 or more days

SPECT CT

78830	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s); tomographic (SPECT) with concurrently acquired computed tomography (CT) transmission scan for anatomical review, localization and determination/detection of pathology, single area or acquisition, single day imaging
78832	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s); tomographic (SPECT) with concurrently acquired computed tomography (CT) transmission scan for anatomical review, localization and determination/detection of pathology, minimum 2 areas or separate acquisitions, single day imaging, or single area or acquisition over 2 or more days



Nuclear Medicine Other Diagnostic

- 78835 may only be reported with 78830 or 78832

OTHER DIAGNOSTIC	
78835+	Radiopharmaceutical quantification measurement(s) single area
78808	Injection procedure for radiopharmaceutical localization by non-imaging probe study, intravenous (e.g., parathyroid adenoma)
78999	Unlisted miscellaneous procedure, diagnostic nuclear medicine

Nuclear Medicine Imaging-Therapeutic Studies

- Therapeutic/Palliative
- CPT 79005-79999
- CPT codes are dependent on the RP administration method

THERAPEUTIC	
79005	Radiopharmaceutical therapy, by oral administration
79101	Radiopharmaceutical therapy, by intravenous administration
79200	Radiopharmaceutical therapy, by intracavitary administration
79300	Radiopharmaceutical therapy, by interstitial radioactive colloid administration
79403	Radiopharmaceutical therapy, radiolabeled monoclonal antibody by intravenous infusion
79440	Radiopharmaceutical therapy, by intra-articular administration
79445	Radiopharmaceutical therapy, by intra-arterial particulate administration
79999	Radiopharmaceutical therapy, unlisted procedure

PET Scans

- Assesses perfusion and metabolic activity in organs
- Most Common RP: FDG
- Types of PET
 - Oncologic/Metabolic
 - Site Specific:
 - Cardiac PET
 - Neurologic PET
- PET/CT only when on a hybrid/integrated single unit
 - NO CPT code that describes using software to “fuse” images from separate units-must use unlisted
- Modifiers
- Coverage is complex
 - CED-Coverage with Evidence Development
 - NCD 220.6.17
 - MACS have authority to make coverage decisions

Site Specific PET Scans

- Metabolic-evaluates the metabolic activity of the brain cells
- Perfusion-evaluates the brain's blood supply/flow
- 78608 should only be used for FDG studies (*Clinical Examples in Radiology 2017*) for distinguishing Alzheimer's disease and frontotemporal dementia.
- For studies performed on patients to evaluate density of beta-amyloid plaque, a sign of Alzheimer's disease, refer to codes 78811 and 78814
 - Refer to NCD for coverage limitations for this.
 - Generally one scan per patient per lifetime may be covered by Medicare

BRAIN/NEUROLOGIC PET

78608	Brain imaging, positron emission tomography (PET); metabolic evaluation
78609	Brain imaging, positron emission tomography (PET); perfusion evaluation

Site Specific PET Scans

CARDIAC PET	
78459	Myocardial imaging, positron emission tomography (PET), metabolic evaluation study, single study
78429	Myocardial imaging, positron emission tomography (PET), metabolic evaluation study, single study, with concurrently acquired computed tomography transmission scan
78491	Myocardial imaging, positron emission tomography (PET), perfusion study; single study, at rest or stress (exercise or pharmacologic)
78430	Myocardial imaging, positron emission tomography (PET), perfusion study, single study, with concurrently acquired computed tomography transmission scan
78492	Myocardial imaging, positron emission tomography (PET), perfusion; multiple studies at rest and stress (exercise or pharmacologic)
78431	Myocardial imaging, positron emission tomography (PET), perfusion study; 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, dual radiotracer (e.g., myocardial viability)
78433	Myocardial imaging, positron emission tomography (PET), combined perfusion with metabolic evaluation study, dual radiotracer (e.g., myocardial viability); with concurrently acquired computed tomography transmission scan
78434+	Absolute quantitation of myocardial blood flow (AQMBF), positron emission tomography (PET), rest and pharmacologic stress

PET Scans

- Oncologic PET/PET-CT
- Limited, skull base-mid thigh, whole body
- Whole body-Top of head to at least level of knees

PET	
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
PET-CT	
78814	Positron emission tomography (PET) with concurrently acquired computed tomography (CT) for attenuation correction and anatomical localization imaging; limited area
78815	Positron emission tomography (PET) with concurrently acquired computed tomography (CT) for attenuation correction and anatomical localization imaging; skull base to mid-thigh
78816	Positron emission tomography (PET) with concurrently acquired computed tomography (CT) for attenuation correction and anatomical localization imaging; whole body

Initial & Subsequent PET

- For all oncologic PET studies with FDG, providers must append one of the below modifiers to 78811-78816 or 78608 as appropriate:
 - **-PI:** PET or PET/CT to inform the INITIAL treatment strategy of tumors that are biopsy proven or strongly suspicious of cancerous based on other diagnostic testing
 - **-PS:** PET or PET/CT to inform the SUBSEQUENT treatment strategy of cancerous tumors when the beneficiary's treating physician determines that the PET study is needed to inform subsequent anti-tumor strategy
- Medicare allows coverage for 1 PI and 3 PS billings for the SAME cancer diagnosis during a patient's lifetime.
 - Any additional PET performed should append modifier-KX to inform the payer that the provider has maintained documentation of medical necessity for the rationale of these additional studies
- Medicare does not cover studies performed for surveillance purposes in a patient with previous treated cancer who has no clinical evidence to suggest active disease. These studies are considered to be screening rather than subsequent strategy scans

NM-Medical Necessity & Coverage

- These studies generally have coverage limitations
- Signs & symptoms and thorough history should be documented
- PET Coverage Limitations:
 - Male/Female Breast cancer-Initial is noncovered; staging of nodes noncovered
 - Cervical cancer has limited coverage (only for staging)
 - Melanoma has limited coverage
 - Prostate is noncovered
 - Na-F18 PET for bone mets (78811-78816) is noncovered
 - Do not use standard bone scan codes
 - Brain PET coverage is limited
- Non-covered PET Scan HCPCS Codes:
 - The following codes should be submitted to Medicare in the following scenarios:
 - G0219-PET whole body; melanoma for non-covered indications
 - G0235-PET imaging, any site, NOS
 - G0252-PET imaging for initial diagnosis or surgical planning of breast cancer

Documentation Tips

- The documentation should answer the questions we asked at the beginning:
 - *Is the study diagnostic or therapeutic?*
 - *What organ/body structure is being evaluated?*
 - *What type of imaging was performed?*
 - *Was uptake performed?*
 - *When were the images taken?*
 - *What type of radiopharmaceutical was used?*
 - *Were additional drugs given to the patient?*
- Clinical history should be thoroughly documented
- Report should have a clear report header/title, technique, findings, and impression



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