Nuclear Medicine & PET Coder—2023

Including diagnostic, therapeutic and radiopharmaceuticals

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This book reflects coding information from the 2023 CPT® manual.

Introduction

The *Nuclear Medicine Coder* is designed to help readers understand:

- Appropriate coding of nuclear medicine procedures for both hospital (technical) and physician (professional) entities;
- Correct charging or billing for these procedures and associated products;
- The terms, phrases, and methods related to the procedures.

Relevant codes are organized by body system (e.g., endocrine system). Each section opens with the code series applicable to the specific body system and pertinent hospital revenue codes. This information is followed by a table that lists drugs and radiopharmaceuticals typically used for nuclear medicine procedures performed on the specific body system (e.g., endocrine system). Each code listed is followed (with few exceptions) by a general definition and tips for billing. A table of information from the 2023 Medicare physician fee schedule (MPFS) and the hospital outpatient prospective payment system (OPPS) concludes the section.

On November 23, 2022, the Centers for Medicare & Medicaid Services (CMS) published the 2023 hospital outpatient prospective payment system (OPPS) final rule, which is available at *https://www.federalregister.gov/public-inspection/2022-23918/medicare-program-hospital-outpatient-prospective-payment-and-ambulatory-surgical-center-payment*.

On November 18, 2022, CMS published the final 2023 Medicare physician fee schedule (MPFS) final rule, which is available at *https://www.federalregister.gov/public-inspection/2022-23873/medicare-and-medicaid-programs-cy-2023-payment-policies-under-the-physician-fee-schedule-and-other*.

2023 MPFS and Hospital OPPS Tables

All MPFS relative value units (RVUs) and OPPS ambulatory payment classification (APC) rates included in these tables are the final *national* rates (no local adjusters).

Each table is designed as follows.

- ***Column 1—Code/Description:*** The numeric CPT and alpha-numeric HCPCS Level II codes for the services covered in each section are followed by the procedure descriptor.
- ***Column 2—Modifier:*** "Global" indicates the global service; "TC" indicates the technical component (TC); and "26" indicates the professional component (PC). (Note: The global service includes both the TC and the

PC, and physicians who furnish both components of the service bill using this method.)

- ***Columns 3 through 5—MPFS:*** From left to right, you will find *SC* (status code), which indicates how the code is paid, and *RVU*, which applies to the code in the first column. RVUs listed apply to both non-facility and facility-based services unless otherwise noted. (See Appendix 2 for a list of MPFS status codes and their definitions.) The "Rate" column shows the national payment rate for the code.
- ***Columns 6 through 8—Hospital OPPS:*** From left to right, you will find the *APC*; the *SI* (status indicator), which indicates how the code is paid; and the national payment *rate* of the code listed in the last column. (See Appendix 3 for a list of the hospital OPPS status indicators and their definitions.)

MPFS Rates Further Explained. In the most general terms, the MPFS reimbursement for a service or procedure is the product of the RVU for its global, technical, or professional component and the Medicare payment conversion factor. To determine actual reimbursement for your specific practice, the RVU must also be adjusted with the geographic practice cost index (GPCI) for your locality.

CMS is continuing to follow a provision of the Deficit Reduction Act (DRA) of 2005 that imposes a payment ceiling on most imaging procedures. This cap limits payment for the TC under the MPFS to the amount paid for the procedure under the OPPS. CMS has published revised RVUs for the imaging procedures affected, where needed, to bring the fee schedule payment into line with the OPPS rate. Note that this provision applies only to the TC of global services and to services consisting of only a TC.

The formula for calculating the Medicare fee schedule payment amount for a given service and fee schedule area can be expressed as follows:

Payment = [(RVU work x GPCI work) + (RVU PE x GPCI PE) + (RVU malpractice x GPCI malpractice)] x CF.

Overview of Nuclear Medicine Procedures

Nuclear medicine is defined as the clinical discipline concerned with the diagnostic and therapeutic uses of radionuclides, excluding the therapeutic use of sealed radiation sources. Examples of the radioactive materials used to accomplish imaging include MDP for bone scans, MAA, Xenon, or DTPA for lung scans, technetium, or iodine for thyroid uptakes and scans, and tetrofosmin, sestamibi, or thallium for cardiac imaging.[1]

Nuclear medicine procedures are performed for either diagnostic or therapeutic reasons. The patient receives a chemical or pharmaceutical preparation attached to a radionuclide via an injection, ingestion, or inhalation. Doses of radioactive material[2] given in both diagnostic and therapeutic studies are described in terms such as millicuries or microcuries (from the root word "curie" – a unit of radioactivity).

Once the radioactive material is inside the patient's body, a record or reading is taken to provide a diagnostic or therapeutic result. A specialized device known as a *scintillation* or *gamma camera* performs imaging or scanning. While not common, uptakes may also be performed on this unit. Gamma cameras may have one, two, or even three separate heads to detect and measure radioactivity. Gamma rays are a type of radiation emitted by the administered isotope. (Other types of radiation are alpha and beta.) The energy level emitted by the gamma rays' radiation is best suited to nuclear imaging.

Diagnostic Studies

Diagnostic studies help establish or confirm a diagnosis. These studies are performed with planar imaging, single photon emission computerized tomography (SPECT) gamma cameras[3], positron emission tomography (PET), integrated PET/computed tomography (PET/CT) systems, SPECT/CT, or uptake probes. Common procedures are bone scans, SPECT imaging, cardiac imaging, lung scans, thyroid uptakes and scans, and renal (kidney) imaging.

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[1] In the 1980s, nuclear medicine led the way in treatments of cancers with radioactively labeled monoclonal antibodies. These materials carried cytotoxic doses of radioactivity to the precise cells the antibodies targeted. Recently, monoclonal materials have made their way to the diagnostic arena in the form of materials such as OncoScint, ProtaScint, and Zevalin.

[2] A complete list of radioactive materials used in diagnostic and therapeutic procedures appears in Appendix 1.

[3] Not all gamma cameras can produce SPECT images, but all do have the ability to produce planar images.

UPTAKE

Imaging is not the only reason for a nuclear medicine procedure. The desired outcome may be to know what amount or percentage of the radioactivity went to a specific area. The detection or counting of this amount, referred to as uptake, is usually performed with a probe. This simple, one-probe detector functions in much the same way as the multidetector cameras used for imaging and larger probes used for studies such as thyroid uptakes. An uptake procedure measures the absorption by a tissue or organ of the radioactive substance, such as radioactive iodine. For example, the amount of radioactivity present in the thyroid tissue is measured and compared with normal values to determine whether the patient has an overactive (hyperthyroid), underactive (hypothyroid) or normal thyroid (euthyroid). Depending upon the result, thyroid therapy may result.

PLANAR IMAGING

Planar imaging produces a picture in two dimensions. To visualize the result of planar imaging, think of a Halloween skeleton. It shows all of the basic bones (ribs, legs, skull, etc.), but if you move to the side, you don't get a sense of depth.

SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY

Single photon emission computed tomography (SPECT) also is called ECT (emission computed tomography) or tomographic scanning. The procedure enables the interpreting physician to see the volume of the area and allows the image to be finely examined in multiple planes. The pictures or images produced in multiple dimensions lets the radiologist or cardiologist determine not only whether there is an abnormal area, but also its location in all three dimensions (x, y and z axes).

In SPECT, the gamma camera acquires the imaging data (radioactivity) and sophisticated computers process the data to allow providers to see a specific area in several planes. SPECT imaging "cuts" the area of the body from front to back, from side to side, or from head to toe.

In a body organ or structure, images taken from end to end (head to toe) are called *transverse*, *axial* or *transaxial images*. The cuts from side to side (or left to right) are sagittal images. Slicing that occurs from the front of the body to the back is known as the coronal image.

The common use of SPECT imaging is for studies of the heart (using radiopharmaceuticals such as thallium, tetrofosmin or sestamibi), but the procedure also may be used for detailed evaluation of the myocardium, liver, bone, or brain. SPECT imaging can be done alone or in addition to the basic planar study.

The following codes in the current procedural terminology (CPT) manual may be used for SPECT procedures.

78071	78494
78451*	78803
78452*	78831
78469	0332T

The following codes in the CPT manual may be used for SPECT/CT procedures.

78072	78452*	78832
78451*	78830	78835

POSITRON EMISSION TOMOGRAPHY

Positron emission tomography (PET) scanning, also known as positron emission transverse tomography (PETT), positron emission mammography (PEM) or positron emission coincident imaging (PECI), is a noninvasive imaging procedure that assesses perfusion and the level of metabolic activity in various organ systems of the human body. That is, it generates real-time imaging of biochemical processes. While not typically seen in the clinical setting in the past, it is becoming more common. CMS continues to expand coverage of cancer-detecting PET scans to encompass more approved clinical uses for a variety of types of cancer. This may allow Medicare beneficiaries to skip invasive procedures. It is expected that in the future CMS will increase coverage for additional conditions, but that more scientific evidence is needed.

A positron camera is used to produce cross-sectional tomographic images by detecting radioactivity from a radiopharmaceutical that is injected into the patient. Images are corrected for scatter using a mathematical calculation by attenuation correction (AC) obtained from a transmission scan[4] image. The procedure is used, among other reasons, to evaluate recurrent colorectal cancer in patients with rising levels of carcinoembryonic antigen (CEA), for staging of lymphoma (both Hodgkins and non-Hodgkins) when the PET scan substitutes for a gallium scan, for the detection of recurrent melanoma, and for noninvasive imaging of the perfusion of the heart for the diagnosis and management of patients with known or suspected coronary artery disease. (Note: Medicare does not cover all uses of PET scans.) Detailed coverage information on PET diagnostic imaging can be found later in this publication.

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* Codes 78451 and 78452 are listed in each section, the SPECT and the SPECT/CT portions. These codes (78451 and 78452) are in each because if a provider performs SPECT/CT for myocardial perfusion imaging (MPI), whether it be for single or multiple studies, the SPECT codes are assigned as they include attenuation correction (AC).

[4] All PET scanners require some form of attenuation correction obtained from the transmission scan. This is not needed at all for planar imaging and not required for SPECT but can be helpful and is gaining popularity with SPECT imaging. A transmission image can be obtained with several methods including an external radioactive rod or line source or, as in the case of PET/CT, by the CT portion of the study.

Integrated Imaging Systems

POSITRON EMISSION TOMOGRAPHY/COMPUTED TOMOGRAPHY

A type of imaging technology referred to as *integrated imaging systems*—sometimes-called *hybrid imaging systems*—continues to evolve. These systems merge two technologies together such as a PET scanner and a CT scanner. The initial models of this new technology utilize the CT portion of the scanner and image for attenuation correction[5] only. PET/CT systems are now capable of utilizing the CT portion of the PET/CT for not only attenuation correction, but fully diagnostic CT imaging. The coding and billing for these procedures is evolving. We recommend you stay close to CMS as well as the specialty societies coding guidance as we anticipate changes in guidance and use of these codes in the future.

Another important term used with this new technology is "fusion." We caution you regarding the multiple uses of this word with the emerging technologies. Although it is true that the interpreting physician does review and read the transmission and emission data in addition to the "fused PET and CT image," it can also be true that external software can be utilized with two separate, non-integrated imaging systems, to obtain and fuse the PET and CT studies. At present, there are NO CPT codes that describe using the (external) software method. As always, and per CPT guidance, in the absence of a specific code, use an unlisted code (e.g., xxx99) to describe software-fused images. Medicare does not currently recognize or pay for software-fused nuclear medicine procedures. Other third-party payers (TPPs) may, but literature and proof of validation of the software technique would be required when educating your payers about this type of fusion imaging.

In 2005, CPT introduced three codes that describe PET/CT technology when utilized for attenuation correction and anatomic localization. In 2008, the American Medical Association (AMA) made minor editorial changes to the PET and PET/CT codes and in 2020, CPT restructured the myocardial PET section to the PET and PET/CT codes. In this publication, details of these changes can be found in the section titled PET Diagnostic Imaging, Including Oncology PET and in the section titled Cardiovascular System Including Myocardial PET.

[5] Attenuation correction is a technique of using quantitative methods or calculations to correct images for the effects of imaging artifacts (scatter and absorption) due to soft tissues and/or bones. This technique is achieved by obtaining a new set of data or images called a transmission scan. While normal nuclear medicine imaging usually involves an emission image (obtained from the radiotracer within the patient's body), attenuation correction uses additional imaging, transmission data (external radiation source) of the patient's soft tissue distribution to create an 'image map' of the body's attenuation effects. Examples of external radiation sources are a gadolinium-153 line source or CT.

SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY/ COMPUTED TOMOGRAPHY

Another variation of this imaging technology is SPECT/CT. Combining SPECT with CT used for both attenuation correction and anatomical localization is becoming more common. Like PET/CT, SPECT/CT acquires both scans with the patient in the same position. Specialized registration software is then utilized to perform reconstruction data-sets and fused images. This is similar to software-fused techniques used for PET/CT. In addition to an organ specific option for SPECT/CT of the parathyroid (see code 78072), non-anatomic site-specific code options also exist (see codes 78830 and 78832). These non-specific code options are based upon several criteria, such as:

1. Number of areas imaged
2. Number of days imaged
3. Number of studies performed*
4. Number of SPECT or SPECT/CT acquisitions performed.

We anticipate new radiotracers specifically targeting cancers of the brain, thyroid, prostate, breast, lung, ovaries, kidneys, and liver (as well as heart and bone diseases and defects) may pave the way for the widespread use of this new technology. This molecular imaging concept will not only provide diagnostic images, it is expected to provide for the same agents use in therapy, similar to Zevalin therapy.

As with all nuclear medicine coding, providers should look first for an organ-specific code(s); if there are none available, providers should report the next closest nuclear medicine CPT code.

Therapeutic Treatments

Nuclear medicine also may be used in therapeutic treatments. Therapeutic procedures provide relief from a specific problem by using a radioactive material. Two common uses are the treatment of patients with radioactive iodine for hyperthyroidism (Graves' disease) or carcinoma. As in diagnostic studies, a radioactive material is used, but in larger amounts or doses.

Therapeutic nuclear medicine procedures also are performed for palliative purposes. Palliative procedures reduce the severity of the current condition without curing the underlying disease. An example of this is the injection of strontium (Metastron) into cancer patients.

* This concept would apply to a ventilation/perfusion SPECT or SPECT/CT exam. While the lungs are a "single area," because two different tracers are used, one for the ventilation and then a completely separate material for the perfusion study, this would be considered a "multiple area" procedure.

Coding, Payment and Policy Guidelines

Coding Basics

The *Nuclear Medicine Coder* contains information from a variety of coding systems: the AMA's CPT codes, the CMS Healthcare Common Procedure Coding System (HCPCS) Level II drug, procedure and supply codes, and the American Hospital Association's (AHA) hospital revenue codes. Each of these coding systems are owned by the organizations mentioned above, and, therefore, those organizations are the authority for appropriate use of their individual coding systems.

CPT often outlines important coding guidance in its introductory sections that should be reviewed each year. For example, in the beginning of the book, the AMA discusses selecting the accurate code or service description and the importance of not approximating a service when selecting the CPT code.

Having said this, we also note that the individual payer does have latitude and discretion and is the final authority for coding and billing guidance for the patients they service. Finally, ***the physician is responsible*** for the choice of codes for each of the payers he/she bills.

Billing for Studies

The CPT Manual includes the following clarification relative to "who" may report CPT codes for radioimmunoassay (RIA) procedures: "Radioimmunoassay tests are found in the Clinical Pathology section (codes 82009–84999). These codes can be appropriately used by any specialist performing such tests in a laboratory licensed and/or certified for radioimmunoassays. The reporting of these tests is not confined to clinical pathology laboratories alone."

Billing for nuclear medicine studies, whether for the hospital (technical) or physician (professional) portion of these studies requires, at minimum, the submission of the appropriate diagnostic (78xxx) or therapeutic (79xxx) HCPCS/CPT code. Different, specific rules govern the reporting of these codes to Medicare Part A or Part B, but the same range of CPT and HCPCS Level II codes apply to all nuclear medicine procedures with the exception of "C" HCPCS Level II codes that are used only in the hospital OPPS. A close review of the *Medicare Claims Processing Manual* (Publication 100-4), Chapter 13 is strongly recommended (*http://www.cms.hhs.gov/manuals/downloads/clm104c13.pdf*).

DISCONTINUED SERVICES

Billing for radiopharmaceuticals and or nuclear medicine services when a study is discontinued or a patient does not show up for a procedure (two different scenarios regarding these policies):

1. Patient does not show up for scheduled procedure and you are left with the cost of the radiopharmaceutical.

If services are not rendered, you may not bill Medicare; however, you may choose to bill the patient directly. See CMS Transmittal 1279 CR 5; 613 for further assistance.

2. Patient shows up, is administered a radiopharmaceutical, and for some reason does not return; or the patient gets ill or claustrophobic, etc.

Select the CPT code based on the procedure actually performed (for example, if only one image is obtained you may choose a limited or single study CPT procedure code). If no imaging was performed, choose the lowest level CPT code in the intended section of CPT and bill with the modifier -52 (reduced service) or modifier -53 (discontinued service), if appropriate.

Remember, for nuclear medicine procedures, you have begun the study if you have administered a radiopharmaceutical—administration is an integral part of the nuclear medicine procedure code. Dictating a detailed report of the administered radiopharmaceutical and any imaging is necessary and may be required with the submitted bill so the payer can determine a payment based on what was performed. You should bill for any purchased and administered radiopharmaceutical, using the appropriate HCPCS Level II code.

In some locations, payer systems cannot accommodate modifier -52, and the payer may instruct you to code for the radiopharmaceutical plus the appropriate administration code.

Modifiers to Use

In addition to selecting appropriate CPT codes, billers should pay attention to the use of modifiers. Modifiers are used to adjust payment, slightly alter or add information to a procedure/service provided. A modifier indicates, to a payer, that a service or procedure has been **altered** by some specific circumstance but has not changed in its definition or code.

Modifiers should be used in accordance with appropriate procedures, as needed, and sometimes required by payers. Payers are not consistent in modifier use, nor is adoption universal from payer to payer in recognizing modifiers. Therefore, we recommend you check with your local payers for their specific guidelines and policies on modifier usage.

Also refer to your current CPT and/or HCPCS manual for a complete list of modifiers, descriptors and instructions.

Modifier	Short Description	Used When:
22	Increased procedural service	Services performed are significantly greater than usually required
26	Professional component	Radiologist provides only the interpretation part of the study
50	Bilateral procedure	The same procedure is performed on both sides of the body. *Note:* Per AMA instruction, a modifier 50 should not be appended to designated add-on codes (see Appendix F). Per Medicare instruction, modifier 50 may be allowed with add-on codes in accordance with MUE/MAI values. Individual payers can make and apply their own policy rules.
51	Multiple procedures	Multiple surgical procedures are performed at the same session (add to second and following)
52	Reduced services	Less than what is described by the code is performed. *Note:* Medicare altered its definition for modifier-52 and restricts it to use only when anesthesia is not planned. Check with your local contractor for guidelines.
53	Discontinued procedure	Indicates physician elected to terminate a surgical or diagnostic procedure due to extenuating cir-cumstances, or those threatening the well-being of the patient
59	Distinct procedural service	Services with CCI edits are legitimately performed on same day (e.g., different lesions, separate access sites). *Note:* CMS introduced the following new subset modifiers that may be used (effective January 1, 2015) instead of modifier -59, when appropriate. Check with your local contractor for guidelines on using these modifiers. -XE Separate encounter -XS Separate structure -XP Separate practitioner -XU Unusual non-overlapping service
76	Repeat procedure or service by same physician or other qualified health professional	An exam or procedure is repeated on the same day by the same physician (e.g., multiple chest x-rays)
77	Repeat procedure by another physician or other qualified health professional	An exam or procedure is repeated on the same day by a different physician or other qualified healthcare professional (e.g., multiple chest x-rays)
LT	Left side	Procedure is performed on the left side of the body
RT	Right side	Procedure is performed on the right side of the body
TC	Technical component	Facility performs and bills for the performance of the exam

Remember, not all modifiers used for professional services billing are also available for hospital services billing.

MULTIPLE PROCEDURE PAYMENT REDUCTION (MPPR) POLICY (CPT MODIFIER 51)

This policy states that when certain procedures are performed in tandem, full payment will be made for only one of the two codes listed. The additional code will be reimbursed at a reduced fee. The codes and payment structure are as follows.

FULL REIMBURSEMENT (100%)	REDUCED REIMBURSEMENT (50%)
78803	78802
78803	78306

Details about modifier 51 (multiple procedure) can be found in the *Medicare Claims Processing Manual* (publication 100-4) at *https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/clm104c12.pdf*. See Chapter 12, section 40.6 and Chapter 13, section 50.3, or *https://www.cms.gov/regulations-and-guidance/guidance/manuals/downloads/clm104c13.pdf*.

MPPR EXPANSION

CMS will continue with the three expanded applications it introduced in 2013 and the statutory modifications to the professional component (PC) of advanced imaging services (computed tomography [CT], magnetic resonance imaging [MRI], and ultrasound). The same list of codes to which the MPPR on the technical component (TC) of advanced imaging already applies (see Addendum A of the final rule). Thus, the MPPR would apply to the PC and the TC of the codes.

In the 2017 final rule, CMS significantly modified its 2016 policy that implemented a 25 percent reduction to the PC of the second and subsequent advanced imaging services furnished in the same session. As mandated by the Consolidated Appropriations Act of 2015 (enacted December 18, 2015), the payment discount for the PC of multiple imaging services furnished on or after January 1, 2017 will change from 25 percent to 5 percent. Full payment is made for the PC and TC of the highest paid procedure. In 2017, the TC payment will be reduced by 50 percent, and the PC payment will be reduced by 5 percent for each additional procedure furnished to the same patient in the same session.

This policy is based on CMS's perception that efficiencies exist when furnishing multiple services in the same session due to duplication of physician work—primarily in the pre- and post-service periods, with smaller efficiencies in the intra-service period. Of note, CMS indicates that it believes this policy of expanding the MPPR to the PC for multiple imaging studies performed in one patient visit is "consistent and complimentary" to the AMA's Relative Value Scale Update Committee's (RUC) work related to bundling and valuing services commonly performed together. In fact, CMS states that where two imaging studies have been bundled into one CPT code, such as is the case for CT of the abdomen and pelvis, the MPPR policy will not apply to those services.

Continuing is the application of the MPPR to both the PC and the TC of advanced imaging procedure to "multiple physicians" in the same group practice (same group national provider identifier [NPI]) effective January 1, 2013. Additionally, CMS will apply the 25 percent reduction policy to the TC of diagnostic cardiovascular services as identified in the CMS final rule. Of note, performing a myocardial perfusion imaging (MPI) study on the same date of service as an echocardiography procedure will result in a reduction in the total payment for this code pair when performed by the same physician on the same date of service.

For the list of codes included in the MPPR policy, go to *https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeeSched/PFS-Federal-Regulation-Notices.html* and, under PFS Federal Regulation Notices, click on CMS-1770-F. Scroll down to the file name "CY 2023 PFS Final Rule Multiple Procedure Payment Reduction Files (ZIP)." (Note that cardiology imaging CPT codes 78428–78494 are included on Multiple Procedure Payment Reduction Files (ZIP) list, but, at present, no other 78XXX codes.)

MODIFIER TIPS

- No modifier appended to a CPT code that describes both technical and professional services, and billed by a physician office or freestanding non-hospital center, indicates to the payer that you are requesting global payment that includes both the professional and technical payments combined.
- Modifiers affecting *payment* should be reported first, followed by the most specific descriptive modifier.
- -GY is often referred to as an "auto deny" modifier; providers use this to obtain a denial and then bill secondary payers.
- -GZ is optional; providers use this modifier when they have *NOT* had an advanced beneficiary notice (ABN) signed by the patient, and they expect an item or service to be denied as not reasonable and necessary.
- -GA is mandatory; providers use this modifier when they *HAVE* an ABN (waiver of liability) signed by the patient on file.

  Effective April 1, 2010, CMS redefined modifier GA as "waiver of liability statement issued as required by payer policy." Medicare systems will now deny these claims as a beneficiary liability (rather than subjecting them to possible medical review), and the beneficiary will have the right to appeal this determination.
- Modifier GX refers to a notice of liability issued, **voluntary** under payer policy (reasonable and necessary item/service associated with a GA or GZ modifier). This modifier should be used to report when a voluntary ABN was issued for a service. Modifier GX must be submitted with non-covered charges only and will be denied by the Medicare contractor as a beneficiary liability. These changes are informational only for Medicare Part B.

For more details of changes of the uses of ABN modifiers, go to *https://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/2012-Transmittals-Items/R2480CP*.

- Medically unlikely edit (MUE) remark codes and modifiers—line items on claims will be returned to provider with possible remark codes, such as the following:

N430	Procedure code is inconsistent with the units billed.
N362	The number of days or units of service exceeds our acceptable maximum. Start: 11/18/2005
M49	Missing/incomplete/invalid value code(s) or amount(s).
M24	Missing/incomplete/invalid number of doses per vial.
MSN 15.6	The information provided does not support the need for this many services or items within this period of time.
ANSI 57	Payment denied/reduced because the payer deems the information submitted does not support this level of service, this many services, this length of service, this dosage, or this day's supply. Note: inactive for 004050. Split into codes 150, 151, 152, 153, and 154.

Message, reason, and remark codes numbers were published by CMS on December 8, 2006 in CR 5402.

Since each line of a claim is adjudicated separately against the MUE of the code on that line, the appropriate use of modifiers to report the same code on separate lines of a claim will enable a provider/supplier to report medically reasonable and necessary units of service in excess of an MUE. CPT modifiers such as the following will accomplish this purpose: -76 (repeat procedure by same physician); -77 (repeat procedure by another physician); anatomic modifiers (e.g., RT, LT, F1, F2); -91 (repeat clinical diagnostic laboratory test); -59 (distinct procedural service); and GD (units of service exceed MUE value and represent reasonable and necessary services). Modifier -59 should be utilized only if no other modifier describes the service.

- Effective January 1, 2017, the JW modifier is ***required*** on all Medicare claims to identify wasted single-use drug vials. When billing, you ***must*** report the waste on a separate line from the patient-administered dose.

  Although the modifier is required, implementation may vary from one Medicare administrative contractor (MAC) to another so be sure to check with your MAC for its specifics.

  In Transmittal 1248 (change request 5520, issued July 2, 2007), CMS gave the following example for reporting waste for drugs: 58 milligrams of adenosine administered to a patient for a pharmacological stress test was taken from a 90-milligram single-use vial. The waste must be documented. It does not need to be in the report but can be on a department work/flow sheet. The provider would bill 58 units of J0153 and 32 units of J0153-JW.

More details about the modifier JW requirement can be found in the frequently asked questions (FAQs) posted by CMS at the following address: *https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/Hospital-OutpatientPPS/Downloads/JW-Modifier-FAQs.pdf*.

For more information for potential use of JW modifiers with certain radiopharmaceuticals, see the SNMMI coding corner at *http://www.snmmi.org/IssuesAdvocacy/QandADetail.aspx?ItemNumber=25038&navItemNumber=24950*, and search for JW modifier examples.

To align with the JW modifier policy, CMS has implemented the JZ modifier to be used for attesting that there were no discarded amounts from single-use-vials or single-use package for which the JW modifier would be required if there were discarded amounts. All outpatient drug claims for single-use vials or single-use packages payable under Medicare Part B will require that the JW modifier or the JZ modifier be reported on the claim to identify administered and discarded drug amounts. The JZ modifier becomes effective January 1, 2023, with required reporting no later than July 1, 2023, in all outpatient settings. CMS states it will begin claim edits for both JW and JZ modifiers beginning October 1, 2023.

- Modifier 50 (bilateral procedure) can be used when providers inject both breasts for sentinel node identification (CPT code 38792). Providers would bill one unit of 38792 with modifier 50 to inform the payer that this was a bilateral procedure. The MUE edit contractor informed the Society of Nuclear Medicine and Molecular Imaging (SNMMI) coding committee that one unit should be assigned with modifier 50 for 38792 (per CMS guidance). Check third-party-payer policies for appropriate modifier as they vary by payer.
- Q0 (zero) is the modifier used to identify to CMS that a site is participating in a coverage with evidence development program, such as IDEAS and or NOPR.
- Effective for all claims with dates of service (DOS) on and after April 3, 2009 and for oncologic uses of PET studies with ^{18}FDG, providers must now append one of the following two modifiers to identify initial treatment strategy or subsequent treatment strategy. These modifiers should be appended to CPT procedure codes 78811–78816 and 78608, as appropriate.

  Modifier PI: PET or PET/CT to inform the *initial* treatment strategy of tumors that are biopsy proven or strongly suspected of being cancerous based on other diagnostic testing

  Modifier 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

- Report **modifier KX** (requirements specified in the medical policy have been met) to inform the payer that the provider has maintained documentation of medical necessity and rationale for these studies. This applies to claims with dates of service on and after June 11, 2013, for oncologic uses of PET or PET/CT studies with ^{18}FDG, those billings beyond (1) PI and / or (3) PS, with the same cancer diagnosis, during the patient's life.
- Append **modifier PO** to all services provided in a CMS-excepted (i.e.,"grandfathered") outpatient provider-based setting designated by CMS as off-campus. CMS introduced the modifier in 2015 and modified it for 2017 for data-collection purposes. It is mandatory effective for claims with dates of service January 1, 2016 and beyond. Facilities may consider hard-coding this modifier into electronic systems or modifying charge masters to incorporate the modifier into systems for claims processing. For more details on this topic, go to the sections of this book that cover the UB-04 and CMS-1500 guidelines for the new data-collection requirements.
- Append **modifier PN** to all services provided in a CMS non-excepted (not grandfathered) outpatient provider-based setting designated by CMS as off-campus. CMS added this modifier in 2017 for data-collection purposes, and it is mandatory for claims with dates of service January 1, 2017 and beyond. This modifier will result in a 60 percent reduction of the OPPS payment rate. In 2017, the OPPS rate was reduced by 50 percent. For 2018, CMS will pay 40 percent of the OPPS rate, resulting in a 60 percent reduction of the OPPS rate when the PN modifier is applied. Facilities may consider hard-coding this modifier into electronic systems or modifying charge masters to incorporate the modifier into systems for claims processing.

  For more details on this topic, go to the sections of this book that cover the UB-04 and CMS-1500 guidelines for the new data-collection requirements.
- Append **modifier FX** to claims with dates of service on and after January 1, 2017 for providers that use only film X-Ray. Payment for technical rates under MPFS and OPPS for X-ray imaging services taken using film is reduced by 20 percent.
- **Modifier CT** is effective for claims with dates of services January 1, 2016 and beyond. The purpose of this modifier is to reduce payment for CT services that are performed on equipment that does not meet the CMS-defined technical requirements. The technical component under the MPFS and HOPPS would be reduced if the list of CPT codes that CMS identified are non-NEMA Standard XR-29-2013 compliant CT scanners. For more details on this topic, see the section of this book entitled Non-NEMA Standard XR-29-2013-compliant CT Scanners.

NCCI Narrative Instructions Specific to Nuclear Medicine

The following are from Chapter 9, Section E of the *National Correct Coding Initiative Policy Manual for Medicare Services*. Each year CMS publishes the *National Correct Coding Initiative Policy Manual for Medicare Services* to explain the rationale for many of the edits. The most current edits available at the time of publication are found here: *https://www.cms.gov/medicare-medicaid-coordination/national-correct-coding-initiative-ncci/ncci-medicare/medicare-ncci-policy-manual*

E. Nuclear Medicine

The general policies described above apply to nuclear medicine as well as standard diagnostic imaging.

1. The injection of a radiopharmaceutical is an integral component of a nuclear medicine procedure. CPT codes for vascular access (e.g., CPT code 36000) and injection of the radiopharmaceutical (e.g., CPT codes 96360–96376) are not separately reportable.

2. Single photon emission computed tomography (SPECT) studies represent an enhanced methodology over standard planar nuclear imaging. Several nuclear medicine CPT codes describe combinations of planar, single photon emission computed tomography (SPECT), flow imaging, or SPECT with CT imaging for evaluation of a specific anatomic area. Unless specified by a single code that combines two or more imaging modalities, no additional information is procured by obtaining both planar and SPECT studies for a limited anatomic area.

3. Myocardial perfusion imaging (CPT codes 78451–78454) is not reportable with cardiac blood pool imaging by gated equilibrium (CPT codes 78472–78473) because the two types of tests utilize different radiopharmaceuticals.

4. CPT codes 76376 and 76377 (3D rendering) are not separately reportable for nuclear medicine procedures (CPT codes 78012–78999). However, CPT code 76376 or 76377 may be separately reported with modifier 59 or XS on the same date of service as a nuclear medicine procedure if the 3D rendering procedure is performed in association with a third procedure (other than nuclear medicine) for which 3D rendering is appropriately reported.

5. CPT codes 78451–78452 (myocardial perfusion imaging;... additional quantification...) include calculation of the heart-lung ratio if obtained. CPT code 78580 (pulmonary perfusion imaging, particulate) *shall* not be reported for calculation of the heart-lung ratio during the processing of a SPECT myocardial perfusion procedure.

6. Positron emission tomography (PET) imaging requires use of a radiopharmaceutical diagnostic imaging agent. HCPCS codes A9555 (Rubidium Rb-82...60 millicuries) and A9526 (Nitrogen N-13 Ammonia...40 millicuries) may only be reported with PET scan CPT codes 78491 and 78492. HCPCS code A9552 (Fluorodeoxyglucose F-18, FDG...45 millicuries) may only be reported with PET scan CPT codes 78459, 78608, and 78811–78816.

7. Positron emission tomography (PET) procedures include a finger stick blood glucose level. CPT codes 82948 (Glucose; blood, reagent strip) or 82962 (Glucose, blood by glucose monitoring device(s)...home use) shall not be reported separately for the measurement of the finger stick blood glucose included in a PET procedure.

8. HCPCS code A9512 (Technetium Tc-99m pertechnetate, diagnostic...per millicurie) describes a radiopharmaceutical used for nuclear medicine studies. Technetium Tc99m pertechnetate is also a component of other Technetium Tc-99m radiopharmaceuticals with separate AXXXX codes. Code A9512 shall not be reported with other AXXXX radiopharmaceuticals containing Technetium Tc-99m for a single nuclear medicine study. However, if two separate nuclear medicine studies are performed on the same date of service, one with the radiopharmaceutical described by HCPCS code A9512 and one with another AXXXX radiopharmaceutical labeled with Technetium Tc-99m, both codes may be reported using an NCCI PTP-associated modifier. HCPCS codes A9500, A9540, and A9541 describe radiopharmaceuticals labeled with Technetium Tc-99m that may be used for separate nuclear medicine studies on the same date of service as a nuclear medicine study using the radiopharmaceutical described by HCPCS code A9512.

9. Generally, diagnostic nuclear medicine procedures are performed on different dates of service than therapeutic nuclear medicine procedures. However, if a diagnostic nuclear medicine procedure is performed on an organ and the decision to proceed with a therapeutic nuclear medicine procedure on the same organ on the same date of service is based on results of the diagnostic nuclear medicine procedure, both procedures may be reported on the same date of service using an NCCI PTP-associated modifier. A provider/supplier shall not report a radiopharmaceutical therapy administration code for the radionuclide administration that is integral to diagnostic nuclear imaging procedures.

10. A three phase bone and/or joint imaging study (CPT code 78315) includes initial vascular flow imaging. CPT code 78445 (non-cardiac vascular flow imaging...) *shall* not be reported separately for the vascular flow imaging integral to CPT code 78315.

11. Non-cardiac vascular flow imaging, when performed, is integral to a nuclear medicine procedure. CPT code 78445 (Non-cardiac vascular flow imaging (ie, angiography, venography)) shall not be reported with any other nuclear medicine procedure code.

12. Supervision and handling of radionuclides is integral to nuclear medicine procedures (e.g., CPT codes 78012–79999.) Providers/suppliers shall not separately report CPT code 77790 (Supervision, handling, loading of radiation source) for this service.

13. The NCCI program contains PTP edits that bundle some radiopharmaceutical codes into nuclear medicine procedure codes. These code pairs represent radiopharmaceuticals that should not be reported with the nuclear medicine procedure since it is inappropriate to use that radiopharmaceutical for that procedure. In some situations where a patient has two nuclear medicine procedures performed on the same date of service, the radiopharmaceutical used for one procedure may be incompatible with the second nuclear medicine procedure. In this circumstance, it may be appropriate to report the radiopharmaceutical with modifiers 59 or - X{ES}.

14. Tumor imaging by positron emission tomography (PET) may be reported with CPT codes 78811–78816. If a concurrent computed tomography (CT) scan is performed for attenuation correction and anatomical localization, CPT codes 78814–78816 shall be reported rather than CPT codes 78811–78813. A CT scan for localization shall not be reported separately with CPT codes 78811–78816.

A medically reasonable and necessary diagnostic CT scan may be separately reportable with an NCCI PTP-associated modifier. If the data set for the diagnostic CT is obtained concurrently on the same PET/CT integrated system where the CT portion of the study is co-registered with the PET images for the purpose attenuation correction and anatomic localization, the diagnostic CT CPT code may be reported with PET CPT codes 78811–78813 using an NCCI PTP-associated modifier. Under these circumstances the diagnostic CT CPT code shall not be reported with PET/CT CPT codes 78814–78816. However, if a data set for the PET/CT for attenuation correction and anatomic localization and a separate data set for the diagnostic CT are obtained on separate pieces of equipment, the diagnostic CT CPT code may be reported with CPT codes 78811–78816 using an NCCI PTP-associated modifier.

2023 HCPCS Level I (AMA CPT) Nuclear Medicine Services and Level II Codes for Radiopharmaceuticals and Drugs

For 2023, nuclear medicine professionals will see minor revisions, one addition to CPT® codes and many HCPCS level two new tracer codes. See the tables below for details.

New or Revised Nuclear Medicine HCPCS Level I Codes

Effective July 1, 2022 and January 1, 2023 [see comment section]

CPT© Code	Long Descriptors	Comments
●+0742T (add-on code) NEW July 1, 2022	Absolute quantitation of myocardial blood flow (AQMBF), single-photon emission computed tomography (SPECT), with exercise or pharmacologic stress, and at rest, when performed (List separately in addition to code for primary procedure).	(Use 0742T in conjunction with 78451, 78452) For MBF with PET studies see CPT 78434. 0742T Sunsets January 2028
▲78803 Revised January 1, 2023	Radiopharmaceutical localization of tumor, inflammatory process, or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomographic (SPECT), single area (eg, head, neck, chest, pelvis), **or acquisition**, single day imaging.	The term "or acquisition" was added for clarification as some coders believed if a single acquisition contained the head and neck they could bill the multiple SPECT code, which was not the intent of the service. If the SPECT camera head is sufficiently large enough for multiple areas and only one SPECT acquisition is taken, bill 78803, not 78831.
▲78830 Revised January 1, 2023	Radiopharmaceutical localization of tumor, inflammatory process, or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomographic (SPECT) with concurrently acquired computed tomography (CT) transmission scan for anatomical review, localization and determination/detection of pathology, single area (eg, head, neck, chest, pelvis), **or acquisition**, single day imaging.	Same concept as comment for 78803 and applied to the SPECT/CT codes.
▲78831 Revised January 1, 2023	Radiopharmaceutical localization of tumor, inflammatory process, or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomographic (SPECT), minimum 2 areas (eg, pelvis and knees, chest, and abdomen) or **separate acquisitions (eg, lung ventilation and perfusion)**, single day imaging, or single area or acquisition over 2 or more days.	The term "or separate acquisition" was added for clarification, as some coders believed if a single acquisition was of the same body area, they could NOT bill the multiple area SPECT code; this was not the intent of the service. In this case, two separate SPECT acquisitions are performed, each with different tracers at two separate acquisitions; for two or more separate SPECT or SPECT/CT acquisitions, bill 78831 not 78830. (The most common occurrence is the V/P lung scan. This example is in the code description to assist the coders; however, it is not the only use.) An additional note to coders regarding two tracers used for a single study: Providers can use two tracers with a single acquisition; this is often referred to as dual tracer technique. The important differentiation for reporting 78831 or 78832 is to perform two independent (separate) SPECT or SPECT/CT studies. These codes are describing the work of two studies rather than one.

New or Revised Nuclear Medicine HCPCS Level I Codes

Effective July 1, 2022 and January 1, 2023 [see comment section]

CPT© Code	Long Descriptors	Comments
▲78832 Revised January 1, 2023	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomographic (SPECT) with concurrently acquired computed tomography (CT) transmission scan for anatomical review, localization and determination/detection of pathology, minimum 2 areas (eg, pelvis and knees, chest and abdomen) **or separate acquisitions (eg, lung ventilation and perfusion),** single day imaging, or single area or acquisition over 2 or more days.	Same concept as comment for 78831 and applied to the SPECT/CT code.

New Nuclear Medicine HCPCS Level II Codes for Newly FDA Approved Radiotracers

Effective July 1, 2022, October 1, 2022 and January 1, 2023 [see comment section]

CPT© Code	Long Descriptors	Comments
●A9596 NEW July 1, 2022	Gallium illuccix 1 millicure Gallium Ga-68 gozetotide, diagnostic, (illuccix), 1 millicurie	Trade name: Illuccix® GE FAST lab or Eckert & Ziegler GalliaPharm NDCs (74725-0100-25, 74725-0100-64) Effective **July 1, 2022** Pass-through End Date: **June 30, 2025**
●C9601 NEW July 1, 2022	Flortaucipir inj 1 millicurie Flortaucipir f 18 injection, diagnostic, 1 millicurie	Trade name: Tauvid™ Eli Lilly and Company F-18 Flortaucipir NDCs (0002-1210-30, 0002-1210-50, 0002-1220-48, 0002-1220-50) Effective **July 1, 2022** E2 = Pricing information not available to CMS No Pass-through at the time of publication
●A9602 NEW Oct. 1, 2022	Fluorodopa f-18 diag per mci Fluorodopa f 18 injection, diagnostic, 1 millicurie	Trade name: None at time of print The Feinstein Institutes for Medical Research 350 Community Drive Manhasset New York 11030 Indicated for visualize dopaminergic nerve terminals in the striatum for the evaluation of adult patients with suspected Parkinsonian syndromes (PS). NDC (13267-346-57) Effective **October 1, 2022** Pass-through End Date: **September 30, 2025**

New Nuclear Medicine HCPCS Level II Codes for Newly FDA Approved Radiotracers *Effective July 1, 2022, October 1, 2022 and January 1, 2023 [see comment section]*		
CPT© Code	**Long Descriptors**	**Comments**
●**A9607 NEW Oct. 1, 2022**	Lutetium lu 177 vipivotide Lutetium Lu 177 vipivotide tetraxetan, therapeutic, 1 millicurie	Trade name: PLUVICTO™ Advanced Accelerator Applications USA, Inc NDC (69488-003-01) Effective **October 1, 2022** Pass-through End Date: **September 30, 2025**
●**A9800 NEW Oct. 1, 2022**	Gallium locametz 1 millicuri Gallium ga-68 gozetotide, diagnostic, (locametx), 1 millicurie	Trade name: LOCAMETEZ® Advanced Accelerator Applications USA, Inc NDC (69488-003-01) Effective **October 1, 2022** Pass-through End Date: **September 30, 2025**

RADIOPHARMACEUTICALS

CMS describes radiopharmaceuticals with three or four elements. (See the table below titled "Radiopharmaceutical HCPCS Level II Description Format.") The first element is the radiopharmaceutical or radioelement with or without an attached compound and/or administration form, if necessary. The second element identifies if the radiopharmaceutical is used for a diagnostic or therapeutic purpose. This keeps consistent with hospital radiopharmaceutical revenue codes 343 and 344 as well as the CPT nuclear medicine structure where 78xxx codes are diagnostic and 79xxx codes are therapeutic. The third element describes the billing unit, for example "per millicurie" or "per study dose." The final element is only used if the billing unit is per study dose, defining the upper limit of the administered dose and is used to clarify the "dose."

Radiopharmaceutical HCPCS Level II Description Format				
Radiopharmaceutical code	**Radiopharmaceutical and/or radioelement with or without compound and with form if necessary (i.e., capsule(s)/solution/ aerosol)**	**Diagnostic or therapeutic**	**Billing unit per study dose, per treatment dose, per millicurie (mCi), per microcurie (uCi)**	**If description, per study dose an "up to" amount is listed for most radiopharmaceuticals**
Example: A9503	Technetium Tc-99m medronate	diagnostic (dx)	per study dose	up to 30 mCi

Appendix 1 does not constitute a comprehensive list of all drugs used by nuclear medicine facilities, but we provide a list of some common drugs that might assist coders and chargemaster managers.

Since 2007, both physicians and hospitals, (when appropriate) should define the procurement of diagnostic and therapeutic radiopharmaceuticals with Level

II HCPCS codes from the A and Q code series. Hospitals billing Medicare outpatients may also select from Level II C codes. Physicians may not use codes from the C section of HCPCS Level II.

As mentioned earlier, CPT offers important coding guidance in the form of introductory sections. Another important paragraph is in the beginning of the nuclear medicine section. This language emphasizes that, in addition to the procedure, providers of nuclear medicine services should bill for the radioactive material or drug given to the patient before or during a diagnostic or therapeutic study. Professional billing also may be allowed for the materials if the practice incurs the expense of purchasing these materials.

PHYSICIAN OFFICE RADIOPHARMACEUTICAL PAYMENTS

The payment rates in the physician office setting for radiopharmaceuticals remain unchanged. CMS clarified that radiopharmaceuticals are not subject to average sales price (ASP) methodology for payment in this setting and that carriers should use the payment methodology in place as of November 2003.

Increasingly, Medicare contractors are switching to payments for radiopharmaceuticals at invoice cost. It may be important to ask your radiopharmaceutical provider to incorporate the cost of transportation with the line item cost of the radiopharmaceutical to facilitate communicating the full radiopharmaceutical cost to the payer. Invoices may be required.

It is important to note that drugs and radiopharmaceuticals are not subject to the DRA mentioned later in this section. However, note that Medicare contractors have discretion in establishing rates, as all radiopharmaceuticals are currently carrier-priced in this setting. Check with your Medicare contractor for local allowable rates. As always, code and bill for radiopharmaceuticals and drugs regardless of payment status by the payers as this is proper coding per the introductory section of CPT.

HOSPITAL DIAGNOSTIC RADIOPHARMACEUTICAL PAYMENTS

The payment received by hospital outpatient departments for diagnostic radiopharmaceuticals is bundled with the major procedure performed. CMS has assigned most diagnostic radiopharmaceuticals with a status indicator "N."

For diagnostic radiopharmaceuticals with status indicator "N," CMS bundles the cost into the procedure payment rate. CMS and medical specialty societies strongly encourage facilities to code and bill separately for radiopharmaceuticals regardless of their status indicator. CMS also states, "All these charges play a role in defining future hospital payment."

As stated above, hospitals should continue to establish the radiopharmaceutical charge following the guidance that CMS published in the 2006 hospital OPPS final rule. Providers should NOT set token (e.g., $1.00 or $0.01 cents) charges for radiopharmaceuticals as this would be inconsistent with CMS guidance.

HOSPITAL OUTPATIENT PHARMACOLOGICAL STRESS AGENTS AND STRESS TEST PAYMENTS

The payment received by hospital outpatient departments for pharmacological stress agents is packaged with the major procedure performed (for example, 78452). CMS has assigned the four pharmacological stress agents with a status indicator "N." Additionally, CMS has conditionally packaged by assigning a status indicator of "Q1" to the stress test 93017. This means that no separate payment will be made when 93017 is billed on the same date of service with a status indicator such as "S" or "T."

Similar to the diagnostic radiopharmaceuticals policy with status indicator "N," CMS bundles these costs into the procedure payment rate. CMS and medical specialty societies strongly encourage facilities to code and bill separately for the pharmacological stress agents and the stress tests regardless of their status indicators. CMS also states, "All these charges play a role in defining future hospital payment."

HOPPS ADD-ON PAYMENT ADJUSTMENT FOR NON-HIGHLY ENRICHED URANIUM (NON-HEU) SOURCES

In 2023, CMS will continue the policy that took effect on January 1, 2013, establishing a Q code with a $10 dollar add-on payment as an adjustment policy for radioisotopes derived from non-highly enriched uranium (non-HEU) sources; $2 of this payment is paid by the patient as a co-insurance.

HCPCS Level II Code	Description Short/Long	Status Indicator/APC	Payment	Co-Insurance	Comments
Q9969	Non-HEU TC-99M add-on/dose Tc-99m from non-highly enriched uranium source, full cost recovery add-on, per study dose	K/1442	$10.00	$2.00	Use with 95 percent non-HEU ^{99m}Tc sourced radiopharmaceuticals

As background, the Obama administration established an agenda to eliminate domestic reliance on reactors outside of the United States that produce HEU and to *promote the conversion* of all medical isotope production to non-HEU sources. This initiative is of national security importance, as these materials, while predominately used for medical purposes, may be misused in terrorist activities. CMS is therefore exercising its statutory authority in HOPPS to adjust payments so that they are equitable for the individual providers. This adjustment would cover the *marginal* (incremental) *cost of radioisotopes produced from non-HEU sources over the costs of a radioisotope produced by HEU sources*.

Clarifications to Non-HEU Add-On Payment

CMS clarifies that this mechanism for an add-on payment is ***strictly voluntarily*** for hospitals. Those that are not experiencing high volumes of significantly

increased costs are not obligated to use this additional payment. There is no requirement to use this HCPCS Q-code or label non-HEU based Mo-99; the payment exists as a tool if it is necessary to reduce payment inequities that might occur as a consequence of industry conversion to non-HEU based Mo-99.

UB-04 GUIDELINES FOR NEW AND REVISED DATA-COLLECTION REQUIREMENTS

2015 Bipartisan Consolidation Budget Act, Section 603

In order to better understand the frequency and type of services furnished in provider-based departments (PBD) in off-campus locations, CMS launched, in 2015, a data-collection requirement that impacted both physician and hospital reporting. Subsequently, the 2015 Bipartisan Consolidation Budget Act (Section 603) stated that "applicable items and services" furnished in an off-campus PBDs will not be considered covered outpatient department (OPD) services for purposes of the OPPS rates and will instead be paid under the "payment system" intended to equalize payments.

Additionally, and most importantly, the law grandfathers in off-campus providers (referred to by CMS as "excepted") that were furnishing and billing services with a date of service on or before November 2, 2015 from a change in OPPS payment. CMS also clarified that implementation of section 603 does not apply to hospital emergency departments or on-campus departments or within the required distance from a remote location of a hospital facility. About the distance, CMS stated, "a 250-yard straight line requirement can be drawn from any point of the remote location to any point in the PBD."

In the 2017 final rule, CMS finalized the applicable payment system for implementation of section 603 as the MPFS. However, after significant public comment, CMS decided to use an analysis of the TC MPFS rates to establish payment for "nonexcepted" PBDs using 50 percent of the OPPS rates—an amount that CMS estimated would be approximately equivalent to the facility TC of MPFS. This final section 603 change is effective January 1, 2017 for nonexcepted off-campus PBDs that had not provided a service on or before November 2, 2015.

If the off-campus PBD provided services after November 2, 2015, it is considered a nonexcepted PBD. New PN modifier will be required for all services January 1, 2017 and beyond.

Providers that are CMS "excepted" PBDs will continue to report the PO modifier effective for all services with a data of service January 1, 2017 and beyond. Appending the PO modifier will allow CMS to continue to track data; however, it does not result in any payment reductions, and 100 percent OPPS rates apply.

CMS Terminology	Plain English
Excepted	**Grandfathering applies (OPPS paid services)**
Non-excepted	**Grandfathering does not apply (non-OPPS paid services)**

HCPCS Level II Modifiers		
HCPCS Modifier	**Descriptor**	**Comment**
PO	**Excepted service** provided at an off-campus, outpatient, PBD of a hospital *Excepted off-campus service*	Used on excepted (i.e., grandfathered) PBD hospital claims to be reported with every code for outpatient hospital services furnished in an off-campus PBD of a hospital
PN	**Non-excepted service** provided at an off-campus, outpatient, PBD of a hospital *Non-excepted off-campus service*	Used on non-excepted PBD hospital claims to be reported with every code, payment rate in OPPS reduced by 50 percent

ADMINISTRATION/INJECTION PROCEDURES

Injection procedures are mostly inherent in each nuclear medicine study and should *not* be charged separately. The edits in CMS's current correct coding initiative (CCI) list many of the injection codes as a component code for most of the nuclear medicine 78xxx–79xxx and G series codes. Any exceptions are noted as parentheticals to the code. The introductory language to the CPT nuclear medicine therapy section also helps clarify some exceptions.

Medicare Policies

Mandated by statute, CMS published the updated conversion factor for January 1, 2023 at $33.0607. At the time of publication, there is pending potential legislation that would increase the conversion factor; providers should check, as it may change for CY 2023 payment rates.

DRA OF 2005

On February 8, 2006, President Bush signed the Deficit Reduction Act (DRA) of 2005 into law. This act contains important updates for the MPFS. For imaging, the most important part of this legislation is a provision to change payment policy effective January 1, 2007 and beyond, to pay the lesser of the MPFS or the hospital OPPS for the TC of all imaging procedures.

NUCLEAR MEDICINE AS DESIGNATED HEALTH SERVICE

Effective January 1, 2007, CMS revised the definition of two categories of designated health services (DHS) subject to the physician self-referral ban to include diagnostic and therapeutic nuclear medicine services and supplies.

Under the physician self-referral statute and regulations, a physician is prohibited from making referrals for DHS to an entity with which he or she (or an immediate family member) has a financial relationship, unless an exception applies. CMS recognized that the inclusion of nuclear medicine as DHS may have an impact on some current arrangements under which patients are receiving medical care, and that some financial arrangements may have to be restructured.

CMS-1500 GUIDELINES FOR NEW DATA-COLLECTION REQUIREMENT

In order to better understand the frequency and type of services furnished in provider-based departments (PBD) in off-campus locations, CMS launched, in 2015, a data-collection requirement that impacted both physician and hospital reporting.

For **professional claims**, CMS issued guidance on August 6, 2015 in transmittal 3315 modifying place of service (POS) code 22 and clarifying that this existing designation is for on-campus providers. It also created new POS code 19 to report off-campus PBD for (837P) claims. These changes are effective for claims with DOS January 1, 2016. CMS will maintain the separate POS code 23 (emergency room, hospital) to identify services furnished in this location.

NON-NEMA STANDARD XR-29-2013-COMPLIANT CT SCANNERS

The Protecting Access to Medicare Act (PAMA) established radiation dose requirements (effective date January 1, 2016). Medicare will reduce reimbursement to the technical component by 5 percent for CT scans acquired on technology that does not meet the new standards in 2016 and by 15 percent in 2017 and subsequent years. CMS created the modifier CT to be reported with diagnostic CT CPT codes (see list below) conducted on machines that ***do not meet*** the National Electrical Manufacturers Association (NEMA) CT guidelines.

Impact for Nuclear Medicine: No nuclear medicine CPT codes are affected by this provision. This change will only affect providers using equipment that does not comply with the radiation dose requirements in PAMA and billing diagnostic CT services for the CPT codes listed in the following box.

Modifier	Description — Long	Comments
CT	Computed tomography services furnished using equipment that does not meet each of the attributes of the National Electrical Manufacturers Association (NEMA) xr-29-2013 standard	The applicable CT services are identified by HCPCS codes 70450–70498; 71250–71275; 72125–72133; 72191–72194; 73200–73206; 73700–73706; 74150–74178; 74261–74263; and 75571–75574 (and any succeeding codes)

What should you do? Check with your manufacturer and obtain a letter for your billing files for each CT unit in your practice noting if the equipment meets or does not meet the standards. If all equipment meets the standards, you don't need to do anything.

However, if one or more of your CT units does not meet the standard, you will need to work with your billing staff to identify from the list of CPT codes above any studies performed on those pieces of equipment so they can append the CT modifier. Doing so will result in a 15 percent reduction in payment rate.

SPECIAL RULE TO INCENTIVIZE TRANSITION FROM TRADITIONAL X-RAY IMAGING TO DIGITAL RADIOGRAPHY

As mandated by the 2015 Bipartisan Consolidation Budget Act, CMS created modifier FX, which will impact TC payments in the hospital OPPS and the MPFS. Effective for services furnished January 1, 2017, and subsequent years, providers that use only film X-Ray must append the FX modifier to the codes assigned for the services provided. Payment for technical rates under MPFS and OPPS for X-ray imaging services taken using film is reduced by 20 percent.

For details, see *Medicare Claims Processing Manual*, Chapter 12, section 20.4.8.

HCPCS Level II Modifier

HCPCS Modifier	Descriptor	Comment
FX	X-ray taken using film	Use on OPPS and MPFS imaging claims. Report to identify a service that does not employ use of digital technology and continues to use only film. TC payment rates in OPPS and MPFS are reduced by 20 percent.

Clinical Laboratory Improvement Amendments

The Clinical Laboratory Improvement Amendments (CLIA) were passed in 1988. The Act established quality standards for all laboratory testing to ensure accuracy, reliability, and timeliness of patient test results, regardless of where the test is performed. CLIA was updated in 2013 with a focus on pre-analytic and post-analytic requirements.

The nuclear medicine codes below are subject to the CLIA requirements.

CPT Codes	Descriptions	Hospital Status Indicator
78110 78110-TC	Plasma volume, radiopharmaceutical volume-dilution technique (separate procedure); single sampling	S–Significant procedure, not discounted when multiple; paid under OPPS as separate APC
78111 78111-TC	Plasma volume, radiopharmaceutical volume-dilution technique (separate procedure); multiple samplings	S–Significant procedure, not discounted when multiple; paid under OPPS as separate APC
78120 78120-TC	Red cell volume determination (separate procedure); single sampling	S–Significant procedure, not discounted when multiple; paid under OPPS as separate APC
78121 78121-TC	Red cell volume determination (separate procedure); multiple samplings	S–Significant procedure, not discounted when multiple; paid under OPPS as separate APC

CPT Codes	Descriptions	Hospital Status Indicator
78122 78122-TC	Whole blood volume determination, including separate measurement of plasma volume and red cell volume (radiopharmaceutical volume-dilution technique)	S–Significant procedure, not discounted when multiple; paid under OPPS as separate APC
78130 78130-TC	Red cell survival study;	S–Significant procedure, not discounted when multiple; paid under OPPS as separate APC
78191 78191-TC	Platelet survival study	S–Significant procedure, not discounted when multiple; paid under OPPS as separate APC

All physician office laboratories that submit claims for these codes must include their 10-digit CLIA identification number in field 23.

Hospitals are required to verify that the testing laboratories they use have a current CLIA certification.

For more information on CLIA including the current codes, go to *www.cms.hhs.gov/CLIA*.

Ordering Diagnostic Tests

On January 11, 2008, CMS issued Transmittal 80 (change request 5743). The material in that transmittal replaces material that previously appeared in §15021 of the *Medicare Carriers Manual*. It has now been relocated into the Internet-only *Medicare Benefit Policy Manual*, Chapter 15—Covered Medical and Other Health Services.

80.6 - REQUIREMENTS FOR ORDERING AND FOLLOWING ORDERS FOR DIAGNOSTIC TESTS

(Rev. 80; Issued: 01-11-08; Effective: 01-01-03; Implementation: 11-19-07)

The following sections provide instructions about ordering diagnostic tests and for complying with such orders for Medicare payment.

NOTE: Unless specified, these sections are not applicable in a hospital setting.

80.6.1 - DEFINITIONS

(Rev. 94, Issued: 08-29-08, Effective: 01-01-03, Implementation: 09-30-08)

Diagnostic Test

A "diagnostic test" includes all diagnostic x-ray tests, all diagnostic laboratory tests, and other diagnostic tests furnished to a beneficiary.

Treating Physician

A "treating physician" is a physician, as defined in §1861(r) of the Social Security Act (the Act), who furnishes a consultation or treats a beneficiary for a specific medical problem, and who uses the results of a diagnostic test in the management of the beneficiary's specific medical problem.

A radiologist performing a therapeutic interventional procedure is considered a treating physician. A radiologist performing a diagnostic interventional or diagnostic procedure is not considered a treating physician.

Treating Practitioner

A "treating practitioner" is a nurse practitioner, clinical nurse specialist, or physician assistant, as defined in §1861(s)(2)(K) of the Act, who furnishes, pursuant to State law, a consultation or treats a beneficiary for a specific medical problem, and who uses the result of a diagnostic test in the management of the beneficiary's specific medical problem.

Testing Facility

A "testing facility" is a Medicare provider or supplier that furnishes diagnostic tests. A testing facility may include a physician or a group of physicians (e.g., radiologist, pathologist), a laboratory, or an independent diagnostic testing facility (IDTF).

Order

An "order" is a communication from the treating physician/practitioner requesting that a diagnostic test be performed for a beneficiary. The order may conditionally request an additional diagnostic test for a particular beneficiary if the result of the initial diagnostic test ordered yields to a certain value determined by the treating physician/practitioner (e.g., if test X is negative, then perform test Y). An order may be delivered via the following forms of communication:

- A written document signed by the treating physician/practitioner, which is hand-delivered, mailed, or faxed to the testing facility; **NOTE:** No signature is required on orders for clinical diagnostic tests paid on the basis of the clinical laboratory fee schedule, the physician fee schedule, or for physician pathology services;
- A telephone call by the treating physician/practitioner or his/her office to the testing facility; and
- An electronic mail by the treating physician/practitioner or his/her office to the testing facility.

If the order is communicated via telephone, both the treating physician/practitioner or his/her office, and the testing facility must document the telephone call in their respective copies of the beneficiary's medical records. While a phy-

sician order is not required to be signed, the physician must clearly document, in the medical record, his or her intent that the test be performed.

80.6.2 - INTERPRETING PHYSICIAN DETERMINES A DIFFERENT DIAGNOSTIC TEST IS APPROPRIATE

(Rev. 80; Issued: 01-11-08; Effective: 01-01-03; Implementation: 11-19-07)

When an interpreting physician, e.g., radiologist, cardiologist, family practitioner, general internist, neurologist, obstetrician, gynecologist, ophthalmologist, thoracic surgeon, vascular surgeon, at a testing facility determines that an ordered diagnostic radiology test is clinically inappropriate or suboptimal, and that a different diagnostic test should be performed (e.g., an MRI should be performed instead of a CT scan because of the clinical indication), the interpreting physician/testing facility may not perform the unordered test until a new order from the treating physician/practitioner has been received. Similarly, if the result of an ordered diagnostic test is normal and the interpreting physician believes that another diagnostic test should be performed (e.g., a renal sonogram was normal and based on the clinical indication, the interpreting physician believes an MRI will reveal the diagnosis), an order from the treating physician must be received prior to performing the unordered diagnostic test.

80.6.3 - RULES FOR TESTING FACILITY TO FURNISH ADDITIONAL TESTS

(Rev. 80; Issued: 01-11-08; Effective: 01-01-03; Implementation: 11-19-07)

If the testing facility cannot reach the treating physician/practitioner to change the order or obtain a new order and documents this in the medical record, then the testing facility may furnish the additional diagnostic test if all of the following criteria apply:

- The testing center performs the diagnostic test ordered by the treating physician/practitioner;
- The interpreting physician at the testing facility determines and documents that, because of the abnormal result of the diagnostic test performed, an additional diagnostic test is medically necessary;
- Delaying the performance of the additional diagnostic test would have an adverse effect on the care of the beneficiary;
- The result of the test is communicated to and is used by the treating physician/practitioner in the treatment of the beneficiary; and
- The interpreting physician at the testing facility documents in his/her report why additional testing was done.

EXAMPLE: (a) The last cut of an abdominal CT scan with contrast shows a mass requiring a pelvic CT scan to further delineate the mass; (b) a bone scan reveals a lesion on the femur requiring plain films to make a diagnosis.

80.6.4 - RULES FOR TESTING FACILITY INTERPRETING PHYSICIAN TO FURNISH DIFFERENT OR ADDITIONAL TESTS
(Rev. 80; Issued: 01-11-08; Effective: 01-01-03; Implementation: 11-19-07)

The following applies to an interpreting physician of a testing facility who furnishes a diagnostic test to a beneficiary who is not a hospital inpatient or outpatient. The interpreting physician must document accordingly in his/her report to the treating physician/practitioner.

Test Design

Unless specified in the order, the interpreting physician may determine, without notifying the treating physician/practitioner, the parameters of the diagnostic test (e.g., number of radiographic views obtained, thickness of tomographic sections acquired, use or non-use of contrast media).

Clear Error

The interpreting physician may modify, without notifying the treating physician/practitioner, an order with clear and obvious errors that would be apparent to a reasonable layperson, such as the patient receiving the test (e.g., x-ray of wrong foot ordered).

Patient Condition

The interpreting physician may cancel, without notifying the treating physician/practitioner, an order because the beneficiary's physical condition at the time of diagnostic testing will not permit performance of the test (e.g., a barium enema cannot be performed because of residual stool in colon on scout KUB; 170.5PA/LAT of the chest cannot be performed because the patient is unable to stand). When an ordered diagnostic test is cancelled, any medically necessary preliminary or scout testing performed is payable.

Diagnosis Coding

The following information is taken verbatim from the online *Medicare Claims Processing Manual*, Chapter 23— Fee Schedule Administration and Coding Requirements.

10—REPORTING ICD DIAGNOSIS AND PROCEDURE CODES
(Rev. 3081, Issued: 09-26-14, Effective: Upon Implementation of ICD-10, Implementation: Upon Implementation of ICD-10)

Proper coding is necessary on Medicare claims because codes are generally used in determining coverage and payment amounts. CMS accepts only HIPAA approved ICD-9-CM or ICD-10-CM/ICD-10-PCS codes, depending on the date of service.

The official ICD-9-CM codes which were updated annually through October 1, 2013 are posted at *http://www.cms.gov/Medicare/Coding/ICD9ProviderDiagnosticCodes/codes.html.*

The official annual updates and effective dates for any changes to ICD-10-CM and ICD10-PCS codes are posted at *http://www.cms.gov/Medicare/Coding/ICD10/index.html*.

See the following sections (10.1 - 10.6) for additional instructions about coding ICD diagnoses for inpatient, outpatient, and other services.

10.1 - GENERAL RULES FOR DIAGNOSIS CODES
(Rev. 3081, Issued: 09-26-14, Effective: Upon Implementation of ICD-10, Implementation: Upon Implementation of ICD-10)

The Official ICD-9-CM Coding Guidelines can be found at *http://www.cdc.gov/nchs/icd/icd9cm_addenda_guidelines.htm.*

The Official ICD-10-CM and ICD-10-PCS Coding Guidelines can be found with the annual ICD-10-CM and ICD-10-PCS updates at *http://www.cms.gov/Medicare/Coding/ICD10/index.html.*

The CMS understands that physicians may not always provide suppliers of DMEPOS with the most specific diagnosis code, and may provide only a narrative description. In those cases, suppliers may choose to utilize a variety of sources to determine the most specific diagnosis code to include on the individual line items of the claim. These sources may include, but are not limited to: coding books and resources, contact with physicians or other health professionals, documentation contained in the patient's medical record, or verbally from the patient's physician or other healthcare professional.

Beneficiaries are not required to submit diagnosis codes on beneficiary-submitted claims.

Beneficiary-submitted claims are filed on Form CMS-1490S. For beneficiary-submitted claims, the A/B MAC (B) must develop the claim to determine a current and valid diagnosis code and may enter the code on the claim.

10.2 - INPATIENT CLAIM DIAGNOSIS REPORTING
(Rev. 3081, Issued: 09-26-14, Effective: Upon Implementation of ICD-10, Implementation: Upon Implementation of ICD-10)

On inpatient claims providers must report the principal diagnosis. The principal diagnosis is the condition established after study to be chiefly responsible for the admission. Even though another diagnosis may be more severe than the principal diagnosis, the principal diagnosis, as defined above, is entered. Entering any other diagnosis may result in incorrect assignment of a Medicare Severity - Diagnosis Related Group (MS-DRG) and an incorrect payment to a hospital under PPS. See Chapter 25, Completing and Processing the Form CMS-1450 Data Set, for instructions about completing the claim.

Other diagnoses codes are required on inpatient claims and are used in determining the appropriate MS-DRG. The provider reports the full codes for up to twenty four additional conditions if they coexisted at the time of admission or developed subsequently, and which had an effect upon the treatment or the length of stay.

The principal diagnosis should not under any circumstances be duplicated as an additional or secondary diagnosis. If the provider reports duplicate diagnoses they are eliminated in Medicare Code Editor (MCE) before GROUPER.

The Admitting Diagnosis Code is required for inpatient hospital claims subject to A/B MAC (A) review. The admitting diagnosis is the condition identified by the physician at the time of the patient's admission requiring hospitalization. For outpatient bills, the field defined as Patient's Reason for Visit is not required by Medicare but may be used by providers for nonscheduled visits for outpatient bills.

10.3 - OUTPATIENT CLAIM DIAGNOSIS REPORTING (Rev. 3081, Issued: 09-26-14, Effective: Upon Implementation of ICD-10, Implementation: Upon Implementation of ICD-10)

For outpatient claims, providers report the full diagnosis code for the diagnosis shown to be chiefly responsible for the outpatient services. For instance, if a patient is seen on an outpatient basis for an evaluation of a symptom (e.g., cough) for which a definitive diagnosis is not made, the symptom is reported. If, during the course of the outpatient evaluation and treatment, a definitive diagnosis is made (e.g., acute bronchitis), the definitive diagnosis is reported. If the patient arrives at the hospital for examination or testing without a referring diagnosis and cannot provide a complaint, symptom, or diagnosis, the hospital reports the encounter code that most accurately reflects the reason for the encounter.

Examples include:

- Z00.00 Encounter for general adult medical examination without abnormal findings
- Z00.01 Encounter for general adult medical examination with abnormal findings
- Z01.10 Encounter for examination of ears and hearing without abnormal findings
- Z01.118 Encounter for examination of ears and hearing with other abnormal findings

For outpatient claims, providers report the full diagnosis codes for up to 24 other diagnoses that coexisted in addition to the diagnosis reported as the principal diagnosis. For instance, if the patient is referred to a hospital for evaluation of hypertension and the medical record also documents diabetes, diabetes is reported as another diagnosis.

Additional information and training is available on CMS Web site: *http://www.cms.gov/Medicare/Coding/ICD10/index.html.*

10.4 - ICD PROCEDURE CODES
(Rev. 3081, Issued: 09-26-14, Effective: Upon Implementation of ICD-10, Implementation: Upon Implementation of ICD-10)

ICD procedure codes are required for inpatient hospital Part A claims only. Healthcare Common Procedure Code System (HCPCS) codes are used for reporting procedures on other claim types. Inpatient hospital claims require reporting the principal procedure if a significant procedure occurred during the hospitalization. For information of the selection of the principal procedure, see the Official ICD-10-PCS coding guidelines posted with the annual updates to ICD-10-PCS posted at *http://www.cms.gov/Medicare/Coding/ICD10/index.html*.

The principal procedure code and other procedure codes shown on the bill must be the full ICD-9-CM, Volume 3, or ICD-10-PCS procedure code, including all applicable digits, up to seven digits.

Up to twenty four significant procedures other than the principal procedure may be reported.

10.5 - CODING FOR OUTPATIENT SERVICES AND PHYSICIAN OFFICES
(Rev. 3081, Issued: 09-26-14, Effective: Upon Implementation of ICD-10, Implementation: Upon Implementation of ICD-10)

The Official ICD-10-CM Coding Guidelines include a section for Outpatient Services (hospital-based and physician office). These guidelines can be found in the annual updates to ICD-10-CM posted at *http://www.cms.gov/Medicare/Coding/ICD10/index.html*.

A/B MACs (A), (B), (HHH), and DME MACs, physicians, hospitals, and other health care providers must comply with the Official ICD-10-CM Coding Guidelines.

10.6 - RELATIONSHIP OF DIAGNOSIS CODES AND DATE OF SERVICE
(Rev. 3081, Issued: 09-26-14, Effective: Upon Implementation of ICD-10, Implementation: Upon Implementation of ICD-10)

Diagnosis codes must be reported based on the date of service (including, when applicable, the date of discharge) on the claim and not the date the claim is prepared or received. A/B MACs (A), (B), (HHH), and DME MACs are required to edit claims on this basis, including providing for annual updates each October.

Shared systems must maintain date parameters for diagnosis editing. Use of actual effective and end dates is required when new diagnosis codes are issued or current codes become obsolete with the annual updates.

The Health Insurance Portability and Accountability Act (HIPAA) requires that medical code sets must be date-of-service compliant. Since ICD diagnosis codes are a medical code set, effective for dates of service on and after October 1, 2004, CMS does not provide any grace period for providers to use in billing discontinued diagnosis codes on Medicare claims. The updated codes are published in the *Federal Register* each year as part of the Proposed Changes to the Hospital Inpatient Prospective Payment Systems in table 6 and effective each October 1.

All MACs will return claims containing a discontinued diagnosis code as unprocessable. For dates of service beginning October 1, 2004, physicians, practitioners, and suppliers must use the current and valid diagnosis code that is then in effect for the date of service. After the updated codes are published in the *Federal Register*, CMS places the new, revised and discontinued codes on the ICD-9 or ICD-10 Web site as applicable: *http://www.cms.gov/Medicare/Coding/ICD9ProviderDiagnosticCodes/codes.html* or *http://www.cms.gov/Medicare/Coding/ICD10/index.html*.

The CMS sends the updated codes to All MACs on an annual basis via a recurring update notification instruction. This is normally released to MACs each June, and contains the new, revised, and discontinued diagnosis codes which are effective for dates of service on and after October 1st.

Endocrine System

CPT Codes: 78012–78099

REVENUE CODES: 340 OR 341

Typical Drugs and Radiopharmaceuticals Used				
HCPCS	**Description**	**Notes**	**RC**	**SI**
A9500	Technetium tc-99m sestamibi, diagnostic, per study dose	Cardiolite, Miraluma, Mibi, Sestamibi, Cardiolite	343	N
A9502	Technetium tc-99m tetrofosmin, diagnostic, per study dose	Myoview, Tetrofosmin, Tetro	343	N
A9505	Thallium tl-201 thallous chloride, diagnostic, per millicurie	Thallium 201, Thallium, Thallous Chloride USP	343	N
A9508	Iodine I-131 iobenguane sulfate, diagnostic, per 0.5 millicurie	I-131 MIBG, I one thirty one	343	N
A9509	Iodine i-123 sodium iodide, diagnostic, per millicurie	Use for 1-4 mCi doses of I-123 for whole body imaging for less than 1 mCi and thyroid imaging see A9516	343	N
A9512	Technetium tc-99m pertechnetate, diagnostic, per millicurie	Straight Tech, Sodium Pertechnetate, Pertechnetate, Tech, Technetium, Technescan, Technelite	343	N
A9516	Iodine i-123 sodium iodide, diagnostic, per 100 microcuries, up to 999 microcuries	Dx 1-123 Capsules, I one twenty three, I -123. For administrations greater than 999 microcuries, see A9509.	343	N
A9528	Iodine i-131 sodium iodide capsule(s), diagnostic, per millicurie	I-131 Dx Caps Per mCi, I One Thirty One, I-131, Iodotope	343	N
A9529	Iodine i-131 sodium iodide solution, diagnostic, per millicurie	Dx I-131 sol per mCi, I one thirty one, I-131, Iodotope	343	N
A9531	Iodine i-131 sodium iodide, diagnostic, per microcurie (up to 100 microcuries)	Dx I-131 up to 100 µCi, I one thirty one, I-131	343	N
A9582	Iodine i-123 iobenguane, diagnostic, per study dose, up to 15 millicuries	Common name: I-123-MIBG. Trade name: AdreView.	343	N
A9590	Iodine-131 iobenguane, 1 millicurie	Trade name: AZEDRA NDC # 71258-0015-02	343 or 344	K
Q9969	Technetium Tc-99m from non-highly enriched uranium source, full cost recovery add-on, per study dose	Use with 95 percent non-HEU ^{99m}Tc sourced radiopharmaceuticals	343	K
C9898	Radiolabeled product provided during a hospital inpatient stay	Effective Oct. 1, 2008	344	N
J3240	Injection, thyrotropin alpha, 0.9 mg	Thyrogen	636	K

Typical studies of the thyroid may be uptakes, scans or both. Additional exams of the endocrine system may include thyroid imaging to detect metastasis, parathyroid imaging and adrenal imaging. Thyroid scans may include a vascular flow study when using technetium pertechnetate ($^{99m}TcO_4^-$). Thyroid scans show a "picture" of the thyroid gland. Thyroid uptakes produce a numerical value only. No image is produced. This calculation determines whether a patient's gland is overactive (hyperthyroid), underactive (hypothyroid), or normal (euthyroid). Parathyroid studies are helpful when trying to differentiate between solitary adenoma from a generalized parathyroid hyperplasia.

TIPS

- When procuring the radioactive material, be certain to submit a separate charge for each radiopharmaceutical utilized. Some payers may ask you to submit an invoice when billing for these items. All parties (i.e., physicians, hospitals, etc.) will now need to identify the diagnostic radiopharmaceutical(s) with appropriate HCPCS Level II A or C codes. (C-series HCPCS codes are only for Medicare outpatient hospital coding and billing.)
- Hospital providers may consider reporting HCPCS Level II Q9969 per study dose, with any of the ^{99m}Tc based radiopharmaceutical HCPCS codes, only when the hospital can document that the patient received technetium derived from at least a 95 percent non-HEU source. Refer to the introduction of this publication for information on non-HEU billing. Additionally, if more than one study dose was administered to the patient, it would be appropriate to report multiple units based on the number of study doses, as long as each study dose meets the code description and documentation requirements. (NOTE: At the time of publication, Q9969 may only be reported for Medicare outpatient hospital coding/billing, and we are not aware of any other payers accepting or adopting this policy.)
- When medically appropriate and covered by payers, the nuclear medicine department may procure and administer Thyrogen (thyrotropin alfa) for patients with a history of differentiated thyroid carcinoma. In these cases, providers would code for the drug with HCPCS level II code J3240—injection, thyrotropin alpha, 0.9 mg. For the injection of the drug, use CPT code 96372—therapeutic, prophylactic, or diagnostic injection; subcutaneous or intramuscular. If nuclear medicine diagnostic imaging and this injection are performed on the same date of service, a modifier 59 would be required to indicate to the payer that this procedure is separate from the radiopharmaceutical administered for the nuclear medicine imaging study.

78012 Thyroid uptake, single or multiple quantitative measurement(s) (including stimulation, suppression, or discharge, when performed)

GENERAL DEFINITION

This service is for performing thyroid uptake(s) only with no imaging. The patient is typically given a radioactive capsule (occasionally solution) to swallow (usually ^{123}Iodine, or ^{131}Iodine) and then asked to return for either one or multiple measurements. The time interval may be two hours, four hours, six hours, and/or 24 or more hours after initially swallowing the diagnostic radiopharmaceutical. A device (uptake probe or gamma camera) is directed at the patient's thyroid gland (in the neck area). Counts are obtained of the patient's neck and a standard for background purposes. All these varying counts are factored into a formula, and the end result is a percentage uptake. This percentage defines whether the patient's thyroid is classified as overactive, underactive, or normal. The key point is that this code is for one or more than one time interval measurement(s) (uptake) only, without any imaging.

TIPS

- Do not unbundle the uptake and imaging procedure into separate component codes. If a combined code exists describing the study done, it must be used. In other words, do not charge separately for the thyroid uptake and the thyroid scan, including when performed on different DOS.
- Use this code if one or more measurements for thyroid uptake are performed.
- Use this code if thyroid stimulation, suppression, or discharge is performed; however, these elements are not required to report the service and are not typical.

78013 Thyroid imaging (including vascular flow, when performed);

GENERAL DEFINITION

This service is for performing thyroid imaging only, no uptake measurement(s). Regardless of the isotope used ($^{99m}TcO_4$, ^{123}Iodine or ^{131}Iodine), this code should be used to report the imaging services when performed without measurements. The imaging is typically three or more views, anterior, RAO or LAO with or without additional marker imaging to identify palpable nodules.

Imaging may be on a single day or over several days. The imaging also can include the initial flow to the thyroid, performed when the radiopharmaceutical is administered via intravenous technique.

TIPS

- Do not unbundle the uptake and imaging procedure into separate component codes. If a combined code exists describing the study done, it must be used. In other words, do not charge separately for the thyroid uptake and the thyroid scan, including when performed on different DOS.
- Use this code for any imaging technique, over one or more days.
- Use this code if the imaging includes a vascular flow of the thyroid; however, vascular flow is not required to report the service and is not typical.

78014 Thyroid imaging (including vascular flow, when performed); with single or multiple uptake(s) quantitative measurement(s) (including stimulation, suppression, or discharge, when performed)

GENERAL DEFINITION

This service is for performing both thyroid uptake(s) and imaging studies. The patient may be given a radioactive capsule (occasionally solution) to swallow (usually ^{123}Iodine or ^{131}Iodine) and then asked to return for either one or multiple measurements. The time interval may be two hours, four hours, six hours, and/or 24 or more hours after initially swallowing the diagnostic radiopharmaceutical. A device (uptake probe or gamma camera) is directed at the patient's thyroid gland (in the neck area). Counts are obtained of the patient's neck and a standard for background purposes. All these varying counts are factored into a formula, and the end result is a percentage uptake. This percentage defines whether the patient's thyroid is classified as overactive, underactive, or normal. Occasionally, dual-radiopharmaceutical techniques will be used with the imaging performed first using technetium followed by the swallowing of a capsule of iodine for the uptakes. Regardless of the isotope(s) and techniques used ($^{99m}TcO_4$, ^{123}Iodine or ^{131}Iodine), this code should be used to report when both an uptake AND imaging services are provided. The imaging is typically three or more views, anterior, RAO or LAO with or without additional marker imaging to identify palpable nodules. Imaging may be on a single day or over several days. The imaging also can include the initial flow to the thyroid, performed when the radiopharmaceutical is administered via intravenous technique.

TIPS

- Do not unbundle the uptake and imaging procedure into separate component codes. If a combined code exists describing the study done, it must be used. In other words, do not charge separately for the thyroid uptake and the thyroid scan, including when performed on different DOS.
- Use this code if one or more measurements for thyroid uptake and imaging are both performed.
- Use this code if thyroid stimulation, suppression, or discharge is performed with imaging; however, the stimulation, suppression or discharge is not required to report the service and is not typical.
- Use this code if the imaging includes a vascular flow of the thyroid in addition to the uptake; however, vascular flow is not required to report the service and is not typical.

CASE: NUCLEAR MEDICINE THYROID SCAN WITH UPTAKE

CLINICAL HISTORY

A 42-year-old woman with clinical symptoms of hypothyroidism, blood thyroid function tests indicative of hypothyroidism, and a multi-nodular goiter on physical examination.

PROCEDURE

The patient ingested 274 uCi of I-123 and the gland was imaged at 4 and 24 hours.

The patient's TSH is low at 0.4. The patient's T4 measurement is 1.33, which is within normal limits. The 4-hour uptake is 9.6 and the 24-hour uptake is 12.1%.

The image of the gland displays diffuse increased activity to the majority of the right lobe compared to the left. However, there is an area of decreased activity in the upper pole of the right lobe, which would correspond to one of the nodules seen ultrasound. This particular nodule merits further investigation. I believe it would be amenable to a fine needle aspiration biopsy by ultrasound guidance.

IMPRESSION

1. Multinodular upper pole right lobe of the thyroid.
2. The remainder of the right lobe of the thyroid displays increased uptake compared to the left, but the uptake measurements fall within the range of normal.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78014	1	2	1
A9516	3	3	4

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

78015 Thyroid carcinoma metastases imaging; limited area (eg, neck and chest only)

GENERAL DEFINITION

The purpose of this study is to image, localize and document residual thyroid tissue or metastatic thyroid tissue. The radiopharmaceuticals and imaging time frames are similar to CPT 78018; the services differ in that limited imaging is obtained (for example, the chest and neck area only are imaged).

TIPS

- Do not use this code if imaging is from the head (vertex) to below the pelvis; see 78018.
- If multiple images are performed over multiple days, submit this charge only once.
- If using ^{123}I for this study, note that HCPCS Level II code A9509 was added to report the radiopharmaceutical in increments of each millicurie administered.
- If a provider administers a therapeutic radiopharmaceutical under the hospital OPPS and plans to later perform a diagnostic scan, the provider should hold the hospital OPPS therapy claim until the diagnostic nuclear medicine scan is complete and ready to be billed.

78016 Thyroid carcinoma metastases imaging; with additional studies (eg, urinary recovery)

GENERAL DEFINITION

The purpose of this study is to image, localize and document residual thyroid tissue or metastatic thyroid tissue with measurements for urinary recovery. The radiopharmaceuticals and imaging time frames are similar to CPT 78018; the services differ in that limited imaging is obtained. (For example, the chest, neck, and pelvis/bladder may be imaged.)

TIPS

- Do not use this code if imaging is from the head (vertex) to below the pelvis; see 78018.
- If multiple images are performed over multiple days, submit this charge only once.
- If using ^{123}I for this study, note that HCPCS Level II code A9509 was added to report the radiopharmaceutical in increments of each millicurie administered.
- If a provider administers a therapeutic radiopharmaceutical under the hospital OPPS and plans to later perform a diagnostic scan, the provider should hold the hospital OPPS therapy claim until the diagnostic nuclear medicine scan is ready to be billed.

78018 Thyroid carcinoma metastases imaging; whole body

GENERAL DEFINITION

Historically referred to as ^{131}I body scan, ^{131}I metastatic survey, or ^{131}I whole body survey, this study is done 24–72 hours or more after the patient swallows a radioactive ^{131}I capsule. Recently ^{123}I in 1–4 millicuries ranges has gained popularity as an alternative or even preferred by some to ^{131}I for whole body metastatic imaging. The purpose of this study is to scan, localize and document residual thyroid tissue or metastatic thyroid tissue. Imaging is from the head to below the pelvis.

TIPS

- If multiple images are performed over multiple days, submit this charge only once.
- If using ^{123}I for this study, report HCPCS Level II code A9509 for the radiopharmaceutical in increments of each millicurie administered.
- The SNMMI coding committee consensus opinion states the following: For whole-body imaging with ^{131}I or ^{123}I for thyroid carcinoma metastases (CPT 78018), inclusion of the region from the head (vertex) to below the pelvis would constitute whole-body imaging.

- When a SPECT code is reported with a whole body code, the SPECT code should be reimbursed at 100 percent, and the whole body code at 50 percent. If the SPECT is a SPECT/CT, the same principle holds in that a SPECT or a SPECT/CT may be billed with a whole body or a whole body over two days. The higher priced study is paid at 100 percent and the lower priced of the two is paid at 50%. This is a long standing policy set by CMS. Since there are new SPECT/CT CPT codes in 2020, expect guidance in future transmittals.

+78020 Thyroid carcinoma metastases uptake (List separately in addition to code for primary procedure)

GENERAL DEFINITION

This code should be submitted in addition to code 78018. When uptakes are performed on a patient having whole body scans (CPT 78018) for thyroid carcinoma metastases scans, the update measurements are performed in a similar manner as discussed earlier in this publication. Full payment will be received for each code.

TIP

- Charge in addition to primary procedure.

78070 Parathyroid planar imaging (including subtraction, when performed);

GENERAL DEFINITION

The purpose of this study is to image parathyroid(s). Regardless of the isotope(s) and techniques (single or dual isotope) used (^{99m}Tc-sestamibi, ^{99m}Tc-tetrosmin, $^{99m}TcO_4$ ^{123}Iodine or ^{131}Iodine), this code should be used to report when parathyroid(s) are scanned using planar only imaging.

TIPS

- Use this code when subtraction technique is used for scanning parathyroid(s) with planar imaging. Note: subtraction is not a required element of this service.
- Choose the single best parathyroid CPT code—78070, 78071 or 78072—based on the image technique (e.g., planar, SPECT or SPECT/

CT) performed. Do not use CPT 78803 to report parathyroid SPECT or SPECT/CT imaging effective January 1, 2013.

- For parathyroid injection procedure without imaging, see CPT 78808.

78071 Parathyroid planar imaging (including subtraction, when performed); with tomographic (SPECT)

GENERAL DEFINITION

The purpose of this study is to image parathyroid(s). Regardless of the isotope(s) and techniques (single or dual isotope) used (^{99m}Tc-sestamibi, ^{99m}Tc-tetrofosmin, $^{99m}TcO_4$ ^{123}iodine or ^{131}iodine). This code should be used to report when both 3-D, single-photon emission computed tomography imaging (SPECT) and planar imaging for parathyroid(s) are performed.

TIPS

- Use this code when subtraction technique is used for imaging parathyroid(s) with planar plus SPECT imaging. Note: Subtraction is not a required element of this service.
- Choose the single best parathyroid CPT code (78070, 78071 or 78072) based on the image technique (e.g., planar, SPECT or SPECT/CT) performed. Do not use CPT 78803 to report parathyroid SPECT or SPECT/CT imaging.
- For parathyroid injection procedure without imaging, see CPT 78808.

78072 Parathyroid planar imaging (including subtraction, when performed); with tomographic (SPECT), and concurrently acquired computed tomography (CT) for anatomical localization

GENERAL DEFINITION

The purpose of this study is to image parathyroid(s). Regardless of the isotope(s) and techniques (single or dual isotope) used (^{99m}Tc-sestamibi, ^{99m}Tc-tetrosmin, $^{99m}TcO_4$ ^{123}Iodine or ^{131}Iodine). This code should be used

to report when the combination of 3-D, single-photon emission computed tomography (SPECT) plus CT (when it is used for anatomical localization) and planar for parathyroid(s) imaging are all performed.

TIPS

- Use this code when subtraction technique is used for scanning parathyroid(s) planar plus SPECT/CT imaging. Note: Subtraction is not a required element of this service.
- Choose the single best parathyroid CPT code (78070, 78071 or 78072) based on the image technique (e.g., planar, SPECT or SPECT/CT) performed. Do not use CPT 78803 to report parathyroid SPECT or SPECT/CT imaging.
- Do not use this code when SPECT and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead, use UPC 78099 for imaging fusion.
- Do not use this code when SPECT and full and complete diagnostic CT are performed on separate systems. Instead, use the appropriate SPECT and CT codes independently.
- This code does include CT for both attenuation correction and anatomic localization (i.e., fusion imaging). Do not charge separately for diagnostic CT imaging unless a full and complete diagnostic CT scan (i.e., not just fusion imaging) is ordered and performed. If a full and complete diagnostic CT is separately ordered, medically necessary and performed, assign the anatomic site-specific CT code, append the CT code with modifier 59, in addition to the appropriate parathyroid imaging code.
- For parathyroid injection procedure without imaging, see CPT 78808.

78075 Adrenal imaging, cortex and/or medulla

GENERAL DEFINITION

Historically, imaging is performed with ^{131}I-MIBG and, more recently, ^{123}I-MIBG, which is commonly performed to detect pheochromocytoma—a neuroendocrine tumor of the medulla of the adrenal glands. The most common radiotracer is ^{131}I-Iobenguane, known as Azedra, and is defined by HCPCS Level II code A9590. CMS does not designate diagnostic or therapeutic in the description of this code. Therefore, as the code description is currently written, this code may be used with both diagnostic or therapeutic procedures. The SNMMI along with CMS and the AHA Coding Clinic are considering more education on this topic, look for more information in 2021.

TIP

- Code separately for the radiopharmaceutical in addition to the procedure. See HCPCS level II codes A9582 when using ^{123}I-MIBG or A9508 or A9590 when using ^{131}I-MIBG.
- When reporting HCPCS A9590, remember that this code can be submitted to describe both a diagnostic as well as a therapeutic dose of the radiopharmaceutical.

78099 Unlisted endocrine procedure, diagnostic nuclear medicine

GENERAL DEFINITION

As noted in the CPT introductory language mentioned earlier in this publication, unlisted codes are used when there is no code to describe the procedure performed. You may not use a code that approximates a current code. In the absence of a code that correctly describes the procedure, use an appropriate unlisted code. This code may be used to describe endocrine diagnostic nuclear medicine procedures not already available in either CPT category I or category III codes.

TIPS

- Do not use CPT 78072 when SPECT and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead, use UPC 78099 for imaging fusion of parathyroid(s).
- When submitting an UPC, clearly define the following for any third-party payer via a written (i.e., "paper") claim: definition or description of the nature, need and extent of procedure, and the time, effort and equipment necessary to provide the service. Refer to the "Special Report" section of CPT for additional information that may also be included.

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	OPPS Rate
78012	Thyroid uptake, single or multiple quantitative measurement(s) (including stimulation, suppression, or discharge, when performed)	Global	A	2.42	$80.01	5591	S	$388.68
		TC	A	2.16	$71.41			
		26	A	0.26	$8.60			
78013	Thyroid imaging (including vascular flow, when performed);	Global	A	5.33	$176.21	5591	S	$388.68
		TC	A	4.81	$159.02			
		26	A	0.52	$17.19			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	OPPS Rate
78014	Thyroid imaging (including vascular flow, when performed); with single or multiple uptake(s) quantitative measurement(s) (including stimulation, suppression, or discharge, when performed)	Global	A	6.66	$220.18	5591	S	$388.68
		TC	A	5.97	$197.37			
		26	A	0.69	$22.81			
78015	Thyroid carcinoma metastases imaging; limited area (eg, neck and chest only)	Global	A	6.46	$213.57	5591	S	$388.68
		TC	A	5.50	$181.83			
		26	A	0.96	$31.74			
78016	Thyroid carcinoma metastases imaging; with additional studies (eg, urinary recovery)	Global	A	7.73	$255.56	5591	S	$388.68
		TC	A	6.76	$223.49			
		26	A	0.97	$32.07			
78018	Thyroid carcinoma metastases imaging; whole body	Global	A	8.70	$287.63	5592	S	$504.50
		TC	A	7.54	$249.28			
		26	A	1.16	$38.35			
78020	Thyroid carcinoma metastases uptake (List separately in addition to code for primary procedure)	Global	A	2.35	$77.69		N	$0.00
		TC	A	1.57	$51.91			
		26	A	0.78	$25.79			
78070	Parathyroid planar imaging (including subtraction, when performed);	Global	A	8.19	$270.77	5591	S	$388.68
		TC	A	7.08	$234.07			
		26	A	1.11	$36.70			
78071	Parathyroid planar imaging (including subtraction, when performed); with tomographic (SPECT)	Global	A	9.78	$323.33	5591	S	$388.68
		TC	A	8.12	$268.45			
		26	A	1.66	$54.88			
78072	Parathyroid planar imaging (including subtraction, when performed); with tomographic (SPECT), and concurrently acquired computed tomography (CT) for anatomical localization	Global	A	12.19	$403.01	5592	S	$504.50
		TC	A	10.02	$331.27			
		26	A	2.17	$71.74			
78075	Adrenal imaging, cortex and/or medulla	Global	A	12.42	$410.61	5593	S	$1,327.27
		TC	A	11.37	$375.90			
		26	A	1.05	$34.71			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	OPPS Rate
78099	Unlisted endocrine procedure, diagnostic nuclear medicine	Global	C	0.00	$0.00	5591	S	$388.68
		TC	C	0.00	$0.00			
		26	C	0.00	$0.00			
96372	Therapeutic, prophylactic, or diagnostic injection (specify substance or drug); subcutaneous or intramuscular	Global	A	0.42	$13.89	5692	Q1	$67.47

*For the most current payment rates, check *http://www.cms.gov/apps/physician-fee-schedule/overview.aspx*.

Hematopoietic, Reticuloendothelial and Lymphatic System

CPT Codes: 78102–78199, 38792

REVENUE CODES: 340 OR 341 (36X FOR 38792)

Typical Drugs and Radiopharmaceuticals Used				
HCPCS	**Description**	**Notes**	**RC**	**SI**
A9512	Technetium tc-99m pertechnetate, diagnostic, per millicurie	Straight Tech, Sodium Pertechnetate, Pertechnetate, Tech, Technetium, Technescan, Technelite	343	N
A9524	Iodine i-131 iodinated serum albumin, diagnostic, per 5 microcuries	I-131 Albumin, I one thirty one, I-131, RISA, Megatope	343	N
A9532	Iodine i-125 serum albumin, diagnostic, per 5 microcuries	I-125 HSA, I-125 albumin for plasma volume, IsoJex	343	N
A9541	Technetium tc-99m sulfur colloid, diagnostic, per study dose, up to 20 millicuries	Sulfur Colloid (SC), Tc Sc (Use this code for Oral, IV, or Filtered SC)	343	N
A9548	Indium in-111 pentetate, diagnostic, per 0.5 Millicurie	Indiclor, Indium DTPA, DTPA [pronounced dit' pa] (Use for Oral or IV)	343	N
A9553	Chromium cr-51 sodium chromate, diagnostic, per study dose, up to 250 microcuries	Chromitope Sodium, Chromium 51, sodium chromate injection, used for Red Cell volume, mass, survival or evaluation of blood loss	343	N
A9520	Technetium Tc 99m tilmanocept, diagnostic, up to 0.5 millicuries	Common name: Lymphoseek NDC # 52579-1600-05 for LymphoSeek™	343	N
Q9969	Technetium Tc-99m from non-highly enriched uranium source, full cost recovery add-on, per study dose	Use with 95 percent non-HEU ^{99m}Tc sourced radiopharmaceuticals	343	K

Procedures performed involving the lymphatic, hematopoietic and reticuloendothelial (RE) systems produce results that may be images, statistics, or both. While the vast majority of studies done in nuclear medicine provide an image that may be viewed on film or a computer screen, studies from this subsection of CPT often produce results expressed in percentages. Like other exams, the radioactive material given to the patient is in the form of an intravenous injection. Once the material is injected, the patient may either undergo a scan, a series of uptakes, or have their blood drawn to be analyzed in the laboratory.

If non-imaging laboratory studies are performed, some studies (depending on the CPT code reported) are also subject to specific rules and regulations

from CLIA. These requirements refer to quality standards for all laboratory testing to ensure the accuracy, reliability and timeliness of patient test results regardless of where the test was performed. The following CPT codes are those referring to nuclear studies.

78110	78121	78191
78110-TC	78121-TC	78191-TC
78111	78122	78267
78111-TC	78122-TC	78268
78120	78130	
78120-TC	78130-TC	

Find the CLIA website at: *https://www.cms.gov/Regulations-and-Guidance/Legislation/CLIA/Downloads/SubjecttoCLIA.pdf*.

When billing any of these codes, on the CMS-1500 form,be aware that a CLIA number will also have to be present.

Bone marrow scanning is used to detect where active functioning marrow is found, as opposed to abnormal areas. These abnormal areas may be a result of disorders such as anemia, lymphoma, sickle cell disease or leukemia.

Spleen scans, often done in conjunction with liver scanning (see codes 78215 or 78216), are performed following an injection of ^{99m}Tc SC. Images are then acquired in multiple views to demonstrate characteristics such as size, shape and position of the spleen. This study is often performed both before and after traumatic events involving the spleen. A flow study may also be done with this exam.

Lymphatic imaging may be performed following injection of ^{99m}Tc SC also. Images may be acquired of a single area, multiple areas, or the whole body. A newer technique has been developed where the filtered radioactivity is injected with non-imaging uptakes performed to locate a sentinel node.

Non-imaging lab studies, while still performed, are rarely done in the nuclear medicine department. Often referred to as “wet lab” exams, most studies are now performed in the hospital laboratory. A study that may be done is known as a red cell survival study. For this procedure, the patient receives an injection of tagged red blood cells labeled to ^{51}Cr. Samples of the patients’ blood are drawn one day (24 hours) later as well as occasionally over the next three weeks. Results are calculated to help differentiate and manage hemolytic anemia. Additional measurements may also be taken over the patients’ spleen to define the spleen’s involvement in various conditions. This is known as a splenic sequestration study.

TIPS

- CLIA is a federal requirement that is not conditional upon Medicare and Medicaid billing. Regardless of the number of tests performed in your facility, the CLIA certificate requirements apply.

- The following CPT codes are subject to CLIA editing based on the CLIA certification of the performing entity: 78110, 78111, 78120, 78121, 78122, 78130, and 78191.
- When providing the services defined by CPT codes 78110–78130 at multiple locations, it is necessary to apply for a separate CLIA number for each physical location of street address and under direction of the hospital's primary library. The exception to this requirement is a hospital setting where laboratories are located in different buildings on the same campus within the same physical location of street address and under direction of the hospital's primary laboratory.
- Most commercial payers will require preauthorization of the procedures described in this chapter.
- When procuring the radioactive material, be certain to submit a separate charge for each radiopharmaceutical utilized. Some payers may ask you to submit an invoice when billing for these items. All parties (i.e., physicians, hospitals, etc.) will now need to identify the diagnostic radiopharmaceutical(s) with appropriate HCPCS Level II A or C codes. (C-series HCPCS codes are only for Medicare outpatient hospital coding and billing.)
- Hospital providers may consider reporting HCPCS Level II Q9969 per study dose, with any of the ^{99m}Tc based radiopharmaceutical HCPCS codes, only when the hospital can document that the patient received technetium derived from at least a 95 percent non-HEU source. Refer to the introduction of this publication for information on non-HEU billing. Additionally, if more than one study dose was administered to the patient, it would be appropriate to report multiple units based on the number of study doses, as long as each study dose meets the code description and documentation requirements. (NOTE: At the time of publication, Q9969 may only be reported for Medicare outpatient hospital coding/billing, and we are not aware of any other payers accepting or adopting this policy.)

78102 Bone marrow imaging; limited area

GENERAL DEFINITION

The patient is injected with radiopharmaceutical, and static images are acquired over a single region (i.e., the chest, the legs, etc.). This study may often be performed before or after radiation therapy or chemotherapy.

78103 Bone marrow imaging; multiple areas

GENERAL DEFINITION

As in 78102, but images are acquired in two or more areas (i.e., feet, lower legs and knees, chest, abdomen, pelvis, etc.).

78104 Bone marrow imaging; whole body

GENERAL DEFINITION

As in 78102, but images are acquired from the head to at least the level of the knees, more commonly, to the ankles/feet. These images may be acquired from either a whole body imaging system or multiple "spot" films of each area.

TIP

- The SNMMI coding committee consensus opinion states: Bone/joint (78306), bone marrow (78104) or tumor whole-body (78802, 78804) require imaging from the top of the head (vertex) to toes (almost). If the toes are not imaged, it would not negate the use of whole-body, although typically the toes are included.

78122 Whole blood volume determination, including separate measurement of plasma volume and red cell volume (radiopharmaceutical volume-dilution technique)

GENERAL DEFINITION

Blood volume analysis is based on the concept of the indicator dilution technique, whereby a tracer substance (e.g., albumin ^{131}I) is mixed into an unknown volume. An identical amount of tracer is placed into a known volume. By comparing the concentration of the indicator between the known and unknown volumes, an exact measurement of the unknown volume can be obtained.

TIP

- For blood count, spun microhematocrit, use CPT 85013 in conjunction with CPT 78122, if performed.

78130 Red cell survival study

GENERAL DEFINITION

Patient is given an injection of radioactive material with blood samples being drawn at 24 hours, and then multiple times over the next three weeks. The blood cells are then "counted" to detect the amount of radioactivity contained in them and compared against background and standards.

TIPS

- This code is subject to CLIA requirements. A CLIA certificate is required by the test site performing this procedure. When reporting this code on the CMS-1500 claim form, the CLIA number must be submitted on the claim.
- Do not charge this code multiple times over the course of the procedure.

In 2021, CPT deleted code 78135. Providers should update their chargemasters accordingly.

Instead of	See	Description
78135	78130	Red cell survival study
	78199	Unlisted hematopoietic, reticuloendothelial and lymphatic procedure, diagnostic nuclear medicine

78185 Spleen imaging only, with or without vascular flow

GENERAL DEFINITION

Patient is injected with radiopharmaceutical with images of the spleen acquired in multiple views. This exam may be done with a vascular flow study.

78195 Lymphatics and lymph nodes imaging

GENERAL DEFINITION

Patient is injected with radioactive material and images are acquired of one or multiple areas.

TIPS

- Do not confuse this code with 38792. Do not report code 78195 with code 38792.
- When performing non-imaging sentinel node exam, report only code 38792. If ultrasound guidance is utilized to perform this injection, also submit code 76942.
- If the lymphoscintigraphy imaging includes SPECT imaging, code only 78803. For SPECT alone or with planar imaging with or without flow, assign CPT 78803, or the most appropriate 788XX CPT code based on

the procedure performed—radiopharmaceutical localization of tumor or distribution of radiopharmaceutical agent(s); tomographic. SNMMI coding committee pointed out the term "distribution," which allows this code to be used for broader indications outside of the original, more restrictive "tumor imaging" language. To further clarify, SNMMI coding committee stated that it would NOT recommend assigning both CPT codes. Instead, choose the single code that describes the protocol and procedure performed.

- A SNMMI coding opinion states that if a nuclear pharmacy supplies several syringes of a radiopharmaceutical (e.g., ^{99m}Technetium sulfur colloid or ^{99m}Technetium tilmanocept), the billing unit remains one (1) as units for these codes are defined and intended to be ***by a study*** not per syringe.
- Bilateral concept (e.g., CPT 38792) does not apply to 78195. When performed, imaging is considered one single study; therefore, the tracers are "per study dose" even if they are administered in separate syringes. Additionally, the inclusion of right and or left would be included in the single study service.

CASE: NUCLEAR MEDICINE SENTINAL NODE IMAGING

CLINICAL HISTORY

68-year-old female with biopsy-proven infiltrating ductal carcinoma, for sentinel node procedure.

PROCEDURE

Informed consent was obtained. It was determined to do a periareolar injection. The skin was cleansed with Betadine and alcohol. This was done after a topical Xylocaine had been applied for approximately 5 minutes. A total of 5 intradermal injections, a total volume of 0.514 mL, a total dose of 0.514 mCi of technetium 99 sulfur colloid was injected in the periareolar left nipple. One (1) hour post injections, imaging was performed in the anterior, left anterior oblique (LAO), and left lateral positions. These demonstrated a normal appearance of the radiotracer at the site of injection. These also demonstrated a single focus of intense radiotracer uptake superomedial and posterior to the periareolar location. There were two fainter areas of uptake, one medial and one superior to this area of intense radiotracer uptake.

IMPRESSION

Successful sentinel node injection with a singular focus of intense radiotracer uptake superomedial and posterior to the periareolar injection site.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78195	1	2	1
A9541	1	3	1

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and

MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

78199 Unlisted hematopoietic, reticuloendothelial and lymphatic procedure, diagnostic nuclear medicine

GENERAL DEFINITION

As noted in the CPT introductory language mentioned earlier in this publication, unlisted codes are used when there is no code to describe the procedure performed. You may not use a code that approximates a current code. In the absence of a code that correctly describes the procedure, use an appropriate unlisted code. This code may be used to describe hematopoietic, reticuloendothelial or lymphatic diagnostic nuclear medicine procedures not already available in either CPT category I or category III codes.

TIP

- Use this UPC code for injection of axillary reverse mapping (ARM) as this service does not currently have a specific CPT code for reporting of this service.
- When submitting an UPC, clearly define the following for any third-party payer via a written (i.e., "paper") claim: definition or description of the nature, need and extent of procedure, and the time, effort and equipment necessary to provide the service. Refer to the "Special Report" section of CPT for additional information that also may be included.

38792 Injection procedure; radioactive tracer for identification of sentinel node

GENERAL DEFINITION

Exam in which an injection of a radiolabeled material is made for subsequent localization of where this material drains. This study is known as a sentinel node procedure and is a non-imaging (no images/pictures are taken) study.

An uptake probe is utilized to localize this "hot" area, thereby pinpointing the location.

TIPS

- Do not report code 78195 with code 38792.
- Do not report 38792 for an intravenous injection technique, these procedures are typically interstitial.
- For claims with dates of service on or after January 1, 2011, for methylene blue dye procedures, report CPT code 38900—intraoperative identification (e.g., mapping) of sentinel lymph node(s), includes injection of non-radioactive dye.
- On the rare occasion that bilateral injections for sentinel node identification are performed, check with local payers regarding appending an appropriate modifier. Consider modifier 59 (distinct procedural service), 51 (multiple procedures), 76 (repeat procedure or service by same physician, or 50 (bilateral procedure), which can be used when providers inject both breasts for sentinel node identification, CPT 38792. Providers would bill one unit of 38792 with modifier 50 to inform the payer this was a bilateral procedure. CMS's MUE contractor informed the SNMMI coding committee that one unit with modifier 50 for 38792 is CMS's guidance.
- Effective 2012, CPT added the words "radioactive tracer" to the description to clarify that 38792 is no longer used for blue dye. For blue dye usage, see 38900.
- A SNMMI coding opinion states that if a nuclear pharmacy supplies several syringes of a radiopharmaceutical (e.g., ^{99m}Technetium sulfur colloid or ^{99m}Technetium tilmanocept), the billing unit remains one (1) as units for these codes are defined and intended to be ***by a study*** not per syringe.

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	OPPS Rate
38792	Injection procedure; radioactive tracer for identification of sentinel node	Global	A	2.47	$81.66	5591	Q1	$388.68
38900	Intraoperative identification (eg, mapping) of sentinel lymph node(s) includes injection of non-radioactive dye, when performed (List separately in addition to code for primary procedure)	Global	A	4.06	$134.23		N	$0.00

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	OPPS Rate
78102	Bone marrow imaging; limited area	Global	A	4.86	$160.68	5591	S	$388.68
		TC	A	4.12	$136.21			
		26	A	0.74	$24.46			
78103	Bone marrow imaging; multiple areas	Global	A	5.22	$172.58	5591	S	$388.68
		TC	A	4.34	$143.48			
		26	A	0.88	$29.09			
78104	Bone marrow imaging; whole body	Global	A	7.02	$232.09	5591	S	$388.68
		TC	A	5.92	$195.72			
		26	A	1.10	$36.37			
78110	Plasma volume, radiopharmaceutical volume-dilution technique (separate procedure); single sampling	Global	A	2.06	$68.11	5593	S	$1,327.27
		TC	A	1.83	$60.50			
		26	A	0.23	$7.60			
78111	Plasma volume, radiopharmaceutical volume-dilution technique (separate procedure); multiple samplings	Global	A	2.19	$72.40	5593	S	$1,327.27
		TC	A	1.92	$63.48			
		26	A	0.27	$8.93			
78120	Red cell volume determination (separate procedure); single sampling	Global	A	2.11	$69.76	5591	S	$388.68
		TC	A	1.83	$60.50			
		26	A	0.28	$9.26			
78121	Red cell volume determination (separate procedure); multiple samplings	Global	A	2.30	$76.04	5592	S	$504.50
		TC	A	1.92	$63.48			
		26	A	0.38	$12.56			
78122	Whole blood volume determination, including separate measurement of plasma volume and red cell volume (radiopharmaceutical volume-dilution technique)	Global	A	2.96	$97.86	5592	S	$504.50
		TC	A	2.35	$77.69			
		26	A	0.61	$20.17			
78130	Red cell survival study;	Global	A	3.69	$121.99	5591	S	$388.68
		TC	A	2.97	$98.19			
		26	A	0.72	$23.80			
78140	Labeled red cell sequestration, differential organ/tissue (eg, splenic and/or hepatic)	Global	A	3.26	$107.78	5591	S	$388.68
		TC	A	2.54	$83.97			
		26	A	0.72	$23.80			
78185	Spleen imaging only, with or without vascular flow	Global	A	4.74	$156.71	5591	S	$388.68
		TC	A	4.26	$140.84			
		26	A	0.48	$15.87			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	OPPS Rate
78191	Platelet survival study	Global	A	3.69	$121.99	5591	S	$388.68
		TC	A	2.97	$98.19			
		26	A	0.72	$23.80			
78195	Lymphatics and lymph nodes imaging	Global	A	9.87	$326.31	5592	S	$504.50
		TC	A	8.22	$271.76			
		26	A	1.65	$54.55			
78199	Unlisted hematopoietic, reticuloendothelial and lymphatic procedure, diagnostic nuclear medicine	Global	C	0.00	$0.00	5591	S	$388.68
		TC	C	0.00	$0.00			
		26	C	0.00	$0.00			
85013	Blood count; spun microhematocrit	Global	X	0.00	$0.00		Q4	$0.00

*For the most current payment rates, check *http://www.cms.gov/apps/physician-fee-schedule/overview.aspx*.

**Paid according to Medicare Clinical Laboratory Fee Schedule. (See *https://www.cms.gov/ClinicalLabFeeSched/.)*

Gastrointestinal System

CPT Codes: 78201–78299, 49427

REVENUE CODES: 340 OR 341 (36X FOR 49427)

Typical Drugs and Radiopharmaceuticals Used				
HCPCS	**Description**	**Notes**	**RC**	**SI**
A9510	Technetium tc-99m disofenin, diagnostic, per study dose, up to 15 millicuries	DISIDA, 99mTc IDA, Disofenin, HIDA, MIDA, PIPIDA	343	N
A9512	Technetium tc-99m pertechnetate, diagnostic, per millicurie	Straight Tech, Sodium Pertechnetate, Pertechnetate, Tech, Technetium, Technescan, Technelite	343	N
A9537	Technetium tc-99m mebrofenin, diagnostic, per study dose, up to 15 millicuries	Choletec, 99mTc BrIDA, Mebrofenin	343	N
A9541	Technetium tc-99m sulfur colloid, diagnostic, per study dose, up to 20 millicuries	Sulfur Colloid (SC), Tc Sc (Use this code for Oral, IV, or Filtered SC)	343	N
A9546	Cobalt co-57/58, cyanocobalamin, diagnostic, per study dose, up to 1 microcurie	Nycomed, Cobalt, Cobalt 57/58	343	N
A9548	Indium in-111 pentetate, diagnostic, per 0.5 Millicurie	Indiclor, Indium DTPA, DTPA [pronounced dit' pa] (Use for Oral or IV)	343	N
A9559	Cobalt co-57 cyanocobalamin, oral, diagnostic, per study dose, up to 1 microcurie	RUBRATOPE-57, CO-BATOPE-57, Dicopac kit, Shillings Study Cobalt, Cobalt 57	343	N
A9560	Technetium tc-99m labeled red blood cells, diagnostic, per study dose, up to 30 millicuries	Tagged Red Cells, Tagged RBCs, ULTRATAG or (nonradioactive [cold]) PYP (pyrophosphate) + 99m Tc — Code to be used for both the invivo/invitro methods of tagging Red Blood Cells	343	N
Q9969	Technetium Tc-99m from non-highly enriched uranium source, full cost recovery add-on, per study dose	Use with 95 percent non-HEU ^{99m}Tc sourced radiopharmaceuticals	343	K
J2270	Injection, morphine sulfate, up to 10 mg	Infumorph	636	N
J2805	Injection, sincalide, 5 micrograms	Kinevac, CCK, Cholecystokinin	636	N
Q9968	Injection, non-radioactive, non-contrast, visualization adjunct (e.g., methylene blue, isosulfan blue), 1 mg	Used typically by surgeon for sentinel node identification in OR	636	K

Imaging studies commonly performed in the gastrointestinal (GI) system are liver scans, liver-spleen scans, gallbladder (hepatobiliary) imaging, gastric emptying, Schilling's tests, GI bleeding exams, and Meckel's diverticulum scans. The radioactive materials for these exams, for the most part, are injected intravenously into the patient, but some studies may involve the patient swallowing a pill, drinking a (radioactive) liquid, or eating radioactive food. Some studies require only static (planar) images to be acquired, while others involve both vascular flow (dynamic) and static images. Still others include the acquisition of SPECT images.

Liver scans as well as liver/spleen scans are performed following the injection of a radioactive material (usually sulfur colloid) with several static images taken of both organs. Occasionally, a vascular flow study will also be performed to examine splenic and/or hepatic perfusion. SPECT images of the liver and/or spleen may also be done.

Another type of liver scan performed is to localize a hemangioma. This exam entails injecting technetium-labeled red blood cells (RBCs) intravenously with a vascular flow study and SPECT images acquired.

Biliary ductal system function (gallbladder or hepatobiliary) scans are one of the most common nuclear GI studies performed. Images are typically acquired in a serial fashion until radioactivity is seen in either the gallbladder or small bowel. Occasionally, additional non-radioactive pharmaceuticals also may be given to patients to assist in diagnosis.

A common example is when CCK (cholecystokinin) or sincalide (Kinevac) is injected intravenously during the hepatobiliary procedure. Morphine sulfate may also be utilized either during, or prior to, the procedure. All drugs should be coded and billed separately in addition to the procedure. Additionally, an ejection fraction (a quantitative measurement) of the gallbladder may be performed as part of the procedure.

Hepatobiliary imaging is now done with a single type of RP from a variety of compounds that share the common iminodiacetate moiety. The deleted CPT code 78220, which was formerly performed with ^{131}I rose bengal, an RP that is no longer available, is now done with the same RP used for gallbladder imaging and all other hepatobiliary imaging. Hepatobiliary imaging is occasionally requested to assess a bile leak in a post-operative patient who has had surgery involving the gallbladder and/or biliary tract. Therefore, adding the language "gallbladder when present" to both new codes will help to clarify the appropriate code to report. The 2011 codes also did not reflect the major difference

in physician and technical work required to perform a study that includes a pharmacological intervention during the procedure, whether or not there is quantification of gallbladder or hepatic function.

The second new procedure is CPT code 78227, which includes administration of a drug during the procedure that stimulates gallbladder contraction. It is used during assessment for acute cholecystitis, which causes spasm at the Sphincter of Oddi, and can help differentiate between acute and chronic cholecystitis.

Gastric emptying studies (GES) are performed on a patient with suspected gastric motility disorders. These studies are often done on patients with diabetes or patients who have had part of their stomach removed. A radioactive meal is prepared for the patient to eat. Sometimes a dual-isotope technique is performed in which the patient both eats food and drinks a beverage with radioactivity in it.

GI bleeding studies are performed to localize an active, or intermittent, gastrointestinal bleeding site(s). The patient is injected with a radioactive material with imaging typically commencing immediately, and often carried out for several hours. Occasionally, delayed images may be taken up to 24 hours later.

A Meckel's diverticulum study, or Meckel's scan, is done to localize ectopic gastric tissue. This sac-like pouch is usually found on the small intestine. Typically performed on children, this exam may determine the occurrence of abdominal pain or gastrointestinal bleeding in kids. This exam usually lasts from 15-60 minutes, and may also include a vascular flow study.

TIPS

- When procuring the radioactive material, be certain to submit a separate charge for each radiopharmaceutical utilized. Some payers may ask you to submit an invoice when billing for these items. All parties (i.e., physicians, hospitals, etc.) will now need to identify the diagnostic radiopharmaceutical(s) with appropriate HCPCS Level II A or C codes. (C-series HCPCS codes are only for Medicare outpatient hospital coding and billing.)
- Hospital providers may consider reporting HCPCS Level II Q9969 per study dose, with any of the ^{99m}Tc based radiopharmaceutical HCPCS codes, only when the hospital can document that the patient received technetium derived from at least a 95 percent non-HEU source. Refer to the introduction of this publication for information on non-HEU billing. Additionally, if more than one study dose was administered to the patient,

it would be appropriate to report multiple units based on the number of study doses, as long as each study dose meets the code description and documentation requirements. (NOTE: At the time of publication, Q9969 may only be reported for Medicare outpatient hospital coding/billing, and we are not aware of any other payers accepting or adopting this policy.)

78201 Liver imaging; static only

GENERAL DEFINITION

Patient is injected with radiopharmaceutical and multiple static images are acquired of the liver in several different views (projections).

TIPS

- Use this code if the patient no longer has a spleen and images are acquired by planar technique.
- The SNMMI coding committee does not recommend using more than one code from the 78201–78216 series for billing a single imaging liver or liver spleen study. Choose the single highest valued code based on the procedure performed. CCI does currently allow, with modifier 59, some of the CPT code combinations for 78201–78216; however, this is not recommended.

78202 Liver imaging; with vascular flow

GENERAL DEFINITION

As in 78201, but an initial vascular flow set of images is taken (dynamic study) of the radioactive material flowing into the liver prior to the static views.

TIPS

- Do not unbundle into separate charges for vascular flow imaging and static images, as this would constitute unbundling. If a comprehensive code exists detailing both portions of the study done, that code must be used.
- Use this code if the patient no longer has a spleen and images are acquired by planar technique including vascular flow images.

- If performed including the liver *and spleen*, see 78215, 78216 or the 788XX series, choose only one of these CPT codes. If several of these codes are appropriate, select the highest valued CPT procedure performed and bill only that one single CPT code.
- If only the spleen is imaged, use code 78185.
- The SNMMI coding committee does not recommend using more than one code from the 78201–78216 code series for billing a single imaging liver or liver spleen study. Choose the single highest valued code based on the procedure performed. CCI does currently allow, with modifier 59, some of the CPT code combinations for 78201–78216; however, this is not recommended.

In 2020, CPT deleted codes 78205 and 78206. Codes 78803 and 78831 describe SPECT imaging. Codes 78830 and 78832 describe SPECT/CT imaging. Providers should consider separate anatomic site-specific line items with the same CPT code to account for the varying organ specific costs when using the 788XX series of codes for these services.

78215 Liver and spleen imaging; static only

GENERAL DEFINITION

As described in code 78201, but images are now also acquired of the spleen. Because of the larger size and available detection area of current nuclear medicine (gamma) cameras, this study is more often performed than 78201.

TIPS

- The SNMMI coding committee does not recommend using more than one code from the 78201–78216 code series for billing a single imaging liver or liver spleen study. Choose the single highest valued code based on the procedure performed. CCI does currently allow, with modifier 59, some of the CPT code combinations for 78201–78216; however, this is not recommended.
- If only the spleen is imaged, use 78185.

78216 Liver and spleen imaging; with vascular flow

GENERAL DEFINITION

As in 78215, but an initial vascular flow set of images is taken (dynamic study) of the radioactive material flowing into the liver and spleen prior to the static views.

TIPS

- Do not unbundle into separate charges for vascular flow imaging and SPECT or static images, as this would constitute unbundling. If a comprehensive code exists detailing both portions of the study done, that code must be used.
- The SNMMI coding committee does not recommend using more than one code from the 78201–78216 series for billing a single imaging liver or liver spleen study. Choose the single highest valued code based on the procedure performed. CCI does currently allow, with modifier 59, some of the CPT code combinations for 78201–78216; however, this is not recommended.
- If only the spleen is imaged, use 78185.

78226 Hepatobiliary system imaging, including gallbladder when present;

GENERAL DEFINITION

This exam goes by many different names. Some common ones are biliary scan, PIPDA scan, DISIDA scan, HIDA scan, disofenin scan, mebrofenin scan, Choletec scan, gallbladder scan, GB, with EF or hepatobiliary study. Whatever the name, all refer to the same procedure—the overall function of the liver, gallbladder when present, and biliary tree. Unlike the liver studies previously defined, this study examines how well the liver, biliary system and gallbladder function.

An intravenous injection of one of the hepatobiliary tracers is given with images focused on the abdomen, specifically the liver and small bowel area. Initial images show the radioactivity primarily in liver, but, later (in a normal patient),

radioactivity begins to flow through the hepatic system into the gallbladder and finally into the small bowel. Occasionally, other non-radioactive drugs are administered prior to the radiopharmaceutical, most commonly morphine sulfate. If a pretreatment drug (e.g., morphine sulfate) is utilized, the administration is part of this procedure; however, the drug supply may be charged separately.

TIPS

- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for additional codes and charges for the pretreatment drug.
- It would not be appropriate to use this code if the radiopharmaceutical administered is ^{99m}Tc SC.
- Use this code when the patient does not have a gallbladder or an evaluation of the gallbladder is not performed.
- For studies that utilize a drug during the procedure to elicit a response, such as but not limited to calculating the gallbladder ejection fraction, use 78227.
- Pretreatment with a drug such as morphine, is included in either 78226 or 78227. Use of a fatty meal is not considered a drug intervention, therefore use 78226.

78227 Hepatobiliary system imaging, including gallbladder when present; with pharmacologic intervention, including quantitative measurement(s) when performed

GENERAL DEFINITION

Similar to 78226, this exam may be referred to by many different names. Some common ones are biliary scan, PIPDA scan, DISIDA scan, HIDA scan, disofenin scan, mebrofenin scan, Choletec scan, gallbladder scan, GB, with EF or hepatobiliary study. Whatever the name, they all refer to the same procedure—the overall function of the liver, gallbladder when present, and biliary

tree. Unlike the liver studies previously defined, this study examines how well the liver, biliary system and gallbladder function. An intravenous injection of one of the hepatobiliary tracers is given with images focused on the abdomen, specifically the liver and small bowel area. Initial images show the radioactivity primarily in liver, but, later (in a normal patient), radioactivity begins to flow through the hepatic system into the gallbladder and finally into the small bowel. Occasionally, other non-radioactive drugs are administered prior to the radiopharmaceutical, most commonly morphine sulfate. If a pretreatment drug (e.g., morphine sulfate) is utilized, the administration is part of this procedure; however, the drug supply may be charged separately. Additionally, **during** this procedure other non-radioactive drugs will be given to elicit a gallbladder contraction. Typical materials are sincalide, Kinevac (cholecystokinin or CCK) or morphine sulfate (MS).

TIPS

- If other non-radioactive drugs (water and fatty meals are not drugs) are utilized either during or for pretreatment, refer to the current Level II series HCPCS manual (typically J codes) for additional codes or charges for the drug(s).
- It would not be appropriate to use this code if the radiopharmaceutical administered is ^{99m}Tc sulfur colloid.
- Use this code when the patient does not have a gallbladder or when an evaluation of the gallbladder is not performed.
- For studies that utilize a drug preprocedure, such as morphine sulfate, use 78226.
- Pretreatment with a drug such as morphine, is included in either 78226 or 78227. Use of a fatty meal is not considered a drug intervention, therefore use 78226.
- For studies that utilize a drug during the procedure to elicit a response, such as but not limited to calculating the gallbladder ejection fraction, use 78227.

CASE: NUCLEAR MEDICINE HEPATOBILIARY SCAN

CLINICAL HISTORY

A 57-year-old female presents with a history of intermittent right upper quadrant abdominal pain often associated with ingestion of a fatty meal. Work up, including gallbladder ultrasonography and upper endoscopy, is unremarkable. A hepatobiliary study is ordered for evaluation, including gallbladder function.

PROCEDURE

7.5 millicuries of Technetium 99 Choletec was administered. Subsequently, 4.6 micrograms of (Kinevac) sincalide was administered.

Initial images show homogeneous activity in the liver. Gallbladder is seen in 10 minutes. Small bowel was not demonstrated until 2 hours post injection. After small bowel was seen, sincalide was administered. The gallbladder ejection fraction is calculated to be 67%.

IMPRESSION

1. Patent cystic duct and common bile duct. Common bile duct patency was seen at 2 hours.
2. 67% ejection fraction of the gallbladder.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78227	1	3	1
A9537	1	3	1
J2805	1	3	3

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

78230 Salivary gland imaging

GENERAL DEFINITION

The salivary glands secrete saliva, which is important functionally to lubricate and solubilize food before digestion. Saliva is also important in initiating starch digestion and reducing bacterial overgrowth in the mouth. Salivary gland imaging in nuclear medicine is used to establish the functional capacity of salivary gland tissue and to demonstrate whether lesions are metastatic or primary to the salivary gland. For this procedure the patient is injected with technetium pertechnetate and planar anterior images are obtained 15 to 30 minutes post injection. Patient is instructed to rinse mouth, and to try not to swallow during imaging.

TIP

- Do not report 78445 in addition to any other nuclear medicine procedure. As the SNMMI coding committee states, "CPT 78445 is a single-body-area flow imaging study and a stand-alone procedure code and is not intended to be used as an add-on code with other nuclear medicine procedures. The commonly performed flows with nuclear medicine procedures have their own specific CPT codes such as the conventional three-phase bone scan, CPT 78315 Bone and/or joint imaging; three phase and typically consists of flow, blood-pool and delayed imaging phases or CPT 78216 Liver-Spleen Imaging with vascular flow." A flow study would be inherent in this procedure code.

78231 Salivary gland imaging; with serial images

GENERAL DEFINITION

As described in CPT 78230, however this is the most common code reported for salivary gland imaging. In this procedure, multiple images are obtained over time (e.g. 60 min dynamic), hence description of serial imaging as well as imaging of the patient prior and post sucking on a lemon wedge or lemon candy. Quantifications are often performed but are not required.

TIPS

- Do not report 78445 in addition to any other nuclear medicine procedure. As the SNMMI coding committee states, "CPT 78445 is a single-body-area flow imaging study and a stand-alone procedure code and is not intended to be used as an add-on code with other nuclear medicine

procedures. The commonly performed flows with nuclear medicine procedures have their own specific CPT codes such as the conventional three-phase bone scan, CPT 78315 Bone and/or joint imaging; three phase and typically consists of flow, blood-pool and delayed imaging phases or CPT 78216 Liver-Spleen Imaging with vascular flow." A flow study would be inherent in this procedure code.

- Do not assign code 78231 with 78230.

78232 Salivary gland function study

GENERAL DEFINITION

As described in CPT 78230, however the addition of images post the patient sucking on lemon wedge or lemon candy, no dynamic imaging for this procedure, when dynamic imaging is performed see 78231. Quantifications are more often performed but are not required.

TIP

- Do not report 78445 in addition to any other nuclear medicine procedure. As the SNMMI coding committee states, "CPT 78445 is a single-body-area flow imaging study and a stand-alone procedure code and is not intended to be used as an add-on code with other nuclear medicine procedures. The commonly performed flows with nuclear medicine procedures have their own specific CPT codes such as the conventional three-phase bone scan, CPT 78315 Bone and/or joint imaging; three phase and typically consists of flow, blood-pool and delayed imaging phases or CPT 78216 Liver-Spleen Imaging with vascular flow." A flow study would be inherent in this procedure code.

78258 Esophageal motility study

GENERAL DEFINITION

Esophageal motility imaging is similar to the more common procedures of gastric emptying studies in that it involves ingestion of radioactive water or food. However, this procedure focuses and images only the esophagus. Dynamic images are obtained while the patient is swallowing the meal. Quantifications are often performed but not required.

TIP

- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual to verify if a separate J-coded option exists for this material.

78261 Gastric mucosa imaging

GENERAL DEFINITION

In this procedure, the imaging is focused on the stomach lining and mucus that is intended to protect the gastric lining from damage by acid. Different from gastric emptying in that the patient is injected with pertechnetate rather than ingesting and different from 78290 in that the focus is on the stomach rather than the intestine. This procedure focuses imaging on the wall of the stomach and is less commonly performed.

TIP

- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual to verify if a separate J-coded option exists for this material.
- See code 78290 for Meckel's diverticulum imaging.

78262 Gastroesophageal reflux study

GENERAL DEFINITION

Similar to CPT code 78264, this exam requires that the patient ingest liquid that has had radioactivity impregnated into it, most commonly ^{99m}Tc SC. The field of view is high in the abdomen and pressure may be applied as the study is evaluating stomach reflux.

TIPS

- Use this code for pulmonary aspiration imaging studies using ^{99m}Tc SC in liquid.
- If the service is performed only for the intent to assess for possible gastroesophageal reflux for pulmonary aspiration report code 78262—gastroesophageal reflux study.
- If the assessment is made to determine if delayed gastric emptying is contributing to reflux, see one of three GES codes 78264–78266 using guidance for each code to arrive at appropriate code selection and submission.

78264 Gastric emptying imaging study (eg, solid, liquid, or both);

GENERAL DEFINITION

This exam requires the patient to eat, or eat and drink, food that has been impregnated with radioactivity. The more common single isotope solid phase study uses ^{99m}Tc SC, usually in scrambled eggs. The liquid phase uses ^{111}In DTPA in a beverage. Once a patient ingests the material(s), he or she is scanned over the next one to four hours with the camera centered over the stomach. Computer images also are acquired to allow for calculation of the percentage of radioactivity emptied, as well as the amount retained. This study is often performed on diabetic patients, patients with anorexia, or those with gastric outlet obstruction.

TIPS

- If a dual-radiopharmaceutical technique is utilized to obtain both solid- and liquid-phase studies in the same session or on the same day, report 78264 once. CPT has clarified that this code would be reported for a solid only, a liquid only or if both a solid and liquid GES is performed on the same date of service. Report this code only once regardless of the technique (i.e., solid, liquid or solid and liquid) performed.
- If the service is performed only for the intent to assess for possible gastroesophageal reflux for pulmonary aspiration, report code 78262—gastroesophageal reflux study.
- If the assessment is made to determine if delayed gastric emptying is contributing to reflux, consider one of three GES codes 78264–78266, using guidance for each code to arrive at appropriate code selection and submission.

78265 Gastric emptying imaging study (eg, solid, liquid, or both); with small bowel transit

GENERAL DEFINITION

Codes 78265 and 78266 are used to recognize and report the motility of the entire GI tract (i.e., stomach, small bowel and colon). These exams require the patient to eat, or eat and drink, food that has been impregnated with radioactivity. The more common single isotope solid phase study uses ^{99m}Tc SC,

usually in scrambled eggs. The liquid phase uses ^{111}In DTPA in a beverage. For small bowel and/or colon transit studies the more common protocol is a dual radioisotope technique; however, this code may be reported using any protocol. Once the patient ingests the material(s), they are scanned over the next several hours (typically up to 24 to 26 hours), the camera is centered over the stomach and imaging occurs until accumulation in the terminal ileum reservoir is seen. The determining factor in code selection is the intent to analyze and report on both GES and the small bowel for the patient. Computer images are also acquired to allow for calculation of the percentage of radioactivity emptied, as well as the amount retained.

TIPS

- If a dual-radiopharmaceutical technique is utilized to obtain both solid- and liquid-phase studies in the same session or on the same day report 78265 once. CPT clarified CPT 78264–78266 would be reported for a solid only, a liquid only or if both a solid and liquid GES were performed on the same date of service. Report this code only once regardless of the technique (i.e., solid, liquid or solid and liquid) performed.
- If the service is performed only for the intent to assess for possible gastroesophageal reflux for pulmonary aspiration, report 78262—gastroesophageal reflux study.
- If the assessment is made to determine if delayed gastric emptying is contributing to reflux, see one of three GES codes 78264–78266 using guidance for each code to arrive at appropriate code selection and submission.

78266 Gastric emptying imaging study (eg, solid, liquid, or both); with small bowel and colon transit, multiple days

GENERAL DEFINITION

Codes 78265 and 78266 are used to recognize and report the motility of the entire GI tract (i.e., stomach, small bowel and colon). These exams require the patient to eat, or eat and drink, food that has been impregnated with radioactivity. The more common single isotope solid phase study uses ^{99m}Tc SC, usually in scrambled eggs. The liquid phase uses ^{111}In DTPA in a beverage. For small bowel and/or colon transit studies the more common protocol is a dual radioisotope technique; however, this code may be reported using any protocol. After ingesting the material, the patient is scanned over the next several days (typically up to 48–72 hours) with the camera centered over the stomach. Imaging occurs through the accumulation in the terminal ileum reservoir and into the colon. The determining factor in code selection is the intent to analyze

and report on both GES, the small bowel and colon transit for the patient. Computer images are also acquired to allow for calculation of the percentage of radioactivity emptied, as well as the amount retained.

TIPS

- If a dual-radiopharmaceutical technique is utilized to obtain both solid- and liquid-phase studies in the same session or on the same day report 78266 once. CPT clarified CPT 78264–78266 would be reported for a solid only, a liquid only or if both a solid and liquid GES is performed on the same date of service. Report this code only once regardless of the technique (i.e., solid, liquid or solid and liquid) performed.
- If the service is performed only for the intent to assess for possible gastroesophageal reflux for pulmonary aspiration, report 78262—gastroesophageal reflux study.
- If the assessment is made to determine if delayed gastric emptying is contributing to reflux, see one of three GES codes 78264–78266 using guidance for each code to arrive at appropriate code selection and submission.

78267 Urea breath test, C-14 (isotopic); acquisition for analysis

GENERAL DEFINITION

CPT codes 78267 and 78268 allow differentiation of this study based upon the type of instrumentation used. These codes refer to those exams where the patient sample is analyzed using a liquid scintillation counter. Previously, codes available were 83013 and 83014. This study used ^{13}C, and the results were calculated using a mass spectrometer. If studies are performed using both methodologies, it is appropriate to submit both the appropriate 830xx and 782xx codes. Currently, the kit used to perform the ^{14}C study includes the radioactive capsule. If submitting codes 83013 or 83014, report with revenue code 300 (laboratory-general).

Also known as a PY breath test or a PY test, this study is performed for detection of active *Helicobacter pylori* infection. Typically, the patient is administered a dose of ^{14}C urea in capsule form along with some lukewarm water. After 10 minutes, exhaled breath is captured into a Mylar® balloon, and the collected air is pumped through breath collection fluid. After addition of a final reagent, the activity within the fluid is measured by a liquid scintillation counter. Results are then obtained. The score is measured in terms of disintegrations per minute (DPM). Interpretation is as follows: less than 50 DPM—negative; 50–199 DPM—indeterminate; 200+ DPM—positive.

TIP

- Based upon AMA's recommendations, do not report code A4641 for the isotope used.

78268 Urea breath test, C-14 (isotopic); analysis

GENERAL DEFINITION

As above, but in this scenario, only the analysis is performed on a sample drawn elsewhere.

Also known as a PY breath test or a PY test, this study is performed for detection of active *Helicobacter pylori* infection. Typically, the patient is administered a dose of ^{14}C urea in capsule form along with some lukewarm water. After 10 minutes, exhaled breath is captured into a Mylar® balloon, and the collected air is pumped through breath collection fluid. After addition of a final reagent, the activity within the fluid is measured by a liquid scintillation counter. Results are then obtained. The score is measured in terms of disintegrations per minute (DPM). Interpretation is as follows: less than 50 DPM—negative; 50–199 DPM—indeterminate; 200+ DPM—positive.

TIP

- Based upon AMA recommendations, do not report code A4641 for the isotope used.

78278 Acute gastrointestinal blood loss imaging

GENERAL DEFINITION

The patient receives an injection of a radioactive material, usually with imaging occurring immediately (vascular flow study) as well as static images over the next 60–90 minutes. Delayed films, as well as films the next day, may also need to be taken. Different isotopes may be utilized to perform this exam. One material is ^{99m}Tc SC. Another is ^{99m}Tc tagged red blood cells (RBCs).

TIPS

- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual to verify if a separate J-coded option exists for this material.
- If multiple images are performed over multiple days, submit this charge only once.

- Do not report 78445 in addition to any other nuclear medicine procedure. As the SNMMI coding committee states, "CPT 78445 is a single-body-area flow imaging study and a stand-alone procedure code and is not intended to be used as an add-on code with other nuclear medicine procedures. The commonly performed flows with nuclear medicine procedures have their own specific CPT codes such as the conventional three-phase bone scan, CPT 78315 Bone and/or joint imaging; three phase and typically consists of flow, blood-pool and delayed imaging phases or CPT 78216 Liver-Spleen Imaging with vascular flow." A flow study would be inherent in this procedure code.
- For a gastrointestinal bleed study when planar and SPECT/CT images are performed to localize a small bleeding site, see CPT 78830 or 78832. This study would typically include imaging over the abdomen or abdomen and pelvis, therefore, possible correct code options would be 78830 or 78832. Since the planar imaging code does not refer to a whole body exam, do not assign CPT 78278 in addition to the SPECT/CT code.

78290 Intestine imaging (eg, ectopic gastric mucosa, Meckel's localization, volvulus)

GENERAL DEFINITION

Most commonly referred to as a Meckel's scan or Meckel's diverticulum study, this exam is done following the injection of $^{99m}TcO_4^-$ (pertechnetate). Static images are then usually acquired over the next 15–60 minutes.

TIPS

- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual to verify if a separate J-coded option exists for this material.
- If multiple images are performed over multiple days, submit this charge only once.
- Do not report 78445 in addition to any other nuclear medicine procedure. As the SNMMI coding committee states, "CPT 78445 is a single-body-area flow imaging study and a stand-alone procedure code and is not intended to be used as an add-on code with other nuclear medicine procedures. The commonly performed flows with nuclear medicine procedures have their own specific CPT codes such as the conventional three-phase bone scan, CPT 78315 Bone and/or joint imaging; three phase and typically consists of flow, blood-pool and delayed imaging phases or CPT 78216 Liver-Spleen Imaging with vascular flow. A flow study would be inherent in this procedure code."

78291 Peritoneal-venous shunt patency test (eg, for LeVeen, Denver shunt)

GENERAL DEFINITION

By definition, a LaVeen shunt is a plastic tube used to transport ascitic fluid from the abdomen, via a jugular vein, to the superior vena cava. This procedure is performed to assess whether this indwelling shunt is "open" (patent), allowing unobstructed flow.

The radiopharmaceutical is injected into the device and then imaged to verify either obstruction or patency.

TIP

- CPT directs the reader to also report code 49427 to define the injection portion of this study. Hospitals should report this surgical CPT code under revenue code 36x, 49x or 76x based upon local third-party-payer billing requirements.

78299 Unlisted gastrointestinal procedure, diagnostic nuclear medicine

GENERAL DEFINITION

As noted in the CPT introductory language mentioned earlier in this publication, unlisted codes are used when there is no code to describe the procedure performed. You may not use a code that approximates a current code. In the absence of a code that correctly describes the procedure, use an appropriate unlisted code. This code may be used to describe gastrointestinal diagnostic nuclear medicine procedure not already available in either CPT category I or category III codes.

TIPS

- For a gastrointestinal bleed study when planar and SPECT/CT images are performed to localize small bleed, there is no CPT code that accurately describes the anatomic localization of a SPECT/CT study therefore use the unlisted code 78299 (unlisted gastrointestinal procedure, diagnostic nuclear medicine). The GI bleed planar study is appropriately reported with 78278.
- When submitting an UPC, clearly define the following for any third-party payer via a written (i.e., "paper") claim: definition or description of the

nature, need and extent of procedure, and the time, effort and equipment necessary to provide the service. Refer to the "Special Report" section of CPT for additional information that may also be included.

49427 Injection procedure (eg, contrast media) for evaluation of previously placed peritoneal-venous shunt

GENERAL DEFINITION

A percutaneous injection of a radioactive material is made into the shunt reservoir to evaluate flow. The progression of the isotope is evaluated via nuclear imaging (scintigraphy).

TIPS

- CPT directs the reader to also report code 49427 to define the injection portion of this study. Hospitals should report this surgical CPT code under revenue code 36x, 49x or 76x based upon local third-party-payer billing requirements.
- This code may be reported with CPT 78291.

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
49427	Injection procedure (eg, contrast media) for evaluation of previously placed peritoneal-venous shunt	Global	A	NA			N	$0.00
78201	Liver imaging; static only	Global	A	5.36	$177.21	5592	S	$504.50
		TC	A	4.76	$157.37			
		26	A	0.60	$19.84			
78202	Liver imaging; with vascular flow	Global	A	5.85	$193.41	5592	S	$504.50
		TC	A	5.16	$170.59			
		26	A	0.69	$22.81			
78215	Liver and spleen imaging; static only	Global	A	5.52	$182.50	5591	S	$388.68
		TC	A	4.84	$160.01			
		26	A	0.68	$22.48			
78216	Liver and spleen imaging; with vascular flow	Global	A	3.85	$127.28	5591	S	$388.68
		TC	A	3.06	$101.17			
		26	A	0.79	$26.12			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78226	Hepatobiliary system imaging, including gallbladder when present;	Global	A	9.06	$299.53	5591	S	$388.68
		TC	A	8.03	$265.48			
		26	A	1.03	$34.05			
78227	Hepatobiliary system imaging, including gallbladder when present; with pharmacologic intervention, including quantitative measurement(s) when performed	Global	A	12.19	$403.01	5592	S	$504.50
		TC	A	10.94	$361.68			
		26	A	1.25	$41.33			
78230	Salivary gland imaging	Global	A	4.98	$164.64	5591	S	$388.68
		TC	A	4.35	$143.81			
		26	A	0.63	$20.83			
78231	Salivary gland imaging; with serial images	Global	A	3.10	$102.49	5591	S	$388.68
		TC	A	2.48	$81.99			
		26	A	0.62	$20.50			
78232	Salivary gland function study	Global	A	3.05	$100.84	5591	S	$388.68
		TC	A	2.49	$82.32			
		26	A	0.56	$18.51			
78258	Esophageal motility study	Global	A	6.01	$198.69	5591	S	$388.68
		TC	A	5.01	$165.63			
		26	A	1.00	$33.06			
78261	Gastric mucosa imaging	Global	A	5.63	$186.13	5591	S	$388.68
		TC	A	4.82	$159.35			
		26	A	0.81	$26.78			
78262	Gastroesophageal reflux study	Global	A	6.90	$228.12	5591	S	$388.68
		TC	A	5.93	$196.05			
		26	A	0.97	$32.07			
78264	Gastric emptying imaging study (eg, solid, liquid, or both);	Global	A	9.22	$304.82	5591	S	$388.68
		TC	A	8.12	$268.45			
		26	A	1.10	$36.37			
78265	Gastric emptying imaging study (eg, solid, liquid, or both); with small bowel transit	Global	A	10.91	$360.69	5591	S	$388.68
		TC	A	9.56	$316.06			
		26	A	1.35	$44.63			
78266	Gastric emptying imaging study (eg, solid, liquid, or both); with small bowel and colon transit, multiple days	Global	A	12.40	$409.95	5592	S	$504.50
		TC	A	10.96	$362.35			
		26	A	1.44	$47.61			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78267	Urea breath test, C-14 (isotopic); acquisition for analysis	Global	X	0.00	$0.00		A	$0.00
78268	Urea breath test, C-14 (isotopic); analysis	Global	X	0.00	$0.00		A	$0.00
78278	Acute gastrointestinal blood loss imaging	Global	A	9.72	$321.35	5591	S	$388.68
		TC	A	8.35	$276.06			
		26	A	1.37	$45.29			
78282	Gastrointestinal protein loss	Global	C	0.00	$0.00	5591	S	$388.68
		TC	C	0.00	$0.00			
		26	A	0.45	$14.88			
78290	Intestine imaging (eg, ectopic gastric mucosa, Meckel's localization, volvulus)	Global	A	9.21	$304.49	5591	S	$388.68
		TC	A	8.26	$273.08			
		26	A	0.95	$31.41			
78291	Peritoneal-venous shunt patency test (eg, for LeVeen, Denver shunt)	Global	A	7.36	$243.33	5591	S	$388.68
		TC	A	6.12	$202.33			
		26	A	1.24	$41.00			
78299	Unlisted gastrointestinal procedure, diagnostic nuclear medicine	Global	C	0.00	$0.00	5591	S	$388.68
		TC	C	0.00	$0.00			
		26	C	0.00	$0.00			

*For the most current payment rates, check *http://www.cms.gov/apps/physician-fee-schedule/overview.aspx*.

Musculoskeletal Imaging

CPT Codes: 78300–78399

REVENUE CODE: 340 OR 341

Typical Drugs and Radiopharmaceuticals Used				
HCPCS	**Description**	**Notes**	**RC**	**SI**
A9503	Technetium tc-99m medronate, diagnostic, per study dose, up to 30 millicuries	Methylene Diphosphonate, MDP, Osteolite, Medronate	343	N
A9538	Technetium tc-99m pyrophosphate, diagnostic, per study dose, up to 25 millicuries	Phosphotec, Technetium labeled Pyrophosphate, Stannous Pyrophosphate, Pyrolite; use this code for myocardial infarct imaging. Do not use this code for GBP, RVG, or MUGA procedures; see A9560	343	N
A9561	Technetium tc-99m oxidronate, diagnostic, per study dose, up to 30 millicuries	HDP, Oxidronate (alternative to MDP for Bone Imaging)	343	N
A9580	Sodium fluoride F-18, diagnostic, per study dose, up to 30 millicuries	F-18, NaF, Sodium fluoride. Use for PET bone scans. Medicare currently does not consider this PET indication covered; other payers may allow; providers should check with third-party payers.	343	N
Q9969	Technetium Tc-99m from non-highly enriched uranium source, full cost recovery add-on, per study dose	Use with 95 percent non-HEU ^{99m}Tc sourced radiopharmaceuticals	343	K

Bone scanning is typically one of the highest volume procedures performed in a nuclear medicine department. The patient is given an injection of the radioactive material, and then either imaged immediately, returning later for more pictures, or sent away for a period of two to four hours, then returning for their scan.

The following are examples of common uses of bone scanning:

- Detecting of malignancy;
- Differentiating between osteomyelitis and cellulitis; and
- Detecting stress fractures.

TIPS

- When procuring the radioactive material, be certain to submit a separate charge for each radiopharmaceutical utilized. Some payers may ask you to submit an invoice when billing for these items. All parties (i.e., physicians, hospitals, etc.) will now need to identify the diagnostic radiopharmaceutical(s) with appropriate HCPCS Level II A or C codes. (C-series HCPCS codes are only for Medicare outpatient hospital coding and billing.)

- Hospital providers may consider reporting HCPCS Level II Q9969 per study dose, with any of the ^{99m}Tc based radiopharmaceutical HCPCS codes, only when the hospital can document that the patient received technetium derived from at least a 95 percent non-HEU source. Refer to the introduction of this publication for information on non-HEU billing. Additionally, if more than one study dose was administered to the patient, it would be appropriate to report multiple units based on the number of study doses, as long as each study dose meets the code description and documentation requirements. (NOTE: At the time of publication, Q9969 may only be reported for Medicare outpatient hospital coding/billing, and we are not aware of any other payers accepting or adopting this policy.)

78300 Bone and/or joint imaging; limited area

GENERAL DEFINITION

Acquisition of images is localized to a single area (i.e., knee(s), a foot or feet, lumbar spine, etc.). In general, images will fit in the camera view. This does not mean that only one image is acquired, as often multiple projects are acquired of a single area.

TIPS

- If images are performed over multiple days, submit this charge only once.
- If you are performing a PET bone scan using Na^{18}F, you ***should not*** use the current bone scan codes as those are for performing bone scans using single photon radiopharmaceuticals and single photon equipment/cameras (78300–78315).
- If you are performing a PET bone scan, see PET section later in this publication for instructions.

78305 Bone and/or joint imaging; multiple areas

GENERAL DEFINITION

This scan consists of imaging two or more anatomic sites (e.g., lumbar spine and pelvis, knees and feet, lower legs and feet, etc.), as opposed to a single area as described in 78300.

TIPS

- If images are performed over multiple days, submit this charge only once.
- If you are performing a PET bone scan using Na^{18}F, you ***should not*** use the current bone scan codes as those are for performing bone scans using

single photon radiopharmaceuticals and single photon equipment/cameras (78300–78315).

- If you are performing a PET bone scan, see PET section later in this publication for instructions.

78306 Bone and/or joint imaging; whole body

GENERAL DEFINITION

This scan consists of images from the head to at least the level of the knees. This set of images may be acquired from either a whole body table or "spot" films of each area. The end result is a graphic representation of nearly all bones in the body.

TIPS

- See modifier -51 section in the beginning of this publication.
- When a SPECT or SPECT/CT code is reported with a whole body code, the SPECT or SPECT/CT code will be reimbursed at 100 percent, and the whole body code at 50 percent.
- The SNMMI coding committee consensus opinion states: Bone/joint (78306), bone marrow (78104) or tumor whole-body (78802, 78804) require imaging from the top of the head (vertex) to toes (almost). If the toes are not imaged, it would not negate the use of whole-body, although typically the toes are included.
- If you are performing a PET bone scan using $Na^{18}F$, you ***should not*** use the current bone scan codes as those are for performing bone scans using single photon radiopharmaceuticals and single photon equipment/cameras (78300–78315).
- If you are performing a PET bone scan, see PET section later in this publication for instructions.

78315 Bone and/or joint imaging; 3 phase study

GENERAL DEFINITION

Sometimes called a triple phase bone scan, this study is made up of three parts: an initial vascular flow, blood pool images, and delayed static images. This study is done to differentiate between cellulitis and osteomyelitis.

TIPS

- If images are performed over multiple days, submit this charge only once.

- If whole body and three phase are both performed, bill only CPT 78315 (see CPT Assistant, January 2002). Non-hospitals may consider appending modifier -22 to 78315 to report the added work. Modifier -22 is not reportable under HOPPS.
- Documentation must state that all three phases (flow, blood pool images and delay images) were obtained before billing 78315.
- When performing whole-body flow imaging followed by whole-body bone scanning (with or without detailed spot images of specific anatomic areas), the SNM coding committee (April 5, 2007) recommends that code 78445 *not* be applied for this flow study. The SNM coding committee consensus opinion (in its entirety) is as follows:

  "There are no specific CPT codes that accurately describe a whole-body flow study plus a whole-body or multiple-area imaging study. In the absence of a specific CPT code, the SNM typically recommends the unlisted CPT code 78399—unlisted musculoskeletal procedure, diagnostic nuclear medicine. We would not recommend use of 78445 in combination with the other bone scan CPT codes 78300–78315. CPT 78445 is a single-body-area flow imaging and imaging study stand-alone procedure code and is not intended to be used as an add-on code with another nuclear medicine procedure.

  "The commonly performed conventional three-phase bone scan, CPT 78315 *Bone and/or joint imaging; three phase*, typically consists of flow, blood-pool and delayed imaging phases. Several of the SNM committee members believe the facility's protocol, indication and resources consumed are similar to the protocol described above. Nuclear Medicine facilities often differ in the specific protocols for imaging services; however, CPT does not create different procedure codes for each protocol. The AMA CPT panel develops codes and the RUC values [for] these codes for the typical (most commonly performed protocol) procedure. A facility's choice of protocol would not change the billing guidelines; therefore, if the resources and physician work are similar or the same, we recommend coding one (1) unit of CPT 78315.

  "If the resources are different we recommend using the unlisted CPT code 78399 and supply supporting documentation as required by the payer."

CASE: NUCLEAR MEDICINE BONE SCAN

CLINICAL HISTORY

Patient is a runner (cross country) and developed right lower tibia pain. Patient had previous fracture of the left tibia.

PROCEDURE

After the injection of 22.9 mCi of technetium 99 MDP, flow, blood pool and delayed images were obtained of the bilateral lower legs.

Dynamic flow studies are symmetric and normal bilaterally.

Blood pool and delayed images show abnormally increased tracer uptake in what appears to be the posterior aspect of the distal tibial diaphysis or metadiaphyseal region. While these are nonspecific in etiology, this would be the appearance of a stress fracture in this region given the clinical scenario.

Correlation made to 8/19/2018 tib-fib (right) x-rays from clinic and 9/30/2018 right ankle x-rays from clinic demonstrating no bony abnormality in this area at that time. Clinical correlation and, if clinically warranted, correlation to repeat plain films in this area would be helpful.

In addition, along the mid tibial cortex of both lower extremities is vague increased tracer uptake. I think this is more likely to be physiologic than a focal abnormality such as a stress fracture in this broad region.

IMPRESSION

1. Abnormally increased focal radiotracer uptake in posterior tibia, as above. If this is the area of the patient's clinical complaint, given the patient's history, this very likely represents a stress fracture.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78315	1	2	1
A9503	1	3	1

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

In 2020, CPT deleted code 78320. Codes 78803 and 78831 describe SPECT imaging. Codes 78830 and 78832 describe SPECT/CT imaging. Providers should consider separate anatomic site-specific line items with the same CPT code to account for the varying organ specific costs when using the 788XX series of codes for these services.

78399 Unlisted musculoskeletal procedure, diagnostic nuclear medicine

GENERAL DEFINITION

As noted in the CPT introductory language mentioned early in this publication, unlisted codes are used when there is no code to describe the procedure performed. You may not use a code that approximates a current code. In the absence of a code that correctly describes the procedure, use an appropriate unlisted code. This code may be used to describe a PET bone scan for a non-Medicare patient. This code may be used to describe a musculoskeletal diagnostic nuclear medicine procedure not already available in either CPT category I or category III codes.

TIPS

- If you are performing a PET bone scan using $Na^{18}F$, ***do not*** use the current bone scan codes as those are for performing bone scans using single photon radiopharmaceuticals and single photon equipment/cameras (78300–78315).
- If you are performing a PET bone scan, see PET section later in this publication for instructions.
- For more information on PET imaging including coverage information, see the PET section later in this publication.
- If performing a ^{99m}Tc pyrophosphate study for burn imaging, do not assign the bone/joint imaging CPT codes. The SNMMI coding committee recommends submitting a UPC such as 78399 and providing documentation to the payer.
- When submitting a UPC, clearly define the following for any third-party payer via a written (i.e., "paper") claim: definition or description of the nature, need and extent of procedure; and the time, effort and equipment necessary to provide the service. Refer to the "Special Report" section of CPT for additional information that also may be included.

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78300	Bone and/or joint imaging; limited area	Global	A	6.35	$209.94	5591	S	$388.68
		TC	A	5.47	$180.84			
		26	A	0.88	$29.09			
78305	Bone and/or joint imaging; multiple areas	Global	A	7.71	$254.90	5591	S	$388.68
		TC	A	6.55	$216.55			
		26	A	1.16	$38.35			
78306	Bone and/or joint imaging; whole body	Global	A	8.25	$272.75	5591	S	$388.68
		TC	A	7.06	$233.41			
		26	A	1.19	$39.34			
78315	Bone and/or joint imaging; 3 phase study	Global	A	9.65	$319.04	5591	S	$388.68
		TC	A	8.24	$272.42			
		26	A	1.41	$46.62			
78350	Bone density (bone mineral content) study, 1 or more sites; single photon absorptiometry	Global	N	0.95	$31.41		E1	$0.00
		TC	N	0.63	$20.83			
		26	N	0.32	$10.58			
78351	Bone density (bone mineral content) study, 1 or more sites; dual photon absorptiometry, 1 or more sites	Global	N	NA			E1	$0.00
		TC						
		26						
78399	Unlisted musculoskeletal procedure, diagnostic nuclear medicine	Global	C	0.00	$0.00	5591	S	$388.68
		TC	C	0.00	$0.00			
		26	C	0.00	$0.00			

*For the most current payment rates, check *http://www.cms.gov/apps/physician-fee-schedule/overview.aspx*.

Cardiovascular System, Including Myocardial PET

CPT Codes: 78428–78499, 93015–93018

REVENUE CODES: 340 OR 341 (482 FOR 93017)

Typical Drugs and Radiopharmaceuticals Used				
HCPCS	**Description**	**Notes**	**RC**	**SI**
A9500	Technetium tc-99m sestamibi, diagnostic, per study dose	Cardiolite, Miraluma, Mibi, Sestamibi, Cardiolite	343	N
A9501	Technetium tc-99m teboroxime, diagnostic, per study dose	CardioTec, TEBO	343	N
A9502	Technetium tc-99m tetrofosmin, diagnostic, per study dose	Myoview, Tetrofosmin, Tetro	343	N
A9504	Technetium tc-99m apcitide, diagnostic, per study dose, up to 20 millicuries	Acutect, AcuTect	343	N
A9505	Thallium tl-201 thallous chloride, diagnostic, per millicurie	Thallium 201, Thallium, Thallous Chloride USP	343	N
A9526	Nitrogen N-13 ammonia, diagnostic, per study dose, up to 40 millicuries	N-13, Ammonia N-13	343	N
A9538	Technetium tc-99m pyrophosphate, diagnostic, per study dose, up to 25 millicuries	Phosphotec, Technetium labeled Pyrophosphate, Stannous Pyrophosphate, Pyrolite; use this code for myocardial infarct imaging. Do not use this code for GBP, RVG, or MUGA procedures; see A9560	343	N
A9555	Rubidium Rb-82, diagnostic, per study dose, up to 60 millicuries	Rb-82, Rubidium, CardioGen82	343	N
A9560	Technetium tc-99m labeled red blood cells, diagnostic, per study dose, up to 30 millicuries	Tagged Red Cells, Tagged RBCs, ULTRATAG or (nonradioactive [cold]) PYP (pyrophosphate) + 99m Tc — Code to be used for both the invivo/invitro methods of tagging Red Blood Cells	343	N
A9582	Iodine i-123 iobenguane, diagnostic, per study dose, up to 15 millicuries	Common name: I-123-MIBG. Trade name: AdreView. Replaces C9247, which has been deleted for 2010	343	N
Q9969	Technetium Tc-99m from non-highly enriched uranium source, full cost recovery add-on, per study dose	Use with 95 percent non-HEU ^{99m}Tc sourced radiopharmaceuticals	343	K
J0153	Injection, adenosine, 1 milligram	Replaces diagnostic and therapeutic codes J0150 and J0151	636	N
J0280	Injection, aminophyllin, up to 250 mg	Phyllocontin	636	N

Typical Drugs and Radiopharmaceuticals Used				
HCPCS	**Description**	**Notes**	**RC**	**SI**
J0461	Injection, atropine sulfate, 0.01 Mg	Atropen, Sal-Tropine	636	N
J1160	Injection, digoxin, up to 0.5 Mg	Lanoxin	636	N
J1245	Injection, dipyridamole, per 10 mg	Persantine IV	636	N
J1250	Injection, dobutamine hydrochloride, per 250 mg	Dobutrex	636	N
J1265	Injection, dopamine hcl, 40 mg	Intropin	636	N
J1800	Injection, propranolol hcl, up to 1 mg	Inderal	636	N
J2785	Injection, regadenoson, 0.1 Mg	NDC # 0469-6501-89 (syringe 0.4 mg); LexiScan. Note: Unit alert—check code description carefully and bill the appropriate number of units.	636	N

CPT Codes: 93015–93018 Cardiovascular Stress Testing

REVENUE CODES: 482 (USE WITH CODE 93017 ONLY)

Numerous coding options exist within this subsection of the diagnostic nuclear medicine section. Commonly performed exams include myocardial perfusion studies, (SPECT and planar) MUGA studies and nuclear venography.

Probably the single largest exam performed in nuclear medicine is the SPECT myocardial perfusion exam. This study provides differentiation between ischemic and infarcted cardiac tissue. Infarcted tissue (referred to as myocardial infarction, or MI) describes cardiac (heart) tissue that is dead. This tissue is not currently supplied by blood. Ischemic tissue is that which is not supplied (perfused) by blood currently, but at a later time, blood does make its way into the tissue. These studies are usually done in two phases.

One phase is immediately after a patient has stressed (exercised) his/her heart. The other phase is when the patient is at rest. This study is sometimes called a rest-and-exercise myocardial perfusion study. Drugs such as adenosine, regadenoson, Persantine, dipyridamole, or Dobutamine may be used to elicit this response. Patient exercise may either be mechanical (e.g., walking on a treadmill, riding a bicycle, etc.) or drug induced (pharmacological). Pharmacologic stressors are injected intravenously. Either method of exercise includes close, physician monitoring of the patient as well as an EKG tracing.

Billing for Cardiac Stress Tests

When billing for the cardiovascular stress test portion of nuclear cardiology procedures, several codes are available for assignment. The codes and descriptions are as follows:

93015 Cardiovascular stress test using maximal or submaximal treadmill or bicycle exercise, continuous electrocardiographic monitoring, and/or pharmacological stress; with physician supervision, with interpretation and report

93016 Cardiovascular stress test using maximal or submaximal treadmill or bicycle exercise, continuous electrocardiographic monitoring, and/or pharmacological stress; physician supervision only, without interpretation and report

93017 Cardiovascular stress test using maximal or submaximal treadmill or bicycle exercise, continuous electrocardiographic monitoring, and/or pharmacological stress; tracing only, without interpretation and report

93018 Cardiovascular stress test using maximal or submaximal treadmill or bicycle exercise, continuous electrocardiographic monitoring, and/or pharmacological stress; interpretation and report only

While a total of four codes are available for assignment, only one may be used to define the technical portion of the study provided by the hospital. That code is 93017 and should be reported on the UB-04 with revenue code 482. The hospital reports this code regardless of who the physician is that provides the supervision, interpretation and report of this exam. The remaining three codes would be used to bill for the professional (i.e., physician) component of the study. Code 93015 would be used when a practice owns the equipment, performs the procedure and provides the interpretation and written report. This defines the "global" billing of this study. Code 93016 is used when a physician performs/supervises the study but does not issue a report. Code 93018 is used when a physician only interprets and reports the findings of the study without actually performing/supervising it. While physicians would never report code 93017 for their portion of the procedure, it is possible for one physician to charge both code 93016 and 93018. A common scenario when both of these codes would be used is when a single physician both supervises/performs a cardiovascular stress test in a hospital setting (on equipment owned by the facility) and provides the written report. Whether or not this physician also performed/interpreted the nuclear cardiology study(s) is irrelevant as the codes for the stress test are not affected by whether or not codes from the 7845x series are also used.

Another exam done in nuclear cardiology is a MUGA or gated blood pool (GBP) scan. MUGA refers to multigated acquisition. This exam looks specifically at the ventricular function of the patient. Portions of this study include ejection fraction (EF) and wall motion (WM).

EF refers to how much blood the heart (typically the left ventricle or LV) pumps out to the rest of the body. This measurement is calculated using sophisticated computers and expressed as a percentage. A common listing would be LVEF = 67%. This means the left ventricular ejection fraction is 67% of all of the blood originally in the left ventricle.

Wall motion (WM) refers to the movement of the left ventricle from systole to diastole. Systole is when the LV has contracted, or squeezed down to its smallest volume. This is the time when the heart is pumping out the oxygen-rich blood to the rest of the body. Diastole is the point in which re-oxygenated blood is flowing back into the LV from the lungs to once again be pumped back out into the body. This pattern or cardiac cycle is repeated over and over, 24 hours a day. Terms used to describe wall motion are akinetic, dyskinetic, contractility, thickening, hypokinetic, systole/diastole analysis or gating images obtained. MUGA studies may be done at rest or during stress. Wall motion and EF measurements help physicians define how well a patient's heart is functioning.

Specific codes are also available to define SPECT cardiac blood pool imaging (or SPECT MUGA), and right ventricular ejection fraction (RVEF).

A vascular flow study may be performed with any nuclear medicine exam in which the radioactive material is injected into the patient's body. Flow studies may yield information not able to be assessed on the static or delayed images.

Nuclear venography is a study in which radioactivity is injected to specifically study a particular vascular system (such as the legs). Separate CPT codes exist for unilateral and bilateral exams.

A variety of protocols exist for nuclear cardiology procedures, but one fundamental rule holds true for all nuclear medicine protocols: It does not matter if the protocol is performed on one day or two days, the coder chooses the code based on the studies performed. Pay particular attention to the words "multiple study" and "single study" to code correctly and use that code whether or not the study is performed on a one-day or multiple-day session. It is not appropriate to code two single studies (one on each day) simply due to the facility's choice of a two-day protocol. This would be considered unbundling.

TIPS

- When procuring the radioactive material, be certain to submit a separate charge for each radiopharmaceutical utilized. Some payers may ask you to submit an invoice when billing for these items. All parties (i.e., physicians, hospitals, etc.) will now need to identify the diagnostic radiopharmaceutical(s) with appropriate HCPCS Level II A or C codes. (C-series HCPCS codes are only for Medicare outpatient hospital coding and billing.)
- Hospital providers may consider reporting HCPCS Level II Q9969 per study dose, with any of the ^{99m}Tc based radiopharmaceutical HCPCS codes, only when the hospital can document that the patient received technetium derived from at least a 95 percent non-HEU source. Refer to the introduction of this publication for information on non-HEU billing. Additionally, if more than one study dose was administered to the patient, it would be appropriate to report multiple units based on the number of study doses, as long as each study dose meets the code description and documentation requirements. (NOTE: At the time of publication, Q9969 may only be reported for Medicare outpatient hospital coding/billing, and we are not aware of any other payers accepting or adopting this policy.)

- Effective January 1, 2017, the JW modifier is ***required*** on all Medicare claims to identify wasted single-use drug vials; however, this waste policy does NOT apply to radiopharmaceuticals. When billing, you ***must*** report the waste on a separate line from the patient-administered dose.

  Although the modifier is required, implementation may vary from one Medicare administrative contractor (MAC) to another so be sure to check with your MAC for its specifics.

  In Transmittal 1248 (change request 5520, issued July 2, 2007), CMS gave the following an example for reporting waste for drugs: 58 milligrams of adenosine administered to a patient for a pharmacological stress test was taken from a 90-milligram single-use vial. The waste must be documented. It does not need to be in the report but can be on a department work/flow sheet. The provider would bill 58 units of J0153 and 32 units of J0153-JW.

  More details about the modifier JW requirement can be found in the frequently asked questions (FAQs) posted by CMS at the following address: *https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/Hospital-OutpatientPPS/Downloads/JW-Modifier-FAQs.pdf.*

0331T Myocardial sympathetic innervation imaging, planar qualitative and quantitative assessment;

GENERAL DEFINITION

This service is used for assessing patients with heart failure and low heart ejection fraction, for the myocardial sympathetic nervous system amount of stored norepinephrine. The purpose of the planar imaging is to demonstrate correlation of ^{123}Iodine MIBG uptake measured quantitatively as the "heart-to-mediastinal ratio" (H/M), using planar imaging and counts from a region of interest over the myocardium relative to counts from a region placed in the upper mediastinum. A new diagnostic indication was approved on March 20, 2013 for AdreView™ ^{123}Iodine MIBG to assist in the evaluation of patients with New York Heart Association (NYHA) Class II or Class III heart failure and left ventricular ejection fraction (LVEF) less than or equal to 35 percent.

TIPS

- For reporting myocardial sympathetic innervation imaging planar for H/M ratio, use category III CPT code 0331T.
- For myocardial sympathetic innervation imaging, planar plus SPECT imaging, see 0332T.
- For myocardial infarct avid imaging, do not use 0331T or 0332T; see CPT codes 78466, 78468 or 78469.

0332T Myocardial sympathetic innervation imaging, planar qualitative and quantitative assessment; with tomographic SPECT

GENERAL DEFINITION

This service includes all the elements of category III CPT code 0331T plus it includes SPECT imaging. The SPECT imaging of ^{123}Iodine MIBG is performed to assess regional denervation, often seen after ischemic episodes. A greater degree of regional denervation relative to perfusion is related to risk of arrhythmias after an acute ischemic syndrome.

TIP

- For reporting myocardial sympathetic innervation imaging, planar imaging for H/M ratio plus SPECT report Category III CPT code 0332T.
- For myocardial sympathetic innervation imaging, planar with H/M ratio only imaging, see 0331T.
- For myocardial infarct avid imaging, do not use 0331T or 0332T, see CPT codes 78466, 78468 or 78469.

+0742T Absolute quantitation of myocardial blood flow (AQMBF), single-photon emission computed tomography (SPECT), with exercise or pharmacologic stress, and at rest, when performed (list separately in addition to code for primary procedure)

GENERAL DEFINITION

Conceptually, this category III CPT® code is similar to the add-on code +78434; however, this myocardial blood flow code is for when it is performed on SPECT or SPECT/CT services. Because this is a category III code, the service is still evolving.

TIP

- Submit in addition to primary procedure code 78451 or 78452.
- When performing absolute quantitation of myocardial blood flow (commonly called MBF) by SPECT or SPECT/CT, report add-on code

+0742T in addition to the primary CPT procedure code. Code +0742T may only be assigned with code 78451 or 78452. While this code (+0742T) is assigned an "N" status indicator under the Medicare OPPS billing methodology, it is still important to assign appropriate charges and report, as this data can have important implications for future rate setting. While Medicare does not make separate reimbursement for this service under OPPS, other payers may. Charges submitted today (even if not currently reimbursed) are important to help shape payment in the future.

78428 Cardiac shunt detection

GENERAL DEFINITION

For a right-to-left shunt, typically ^{99m}Tc MAA (the same agent used for lung perfusion) is used. For a left-to-right shunt, typically ^{99m}Tc DTPA (the same agent as used for some renal imaging) is used. The study looks at blood flow in different chambers of the heart.

78445 Non-cardiac vascular flow imaging (ie, angiography, venography)

GENERAL DEFINITION

This code refers to a flow study performed of an organ or anatomic site. CPT 78445 is a single-body-area flow imaging and imaging study stand-alone procedure code and is not intended to be used as an add-on code with another nuclear medicine procedure.

The American College of Radiology (ACR) and SNMMI coding committee agree that this code should not be used in addition to any other nuclear medicine CPT codes during the same clinical setting because it is not considered an add-on (+) code.

78451 Myocardial perfusion imaging, tomographic (SPECT) (including attenuation correction, qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); single study, at rest or stress (exercise or pharmacologic)

GENERAL DEFINITION

This exam may be done at stress or rest but not both; for both see a multiple study CPT code. This myocardial perfusion imaging code is specifically for single photon emission computed tomography (SPECT), which is also called 3-D imaging. Single or dual isotope technique may be used. If ^{201}Tl is used, it should be charged per millicurie (mCi) used. For ^{99m}Tc sestamibi or ^{99m}Tc tetrofosmin, charge per study dose. This code includes wall motion, ejection fraction and attenuation correction, when performed, either separately or as part of any of these myocardial perfusion studies and may not be billed separately.

TIPS

- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes and charges (e.g., regadenoson, adenosine, dipyridamole, etc.)
- When they are performed, wall motion, ejection fraction and attenuation correction are part of this code and may not be billed separately.
- When LV or RV ejection fraction is performed, the technique can be by first-pass or gating; either would be acceptable methods for this CPT code. Providers may not bill separately using 78481 or 78483 for first-pass technique on a separate camera with any of the packaged codes used in conjunction with this code.
- If stress study is performed, bill separately using the appropriate CPT 93015–93018 code(s).
- When performing absolute quantitation of myocardial blood flow (commonly called MBF) by SPECT or SPECT/CT, report add-on code +0742T in addition to the primary CPT procedure code. Code +0742T may only be assigned with code 78451 or 78452. While this code (+0742T) is assigned an "N" status indicator under the Medicare OPPS billing methodology, it is still important to assign appropriate charges and report as this data can have important implications for future rate setting. While Medicare does not make separate reimbursement for this service under OPPS, other payers may. Charges submitted today (even if not currently reimbursed) are important to help shape payment in the future.

78452 Myocardial perfusion imaging, tomographic (SPECT) (including attenuation correction, qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed);

multiple studies, at rest and/or stress (exercise or pharmacologic) and/or redistribution and/or rest reinjection

GENERAL DEFINITION

This exam describes at least two or more of a stress, rest or redistribution study. If the protocol is performed over multiple days, do not use the single-study code to charge separately for each day, as that would be unbundling. This myocardial perfusion imaging code is specifically for multiple SPECT also called 3-D imaging studies.

Single- or dual-isotope technique may be used. If ^{201}Tl is used, it should be charged per millicurie (mCi) used. If ^{99m}Tc sestamibi or ^{99m}Tc tetrofosmin is used, charge for each per-study dose.

This code includes wall motion, ejection fraction and attenuation correction, when performed, either separately or as part of any of these myocardial perfusion studies and may not be billed separately.

TIPS

- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes or charges (e.g., regadenoson, adenosine, dipyridamole, etc.).
- When they are performed, single or multiple wall motion, ejection fraction and attenuation correction are part of this code and may not be billed separately.
- There are three types of studies for myocardial perfusion imaging; 1.) a rest study, 2.) a stress study, and 3.) a redistribution study. Prone is not considered a "study" for the purposes of coding myocardial perfusion imaging, instead, it is considered additional imaging. While some facilities or practices may add prone imaging to the protocol for the study itself, for the purposes of actual CPT code choice, the term "multiple studies" requires two or more of the three types of studies described above to support assignment of CPT code 78452 or 78454.
- When LV or RV ejection fraction is performed, the technique can be by first-pass or gating; either would be acceptable methods for this CPT code. Providers may not bill separately using 78481 or 78483 for first-pass technique on a separate camera with any of the packaged codes used in conjunction with this code.
- If stress study is performed, bill separately using the appropriate CPT 93015–93018 code(s).
- When performing absolute quantitation of myocardial blood flow (commonly called MBF) by SPECT or SPECT/CT, report add-on code

+0742T in addition to the primary CPT procedure code. Code +0742T may only be assigned with code 78451 or 78452. While this code (+0742T) is assigned an "N" status indicator under the Medicare OPPS billing methodology, it is still important to assign appropriate charges and report, as this data can have important implications for future rate setting. While Medicare does not make separate reimbursement for this service under OPPS, other payers may. Charges submitted today (even if not currently reimbursed) are important to help shape payment in the future.

CASE: NUCLEAR MEDICINE MYOCARDIAL PERFUSION SCAN WITH SPECT, STRESS AND REST IMAGING

CLINICAL HISTORY

Chest pain. Cardiac risk factors include diabetes, previous myocardial infarction ten years ago.

PROCEDURE

The procedure was performed under the supervision of Dr. A. Pharmacologic stress testing was performed with adenosine with a dose 55 mg. The heart rate was 56 BPM at baseline and rose to 82 BPM during the infusion, which is 49% of the maximum predicted heart rate.

Myocardial perfusion imaging was performed at rest following the injection of 12.1 mCi of Tc Sestamibi. At peak pharmacologic effect, the patient was injected with 38.2 mCi of Tc Sestamibi. Post-stress SPECT imaging was performed.

FINDINGS

The overall quality of the study is satisfactory. Left ventricular cavity is normal. SPECT images demonstrate homogeneous tracer distribution throughout the myocardium with no perfusion defects. Gated SPECT imaging reveals normal myocardial thickening and wall motion. There is a normal left ventricular ejection fraction measuring 54%.

IMPRESSION

Normal exam.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78452	1	2	1
A9500	2	3	3
J0153	55	3	180
93015-93018 Based upon the documentation provided, there is not sufficient information to assign a precise code. To achieve accurate and compliant billing, you must initiate follow-up discussion with the provider to get additional details of who performed which portion of the cardiovascular stress testing. For a hospital-based procedure, the facility will report CPT code 93017 for the technical only portion of the stress test.			

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

78453 Myocardial perfusion imaging, planar (including qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); single study, at rest or stress (exercise or pharmacologic)

GENERAL DEFINITION

This exam may be done at stress or rest but not both; for both, see multiple study CPT code. This myocardial perfusion imaging code is specifically for 2-D planar imaging.

Single- or dual-isotope technique may be used. If ^{201}Tl is used, it should be charged per millicurie (mCi) used. If ^{99m}Tc sestamibi or ^{99m}Tc tetrofosmin is used, charge per-study dose.

This code includes wall motion, ejection fraction and attenuation correction when performed, either separately or as part of any of these myocardial perfusion studies. It may not be billed separately, but this would be rare and tips as noted under codes 78451 and 78452 apply.

TIPS

- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes and charges (e.g., regadenoson, adenosine, dipyridamole, etc.).
- If stress study is performed, bill separately using the appropriate CPT 93015–93018 code(s).

78454 Myocardial perfusion imaging, planar (including qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); multiple studies, at rest and/or stress (exercise or pharmacologic) and/or redistribution and/or rest reinjection

GENERAL DEFINITION

This exam describes at least two or more of a stress, rest or redistribution study. If the protocol is performed over multiple days, do not charge separately for each day using the single study code, as that would be considered unbundling.

This myocardial perfusion imaging code is specifically for multiple 2-D planar imaging studies. Single- or dual-isotope technique may be used. If ^{201}Tl is used, it should be charged per millicurie (mCi) used. For ^{99m}Tc sestamibi or ^{99m}Tc tetrofosmin, charge for each per-study dose.

This code includes wall motion, ejection fraction and attenuation correction, when performed, either separately or as part of any of these myocardial perfusion studies and may not be billed separately. However this would be rare, and tips included under 78451 and 78452 apply.

TIPS

- There are three types of studies for myocardial perfusion imaging; 1.) a rest study, 2.) a stress study, and 3.) a redistribution study. Prone is not considered a "study" for the purposes of coding myocardial perfusion imaging, instead, it is considered additional imaging. While some facilities or practices may add prone imaging to the protocol for the study itself, for the purposes of actual CPT code choice, the term "multiple studies" requires two or more of the three types of studies described above to support assignment of CPT code 78452 or 78454.
- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., regadenoson, adenosine, dipyridamole, etc.)
- If stress study is performed, bill separately using the appropriate CPT 93015–93018 code(s).

78456 Acute venous thrombosis imaging, peptide

GENERAL DEFINITION

A systemic injection of the radiolabeled peptide is made with imaging taking place on the same day as opposed to a multiple-day approach. This procedure allows differentiation of acute versus chronic venous thrombosis.

TIP

- Do not charge separately for vascular flow.

78457 Venous thrombosis imaging, venogram; unilateral

GENERAL DEFINITION

A venous injection is made into one extremity with dynamic imaging of the area in question. Pictures (images) are acquired in a continuous sequence, usually every one-half to two seconds for up to one minute.

TIP

- Do not charge separately for vascular flow.

78458 Venous thrombosis imaging, venogram; bilateral

GENERAL DEFINITION

As described in 78457, but both extremities are studied. This exam is usually performed on the lower extremities and is useful as a screening test to rule out (R/O) deep venous thrombosis (DVT).

TIP

- Do not charge separately for vascular flow.

78459 Myocardial imaging, positron emission tomography (PET), metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), single study;

GENERAL DEFINITION

After an intravenous injection of a PET radiotracer, the patient is scanned in the PET scanner to determine myocardial viability prior to revascularization.

Radiopharmaceuticals such as ^{18}F FDG may be used when attempting to image viable myocardium that improve in function and contractility following revascularization.

TIPS

- Beginning October 1, 2002, this exam is covered for the determination of myocardial viability as a primary or initial diagnostic study prior to revascularization and will continue to cover ^{18}F FDG PET when used as a follow-up to an inconclusive SPECT. If, however a patient received an ^{18}F FDG PET study with inconclusive results, a follow-up SPECT is not covered. Both full and partial ring PET scanners are covered. (See the PET section of this publication for more details.)
- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.

78429 Myocardial imaging, positron emission tomography (PET), metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), single study; with concurrently acquired computed tomography transmission scan

GENERAL DEFINITION

After an intravenous injection of a PET radiotracer, the patient is scanned in the PET/CT scanner to determine myocardial viability prior to revascularization. Radiopharmaceuticals such as ^{18}F FDG may be used when attempting to image viable myocardium that improve in function and contractility following revascularization.

TIPS

- Beginning October 1, 2002, this exam is covered for the determination of myocardial viability as a primary or initial diagnostic study prior to revascularization and will continue to cover ^{18}F FDG PET when used as

a follow-up to an inconclusive SPECT. If, however a patient received an ^{18}F FDG PET study with inconclusive results, a follow-up SPECT is not covered. Both full and partial ring PET scanners are covered. (See the PET section of this publication for more details.)

- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.
- This code does include CT for both attenuation correction and anatomic localization (i.e., fusion imaging). However, do not charge separately for diagnostic CT imaging unless a full and complete diagnostic CT scan (i.e., not just fusion imaging) is ordered and performed. If a full and complete diagnostic CT is separately ordered, medically necessary, and performed, assign the anatomic site-specific CT code, append the CT code with modifier 59, in addition to the appropriate PET imaging code.
- Do not use this code when PET and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead, use UPC 78499 for imaging fusion.

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

GENERAL DEFINITION

This procedure is used for evaluating a myocardial infarction (MI) several days after an acute event. The above three CPT codes can be used to report evaluation of an acute MI as follows: CPT 78466 is for planar imaging, CPT 78468 is for planar plus ejection fraction by first pass flow technique, and CPT 78469 is for planar plus SPECT imaging.

TIPS

- For myocardial sympathetic innervation imaging, planar or planar plus SPECT imaging see 0331T or 0332T.
- Do not report for studies using technetium for cardiac amyloidosis, see the 788XX series CPT codes.

78472 Cardiac blood pool imaging, gated equilibrium; planar, single study at rest or stress (exercise and/ or pharmacologic), wall motion study plus ejection fraction, with or without additional quantitative processing

GENERAL DEFINITION

Patient is studied a single time (resting or at stress) with results indicating both wall motion (WM) and ejection fraction (EF). Most commonly, single study is done at rest. This procedure is commonly referred to as a GBP (gated blood pool), MUGA (multi gated acquisition), or RVG (radionuclide ventriculogram). If right-sided ejection fraction (RVEF) is also done, additionally submit code 78496.

TIPS

- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/ charges (e.g., adenosine, dipyridamole, etc.).
- Do not charge separately for vascular flow.
- If resting cardiac-gated blood pool SPECT is performed, do not charge both codes 78472 and 78494. Submit 78494 only.

78473 Cardiac blood pool imaging, gated equilibrium; multiple studies, wall motion study plus ejection fraction, at rest and stress (exercise and/or pharmacologic), with or without additional quantification

GENERAL DEFINITION

As described in code 78472, but two or more studies are done. This procedure is commonly referred to as a rest and exercise GBP (gated blood pool), MUGA (multigated acquisition), or rest and exercise RVG (radionuclide ventriculogram). Multiple acquisitions are made as the patient is exercised and reaches specific heart rates. The physician's report states various EF and WM results from each separate acquisition.

TIPS

- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., adenosine, dipyridamole, etc.).
- Do not charge separately for vascular flow.

78481 Cardiac blood pool imaging (planar), first pass technique; single study, at rest or with stress (exercise and/or pharmacologic), wall motion study plus ejection fraction, with or without quantification

GENERAL DEFINITION

Like code 78472, however, the method to obtain the assessment of the ventricular performance is done by first-pass technique rather than by blood-pool method. This method involves sampling for only the seconds during the initial transient of the technetium-99m bolus. The radiopharmaceutical may be any product that has enough photons packed into the bolus to provide adequate counting statistics from which assessment and measurements of ejection fraction and wall motion can be derived (e.g, Tc-99m-Pertechnetate, Tc-99m Pentetate, etc.).

TIPS

- Do not charge separately for vascular flow.
- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., adenosine, regadenoson, etc.).

78483 Cardiac blood pool imaging (planar), first pass technique; multiple studies, at rest and with stress (exercise and/or pharmacologic), wall motion study plus ejection fraction, with or without quantification

GENERAL DEFINITION

This procedure is as described in code 78481, but multiple studies are performed. A rest in addition to a stress first-pass flow study are performed, which requires two separate per-study doses of the appropriate radiopharmaceutical tracer, sufficient for the bolus injections needed for imaging (e.g, Tc-99m-Pertechnetate, Tc-99m Pentetate, etc.).

TIPS

- Do not charge separately for vascular flow.
- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., adenosine, regadenoson, etc.).

78494 Cardiac blood pool imaging, gated equilibrium, SPECT, at rest, wall motion study plus ejection fraction, with or without quantitative processing

GENERAL DEFINITION

The patient is imaged utilizing a SPECT camera with results indicating both wall motion (WM) and ejection fraction (EF). This procedure is commonly called a SPECT GBP (SPECT gated blood pool), SPECT MUGA (SPECT multigated acquisition), or SPECT RVG (SPECT radionuclide ventriculogram).

TIPS

- Do not charge separately for vascular flow.
- If resting cardiac gated blood pool SPECT is performed, do not charge both codes 78472 and 78494. Submit only 78494.

+78496 Cardiac blood pool imaging, gated equilibrium, single study, at rest, with right ventricular ejection fraction by first pass technique (List separately in addition to code for primary procedure)

GENERAL DEFINITION

Conceptually, this exam is performed in exactly the same way as the procedure defined in code 78472, but this procedure is specifically focused on the right side of the heart. If performed with traditional left-sided GBP/MUGA/RVG (78472), submit both codes. The physician report will specifically define RVEF (right ventricular ejection fraction) to alert you to charge code 78496.

TIPS

- Do not charge separately for a vascular flow.
- Submit in addition to base procedure code.

VARIATIONS

Exam	Codes
Gated blood pool (GBP/MUGA/ RVG – left-sided with RVEF	78472 and 78496

78491 Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/ or ejection fraction[s], when performed); single study, at rest or stress (exercise or pharmacologic)

GENERAL DEFINITION

This exam may be done at stress or at rest. This code is specifically for myocardial perfusion with PET radiotracers on PET scanners. After an intravenous injection of a PET perfusion radiotracer, the patient is scanned in the PET or PET/CT camera to determine myocardial perfusion for known or suspected coronary artery disease. Radiopharmaceuticals such as rubidium (^{82}Rb) or ammonia (^{13}N) may be used to image the myocardium.

TIPS

- Beginning March 14, 1995, this service is considered covered by Medicare for PET scans performed at rest or with pharmacological stress used for non-invasive imaging of the perfusion of the heart for diagnosis and management of patients with known or suspected coronary artery disease using ^{82}Rb. Effective October 1, 2003 Medicare approved the use of ^{13}N. Details are provided later in this section on the Medicare coverage manuals.
- In the event that a patient received a SPECT with inconclusive results, a PET scan may be performed and be covered by Medicare. SPECT MPI is NOT covered following an inconclusive PET; however, a PET MPI may be performed in place of a SPECT MPI study.
- Prior to January 1, 2020, CPT 78459 may be performed on the SDOS as 78491 or 78492 as these are separate services. On or after January 1, 2020 see CPT codes 78432 or 78433.
- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.
- If cardiac stress is performed, choose from the CPT code set 93015–93018 to describe the service(s) rendered. Cardiac stress testing is not included in the CPT code for the cardiovascular PET or PET/CT procedure. Refer to the beginning of this section (Billing for Cardiac Stress Tests) for specific instructions regarding billing of these codes.
- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., adenosine, dipyridamole, etc.).

78430 Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); single study, at rest or stress (exercise or pharmacologic), with concurrently acquired computed tomography transmission scan

GENERAL DEFINITION

This exam may be done at stress or at rest. This code is specifically for myocardial perfusion with PET radiotracers on PET scanners. After an intravenous injection of a PET perfusion radiotracer, the patient is scanned in the PET or PET/CT camera to determine myocardial perfusion for known or suspected coronary artery disease. Radiopharmaceuticals such as rubidium (^{82}Rb) or ammonia (^{13}N) may be used to image the myocardium.

TIPS

- Beginning March 14, 1995, this service is considered covered by Medicare for PET scans performed at rest or with pharmacological stress used for non-invasive imaging of the perfusion of the heart for diagnosis and management of patients with known or suspected coronary artery disease using ^{82}Rb. Effective October 1, 2003 Medicare approved the use of ^{13}N. Details are provided later in this section on the Medicare coverage manuals.
- In the event that a patient received a SPECT with inconclusive results, a PET scan may be performed and be covered by Medicare. SPECT MPI is NOT covered following an inconclusive PET; however, a PET MPI may be performed in place of a SPECT MPI study.
- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.
- If cardiac stress is performed, choose from the CPT code set 93015–93018 to describe the service(s) rendered. Cardiac stress testing is not included in the CPT code for the cardiovascular PET or PET/CT procedure. Refer to the beginning of this section (Billing for Cardiac Stress Tests) for specific instructions regarding billing of these codes.
- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., adenosine, dipyridamole, etc.).
- This code does include CT for both attenuation correction and anatomic localization (i.e., fusion imaging). However, do not charge separately for diagnostic CT imaging unless a full and complete diagnostic CT scan (i.e., not just fusion imaging) is ordered and performed. If a full and complete diagnostic CT is separately ordered, medically necessary and performed, assign the anatomic site-specific CT code, append the CT code with modifier 59, in addition to the appropriate PET imaging code.
- Do not use this code when PET and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead, use UPC 78499 for imaging fusion.

78492 Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); multiple studies at rest and stress (exercise or pharmacologic)

GENERAL DEFINITION

This exam is used to report both stress and rest PET myocardial perfusion imaging. This code is specifically for myocardial perfusion with PET radiotracers on PET scanners. After an intravenous injection of a PET perfusion radiotracer, the patient is scanned in the PET camera to determine myocardial perfusion for known or suspected coronary artery disease. Radiopharmaceuticals such as ^{82}Rb or ^{13}N may be used when imaging the myocardium.

TIPS

- Beginning March 14, 1995, this service is considered covered by Medicare for PET scans performed at rest or with pharmacological stress used for non-invasive imaging of the perfusion of the heart for diagnosis and management of patients with known or suspected coronary artery disease using ^{82}Rb. Effective October 1, 2003 Medicare approved the use of ^{13}N. Details are provided later in this section on the Medicare coverage manuals.
- In the event that a patient received a SPECT with inconclusive results, a PET scan may be performed and be covered by Medicare. SPECT MPI is NOT covered following an inconclusive PET; however, a PET MPI may be performed in place of a SPECT MPI study.
- Prior to January 1, 2020, CPT 78459 may be performed on the SDOS as 78491 or 78492 as these are separate services. On or after January 1, 2020 see the CPT codes 78432 or 78433.
- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.
- If cardiac stress is performed, choose from the CPT code set 93015–93018 to describe the service(s) rendered. Cardiac stress testing is not included in the CPT code for the cardiovascular PET or PET/CT procedure. Refer to the beginning of this section (Billing for Cardiac Stress Tests) for specific instructions regarding billing of these codes.
- When performing absolute quantitation of myocardial blood flow by PET or PET/CT, report add-on code +78434 in addition to the primary CPT pro-

cedure code. Code +78434 may only be assigned with code 78431 or 78492. While this code (+78434) is assigned an "N" status indicator under the Medicare OPPS billing methodology, it is still important to assign appropriate charges and report as this data can have important implications for future rate setting. While Medicare does not make separate reimbursement for this service under OPPS, other payers may. Charges submitted today (even if not currently reimbursed) are important to help shape payment in the future.

- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., adenosine, dipyridamole, etc.). **Note:** For all PET stress myocardial perfusion imaging (MPI) studies, expect to bill one of the pharmacological stress agents. PET MPI pharmacological stress agents (e.g. adenosine, regadenoson, or dipyridamole) are typically required when imaging a patient in the PET camera.

78431 Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); multiple studies at rest and stress (exercise or pharmacologic), with concurrently acquired computed tomography transmission scan

GENERAL DEFINITION

This exam is used to report both stress and rest PET/CT myocardial perfusion imaging. This code is specifically for myocardial perfusion with PET radiotracers on PET/CT scanners. After an intravenous injection of a PET perfusion radiotracer, the patient is scanned in the PET/CT camera to determine myocardial perfusion for known or suspected coronary artery disease. Radiopharmaceuticals such as ^{82}Rb or ^{13}N may be used when imaging the myocardium.

TIPS

- Beginning March 14, 1995, this service is considered covered by Medicare for PET scans performed at rest or with pharmacological stress used for non-invasive imaging of the perfusion of the heart for diagnosis and management of patients with known or suspected coronary artery disease using ^{82}Rb. Effective October 1, 2003 Medicare approved the use of ^{13}N. Details are provided later in this section on the Medicare coverage manuals.
- In the event that a patient received a SPECT with inconclusive results, a PET scan may be performed and be covered by Medicare. SPECT MPI is NOT covered following an inconclusive PET; however, a PET MPI may be performed in place of a SPECT MPI study.

- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.
- If cardiac stress is performed, choose from the CPT code set 93015–93018 to describe the service(s) rendered. Cardiac stress testing is not included in the CPT code for the cardiovascular PET or PET/CT procedure. Refer to the beginning of this section (Billing for Cardiac Stress Tests) for specific instructions regarding billing of these codes.
- When performing absolute quantitation of myocardial blood flow by PET or PET/CT, report add-on code +78434 in addition to the primary CPT procedure code. Code +78434 may only be assigned with code 78431 or 78492. While this code (+78434) is assigned an "N" status indicator under the Medicare OPPS billing methodology, it is still important to assign appropriate charges and report as this data can have important implications for future rate setting. While Medicare does not make separate reimbursement for this service under OPPS, other payers may. Charges submitted today (even if not currently reimbursed) are important to help shape payment in the future.
- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., adenosine, dipyridamole, etc.). **Note:** For all PET stress myocardial perfusion imaging (MPI) studies, expect to bill one of the pharmacological stress agents. PET MPI pharmacological stress agents (e.g. adenosine, regadenoson, or dipyridamole) are typically required when imaging a patient in the PET camera.
- This code does include CT for both attenuation correction and anatomic localization (i.e., fusion imaging). However, do not charge separately for diagnostic CT imaging unless a full and complete diagnostic CT scan (i.e., not just fusion imaging) is ordered and performed. If a full and complete diagnostic CT is separately ordered, medically necessary and performed, assign the anatomic site-specific CT code, append the CT code with modifier 59, in addition to the appropriate PET imaging code.
- Do not use this code when PET and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead, use UPC 78499 for imaging fusion.

78432 Myocardial imaging, positron emission tomography (PET), combined perfusion with metabolic evaluation study (including ventricular wall motion[s] and/or ejec-

tion fraction[s], when performed), dual radiotracer (eg, myocardial viability);

GENERAL DEFINITION

This exam is used to report both stress and rest PET/CT myocardial perfusion imaging. This code is specifically for myocardial perfusion with PET radiotracers on PET/CT scanners. After an intravenous injection of a PET perfusion radiotracer, the patient is scanned in the PET/CT camera to determine myocardial perfusion for known or suspected coronary artery disease. Radiopharmaceuticals such as ^{82}Rb or ^{13}N may be used when imaging the myocardium.

TIPS

- Beginning October 1, 2002, this exam is covered for the determination of myocardial viability as a primary or initial diagnostic study prior to revascularization and will continue to cover ^{18}F FDG PET when used as a follow-up to an inconclusive SPECT. If, however a patient received an ^{18}F FDG PET study with inconclusive results, a follow-up SPECT is not covered. Both full and partial ring PET scanners are covered. (See the PET section of this publication for more details.)
- Beginning March 14, 1995, this service is considered covered by Medicare for PET scans performed at rest or with pharmacological stress used for non-invasive imaging of the perfusion of the heart for diagnosis and management of patients with known or suspected coronary artery disease using ^{82}Rb. Effective October 1, 2003 Medicare approved the use of ^{13}N. Details are provided later in this section on the Medicare coverage manuals.
- In the event that a patient received a SPECT with inconclusive results, a PET scan may be performed and be covered by Medicare. SPECT MPI is NOT covered following an inconclusive PET; however, a PET MPI may be performed in place of a SPECT MPI study.
- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.
- If cardiac stress is performed, choose from the CPT code set 93015–93018 to describe the service(s) rendered. Cardiac stress testing is not included in the CPT code for the cardiovascular PET or PET/CT procedure. Refer to the beginning of this section (Billing for Cardiac Stress Tests) for specific instructions regarding billing of these codes.
- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., adenosine, dipyridamole, etc.). **Note:** For all PET stress

myocardial perfusion imaging (MPI) studies, expect to bill one of the pharmacological stress agents. PET MPI pharmacological stress agents (e.g. adenosine, regadenoson, or dipyridamole) are typically required when imaging a patient in the PET camera.

78433 Myocardial imaging, positron emission tomography (PET), combined perfusion with metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), dual radiotracer (eg, myocardial viability); with concurrently acquired computed tomography transmission scan

GENERAL DEFINITION

This exam is used to report both stress and rest PET/CT myocardial perfusion imaging. This code is specifically for myocardial perfusion with PET radiotracers on PET/CT scanners. After an intravenous injection of a PET perfusion radiotracer, the patient is scanned in the PET/CT camera to determine myocardial perfusion for known or suspected coronary artery disease. Radiopharmaceuticals such as ^{82}Rb or ^{13}N may be used when imaging the myocardium.

TIPS

- Beginning October 1, 2002, this exam is covered for the determination of myocardial viability as a primary or initial diagnostic study prior to revascularization and will continue to cover ^{18}F FDG PET when used as a follow-up to an inconclusive SPECT. If, however a patient received an ^{18}F FDG PET study with inconclusive results, a follow-up SPECT is not covered. Both full and partial ring PET scanners are covered. (See the PET section of this publication for more details.)
- Beginning March 14, 1995, this service is considered covered by Medicare for PET scans performed at rest or with pharmacological stress used for non-invasive imaging of the perfusion of the heart for diagnosis and management of patients with known or suspected coronary artery disease using ^{82}Rb. Effective October 1, 2003 Medicare approved the use of ^{13}N. Details are provided later in this section on the Medicare coverage manuals.
- In the event that a patient received a SPECT with inconclusive results, a PET scan may be performed and be covered by Medicare. SPECT MPI is NOT covered following an inconclusive PET; however, a PET MPI may be performed in place of a SPECT MPI study.

- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.
- If cardiac stress is performed, choose from the CPT code set 93015–93018 to describe the service(s) rendered. Cardiac stress testing is not included in the CPT code for the cardiovascular PET or PET/CT procedure. Refer to the beginning of this section (Billing for Cardiac Stress Tests) for specific instructions regarding billing of these codes.
- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., adenosine, dipyridamole, etc.). **Note:** For all PET stress myocardial perfusion imaging (MPI) studies, expect to bill one of the pharmacological stress agents. PET MPI pharmacological stress agents (e.g. adenosine, regadenoson, or dipyridamole) are typically required when imaging a patient in the PET camera.
- This code does include CT for both attenuation correction and anatomic localization (i.e., fusion imaging). However, do not charge separately for diagnostic CT imaging unless a full and complete diagnostic CT scan (i.e., not just fusion imaging) is ordered and performed. If a full and complete diagnostic CT is separately ordered, medically necessary and performed, assign the anatomic site-specific CT code, append the CT code with modifier 59, in addition to the appropriate PET imaging code.
- Do not use this code when PET and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead, use UPC 78499 for imaging fusion.

+78434 Absolute quantitation of myocardial blood flow (AQMBF), positron emission tomography (PET), rest and pharmacologic stress (List separately in addition to code for primary procedure)

GENERAL DEFINITION

Absolute quantitation of myocardial blood flow (MBF) by PET has a significant role in the clinical evaluation of epicardial and microvascular coronary artery disease (CAD). The clinical value of the absolute quantitation of MBF

by PET is well-recognized, standards and computer processing techniques are evolving.

TIPS

- Submit in addition to primary procedure code 78431 or 78492.
- When performing absolute quantitation of myocardial blood flow by PET or PET/CT, report add-on code +78434 in addition to the primary CPT procedure code. Code +78434 may only be assigned with code 78431 or 78492. While this code (+78434) is assigned an "N" status indicator under the Medicare OPPS billing methodology, it is still important to assign appropriate charges and report as this data can have important implications for future rate setting. While Medicare does not make separate reimbursement for this service under OPPS, other payers may. Charges submitted today (even if not currently reimbursed) are important to help shape payment in the future.

78499 Unlisted cardiovascular procedure, diagnostic nuclear medicine

GENERAL DEFINITION

As noted in the CPT introductory language mentioned earlier in this publication, unlisted codes are used when there is no code to describe the procedure preformed. You may not use a code that approximates a current code. In the absence of a code the correctly describes the procedure, use an appropriate unlisted code. This code may be used to describe cardiac procedures not already available in either CPT category I or category III codes.

TIPS

- This code may be used to describe first-pass technique ventricular function portion when performed in conjunction with myocardial perfusion studies. Do not use 78481 or 78483 with 78451–78454.
- When submitting an UPC, clearly define the following for any third-party payer via a written (i.e., "paper") claim: definition or description of the nature, need and extent of procedure; and the time, effort and equipment necessary to provide the service. Refer to the "Special Report" section of CPT for additional information that may also be included.

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
0331T	Myocardial sympathetic innervation imaging, planar qualitative and quantitative assessment;	Global	C	0.00	$0.00	5593	S	$1,327.27

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
0332T	Myocardial sympathetic innervation imaging, planar qualitative and quantitative assessment; with tomographic SPECT	Global	C	0.00	$0.00	5593	S	$1,327.27
0742T	Absolute quantitation of myocardial blood flow (AQMBF), single-photon emission computed tomography (SPECT), with exercise or pharmacologic stress, and at rest, when performed (List separately in addition to code for primary procedure)	Global	C	0.00	$0.00		N	$0.00
78414	Determination of central c-v hemodynamics (non-imaging) (eg, ejection fraction with probe technique) with or without pharmacologic intervention or exercise, single or multiple determinations	Global	C	0.00	$0.00	5592	S	$504.50
		TC	C	0.00	$0.00			
		26	A	0.62	$20.50			
78428	Cardiac shunt detection	Global	A	5.26	$173.90	5591	S	$388.68
		TC	A	4.19	$138.52			
		26	A	1.07	$35.37			
78445	Non-cardiac vascular flow imaging (ie, angiography, venography)	Global	A	5.89	$194.73	5591	S	$388.68
		TC	A	5.17	$170.92			
		26	A	0.72	$23.80			
78451	Myocardial perfusion imaging, tomographic (SPECT) (including attenuation correction, qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); single study, at rest or stress (exercise or pharmacologic)	Global	A	9.45	$312.42	5593	S	$1,327.27
		TC	A	7.56	$249.94			
		26	A	1.89	$62.48			
78452	Myocardial perfusion imaging, tomographic (SPECT) (including attenuation correction, qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); multiple studies, at rest and/or stress (exercise or pharmacologic) and/or redistribution and/or rest reinjection	Global	A	13.11	$433.43	5593	S	$1,327.27
		TC	A	10.87	$359.37			
		26	A	2.24	$74.06			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78453	Myocardial perfusion imaging, planar (including qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); single study, at rest or stress (exercise or pharmacologic)	Global	A	8.16	$269.78	5593	S	$1,327.27
		TC	A	6.79	$224.48			
		26	A	1.37	$45.29			
78454	Myocardial perfusion imaging, planar (including qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); multiple studies, at rest and/or stress (exercise or pharmacologic) and/or redistribution and/or rest reinjection	Global	A	12.17	$402.35	5593	S	$1,327.27
		TC	A	10.28	$339.86			
		26	A	1.89	$62.48			
78456	Acute venous thrombosis imaging, peptide	Global	A	8.70	$287.63	5593	S	$1,327.27
		TC	A	7.32	$242.00			
		26	A	1.38	$45.62			
78457	Venous thrombosis imaging, venogram; unilateral	Global	A	4.70	$155.39	5592	S	$504.50
		TC	A	3.63	$120.01			
		26	A	1.07	$35.37			
78458	Venous thrombosis imaging, venogram; bilateral	Global	A	5.85	$193.41	5591	S	$388.68
		TC	A	4.58	$151.42			
		26	A	1.27	$41.99			
78459	Myocardial imaging, positron emission tomography (PET), metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), single study;	Global	C	0.00	$0.00	5593	S	$1,327.27
		TC	C	0.00	$0.00			
		26	A	2.14	$70.75			
78429	Myocardial imaging, positron emission tomography (PET), metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), single study; with concurrently acquired computed tomography transmission scan	Global	C	0.00	$0.00	5594	S	$1,489.35
		TC	C	0.00	$0.00			
		26	A	2.34	$77.36			
78466	Myocardial imaging, infarct avid, planar; qualitative or quantitative	Global	A	5.21	$172.25	5591	S	$388.68
		TC	A	4.23	$139.85			
		26	A	0.98	$32.40			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78468	Myocardial imaging, infarct avid, planar; with ejection fraction by first pass technique	Global	A	5.48	$181.17	5592	S	$504.50
		TC	A	4.39	$145.14			
		26	A	1.09	$36.04			
78469	Myocardial imaging, infarct avid, planar; tomographic SPECT with or without quantification	Global	A	6.22	$205.64	5592	S	$504.50
		TC	A	4.95	$163.65			
		26	A	1.27	$41.99			
78472	Cardiac blood pool imaging, gated equilibrium; planar, single study at rest or stress (exercise and/or pharmacologic), wall motion study plus ejection fraction, with or without additional quantitative processing	Global	A	6.37	$210.60	5591	S	$388.68
		TC	A	5.02	$165.96			
		26	A	1.35	$44.63			
78473	Cardiac blood pool imaging, gated equilibrium; multiple studies, wall motion study plus ejection fraction, at rest and stress (exercise and/or pharmacologic), with or without additional quantification	Global	A	8.08	$267.13	5591	S	$388.68
		TC	A	6.07	$200.68			
		26	A	2.01	$66.45			
78481	Cardiac blood pool imaging (planar), first pass technique; single study, at rest or with stress (exercise and/or pharmacologic), wall motion study plus ejection fraction, with or without quantification	Global	A	4.99	$164.97	5592	S	$504.50
		TC	A	3.63	$120.01			
		26	A	1.36	$44.96			
78483	Cardiac blood pool imaging (planar), first pass technique; multiple studies, at rest and with stress (exercise and/or pharmacologic), wall motion study plus ejection fraction, with or without quantification	Global	A	6.72	$222.17	5592	S	$504.50
		TC	A	4.70	$155.39			
		26	A	2.02	$66.78			
78491	Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); single study, at rest or stress (exercise or pharmacologic)	Global	C	0.00	$0.00	5594	S	$1,489.35
		TC	C	0.00	$0.00			
		26	A	2.08	$68.77			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78430	Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); single study, at rest or stress (exercise or pharmacologic), with concurrently acquired computed tomography transmission scan	Global	C	0.00	$0.00	5594	S	$1,489.35
		TC	C	0.00	$0.00			
		26	A	2.21	$73.06			
78492	Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); multiple studies at rest and stress (exercise or pharmacologic)	Global	C	0.00	$0.00	5594	S	$1,489.35
		TC	C	0.00	$0.00			
		26	A	2.48	$81.99			
78431	Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); multiple studies at rest and stress (exercise or pharmacologic), with concurrently acquired computed tomography transmission scan	Global	C	0.00	$0.00	1523	S	$2,750.50
		TC	C	0.00	$0.00			
		26	A	2.59	$85.63			
78432	Myocardial imaging, positron emission tomography (PET), combined perfusion with metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), dual radiotracer (eg, myocardial viability);	Global	C	0.00	$0.00	1520	S	$1,850.50
		TC	C	0.00	$0.00			
		26	A	2.76	$91.25			
78433	Myocardial imaging, positron emission tomography (PET), combined perfusion with metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), dual radiotracer (eg, myocardial viability); with concurrently acquired computed tomography transmission scan	Global	C	0.00	$0.00	1521	S	$1,950.50
		TC	C	0.00	$0.00			
		26	A	3.01	$99.51			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78434	Absolute quantitation of myocardial blood flow (AQMBF), positron emission tomography (PET), rest and pharmacologic stress (List separately in addition to code for primary procedure)	Global	C	0.00	$0.00		N	$0.00
		TC	C	0.00	$0.00			
		26	A	0.86	$28.43			
78494	Cardiac blood pool imaging, gated equilibrium, SPECT, at rest, wall motion study plus ejection fraction, with or without quantitative processing	Global	A	6.41	$211.92	5591	S	$388.68
		TC	A	4.77	$157.70			
		26	A	1.64	$54.22			
78496	Cardiac blood pool imaging, gated equilibrium, single study, at rest, with right ventricular ejection fraction by first pass technique (List separately in addition to code for primary procedure)	Global	A	1.25	$41.33		N	$0.00
		TC	A	0.56	$18.51			
		26	A	0.69	$22.81			
78499	Unlisted cardiovascular procedure, diagnostic nuclear medicine	Global	C	0.00	$0.00	5591	S	$388.68
		TC	C	0.00	$0.00			
		26	C	0.00	$0.00			
93015	Cardiovascular stress test using maximal or submaximal treadmill or bicycle exercise, continuous electrocardiographic monitoring, and/or pharmacological stress; with supervision, interpretation and report	Global	A	2.10	$69.43		B	$0.00
93016	Cardiovascular stress test using maximal or submaximal treadmill or bicycle exercise, continuous electrocardiographic monitoring, and/or pharmacological stress; supervision only, without interpretation and report	Global	A	0.62	$20.50		B	$0.00
93017	Cardiovascular stress test using maximal or submaximal treadmill or bicycle exercise, continuous electrocardiographic monitoring, and/or pharmacological stress; tracing only, without interpretation and report	Global	A	1.07	$35.37	5722	Q1	$280.06

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs								
Code	**Description**	**Modifier**	**SC**	**RVU**	**Rate***	**APC**	**SI**	**Rate**
93018	Cardiovascular stress test using maximal or submaximal treadmill or bicycle exercise, continuous electrocardiographic monitoring, and/or pharmacological stress; interpretation and report only	Global	A	0.41	$13.55		B	$0.00

*For the most current payment rates, check *http://www.cms.gov/apps/physician-fee-schedule/overview.aspx*.

Respiratory System

CPT Codes: 78579–78599

REVENUE CODES: 340 OR 341

Typical Drugs and Radiopharmaceuticals Used				
HCPCS	**Description**	**Notes**	**RC**	**SI**
A4641	Radiopharmaceutical, diagnostic, not otherwise classified —*Krypton KR-81m gas, diagnostic, per study dose*	Not commercially manufactured and sold in the U.S. at present; used for lung scans; see Xenon for alternative.	343	N
A4641	Radiopharmaceutical, diagnostic, not otherwise classified —*Technetium TC-99m (HAM) human albumin microspheres, diagnostic, per study dose*	No longer commercially manufactured. Replaced by Technetium MAA.	343	N
A9540	Technetium tc-99m macroaggregated albumin, diagnostic, per study dose, up to 10 millicuries	Macrotec, Pulmolite, Pulmotech™, MAA, Macroaggregated Albumin, Technetium MAA, Macrosoheres	343	N
A9558	Xenon xe-133 gas, diagnostic, per 10 millicuries	Xenon, Xenon Gas	343	N
A9567	Technetium tc-99m pentetate, diagnostic, aerosol, per study dose, up to 75 millicuries	DTPA [pronounced dit' pa], Technetium DTPA, DTPA Aerosol For Lung Ventilation Studies	343	N
Q9969	Technetium Tc-99m from non-highly enriched uranium source, full cost recovery add-on, per study dose	Use with 95 percent non-HEU ^{99m}Tc sourced radiopharmaceuticals	343	K

Like bone scans, lung scanning, sometimes called V/P or V/Q lung scans, are common procedures performed in nuclear medicine facilities. The V stands for ventilation, and this study is imaging of the airway, bronchi, bronchioles (in other words, air movement in the lungs), where the patient breathes in a radioactive gas or aerosol. Most common radiopharmaceuticals include ^{99m}Tc DTPA (pentetate) aerosolized particles or xenon (^{133}Xe) gas.

The P or Q stands for perfusion, which is an exam that shows the parenchyma and blood flow to the lungs, typically looking for blood clots also known as pulmonary emboli (PE). The radioactive material most commonly used for perfusion imaging is ^{99m}Tc macroaggregated albumin (MAA). Usually, the two separate studies, both ventilation and perfusion are performed. Occasionally, only one study is performed, either a ventilation alone or perfusion alone. Imaging for ventilation and perfusion studies is most often performed in multiple views or projections, such as anterior, posterior, laterals and obliques.

Another purpose for performing lung scans may be as a presurgery where patients will have removal of either a segment or the entire lung. In these instances, images may be obtained but are not required as part of the study. The primary purpose of these studies is to perform quantitative measurements of either a perfusion only or both ventilation and perfusion studies.

TIPS

- When procuring the radioactive material, be certain to submit a separate charge for each radiopharmaceutical utilized. Some payers may ask you to submit an invoice when billing for these items. All parties (i.e., physicians, hospitals, etc.) will now need to identify the diagnostic radiopharmaceutical(s) with appropriate HCPCS Level II A or C codes. (C-series HCPCS codes are only for Medicare outpatient hospital coding and billing.)
- Hospital providers may consider reporting HCPCS Level II Q9969 per study dose, with any of the ^{99m}Tc based radiopharmaceutical HCPCS codes, only when the hospital can document that the patient received technetium derived from at least a 95 percent non-HEU source. Refer to the introduction of this publication for information on non-HEU billing. Additionally, if more than one study dose was administered to the patient, it would be appropriate to report multiple units based on the number of study doses, as long as each study dose meets the code description and documentation requirements. (**NOTE:** At the time of publication, Q9969 may only be reported for Medicare outpatient hospital coding/billing, and we are not aware of any other payers accepting or adopting this policy.)
- For lung imaging, choose the single best code that describes the complete procedure. Report the following only once per imaging session: 78579, 78580, 78582, 78597 or 78598. Do not unbundle codes.
- The organ specific lung service CPT codes are for imaging with planar technique. If performing SPECT or SPECT/CT, refer to the 788XX CPT code series for reporting the correct SPECT or SPECT/CT service. For example, a SPECT perfusion study using only MAA would be assigned CPT 78803, a SPECT/CT would instead be coded as 78830 as they are single studies of one area. Alternatively, performing both perfusion and ventilation SPECT would be coded 78831 because two separate studies are being done of the lung, one using the perfusion tracer and a second with the ventilation tracer. While some have argued that both (the perfusion and the ventilation) are of a single area, because two different tracers have been utilized and two separate and distinct studies were done, regardless of the imaging of the "same area," this is still considered to be multiple SPECT imaging since two separate and distinct studies were performed. Similarly, when performing SPECT/CT studying both ventilation and perfusion, assign CPT code 78832.

78579 Pulmonary ventilation imaging (eg, aerosol or gas)

GENERAL DEFINITION

This procedure defines only the airflow into the patient's lungs (also referred to as the ventilation). It is performed as the patient inhales a radioactive "mist/aerosol" or gas. Single or multiple views or projects may be obtained (anterior, posterior, right anterior oblique [RAO], left anterior oblique [LAO], right posterior oblique [RPO], left posterior oblique [LPO], right lateral [RT], and left lateral [LT]) are acquired by either moving the patient or the gamma camera.

TIPS

- Use this code if either gas or aerosol radiopharmaceuticals are utilized for ventilation-only studies.
- Submit this code if the ventilation is the only portion of the lung procedure performed. Do not unbundle into separate charges for the ventilation, when performed with a perfusion study; use CPT 78582 when performing both studies. Studies are typically performed on a single date of service; however, if the studies are done on separate days, continue to bill the bundled code rather than two separate codes—as long as the studies are performed within a few days of each other. If quantitation ventilation and perfusion studies are performed, see 78598.
- As with any codes, it is critically important for facilities to carefully review their procedure costs prior to setting the charges, which should account for the varying work performed. Hospitals should NOT simply crosswalk the previous codes listed, crosswalks are for assistance only. If CPT now includes a new number and code then there are differences that need to be taken into account.
- The organ specific lung service CPT codes are for imaging with planar technique. If performing SPECT or SPECT/CT, refer to the 788XX CPT code series for reporting the correct SPECT or SPECT/CT service. For example, a SPECT perfusion study using only MAA would be assigned CPT 78803, a SPECT/CT would instead be coded as 78830 as they are single studies of one area. Alternatively, performing both perfusion and ventilation SPECT would be coded 78831 because two separate studies are being done of the lung, one using the perfusion tracer and a second with the ventilation tracer. While some have argued that both (the perfusion and the ventilation) are of a single area, because two different tracers have been utilized and two separate and distinct studies were done, regardless of the imaging of the "same area," this is still considered to be multiple SPECT imaging since two separate and distinct studies were performed. Similarly, when performing SPECT/CT studying both ventilation and perfusion, assign CPT code 78832.

78580 Pulmonary perfusion imaging (eg, particulate)

GENERAL DEFINITION

Perfusion scan or blood flow takes place after an IV injection of ^{99m}Tc MAA. Multiple images are acquired, typically in 6-8 projections (views). These same projections are also acquired in the aerosol ventilation study so the two sets of images can be compared against one another.

TIPS

- If gas or aerosol ventilation is performed with perfusion, see CPT code 78582.
- If quantitation is performed, see CPT code 78597 or 78598.
- Submit this code only if the perfusion is the only portion of the lung procedure performed. Do not unbundle into separate charges for the perfusion; when performed with a ventilation study, use CPT 78582 when performing both studies. Studies are typically performed on a single date of service; however, continue to bill the bundled code rather than two separate codes if the studies are done on separate days—as long as they are performed within a few days of each other.
- It is not appropriate to bill the lung codes with or without any modifier. For the calculation of the heart-lung ratio during the processing of a SPECT myocardial perfusion procedure, see 78451 or 78452.
- The organ specific lung service CPT codes are for imaging with planar technique. If performing SPECT or SPECT/CT, refer to the 788XX CPT code series for reporting the correct SPECT or SPECT/CT service. For example, a SPECT perfusion study using only MAA would be assigned CPT 78803, a SPECT/CT would instead be coded as 78830 as they are single studies of one area. Alternatively, performing both perfusion and ventilation SPECT would be coded 78831 because two separate studies are being done of the lung, one using the perfusion tracer and a second with the ventilation tracer. While some have argued that both (the perfusion and the ventilation) are of a single area, because two different tracers have been utilized and two separate and distinct studies were done, regardless of the imaging of the "same area," this is still considered to be multiple SPECT imaging since two separate and distinct studies were performed. Similarly, when performing SPECT/CT studying both ventilation and perfusion, assign CPT code 78832.

78582 Pulmonary ventilation (eg, aerosol or gas) and perfusion imaging

GENERAL DEFINITION

This procedure defines both the ventilation (air supply) and the perfusion (blood supply) to the lungs for imaging and evaluation. Airflow can be by gas or aerosol, and the perfusion is typically performed with ^{99m}Tc macroaggregated albumin (MAA). The most frequent indication for this procedure is pulmonary embolism (PE).

TIPS

- Use this code if either gas or aerosol radiopharmaceuticals are utilized for the ventilation portion of the study.
- Submit this code only if both a ventilation and perfusion is performed. If a single-study ventilation only or perfusion only are performed, see CPT 78579 or 78580. Studies are typically performed on a single date of service; however, continue to bill the bundled code rather than two separate codes if the studies are done on separate days—as long as they are performed within a few days of each other. If quantitation ventilation and perfusion studies are performed, see CPT 78598.
- It is not appropriate to bill the lung codes with or without any modifier. For the calculation of the heart-lung ratio during the processing of a SPECT myocardial perfusion procedure, see 78451 or 78452.
- As with any codes, it is critically important for facilities to carefully review their procedure costs prior to setting the charges, which should account for the varying work performed. Hospitals should NOT simply crosswalk the previous codes listed earlier; crosswalks are for assistance. If the AMA created a new number and code then there are differences that need to be taken into account.
- The organ specific lung service CPT codes are for imaging with planar technique. If performing SPECT or SPECT/CT, refer to the 788XX CPT code series for reporting the correct SPECT or SPECT/CT service. For example, a SPECT perfusion study using only MAA would be assigned CPT 78803, a SPECT/CT would instead be coded as 78830 as they are single studies of one area. Alternatively, performing both perfusion and ventilation SPECT would be coded 78831 because two separate studies are being done of the lung, one using the perfusion tracer and a second with the ventilation tracer. While some have argued that both (the perfusion and the ventilation) are of a single area, because two different tracers have been utilized and two separate and distinct studies were done, regardless of the imaging of the "same area," this is still considered to be multiple SPECT imaging since two separate and distinct studies were performed. Similarly, when performing SPECT/CT studying both ventilation and perfusion, assign CPT code 78832.

CASE: NUCLEAR MEDICINE VENTILATION / PERFUSION LUNG SCAN

CLINICAL HISTORY

67-year-old male, hyperkalemia, acute renal failure. Hypotension with shortness of breath.

PROCEDURE

Ventilation and perfusion imaging in the following projections; anterior, posterior, right anterior oblique (RAO), left anterior oblique (LAO), right lateral, left lateral, right posterior oblique (RPO), and left posterior oblique (LPO) were obtained after intravenous injection of 6.6 mCi of 99mTc MAA into the right arm. Ventilation images posterior projection were obtained while the patient inhaled 14.4 mCi or Xe-133.

Same day PA and Lateral Chest X-ray is reviewed and used as comparator.

Ventilation images show moderate retention bilaterally compatible with COPD. Perfusion images show minimal inhomogeneity of the radiotracer distribution.

IMPRESSION

Low probability scan for evidence of acute pulmonary embolism. The clinical service was informed of the findings at the time of the examination by personal phone call and follow up with a faxed preliminary reading.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78582	1	3	1
A9540	1	3	2
A9558	2	3	7

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

78597 Quantitative differential pulmonary perfusion, including imaging when performed

GENERAL DEFINITION

This procedure is primarily used to predict how a patient might fare if either a part or the entire lung was removed. Imaging may or may not be performed. The differential quantification measurement(s) are the primary purpose of this procedure.

TIPS

- Submit this code only if quantitation perfusion is performed alone. If quantitation for ventilation and perfusion is performed, use 78598.
- If ventilation and perfusion or perfusion-only studies are performed for an indication of PE, see CPT 78579 or 78580.
- It is not appropriate to bill the lung codes with or without any modifier. For the calculation of the heart-lung ratio during the processing of a SPECT myocardial perfusion procedure, see 78451 or 78452.
- As with any codes, it is critically important for facilities to carefully review their procedure costs prior to setting the charges, which should account for the varying work performed. Hospitals should NOT simply crosswalk the previous codes listed noted earlier; crosswalks are for assistance. If CPT created a new number and code then there are differences that need to be taken into account.
- The organ specific lung service CPT codes are for imaging with planar technique. If performing SPECT or SPECT/CT, refer to the 788XX CPT code series for reporting the correct SPECT or SPECT/CT service. For example, a SPECT perfusion study using only MAA would be assigned CPT 78803, a SPECT/CT would instead be coded as 78830 as they are single studies of one area. Alternatively, performing both perfusion and ventilation SPECT would be coded 78831 because two separate studies are being done of the lung, one using the perfusion tracer and a second with the ventilation tracer. While some have argued that both (the perfusion and the ventilation) are of a single area, because two different tracers have been utilized and two separate and distinct studies were done, regardless of the imaging of the "same area," this is still considered to be multiple SPECT imaging since two separate and distinct studies were performed. Similarly, when performing SPECT/CT studying both ventilation and perfusion, assign CPT code 78832.

78598 Quantitative differential pulmonary perfusion and ventilation (eg, aerosol or gas), including imaging when performed

GENERAL DEFINITION

This procedure is primarily used to predict how a patient might fare if either a part or the entire lung was removed. Imaging may or may not be performed.

The differential quantification measurement(s) are the primary purpose of this procedure. Report this code when both the ventilation and perfusion quantitation is performed.

TIPS

- Use this code if either gas or aerosol radiopharmaceuticals are utilized for the ventilation portion of the study.
- Submit this code only if both a ventilation and perfusion is performed for differential quantitation. If studies are performed for pulmonary embolism, use 78579–78582.
- Studies are typically performed on a single date of service; however, if the studies are done on separate days, continue to bill the bundled code rather than two separate codes—as long as they are performed within a few days of each other. If a quantitation perfusion-only study is performed, see CPT 78598.
- It is not appropriate to bill the lung codes with or without any modifier. For the calculation of the heart-lung ratio during the processing of a SPECT myocardial perfusion procedure, use 78451 or 78452.
- As with any codes, it is critically important for facilities to carefully review their procedure costs prior to setting the charges, which should account for the varying work performed. Hospitals should NOT simply crosswalk the previous codes listed noted earlier; crosswalks are for assistance. If the AMA created a new number and code then there are differences that need to be taken into account.
- The organ specific lung service CPT codes are for imaging with planar technique. If performing SPECT or SPECT/CT, refer to the 788XX CPT code series for reporting the correct SPECT or SPECT/CT service. For example, a SPECT perfusion study using only MAA would be assigned CPT 78803, a SPECT/CT would instead be coded as 78830 as they are single studies of one area. Alternatively, performing both perfusion and ventilation SPECT would be coded 78831 because two separate studies are being done of the lung, one using the perfusion tracer and a second with the ventilation tracer. While some have argued that both (the perfusion and the ventilation) are of a single area, because two different tracers have been utilized and two separate and distinct studies were done, regardless of the imaging of the "same area," this is still considered to be multiple SPECT imaging since two separate and distinct studies were performed. Similarly, when performing SPECT/CT studying both ventilation and perfusion, assign CPT code 78832.

78599 Unlisted respiratory procedure, diagnostic nuclear medicine

GENERAL DEFINITION

As noted in the CPT introductory language mentioned earlier in this publication, unlisted codes are used when there is no other code to describe the procedure performed. You may not use a code that approximates a current code. In the absence of a code that correctly describes the procedure, use an appropriate unlisted code. This code may be used to describe respiratory diagnostic nuclear medicine procedures not already available in either CPT category I or category III codes.

TIP

- When submitting an UPC, clearly define the following for any third-party payer via a written (i.e., "paper") claim: definition or description of the nature, need and extent of procedure, and the time, effort and equipment necessary to provide the service. Refer to the "Special Report" section of CPT for additional information that may also be included.

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78579	Pulmonary ventilation imaging (eg, aerosol or gas)	Global	A	5.28	$174.56	5591	S	$388.68
		TC	A	4.60	$152.08			
		26	A	0.68	$22.48			
78580	Pulmonary perfusion imaging (eg, particulate)	Global	A	6.62	$218.86	5591	S	$388.68
		TC	A	5.59	$184.81			
		26	A	1.03	$34.05			
78582	Pulmonary ventilation (eg, aerosol or gas) and perfusion imaging	Global	A	9.26	$306.14	5592	S	$504.50
		TC	A	7.79	$257.54			
		26	A	1.47	$48.60			
78597	Quantitative differential pulmonary perfusion, including imaging when performed	Global	A	5.63	$186.13	5591	S	$388.68
		TC	A	4.62	$152.74			
		26	A	1.01	$33.39			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78598	Quantitative differential pulmonary perfusion and ventilation (eg, aerosol or gas), including imaging when performed	Global	A	8.44	$279.03	5592	S	$504.50
		TC	A	7.28	$240.68			
		26	A	1.16	$38.35			
78599	Unlisted respiratory procedure, diagnostic nuclear medicine	Global	C	0.00	$0.00	5591	S	$388.68
		TC	C	0.00	$0.00			
		26	C	0.00	$0.00			

*For the most current payment rates, check *http://www.cms.gov/apps/physician-fee-schedule/overview.aspx*.

Central Nervous System, Including Selected Neurological PET

CPT Codes: 78600–78699, 61070, 62323, 62327

REVENUE CODES: 340 OR 341 (36X FOR 623XX)

Typical Drugs and Radiopharmaceuticals Used

HCPCS	Description	Notes	RC	SI
A9512	Technetium tc-99m pertechnetate, diagnostic, per millicurie	Straight Tech, Sodium Pertechnetate, Pertechnetate, Tech, Technetium, Technescan, Technelite	343	N
A9521	Technetium tc-99m exametazime, diagnostic, per study dose, up to 25 millicuries	Ceretec, HMPAO, Technetium Labeled Ceretec, Exametazime	343	N
A9539	Technetium tc-99m pentetate, diagnostic, per study dose, up to 25 millicuries	Pentetate, Tc-99M DTPA, DTPA, Technetium DTPA [pronounced dit' pa]	343	N
A9548	Indium in-111 pentetate, diagnostic, per 0.5 Millicurie	Indiclor, Indium DTPA, DTPA [pronounced dit' pa] (Use for Oral or IV)	343	N
A9550	Technetium tc-99m sodium gluceptate, diagnostic, per study dose, up to 25 millicurie	Glucoscan, Glucoheptonate, Gluco, Technetium Glucoheptonate, Gluceptate, GH	343	N
A9552	Fluorodeoxyglucose F-18 fdg, diagnostic, per study dose, up to 45 millicuries	FDG, F-18	343	N
A9557	Technetium tc-99m bicisate, diagnostic, per study dose, up to 25 millicuries	Neurolite, Neurolite, ECD	343	N
A9584	Iodine I-123 ioflupane, diagnostic, per study dose, up to 5 millicuries	DaTscan, replaced C9604 effective July 1, 2011 to Dec. 31, 2011	343	N
●A9602	Fluorodopa f 18 injection, diagnostic, 1 millicurie	Trade name: None at time of print The Feinstein Institutes for Medical Research 350 Community Drive Manhasset New York 11030 Indicated for visualize dopaminergic nerve terminals in the striatum for the evaluation of adult patients with suspected Parkinsonian syndromes (PS). NDC (13267-346-57) Effective October 1, 2022 Pass-through End Date: September 30, 2025	343	G
Q9969	Technetium Tc-99m from non-highly enriched uranium source, full cost recovery add-on, per study dose	Use with 95 percent non-HEU ^{99m}Tc sourced radiopharmaceuticals	343	K

J1120	Injection, acetazolamide sodium, up to 500 mg	Diamox	636	N
J1160	Injection, digoxin, up to 0.5 Mg	Lanoxin	636	N

In the past, nuclear medicine brain imaging played a larger role in assessing and defining cerebral abnormalities. While the advent of positron emission tomography (PET) has renewed interest in this type of scanning, the high cost of both PET cameras as well as cyclotrons has kept the vast majority of brain scanning to CT and MRI.

Nuclear imaging, while not used for the standard brain scanning, still is utilized to assess brain death (cerebral silence) as well as cerebrospinal fluid flow procedures. Similar to myelography performed in diagnostic radiology, nuclear cerebrospinal fluid-flow studies also require the installation of the radioactive material into the spinal canal. As the radioactive material moves through the canal, static images are acquired which may demonstrate abnormalities. Once the material makes its way up into the head, images are again acquired, possibly showing shunts, leaks, etc. In addition to planar imaging, SPECT imaging may also be performed. Cerebrospinal fluid-flow studies typically require imaging over multiple days as opposed to typical brain scans that are begun and finished on the same day.

For example, brain-death imaging is typically a flow-only study (CPT code 78610). However, if static imaging was obtained, it would, typically, be less than four views (CPT 78601). Studies that require supervision and interpretation of at least four or more views are typical protocol for the evaluation of the brain for a variety of indications including seizures or dementia (CPT 78605). As with many other nuclear medicine sections, if SPECT is performed, the higher-valued SPECT study is coded and any static (planar) views including a flow would be included in the SPECT study. Therefore, it would not be appropriate to code a flow or any statics in addition to a SPECT study. Please ask your physicians to dictate the number and type of views, if a flow was obtained and if SPECT was performed, to assist the coders in the appropriate selection of the revised neurological codes.

TIPS

- When procuring the radioactive material, be certain to submit a separate charge for each radiopharmaceutical utilized. Some payers may ask you to submit an invoice when billing for these items. All parties (i.e., physicians, hospitals, etc.) will now need to identify the diagnostic radiopharmaceutical(s) with appropriate HCPCS Level II A or C codes. (C-series HCPCS codes are only for Medicare outpatient hospital coding and billing.)
- Hospital providers may consider reporting HCPCS Level II Q9969 per study dose, with any of the ^{99m}Tc based radiopharmaceutical HCPCS

codes, only when the hospital can document that the patient received technetium derived from at least a 95 percent non-HEU source. Refer to the introduction of this publication for information on non-HEU billing. Additionally, if more than one study dose was administered to the patient, it would be appropriate to report multiple units based on the number of study doses, as long as each study dose meets the code description and documentation requirements. (NOTE: At the time of publication, Q9969 may only be reported for Medicare outpatient hospital coding/billing, and we are not aware of any other payers accepting or adopting this policy.)

78600 Brain imaging, less than 4 static views;

GENERAL DEFINITION

Radiopharmaceutical is injected intravenously (IV), and 1–3 images are acquired of the patient's head/brain. While not stated in CPT, a limited study usually consists of less than four static images.

78601 Brain imaging, less than 4 static views; with vascular flow

GENERAL DEFINITION

As above in 78600, but a vascular flow study is performed in addition to the static images. When trying to rule out brain death, this is typically one procedure that may be done.

TIPS

- Do not charge separately for vascular flow.
- If other, non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (e.g., J1120, also called Diamox, is a drug used to increase blood flow to the brain) for potential additional codes/charges.

78605 Brain imaging, minimum 4 static views;

GENERAL DEFINITION

Radiopharmaceutical is injected intravenously (IV) and four or more images are acquired of the patient's head/brain.

78606 Brain imaging, minimum 4 static views; with vascular flow

GENERAL DEFINITION

As in 78605, but a vascular flow is also performed in addition to the static images.

TIPS

- Do not charge separately for vascular flow.
- If other, non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (e.g., J1120, also called Diamox, is a drug used to increase blood flow to the brain) for potential additional codes/charges.

In 2020, CPT deleted code 78607. Codes 78803 and 78831 describe SPECT imaging. Codes 78830 and 78832 describe SPECT/CT imaging. Providers should consider separate anatomic site-specific line items with the same CPT code to account for the varying organ specific costs when using the 788XX series of codes for these services.

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

GENERAL DEFINITION

After an intravenous injection of a PET radiotracer, the patient is scanned in the PET unit to determine metabolic activity. Radiopharmaceuticals such as ^{18}F FDG may be used. A metabolic study is a type of exam in which the target area(s)/tissue(s) are studied to examine changes in cells of the area in question. It has been shown that metabolic changes in cancer cells are different than other tissues or distributions such as dementia and neurodegenerative diseases. In cancer cells there are increased rates of blood and amino acid flow, glucose transport and DNA synthesis compared to normal, degenerative, or non-cancerous tissues. PET studies are able to detect these variations with a high range of efficiency.

TIPS

- Do not use CPT code 78608 for beta-amyloid imaging or Parkinsonian syndromes (PS); see 78811or 78814.

- This code may be used for PET imaging of the brain such as tumors, dementia and neurodegenerative diseases.
- For those claims with dates of service on or after June 11, 2013, for oncologic uses of PET or PET/CT studies with ^{18}FDG, those billings beyond (1) PI and / or (3) PS, with the same cancer diagnosis, during the patient's life, report **modifier KX. It specifies that the requirements of the medical policy have been met** and informs payers that the provider has maintained documentation of medical necessity and rationale for these studies.
- Do not charge separately for a vascular flow.
- Effective for all claims with dates of service on and after April 3, 2009 and for oncologic uses of PET studies with ^{18}F FDG, providers have had to append one of the following modifiers to identify initial treatment strategy or subsequent treatment strategy. These modifiers should be appended to CPT procedure codes 78811–78816 and 78608, as appropriate.

  Modifier PI: PET or PET/CT to inform the initial treatment strategy of tumors that are biopsy proven or strongly suspected of being cancerous based on other diagnostic testing

  Modifier 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

  Report **modifier KX** (requirements specified in the medical policy have been met) to inform the payer that the provider has maintained documentation of medical necessity and rationale for these studies. This applies to claims with dates of service on and after June 11, 2013, for oncologic uses of PET or PET/CT studies with ^{18}FDG, those billings beyond (1) PI and / or (3) PS, with the same cancer diagnosis, during the patient's life.

  For more on these modifiers, go to *http://www.cms.hhs.gov/transmittals/downloads/R1833CP.pdf*.

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

GENERAL DEFINITION

After an intravenous injection of a PET radiotracer, the patient is scanned in the PET unit to determine a cerebral perfusion evaluation. A perfusion study is, by definition, a study in which the volume of blood supplying a unit mass (volume) of tissue per unit time. Unlike metabolic imaging, this study is focused not on information at the cellular level, but on more of a general level—"is the area in question supplied by blood at all, is the flow symmetrical, how quickly does the blood get there, etc."

TIP

- There are currently no Medicare-covered indications for this CPT code.

78610 Brain imaging, vascular flow only

GENERAL DEFINITION

Radioactive material is injected with films acquired only during the dynamic phase of the study. No static imaging is performed. This study can also be performed for brain death assessment.

78630 Cerebrospinal fluid flow, imaging (not including introduction of material); cisternography

GENERAL DEFINITION

Radioactive material is introduced into the patient via (typically) a lumbar puncture. The isotope is then followed and imaged as it makes its way up the spinal canal into the skull. This imaging process is usually performed over a period of two to four days.

TIPS

- If multiple images are performed over multiple days, submit this charge only once.
- Charge separately for the introduction of the radiopharmaceutical into the lumbar canal. The exact code will vary based upon access and method used, but the most common option is CPT codes 62323. This is a bundled code that includes imaging guidance as well, so do not charge separately for CT or fluoroscopic imaging to aid in the access for the delivery of the radioactive material. Hospitals should report this code with revenue code 36X, 49X or 76X.

78635 Cerebrospinal fluid flow, imaging (not including introduction of material); ventriculography

GENERAL DEFINITION

As described in 78630, but imaging is specifically focused on cerebral ventricles.

TIPS

- If multiple images are performed over multiple days, submit this charge only once.
- Charge separately for the introduction of the radiopharmaceutical into the lumbar canal. The exact code will vary based upon access and method used, but the most common option is CPT codes 62323. This is a bundled code that includes imaging guidance as well, so do not charge separately for CT or fluoroscopic imaging to aid in the access for the delivery of the radioactive material. Hospitals should report this code with revenue code 36X, 49X or 76X.

78645 Cerebrospinal fluid flow, imaging (not including introduction of material); shunt evaluation

(For Injection Procedure, see 61000–61070, 62270–62294)

GENERAL DEFINITION

Patient's indwelling shunt is cannulated and injected with radioactive material with subsequent images.

TIPS

- If multiple images are performed over multiple days, submit this charge only once.
- See code 61070 for injection of shunt.

In 2020, CPT deleted code 78647. Codes 78803 and 78831 describe SPECT imaging. Codes 78830 and 78832 describe SPECT/CT imaging. Providers should consider separate anatomic site-specific line items with the same CPT code to account for the varying organ specific costs when using the 788XX series of codes for these services.

78650 Cerebrospinal fluid leakage detection and localization

GENERAL DEFINITION

Radioactive material is introduced into the patient via (typically) a lumbar puncture. The isotope is then followed and imaged as it makes its way up the spinal canal into the skull. The patient, suspected of leaking spinal fluid, has cotton balls or pledgets placed in the nasal canal or external ears to absorb any fluid that may indeed be leaking out. These pledgets are then extracted and placed in an uptake probe to detect if any radioactivity is present and, if so, where it is leaking from/to.

TIP

- Charge separately for the introduction of the radiopharmaceutical into the lumbar canal. The exact code will vary based upon access and method used, but the most common option is CPT codes 62323. This is a bundled code that includes imaging guidance as well, so do not charge separately

for CT or fluoroscopic imaging to aid in the access for the delivery of the radioactive material. Hospitals should report this code with revenue code 36X, 49X or 76X.

CASE: NUCLEAR MEDICINE CISTERNOGRAM

CLINICAL HISTORY

35-year-old female with sensory disturbance and paresthesia. Evaluate for cerebrospinal fluid leak.

PROCEDURE

On 8-29-2018 614 uCi of Indium-111 DTPA was injected intrathecally (billed separately). Imaging was obtained at 30 minutes, 1 hour, 6 hours, 24 hours and 48 hours post injection.

IMPRESSION

There is normal circulation of cerebrospinal fluid without evidence for hydrocephalus. No evidence of leak of CSF outside the central nervous system is seen.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78650	1	3	1
A9548	2	3	2

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

78660 Radiopharmaceutical dacryocystography

GENERAL DEFINITION

This procedure is a study to evaluate tear (lacrimal) drainage and structure of the eye(s).

78699 Unlisted nervous system procedure, diagnostic nuclear medicine

GENERAL DEFINITION

As noted in the CPT introductory language mentioned earlier in this publication, unlisted codes are used when there is no other code to describe the procedure performed. You may not use a code that approximates a current code. In the absence of a code that correctly describes the procedure, use an appropriate unlisted code. This code may be used to describe nervous system diagnostic nuclear medicine procedures not already available in either CPT category I or category III codes.

TIP

- When submitting an UPC, clearly define the following for any third-party payer via a written (i.e., "paper") claim: definition or description of the nature, need and extent of procedure, and the time, effort and equipment necessary to provide the service. Refer to the "Special Report" section of CPT for additional information that may also be included.

61070 Puncture of shunt tubing or reservoir for aspiration or injection procedure

GENERAL DEFINITION

The physician, via placement of a needle into the shunt tubing or reservoir injects a radioactive material to evaluate flow and/or patency under nuclear imaging (scintigraphy).

TIP

- Assign this code in addition to code 78645.

62323 Injection(s), of diagnostic or therapeutic substance(s) (eg, anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, including needle or catheter placement, interlaminar epidural or subarachnoid, lumbar or sacral (caudal); with imaging guidance (ie, fluoroscopy or CT)

GENERAL DEFINITION

With the patient either lying on their side or in a sitting position, a needle is percutaneously placed in the epidural or subarachnoid space. CT guidance or fluoroscopy may or may not also be used to guide the needle placement/injection. Code 62323 describes this services and includes imaging guidance. Code 62322 describes the same, exact procedure; however, it is performed **without imaging guidance**. A radioactive material is injected for subsequent nuclear imaging (scintigraphy).

TIP

- Assign this code in addition to code 78630, 78635, 788XX series code or 78650 as appropriate when the radioactive material is delivered on a single day of service using imaging guidance (as opposed to code 62327).

62327 Injection(s), including indwelling catheter placement, continuous infusion or intermittent bolus, of diagnostic or therapeutic substance(s) (eg, anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, interlaminar epidural or subarachnoid, lumbar or sacral (caudal); with imaging guidance (ie, fluoroscopy or CT)

GENERAL DEFINITION

With the patient either lying on the side or in a sitting position, a needle is percutaneously placed in the epidural or subarachnoid space. CT or fluoroscopy may or may not also be used to guide the needle placement/injection. Code 62327 describes this services and includes imaging guidance. Code 62326 describes the same, exact procedure, however it is performed **without imaging guidance**. A radioactive material is ***continuously or intermittently infused*** for subsequent nuclear imaging (scintigraphy).

TIP

- Assign this code in addition to code 78630, 78635, 788XX series code or 78650 as appropriate when the radioactive material is ***continuously or intermittently infused*** using imaging guidance (as opposed to code 62323).

Regarding the assignment of codes 62320 to 62327:

The following is from the *NCCI Policy Manual for Medicare Services* narrative instructions and can be found in Chapter 8, Section C. This instruction demonstrates that Medicare considers the fluoroscopy utilized as a guidance mechanism to perform the intrathecal injection inclusive and should not be separately coded.

> 21. CPT codes 62310-62319 describe injections of diagnostic or therapeutic substance(s) into the epidural or subarachnoid spaces at different spinal levels. Fluoroscopic guidance such as CPT code 77003 (Fluoroscopic guidance and localization of needle or catheter tip for spine or paraspinous diagnostic or therapeutic injection procedures (epidural or subarachnoid)) is included in these procedures and should not be reported separately with these codes.
>
> On January 1, 2017, CPT codes 62310-62319 were replaced by CPT codes 62320-62327. CPT codes 62321, 62323, 62325, and 62327 describe these injections with fluoroscopic or CT guidance, and CPT codes 62320, 62322, 62324, and 62326 describe these injections without imaging guidance.

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
61070	Puncture of shunt tubing or reservoir for aspiration or injection procedure	Global	A	NA		5442	T	$644.34
62323	Injection(s), of diagnostic or therapeutic substance(s) (eg, anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, including needle or catheter placement, interlaminar epidural or subarachnoid, lumbar or sacral (caudal); with imaging guidance (ie, fluoroscopy or CT)	Global	A	7.74	$255.89	5442	T	$644.34

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
62327	Injection(s), including indwelling catheter placement, continuous infusion or intermittent bolus, of diagnostic or therapeutic substance(s) (eg, anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, interlaminar epidural or subarachnoid, lumbar or sacral (caudal); with imaging guidance (ie, fluoroscopy or CT)	Global	A	8.05	$266.14	5443	T	$852.18
78600	Brain imaging, less than 4 static views;	Global	A	5.10	$168.61	5591	S	$388.68
		TC	A	4.49	$148.44			
		26	A	0.61	$20.17			
78601	Brain imaging, less than 4 static views; with vascular flow	Global	A	6.07	$200.68	5591	S	$388.68
		TC	A	5.37	$177.54			
		26	A	0.70	$23.14			
78605	Brain imaging, minimum 4 static views;	Global	A	5.66	$187.12	5592	S	$504.50
		TC	A	4.90	$162.00			
		26	A	0.76	$25.13			
78606	Brain imaging, minimum 4 static views; with vascular flow	Global	A	9.12	$301.51	5592	S	$504.50
		TC	A	8.23	$272.09			
		26	A	0.89	$29.42			
78608	Brain imaging, positron emission tomography (PET); metabolic evaluation	Global	C	0.00	$0.00	5594	S	$1,489.35
		TC	C	0.00	$0.00			
		26	A	2.04	$67.44			
78609	Brain imaging, positron emission tomography (PET); perfusion evaluation	Global	N	2.12	$70.09		E1	$0.00
		TC	N	0.00	$0.00			
		26	N	2.12	$70.09			
78610	Brain imaging, vascular flow only	Global	A	4.94	$163.32	5592	S	$504.50
		TC	A	4.52	$149.43			
		26	A	0.42	$13.89			
78630	Cerebrospinal fluid flow, imaging (not including introduction of material); cisternography	Global	A	9.40	$310.77	5592	S	$504.50
		TC	A	8.45	$279.36			
		26	A	0.95	$31.41			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78635	Cerebrospinal fluid flow, imaging (not including introduction of material); ventriculography	Global	A	9.41	$311.10	5592	S	$504.50
		TC	A	8.54	$282.34			
		26	A	0.87	$28.76			
78645	Cerebrospinal fluid flow, imaging (not including introduction of material); shunt evaluation	Global	A	8.99	$297.22	5592	S	$504.50
		TC	A	8.22	$271.76			
		26	A	0.77	$25.46			
78650	Cerebrospinal fluid leakage detection and localization	Global	A	7.56	$249.94	5593	S	$1,327.27
		TC	A	6.84	$226.14			
		26	A	0.72	$23.80			
78660	Radiopharmaceutical dacryocystography	Global	A	4.31	$142.49	5591	S	$388.68
		TC	A	3.68	$121.66			
		26	A	0.63	$20.83			
78699	Unlisted nervous system procedure, diagnostic nuclear medicine	Global	C	0.00	$0.00	5591	S	$388.68
		TC	C	0.00	$0.00			
		26	C	0.00	$0.00			

*For the most current payment rates, check *http://www.cms.gov/apps/physician-fee-schedule/overview.aspx*.

Genitourinary System

CPT Codes: 78700–78799, 51701–51703

REVENUE CODES: 340 OR 341 (36X FOR 517XX)

Typical Drugs and Radiopharmaceuticals Used

HCPCS	Description	Notes	RC	SI
A4641	Radiopharmaceutical, diagnostic, not otherwise classified —*Iodine I-131 hippuran, diagnostic, per study dose*	Often replaced by MAG 3	343	N
A9512	Technetium tc-99m pertechnetate, diagnostic, per millicurie	Straight Tech, Sodium Pertechnetate, Pertechnetate, Tech, Technetium, Technescan, Technelite	343	N
A9539	Technetium tc-99m pentetate, diagnostic, per study dose, up to 25 millicuries	Pentetate, Tc-99M DTPA, DTPA, Technetium DTPA [pronounced dit' pa]	343	N
A9550	Technetium tc-99m sodium gluceptate, diagnostic, per study dose, up to 25 millicurie	Glucoscan, Glucoheptonate, Gluco, Technetium Glucoheptonate, Gluceptate, GH	343	N
A9551	Technetium tc-99m succimer, diagnostic, per study dose, up to 10 millicuries	DMSA, Technetium Labeled DMSA, Dimercaptosuccinic acid, Succimer	343	N
A9554	Iodine i-125 sodium iothalamate, diagnostic, per study dose, up to 10 microcuries	125-I-Iothalamate, Glofil-125, Cypros Pharmaceutical for GFR assessment	343	N
A9562	Technetium tc-99m mertiatide, diagnostic, per study dose, up to 15 millicuries	MAG-3, MAGS, Technetium MAG 3	343	N
Q9969	Technetium Tc-99m from non-highly enriched uranium source, full cost recovery add-on, per study dose	Use with 95 percent non-HEU ^{99m}Tc sourced radiopharmaceuticals	343	K
J1940	Injection, furosemide, up to 20 mg	Lasix, furomide MD, Furocot	636	N
J3490	Unclassified drugs —e.g., Captopril (ACE inhibitor)	NOC	636	N

Renal imaging takes place following the IV injection of one (or more) of several possible radionuclides. The most common imaging agent currently utilized to assess both blood flow into the kidneys (renal flow) as well as the production and excretion of urine into the bladder (renal function) is MAG3. In the renal flow and function study, images are acquired as the radioactive material is injected, usually every one to two seconds for one to two minutes. Additional images are then acquired every two to three minutes over the next 20 to 30 minutes.

If delayed excretion of urine is noted, a diuretic (sometimes called a "water pill") is injected into the patient with the study carried out for an additional period of time to assess the response to this drug. The most common diuretic injection is Lasix (furosemide). When this additional injection is given, it is known as pharmacologic intervention.

Another drug that may be given to assess for renal hypertension is captopril. This material is an angiotensin converting enzyme (ACE) inhibitor. Single or multiple studies may be performed when additional pharmacologic intervention is utilized.

On occasion, non-imaging renal studies may be done where a radioactive material is injected, with blood samples being drawn and the radioactivity "counted" from the sample.

As described for other anatomical sites, renal SPECT imaging may also be performed to provide additional clinical information.

Radionuclide voiding cystourethrograms (VCU or VCUG) are often performed on younger patients to assess urinary tract problems, specifically ureteral reflux, which produces recurrent urinary tract infections. Radioactivity, as well as a sterile saline, is infused directly into the patient's bladder via a catheter with pictures taken during filling, voiding, and post-voiding phases.

Testicular imaging, sometimes called scrotal scanning, is extremely useful in detecting testicular torsion. Since current clinical practice is to perform both a dynamic (flow study) and static set of images, the AMA has simplified reporting with only one CPT code for this procedure. The intent of this procedure is always to perform the flow. However, if, for technical reasons, a flow was not acquired, this code should still be used. This test is used primarily to differentiate between testicular torsion and epididymitis.

TIPS

- When procuring the radioactive material, be certain to submit a separate charge for each radiopharmaceutical utilized. Some payers may ask you to submit an invoice when billing for these items. All parties (i.e., physicians, hospitals, etc.) will now need to identify the diagnostic radiopharmaceutical(s) with appropriate HCPCS Level II A or C codes. (C-series HCPCS codes are only for Medicare outpatient hospital coding and billing.)

- Hospital providers may consider reporting HCPCS Level II Q9969 per study dose, with any of the ^{99m}Tc based radiopharmaceutical HCPCS codes, only when the hospital can document that the patient received technetium derived from at least a 95 percent non-HEU source. Refer to the introduction of this publication for information on non-HEU billing. Additionally, if more than one study dose was administered to the patient, it would be appropriate to report multiple units based on the number of study doses, as long as each study dose meets the code description and documentation requirements. (NOTE: At the time of publication, Q9969 may only be reported for Medicare outpatient hospital coding/billing, and we are not aware of any other payers accepting or adopting this policy.)

78700 Kidney imaging morphology;

GENERAL DEFINITION

Radioactive material is injected with static images taken at definite, timed intervals (i.e., 1, 5, 10, 15 minutes, etc.). No flow study is performed with this exam. Static imaging is helpful to determine the size, shape, and position of the kidneys.

TIPS

- Do not unbundle into separate charges for vascular flow imaging and SPECT or static images, as this would constitute unbundling. For SPECT and SPECT/CT of the kidneys see the new 788XX series CPT codes. If a comprehensive code exists detailing both portions of the study done, that code must be used.
- The SNMMI coding committee does not recommend using more than one code of the 78700–78725 series for billing a kidney study. Choose the single highest valued code based on the procedure performed. CCI does currently allow, with a modifier 59, some of the CPT code combinations for 78700–78725; however, this is not recommended.

78701 Kidney imaging morphology; with vascular flow

GENERAL DEFINITION

As described in 78700, but includes vascular flow also. This code is not to be used when true renal function studies are done (see code 78707).

TIPS

- Do not unbundle into separate charges for vascular flow imaging and SPECT or static images, as this would constitute unbundling. For SPECT and SPECT/CT of the kidneys see the new 788XX series CPT codes. If a comprehensive code exists detailing both portions of the study done, that code must be used.
- The SNMMI coding committee does not recommend using more than one of the codes from the 78700–78725 series for billing a kidney study. Choose the single highest valued code based on the procedure performed. CCI does currently allow, with a modifier 59, some of the CPT code combinations for 78700–78725, however, this is not recommended.

78707 Kidney imaging morphology; with vascular flow and function, single study without pharmacological intervention

GENERAL DEFINITION

This procedure is typically the most prevalent renal study performed in nuclear medicine. It is sometimes called a renogram or a triple-phase renal scan. The radioactive material is injected with images taken immediately as it flows into the kidneys, and then over the next 20 to 30 minutes as the material is extracted from the blood stream, concentrated in the kidney(s) and finally excreted through the ureters into the bladder. Computer processing is utilized to generate "regions of interest" (ROIs) around each kidney, plus the bladder, to generate time-activity curves. These curves describe results such as T-max and T 1/2 times. This code does not include/reflect the additional injection/ingestion of other pharmaceutical agents. This code may be used when performing transplant renal imaging.

TIPS

- Do not unbundle into separate charges for vascular flow imaging and SPECT or static images, as this would constitute unbundling. If a com-

prehensive code exists detailing both portions of the study done, that code must be used.

- The SNMMI coding committee does not recommend using more than one code from the 78700–78725 series for billing a kidney study. Choose the single highest valued code based on the procedure performed. CCI does currently allow, with a modifier 59, some of the CPT code combinations for 78700–78725, however, this is not recommended.
- If your facility performs a GFR as part of the imaging study, do not bill any additional codes as this would be included in the work for one unit of CPT code 78707.

CASE: NUCLEAR MEDICINE RENOGRAM

CLINICAL HISTORY

65-year-old female with right pyelonephritis. Resolving symptoms. Check renal function.

PROCEDURE

Intravenous administration of 10.8 mCi 99mTc MAG3 followed by immediate vascular imaging of the arterial phase and continuous static imaging every minute for 30 minutes post injection of tracer.

The arterial phase reveals minimal decreased uptake in the right upper pole which may represent the source of patient pyelonephritis. The parenchymal uptake is otherwise symmetric. Bilaterally, the excretory phase and ureteral emptying is symmetric and within normal limits.

The peaks are achieved on the right kidney at 1.5 minutes and on the left in 3 minutes. The differential function is calculated with the right side having 42.7% and the left side having 57.3%. The arterial phase images indicate symmetric arterial inflow curves. The delayed images indicate symmetric excretion, ureteral filling, and emptying of the GU tract without evidence of obstruction.

IMPRESSION

The imaging study indicates that a minimally decreased parenchymal function right upper pole may be related to the patient's pyelonephritis. Overall right renal function is 43% with the left side at 57%. The radiotracer uptake dynamics are unremarkable. No evidence for obstruction.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78707	1	2	1
A9562	1	3	2

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and

MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

78708 Kidney imaging morphology; with vascular flow and function, single study, with pharmacological intervention (eg, angiotensin converting enzyme inhibitor and/or diuretic)

GENERAL DEFINITION

As described in code 78707, but an additional drug (non-radioactive) is given prior to, or during scanning. Common drugs utilized are Lasix or Captopril. Only one single study is done.

TIPS

- When other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., Lasix, furosemide, etc.).
- Do not unbundle into separate charges for vascular flow imaging and SPECT or static images, as this would constitute unbundling. For SPECT and SPECT/CT of the kidneys see the new 788XX series CPT codes. If a comprehensive code exists detailing both portions of the study done, that code must be used.
- The SNMMI coding committee does not recommend using more than one code from the 78700–78725 series for billing a kidney study. Choose the single highest valued code based on the procedure performed. CCI does currently allow, with a modifier 59, some of the CPT code combinations for 78700–78725, however, this is not recommended.

78709 Kidney imaging morphology; with vascular flow and function, multiple studies, with and without pharmacological intervention (eg, angiotensin converting enzyme inhibitor and/or diuretic)

GENERAL DEFINITION

As described in 78707 and 78708, this code reflects two or more studies including with and without the additional (non-radioactive) drug.

TIPS

- This service consists of multiple studies and much like myocardial perfusion SPECT, multiple (e.g., 78452) studies, providers should submit separate charges for each dose and bill for each dose used. Pay close attention to the "per study dose" description of the radiopharmaceutical utilized.
- When other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., Lasix, furosemide, etc.).
- Do not unbundle into separate charges for vascular flow imaging and SPECT or static images, as this would constitute unbundling. For SPECT and SPECT/CT of the kidneys see the new 788XX series CPT codes. If a comprehensive code exists detailing both portions of the study done, that code must be used.
- The SNMMI coding committee does not recommend using more than one code from the 78700–78725 series for billing a kidney study. Choose the single highest valued code based on the procedure performed. CCI does currently allow, with a modifier 59, some of the CPT code combinations for 78700–78725, however, this is not recommended.

In 2020, CPT deleted code 78710. Codes 78803 and 78831 describe SPECT imaging. Codes 78830 and 78832 describe SPECT/CT imaging. Providers should consider separate anatomic site-specific line items with the same CPT code to account for the varying organ specific costs when using the 788XX series of codes for these services.

78725 Kidney function study, non-imaging radioisotopic study

GENERAL DEFINITION

Radioactive study in which no images are taken, only statistical counting data based upon the emissions detected from the radioactive patient sample in question. Not typically performed.

TIPS

- Do not unbundle into separate charges for vascular flow imaging and SPECT or static images, as this would constitute unbundling. For SPECT and SPECT/CT of the kidneys see the new 788XX series CPT codes. If a comprehensive code exists detailing both portions of the study done, that code must be used.
- The SNMMI coding committee does not recommend using more than one code from the 78700–78725 series for billing a kidney study. Choose the single highest valued code based on the procedure performed. CCI does currently allow, with a modifier 59, some of the CPT code combinations for 78700–78725, however, this is not recommended.
- This service is not subject to CLIA requirement and is paid in the HOPPS and MPFS setting.

+78730 Urinary bladder residual study (List separately in addition to code for primary procedure)

GENERAL DEFINITION

This code should only be used to identify the procedure as an add-on code to CPT 78740 described below. Use this add-on code to describe when pre- and post-voiding images of the radiopharmaceutical are obtained and measurements are calculated to determine the residual urine.

78740 Ureteral reflux study (radiopharmaceutical voiding cystogram)

GENERAL DEFINITION

This procedure is typically performed on children. Sometimes referred to as VCUG or VCU, it involves instilling a small amount of radioactivity and sterile saline into the patient's bladder through a catheter. Images are acquired during the filling of the bladder. If pre- and post-voiding images of the radiopharmaceutical are obtained and measurements are calculated to determine the residual urine, use add-on code 78730 in addition to 78740.

TIP

- Assign code 51701, 51702 or 51703, in addition to code 78740, as appropriate.

78761 Testicular imaging with vascular flow

GENERAL DEFINITION

Radioactive material is injected intravenously with static imaging of the scrotal and perineal area. This is most useful in diagnosing acute testicular torsion and acute epididymo-orchitis. This code includes static imaging and a flow (including an attempted flow that, for technical reasons, was attempted but not obtained). A flow is most commonly performed when testicular imaging is performed.

78799 Unlisted genitourinary procedure, diagnostic nuclear medicine

GENERAL DEFINITION

As noted in the CPT introductory language mentioned earlier in this publication, unlisted codes are used when there is no other code to describe the procedure performed. You may not use a code that approximates a current code. In the absence of a code that correctly describes the procedure, use an appropriate unlisted code. This code may be used to describe genitourinary diagnostic nuclear medicine procedure not already available in either CPT category I or category III codes.

TIP

- When submitting an UPC, clearly define the following for any third-party payer via a written (i.e., "paper") claim: definition or description of the nature, need and extent of procedure, and the time, effort and equipment necessary to provide the service. Refer to the "Special Report" section of CPT for additional information that may also be included.

51701 Insertion of non-indwelling bladder catheter (eg, straight catheterization for residual urine)

GENERAL DEFINITION

A tube is inserted via the urethra to drain urine.

TIP

- This code may be used in addition to code 78740 for a nuclear VCUG.

51702 Insertion of temporary indwelling bladder catheter; simple (eg, Foley)

GENERAL DEFINITION

A temporary indwelling catheter (i.e., Foley) is inserted via the urethra into the bladder to drain the urine. This catheter is held in place (once positioned) via inflation of a retention balloon once the catheter is appropriately advanced.

TIP

- This code may be used in addition to code 78740 for a nuclear VCUG.

51703 Insertion of temporary indwelling bladder catheter; complicated (eg, altered anatomy, fractured catheter/balloon)

GENERAL DEFINITION

As in 51702, but in this scenario, the placement is more difficult because of scenarios such as an enlarged prostate or atypical catheter/balloon configuration (i.e., fractured).

TIP

- This code may be used in addition to code 78740 for a nuclear VCUG.

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
51701	Insertion of non-indwelling bladder catheter (eg, straight catheterization for residual urine)	Global	A	1.33	$43.97	5734	Q1	$116.11
51702	Insertion of temporary indwelling bladder catheter; simple (eg, Foley)	Global	A	1.84	$60.83	5734	Q1	$116.11
51703	Insertion of temporary indwelling bladder catheter; complicated (eg, altered anatomy, fractured catheter/balloon)	Global	A	4.48	$148.11	5721	S	$145.43
78700	Kidney imaging morphology;	Global	A	4.81	$159.02	5591	S	$388.68
		TC	A	4.19	$138.52			
		26	A	0.62	$20.50			
78701	Kidney imaging morphology; with vascular flow	Global	A	6.32	$208.94	5591	S	$388.68
		TC	A	5.63	$186.13			
		26	A	0.69	$22.81			
78707	Kidney imaging morphology; with vascular flow and function, single study without pharmacological intervention	Global	A	6.54	$216.22	5592	S	$504.50
		TC	A	5.23	$172.91			
		26	A	1.31	$43.31			
78708	Kidney imaging morphology; with vascular flow and function, single study, with pharmacological intervention (eg, angiotensin converting enzyme inhibitor and/or diuretic)	Global	A	5.20	$171.92	5592	S	$504.50
		TC	A	3.55	$117.37			
		26	A	1.65	$54.55			
78709	Kidney imaging morphology; with vascular flow and function, multiple studies, with and without pharmacological intervention (eg, angiotensin converting enzyme inhibitor and/or diuretic)	Global	A	10.34	$341.85	5592	S	$504.50
		TC	A	8.40	$277.71			
		26	A	1.94	$64.14			
78725	Kidney function study, non-imaging radioisotopic study	Global	A	3.38	$111.75	5591	S	$388.68
		TC	A	2.86	$94.55			
		26	A	0.52	$17.19			
78730	Urinary bladder residual study (List separately in addition to code for primary procedure)	Global	A	2.04	$67.44		N	$0.00
		TC	A	1.83	$60.50			
		26	A	0.21	$6.94			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78740	Ureteral reflux study (radiopharmaceutical voiding cystogram)	Global	A	6.10	$201.67	5591	S	$388.68
		TC	A	5.33	$176.21			
		26	A	0.77	$25.46			
78761	Testicular imaging with vascular flow	Global	A	5.99	$198.03	5591	S	$388.68
		TC	A	4.98	$164.64			
		26	A	1.01	$33.39			
78799	Unlisted genitourinary procedure, diagnostic nuclear medicine	Global	C	0.00	$0.00	5591	S	$388.68
		TC	C	0.00	$0.00			
		26	C	0.00	$0.00			

*For the most current payment rates, check *http://www.cms.gov/apps/physician-fee-schedule/overview.aspx*.

Other Procedures (Abscess, Tumor, etc.)

CPT Codes: 78800–78999

REVENUE CODES: 33X OR 341

Typical Drugs and Radiopharmaceuticals Used				
HCPCS	**Description**	**Notes**	**RC**	**SI**
A4642	Indium in-111 satumomab pendetide, diagnostic, per study dose, up to 6 millicuries	Oncoscint, OncoScint	343	N
A9500	Technetium tc-99m sestamibi, diagnostic, per study dose	Cardiolite, Miraluma, Mibi, Sestamibi, Cardiolite	343	N
A9502	Technetium tc-99m tetrofosmin, diagnostic, per study dose	Myoview, Tetrofosmin, Tetro	343	N
A9505	Thallium tl-201 thallous chloride, diagnostic, per millicurie	Thallium 201, Thallium, Thallous Chloride USP	343	N
A9507	Indium in-111 capromab pendetide, diagnostic, per study dose, up to 10 millicuries	Prostascint	343	N
A9508	Iodine i-131 iobenguane sulfate, diagnostic, per 0.5 Millicurie	I-131 MIBG, I one thirty one, I-131 MIBG	343	N
A9536	Technetium tc-99m depreotide, diagnostic, per study dose, up to 35 millicuries	NEOTEC, Neotec	343	N
A9540	Technetium tc-99m, macroaggregated albumin, diagnostic, per study dose, up to 10 millicuries	Macrotec, Pulmolite, Pulmotech™, MAA, Macroaggregated albumin, Technetium MAA, Macrospheres	343	N
A9542	Indium in-111 ibritumomab tiuxetan, diagnostic, per study dose, up to 5 millicuries	DxIn-111 Zevalin, 111In Zevalin, Diagnostic Zevalin	343	N
A9547	Indium in-111 oxyquinoline, diagnostic, per 0.5 Millicurie	Used with WBC labeling Indium Labeled White Cells, Indium Tagged WBCs, Indium Oxyquinoline	343	N
A9556	Gallium ga-67 citrate, diagnostic, per millicurie	Gallium, 67Gallium, Gallium Citrate	343	N
A9558	Xenon xe-133 gas, diagnostic, per 10 millicuries	Xenon, Xenon gas	343	N
A9566	Technetium tc-99m fanolesomab, diagnostic, per study dose, up to 25 millicuries	NeutroSpec	343	N

Typical Drugs and Radiopharmaceuticals Used				
HCPCS	**Description**	**Notes**	**RC**	**SI**
A9567	Technetium tc-99m pentetate, diagnostic, aerosol, per study dose, up to 75 millicuries	DTPA (pronounced dit' pa), Technetium DTPA, DTPA aerosol for lung ventilation studies	343	N
A9568	Technetium tc-99m arcitumomab, diagnostic, per study dose, up to 45 millicuries	CEA scan	343	N
A9569	Technetium tc-99m exametazime labeled autologous white blood cells, diagnostic, per study dose	Use this code for infection or inflammation imaging; do not use this code for brain imaging—see A9521.	343	N
A9570	Indium in-111 labeled autologous white blood cells, diagnostic, per study dose	When prepared with patient WBC, use this code; do not use A9547.	343	N
A9571	Indium in-111 labeled autologous platelets, diagnostic, per study dose	When prepared with patient platelets, use this code; do not use A9547.	343	N
A9572	Indium in-111 pentetreotide, diagnostic, per study dose, up to 6 millicuries	Octreoscan	343	N
A9582	Iodine i-123 iobenguane, diagnostic, per study dose, up to 15 millicuries	Common name: I-123-MIBG. Trade name: AdreView	343	N
A9590	Iodine-131 iobenguane, 1 millicurie	Trade name: AZEDRA NDC # 71258-0015-02	343 or 344	K
Q9969	Technetium Tc-99m from non-highly enriched uranium source, full cost recovery add-on, per study dose	Use with 95 percent non-HEU ^{99m}Tc sourced radiopharmaceuticals	343	K
C9898	Radiolabeled product provided during a hospital inpatient stay	Effective Oct. 1, 2008	344	N
J9311	Injection, rituximab 10 mg and hyaluronidase	Effective January 1, 2019	636 or chemo revenue code	G
J9312	Injection, rituximab, 10 mg	Effective January 1, 2019	636 or chemo revenue code	K

Before coding/billing for these procedures and supplies, be certain to check both local coverage determinations (LCDs) and national coverage determinations (NCDs) for current coverage criteria for these studies.

Tumor and abscess localization studies have progressed rapidly in the last several years, largely due to the development and approval of new diagnostic imaging agents. In the past, radioactive gallium and indium were the main radioactive materials utilized for these procedures. While these isotopes are still in use, technetium (^{99m}Tc) labeled materials (such as arcitumomab) are also available.

The patient receives an injection of the radioactive material and static, SPECT, or both types of images are acquired. These procedures are typically carried out over a period of two to four days. These scans aid in the localization of occult infections, confirming the location (or absence) of infection at a supposed site, and localizing inflammation and neoplasms. Similar to code choices for bone scanning, options exist for tumor or abscess studies for limited area, two or more areas, whole body, and SPECT or SPECT/CT procedures.

For 2020 there are several revised and new codes in the Other Procedures section of CPT for Nuclear Medicine. In an effort to simplify the SPECT coding structure and to recognize the work of the CT when performed for transmission and anatomical localization, this code family was significantly revised. If there are organ specific CPT codes, the provider is directed to review those organ specific planar or SPECT CPT codes prior to selecting a code from this revised section. Of importance, there are no changes to the parathyroid codes nor are there changes to the cardiovascular section in 2020. To simplify, the infection and inflammation individual codes were deleted, and this language was added to a more generic and all-encompassing new and revised CPT code set in the Other Procedures section. Therefore, the new and revised codes include a radiopharmaceutical localization of either a tumor, an inflammatory process or the distribution of radiopharmaceutical agent(s). These codes (78803, 78830–78832) also include vascular flow and blood pool imaging, when performed. Therefore, if you perform those elements or not, it would still be coded the same. This is consistent with the language seen when performing either a PET or a SPECT study with wall motion or ejection fraction.

Additionally, these new codes now account for the SPECT or SPECT/CT technology. Rather than continue to create organ specific codes the CPT editorial panel created all the new codes in this generic format. While they did discuss existing codes such as parathyroid and the myocardial SPECT studies, it was decided that those codes were different enough to maintain their current code structure. As such, this new structure would replace bone, kidney, and liver SPECT studies, but not the planar organ specific codes. Also added are new codes for when it is medically necessary to perform more than one SPECT or SPECT/CT on the same day, or over several days.

A scanning procedure done to study possible breast tumors is known as scintimammography. Either single area or two or more area scanning may be performed.

Adrenal imaging with MIBG may be described by either planar, SPECT or SPECT/CT. When performing planar imaging see CPT code 78075. When performing adrenal imaging by SPECT see 78803, and by SPECT/CT see 78830.

TIPS

- When procuring the radioactive material, be certain to submit a separate charge for each radiopharmaceutical utilized. Some payers may ask you to submit an invoice when billing for these items. All parties (i.e., physicians, hospitals, etc.) will now need to identify the diagnostic radiopharmaceutical(s)

with appropriate HCPCS Level II A or C codes. (C-series HCPCS codes are only for Medicare outpatient hospital coding and billing.)

- Hospital providers may consider reporting HCPCS Level II Q9969 per study dose, with any of the ^{99m}Tc based radiopharmaceutical HCPCS codes, only when the hospital can document that the patient received technetium derived from at least a 95 percent non-HEU source. Refer to the introduction of this publication for information on non-HEU billing. Additionally, if more than one study dose was administered to the patient, it would be appropriate to report multiple units based on the number of study doses, as long as each study dose meets the code description and documentation requirements. (NOTE: At the time of publication, Q9969 may only be reported for Medicare outpatient hospital coding/billing, and we are not aware of any other payers accepting or adopting this policy.)

78800 Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); planar, single area (eg, head, neck, chest, pelvis), single day imaging

GENERAL DEFINITION

Planar imaging using a radiotracer is localized to a single area (i.e., abdomen, chest, breast, neck, etc.). An organ specific planar imaging CPT code takes precedent as coding choice when one is available.

TIPS

- If planar imaging of a single area is performed over multiple days, see 78801.
- When billing HCPCS code A9570 with CPT 78800 or 78801 the provider may require a modifier 59 to be placed on the HCPCS code. We have experience specifically with the MAC Novitas with July 2021 claims.
- CPT 78800 may be used for breast imaging studies with ^{99m}Tc sestamibi on traditional gamma planar cameras or with breast-specific gamma imaging (BSGI) equipment. Imaging both or one breast(s) would be considered a single area study.
- If planar imaging is performed on the same day, or next day as part of a whole body scan, do not report CPT 78800 twice or in addition to other nuclear medicine CPT codes as delayed or single planar imaging is part of any other higher level nuclear medicine procedure.
- This code may be reported for planar studies using technetium PYP for cardiac amyloidosis as the area is a single area of the heart or chest region.

- CPT code 78800 can also be used for imaging inflammation or abscess agents, however, when performing imaging using bone agents for inflammatory disease, see codes 78300, 78305, 78306 or 78315.

CASE: NUCLEAR MEDICINE CARDIAC AMYLOIDOSIS WITH PYROPHOSPHATE (PYP)

CLINICAL HISTORY

75-year-old presents with cardiomyopathy.

PROCEDURE

Radiopharmaceutical: 21 mCi technetium 99m pyrophosphate.

Anterior, LAO, and left lateral projections of the chest were obtained.

IMPRESSION

There is intense diffuse uptake of activity in the left ventricle, greater intensity than bone. Activity is also seen in the right ventricle, similar intensity to bone.

CONCLUSION

Findings support a diagnosis of ATTR amyloidosis.

This is a grade 3 scan.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78800	1	2	1
A9538	1	3	1

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

78801 Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); planar, 2 or more areas (eg, abdomen and pelvis,

head and chest), 1 or more days imaging or single area imaging over 2 or more days

GENERAL DEFINITION

Planar imaging using a radiotracer(s) is localized to two or more areas (i.e., chest and neck, chest and abdomen, abdomen and pelvis, etc.). An organ specific planar imaging CPT code takes precedent as coding choice when one is available.

TIPS

- CPT 78800, not 78801, is used for breast imaging studies with ^{99m}TC sestambi on traditional gamma cameras or with breast-specific gamma imaging (BSGI) equipment.
- When billing HCPCS code A9570 with CPT 78800 or 78801 the provider may require a modifier 59 to be placed on the HCPCS code. We have experience specifically with the MAC Novitas with July 2021 claims.
- If multiple images are performed over multiple days, submit this charge only once.
- CPT code 78801 can also be used for imaging inflammation or abscess agents, however, when performing imaging using bone agents for inflammatory disease, see codes 78300, 78305, 78306 or 78315.

CASE: NUCLEAR MEDICINE LINE ASSESSMENT

CLINICAL HISTORY

62-year-old presents for assessment for diaphragmatic defect/communication between pleural and abdominal space.

PROCEDURE

Under sterile conditions, 0.8 mCi technetium 99m MAA was injected into the right chest tube, along with 20 cc of saline. Static images were obtained over the chest and abdomen.

IMPRESSION

Initial immediate post injection images demonstrate radiotracer within the right hemithorax. On the 4 hour delayed images of both chest and abdomen, no tracer was visualized outside the right pleural cavity.

CONCLUSION

No scintigraphic evidence to suggest communication between the right pleural cavity and the peritoneum.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78801	1	2	1
A9540	1	3	2

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

78802 Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); planar, whole body, single day imaging

GENERAL DEFINITION

Scanning consists of images from the head to at least the level of the knees. These images may be acquired in a contiguous fashion (moving camera or whole body table), or in a series of static "spot" images that, in total, compose a whole body study. Imaging takes place on only a single day. An organ specific planar imaging CPT code takes precedent as coding choice when one is available.

TIPS

- If whole body studies are performed over multiple days, do not use CPT code 78802 multiple times; instead, see code 78804.
- See 79403 for Zevalin therapeutic administrations.
- When a single whole body study and a single area SPECT or SPECT/CT are performed on the same date of service, you may report both 78802 (or other organ specific whole body CPT codes) with 78803 or 78830; modifier 51 is appended to the lower RVU code. This will result in payment of 100% of the higher priced service and 50% of the lower priced service and is necessary to account for overlap in the payment rates (Modifier 51 is not assigned by hospitals billing under OPPS).
- CPT code 78802 can also be used for imaging inflammation or abscess agents, however, when performing imaging using bone agents for inflammatory disease, see codes 78300, 78305, 78306 or 78315.

CASE: NUCLEAR MEDICINE WBC IMAGING

CLINICAL HISTORY

72-year-old patient with mechanical loosening of internal right hip prosthetic joint, initial encounter. Bilateral hip replacements 2010. Right knee replacement 2016. Pain in the right hip since 2010.

PROCEDURE

0.7342 mCi Indium-111 labeled WBC radiopharmaceutical was injected into the left antecubital fossa. Imaging of whole body from skull vertex to feet was performed 24 hours post injection.

IMPRESSION

COMPARISON: NM Bone Scan Three Phase dated 12/30/2019; NM Bone Scan Three Phase dated 1/22/2015

There is normal uptake in the liver and spleen and bone marrow. There is no abnormal uptake in the areas of concern, specifically in the pelvis, hips or knees.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78802	1	2	1
A9570	1	3	1

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

78804 Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical

agent(s) (includes vascular flow and blood pool imaging, when performed); planar, whole body, requiring 2 or more days imaging

GENERAL DEFINITION

Scanning consists of images from the head to at least the level of the knees on two separate days of imaging. These images may be acquired in a contiguous fashion (moving camera or whole body table), or in a series of static "spot" images that, in total, compose a whole body study on each day of imaging. An organ specific planar imaging CPT code takes precedent as coding choice when one is available. CPT code 78804 is assigned when imaging takes place on multiple (i.e., two or more) days.

TIPS

- If whole body studies are performed over multiple days, do not use CPT code 78802 multiple times; instead, see code 78804.
- See 79403 for Zevalin therapeutic administrations.
- When a two or more day whole body study and either a SPECT or SPECT/CT procedure is performed on a single day, you may report code 78804 and either 78803 or 78830 (depending on whether SPECT or SPECT/CT was performed); modifier 51 is appended to the lower RVU code (whole body imaging codes carry lower RVUs than the SPECT or SPECT/CT codes). This will result in payment of 100% of the higher priced service and 50% of the lower priced service and is necessary to account for any overlap in the payment rates. (Modifier 51 is not assigned by hospitals billing under OPPS)
- Use this code only once regardless of whether imaging is performed on two, three, four or five days.
- CPT code 78804 can also be used for imaging inflammation or abscess agents.

CASE: NUCLEAR MEDICINE SOMATOSTATIN RECEPTOR IMAGING

CLINICAL HISTORY

67-year-old with dizziness and giddiness.

PROCEDURE

Following IV administration of 6.0 mCi indium-111 Octreoscan, anterior and posterior whole-body images from the top of the skull to the feet are obtained at both 4 hours and 24 hours post injection. Abdomen and pelvic SPECT-CT is acquired at 24 hours, both SPECT-CT images are reconstructed in 3 planes.

Comparison: CT abdomen and pelvis November 30, 2015.

IMPRESSION

Planar images demonstrate mild hyperactivity in the thyroid gland, right greater than left, best seen at 24 hours. Planar and SPECT images demonstrate a photopenic cyst anteriorly in the liver. Otherwise there is physiologic uptake in the solid viscera and bowel. no apparent lymphadenopathy "R599" in the neck, chest, abdomen, or pelvis. no abnormal hyperactivity in the lungs or bones.

CONCLUSION

1. Nonspecific hyperactivity in the thyroid gland, right greater than left. Recommend further workup with thyroid ultrasound.
2. Otherwise negative study with no other evidence for somatostatin receptor-positive neoplasm.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78804	1	2	1
78832	1	2	1
A9572	1	3	1

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

78803 Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomographic (SPECT), single area (eg, head, neck, chest, pelvis), single day imaging

GENERAL DEFINITION

Images are reproduced with the aid of a computer in multiple planes (transverse, sagittal, and coronal), which contributes to the accuracy of the exam. May be done as a stand-alone, or in conjunction with previously defined whole body procedures.

TIPS

- Check current CCI edits regarding reporting of this code. It is appropriate to report this code with CPT 78802 and 78804 with the appropriate modifier as necessary.
- Code 78803 is for SPECT performed on a single day of a single area. When a stand-alone SPECT is performed imaging two different body parts over two or more days, instead report CPT code 78831.
- Do not use CPT code 78803 to report parathyroid SPECT or SPECT/CT imaging, instead, refer to codes 78071 or 78072.
- CPT provides two codes for use for whole body imaging (78802 and 78804) as well as four total code options for SPECT or SPECT/CT. Two codes are for SPECT only (78803 and 78831) and two codes are for SPECT/CT (78830 and 78832). Whenever both whole body imaging as well as SPECT or SPECT/CT imaging is performed on the same patient, both may be charged. Correct coding is based upon the type of procedure performed (i.e., planar, SPECT, or SPECT/CT), the number of areas imaged, and the number of days over which imaging was done. Whole body codes are broken down as:
  1. Single day imaging (78802)
  2. Multiple day (i.e., two or more days) imaging (78804)
- Codes 78803 and 78831 are for SPECT only. Code 78803 defines SPECT imaging of a single area on a single date of service (SDOS). Code 78831 also defines SPECT imaging, but may be used in one of two fashions:

1. Single day imaging of two or more areas; or
2. Multiple (i.e., two or more) day imaging of a single area

- Codes 78830 and 78832 define SPECT/CT imaging. Code 78830 defines SPECT/CT imaging of a single area on a single date of service (SDOS). Code 78832 also defines SPECT/CT imaging, but may be used in one of two fashions:
  1. Single day imaging of two or more areas; or
  2. Multiple (i.e., two or more) day imaging of a single area
- Be mindful of modifier assignment and payer requirements when submitting these codes together.
- See 79403 for Zevalin therapeutic administrations.
- This code may be reported for planar plus SPECT or SPECT alone studies using technetium PYP for cardiac amyloidosis.
- When performing a liver, bone, renal, lung, brain, CSF or kidney SPECT or SPECT/CT study(ies), see 78803, 78830–78832 for the most appropriate code selection.
- In 2023, CPT added the terms "or acquisition", and "or separate acquisitions (e.g., lung ventilation and perfusion)," for clarification. If the SPECT or SPECT/CT camera head is sufficiently large enough for multiple areas and only one SPECT or SPECT/CT acquisition is taken, bill the single acquisition code. Alternatively, when two separate SPECT or SPECT/CT acquisitions are performed of the same area, each with different tracers, bill the two acquisition code. (The most common occurrence is the V/P lung scan. This is an example used in the code description to assist the coders; however, it is not the only use.)
- When two tracers are used for a single study (aka single acquisition), report the single study code and not the two study code as the two study codes are to differentiate the time for the additional acquisitions, not the two tracers.

78830 Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomographic (SPECT) with concurrently acquired computed tomography (CT) transmission scan for anatomical review, localization and determination/detection of

pathology, single area (eg, head, neck, chest, pelvis), single day imaging

GENERAL DEFINITION

Images are reproduced with the aid of a computer in multiple planes (transverse, sagittal, and coronal), which contributes to the accuracy of the exam. Additionally, this service includes the use of CT for attenuation correction, anatomical review, or localization or detection of anatomical pathology. The study is essentially the same as 78803, with the addition of the additional CT information. Of importance, the CT is not a fully diagnostic CT. These studies may be done as a stand-alone, or in conjunction with previously defined whole body procedures.

TIPS

- Check current CCI edits regarding reporting of this code. It is appropriate to report this code with CPT 78802 and 78804 with the appropriate modifier as necessary.
- SPECT/CT alone should only be billed once, for imaging of two different body parts or over two days see CPT 78832.
- Do not use CPT code 78803 to report parathyroid SPECT or SPECT/CT imaging, instead, refer to codes 78071 or 78072.
- CPT provides two codes for use for whole body imaging (78802 and 78804) as well as four total code options for SPECT or SPECT/CT. Two codes are for SPECT only (78803 and 78831) and two codes are for SPECT/CT (78830 and 78832). Whenever both whole body imaging as well as SPECT or SPECT/CT imaging is performed on the same patient, both may be charged. Correct coding is based upon the type of procedure performed (i.e., planar, SPECT, or SPECT/CT), the number of areas imaged, and the number of days over which imaging was done. Whole body codes are broken down as:
  1. Single day imaging (78802)
  2. Multiple day (i.e., two or more days) imaging (78804)
- Codes 78803 and 78831 are for SPECT only. Code 78803 defines SPECT imaging of a single area on a single date of service (SDOS). Code 78831 also defines SPECT imaging, but may be used in one of two fashions:
  1. Single day imaging of two or more areas; or
  2. Multiple (i.e., two or more) day imaging of a single area
- Codes 78830 and 78832 define SPECT/CT imaging. Code 78830 defines SPECT/CT imaging of a single area on a single date of service (SDOS). Code 78832 also defines SPECT/CT imaging, but may be used in one of two fashions:

1. Single day imaging of two or more areas; or
2. Multiple (i.e., two or more) day imaging of a single area

- Be mindful of modifier assignment and payer requirements when submitting these codes together.
- See 79403 for Zevalin therapeutic administrations.
- This code may be reported for planar plus SPECT/CT or SPECT/CT alone studies using technetium PYP for cardiac amyloidosis.
- When performing a liver, bone, renal, lung, brain, CSF or kidney SPECT or SPECT/CT study(ies), see 78803, 78830–78832 for the most appropriate code selection.
- This code includes CT for both attenuation correction and anatomic localization (i.e., fusion imaging). Do not charge separately for diagnostic CT imaging unless a full and complete diagnostic CT scan (i.e., not just fusion imaging) is ordered and performed. If a full and complete diagnostic CT is separately ordered, medically necessary and performed, assign the anatomic site-specific CT code, append the CT code with modifier 59, in addition to the appropriate nuclear medicine imaging code.
- Do not use this code when SPECT and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead, use UPC 78099 for imaging fusion.
- In 2023, CPT added the terms "or acquisition", and "or separate acquisitions (e.g., lung ventilation and perfusion)," for clarification. If the SPECT or SPECT/CT camera head is sufficiently large enough for multiple areas and only one SPECT or SPECT/CT acquisition is taken, bill the single acquisition code. Alternatively, when two separate SPECT or SPECT/CT acquisitions are performed of the same area, each with different tracers, bill the two acquisition code. (The most common occurrence is the V/P lung scan. This is an example used in the code description to assist the coders; however, it is not the only use.)
- When two tracers are used for a single study (aka single acquisition), report the single study code and not the two study code as the two study codes are to differentiate the time for the additional acquisitions, not the two tracers.

78831 Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomo-

graphic (SPECT), minimum 2 areas (eg, pelvis and knees, abdomen and pelvis), single day imaging, or single area imaging over 2 or more days

GENERAL DEFINITION

Images are reproduced with the aid of a computer in multiple planes (transverse, sagittal, and coronal), which contributes to the accuracy of the exam. May be done as a stand-alone, or in conjunction with previously defined whole body procedures. The difference between 78803 and 78831 is the addition of a second SPECT study of either the same area on a different date of service, or a different area on the same day of service.

TIPS

- Check current CCI edits regarding reporting of this code. It is appropriate to report this code with CPT 78802 and 78804 (whole body imaging codes) with the appropriate modifier as necessary.
- Stand-alone SPECT (code 78831) should only be billed a single time in the following scenarios:
  1. SPECT of multiple anatomic areas on a single date of service
  2. SPECT of a single area over two or more days of imaging
- Do not use CPT code 78803 to report parathyroid SPECT or SPECT/CT imaging, instead, refer to codes 78071 or 78072.
- CPT provides two codes for use for whole body imaging (78802 and 78804) as well as four total code options for SPECT or SPECT/CT. Two codes are for SPECT only (78803 and 78831) and two codes are for SPECT/CT (78830 and 78832). Whenever both whole body imaging as well as SPECT or SPECT/CT imaging is performed on the same patient, both may be charged. Correct coding is based upon the type of procedure performed (i.e., planar, SPECT, or SPECT/CT), the number of areas imaged, and the number of days over which imaging was done. Whole body codes are broken down as:
  1. Single day imaging (78802)
  2. Multiple day (i.e., two or more days) imaging (78804)
- Codes 78803 and 78831 are for SPECT only. Code 78803 defines SPECT imaging of a single area on a single date of service (SDOS). Code 78831 also defines SPECT imaging, but may be used in one of two fashions:
  1. Single day imaging of two or more areas; or
  2. Multiple (i.e., two or more) day imaging of a single area

- Codes 78830 and 78832 define SPECT/CT imaging. Code 78830 defines SPECT/CT imaging of a single area on a single date of service (SDOS). Code 78832 also defines SPECT/CT imaging, but may be used in one of two fashions:
  1. Single day imaging of two or more areas; or
  2. Multiple (i.e., two or more) day imaging of a single area
- Be mindful of modifier assignment and payer requirements when submitting these codes together.
- See 79403 for Zevalin therapeutic administrations.
- This code may be reported for planar plus SPECT or SPECT alone studies using technetium PYP for cardiac amyloidosis.
- When performing a liver, bone, renal, lung, brain, CSF or kidney SPECT or SPECT/CT study(ies), see 78803, 78830–78832 for the most appropriate code selection.
- In 2023, CPT added the terms "or acquisition", and "or separate acquisitions (e.g., lung ventilation and perfusion)," for clarification. If the SPECT or SPECT/CT camera head is sufficiently large enough for multiple areas and only one SPECT or SPECT/CT acquisition is taken, bill the single acquisition code. Alternatively, when two separate SPECT or SPECT/CT acquisitions are performed of the same area, each with different tracers, bill the two acquisition code. (The most common occurrence is the V/P lung scan. This example is used in the code description to assist the coders; however, it is not the only use.)
- When two tracers are used for a single study (aka single acquisition), report the single study code and not the two study code as the two study codes are to differentiate the time for the additional acquisitions, not the two tracers.

78832 Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomographic (SPECT) with concurrently acquired computed tomography (CT) transmission scan for anatomical review, localization and determination/detection of

pathology, minimum 2 areas (eg, pelvis and knees, abdomen and pelvis), single day imaging, or single area imaging over 2 or more days

GENERAL DEFINITION

Images are reproduced with the aid of a computer in multiple planes (transverse, sagittal, and coronal), which contributes to the accuracy of the exam. Additionally, this service includes the use of CT for attenuation correction, anatomical review, or localization or detection of anatomical pathology. The study is basically the same as 78830 with the addition of the CT additional information. Of importance, the CT is not a fully diagnostic CT. These studies may be done as a stand-alone, or in conjunction with previously defined whole body procedures. Additionally, the difference between 78830 and 78832 is the addition of a second SPECT/CT study of either the same area on a different date of service, or a different area on the same day of service.

TIPS

- Check current CCI edits regarding reporting of this code. It is appropriate to report this code with CPT 78802 and 78804 (whole body imaging codes) with the appropriate modifier as necessary.
- For a single day SPECT/CT study of a single area, see CPT code 78830.
- Do not use CPT code 78803 to report parathyroid SPECT or SPECT/CT imaging, instead, refer to codes 78071 or 78072.
- CPT provides two codes for use for whole body imaging (78802 and 78804) as well as four total code options for SPECT or SPECT/CT. Two codes are for SPECT only (78803 and 78831) and two codes are for SPECT/CT (78830 and 78832). Whenever both whole body imaging as well as SPECT or SPECT/CT imaging is performed on the same patient, both may be charged. Correct coding is based upon the type of procedure performed (i.e., planar, SPECT, or SPECT/CT), the number of areas imaged, and the number of days over which imaging was done. Whole body codes are broken down as:
  1. Single day imaging (78802)
  2. Multiple day (i.e., two or more days) imaging (78804)
- Codes 78803 and 78831 are for SPECT only. Code 78803 defines SPECT imaging of a single area on a single date of service (SDOS). Code 78831 also defines SPECT imaging, but may be used in one of two fashions:
  1. Single day imaging of two or more areas; or
  2. Multiple (i.e., two or more) day imaging of a single area

- Codes 78830 and 78832 define SPECT/CT imaging. Code 78830 defines SPECT/CT imaging of a single area on a single date of service (SDOS). Code 78832 also defines SPECT/CT imaging, but may be used in one of two fashions:
  1. Single day imaging of two or more areas; or
  2. Multiple (i.e., two or more) day imaging of a single area
- Be mindful of modifier assignment and payer requirements when submitting these codes together.
- See 79403 for Zevalin therapeutic administrations.
- When performing a liver, bone, renal, lung, brain, CSF or kidney SPECT or SPECT/CT study(ies), see 78803, 78830–78832 for the most appropriate code selection.
- This code does include CT for both attenuation correction and anatomic localization (i.e., fusion imaging). Do not charge separately for diagnostic CT imaging unless a full and complete diagnostic CT scan (i.e., not just fusion imaging) is ordered and performed. If a full and complete diagnostic CT is separately ordered, medically necessary and performed, assign the anatomic site-specific CT code, append the CT code with modifier 59, in addition to the appropriate nuclear medicine imaging code.
- Do not use this code when SPECT and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead, use UPC 78099 for imaging fusion.
- In 2023, CPT added the terms "or acquisition", and "or separate acquisitions (e.g., lung ventilation and perfusion)," for clarification. If the SPECT or SPECT/CT camera head is sufficiently large enough for multiple areas and only one SPECT or SPECT/CT acquisition is taken, bill the single acquisition code. Alternatively, when two separate SPECT or SPECT/CT acquisitions are performed of the same area, each with different tracers, bill the two acquisition code. (The most common occurrence is the V/P lung scan. This example is used in the code description to assist the coders; however, it is not the only use.)
- When two tracers are used for a single study (aka single acquisition), report the single study code and not the two study code as the two study codes are to differentiate the time for the additional acquisitions, not the two tracers.

CASE: NUCLEAR MEDICINE BONE SPECT/CT LS SPINE

CLINICAL HISTORY

85-year-old presents with compression fracture, L/S-spine fracture, pathological assess L1 compression fracture, patient complains of hip pain in addition to the back pain.

PROCEDURE

RADIOPHARMACEUTICAL: 24.1 mCi technetium 99m MDP IV.

TECHNIQUE: Three-hour delay SPECT-CT of the lower abdomen to include lumbar spine and pelvis is performed, both sets of SPECT-CT images are reconstructed in 3 planes.

IMPRESSION

The SPECT-CT images demonstrate intense hyperactivity in the L1 vertebral body, most pronounced posteriorly, correlating with compression fracture on prior CT. There is additional mild hyperactivity in the inferior endplate of T12, possibly relating to degenerative change. There is no significant hyperactivity elsewhere in the included spine, pelvis and hips with attention to L2-L5 fusion hardware.

Unremarkable kidneys and bladder.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78832	1	2	1
A9503	1	3	1

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

78835 Radiopharmaceutical quantification measurement(s) single area (List separately in addition to code for primary procedure)

GENERAL DEFINITION

The use of quantitation for nuclear medicine services is not new, however, in 2020, CPT developed this add on code to be reported only with CPT codes 78830 or 78832 when performed in conjunction with SPECT/CT services. Each single study quantitation requires collecting the data in a manner that will allow analysis and usually means acquiring in list mode. However, new methods are available so while list mode is the typical, it is not the only method. Followed by a re-bin of the data to allow quantitation and export the data set to a dedicated computer with quantitation software. The physician or qualified healthcare professional reviews the bolus duration, peak and plateau waveforms and if all quality measures are acceptable, will provide numeric data in the report to the referrer. It is expected that a separate paragraph describing this add on is included in the SPECT/CT report.

TIPS

- 78835 may only be reported with SPECT/CT CPT codes 78830 or 78832.
- When quantitation is performed for more than one area or same area on multiple days of service, report this add on code with multiple units.
- Do not use this add on code with myocardial SPECT studies, see CPT 78451, 78452, 78469 or 78494 CPT codes.

78808 Injection procedure for radiopharmaceutical localization by non-imaging probe study, intravenous (eg, parathyroid adenoma)

GENERAL DEFINITION

This code reflects the resources required to provide a radioactive drug administered by intravenous routes prior to gamma probe localization (e.g., parathyroid tumors).

TIP

- For parathyroid injection with imaging, see CPT 78070, 78071 or 78072.

78999 Unlisted miscellaneous procedure, diagnostic nuclear medicine

GENERAL DEFINITION

As noted in the CPT introductory language mentioned earlier in this publication, unlisted codes are used when there is no other code to describe the proce-

dure performed. You may not use a code that approximates a current code. In the absence of a code that correctly describes the procedure, use an appropriate unlisted code. This code may be used to describe miscellaneous diagnostic nuclear medicine procedure not already available in either CPT category I or category III codes.

TIPS

- When submitting an UPC, clearly define the following for any third-party payer via a written (i.e., "paper") claim: definition or description of the nature, need and extent of procedure, and the time, effort and equipment necessary to provide the service. Refer to the "Special Report" section of CPT for additional information that may also be included.
- Do not use 78999 for fusion for parathyroid imaging; instead see CPT code 78072.
- Do not use 78999 for fusion for any of the SPECT/CT codes, 78072, 78830 or 78832.

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78800	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); planar, single area (eg, head, neck, chest, pelvis), single day imaging	Global	A	7.05	$233.08	5591	S	$388.68
		TC	A	6.15	$203.32			
		26	A	0.90	$29.75			
78801	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); planar, 2 or more areas (eg, abdomen and pelvis, head and chest), 1 or more days imaging or single area imaging over 2 or more days	Global	A	7.64	$252.58	5591	S	$388.68
		TC	A	6.63	$219.19			
		26	A	1.01	$33.39			
78802	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); planar, whole body, single day imaging	Global	A	8.64	$285.64	5593	S	$1,327.27
		TC	A	7.54	$249.28			
		26	A	1.10	$36.37			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78804	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); planar, whole body, requiring 2 or more days imaging	Global	A	18.02	$595.75	5593	S	$1,327.27
		TC	A	16.64	$550.13			
		26	A	1.38	$45.62			
78803	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomographic (SPECT), single area (eg, head, neck, chest, pelvis), single day imaging	Global	A	10.63	$351.44	5593	S	$1,327.27
		TC	A	9.15	$302.51			
		26	A	1.48	$48.93			
78830	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomographic (SPECT) with concurrently acquired computed tomography (CT) transmission scan for anatomical review, localization and determination/detection of pathology, single area (eg, head, neck, chest, pelvis), single day imaging	Global	A	13.39	$442.68	5593	S	$1,327.27
		TC	A	11.39	$376.56			
		26	A	2.49	$82.32			
78831	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomographic (SPECT), minimum 2 areas (eg, pelvis and knees, abdomen and pelvis), single day imaging, or single area imaging over 2 or more days	Global	A	19.77	$653.61	5593	S	$1,327.27
		TC	A	17.28	$571.29			
		26	A	2.49	$82.32			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78832	Radiopharmaceutical localization of tumor, inflammatory process or distribution of radiopharmaceutical agent(s) (includes vascular flow and blood pool imaging, when performed); tomographic (SPECT) with concurrently acquired computed tomography (CT) transmission scan for anatomical review, localization and determination/detection of pathology, minimum 2 areas (eg, pelvis and knees, abdomen and pelvis), single day imaging, or single area imaging over 2 or more days	Global	A	25.34	$837.76	5594	S	$1,489.35
		TC	A	22.46	$742.54			
		26	A	2.88	$95.21			
78835	Radiopharmaceutical quantification measurement(s) single area (List separately in addition to code for primary procedure)	Global	A	2.77	$91.58		N	$0.00
		TC	A	2.14	$70.75			
		26	A	0.63	$20.83			
78808	Injection procedure for radiopharmaceutical localization by non-imaging probe study, intravenous (eg, parathyroid adenoma)	Global	A	1.18	$39.01	5591	Q1	$388.68
78999	Unlisted miscellaneous procedure, diagnostic nuclear medicine	Global	C	0.00	$0.00	5591	S	$388.68

*For the most current payment rates, check *http://www.cms.gov/apps/physician-fee-schedule/overview.aspx*.

PET Diagnostic Imaging, Including Oncology PET

CPT Codes: 78429–78434,78459, 78491, 78492, 78608, 78609, 78811–78816, and HCPCS Level II Codes: G0219, G0235 and G0252

REVENUE CODES: 404 MOST COMMON (RARELY 340 OR 341)

Typical Drugs and Radiopharmaceuticals Used				
HCPCS	**Description**	**Notes**	**RC**	**SI**
A9515	Choline C-11, diagnostic, per study dose, up to 20 millicuries	Diagnostic radiopharmaceutical first approved by the FDA on September 13, 2012 and ANDA approved November 17, 2015 from the manufacturer Zevacor. Common name: C-11 Choline C-11 Choline Zevacor or In-facility production (e.g., Mayo Clinic)	343	N
A9526	Nitrogen N-13 ammonia, diagnostic, per study dose, up to 40 millicuries	N-13, Ammonia N-13	343	N
A9552	Fluorodeoxyglucose F-18 FDG, diagnostic, per study dose, up to 45 millicuries	FDG, F-18	343	N
A9555	Rubidium Rb-82, diagnostic, per study dose, up to 60 millicuries	Rb-82, Rubidium, CardioGen82	343	N
A9580	Sodium fluoride F-18, diagnostic, per study dose, up to 30 millicuries	F-18, NaF, Sodium fluoride	343	N
A9586	Florbetapir F-18, diagnostic, per study dose, up to 10 millicuries	Common name: Beta amyloid imaging Trade name: Amyvid™ NDC # 00002-1200-01	343	N
A9587	Gallium Ga-68, dotatate, diagnostic, 0.1 millicurie	New diagnostic radiopharmaceutical approved by the FDA on June 2, 2016 Common name: Gallium DOTATATE Trade name: NETSPOT™ by AAA NDC # 69488-001-40 *A PET imaging agent for the localization of somatostatin receptor–positive neuroendocrine tumors*	343	N
A9588	Fluciclovine F-18, diagnostic, 1 millicurie	New diagnostic radiopharmaceutical approved by the FDA on May 31, 2016 Trade name: Axumin™ by Blue Earth Diagnostic (BED) NDC # 69932-0001-01 *A PET imaging agent for detecting biochemical recurrence of prostate cancer*	343	N
A9591	Fluoroestradiol F-18, diagnostic, 1 mCi	CERIANNA™ NDC # 72874-0001-01 January 1, 2021 and later	343	G
A9592	Copper Cu-64, dotatate, diagnostic, 1 millicurie	Trade name: Detectnet™ Cu-64 DOTATATE NDC # 69945-00694-01	343	G

A9593	Gallium ga-68 psma-11, diagnostic, (ucsf), 1 millicurie	No trade name (UCSF) Effective July 1, 2021	343	G
A9594	Gallium ga-68 psma-11, diagnostic, (ucla), 1 millicurie	No trade name (UCLA) Effective July 1, 2021	343	G
A9595	Piflufolastat f-18, diagnostic, 1 millicurie	Trade name: Pylarify™ PSMA NDC # 71258-0022-00 Effective January 1, 2022	343	G
●A9596	Gallium Ga-68 gozetotide, diagnostic, (illuccix), 1 millicurie	Trade name: Illuccix® GE FAST lab or Eckert & Ziegler GalliaPharm NDCs (74725-0100-25, 74725-0100-64) Effective July 1, 2022 Pass-through End Date: June 30, 2025	343	G
A9597	Positron emission tomography radiopharmaceutical, diagnostic, for tumor identification, not otherwise classified	Generic code, use for newly FDA approved PET diagnostic radiopharmaceutical for tumor identification, NOC	343	N
A9598	Positron emission tomography radiopharmaceutical, diagnostic, for non-tumor identification, not otherwise classified	Generic code, use for newly FDA-approved PET diagnostic radiopharmaceuticals for non-tumor identification, NOC (e.g., neurologic or cardiac indicated tracers)	343	N
●A9601	Flortaucipir f 18 injection, diagnostic, 1 millicurie	Trade name: Tauvid™ Eli Lilly and Company F-18 Flortaucipir NDCs (0002-1210-30, 0002-1210-50, 0002-1220-48, 0002-1220-50) Effective July 1, 2022 E2 = Pricing information not available to CMS No pass-through End Date at the time of publication	343	E2
●A9602	Fluorodopa f 18 injection, diagnostic, 1 millicurie	Trade name: None at time of print The Feinstein Institutes for Medical Research 350 Community Drive Manhasset New York 11030 Indicated for visualize dopaminergic nerve terminals in the striatum for the evaluation of adult patients with suspected Parkinsonian syndromes (PS). NDC (13267-346-57) Effective October 1, 2022 Pass-through End Date: September 30, 2025	343	G
●A9800	Gallium locametz 1 millicuri Gallium ga-68 gozetotide, diagnostic, (locametx), 1 millicurie	Trade name: LOCAMETZ® Advanced Accelerator Applications USA, Inc NDCs (69488-003-01) Effective October 1, 2022 Pass-through End Date: September 30, 2025	343	G
C9060 or J3490	Fluoroestradiol F-18, diagnostic, 1 mCi	Trade name: CERIANNA™ NDC # 72874-0001-01 C codes are Hospital Outpatient use only. Effective October 1, 2020 to December 31, 2020. See A9591 on or after January 1, 2021	343	G

C9067	Gallium Ga-68, dotatoc, diagnostic, 0.01mCi	No trade name: UIHC Hospital Outpatient use only. Effective October 1, 2020	343	G
Q9982	Flutemetamol F-18, diagnostic, per study dose, up to 5 millicuries	Vizamyl™ F-18 flutemetamol -G.E. NDC # 17156-067-01	343	N
Q9983	Florbetaben F-18, diagnostic per study does, up to 8.1 millicuries	Neuraceq™ F-18 florbetaben - Piramal NDC # 54828-001-30	343	N
J0153	Injection, adenosine, 1 milligram	Replaces diagnostic and therapeutic codes J0150 and J0151, which CMS terminated	636	N
J1245	Injection, dipyridamole, per 10 mg	Persantine IV	636	N
J1250	Injection, dobutamine hydrochloride, per 250 mg	Dobutrex	636	N
J2785	Injection, regadenoson, 0.1 Mg	LexiScan NDC # 0469-6501-89 (syringe 0.4 mg) Note: Unit alert—check code description carefully and bill the appropriate number of units.	636	N

TIPS

- When procuring the radioactive material, be certain to submit a separate charge for each radiopharmaceutical utilized. Some payers may ask you to submit an invoice when billing for these items. All parties (i.e., physicians, hospitals, etc.) will now need to identify the diagnostic radiopharmaceutical(s) with appropriate HCPCS Level II A or C codes. (C-series HCPCS codes are only for Medicare outpatient hospital coding and billing.)
- Instructions for billing PET radiopharmaceuticals can be found in Transmittal 1301 (CR 5665), which was implemented on January 7, 2008. This transmittal can be found at *http://www.cms.hhs.gov/transmittals/downloads/R1301CP.pdf*.

  In general, providers are instructed to use HCPCS level II codes that are specific to the PET radiopharmaceutical and are instructed not to use the NOC code A4641 for covered Medicare PET tracers. However, in the case of most new diagnostic PET agents, with the exception of beta-amyloid agents, and until CMS creates a specific code for new diagnostic radiopharmaceuticals, providers should report A4641.

  Specifically, in transmittal 2718 (change request 8338 dated June 7, 2013), CMS states, "Diagnostic radiopharmaceuticals and contrast agents are policy packaged under the OPPS unless they have been granted pass-through status." In 2017, CMS created two generic HCPCS level II codes to allow any new PET tracers to be billed post FDA approval and prior to a tracer-specific code being created and implemented; those two HCPCS codes are A9597 and A9598. Use A9597 for PET tracers used to identify tumors, and use A9598 for all other non-tumor identification PET tracers that do not yet have specific HCPCS codes.

New diagnostic radiopharmaceutical and contrast agents are an exception to the standard new drug payment policy and should not be billed with C9399 prior to the approval of pass-through status. Instead, they should be billed with an appropriate "A" NOC code as noted above.

The above-mentioned transmittal is available at *http://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R2718CP.pdf*.

- For services performed on PET/MRI equipment, use the appropriate PET-alone or MRI-alone CPT codes. The national coverage indications and coding apply for both PET and MRI services. Remember: Assign each code for these procedures, and each must be a separate full and complete diagnostic exam.

POSITRON EMISSION TOMOGRAPHY

Positron emission tomography (PET) scanning, also known as positron emission transverse tomography (PETT), positron emission mammography (PEM), or positron emission coincident imaging (PECI), is a noninvasive imaging procedure that assesses perfusion and the level of metabolic activity in various organ systems of the human body. That is, it generates real-time imaging of biochemical processes. While not typically seen in the clinical setting in the past, it is becoming more common. CMS continues to expand coverage of cancer-detecting PET scans to encompass more approved clinical uses for a variety of types of cancer. This may allow Medicare beneficiaries to skip invasive procedures. It is expected that in the future CMS will increase coverage for additional conditions but that more scientific evidence is needed.

A positron camera is used to produce cross-sectional tomographic images by detecting radioactivity from a radiopharmaceutical that is injected into the patient. Images are corrected for scatter using a mathematical calculation by attenuation correction (AC) obtained from a transmission scan[7] image. The procedure is used, among other reasons, to evaluate recurrent colorectal cancer in patients with rising levels of carcinoembryonic antigen (CEA) for staging of lymphoma (both Hodgkins and non-Hodgkins) when the PET scan substitutes for a gallium scan, for the detection of recurrent melanoma, and for noninvasive imaging of the perfusion of the heart for the diagnosis and management of patients with known or suspected coronary artery disease. (Note: Medicare does not cover all uses of PET scans.) Detailed coverage information on PET diagnostic imaging can be found later in this section.

POSITRON EMISSION TOMOGRAPHY/COMPUTED TOMOGRAPHY

A type of imaging technology has emerged referred to as integrated imaging systems (sometimes-called hybrid imaging systems). These systems merge two technologies together such as a PET scanner and a CT scanner. The initial models of this new technology utilize the CT portion of the scanner

and image for attenuation correction only. PET/CT systems are now capable of utilizing the CT portion of the PET/CT for not only attenuation correction,[7] but fully diagnostic CT imaging. The coding and billing for these procedures is evolving.

We recommend you stay close to CMS as well as the specialty societies as we anticipate changes in guidance and use of these codes in the future.

Another important term used with this new technology is "fusion." We caution you regarding the multiple uses of this word with the emerging technologies. Although it is true that the interpreting physician does review and read the transmission and emission data in addition to the "fused PET and CT image," it can also be true that external software can be utilized with two separate, non-integrated imaging systems to obtain and fuse the PET and CT studies.

At present, there are NO CPT codes that describe using the (external) software method. As always, and per CPT guidance in the absence of a specific code, use an unlisted code (e.g., xxx99) to describe software-fused images. Medicare does not currently recognize or pay for software-fused nuclear medicine procedures. Other third-party payers may, but literature and proof of validation of the software technique would be required when educating your payers about this type of fusion imaging.

In 2005, CPT introduced three codes that describe PET/CT technology when utilized for ***both*** attenuation correction and anatomic localization. Additionally, effective January 28, 2005, CMS notified providers to begin using CPT codes for ***all covered*** PET services. Effective for services on or after January 28, 2005, CMS deleted many of the HCPCS G codes and retained only a handful of G codes for providers to use for non-covered PET services for Medicare patients. These PET codes and descriptions are provided in this section.

CPT-modified oncology PET codes 78811–78816 took effect January 1, 2008. Specifically, the AMA removed the term "tumor" from the description to allow broader use of these codes and expand their use for indications for other tracers other than tumor imaging. For example, infection and inflammation or PET bone imaging with $Na^{18}F$ are currently covered by some private payers.

For Medicare non-covered procedures, providers must use the appropriate G codes. We encourage providers to stay current with the Medicare PET coverage policies as these are likely to be updated.

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[7] Attenuation correction is a technique of using quantitative methods or calculations to correct images for the effects of imaging artifacts (scatter and absorption) due to soft tissues and/or bones. This technique is achieved by obtaining a new set of data or images called a transmission scan. While normal nuclear medicine imaging usually involves an emission image (obtained from the radiotracer within the patient's body), attenuation correction uses additional imaging, transmission data (external radiation source) of the patient's soft tissue distribution to create an 'image map' of the body's attenuation effects. Examples of external radiation sources are a gadolinium-153 line source or computed tomography.

Medicare PET national coverage determinations are complex. Provided at the end of this section are details and references from CMS and the national coverage policies. Required documentation and coding are provided in this section, and we strongly recommend that you carefully review and follow these guideline prior to submitting claims for PET services.

There was an update to the list of payable diagnoses in early November 2018; for more information, refer to: *https://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/2018Downloads/R2200OTN.pdf*.

Cardiovascular Positron Emission Tomography (PET)

78459 Myocardial imaging, positron emission tomography (PET), metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), single study;

GENERAL DEFINITION

After an intravenous injection of a PET radiotracer, the patient is scanned in the PET or PET/CT camera to determine myocardial viability prior to revascularization. Radiopharmaceuticals such as ^{18}F FDG may be used to image viable myocardium that improve in function and contractility following revascularization.

TIPS

- Beginning October 1, 2002, this exam is covered for the determination of myocardial viability as a primary or initial diagnostic study prior to revascularization and will continue to cover ^{18}F FDG PET when used as a follow-up to an inconclusive SPECT. If, however a patient received an ^{18}F FDG PET study with inconclusive results, a follow-up SPECT is not covered. Both full and partial ring PET scanners are covered.
- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.

78429 Myocardial imaging, positron emission tomography (PET), metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), single study; with concurrently acquired computed tomography transmission scan

GENERAL DEFINITION

After an intravenous injection of a PET radiotracer, the patient is scanned in the PET/CT scanner to determine myocardial viability prior to revascularization. Radiopharmaceuticals such as ^{18}F FDG may be used when attempting to image viable myocardium that improve in function and contractility following revascularization.

TIPS

- Beginning October 1, 2002, this exam is covered for the determination of myocardial viability as a primary or initial diagnostic study prior to revascularization and will continue to cover ^{18}F FDG PET when used as a follow-up to an inconclusive SPECT. If, however a patient received an ^{18}F FDG PET study with inconclusive results, a follow-up SPECT is not covered. Both full and partial ring PET scanners are covered.
- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.
- This code does include CT for both attenuation correction and anatomic localization (i.e., fusion imaging). However, do not charge separately for diagnostic CT imaging unless a full and complete diagnostic CT scan (i.e., not just fusion imaging) is ordered and performed. If a full and complete diagnostic CT is separately ordered, medically necessary, and performed, assign the anatomic site-specific CT code, append the CT code with modifier 59, in addition to the appropriate PET imaging code.
- Do not use this code when PET and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead, use UPC 78499 for imaging fusion.

78491 Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); single study, at rest or stress (exercise or pharmacologic)

GENERAL DEFINITION

This exam may be done at stress or at rest. This code is specifically for myocardial perfusion with PET radiotracers on PET scanners. After an intravenous injection of a PET perfusion radiotracer, the patient is scanned in the PET or PET/CT camera to determine myocardial perfusion for known or suspected coronary artery disease. Radiopharmaceuticals such as rubidium (^{82}Rb) or ammonia (^{13}N) may be used to image the myocardium.

TIPS

- Beginning March 14, 1995, this service is considered covered by Medicare for PET scans performed at rest or with pharmacological stress used for non-invasive imaging of the perfusion of the heart for diagnosis and management of patients with known or suspected coronary artery disease using ^{82}Rb. Effective October 1, 2003 Medicare approved the use of ^{13}N. Details are provided later in this section on the Medicare coverage manuals.
- In the event that a patient received a SPECT with inconclusive results, a PET scan may be performed and be covered by Medicare. SPECT MPI is NOT covered following an inconclusive PET; however, a PET MPI may be performed in place of a SPECT MPI study.
- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.
- If cardiac stress is performed, choose from the CPT code set 93015–93018 to describe the service(s) rendered. Cardiac stress testing is not included in the CPT code for the cardiovascular PET or PET/CT procedure. Refer to the cardiovascular system section of this publication for specific instructions regarding billing of these codes.
- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/ charges (e.g., adenosine, dipyridamole, etc.).

78430 Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); single study, at rest or stress (exercise or pharmacologic), with concurrently acquired computed tomography transmission scan

GENERAL DEFINITION

This exam may be done at stress or at rest. This code is specifically for myocardial perfusion with PET radiotracers on PET scanners. After an intravenous injection of a PET perfusion radiotracer, the patient is scanned in the PET or PET/CT camera to determine myocardial perfusion for known or suspected coronary artery disease. Radiopharmaceuticals such as rubidium (^{82}Rb) or ammonia (^{13}N) may be used to image the myocardium.

TIPS

- Beginning March 14, 1995, this service is considered covered by Medicare for PET scans performed at rest or with pharmacological stress used for non-invasive imaging of the perfusion of the heart for diagnosis and management of patients with known or suspected coronary artery disease using ^{82}Rb. Effective October 1, 2003 Medicare approved the use of ^{13}N. Details are provided later in this section on the Medicare coverage manuals.
- In the event that a patient received a SPECT with inconclusive results, a PET scan may be performed and be covered by Medicare. SPECT MPI is NOT covered following an inconclusive PET; however, a PET MPI may be performed in place of a SPECT MPI study.
- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.
- If cardiac stress is performed, choose from the CPT code set 93015–93018 to describe the service(s) rendered. Cardiac stress testing is not included in the CPT code for the cardiovascular PET or PET/CT procedure. Refer to the cardiovascular system section of this publication for specific instructions regarding billing of these codes.

- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., adenosine, dipyridamole, etc.).
- This code does include CT for both attenuation correction and anatomic localization (i.e., fusion imaging). However, do not charge separately for diagnostic CT imaging unless a full and complete diagnostic CT scan (i.e., not just fusion imaging) is ordered and performed. If a full and complete diagnostic CT is separately ordered, medically necessary and performed, assign the anatomic site-specific CT code, append the CT code with modifier 59, in addition to the appropriate PET imaging code.
- Do not use this code when PET and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead, use UPC 78499 for imaging fusion.

78492 Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); multiple studies at rest and stress (exercise or pharmacologic)

GENERAL DEFINITION

This exam is used to report both stress and rest PET myocardial perfusion imaging. This code is specifically for myocardial perfusion with PET radiotracers on PET scanners. After an intravenous injection of a PET perfusion radiotracer, the patient is scanned in the PET or PET/CT camera to determine myocardial perfusion for known or suspected coronary artery disease. Radiopharmaceuticals such as ^{82}Rb or ^{13}N may be used to image the myocardium.

TIPS

- Beginning March 14, 1995, this service is considered covered by Medicare for PET scans performed at rest or with pharmacological stress used for non-invasive imaging of the perfusion of the heart for diagnosis and management of patients with known or suspected coronary artery disease using ^{82}Rb. Effective October 1, 2003 Medicare approved the use of ^{13}N. Details are provided later in this section on the Medicare coverage manuals.
- In the event that a patient received a SPECT with inconclusive results, a PET scan may be performed and be covered by Medicare. SPECT MPI is NOT covered following an inconclusive PET; however, a PET MPI may be performed in place of a SPECT MPI study.

- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.
- If cardiac stress is performed, choose from the CPT code set 93015–93018 to describe the service(s) rendered. Cardiac stress testing is not included in the CPT code for the cardiovascular PET or PET/CT procedure. Refer to the cardiovascular system section of this publication for specific instructions regarding billing of these codes.
- When performing absolute quantitation of myocardial blood flow by PET or PET/CT, report add-on code +78434 in addition to the primary CPT procedure code. Code +78434 may only be assigned with code 78431 or 78492. While this code (+78434) is assigned an "N" status indicator under the Medicare OPPS billing methodology, it is still important to assign appropriate charges and report as this data can have important implications for future rate setting. While Medicare does not make separate reimbursement for this service under OPPS, other payers may. Charges submitted today (even if not currently reimbursed) are important to help shape payment in the future.
- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., adenosine, dipyridamole, etc.). **Note:** For all PET stress myocardial perfusion imaging (MPI) studies, expect to bill one of the pharmacological stress agents. PET MPI pharmacological stress agents (e.g. adenosine, regadenoson, or dipyridamole) are typically required when imaging a patient in the PET camera.

78431 Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); multiple studies at rest and stress (exercise or pharmacologic), with concurrently acquired computed tomography transmission scan

GENERAL DEFINITION

This exam is used to report both stress and rest PET/CT myocardial perfusion imaging. This code is specifically for myocardial perfusion with PET radiotracers on PET/CT scanners. After an intravenous injection of a PET perfusion radiotracer, the patient is scanned in the PET/CT camera to determine myocardial perfusion for known or suspected coronary artery disease. Radiopharmaceuticals such as ^{82}Rb or ^{13}N may be used when imaging the myocardium.

TIPS

- Beginning March 14, 1995, this service is considered covered by Medicare for PET scans performed at rest or with pharmacological stress used for non-invasive imaging of the perfusion of the heart for diagnosis and management of patients with known or suspected coronary artery disease using ^{82}Rb. Effective October 1, 2003 Medicare approved the use of ^{13}N. Details are provided later in this section on the Medicare coverage manuals.
- In the event that a patient received a SPECT with inconclusive results, a PET scan may be performed and be covered by Medicare. SPECT MPI is NOT covered following an inconclusive PET; however, a PET MPI may be performed in place of a SPECT MPI study.
- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.
- If cardiac stress is performed, choose from the CPT code set 93015–93018 to describe the service(s) rendered. Cardiac stress testing is not included in the CPT code for the cardiovascular PET or PET/CT procedure. Refer to the cardiovascular system section of this publication for specific instructions regarding billing of these codes.
- When performing absolute quantitation of myocardial blood flow by PET or PET/CT, report add-on code +78434 in addition to the primary CPT procedure code. Code +78434 may only be assigned with code 78431 or 78492. While this code (+78434) is assigned an "N" status indicator under the Medicare OPPS billing methodology, it is still important to assign appropriate charges and report as this data can have important implications for future rate setting. While Medicare does not make separate reimbursement for this service under OPPS, other payers may. Charges submitted today (even if not currently reimbursed) are important to help shape payment in the future.
- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., adenosine, dipyridamole, etc.). **Note:** For all PET stress myocardial perfusion imaging (MPI) studies, expect to bill one of the

pharmacological stress agents. PET MPI pharmacological stress agents (e.g. adenosine, regadenoson, or dipyridamole) are typically required when imaging a patient in the PET camera.

- This code does include CT for both attenuation correction and anatomic localization (i.e., fusion imaging). However, do not charge separately for diagnostic CT imaging unless a full and complete diagnostic CT scan (i.e., not just fusion imaging) is ordered and performed. If a full and complete diagnostic CT is separately ordered, medically necessary and performed, assign the anatomic site-specific CT code, append the CT code with modifier 59, in addition to the appropriate PET imaging code.
- Do not use this code when PET and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead, use UPC 78499 for imaging fusion.

78432 Myocardial imaging, positron emission tomography (PET), combined perfusion with metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), dual radiotracer (eg, myocardial viability);

GENERAL DEFINITION

This exam is used to report both stress and rest PET/CT myocardial perfusion imaging. This code is specifically for myocardial perfusion with PET radiotracers on PET/CT scanners. After an intravenous injection of a PET perfusion radiotracer, the patient is scanned in the PET/CT camera to determine myocardial perfusion for known or suspected coronary artery disease. Radiopharmaceuticals such as ^{82}Rb or ^{13}N may be used when imaging the myocardium.

TIPS

- Beginning October 1, 2002, this exam is covered for the determination of myocardial viability as a primary or initial diagnostic study prior to revascularization and will continue to cover ^{18}F FDG PET when used as a follow-up to an inconclusive SPECT. If, however a patient received an ^{18}F FDG PET study with inconclusive results, a follow-up SPECT is not covered. Both full and partial ring PET scanners are covered.
- Beginning March 14, 1995, this service is considered covered by Medicare for PET scans performed at rest or with pharmacological stress used for non-invasive imaging of the perfusion of the heart for diagnosis and management of patients with known or suspected coronary artery disease using ^{82}Rb. Effective October 1, 2003 Medicare approved the use of ^{13}N. Details are provided later in this section on the Medicare coverage manuals.

- In the event that a patient received a SPECT with inconclusive results, a PET scan may be performed and be covered by Medicare. SPECT MPI is NOT covered following an inconclusive PET; however, a PET MPI may be performed in place of a SPECT MPI study.
- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.
- If cardiac stress is performed, choose from the CPT code set 93015–93018 to describe the service(s) rendered. Cardiac stress testing is not included in the CPT code for the cardiovascular PET or PET/CT procedure. Refer to the cardiovascular system section of this publication for specific instructions regarding billing of these codes.
- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., adenosine, dipyridamole, etc.). **Note:** For all PET stress myocardial perfusion imaging (MPI) studies, expect to bill one of the pharmacological stress agents. PET MPI pharmacological stress agents (e.g. adenosine, regadenoson, or dipyridamole) are typically required when imaging a patient in the PET camera.

78433 Myocardial imaging, positron emission tomography (PET), combined perfusion with metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), dual radiotracer (eg, myocardial viability); with concurrently acquired computed tomography transmission scan

GENERAL DEFINITION

This exam is used to report both stress and rest PET/CT myocardial perfusion imaging. This code is specifically for myocardial perfusion with PET radiotracers on PET/CT scanners. After an intravenous injection of a PET perfusion radiotracer, the patient is scanned in the PET/CT camera to determine myocardial perfusion for known or suspected coronary artery disease. Radiopharmaceuticals such as ^{82}Rb or ^{13}N may be used when imaging the myocardium.

TIPS

- Beginning October 1, 2002, this exam is covered for the determination of myocardial viability as a primary or initial diagnostic study prior to revascularization and will continue to cover 18F FDG PET when used as a follow-up to an inconclusive SPECT. If, however a patient received an 18F FDG PET study with inconclusive results, a follow-up SPECT is not covered. Both full and partial ring PET scanners are covered.
- Beginning March 14, 1995, this service is considered covered by Medicare for PET scans performed at rest or with pharmacological stress used for non-invasive imaging of the perfusion of the heart for diagnosis and management of patients with known or suspected coronary artery disease using 82Rb. Effective October 1, 2003 Medicare approved the use of 13N. Details are provided later in this section on the Medicare coverage manuals.
- In the event that a patient received a SPECT with inconclusive results, a PET scan may be performed and be covered by Medicare. SPECT MPI is NOT covered following an inconclusive PET; however, a PET MPI may be performed in place of a SPECT MPI study.
- Note, wall motion and/or ejection fraction or flow, when performed, is now included in this code. Therefore, it is no longer appropriate to report these services separately on or after January 1, 2020.
- Choose the single most specific myocardial PET CPT code (78459, 78429, 78491, 78430, 78492, 78431, 78432, 78433, 78434) based on the imaging technique (i.e., PET, PET/CT,) and radiotracer mechanism of action (i.e., perfusion and/or metabolic) performed.
- If cardiac stress is performed, choose from the CPT code set 93015–93018 to describe the service(s) rendered. Cardiac stress testing is not included in the CPT code for the cardiovascular PET or PET/CT procedure. Refer to the cardiovascular system section of this publication for specific instructions regarding billing of these codes.
- If other non-radioactive drugs are utilized, refer to the current Level II series HCPCS manual (typically J codes) for potential additional codes/charges (e.g., adenosine, dipyridamole, etc.). **Note:** For all PET stress myocardial perfusion imaging (MPI) studies, expect to bill one of the pharmacological stress agents. PET MPI pharmacological stress agents (e.g. adenosine, regadenoson, or dipyridamole) are typically required when imaging a patient in the PET camera.
- This code does include CT for both attenuation correction and anatomic localization (i.e., fusion imaging). However, do not charge separately for diagnostic CT imaging unless a full and complete diagnostic CT scan (i.e., not just fusion imaging) is ordered and performed. If a full and complete diagnostic CT is separately ordered, medically necessary and performed, assign the anatomic site-specific CT code, append the CT code with modifier 59, in addition to the appropriate PET imaging code.

- Do not use this code when PET and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead, use UPC 78499 for imaging fusion.

CASE: NUCLEAR MEDICINE METABOLIC PLUS PERFUSION TO EVALUATE FOR SARCOID

CLINICAL HISTORY

55-year-old presents with non-sustained ventricular tachycardia - evaluate for sarcoidosis.

PROCEDURE

Following the administration of 19.6 mCi of N-13-ammonia at rest in the left antecubital vein at 11:19 AM gated PET/CT was performed of the myocardium.

The patient was on a low carbohydrate, high fat diet prior to imaging. Blood glucose 59 mg/dL.

The patient then received 10.9 mCi of F-18 FDG intravenously in the left antecubital vein at 11:40 AM and PET/CT myocardial imaging was performed.

IMPRESSION

--------N-13 Resting Perfusion--------

Perfusion defects are seen in the distal apex, distal inferior wall and distal septal wall. Perfusion defects are also seen in the mid to basal anterolateral and inferolateral walls.

Gated PET imaging demonstrates a resting ejection fraction of 53% with unremarkable cine.

-------F-18 FDG metabolism--------

No FDG activity is seen in the region of the perfusion defects. Suppression of the myocardium is excellent.

Perfusion defects without corresponding FDG avidity are seen in the distal apex, distal inferior wall, distal septal wall as well as the mid to basal anterolateral and inferolateral walls. Findings likely represent scarring. No evidence of myocardial sarcoidosis.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78433	1	2	1
A9526	1	3	2
A9552	1	3	1

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

78434 Absolute quantitation of myocardial blood flow (AQMBF), positron emission tomography (PET), rest and pharmacologic stress (List separately in addition to code for primary procedure)

GENERAL DEFINITION

Absolute quantitation of myocardial blood flow (MBF) by positron emission tomography (PET) has a significant role in the clinical evaluation of epicardial and microvascular coronary artery disease (CAD). The clinical value of the absolute quantitation of MBF by PET is well-recognized; standards and computer processing techniques are evolving.

TIP

- Submit in addition to primary procedure code 78431 or 78492.
- When performing absolute quantitation of myocardial blood flow by PET or PET/CT, report add-on code +78434 in addition to the primary CPT procedure code. Code +78434 may only be assigned with code 78431 or 78492. While this code (+78434) is assigned an "N" status indicator under the Medicare OPPS billing methodology, it is still important to assign appropriate charges and report as this data can have important implications for future rate setting. While Medicare does not make separate reimbursement for this service under OPPS, other payers may. Charges submitted today (even if not currently reimbursed) are important to help shape payment in the future.

Neurological Positron Emission Tomography (PET)

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

GENERAL DEFINITION

After an intravenous injection of a PET radiotracer, the patient is scanned in the PET unit to determine metabolic activity. Radiopharmaceuticals such as ^{18}F FDG may be used. A metabolic study is a type of exam in which the target area(s)/tissue(s) are studied to examine changes in cells of the area in question. It has been shown that metabolic changes in cancer cells are different than other tissues or distributions such as dementia and neurodegenerative diseases. In cancer cells there are increased rates of blood and amino acid flow, glucose transport and DNA synthesis compared to normal, degenerative, or non-cancerous tissues. PET studies are able to detect these variations with a high range of efficiency.

TIPS

- This code may be used for PET imaging of the brain such as tumors, dementia and neurodegenerative diseases.
- Do not use CPT code 78608 for beta-amyloid imaging or Parkinsonian syndromes (PS); see 78811or 78814.
- Do not charge separately for a vascular flow.
- When PET imaging is performed for oncologic reasons using the radiopharmaceutical ^{18}F FDG, providers have appended one of the following modifiers to identify initial treatment strategy (PI) or subsequent treatment strategy (PS). These modifiers should be appended to CPT procedure codes 78811–78816 and 78608, as appropriate.

  Modifier PI: PET or PET/CT to inform the initial treatment strategy of tumors that are biopsy proven or strongly suspected of being cancerous based on other diagnostic testing

  Modifier 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

  For those claims, date of service on or after June 11, 2013, for oncologic uses of PET or PET/CT studies with ^{18}FDG, those billings beyond (1) PI and / or (3) PS, with the same cancer diagnosis, during the patient's life, report **modifier KX-requirements specified the medical policy have been met**, to inform the payer that the provider has maintained documentation of medical necessity and rationale for these studies.

CASE: NUCLEAR MEDICINE PET/CT OF THE BRAIN WITH F-18 FDG

CLINICAL HISTORY

55-year-old presents with evolving memory loss.

PROCEDURE

Following the intravenous injection of 9.2 mCi F-18 FDG into the right antecubital fossa, a PET-CT scan was performed from the vertex of the skull through the base of the skull. Fusion images were created from the PET-CT source data.

IMPRESSION

The examination is compared to an extensive consultative note dated 07/17/2019 as well as a concomitant CT scan performed during the course of this examination for anatomic correlation. On today's examination from referring physician notes, there is moderate ventricular dilatation noted involving the lateral ventricles and third ventricle. There is minimal peripheral cortical atrophy noted.

On PET-CT today, there is slightly diminished metabolic uptake seen in the medial left frontal lobe. The remainder of the frontal lobes appear to be symmetric. There is markedly diminished metabolic uptake seen in the temporal lobes bilaterally extending from the anterior portion through the posterior portion. Similarly, there is significant metabolic deficit seen in the parietal lobes bilaterally, left slightly greater than right. Markedly diminished metabolic uptake is seen within the region of the cingulate gyrus. There is normal metabolic uptake seen within the thalamus and basal ganglia. Normal metabolic uptake is seen within the occipital lobe.

The findings are consistent with a pattern suggestive of moderately advanced Alzheimer's disease. As there is mild-to-moderate ventricular dilation, normal-pressure hydrocephalus cannot be completely ruled out and that would also mimic these findings.

CONCLUSION:

1. Significant metabolic deficits in the temporal lobes, parietal lobes, and cingulate gyrus as described. The findings are consistent with moderately advanced Alzheimer's disease.
2. Moderate ventricular dilation as described. Conceivably the patient has early stages of normal-pressure hydrocephalus and that too could mimic these metabolic findings. Correlation is recommended.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78608	1	3	1
A9552	1	3	1

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

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

GENERAL DEFINITION

After an intravenous injection of a PET radiotracer, the patient is scanned in the PET unit to determine a cerebral perfusion evaluation.

A perfusion study is, by definition, a study in which the volume of blood supplying a unit mass (volume) of tissue per unit time. Unlike metabolic imaging, this study is focused not on information at the cellular level, but on more of a general level: "is the area in question supplied by blood at all, is the flow symmetrical, how quickly does the blood get there, etc."

TIP

- There are currently no Medicare-covered indications for this CPT code.

Other Positron Emission Tomography (PET)

GENERAL DEFINITION

After an intravenous injection of a PET radiotracer, the patient is scanned in the PET unit to determine metabolic activity. Radiopharmaceuticals such as ^{18}F FDG may be used. A metabolic study is a type of exam in which the target area(s)/tissue(s) are studied to examine changes in cells of the area in question. It has been shown that metabolic changes in cancer cells are different than other tissues. In cancer cells there are increased rates of blood and amino acid flow, glucose transport and DNA synthesis compared to normal, non-cancerous tissues. PET studies are able to detect these variations with a high range of efficiency.

CPT codes 78811–78813 do not include CT performed for both attenuation correction and anatomic localization. To be clear, the transmission scan utilized for attenuation correction, as with all PET studies, may or may not be obtained by CT. The important distinction between CPT codes 78811–78813 and 78814–78816 is that the transmission scan is used only for attenuation correction for 78811–78813. For 78814–78816, the transmission scan collected by CT will be used for both attenuation correction and anatomic localization. For PET or PET/CT codes, providers choose one code (the single best choice) and report these codes only once per imaging session.

CPT-modified oncology PET codes 78811–78816 took effect January 1, 2008. Specifically, the AMA removed the term "tumor" from the description to allow broader use of these codes and expand their use for indications for other tracers other than tumor imaging. Examples include infection and inflammation or PET bone imaging with Na^{18}F that are currently covered by some private payers.

For Medicare non-covered procedures, providers must use the appropriate G codes. We encourage providers to stay current with the Medicare PET coverage policies as these are likely to be updated.

The following is verbatim from the *NCCI Policy Manual for Medicare Services*, Chapter 9, Section E:

> 14. Tumor imaging by positron emission tomography (PET) may be reported with CPT codes 78811-78816. If a concurrent computed tomography (CT) scan is performed for attenuation correction and anatomical localization, CPT codes 78814–78816 shall be reported rather than CPT codes 78811–78813. A CT scan for localization shall not be reported separately with CPT codes 78811–78816.
>
> A medically reasonable and necessary diagnostic CT scan may be separately reportable with an NCCI PTP-associated modifier. If the data set for the diagnostic CT is obtained concurrently on the same PET/CT integrated system where the CT portion of the study is co-registered with the PET images for the purpose of attenuation correction and anatomic localization, the diagnostic CT CPT code may be reported with PET CPT codes 78811–78813 utilizing an NCCI PTP-associated modifier. Under these circumstances the diagnostic CT CPT code shall not be reported with PET/CT CPT codes 78814–78816. However, if a data set for the PET/CT for attenuation correction and anatomic localization and a separate data set for the diagnostic CT are obtained on separate pieces of equipment, the diagnostic CT CPT code may be reported with CPT codes 78811–78816 using an NCCI PTP-associated modifier.

78811 Positron emission tomography (PET) imaging; limited area (eg, chest, head/neck)

GENERAL DEFINITION

This code is used when a limited area such as the chest alone or neck alone are imaged and analyzed.

TIPS

- For all PET procedures covered under a CMS-approved CED program (e.g., NOPR or IDEAS), hospital providers only must list condition code 30 and place Z00.6 in the second diagnosis position. Additionally, all outpatient providers should append the Q0 (zero) modifier to both the CPT procedure code and the diagnostic radiopharmaceutical tracer to signify to Medicare, when a case is CED. Finally, add the eight-digit clinical trial number, which will be mandatory for claims with DOS on or after January 1, 2014. More information regarding the eight-digit mandatory requirement on claims forms for CED programs can be located at *http://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R2805CP.pdf*.
- Do not use this code when PET/CT is performed on an integrated system (hardware fusion) and the CT is used for both attenuation correction and anatomic localization. Instead see CPT codes 78814–78816.

- Do not use this code when PET and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead, use UPC CPT code 78999 for the image fusion.
- If only a PEM imaging study of one or two breasts are performed, bill CPT 78811. If torso or whole body imaging is performed with the PEM during the same imaging session, bill the highest level CPT code (choose from the 78811–78816 series). The limited study will be considered part of the higher level PET CPT code, billed alone on the claim.
- When PET imaging is performed for oncologic reasons using radiopharmaceutical ^{18}F FDG, providers have appended one of the following two modifiers to identify initial treatment strategy (PI) or subsequent treatment strategy (PS). These modifiers should be appended to CPT procedure codes 78811–78816 and 78608, as appropriate.

  Modifier PI: PET or PET/CT to inform the initial treatment strategy of tumors that are biopsy proven or strongly suspected of being cancerous based on other diagnostic testing

  Modifier 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

  For those claims, date of service on or after June 11, 2013, for oncologic uses of PET or PET/CT studies with ^{18}FDG, those billings beyond (1) PI and/or (3) PS, with the same cancer diagnosis, during the patient's life, report **modifier KX-requirements specified the medical policy have been met**, to inform the payer that the provider has maintained documentation of medical necessity and rationale for these studies.

  If the coverage is conditional under an approved CMS study such as NOPR, the Q0 (zero) is appended in addition to the PI or PS. Note hospital claims would also be required to submit the V70.7 in the second diagnosis position, as well as adding condition code 30 to the claim. For claims with DOS 10/1/2015 or after report ICD-10-CM code Z00.6 instead of V70.7.
- Providers billing Medicare for a sodium fluoride PET study in an approved CMS CED program must use one of the CPT codes 78811–78816 with a PI or PS modifier **AND** the Q0 (zero) CED modifier on both the procedure and the diagnostic radiopharmaceutical HCPCS code. Facilities place the Z00.6 in the second diagnosis position; if billing technical or global, the HCPCS Level II A9580 must be on the same claim.
- For professional claims submitted for sodium fluoride PET bone imaging studies conducted in a CED program, use one of the CPT codes 78811–78816 with a PI or PS **AND** the Q0 (zero) CED modifier plus **modifier KX—requirements specified in the medical policy have been met.** This is to clarify to Medicare that the professional services met the requirements

of an approved CMS CED program such as the National Oncologic PET Registry (NOPR). KX is not necessary on $Na^{18}F$ claims billed for global or technical services.

- For PET agents in a CED study, most Medicare contractors have been asking for placement of the Q0 (zero) modifier on the radiopharmaceutical HCPCS Level II code, (e.g., A9580, A9586, Q9982 and Q9983) in addition to placing the Q0 with the procedure code. Check with your local Medicare contractor on its policy.
- To bill Medicare in any setting for non-covered PET services, providers would choose HCPCS Level II code G0235—PET imaging, any site, not otherwise specified. Billing Medicare with this code should result in a claim denial. Providers who choose to have their patients sign advanced beneficiary notices (ABNs) before the studies are performed could then bill the patient for the non-covered Medicare service.
- There are three FDA-approved beta-amyloid diagnostic PET agents. Of importance, on September 30, 2013, CMS published a NCD to cover one PET scan to exclude AD but only for patients participating in specific clinical studies under a Coverage with Evidence Development (CED) program, which grants conditional reimbursement upon collection of specific data. Providers must participate and meet the required elements of a study for Medicare to cover and pay for these services. It is important to keep documentation in your billing files regarding participation in these CED studies for the patient records.

BETA-AMYLOID PLAQUE IMAGING

To report beta-amyloid plaque imaging, the SNMMI recommends, and CMS confirmed in transmittals, one of the following two CPT codes based on the protocol and equipment utilized, which applies to all settings and payers.

78811 Positron emission tomography (PET) imaging; limited area (e.g., chest, head/neck)

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

HCPCS FOR AMYVID™

When using the radiopharmaceutical Amyvid™, hospital outpatient departments, IDTFs, physician offices, and TPPs should assign HCPCS Level II code A9586. Remember, only those incurring the expense for (i.e., paying for) this item should charge for it.

HCPCS FOR VIZAMYL™

When using the radiopharmaceutical Vizamyl™, hospital outpatient departments IDTFs, physician offices, and TPPs should assign HCPCS Level II code Q9982. Remember, only those incurring the expense for (i.e., paying for) this item should charge for it.

HCPCS FOR NEURACEQ™

When using the radiopharmaceutical Neuraceq™, hospital outpatient departments, IDTFs, physician offices, and TPPs should assign HCPCS Level II code Q9983. Remember, only those incurring the expense for (i.e., paying for) this item should charge for it.

- The SNMMI consensus allows 78812 and 78815 to be reported with the following documentation, skull base to mid-thighs, skull base to pelvis, skull base to proximal thighs. The intent of skull base to mid-thigh is to capture the prior torso description and was intended to capture "multiple body areas" such as chest, abdomen and pelvis. The hips are part of the pelvis and the thighs are part of the hips, according to the anatomical reference, *Atlas of Human Anatomy*, by Dr Frank A. Netter. So, in documentation terms, if the code mentions "from the base of the skull to the thighs," the SNMMI believes that saying "from the base of the skull to the pelvis" is adequate documentation.
- At the time of publication, CMS had approved four studies for beta amyloid imaging, and participation in these studies are covered and reimbursed under the Medicare CED policy. Check the CMS web site for updates at *https://www.cms.gov/Medicare/Coverage/Coverage-with-Evidence-Development/Amyloid-PET.html*. Of note, the largest CED study approved by Medicare for beta-amyloid imaging to date was the Imaging Dementia Evidence for Amyloid Scanning (IDEAS) Clinical Registry. This study was closed for patient registrations on December 7, 2017. On December 17, 2020, the ACR opened a follow up study called New IDEAS: Imaging Dementia-Evidence for Amyloid Scanning Study, at the time of publication this study is open. Contact *newideas-participant@alz.org* or *newideas@acr.org* or go to *https://www.alz.org/research/new-ideas-study* or *http://www.ideas-study.org/* for more information on current or past clinical studies available.

78812 Positron emission tomography (PET) imaging; skull base to mid-thigh

GENERAL DEFINITION

This code is used when imaging is performed from the base of the skull to mid-thigh and is the most common body area to scan for PET procedures today. Previously, the HCPCS G PET codes identified some procedures as whole body or regional and providers, under this dual definition, used the G-code to report whole body or regional imaging. CPT is clear regarding the body area scanned and providers should pay close attention to the specified body area in the CPT code. Choose the single best CPT code based on the body area scanned.

TIPS

- For all PET procedures covered under a CMS-approved CED program (e.g., NOPR or IDEAS), hospital providers only must list condition code 30 and

place Z00.6 in the second diagnosis position. Additionally, all outpatient providers should append the Q0 (zero) modifier to both the CPT procedure code and the diagnostic radiopharmaceutical tracer to signify to Medicare, when a case is CED. Finally, add the eight-digit clinical trial number, which will be mandatory for claims with DOS on or after January 1, 2014. More information regarding the eight-digit mandatory requirement on claims forms for CED programs can be located at *http://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R2805CP.pdf*.

- Do not use this code for PET scans from head to lower leg imaging. Instead, use code 78813.
- The SNMMI consensus allows 78812 and 78815 to be reported with the following documentation, skull base to mid-thighs, skull base to pelvis, skull base to proximal thighs. The intent of skull base to mid-thigh is to capture the prior torso description and was intended to capture "multiple body areas" such as chest, abdomen and pelvis. According to the anatomical reference, *Atlas of Human Anatomy*, by Dr Frank A. Netter, the hips are part of the pelvis and the thighs are part of the hips. So, in documentation terms, if the code mentions "from the base of the skull to the thighs," the SNMMI believes that saying "from the base of the skull to the pelvis" is adequate documentation.
- Do not use this code when PET/CT is performed on an integrated system (hardware fusion) and the CT is used for both attenuation correction and anatomic localization. Instead see codes 78814–78816.
- Do not use this code when PET and full and complete diagnostic CT are performed on separate systems. Instead, use the appropriate independent PET and CT code, append modifier -59 to the CT code.
- When PET imaging is performed for oncologic reasons using radiopharmaceutical ^{18}F FDG, providers have appended one of the following two modifiers to identify initial treatment strategy (PI) or subsequent treatment strategy (PS). These modifiers should be appended to CPT procedure codes 78811–78816 and 78608.

  Modifier PI: PET or PET/CT to inform the initial treatment strategy of tumors that are biopsy proven or strongly suspected of being cancerous based on other diagnostic testing or

  Modifier 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.

  For those claims, date of service on or after June 11, 2013, for oncologic uses of PET or PET/CT studies with ^{18}FDG, those billings beyond (1) PI and/or (3) PS, with the same cancer diagnosis, during the patient's life, report **modifier KX-requirements specified the medical policy have been met**, to inform the payer that the provider has maintained documentation of medical necessity and rationale for these studies.

If the coverage is conditional under an approved CMS study such as NOPR, the Q0 (zero) is appended in addition to the PI or PS. Note hospital claims would also be required to submit the V70.7 in the second diagnosis position, as well as adding condition code 30 to the claim. For claims with DOS 10/1/2015 or after report ICD-10-CM code Z00.6 instead of V70.7.

- Providers billing Medicare for a sodium fluoride PET study in an approved CMS CED program must use one of the CPT codes 78811–78816 with a PI or PS modifier **AND** the Q0 (zero) CED modifier. Facilities place the V70.7 in the second diagnosis position; if billing technical or global, the HCPCS Level II A9580 must be on the same claim.
- For professional claims submitted for sodium fluoride PET bone imaging studies conducted in a CED program, use one of the CPT codes 78811–78816 with a PI or PS **AND** the Q0 (zero) CED modifier plus **modifier KX—requirements specified in the medical policy have been met.** This is to clarify to Medicare that the professional services met the requirements of an approved CMS CED program such as the National Oncologic PET Registry (NOPR). KX is not necessary on $Na^{18}F$ claims billed for global or technical services.
- For PET agents in a CED study, most Medicare contractors have been asking for placement of the Q0 (zero) modifier on the radiopharmaceutical HCPCS Level II code, (e.g., A9580, A9586, Q9982 and Q9983) in addition to placing the Q0 with the procedure code. Check with your local Medicare contractor on its policy.
- To bill Medicare in any setting for non-covered PET services, providers would choose HCPCS Level II code G0235—PET imaging, any site, not otherwise specified. Billing Medicare with this code should result in a claim denial. Providers who choose to have their patients sign advanced beneficiary notices (ABNs) before the studies are performed could then bill the patient for the non-covered Medicare service.

78813 Positron emission tomography (PET) imaging; whole body

GENERAL DEFINITION

This code is used when imaging is performed from the skull to lower legs and is most commonly used for indications such as melanoma. Previously, the HCPCS G PET codes identified some procedures as whole body or regional and providers, under this dual definition, used the G-code to report whole body or regional imaging. CPT is clear regarding the body area scanned, and providers should pay close attention to the specified body area in the CPT code. Choose the single best code based on the body area scanned.

TIPS

- For all PET procedures covered under a CMS-approved CED program (e.g., NOPR or IDEAS), hospital providers only must list condition code 30 and place Z00.6 in the second diagnosis position. Additionally, all outpatient

providers should append the Q0 (zero) modifier to both the CPT procedure code and the diagnostic radiopharmaceutical tracer to signify to Medicare, when a case is CED. Finally, add the eight-digit clinical trial number, which will be mandatory for claims with DOS on or after January 1, 2014. More information regarding the eight-digit mandatory requirement on claims forms for CED programs can be located at *http://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R2805CP.pdf*.

- Do not use this code for PET scans from base of skull (head) to thigh imaging, Instead, use code 78812.
- Do not use this code when PET/CT is performed on an integrated system (hardware fusion) and the CT is used for both attenuation correction and anatomic localization. Instead see CPT codes 78814–78816.
- Do not use this code when PET and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead, use UPC code 78999 for the image fusion.
- The SNMMI coding committee consensus opinion states: For PET and PET/CT imaging, historically the term whole-body was used to describe a variety of imaging protocols, and most often meant including the region from skull base to mid thigh, which is now coded CPT 78812, 78815. The SNMMI recommends that PET and PET/CT whole-body imaging (CPT 78813, 78816) include the region from the skull (vertex) to substantially below the knees, usually extending to the feet.
- When PET imaging is performed for oncologic reasons using radiopharmaceutical ^{18}F FDG, providers have appended one of the following two modifiers to identify initial treatment strategy (PI) or subsequent treatment strategy (PS). These modifiers should be appended to CPT procedure codes 78811–78816 and 78608, as appropriate.

  Modifier PI: PET or PET/CT to inform the initial treatment strategy of tumors that are biopsy proven or strongly suspected of being cancerous based on other diagnostic testing

  Modifier 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

  For those claims, date of service on or after June 11, 2013, for oncologic uses of PET or PET/CT studies with ^{18}FDG, those billings beyond (1) PI and/or (3) PS, with the same cancer diagnosis, during the patient's life, report **modifier KX-requirements specified the medical policy have been met**, to inform the payer that the provider has maintained documentation of medical necessity and rationale for these studies.

  If the coverage is conditional under an approved CMS study such as NOPR, the Q0 (zero) is appended in addition to the PI or PS. Note hospital claims would also be required to submit the V70.7 in the second diagnosis position, as well as adding condition code 30 to the claim. For claims with DOS 10/1/2015 or after report ICD-10-CM code Z00.6 instead of V70.7.

- Providers billing Medicare for a sodium fluoride PET study in an approved CMS CED program must use one of the CPT codes 78811–78816 with a PI or PS modifier **AND** the Q0 (zero) CED modifier. Facilities place the V70.7 in the second diagnosis position; if billing technical or global, the HCPCS Level II A9580 must be on the same claim. For claims with DOS 10/1/2015 or after report ICD-10-CM code Z00.6 instead of V70.7.
- For professional claims submitted for sodium fluoride PET bone imaging studies conducted in a CED program, use one of the CPT codes 78811–78816 with a PI or PS **AND** the Q0 (zero) CED modifier plus **modifier KX—requirements specified in the medical policy have been met.** This is to clarify to Medicare that the professional services met the requirements of an approved CMS CED program such as the National Oncologic PET Registry (NOPR). KX is not necessary on $Na^{18}F$ claims billed for global or technical services.
- For PET agents in a CED study, most Medicare contractors have been asking for placement of the Q0 (zero) modifier on the radiopharmaceutical HCPCS Level II code, (e.g., A9580, A9586, Q9982 and Q9983) in addition to placing the Q0 with the procedure code. Check with your local Medicare contractor on its policy.
- To bill Medicare in any setting for non-covered PET services, providers would choose HCPCS Level II code G0235—PET imaging, any site, not otherwise specified. Billing Medicare with this code should result in a claim denial. Providers who choose to have their patients sign advanced beneficiary notices (ABNs) before the studies are performed could then bill the patient for the non-covered Medicare service.

78814 Positron emission tomography (PET) with concurrently acquired computed tomography (CT) for attenuation correction and anatomical localization imaging; limited area (eg, chest, head/neck)

GENERAL DEFINITION

This code is used when a limited area such as the chest alone or neck alone are imaged and analyzed. In addition to PET imaging (defined above), the patient also has a CT study performed for anatomical localization of the area of interest. Following the diagnostic PET scan and CT (localization) study, these two data-sets are overlayed (i.e., "fused") to provide precise localization of the area examined.

TIPS

- For all PET procedures covered under a CMS-approved CED program (e.g., NOPR or IDEAS), hospital providers only must list condition code 30 and place Z00.6 in the second diagnosis position. Additionally, all outpatient providers should append the Q0 (zero) modifier to both the CPT procedure

code and the diagnostic radiopharmaceutical tracer to signify to Medicare, when a case is CED. Finally, add the eight-digit clinical trial number, which will be mandatory for claims with DOS on or after January 1, 2014. More information regarding the eight-digit mandatory requirement on claims forms for CED programs can be located at *http://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R2805CP.pdf*.

- Do not use this code when PET and full and complete diagnostic CT are performed on separate systems. Instead, use the appropriate PET and CT codes independently.
- Do not use this code when PET and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead, use UPC 78999 for the image fusion.
- This code does include CT for both attenuation correction and anatomic localization (i.e., fusion imaging). Do not charge separately for diagnostic CT imaging unless a full and complete diagnostic CT scan (i.e., not just fusion imaging) is ordered and performed. If a full and complete diagnostic CT is ordered and performed, assign the anatomic site-specific CT code, append the CT code with modifier -59, in addition to the appropriate PET or PET/CT code.
- When PET imaging is performed for oncologic reasons using radiopharmaceutical ^{18}F FDG, providers have appended one of the following two modifiers to identify initial treatment strategy (PI) or subsequent treatment strategy (PS). These modifiers should be appended to CPT procedure codes 78811–78816 and 78608, as appropriate.

  Modifier PI: PET or PET/CT to inform the initial treatment strategy of tumors that are biopsy proven or strongly suspected of being cancerous based on other diagnostic testing

  Modifier 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

  For those claims, date of service on or after June 11, 2013, for oncologic uses of PET or PET/CT studies with ^{18}FDG, those billings beyond (1) PI and / or (3) PS, with the same cancer diagnosis, during the patient's life, report **modifier KX-requirements specified the medical policy have been met**, to inform the payer that the provider has maintained documentation of medical necessity and rationale for these studies.

  If the coverage is conditional under an approved CMS study such as NOPR, the Q0 (zero) is appended in addition to the PI or PS. Note hospital claims would also be required to submit the Z00.6 in the second diagnosis position, as well as adding condition code 30 to the claim.
- Providers billing Medicare for a sodium fluoride PET study in an approved CMS CED program must use one of the CPT codes 78811–78816 with a PI or PS modifier **AND** the Q0 (zero) CED modifier on both the procedure and the diagnostic radiopharmaceutical HCPCS code. Facilities place

the Z00.6 in the second diagnosis position; if billing technical or global, the HCPCS Level II A9580 must be on the same claim.

- For professional claims submitted for sodium fluoride PET bone imaging studies conducted in a CED program, use one of the CPT codes 78811–78816 with a PI or PS **AND** the Q0 (zero) CED modifier plus **modifier KX—requirements specified in the medical policy have been met.** This is to clarify to Medicare that the professional services met the requirements of an approved CMS CED program such as the National Oncologic PET Registry (NOPR). KX is not necessary on sodium fluoride claims billed for global or technical services.
- For PET agents in a CED study, most Medicare contractors have been asking for placement of the Q0 (zero) modifier on the radiopharmaceutical HCPCS Level II code, (e.g., A9580, A9586, Q9982 and Q9983) in addition to placing the Q0 with the procedure code. Check with your local Medicare contractor on its policy.
- To bill Medicare in any setting for non-covered PET services, providers would choose HCPCS Level II code G0235—PET imaging, any site, not otherwise specified. Billing Medicare with this code should result in a claim denial. Providers who choose to have their patients sign advanced beneficiary notices (ABNs) before the studies are performed could then bill the patient for the non-covered Medicare service.
- There are three FDA-approved beta-amyloid diagnostic PET agents. Of importance, on September 30, 2013, CMS published a NCD to cover one PET scan to exclude AD but only for patients participating in specific clinical studies under a Coverage with Evidence Development (CED) program, which grants conditional reimbursement upon collection of specific data. Providers must participate and meet the required elements of a study for Medicare to cover and pay for these services. It is important to keep documentation in your billing files regarding participation in these CED studies for the patient records.

BETA-AMYLOID PLAQUE IMAGING

To report beta-amyloid plaque imaging, the SNMMI recommends, and CMS confirmed in transmittals, one of the following two CPT codes based on the protocol and equipment utilized, which applies to all settings and payers.

78811 Positron emission tomography (PET) imaging; limited area (e.g., chest, head/neck)

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

HCPCS FOR AMYVID™

When using the radiopharmaceutical Amyvid™, hospital outpatient departments, IDTFs, physician offices, and TPPs should assign HCPCS Level II code A9586. Remember, only those incurring the expense for (i.e., paying for) this item should charge for it.

HCPCS FOR VIZAMYL™

When using the radiopharmaceutical Vizamyl™, hospital outpatient departments IDTFs, physician offices, and TPPs should assign HCPCS Level II code Q9982. Remember, only those incurring the expense for (i.e., paying for) this item should charge for it.

HCPCS FOR NEURACEQ™

When using the radiopharmaceutical Neuraceq™, hospital outpatient departments, IDTFs, physician offices, and TPPs should assign HCPCS Level II code Q9983. Remember, only those incurring the expense for (i.e., paying for) this item should charge for it.

- At the time of publication, CMS had approved four studies for beta amyloid imaging, and participation in these studies are covered and reimbursed under the Medicare CED policy. Check the CMS web site for updates at *https://www.cms.gov/Medicare/Coverage/Coverage-with-Evidence-Development/Amyloid-PET.html*. Of note, the largest CED study approved by Medicare for beta-amyloid imaging to date was the Imaging Dementia Evidence for Amyloid Scanning (IDEAS) Clinical Registry. This study was closed for patient registrations on December 7, 2017. On December 17, 2020, the ACR opened a follow up study called New IDEAS: Imaging Dementia-Evidence for Amyloid Scanning Study, at the time of publication this study is open. Contact *newideas-participant@alz.org* or *newideas@acr.org* or go to *https://www.alz.org/research/new-ideas-study* or *http://www.ideas-study.org/* for more information on current or past clinical studies available.

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

GENERAL DEFINITION

This code is used when imaging is performed from the base of the skull to mid-thigh and is the most common body area to scan for PET procedures today. In addition to PET imaging (defined above), the patient also has a CT study

performed for anatomical localization of the area(s) of interest. Following the diagnostic PET scan and CT (localization) study, these two data-sets are overlaid (i.e., "fused") to provide precise localization of the area examined.

TIPS

- For all PET procedures covered under a CMS-approved CED program (e.g., NOPR or IDEAS), hospital providers only must list condition code 30 and place Z00.6 in the second diagnosis position. Additionally, all outpatient providers should append the Q0 (zero) modifier to both the CPT procedure code and the diagnostic radiopharmaceutical tracer to signify to Medicare, when a case is CED. Finally, add the eight-digit clinical trial number, which will be mandatory for claims with DOS on or after January 1, 2014. More information regarding the eight-digit mandatory requirement on claims forms for CED programs can be located at *http://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R2805CP.pdf*.
- The SNMMI consensus allows 78812 and 78815 to be reported with the following documentation, skull base to mid-thighs, skull base to pelvis, skull base to proximal thighs. The intent of skull base to mid-thigh is to capture the prior torso description and was intended to capture "multiple body areas" such as chest, abdomen and pelvis. According to the anatomical reference, *Atlas of Human Anatomy*, by Dr Frank A. Netter, if providers get through the base of the pelvis, they are imaging the hips, which is part of the thigh and together with the imaging from the base of skull would be sufficient documentation to report 78812 or 78815 accordingly.
- Do not use this code when PET and full and complete diagnostic CT are performed on separate systems. Instead, use the appropriate PET and CT codes independently.
- Do not use this code when PET and CT are performed on separate systems, and software (software fusion) is utilized to perform anatomic localization. Instead use UPC 78999 for the image fusion.
- This code does include CT for both attenuation correction and anatomic localization (i.e., fusion imaging). Do not charge separately for diagnostic CT imaging unless a full and complete diagnostic CT scan (i.e., not just fusion imaging) is ordered and performed. If a full and complete diagnostic CT is ordered and performed, assign the anatomic site-specific CT code, append the CT code with modifier -59, in addition to the appropriate PET or PET/CT code.
- When PET imaging is used for oncologic reasons with radiopharmaceutical ^{18}F FDG, providers have appended one of the following two modifiers to identify initial treatment strategy (PI) or subsequent treatment strategy (PS). These modifiers should be appended to CPT procedure codes 78811–78816 and 78608, as appropriate.

Modifier PI: PET or PET/CT to inform the initial treatment strategy of tumors that are biopsy proven or strongly suspected of being cancerous based on other diagnostic testing

Modifier 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

For those claims, date of service on or after June 11, 2013, for oncologic uses of PET or PET/CT studies with ^{18}FDG, those billings beyond (1) PI and / or (3) PS, with the same cancer diagnosis, during the patient's life, report **modifier KX-requirements specified the medical policy have been met**, to inform the payer that the provider has maintained documentation of medical necessity and rationale for these studies.

Providers billing Medicare for a sodium fluoride PET study in an approved CMS CED program must use one of the CPT codes 78811–78816 with a PI or PS modifier AND the Q0 (zero) CED modifier on both the procedure and the diagnostic radiopharmaceutical HCPCS code. Facilities place the Z00.6 in the second diagnosis position; if billing technical or global, the HCPCS Level II A9580 must be on the same claim.

- Providers billing Medicare for a sodium fluoride PET study in an approved CMS CED program must use one of the CPT codes 78811–78816 with a PI or PS modifier **AND** the Q0 (zero) CED modifier. Facilities place the V70.7 in the second diagnosis position; if billing technical or global, the HCPCS Level II A9580 must be on the same claim. For claims with DOS 10/1/2015 or after report ICD-10-CM code Z00.6 instead of V70.7.
- For professional claims submitted for sodium fluoride PET bone imaging studies conducted in a CED program, use one of the CPT codes 78811–78816 with a PI or PS **AND** the Q0 (zero) CED modifier plus **modifier KX—requirements specified in the medical policy have been met.** This is to clarify to Medicare that the professional services met the requirements of an approved CMS CED program such as the National Oncologic PET Registry (NOPR). KX is not necessary on sodium fluoride claims billed for global or technical services.
- For PET agents in a CED study, most Medicare contractors have been asking for placement of the Q0 (zero) modifier on the radiopharmaceutical HCPCS Level II code, (e.g., A9580, A9586, Q9982 and Q9983) in addition to placing the Q0 with the procedure code. Check with your local Medicare contractor on its policy.
- To bill Medicare in any setting for non-covered PET services, providers would choose HCPCS Level II code G0235—PET imaging, any site, not otherwise specified. Billing Medicare with this code should result in a claim denial. Providers who choose to have their patients sign advanced beneficiary notices (ABNs) before the studies are performed could then bill the patient for the non-covered Medicare service.

CASE: NUCLEAR MEDICINE PET-CT

CLINICAL HISTORY

65-year-old male with squamous cell lung carcinoma recently diagnosed. Patient has history of adenopathy in the chest and the abdomen seen on recent CT scan.

PROCEDURE

Patient received 17.81 mCi of F-18 FDG intravenously injected in the right hand at 9:22 AM without complication. No PET-CT comparison studies are available. CT scan from earlier this week is available for review. PET-CT imaging is obtained from the skull base to the patients' knees.

IMPRESSION

Physiological uptake is noted in the oropharynx. There are multiple foci of abnormal uptake consistent with the patients known adenopathy. There is a focus in the posterior right mid cervical region with a maximal SUV of 6.7. There are several small foci in the right thoracic inlet with maximal SUV of 5.4. There are multiple foci of abnormal uptake within the mediastinum and hila consistent with extensive adenopathy. Maximal SUV in the subcarinal region is 10.1. Maximal SUV in the left hila is 16.5. Maximal SUV in the right hila is 10.9. Maximal SUB in the middle mediastinum is 15. 9. There is a small pulmonary nodule in the left mid lung with a maximal SUV of 6.7. There are dominant soft tissue mass lesions in both lower lungs medially which do not demonstrate any appreciable increase uptake. Calcified pleural plaque is again noted. No other areas of abnormal update are identified with in any pulmonary nodules. There is abnormal uptake without adenopathy in the region of the EG junction with a maximal SUV is 12. There is also some increased uptake within the retroperitoneal lymph nodes with maximal SUV of 6. Cholelithiasis is noted. Normal distribution of uptake is noted within the liver and spleen. Increased uptake within a lymph node in the left pelvis region with a maximal SUV of 5.7.

In summary;

1. Extensive abnormal uptake within adenopathy in the neck, chest, abdomen, and pelvis consistent with metastatic disease.
2. Small focus of increased uptake within a nodule in the left mid lung, which, although very small, me be the site of patient's primary lesion.
3. No appreciable abnormal uptake is seen within patient pulmonary mess lesions in the lower medial aspect of both lungs.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78815-PI	1	2	1
A9552	1	3	1

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

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

GENERAL

This code is used when imaging is performed from the skull to lower legs and is the most commonly used for indications such as melanoma, among others. In addition to PET imaging (defined above), the patient also has a CT study performed for anatomical localization of the area(s) of interest. Following the diagnostic PET scan and CT (localization) study, these two data-sets are merged (i.e., fused) to provide precise localization of the area examined.

TIPS

- For all PET procedures covered under a CMS-approved CED program (e.g., NOPR or IDEAS), hospital providers only must list condition code 30 and place Z00.6 in the second diagnosis position. Additionally, all outpatient providers should append the Q0 (zero) modifier to both the CPT procedure code and the diagnostic radiopharmaceutical tracer to signify to Medicare, when a case is CED. Finally, add the eight-digit clinical trial number, which will be mandatory for claims with DOS on or after January 1, 2014. More information regarding the eight-digit mandatory requirement on claims forms for CED programs can be located at *http://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R2805CP.pdf*.
- Do not use this code when PET and full and complete diagnostic CT are performed on separate systems. Instead, use the appropriate PET and CT codes independently.
- Do not use this code when PET and CT are performed on separate systems and software (software fusion) is utilized to perform anatomic localization. Instead use UPC 78999 for the image fusion.
- This code does include CT for both attenuation correction and anatomic localization (i.e., fusion imaging). Do not charge separately for diagnostic CT imaging unless a full and complete diagnostic CT scan (i.e., not just fusion imaging) is ordered and performed. If a full and complete diagnostic CT is ordered and performed, assign the anatomic site-specific CT code, append the CT code with modifier -59, in addition to the appropriate PET or PET/CT code.

- The SNMMI coding committee consensus opinion states: For PET and PET/CT imaging, historically the term whole-body was used to describe a variety of imaging protocols and most often meant including the region from skull base to mid thigh, which is now coded CPT 78812, 78815. The SNMMI recommends that PET and PET/CT whole-body imaging (CPT 78813, 78816) include the region from the skull (vertex) to substantially below the knees, usually extending to the feet.
- When PET imaging is used for oncologic reasons with radiopharmaceutical ^{18}F FDG, providers have appended one of the following two modifiers to identify initial treatment strategy (PI) or subsequent treatment strategy (PS). These modifiers should be appended to CPT procedure codes 78811–78816 and 78608, as appropriate.

  Modifier PI: PET or PET/CT to inform the initial treatment strategy of tumors that are biopsy proven or strongly suspected of being cancerous based on other diagnostic testing

  Modifier 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

  For those claims, date of service on or after June 11, 2013, for oncologic uses of PET or PET/CT studies with ^{18}FDG, those billings beyond (1) PI and / or (3) PS, with the same cancer diagnosis, during the patient's life, report **modifier KX-requirements specified the medical policy have been met**, to inform the payer that the provider has maintained documentation of medical necessity and rationale for these studies.
- Providers billing Medicare for a sodium fluoride PET study in an approved CMS CED program must use one of the CPT codes 78811–78816 with a PI or PS modifier **AND** the Q0 (zero) CED modifier on both the procedure and the diagnostic radiopharmaceutical HCPCS code. Facilities place the Z00.6 in the second diagnosis position. (For claims with a DOS before 10/1/2015, report V70.7 in the second diagnosis position.) If billing technical or global, the HCPCS Level II A9580 must be on the same claim.
- For professional claims submitted for sodium fluoride PET bone imaging studies conducted in a CED program, use one of the CPT codes 78811–78816 with a PI or PS **AND** the Q0 (zero) CED modifier plus **modifier KX—requirements specified in the medical policy have been met.** This is to clarify to Medicare that the professional services met the requirements of an approved CMS CED program such as the National Oncologic PET Registry (NOPR). KX is not necessary on sodium fluoride claims billed for global or technical services.
- For PET agents in a CED study, most Medicare contractors have been asking for placement of the Q0 (zero) modifier on the radiopharmaceutical HCPCS Level II code, (e.g., A9580, A9586, Q9982 and Q9983) in addition to placing the Q0 with the procedure code. Check with your local Medicare contractor on its policy.

- To bill Medicare in any setting for non-covered PET services, providers would choose HCPCS Level II code G0235—PET imaging, any site, not otherwise specified. Billing Medicare with this code should result in a claim denial. Providers who choose to have their patients sign advanced beneficiary notices (ABNs) before the studies are performed could then bill the patient for the non-covered Medicare service.

CASE: NUCLEAR MEDICINE FDG PET/CT IMAGING

CLINICAL HISTORY

The patient is an 89-year-old female with history of anal melanoma diagnosed by biopsy 5/1/17. Remote history of lung carcinoma, with prior radiation therapy in 2011. The patient presents for staging/initial therapy encounter.

PROCEDURE

Comparison: 10/1/15.

Technique: An unenhanced nondiagnostic CT scan was obtained for the purposes of attenuation correction and anatomic correlation. 60 minutes following the intravenous injection of 11.5 millicuries of F-18 fluorodeoxyglucose, PET images were acquired from the skull vertex through the feet. The blood glucose level at the time of injection was 100 mg/dL. Axial, sagittal, and coronal reconstructions were interpreted with and without attenuation correction. Fusion of the CT and PET were processed.

IMPRESSION

Head/neck: No hypermetabolic mass or adenopathy.

Chest: There is mild FDG activity in the superior right hilum, SUV max 3.3. Previous right hilar SUV max 3.3. In the left hilum, SUV max 2.9. Previously, 2.8. Therefore, likely reactive or inflammatory.

No FDG-avid pulmonary parenchymal abnormality. Stable non-FDG avid subpleural nodule in the posterior right lung base, measuring 6 mm.

Abdomen: No hypermetabolic intrahepatic space-occupying lesion.

Retroperitoneal adenopathy has developed, with increased metabolic activity. Lower right para¬aortic lymph node measures 1.9 cm, SUV max 11.3. Lower left posterolateral para-aortic lymph node, SUV max 5.5, measuring 1.8 cm. Small interaortocaval lymph node, SUV max 5.6, measuring 1.3 cm. Left periaortic lymph node, 1.8 cm, SUV max 3.5.

Non-FDG avid mild thickening of the adrenal glands. Non-FDG avid low-attenuation posterior upper pole right renal cyst. Surgical clips from prior cholecystectomy.

Lower abdominal aortic aneurysm, maximum diameter 4.3 cm. Unchanged.

Pelvis: Small hypermetabolic left iliac lymph node, SUV max 6, measuring 1. 6 cm.

Continued on next page

Continued from previous page

Small left inguinal lymph nodes. Medial. lymph node, SUV max 3.3. Lateral lymph node, SUV max 4.1.

Measuring 1 cm and 1.5 cm, respectively. Left external iliac lymph node, SUV max 2.8, measuring 1.3 cm.

Left paramidline focus of likely perianal FDG activity, SUV max 6.3

Extremities: Just above the level of the right knee, along the posteromedial margin, there is a small focus of FDG, SUV max 1.4, contiguous with the greater saphenous vein. Uncertain if this represents a soft tissue nodule or focal varicose distention of the vein. Mild focal FDG accumulation is demonstrated , SUV max 1.3, also along the greater saphenous vein where there is mild distention at the approximate level of the tibial plateau. Further evaluation recommended with ultrasound to determine if this represents a soft tissue nodule or more likely localized varicosity of the vein.

CONCLUSION

Left paramidlin perianal FDG focus, likely corresponding to the reported primary neoplasm.

Retroperitoneal hypermetabolic metastatic adenopathy. Left inguinal and pelvic mild hypermetabolic metastatic adenopathy.

2 foci of FDG about the right knee contiguous with the greater saphenous vein, as described. Probably localized varicosity of the vein. However, further evaluation with ultrasound would be recommended to exclude the less likely possibility of a soft tissue nodular component.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
78816-PI	1	2	1
A9552	1	3	1

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

HCPCS Level II Codes for PET Imaging

Per previously issued instructions from CMS, providers may use the following G codes for non-covered PET services for Medicare patients.

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

GENERAL DEFINITION

Use this code for Medicare patients presenting for PET studies with non-covered melanoma indications. The CMS NCD defines a NON-covered policy regarding PET studies for patients with melanoma for initial staging of regional lymph nodes. Refer to the Medicare coverage manual for details at the end of this section.

G0235 PET imaging, any site, not otherwise specified

GENERAL DEFINITION

Use this code for Medicare patients presenting with other non-covered PET indications that do not have a specific HCPCS level II code. The CMS NCD for PET imaging is an exclusionary policy.

Section 220.6 of the *Medicare National Coverage Determinations Manual*, (chapter 1, part 4, sections 200-310.1, lists all Medicare-covered uses of PET scans. Except as set forth in cancer indications listed as "Coverage with Evidence Development" a particular use of PET scans is not covered unless the manual specifically says it is covered. Although section 220.6 lists some non-covered uses of PET scans, it does not constitute an exhaustive list of all non-covered users. Refer to the Medicare coverage manual for details at the end of this section.

TIPS

- Use this code for a PET bone scan using $Na^{18}F$ or amyloid agents on Medicare patients when NOT participating in a CMS-approved CED program.
- To bill Medicare in any setting for non-covered PET services, providers would choose HCPCS Level II code G0235—PET imaging, any site, not otherwise specified. Billing Medicare with this code should result in a claim denial. Providers who choose to have their patients sign advanced beneficiary notices (ABNs) before the studies are performed could then bill the patient for the non-covered Medicare service.

G0252 PET imaging, full and partial-ring pet scanners only, for initial diagnosis of breast cancer and/or surgical planning for breast cancer (e.g., initial staging of axillary lymph nodes)

GENERAL DEFINITION

Use this code for Medicare patients presenting for PET studies with non-covered breast cancer indications. The CMS NCD defines a NON-covered policy regarding PET studies for the diagnosis of breast cancer or for initial staging axillary lymph nodes on patients with breast cancer. Refer to the Medicare coverage manual for details at the end of this section.

Coverage with Evidence Development and National Oncologic PET Registry

The NOPR was sponsored by the Academy of Molecular Imaging (AMI) and is managed by the American College of Radiology (ACR) through the American College of Radiology Imaging Network (ACRIN). Other endorsing professional organizations include the American Society of Clinical Oncology (ASCO) and the SNMMI. The NOPR was a national, Internet-based, audited data repository that is designed to gather PET data from beneficiaries and providers and to report on that data.

The goals of coverage of evidence development (CED) policy and the NOPR are to link coverage "payment" with prospective data collection. CED extends the concept of medical necessity for promising, potentially high-value technology. These studies can improve evidence available to patients, clinicians and policymakers to better target treatments to subpopulations when the greatest benefit is proven in medical practice and medical literature.

The NCD and Medicare coverage for NaF-PET (under CED) expired on December 14, 2017 at midnight EST. The NOPR web site stopped accepting new case registrations on **December 15, 2017**.

For more information check the CMS national coverage policy for any updates per section 220.6.19 of the *NCD Manual*. The CED policy continues under NOPR for NaF-18 PET and PET/CT for bone metastasis per section 220.6.19 of the *NCD Manual*.

PET Medicare NCD

On January 1, 1998, CMS began a long-drawn-out process of determining Medicare coverage for PET studies. This evolution is ongoing, on an organ or indication basis today. Because of the complexity of the PET NCD's coverage and required coding, providers of PET imaging services must review the NCD carefully and code their claims appropriately and accordingly. In this section, we have summarized the Medicare NCD with highlights and tables that are current at the time of publication. The Medicare coverage polices are expected to continue to change; therefore, we recommend that all providers of PET services check for updates at one or all of the following on a regular basis: the SNMMI coding corner (*www.snmmi.org*), the NOPR website (*www.cancerPET-TRegistry.org*), the IDEAS website (*www.ideas-study.org*), and Medicare manuals and Medicare manuals and at the CMS websites provided below:

- *Medicare National Coverage Determinations Manual* (Publication 100-03), Chapter 1, Section 220.6 (PET Scans) at *http://www.cms.hhs.gov/Manuals/IOM/list.asp*
- *Medicare Claims Processing Manual* (Publication 100-04), Chapter 13, Section 60.3 at *http://www.cms.hhs.gov/Manuals/IOM/list.asp*

In addition to these resources, be sure to check the following transmittals:

- For information on payment for ^{18}F FDG PET scans in ***CMS-approved clinical trials with CED use of QR and QV modifiers***, see Transmittal R956CP (CR 5124, May 19, 2006) at *http://www.cms.gov/transmittals/downloads/R956CP.pdf*.
- For revised information on ^{18}F FDG PET ***coding tracers***, see Transmittal R1301CP (CR 5665, July 20, 2007) at *http://www.cms.gov/Transmittals/Downloads/R1301CP.pdf*.
- For information on ^{18}F FDG PET ***cervical cancer***, see Transmittal 1888 (CR 6753, January 6, 2010) at *http://www.cms.gov/transmittals/downloads/R1888CP.pdf*.
- For information on ^{18}F FDG PET ***for solid tumors and myeloma new framework***, see Transmittal R120NCD (CR 6632, May 6, 2010) at *http://www.cms.hhs.gov/transmittals/Downloads/R120NCD.pdf*.
- For information on ^{18}F FDG PET for ***Initial Treatment Strategy (PI) in Solid Tumors and Myeloma***, see Transmittal 124 (CR 7148 September 24, 2010) at *http://www.cms.gov/transmittals/downloads/R124NCD.pdf*.

- For information on ***Billing Clarification for (NaF-18) PET (Sodium Fluoride -18) PET for Identify Bone Metastasis of Cancer in Context of a Clinical Trial***, see Transmittal 2096 (CR 7125, November 19, 2010) at *http://www.cms.gov/transmittals/downloads/R2096CP.pdf*.
- FDG claims with DOS on or after June 11, 2013, FDG PET and FDG PET/CT claims, (codes 78608, 78811–78816 and HCPCS A9552, for all oncologic conditions, no longer require the Q0 [zero] modifier.
- For information on **FDG PET post NOPR for solid tumors** effective June 11, 2013, see:
  - Transmittal 168 (issued May 28, 2014) at *http://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R168NCD.pdf*
  - Transmittal 2932 (CR 8739) at *http://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R2932CP.pdf* (issued April 18, 2014).
- For information on the **Medicare NCD for Beta Amyloid PET in dementia and neurodegenerative disease**, see:
  - Transmittal 164 updates the *NCD Manual*, and it is available at found at *http://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R164NCD.pdf*.
  - Transmittal 2915 (CR 8526, issued March 27, 2014) updates the *Medicare Claims Processing Manual*, and it is available at *http://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R2915CP.pdf*.
- For information on the **mandatory reporting of an eight-digit clinical trial number** on claims (currently in use for all CED programs, such as NaF-18 and Beta Amyloid: *http://clinicaltrials.com/*), see:
  - Transmittal 2955 (CR 8401, May 13, 2014) at *http://www.cms.gov/transmittals/downloads/R2955CP.pdf*
- For information on removal of **general guidance for NCD 220.6** Positron Emission Tomography (PET) scans (Note: this change does not impact any PET-related NCDs currently covered or non-covered under *NCD 220.6 see Transmittal 11426, (change request CR 12613 dated May 20, 2022)*.
- For information on **retirement of Infection and Inflammation** policy, see *Transmittal 10927* (change request 12254 dated August 21, 2021). The local A/B MAC contractors shall determine coverage for NCD 220.6.16 FDG PET for Inflammation and Infection, effective for claims with dates of service on and after January 1, 2021.

In general for PET studies, if Medicare covers a procedure, providers use a CPT procedure code; for non-covered procedures, use a HCPCS level II procedure code. If there is an organ or indication specific to the AMA's CPT system or CMS's HCPCS level II code system, the more specific code takes precedence over the general code (e.g., brain PET, cardiac PET; Medicare non-covered indications). For third-party payers, use CPT procedure codes exclusively unless instructed otherwise by the payer. For radiopharmaceuticals, as with any nuclear medicine procedure, bill the HCPCS Level II radiopharmaceutical codes in addition to the procedure codes.

On March 7, 2013, CMS modified the exclusionary clause for certain PET studies in section 200.6 of the *Medicare NCD Manual*. The guidance states, "Unless there is a specific national coverage determination, local Medicare Administrative Contractors (MACs) may determine coverage within their respective jurisdictions for PET using radiopharmaceuticals for their FDA-approved labeled indications for oncologic imaging for products approved by the FDA after September 1, 2012."

- The effect of this decision is to remove the national non-coverage for FDA labeled oncologic uses of PET radiopharmaceuticals (approved after September 1, 2012) that are not more specifically determined nationally. This NCD PET policy affects PET tracers, such as C-11 Choline, that was FDA-approved on September 12, 2012; therefore, coverage for this product will be a the local Medicare contractor discretion.
- This decision does not change coverage for any use of PET using radiopharmaceuticals F-18 FDG, NaF-18 sodium fluoride, ammonia N-13, or rubidium-82 (Rb-82).
- This decision does not prevent CMS from determining national coverage for any uses of any radiopharmaceuticals in the future. If such determinations are made, a future determination would supersede local contractor determination.

CMS emphasized each of the following points in the decision:

- Changing the "restrictive" language of prior PET decisions will not by itself suffice to expand Medicare coverage to new PET radiopharmaceuticals.
- The scope of this change extends only to FDA-approved indications for oncologic uses of PET tracers.
- This change does not include screening uses of PET scanning.

It also acknowledged the advances relating to the assessment of diagnostic performance and patient safety, as pioneered by the FDA in its regulatory policies and guidelines for diagnostic PET imaging agents and systems during the past decade. CMS noted for completeness that local coverage cannot be in conflict with NCDs or other national policies. Finally, that future CMS NCDs, if any, regarding diagnostic PET imaging would not be precluded by this NCD.

The NCD is binding on local Medicare administrative contractors (MACs). However, MACs have discretion regarding setting rates for carrier-priced codes, setting frequency limits, when not specified in the NCD, post pay review and selection of ICD-10 codes that represent the NCD, when not specified.

Periodically, CMS publishes updates to the ICD-10 codes included in the NCD for PET services. These tables can be found at *https://www.cms.gov/Medicare/Coverage/CoverageGenInfo/ICD10.html*. (See section 220.6.xx.)

Cardiac PET Coverage

PET SCANS FOR IMAGING PERFUSION OF THE HEART

Section 200.6.1 of the Medicare NDC Manual

Beginning on dates of service (DOS) on or after March 14, 1995, Medicare covers one PET scan for imaging for the diagnosis and management of patients with known or suspected coronary artery disease for the perfusion of the heart using rubidium 82 (^{82}Rb).

On or after October 1, 2003, it covers one PET scan using ammonia (^{13}N) provided that the following conditions are met:

- The PET is done at a PET imaging center with a PET scanner that has been approved by the FDA;
- The PET scan is a rest-alone or rest-with-pharmacologic-stress PET scan, used for non-invasive imaging of heart perfusion for the diagnosis and management of patients with known or suspected coronary artery disease using ^{82}Rb; and
- Either the PET scan is used in place of, but not in addition to, a single photon emission computed tomography (SPECT) or the PET scan is used following a SPECT that was found inconclusive.

FDG PET SCANS FOR MYOCARDIAL VIABILITY

Section 200.6.8 of the Medicare NDC Manual

Beginning October 1, 2002, Medicare covers FDG PET for the determination of myocardial viability as a primary or initial diagnostic study prior to revascularization, or following an inconclusive SPECT. Studies performed by full or partial ring scanners are covered. The identification of a patient with partial loss of heart muscle movement or hibernating myocardium is important in selecting candidates with compromised ventricular function to determine appropriates for revascularization. FDG PET distinguishes between dysfunctional but viable myocardial tissue and scar tissue in order to affect management decisions in patients with ischemic cardiomyopathy and left ventricular dysfunction.

Neurological PET Coverage

FDG PET FOR REFRACTORY SEIZURES

Section 200.6.9 of the Medicare NDC Manual

Beginning July 1, 2001, Medicare covers FDG PET for pre-surgical evaluation for the purpose of localization of a focus of refractory seizure activity. Note, that it is only covered for pre-surgical evaluation. Documentation that these conditions are met should be maintained by the referring physician in the beneficiary's medical record, as is normal business practice.

FDG PET FOR DEMENTIA AND NEURODEGENERATIVE DISEASES

Section 200.6.13 of the Medicare NDC Manual

Medicare covers FDG PET scans for one of the following: 1) the differential diagnosis of fronto-temporal dementia (FTD) and Alzheimer's disease (AD) under specific requirements, or 2) its use in a CMS-approved practical clinical trial focused on the utility of FDG PET in the diagnosis or treatment of dementing neurodegenerative diseases. Specific requirements for each indication are clarified below.

FDG PET REQUIREMENTS FOR COVERAGE IN THE DIFFERENTIAL DIAGNOSIS OF AD AND FTD

- An FDG PET scan is considered reasonable and necessary in patients with a recent diagnosis of dementia and documented cognitive decline of at least six months who meet diagnostic criteria for both AD and FTD. These patients have been evaluated for specific alternate neurodegenerative diseases or other causative factors, but the cause of the clinical symptoms remains uncertain.

  The following additional conditions must be met before an FDG PET scan will be covered:
- The patient's onset, clinical presentation, or course of cognitive impairment is such that FTD is suspected as an alternative neurodegenerative cause of the cognitive decline. Specifically, symptoms such as social disinhibition, awkwardness, difficulties with language, or loss of executive function are more prominent early in the course of FTD than the memory loss typical of AD.
- The patient has had a comprehensive clinical evaluation (as defined by the American Academy of Neurology [AAN]) encompassing a medical history from the patient and a well-acquainted informant (including assessment of activities of daily living), physical and mental status examination (including formal documentation of cognitive decline occurring over at least 6 months) aided by cognitive scales or neuropsychological testing, laboratory tests, and structural imaging such as MRI or CT.
- A physician experienced in the diagnosis and assessment of dementia has conducted the patient evaluation, which did not clearly determine a specific neurodegenerative disease or other cause for the clinical symptoms. Also, the information available through FDG PET is reasonably expected to help clarify the diagnosis between FTD and AD and help guide future treatment.

- The FDG PET scan is performed in a facility that has all the accreditation necessary to operate nuclear medicine equipment. The reading of the scan should be done by an expert in nuclear medicine, radiology, neurology, or psychiatry who has experience interpreting such scans in the presence of dementia.
- A brain single photon emission computed tomography (SPECT) or FDG PET scan has not been obtained for the same indication. (The indication can be considered to be different in patients who exhibit important changes in scope or severity of cognitive decline, and meet all other qualifying criteria listed above and below [including the judgment that the likely diagnosis remains uncertain]. The results of a prior SPECT or FDG PET scan must have been inconclusive or, in the case of SPECT, difficult to interpret due to immature or inadequate technology. In these instances, an FDG PET scan may be covered after one year has passed from the time the first SPECT or FDG PET scan was performed.)
- The referring and billing provider(s) have documented the appropriate evaluation of the Medicare beneficiary. Providers should establish the medical necessity of an FDG PET scan by ensuring that the following information has been collected and is maintained in the beneficiary medical record:
    - Date of onset of symptoms;
    - Diagnosis of clinical syndrome (normal aging; mild cognitive impairment (MCI); mild, moderate or severe dementia);
    - Mini mental status exam (MMSE) or similar test score;
    - Presumptive cause (possible, probable, uncertain AD);
    - Any neuropsychological testing performed;
    - Results of any structural imaging (MRI or CT) performed;
    - Relevant laboratory tests (B_{12}, thyroid hormone); and
    - Number and name of prescribed medications.

The billing provider must furnish a copy of the FDG PET scan result for use by CMS and its contractors upon request. These verification requirements are consistent with federal requirements set forth in Title 42 of the *Code of Federal Regulations*, section 410.32 (which, generally, covers diagnostic x-ray tests, diagnostic laboratory tests, and other tests).

FDG PET REQUIREMENTS FOR COVERAGE IN THE CONTEXT OF A CMS-APPROVED PRACTICAL CLINICAL TRIAL UTILIZING A SPECIFIC PROTOCOL TO DEMONSTRATE THE UTILITY OF FDG PET IN THE DIAGNOSIS AND TREATMENT OF NEURODEGENERATIVE DEMENTING DISEASES

An FDG PET scan is considered reasonable and necessary in patients with MCI or early dementia only in the context of an approved clinical trial approved by CMS. The approved CMS clinical trial must compare patients who

do and do not receive an FDG PET scan and have as its goal to monitor, evaluate, and improve clinical outcomes. In addition, it must meet the following basic criteria:

- Written protocol on file;
- Institutional Review Board review and approval;
- Scientific review and approval by two or more qualified individuals who are not part of the research team; and,
- Certification that investigators have not been disqualified.

All other uses of FDG PET for patients with a presumptive diagnosis of dementia-causing neurodegenerative disease (e.g., possible or probable AD, clinically typical FTD, dementia of Lewy bodies, or Creutzfeld-Jacob disease) for which CMS has not specifically indicated that coverage should not continue to be non-covered.

BETA AMYLOID PET IN DEMENTIA AND NEURODEGENERATIVE DISEASE (CAG-00431N)

Section 200.6.20 of the Medicare NDC Manual

On September 27, 2013 CMS issued this decision about the above:

- The evidence is insufficient to cover beta amyloid PET imaging.
- Medicare will cover one beta amyloid PET scan per patient when performed as part of an approved CED clinical trial.
- The decision provides details re: CED clinical trial criteria. (At the printing of this book, there is no CMS-approved CED clinical trial for amyloid-beta PET imaging.)

For more detailed information about CMS's decision on amyloid-beta, see *http://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=265*.

FDG PET for Infection and Inflammation

INFECTION AND INFLAMMATION

Section 200.6.16 of the Medicare NDC Manual (Retired Effective January 1, 2021)

NCD 220.6.16 Positron Emission Tomography (PET) Scans (September 3, 2013)

Effective for dates of service on or after January 1, 2021, local Medicare Administrative Contractors (MACs) may determine coverage within their respective jurisdictions for Fluorodeoxyglucose (FDG) PET for Infection and Inflammation (formerly National Coverage Determination (NCD) 220.6.16).

(Rev. 10927, Issued: 08-02-21, Effective: 01-01-2021, Implementation: 06-22-21)

Effective January 1, 2021, the Centers for Medicare & Medicaid Services determined that no national coverage determination (NCD) is appropriate at this time for FDG PET for Inflammation and Infection. In the absence of an NCD, coverage determinations will be made by the Medicare Administrative Contractors under section 1862(a)(1)(A) of the Social Security Act.

NOTE: Transmittal 10888, dated July 19, 2021, was rescinded and replaced by transmittal 10927, dated August 2, 2021. Of importance, this transmittal revised the attached spreadsheet for NCD 220.6.16 which originally incorrectly listed some non-covered ICD 10 codes. Implementation date October 4, 2021 would correct those and remove the list of non-covered at a national level ICD 10 codes leaving the discretion to the local contractors. Providers may need to resubmit denied claims for dates of service January 1, 2021 to October 4, 2021.

Sodium Fluoride (NaF) PET for Bone Imaging

NaF PET

Section 200.6.19 of the Medicare NDC Manual

On February 26, 2010, CMS published a final national coverage determination (NCD) for NaF-18 PET imaging when the beneficiary's treating physician determines that the NaF-18 PET study is needed to inform the initial antitumor treatment strategy or to guide subsequent antitumor treatment strategy after the completion of initial treatment, and when the beneficiary is enrolled in, **and the NaF-18 PET provider is participating in an approved CMS coverage with evidence development (CED) program.** (The NaF NOPR opened in 2011 and is expected to accept patient and facility participation through December 14, 2017.

Oncologic PET Coverage

SOLID TUMOR ONCOLOGIC, LEUKEMIA AND MYELOMA

Section 200.6.17 of the Medicare NDC Manual

This policy took effect on October 30, 2009, for services performed on and after April 3, 2009 on patients with known or suspected cancer.

General Conditions of Coverage for PET

ALLOWABLE FDG PET SYSTEMS

Section 200.6.17 of the Medicare NDC Manual

This policy took effect on October 30, 2009, for services performed on and after April 3, 2009, on patients with known or suspected cancer. The revised

national policy provides the following four categories of coverage for two categories of cancer management:

- "Any FDG-approved" means all systems approved or cleared for marketing by the Food and Drug Administration (FDA) to image radionuclides in the body.
- "Certain coincidence systems" refers to the systems that have all the following:
  - Crystal at least 5/8-thick;
  - Techniques to minimize or correct for scatter and/or randoms; and
  - Digital detectors and iterative reconstruction.
- Scans performed with gamma camera PET systems with crystals thinner than 5/8" are not covered by Medicare. In addition, scans performed with systems with crystals greater than 5/8" in thickness, but that do not meet the other listed design characteristics, are not covered by Medicare.

Beginning October 30, 2009, **all** covered PET FDG oncologic-related claims for DOS on or after April 3, 2009, **MUST** include either the PI or PS modifier in order for the claim to be processed correctly.

If the coverage is conditional under an approved CMS study such as NOPR, the Q0 (zero) is appended in addition to the PI or PS.

The following modifiers have been created for the initial treatment strategy of tumors, subsequent treatment strategy of cancerous tumors, and identification of investigational research studies (e.g., CED and /or NOPR).

HCPCS Modifier or ICD-10-CM Code	Description	Effective October 30, 2009 on Claims With DOS April 3, 2009 for covered FDG PET Oncologic-Related Claims
PI (eye)	PET tumor ***initial*** treatment strategy ***CMS short description:*** PET tumor init tx strat ***CMS long description:*** Positron emission tomography (PET) or PET/computed tomography (CT) to inform the initial treatment strategy of tumors that are biopsy-proven or strongly suspected of being cancerous based on other diagnostic testing	Diagnosis or initial staging
PS	PET tumor ***subsequent*** treatment strategy ***CMS short description:*** PET tumor subsq tx strategy ***CMS long description:*** Positron emission tomography (PET) or PET/computed tomography (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 antitumor strategy.	"Restaging" or "monitoring"

HCPCS Modifier or ICD-10-CM Code	Description	Effective October 30, 2009 on Claims With DOS April 3, 2009 for covered FDG PET Oncologic-Related Claims
Q0 (zero)	Investigational clinical service provided in a clinical research study that is in an approved clinical research study	For Medicare physician fee schedule (1500) claims, append to the CPT procedure code when participating in CMS-approved clinical study (e.g., NOPR).
-KX	SPECIFIC REQUIRED DOCUMENTATION ON FILE. (EFFECTIVE DATE: 7/1/2002) This modifier may be used to indicate that specific required documentation is on file in the patient's medical record. Documentation must be submitted upon request.	Any subsequent (-PS modifier) FDG **PET** scan beyond the third scan will also require the use of the **-KX** modifier. Please append a **-KX** modifier, in tandem with medical necessity documentation in the patient record, whenever there is a justifiable need to order additional **PET** scans beyond three allowable **PET** scans for the same cancer diagnosis.
Z00.6	Encounter for examination for normal comparison and control in clinical research program	For hospital claims (1450), place in second diagnosis position to identify CMS-approved clinical study (e.g., NOPR, IDEAS). Use on claims on and after October 1, 2015.

MEDICARE FDG PET Imaging Coverage Status for Cancers by Indication (On or After June 11, 2013)

Section 200.6.17 of the Medicare NDC Manual

Effective for claims with dates of service on and after June 11, 2013, CMS is adopting a coverage framework that ends the prospective data collection requirements by NOPR under CED for all oncologic uses of FDG PET imaging. CMS is making this change for all NCDs that address coverage of FDG PET for oncologic uses addressed in this decision.

- Cancers and indications that are reimbursable (covered) by Medicare, use CPT codes to bill.
- Cancers and indications that are specifically excluded (non-covered) for Medicare reimbursement, use HCPCS Level II G codes to bill.

INITIAL ANTI-TUMOR TREATMENT STRATEGY

CMS continues to believe that the evidence is adequate to determine that the results of FDG PET imaging are useful in determining the appropriate initial anti-tumor treatment strategy for beneficiaries with suspected cancer and improve health outcomes and thus are reasonable and necessary under §1862(a)(1)(A) of the Social Security Act (the "Act").

Therefore, CMS continues to nationally cover **one** FDG PET study for beneficiaries who have cancers that are biopsy-proven or strongly suspected based on other diagnostic testing when the beneficiary's treating physician determines that the FDG PET study is needed to determine the location and/or extent of the tumor for the following therapeutic purposes related to the initial anti-tumor treatment strategy:

- To determine whether or not the beneficiary is an appropriate candidate for an invasive diagnostic or therapeutic procedure; or
- To determine the optimal anatomic location for an invasive procedure; or
- To determine the anatomic extent of tumor when the recommended anti-tumor treatment reasonably depends on the extent of the tumor.

See the table at the end of this section for a synopsis of all nationally covered and non-covered oncologic uses of FDG PE imaging.

Nationally Covered Indications (Effective June 11, 2013)

CMS continues to nationally cover:

- FDG PET imaging for the initial anti-tumor treatment strategy for male and female breast cancer only when used in staging distant metastasis.
- FDG PET to determine initial anti-tumor treatment strategy for melanoma other than for the evaluation of regional lymph nodes.
- FDG PET imaging for the detection of pre-treatment metastasis (i.e., staging) in newly diagnosed cervical cancers.

Nationally Non-Covered Indications (Effective June 11, 2013)

CMS continues to nationally non-cover:

- Initial anti-tumor treatment strategy in Medicare beneficiaries who have adenocarcinoma of the prostate
- FDG PET imaging for diagnosis of breast cancer and initial staging of axillary nodes
- FDG PET imaging for initial anti-tumor treatment strategy for the evaluation of regional lymph nodes in melanoma
- FDG PET imaging for the diagnosis of cervical cancer related to initial anti-tumor treatment strategy.

SUBSEQUENT ANTI-TUMOR TREATMENT STRATEGY

Subsequent Anti-Tumor Treatment Strategy Nationally Covered Indications (Effective June 11, 2013)

Three FDG PET scans are nationally covered when used to guide subsequent management of anti-tumor treatment strategy after completion of initial anti-tumor therapy. Coverage of more than three FDG PET scans to guide subsequent management of anti-tumor treatment strategy after completion of initial anti-tumor therapy shall be determined by the local MACs.

Synopsis of Coverage of PET FDG for Oncologic Conditions (Effective June 11, 2013)

Effective for claims with DOS on and after June 11, 2013, the chart below summarizes national FDG PET coverage for oncologic conditions:

FDG PET for Oncologic Conditions (Effective June 11, 2013)

FDG PET for Solid Tumors and Myeloma Tumor Type	Initial Treatment Strategy (formerly "diagnosis" and "staging")	Subsequent Treatment Strategy (formerly "restaging" and "monitoring response to treatment")
Colorectal	Cover	Cover
Esophagus	Cover	Cover
Head and Neck (not thyroid or CNS)	Cover	Cover
Lymphoma	Cover	Cover
Non-small cell lung	Cover	Cover
Ovary	Cover	Cover
Brain	Cover	Cover
Cervix	Cover with exceptions*	Cover
Small cell lung	Cover	Cover
Soft tissue sarcoma	Cover	Cover
Pancreas	Cover	Cover
Testes	Cover	Cover
Prostate	**Non-cover**	Cover
Thyroid	Cover	Cover
Breast (male and female)	Cover with exceptions*	Cover
Melanoma	Cover with exceptions*	Cover
All other solid tumors	Cover	Cover
Myeloma	Cover	Cover
All other cancers not listed	Cover	Cover
Non-melanoma skin (173)	C	Cover

***Cervix:** Nationally non-covered for the initial diagnosis of cervical cancer related to initial anti-tumor treatment strategy. All other indications for initial anti-tumor treatment strategy for cervical cancer are nationally covered.

***Breast:** Nationally non-covered for initial diagnosis and/or staging of axillary lymph nodes. Nationally covered for initial staging of metastatic disease. All other indications for initial anti-tumor treatment strategy for breast cancer are nationally covered.

***Melanoma:** Nationally non-covered for initial staging of regional lymph nodes. All other indications for initial anti-tumor treatment strategy for melanoma are nationally covered.

***Leukemia:** Nationally covered under "all other cancers not listed."

IMPORTANT NOTES:

- The billing physician remains responsible for documenting medical necessity, which is required for the coding and billing of covered FDG PET studies. Eligibility for the billing of covered FDG PET studies does not constitute a clinical management recommendation for the use of PET for covered cancers and indications. Referring and interpreting physicians are thus advised to refer to the published literature to better understand the potential

limitations of FDG-PET and carefully review the MAC local coverage policies for specific diagnosis coding instructions.

- "Initial treatment strategy" (ITS) does not refer to the first time a patient has an oncologic PET study. *It is* intended to identify the stage of the cancer or potential cancer. Therefore, *it is* used if the reason for the FDG PET study is to diagnosis or for the initial staging study after the cancer has been diagnosed.
- "Subsequent treatment strategy" (STS) is intended to identify the stage of the cancer. STS is used if the reason for the FDG PET study is to restage a cancer, to re-assess a reoccurrence, or to monitor after a course of treatment is concluded and/or there are signs that a treatment is not working.
- *Surveillance or monitoring*, in the absence of signs or symptoms sufficient to justify a FDG PET study, is ***not*** covered by Medicare.
- National frequency limits:
  - One FDG-PET scan will be nationally covered for oncologic indications when used to guide initial physician management of initial treatment strategy. Additional scans are permitted at MAC or Medicare Advantage (MA) Plan Contractor discretion.
  - Three FDG-PET scans will be nationally covered for oncologic indications when used to guide ***subsequent*** physician management of anti-tumor strategy after initial anticancer therapy. Additional scans are permitted at MAC or MA Plan Contractor discretion. CMS acknowledged that it is "now aware that many patients may expect to undergo **more than one** FDG-PET scan **during later phases** of their medical treatment." By nationally covering three scans, the final decision provides "administrative flexibility to **enhance patient access** to needed medical care, and **reduce potential overutilization** of FDG-PET scans that would not be found to be reasonable and necessary."
- Use of FDG-PET/CT "when used to guide ***subsequent*** anti-tumor treatment strategy for patients with cancer of the **prostate** is reasonable and necessary under § 1862(a)(1)(A)." MACs are likely to monitor for appropriate patient use.
- CED closed December 14, 2017 under NOPR for NaF-18 PET and PET/CT for bone metastasis per section 220.6.19 of the *NCD Manual*.

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
0742T	Absolute quantitation of myocardial blood flow (AQMBF), single-photon emission computed tomography (SPECT), with exercise or pharmacologic stress, and at rest, when performed (List separately in addition to code for primary procedure)	Global	C	0.00	$0.00		N	$0.00
		TC	C	0.00	$0.00			
		26	C	0.00	$0.00			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78459	Myocardial imaging, positron emission tomography (PET), metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), single study;	Global	C	0.00	$0.00	5593	S	$1,327.27
		TC	C	0.00	$0.00			
		26	A	2.14	$70.75			
78429	Myocardial imaging, positron emission tomography (PET), metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), single study; with concurrently acquired computed tomography transmission scan	Global	C	0.00	$0.00	5594	S	$1,489.35
		TC	C	0.00	$0.00			
		26	A	2.34	$77.36			
78491	Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); single study, at rest or stress (exercise or pharmacologic)	Global	C	0.00	$0.00	5594	S	$1,489.35
		TC	C	0.00	$0.00			
		26	A	2.08	$68.77			
78430	Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); single study, at rest or stress (exercise or pharmacologic), with concurrently acquired computed tomography transmission scan	Global	C	0.00	$0.00	5594	S	$1,489.35
		TC	C	0.00	$0.00			
		26	A	2.21	$73.06			
78492	Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); multiple studies at rest and stress (exercise or pharmacologic)	Global	C	0.00	$0.00	5594	S	$1,489.35
		TC	C	0.00	$0.00			
		26	A	2.48	$81.99			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78431	Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); multiple studies at rest and stress (exercise or pharmacologic), with concurrently acquired computed tomography transmission scan	Global	C	0.00	$0.00	1523	S	$2,750.50
		TC	C	0.00	$0.00			
		26	A	2.59	$85.63			
78432	Myocardial imaging, positron emission tomography (PET), combined perfusion with metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), dual radiotracer (eg, myocardial viability);	Global	C	0.00	$0.00	1520	S	$1,850.50
		TC	C	0.00	$0.00			
		26	A	2.76	$91.25			
78433	Myocardial imaging, positron emission tomography (PET), combined perfusion with metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), dual radiotracer (eg, myocardial viability); with concurrently acquired computed tomography transmission scan	Global	C	0.00	$0.00	1521	S	$1,950.50
		TC	C	0.00	$0.00			
		26	A	3.01	$99.51			
78434	Absolute quantitation of myocardial blood flow (AQMBF), positron emission tomography (PET), rest and pharmacologic stress (List separately in addition to code for primary procedure)	Global	C	0.00	$0.00		N	$0.00
		TC	C	0.00	$0.00			
		26	A	0.86	$28.43			
78608	Brain imaging, positron emission tomography (PET); metabolic evaluation	Global	C	0.00	$0.00	5594	S	$1,489.35
		TC	C	0.00	$0.00			
		26	A	2.04	$67.44			
78609	Brain imaging, positron emission tomography (PET); perfusion evaluation	Global	N	2.12	$70.09		E1	$0.00
		TC	N	0.00	$0.00			
		26	N	2.12	$70.09			
78811	Positron emission tomography (PET) imaging; limited area (eg, chest, head/neck)	Global	C	0.00	$0.00	5593	S	$1,327.27
		TC	C	0.00	$0.00			
		26	A	2.08	$68.77			

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
78812	Positron emission tomography (PET) imaging; skull base to mid-thigh	Global	C	0.00	$0.00	5594	S	$1,489.35
		TC	C	0.00	$0.00			
		26	A	2.67	$88.27			
78813	Positron emission tomography (PET) imaging; whole body	Global	C	0.00	$0.00	5594	S	$1,489.35
		TC	C	0.00	$0.00			
		26	A	2.69	$88.93			
78814	Positron emission tomography (PET) with concurrently acquired computed tomography (CT) for attenuation correction and anatomical localization imaging; limited area (eg, chest, head/neck)	Global	C	0.00	$0.00	5594	S	$1,489.35
		TC	C	0.00	$0.00			
		26	A	3.03	$100.17			
78815	Positron emission tomography (PET) with concurrently acquired computed tomography (CT) for attenuation correction and anatomical localization imaging; skull base to mid-thigh	Global	C	0.00	$0.00	5594	S	$1,489.35
		TC	C	0.00	$0.00			
		26	A	3.36	$111.08			
78816	Positron emission tomography (PET) with concurrently acquired computed tomography (CT) for attenuation correction and anatomical localization imaging; whole body	Global	C	0.00	$0.00	5594	S	$1,489.35
		TC	C	0.00	$0.00			
		26	A	3.38	$111.75			
G0219	Pet imaging whole body; melanoma for non-covered indications	Global	N	0.00	$0.00		E1	$0.00
		TC	N	0.00	$0.00			
		26	N	0.00	$0.00			
G0235	Pet imaging, any site, not otherwise specified	Global	N	0.00	$0.00	5591	S	$388.68
		TC	N	0.00	$0.00			
		26	N	0.00	$0.00			
G0252	Pet imaging, full and partial-ring pet scanners only, for initial diagnosis of breast cancer and/or surgical planning for breast cancer (e.g., initial staging of axillary lymph nodes)	Global	N	0.00	$0.00		E1	$0.00
		TC	N	0.00	$0.00			
		26	N	2.12	$70.09			

*For the most current payment rates, check *http://www.cms.gov/apps/physician-fee-schedule/overview.aspx*, *http://www.cms.gov/PhysicianFeeSched/,* and *https://www.cms.gov/medicare/physician-fee-schedule/search.*

Therapeutic

CPT Codes: 79005–79999

REVENUE CODES: 33X OR 342

Typical Drugs and Radiopharmaceuticals Used				
HCPCS	**Description**	**Notes**	**RC**	**SI**
A9513	Lutetium lu 177, dotatate, therapeutic, 1 millicurie	LUTATHERA®	344	K
A9517	Iodine I-131 sodium iodide capsule(s), therapeutic, per millicurie	Rx I-131 Capsules, I one thirty one, I-131, Iodotope	344	K
A9530	Iodine I-131 sodium iodide solution, therapeutic, per millicurie	Rx 1-131 sol per mCi, I one thirty one, I-131, Iodotope	344	K
A9543	Yttrium Y-90 ibritumomab tiuxetan, therapeutic, per treatment dose, up to 40 millicuries	Rx Y-90 Zevalin, yttrium, 90Y Zevalin, therapeutic Zevalin	344	K
A9563	Sodium phosphate P-32, therapeutic, per millicurie	P 32, 32P Phosphate	344	K
A9564	Chromic phosphate P-32 suspension, therapeutic, per millicurie	P 32, 32P Chromate, 32P Chromic, Phosphocol P-32	344	E1
A9590	Iodine-131 iobenguane, 1 millicurie	Trade name: AZEDRA NDC 71258-0015-02	343 or 344	K
A9600	Strontium Sr-89 chloride, therapeutic, per millicurie	Rx Metastron, Strontium, Strontium Labeled Metastron	344	K
A9604	Samarium Sm-153 lexidronam, therapeutic, per treatment dose, up to 150 millicuries	Rx Quadramet Samarium, Lexidronamm, 153Samarium, 153Sm-EDTMP	344	K
A9606	Radium Ra-223 dichloride, therapeutic, per microcurie	The FDA approved this therapeutic radiopharmaceutical on May 15, 2013. Common name: Radium-223 Trade name: Xofigo™ NDC #50419-0208-01 for Xofigo™ Note: Code description is per microcurie. Billing units should be consistent with costs of radiotracer.	344	K
●A9607	Lutetium lu 177 vipivotide Lutetium Lu 177 vipivotide tetraxetan, therapeutic, 1 millicurie	Trade name: PLUVICTO™ Advanced Accelerator Applications USA, Inc NDCs (69488-003-01) Effective October 1, 2022 Pass-through End Date: September 30, 2025	344	G
A9699	Radiopharmaceutical, therapeutic, not otherwise classified	RX NOC	344	N
A9699	Radiopharmaceutical, therapeutic, not otherwise classified *—Gold Au-198, therapeutic, per treatment dose*	Radio-Gold, radioactive Gold, Gold 198	344	N

Typical Drugs and Radiopharmaceuticals Used				
HCPCS	**Description**	**Notes**	**RC**	**SI**
A9699	Radiopharmaceutical, therapeutic, not otherwise classified *—Rhenium Rh-186, therapeutic, per treatment dose*	Rhenium Rh-186	344	N
A9699	Radiopharmaceutical, therapeutic, not otherwise classified *—Yttrium Y-90, therapeutic, per treatment dose*	Yttrium Y-90	344	N
C2616	Brachytherapy source, non-stranded, yttrium-90, per source	TheraSphere, SirTex, SIR-Spheres, Y-90 MicroSpheres	278	U
J9311	Injection, rituximab 10 mg and hyaluronidase	Effective January 1, 2019	636 or chemo revenue code	G
J9312	Injection, rituximab, 10 mg	Effective January 1, 2019	636 or chemo revenue code	K
Q3001	Radioelements for brachytherapy, any type, each	TheraSphere, SirTex, SIR-Spheres, Y-90 MicroSpheres	278	B

The therapeutic nuclear medicine section of CPT (79xxx) was completely redone in 2005. Numerous additions, deletions and cross-reference changes were made. These changes moved code descriptions away from a specific type of therapy and towards defining how the material may be given without regard to what was being treated.

The complete set of codes defining radiopharmaceutical therapy are defined in the following information after this introduction.

Radionuclide therapy procedures are accomplished by the patient swallowing a capsule, drinking a liquid, or receiving an injection. Commonly performed therapeutic studies are treatments for hyperthyroidism (Graves' disease) or ablation of the thyroid in patients with thyroid carcinoma (cancer). Both therapies are performed utilizing radioactive iodine, in this case ^{131}I. The thyroid gland naturally seeks out (uptake) iodine, so when radioactive iodine is given, it will localize in the thyroid gland or thyroid tissue. Because of this targeting effect, the radioactivity is delivered primarily to this structure. Occasionally, patients will have metastatic (defined as involvement of regions remote from the site of origin) thyroid carcinoma in which radioactive iodine localizes in residual thyroid tissue, or in iodine avid metastatic sites.

Therapy to reduce the number of red cells in the blood and total blood volume (known as polycythemia vera) is accomplished by giving the patient an injection of radioactive phosphorus (^{32}P phosphate).

Intracavitary therapy, such as peritoneal or pleural, is accomplished by administering an injection of colloidal radioactive phosphorus (^{32}P chromate).

Palliative refers to reducing the severity of symptoms without curing the underlying disease. Simply put, palliative procedures ease the pain, but do not cure the problem. Two radiopharmaceuticals are used for this procedure. They are Metastron (^{89}Sr chloride) and ^{153}samarium (^{153}Sm lexidronam). Both are used for patients with confirmed osteoblastic skeletal metastases. Imaging (bone scans) may be performed in addition to therapy when using ^{153}Sm.

Radioimmunotherapy (RIT) is a hybridized monoclonal antibody that has a high affinity for a molecular target. It involves the administration, typically slow intravenous infusion, of an antibody attached to a radioisotope, targeted to a specific cell type. An example of RIT is Yttrium-90 Ibritumomab Tiuxetan (Zevalin), which is approved for non-Hodgkin's lymphomas (NHL). These treatments are considered "unsealed sources." It is important to note that there are several steps to the entire RIT treatment that include codes in other sections of the CPT book. Appendix 5 in this publication outlines the varying key elements and codes in the entire treatment regime.

Microsphere brachytherapy is a type of "sealed source" treatment identified by the Nuclear Regulatory Commission (NRC) as a type of permanent brachytherapy. Small microspheres (15 to 35 micrometers) of glass (TheraSphere®) or resin (SIR-Sphere) are injected intra-arterially into tumors such as the liver. The particle size targets the microvascular nature of the tumor and preserves normal tissue and/or organs. These highly complex procedures often require the interventional suite to gain arterial access; therefore, they involve multiple procedures and steps often by a large team of professionals, each performing their specialized part of the entire treatment.

As with any therapeutic procedure, certain individuals are responsible for the decision to treat the patient and others that will provide follow-up care. If providers are involved in the decision to treat, those providers should look to the evaluation and management section of CPT to report those services. Providers should bill for each part of the service pertaining to those which they personally performed. As always, it is important to maintain an appropriate level of documentation to support each of the CPT code(s) billed. Pay careful attention to CPT codes with global periods, such as a 90-day period or less, which include follow-up care. As with any CPT code, if there are bundled codes for the entire service that a single provider has performed, bill the bundled code. As mentioned earlier, several of these therapeutic treatments often have a team of individuals performing varying aspects of the treatment. Providers should only bill for the services which were provided and must maintain an appropriate level of documentation to support each code billed.

TIPS

- When procuring the radioactive material, be certain to submit a separate charge for each radiopharmaceutical utilized. Some payers may ask you to submit an invoice when billing for these items. Identify the therapeutic radiopharmaceutical(s) with appropriate HCPCS Level II A- or C-

codes. (C- series HCPCS codes are only for Medicare outpatient hospital coding/billing.)

- When procuring the drugs, chemotherapy or non-radioactive monoclonal antibody, be certain to submit a separate charge for each drug or chemotherapy utilized. All parties (e.g., physicians, hospitals, etc.) should identify the drugs or chemotherapy with the appropriate HCPCS Level II J or C code. (C- Series HCPCS codes are only for Medicare outpatient hospital coding and billing.)
- The following therapeutic nuclear medicine CPT codes (79xxx) do not include services provided regarding the decision to treat the patient. Use the appropriate level of evaluation and management codes to report these services, CPT codes 99211–99245, new or established patient, based on the documentation provided.
- Several of the therapeutic nuclear medicine CPT codes might also require services such as dosimetry, biodistribution, diagnostic imaging, chemotherapy administration, treatment planning, and interventional access. Report these CPT codes separately, if not already part of a bundled or packaged CPT code and if performed by separate physicians, and maintain documentation as appropriate. Examples include CPT 78804, 77370, 77300, 96413, 96415, and 96365.
- CPT 77370, 77300 are reported by medical physicists or radiation oncologists that provide special dosimetry calculations for therapeutic administrations. These services are not typically reported by nuclear medicine or radiologic physicians.

79005 Radiopharmaceutical therapy, by oral administration

GENERAL DEFINITION

Patient swallows radioactive iodine in either a liquid or solid (capsule) form. This code could describe therapy performed for conditions such as Graves' disease, euthyroid cardiac disease, thyroid carcinoma or metastatic thyroid carcinoma.

TIPS

- Submit radiopharmaceutical charges in addition to those for the therapeutic procedure performed.
- This code replaces 79000, 79001, 79020, 79030 and 79035.
- If a provider administers a therapeutic radiopharmaceutical under the hospital OPPS and plans to later perform a diagnostic scan, the provider should hold the hospital OPPS therapy claim until the diagnostic nuclear medicine scan is complete and ready to be billed.

CASE: NUCLEAR MEDICINE THERAPY

CLINICAL HISTORY

Hyperthyroidism

PROCEDURE

The therapy procedure and risks were explained in detail to the patient as well as the precautions to be taken after administration of I-131. 10.5 mCi of I-131 was given orally in a capsule. The patient will follow up with endocrinologist in 2 weeks.

IMPRESSION

10.5 mCi of Iodine 131 capsule with administered orally for treatment of patient's hyperthyroidism with no apparent compilations.

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
79005	1	3	1
A9517	11	3	200

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

79101 Radiopharmaceutical therapy, by intravenous administration

GENERAL DEFINITION

An intravenous injection of a radiopharmaceutical is given to provide treatment for a specific condition. This code could be used to describe treatment to patients afflicted with polycythemia vera or metastatic bone lesions.

TIPS

- Submit radiopharmaceutical charges in addition to those for the therapeutic procedure performed.
- For claims with a date of service on or after January 1, 2015, report A9606 *Radium Ra-223 dichloride, therapeutic, per microcurie dose*. Note the units are per microcurie rather than per treatment dose; therefore, pay careful attention to billing for any waste as well as billing the correct number of units per microcurie administered to the patient for each treatment.

- Do not use this code with 79403 (i.e., Zevalin therapy).
- This code replaces 79100 and 79400.
- When using ^{153}Sm (samarium), effective January 1, 2010, bill per treatment dose. This code and the description changed, therefore, *prior* to January 1, 2010 bill per 50 millicuries (mCi).
- When using ^{153}Sm (samarium), bill per 50 millicurie (mCi) used.
- Do not assign codes 36400, 36410, 79403, 96365, 96413, 96415 or 96409 with this code.
- If a provider administers a therapeutic radiopharmaceutical under the hospital OPPS and plans to later perform a diagnostic scan, the provider should hold the hospital OPPS therapy claim until the diagnostic nuclear medicine scan is complete and ready to be billed.

CASE: NUCLEAR MEDICINE LUTATHERA TREATMENT 1 OF 4

CLINICAL HISTORY

History: Metastatic midgut neuroendocrine tumor, referred for Lutathera treatment 1 of 4

Long-acting octreotide within one month: no

Short-acting octreotide within 24 hours: no

Liver, renal and bone marrow function: within acceptable limits

PROCEDURE

The patient was pre-treated with anti-emetics *(see nursing/medical documentation billing by a different department)*. The patient underwent infusion of 1600 mL of Clinisol 15% diluted to 2,067 mL per protocol over approximately 5 hours. 45 minutes after the start of the Clinisol infusion, Lu-177 Lutathera was infused via separate IV over 30 minutes.

IMPRESSION

The Lu-177 was administered without difficulty. Anti-emetics were administered as documented separately in the nursing records.

CONCLUSION

Successful Lutathera treatment 1 of 4.

Total cumulative dose = 205.2 mCi Lu-177 Lutathera

CPT/HCPCS Code(s)

CPT/HCPCS Code	Units for this Claim	MAI	MUE
79101	1	3	1
A9513	205	3	200

Note: *Billing for the amino acid depends on where it is obtained and the area that administered it. injection codes and HCPCS codes 96365, 96366 x 4 – infusion of amino acids.*

MAI and MUE values are current at the time of publication. As these are subject to change quarterly, be certain to verify the most current MUE and

MAI values at: *https://www.cms.gov/Medicare/Coding/NationalCorrectCodInitEd/MUE.html*.

Choose the correct file relative to physician billing or Medicare outpatient hospital billing; the options are:

1. Practitioner Services MUE Table
2. Facility Outpatient Hospital Services MUE Table

79200 Radiopharmaceutical therapy, by intracavitary administration

GENERAL DEFINITION

Injection of ^{32}P chromate is given directly into peritoneal or pleural cavities. A thoracentesis or paracentesis is usually performed prior to this procedure.

79300 Radiopharmaceutical therapy, by interstitial radioactive colloid administration

GENERAL DEFINITION

A radiopharmaceutical is administered to provide therapy "within the space of tissue or an organ." This could be a glioma, meningioma, etc.

TIP

- If a provider administers a therapeutic radiopharmaceutical under the hospital OPPS and plans to later perform a diagnostic scan, the provider should hold the hospital OPPS therapy claim until the diagnostic nuclear medicine scan is complete and ready to be billed.

79403 Radiopharmaceutical therapy, radiolabeled monoclonal antibody by intravenous infusion

GENERAL DEFINITION

The patient has previously undergone both consultations and diagnostic imaging (see 78804) to assess the need for and compatibility with monoclonal antibody therapy. The material is infused into the patient under close observation to monitor any potential reactions. Final instructions are provided to the patient regarding post-therapy situations. Infusion therapy procedure is complete.

TIPS

- See detailed radioimmunotherapy table in Appendix 5 for elements of the entire treatment regimen.
- Submit nonradioactive charges in addition to those for the therapeutic procedure performed.
- Zevalin requires a nonradioactive administration of the monoclonal antibody prior to the radioactive administration.
- Do not submit code 79101 with 79403.
- Use 79403 for therapeutic administrations of Zevalin. Do not report A9542 for therapeutic administrations. For diagnostic administrations of Zevalin, see HCPCS level code A9543.
- If a provider administers a therapeutic radiopharmaceutical under the hospital OPPS and plans to later perform a diagnostic scan, the provider should hold the hospital OPPS therapy claim until the diagnostic nuclear medicine scan is complete and ready to be billed.

79440 Radiopharmaceutical therapy, by intra-articular administration

GENERAL DEFINITION

This procedure defines a form of therapy in which a radioactive material is instilled into the joint space. One reason for performing this procedure may be for a radiosynovectomy. This study may also be done to offer relief to patients with rheumatoid or other types of arthritis.

TIP

- If a provider administers a therapeutic radiopharmaceutical under the hospital OPPS and plans to later perform a diagnostic scan, the provider should hold the hospital OPPS therapy claim until the diagnostic nuclear medicine scan is complete and ready to be billed.

79445 Radiopharmaceutical therapy, by intra-arterial particulate administration

GENERAL DEFINITION

Following initial diagnostic angiography, a therapeutic radiopharmaceutical is given intra-arterially via selective catheterization of a vessel. In addition to the delivery of the isotope, an embolization is also performed. In effect, three services have been provided: diagnostic angiography, transcatheter therapy (non-radioactive) and radiopharmaceutical therapy.

TIPS

- Submit radiopharmaceutical charges in addition to those for the therapeutic procedure performed.
- Submit separate charges for selective catheterization(s) (i.e., 3624x codes) in addition to radiopharmaceutical therapy.
- Submit separate charges for the supervision and interpretation (S&I) component of diagnostic and transcatheter therapy procedures (i.e., 75xxx codes) as well as radiopharmaceutical therapy.
- Submit separate charges for surgical/procedural component of transcatheter therapy procedure (i.e., 372xx codes) as well as radiopharmaceutical therapy.
- Do not submit codes 96422, 96423 or 96420 with 79445.
- Common procedures are SIR-Spheres and TheraSpheres.
- If a provider administers a therapeutic radiopharmaceutical under the hospital OPPS and plans to later perform a diagnostic scan, the provider should hold the hospital OPPS therapy claim until the diagnostic nuclear medicine scan is complete and ready to be billed.
- Instead of assigning 79445, some non-Medicare payers may want you to use HCPCS code S2095—transcatheter occlusion or embolization for tumor destruction, percutaneous any method, using yttrium-90 microspheres.
- Consider the full service provided by the individual physicians when assigning the CPT code(s). As mentioned in the introduction of the therapeutic section, some of the radiation oncology CPT codes include global periods, providing for the follow-up care of the patients. Examples include 77750, 77778 and 77263. As with any bundled service, it would not be appropriate to bill for these complete services plus the individual services (for example, CPT 77778 with CPT 79445).

79999 Radiopharmaceutical therapy, unlisted procedure

GENERAL DEFINITION

As noted in the CPT introductory language mentioned earlier in this publication, unlisted codes are used when there is no other code to describe the procedure performed. You may not use a code that approximates a current code. In the absence of a code that correctly describes the procedure, use an appropriate unlisted code. This code may be used to describe radiopharmaceutical therapeutic nuclear medicine procedures not already available in either CPT category I or category III codes.

TIP

- When submitting an UPC, clearly define the following for any third-party payer via a written (i.e., "paper") claim: definition or description of the

nature, need and extent of procedure; and the time, effort and equipment necessary to provide the service. Refer to the "Special Report" section of CPT for additional information that may also be included.

- If a provider administers a therapeutic radiopharmaceutical under the hospital OPPS and plans to later perform a diagnostic scan, the provider should hold the hospital OPPS therapy claim until the diagnostic nuclear medicine scan is complete and ready to be billed.

Medicare Physician Fee Schedule RVUs and Hospital OPPS Rates Under APCs

Code	Description	Modifier	SC	RVU	Rate*	APC	SI	Rate
79005	Radiopharmaceutical therapy, by oral administration	Global	A	4.02	$132.90	5661	S	$249.73
		TC	A	1.53	$50.58			
		26	A	2.49	$82.32			
79101	Radiopharmaceutical therapy, by intravenous administration	Global	A	4.38	$144.81	5661	S	$249.73
		TC	A	1.60	$52.90			
		26	A	2.78	$91.91			
79200	Radiopharmaceutical therapy, by intracavitary administration	Global	A	3.92	$129.60	5661	S	$249.73
		TC	A	1.58	$52.24			
		26	A	2.34	$77.36			
79300	Radiopharmaceutical therapy, by interstitial radioactive colloid administration	Global	C	0.00	$0.00	5661	S	$249.73
		TC	C	0.00	$0.00			
		26	A	1.88	$62.15			
79403	Radiopharmaceutical therapy, radiolabeled monoclonal antibody by intravenous infusion	Global	A	5.95	$196.71	5661	S	$249.73
		TC	A	2.80	$92.57			
		26	A	3.15	$104.14			
79440	Radiopharmaceutical therapy, by intra-articular administration	Global	A	3.53	$116.70	5661	S	$249.73
		TC	A	1.19	$39.34			
		26	A	2.34	$77.36			
79445	Radiopharmaceutical therapy, by intra-arterial particulate administration	Global	C	0.00	$0.00	5661	S	$249.73
		TC	C	0.00	$0.00			
		26	A	3.24	$107.12			
79999	Radiopharmaceutical therapy, unlisted procedure	Global	C	0.00	$0.00	5661	S	$249.73
		TC	C	0.00	$0.00			
		26	C	0.00	$0.00			

*For the most current payment rates, check *http://www.cms.gov/apps/physician-fee-schedule/overview.aspx*, *http://www.cms.gov/PhysicianFeeSched/*, and *https://www.cms.gov/medicare/physician-fee-schedule/search*.

Appendices

APPENDIX 1

Drugs, Radiopharmaceuticals, and Common Isotopes

This appendix consists of three tables that list radioactive and non-radioactive materials likely to be used in a typical nuclear medicine department.

Table A-1 encompasses substances specifically identified by a HCPCS Level II code. Table A-2 covers diagnostic radiopharmaceuticals that have no specific HCPCS code and must be reported using the A4641 "not otherwise classified" (NOC) code. Table A-3 covers therapeutic radiopharmaceuticals that have no specific HCPCS code and must be reported using the A9699 or C9399 "not otherwise classified" (NOC) code.

Note the following special information in these tables:

- A round bullet "●" indicates a new code.
- A triangle symbol "▲" indicates a revised code description.
- A code shown in ~~strikethrough~~ with the symbol "✖" has been deleted (and in some cases replaced by another code).
- "RC"—This is the hospital revenue code. See Appendix 2 for more information.
- "SI"—This is the hospital status indicator.

Not all items listed in these tables receive separate payment in all care settings. Nevertheless, bill them separately in addition to the procedures performed.

These tables comprise information found in the CMS HCPCS code list and in Addendum B of the hospital OPPS final rule for 2021.

Table A-1. Drugs, Radiopharmaceuticals, and Common Isotopes

HCPCS/Description		Notes	RC	SI
A4642	Indium In-111 satumomab pendetide, diagnostic, per study dose, up to 6 millicuries	Oncoscint, OncoScint	343	N
A9500	Technetium Tc-99m sestamibi, diagnostic, per study dose	Cardiolite, Miraluma, Mibi, Sestamibi, Cardiolite	343	N
A9501	Technetium Tc-99m teboroxime, diagnostic, per study dose	CardioTec, TEBO	343	N
A9502	Technetium Tc-99m tetrofosmin, diagnostic, per study dose	Myoview, Tetrofosmin, Tetro	343	N
A9503	Technetium Tc-99m medronate, diagnostic, per study dose, up to 30 millicuries	Methylene Diphosphonate, MDP, Osteolite, Medronate	343	N
A9504	Technetium Tc-99m apcitide, diagnostic, per study dose, up to 20 millicuries	Acutect, AcuTect	343	N
A9505	Thallium Tl-201 thallous chloride, diagnostic, per millicurie	Thallium 201, Thallium, Thallous Chloride USP	343	N
A9507	Indium In-111 capromab pendetide, diagnostic, per study dose, up to 10 millicuries	Prostascint	343	N
A9508	Iodine I-131 iobenguane sulfate, diagnostic, per 0.5 Millicurie	I-131 MIBG, I one thirty one, I-131 MIBG	343	N
A9509	Iodine I-123 sodium iodide, diagnostic, per millicurie	Use for 1-4 mCi doses of I-123 for whole body imaging for less than 1 mCi and thyroid imaging see A9516	343	N
A9510	Technetium Tc-99m disofenin, diagnostic, per study dose, up to 15 millicuries	DISIDA, 99mTc IDA, Disofenin, HIDA, MIDA, PIPIDA	343	N
A9512	Technetium Tc-99m pertechnetate, diagnostic, per millicurie	Straight Tech, Sodium Pertechnetate, Pertechnetate, Tech, Technetium, Technescan, Technelite	343	N
A9513	Lutetium lu 177, dotatate, therapeutic, 1 millicurie	LUTATHERA®	344	K
A9515	Choline C-11, diagnostic, per study dose, up to 20 millicuries	Diagnostic radiopharmaceutical first approved by the FDA on September 13, 2012 and ANDA approved on November 17, 2015 from the manufacturer Zevacor. Common name: C-11 Choline C-11 Choline Zevacor or In-facility production (e.g., Mayo Clinic)	343	N
A9516	Iodine I-123 sodium iodide, diagnostic, per 100 microcuries, up to 999 microcuries	Dx 1-123 Capsules, I one twenty three, I -123. For administrations greater than 999 microcuries, see A9509.	343	N
A9517	Iodine I-131 sodium iodide capsule(s), therapeutic, per millicurie	Rx I-131 Capsules, I one thirty one, I-131, Iodotope	344	K

Table A-1. Drugs, Radiopharmaceuticals, and Common Isotopes

HCPCS/Description		Notes	RC	SI
A9520	Technetium Tc 99m tilmanocept, diagnostic, up to 0.5 millicuries	Common name: Lymphoseek NDC #52579-1600-05 for LymphoSeek™	343	N
A9521	Technetium Tc-99m exametazime, diagnostic, per study dose, up to 25 millicuries	Ceretec, HMPAO, Technetium Labeled Ceretec, Exametazime	343	N
A9524	Iodine I-131 iodinated serum albumin, diagnostic, per 5 microcuries	I-131 Albumin, I one thirty one, I-131, RISA, Megatope	343	N
A9526	Nitrogen N-13 ammonia, diagnostic, per study dose, up to 40 millicuries	N-13, Ammonia N-13	343	N
A9528	Iodine I-131 sodium iodide capsule(s), diagnostic, per millicurie	I-131 Dx Caps Per mCi, I One Thirty One, I-131, Iodotope	343	N
A9529	Iodine I-131 sodium iodide solution, diagnostic, per millicurie	Dx I-131 sol per mCi, I one thirty one, I-131, Iodotope	343	N
A9530	Iodine I-131 sodium iodide solution, therapeutic, per millicurie	Rx 1-131 sol per mCi, I one thirty one, I-131, Iodotope	344	K
A9531	Iodine I-131 sodium iodide, diagnostic, per microcurie (up to 100 microcuries)	Dx I-131 up to 100 µCi, I one thirty one, I-131	343	N
A9532	Iodine I-125 serum albumin, diagnostic, per 5 microcuries	I-125 HSA, I-125 albumin for plasma volume, IsoJex	343	N
A9536	Technetium Tc-99m depreotide, diagnostic, per study dose, up to 35 millicuries	NEOTEC, Neotec	343	N
A9537	Technetium Tc-99m mebrofenin, diagnostic, per study dose, up to 15 millicuries	Choletec, 99mTc BrIDA, Mebrofenin	343	N
A9538	Technetium Tc-99m pyrophosphate, diagnostic, per study dose, up to 25 millicuries	Phosphotec, Technetium labeled Pyrophosphate, Stannous Pyrophosphate, Pyrolite; use this code for myocardial infarct imaging. Do not use this code for GBP, RVG, or MUGA procedures; see A9560	343	N
A9539	Technetium Tc-99m pentetate, diagnostic, per study dose, up to 25 millicuries	Pentetate, Tc-99M DTPA, DTPA, Technetium DTPA [pronounced "dit' pa"]	343	N
A9540	Technetium Tc-99m macroaggregated albumin, diagnostic, per study dose, up to 10 millicuries	Macrotec, Pulmolite, Pulmotech™, MAA, Macroaggregated Albumin, Technetium MAA, Macrosoheres	343	N
A9541	Technetium Tc-99m sulfur colloid, diagnostic, per study dose, up to 20 millicuries	Sulfur Colloid (SC), Tc Sc (Use this code for Oral, IV, or Filtered SC)	343	N
A9542	Indium In-111 ibritumomab tiuxetan, diagnostic, per study dose, up to 5 millicuries	DxIn-111 Zevalin, 111In Zevalin, Diagnostic Zevalin	343	N
A9543	Yttrium Y-90 ibritumomab tiuxetan, therapeutic, per treatment dose, up to 40 millicuries	Rx Y-90 Zevalin, yttrium, 90Y Zevalin, therapeutic Zevalin	344	K
A9546	Cobalt Co-57/58, cyanocobalamin, diagnostic, per study dose, up to 1 microcurie	Nycomed, Cobalt, Cobalt 57/58	343	N

Table A-1. Drugs, Radiopharmaceuticals, and Common Isotopes

HCPCS/Description		Notes	RC	SI
A9547	Indium In-111 oxyquinoline, diagnostic, per 0.5 Millicurie	Used with WBC labeling Indium Labeled White Cells, Indium Tagged WBCs, Indium Oxvuuinoline	343	N
A9548	Indium In-111 pentetate, diagnostic, per 0.5 Millicurie	Indiclor, Indium DTPA, DTPA [pronounced "dit' pa"] (Use for Oral or IV)	343	N
A9550	Technetium Tc-99m sodium gluceptate, diagnostic, per study dose, up to 25 millicurie	Glucoscan, Glucoheptonate, Gluco, Technetium Glucoheptonate, Gluceptate, GH	343	N
A9551	Technetium Tc-99m succimer, diagnostic, per study dose, up to 10 millicuries	DMSA, Technetium Labeled DMSA, Dimercaptosuccinic acid, Succimer	343	N
A9552	Fluorodeoxyglucose F-18 fdg, diagnostic, per study dose, up to 45 millicuries	FDG, F-18	343	N
A9553	Chromium Cr-51 sodium chromate, diagnostic, per study dose, up to 250 microcuries	Chromitope Sodium, Chromium 51, sodium chromate injection, used for Red Cell volume, mass, survival or evaluation of blood loss	343	N
A9554	Iodine I-125 sodium iothalamate, diagnostic, per study dose, up to 10 microcuries	125-I-Iothalamate, Glofil-125, Cypros Pharmaceutical for GFR assessment	343	N
A9555	Rubidium Rb-82, diagnostic, per study dose, up to 60 millicuries	Rb-82, Rubidium, CardioGen82	343	N
A9556	Gallium Ga-67 citrate, diagnostic, per millicurie	Gallium, 67Gallium, Gallium Citrate	343	N
A9557	Technetium Tc-99m bicisate, diagnostic, per study dose, up to 25 millicuries	Neurolite, Neurolite, ECD	343	N
A9558	Xenon Xe-133 gas, diagnostic, per 10 millicuries	Xenon, Xenon Gas	343	N
A9559	Cobalt Co-57 cyanocobalamin, oral, diagnostic, per study dose, up to 1 microcurie	RUBRATOPE-57, CO-BATOPE-57, Dicopac kit, Shillings Study Cobalt, Cobalt 57	343	N
A9560	Technetium Tc-99m labeled red blood cells, diagnostic, per study dose, up to 30 millicuries	Tagged Red Cells, Tagged RBCs, ULTRATAG or (nonradioactive [cold]) PYP (pyrophosphate) + 99m Tc — Code to be used for both the invivo/invitro methods of tagging Red Blood Cells	343	N
A9561	Technetium Tc-99m oxidronate, diagnostic, per study dose, up to 30 millicuries	HDP, Oxidronate (alternative to MDP for Bone Imaging)	343	N
A9562	Technetium Tc-99m mertiatide, diagnostic, per study dose, up to 15 millicuries	MAG-3, MAGS, Technetium MAG 3	343	N
A9563	Sodium phosphate P-32, therapeutic, per millicurie	P 32, 32P Phosphate	344	K

Table A-1. Drugs, Radiopharmaceuticals, and Common Isotopes

HCPCS/Description		Notes	RC	SI
A9564	Chromic phosphate P-32 suspension, therapeutic, per millicurie	P 32, 32P Chromate, 32P Chromic, Phosphocol P-32	344	E1
A9566	Technetium Tc-99m fanolesomab, diagnostic, per study dose, up to 25 millicuries	NeutroSpec	343	N
A9567	Technetium Tc-99m pentetate, diagnostic, aerosol, per study dose, up to 75 millicuries	DTPA [pronounced "dit' pa"], Technetium DTPA, DTPA Aerosol For Lung Ventilation Studies	343	N
A9568	Technetium Tc-99m arcitumomab, diagnostic, per study dose, up to 45 millicuries	CEA scan	343	N
A9569	Technetium Tc-99m exametazime labeled autologous white blood cells, diagnostic, per study dose	Use this code for infection or inflammation imaging; do not use this code for brain imaging—see A9521.	343	N
A9570	Indium In-111 labeled autologous white blood cells, diagnostic, per study dose	When prepared with patient WBC, use this code; do not use A9547.	343	N
A9571	Indium In-111 labeled autologous platelets, diagnostic, per study dose	When prepared with patient platelets, use this code; do not use A9547.	343	N
A9572	Indium In-111 pentetreotide, diagnostic, per study dose, up to 6 millicuries	Octreoscan A9565 was deleted effective 2008; note description change, adjust charge if necessary.	343	N
A9580	Sodium fluoride F-18, diagnostic, per study dose, up to 30 millicuries	F-18, NaF, Sodium Flouride.	343	N
A9582	Iodine I-123 iobenguane, diagnostic, per study dose, up to 15 millicuries	Common name: I-123-MIBG. Trade name: AdreView	343	N
A9584	Iodine I-123 ioflupane, diagnostic, per study dose, up to 5 millicuries	Common name: Datscan Trade name: DaTscan™	343	N
A9586	Florbetapir F18, diagnostic, per study dose, up to 10 millicuries	Common name: Beta amyloid imaging Trade name*: Amyvid™ NDC #00002-1200-01	343	N
A9587	Gallium Ga-68, dotatate, diagnostic, 0.1 millicurie	New diagnostic radiopharmaceutical approved by the FDA on June 2, 2016 Common name: Gallium DOTATATE Trade name: NETSPOT™ by AAA NDC # 69488-001-40 *A PET imaging agent for the localization of somatostatin receptor–positive neuroendocrine tumors*	343	N

Table A-1. Drugs, Radiopharmaceuticals, and Common Isotopes

HCPCS/Description		Notes	RC	SI
A9588	Fluciclovine F-18, diagnostic, 1 millicurie	New diagnostic radiopharmaceutical approved by the FDA on May 31, 2016 Trade name: Axumin™ by Blue Earth Diagnostic (BED) NDC # 69932-0001-01 A PET imaging agent for detecting biochemical recurrence of prostate cancer	343	N
A9590	Iodine-131 iobenguane, 1 millicurie	Trade name: AZEDRA NDC 71258-0015-02	343 or 344	K
A9591	Fluoroestradiol F-18, diagnostic, 1 mCi	Trade name: CERIANNA™ NDC (72874-0001-01) January 1, 2021 and later	343	G
A9592	Copper Cu-64, dotatate, diagnostic, 1 millicurie	Trade name: Detectnet™ Cu-64 DOTATATE NDC (69945-0064-01)	343	G
A9593	Gallium ga-68 psma-11, diagnostic, (ucsf), 1 millicurie	No trade name (UCSF) Effective July 1, 2021	343	G
A9594	Gallium ga-68 psma-11, diagnostic, (ucla), 1 millicurie	No trade name (UCLA) Effective July 1, 2021	343	G
A9595	Piflufolastat f-18, diagnostic, 1 millicurie	Trade name: Pylarify™ PSMA NDC (71258-0022-00) Effective January 1, 2022	343	G
●A9596	Gallium Ga-68 gozetotide, diagnostic, (illuccix), 1 millicurie	Trade name: Illuccix® GE FASTlab or Eckert & Ziegler GalliaPharm NDCs (74725-0100-25, 74725-0100-64) Effective July 1, 2022 Pass-through End Date: June 30, 2025	343	G
A9597	Positron emission tomography radiopharmaceutical, diagnostic, for tumor identification, not otherwise classified	Generic code, use for newly FDA approved PET diagnostic radiopharmaceutical for tumor identification, NOC	343	N
A9598	Positron emission tomography radiopharmaceutical, diagnostic, for non-tumor identification, not otherwise classified for Cu-64 DOTATATE Some payers may request J3490 (Unclassified drugs), which is another unlisted drug code. Check with local payers for correct reporting.	Generic code, use for newly FDA approved PET diagnostic radiopharmaceuticals for non-tumor identification, NOC (e.g., neurologic- or cardiac-indicated tracers)	343	N
A9599	Radiopharmaceutical, diagnostic, for beta-amyloid positron emission tomography (PET) Imaging, per study dose	Use in MPFS setting for Vizamyl or Neuraceq.	343	N
A9600	Strontium Sr-89 chloride, therapeutic, per millicurie	Rx Metastron, Strontium, Strontium Labeled Metastron	344	K

Table A-1. Drugs, Radiopharmaceuticals, and Common Isotopes

HCPCS/Description		Notes	RC	SI
●A9601	Flortaucipir f 18 injection, diagnostic, 1 millicurie	Trade name: Tauvid™ Eli Lilly and Company F-18 Flortaucipir NDCs (0002-1210-30, 0002-1210-50, 0002-1220-48, 0002-1220-50) Effective July 1, 2022 E2 = Pricing information not available to CMS No Pass-through End Date at the time of publication	343	E2
●A9602	Fluorodopa f 18 injection, diagnostic, 1 millicurie	Trade name: None at time of print The Feinstein Institutes for Medical Research 350 Community Drive Manhasset New York 11030 Indicated for visualize dopaminergic nerve terminals in the striatum for the evaluation of adult patients with suspected Parkinsonian syndromes (PS). NDC (13267-346-57) Effective October 1, 2022 Pass-through End Date: September 30, 2025	343	G
A9604	Samarium Sm-153 lexidronam, therapeutic, per treatment dose, up to 150 millicuries	Rx Quadramet Samarium, Lexidronamm, 153Samarium, 153Sm-EDTMP	344	K
A9606	Radium Ra-223 dichloride, therapeutic, per microcurie	The FDA approved this therapeutic radiopharmaceutical on May 15, 2013. Common name: Radium-223 Trade name: Xofigo™ NDC # 50419-0208-01 for Xofigo™ Note: Code description is per microcurie. Billing units should be consistent with costs of radiotracer.	344	K
●A9607	Lutetium lu 177 vipivotide Lutetium Lu 177 vipivotide tetraxetan, therapeutic, 1 millicurie	Trade name: PLUVICTO™ Advanced Accelerator Applications USA, Inc NDCs (69488-003-01) Effective October 1, 2022 Pass-through End Date: September 30, 2025	344	G
●A9800	Gallium locametz 1 millicuri Gallium ga-68 gozetotide, diagnostic, (locametx), 1 millicurie	Trade name: LOCAMETEZ® Advanced Accelerator Applications USA, Inc NDCs (69488-003-01) Effective October 1, 2022 Pass-through End Date: September 30, 2025	343	G

Table A-1. Drugs, Radiopharmaceuticals, and Common Isotopes

HCPCS/Description		Notes	RC	SI
C2616	Brachytherapy source, non-stranded, yttrium-90, per source	TheraSphere, SirTex, SIR-Spheres, Y-90 MicroSpheres	278	U
C9060 or J3490	Fluoroestradiol F-18, diagnostic, 1 mCi	Trade name: CERIANNA™ NDC # 72874-0001-01 C codes are Hospital Outpatient use only. Effective October 1, 2020 to December 31, 2020. See A9591 on or after January 1, 2021	343	G
C9067	Gallium Ga-68, dotatoc, diagnostic, 0.01mCi	No trade name: UIHC Hospital Outpatient use only. Effective October 1, 2020	343	G
C9898	Radiolabeled product provided during a hospital inpatient stay	Effective Oct. 1, 2008	344	N
J0153	Injection, adenosine, 1 milligram	Replaces diagnostic and therapeutic codes J0150 and J0151	636	N
J0280	Injection, aminophyllin, up to 250 mg	Phyllocontin	636	N
J0461	Injection, atropine sulfate, 0.01 mg	Atropen, Sal-Tropine	636	N
J1120	Injection, acetazolamide sodium, up to 500 mg	Diamox	636	N
J1160	Injection, digoxin, up to 0.5 mg	Lanoxin	636	N
J1245	Injection, dipyridamole, per 10 mg	Persantine IV	636	N
J1250	Injection, dobutamine hydrochloride, per 250 mg	Dobutrex	636	N
J1265	Injection, dopamine HCl, 40 mg	Intropin	636	N
J1800	Injection, propranolol HCl, up to 1 mg	Inderal	636	N
J1940	Injection, furosemide, up to 20 mg	Lasix, furomide MD, Furocot	636	N
J2270	Injection, morphine sulfate, up to 10 mg	Infumorph	636	N
J2785	Injection, regadenoson, 0.1 mg	LexiScan NDC 0469-6501-89 (syringe 0.4 mg) Note: Unit alert—check code description carefully and bill the appropriate number of units.	636	N
J2805	Injection, sincalide, 5 micrograms	Kinevac, CCK, Cholecystokinin	636	N
J3240	Injection, thyrotropin alpha, 0.9 mg	Thyrogen	636	K
J9311	Injection, rituximab 10 mg and hyaluronidase	Effective January 1, 2019	636 or chemo rev-enue code	G
J9312	Injection, rituximab, 10 mg	Effective January 1, 2019	636 or chemo rev-enue code	K

Table A-1. Drugs, Radiopharmaceuticals, and Common Isotopes

HCPCS/Description		Notes	RC	SI
Q3001	Radioelements for brachytherapy, any type, each	TheraSphere, SirTex, SIR-Spheres, Y-90 MicroSpheres	278	B
Q9968	Injection, non-radioactive, non-contrast, visualization adjunct (e.g., methylene blue, isosulfan blue), 1 mg	Used typically by surgeon for sentinel node identification in OR, alternative nonradioactive option to ^{99m}Tc filtered SC	636	K
Q9969	Technetium Tc-99m from non-highly enriched uranium source, full cost recovery add-on, per study dose	Use with 95 percent non-HEU ^{99m}Tc sourced radiopharmaceuticals	343	K
Q9982	Flutemetamol F-18, diagnostic, per study dose, up to 5 millicuries	New diagnostic PET radiopharmaceutical was approved by the FDA on October 25, 2013. Common name: Beta amyloid imaging agent Trade name: Vizamyl™ G.E. NDC # 17156-067-01 Prior to July 1, 2016 providers in MPFS setting used the NOC code A9599 and in OPPS used C9459 to report.	343	N
Q9983	Florbetaben F-18, diagnostic, per study dose, up to 8.1 millicuries	New diagnostic PET radiopharmaceutical was approved by the FDA on March 20, 2014. Common name: Beta amyloid imaging agent Trade name: Neuracq™ Piramal NDC # 54828-001-30 Prior to July 1, 2016 providers in MPFS setting used the NOC code A9599 and in OPPS used C9458 to report.	343	N

Table A-2. Diagnostic Radiopharmaceuticals Without HCPCS Codes—Report Using NOC Code

HCPCS/Description		Notes	RC	SI
A4641	Radiopharmaceutical, diagnostic, not otherwise classified *—Iodine I-131 hippuran, diagnostic, per study dose*	Often replaced by MAG 3	343	N
A4641	Radiopharmaceutical, diagnostic, not otherwise classified *—Krypton KR-81m gas, diagnostic, per study dose*	Not commercially manufactured and sold in the U.S. at present; used for lung scans; see Xenon for alternative.	343	N
A4641	Radiopharmaceutical, diagnostic, not otherwise classified *—Technetium TC-99m (HAM) human albumin micro-spheres, diagnostic, per study dose*	No longer commercially manufactured. Replaced by Technetium MAA.	343	N

Table A-2. Diagnostic Radiopharmaceuticals Without HCPCS Codes—Report Using NOC Code

HCPCS/Description		Notes	RC	SI
A9597	Positron emission tomography radiopharmaceutical, diagnostic, for tumor identification, not otherwise classified for Cu-64 DOTATATE Some payers may request J3490 (Unclassified drugs), which is another unlisted drug code. Check with local payers for correct reporting.	Trade name: DetectnetTM Cu-64 DOTATATE NDC # 69945-00694-01 Note: Verify quarterly as CMS releases updates	343	N
A9598	Positron emission tomography radiopharmaceutical, diagnostic, for non-tumor identification, not otherwise classified	Generic code, use for newly FDA approved PET diagnostic radiopharmaceuticals for non-tumor identification, NOC (e.g., neurologic- or cardiac- indicated tracers)	343	N

Table A-3. Therapeutic Radiopharmaceuticals Without HCPCS Codes—Report Using A9699 NOC Code

HCPCS/Description		Notes	RC	SI
A9699	Radiopharmaceutical, therapeutic, not otherwise classified	RX NOC	344	N
A9699	Radiopharmaceutical, therapeutic, not otherwise classified *—Gold Au-198, therapeutic, per treatment dose*	Radio-Gold, radioactive Gold, Gold 198	344	N
A9699	Radiopharmaceutical, therapeutic, not otherwise classified *—Rhenium Rh-186, therapeutic, per treatment dose*	Rhenium Rh-186	344	N
A9699	Radiopharmaceutical, therapeutic, not otherwise classified *—Yttrium Y-90, therapeutic, per treatment dose*	Yttrium Y-90	344	N

APPENDIX 2

Medicare PFS Payment Status Codes and Descriptions

Status Codes from the Medicare PFS

The status code (SC) is an indicator that shows whether the CPT/HCPCS code is in the MPFS and whether it is separately payable if the service is covered. The following SCs may be helpful:

Mod. If a pre-determined payment amount is made for a code and if a modifier is used, the modifier is shown in this column. When 53 is shown, it indicates the rate for a discontinued procedure. A modifier is shown in this column to indicate the technical component (TC) or a professional component (26) for the service. For a global service, this column will not include a TC or 26. When a practitioner furnishes both the PC and TC, the code is billed without a modifier.

Status. The indicators show whether the CPT/HCPCS code is included in the PFS and if it is covered whether it is separately payable. An explanation of each status indicator follows:

A = Active code. These codes are separately payable under the PFS. There will be RVUs for codes with this status. The presence of an "A" indicator does not mean that Medicare has made a national coverage determination regarding the service. Contractors remain responsible for local coverage decisions in the absence of a national Medicare policy.

B = Bundled code. Payments for covered services are always bundled into payment for other services, which are not specified. If these services are covered, payment for them is subsumed in the payment for the services to which they are bundled (for example, telephone calls to patients to convey information following a service or procedure). If RVUs are shown, they are not used for Medicare payment.

C = Contractor-priced code. Contractors establish RVUs and payment amounts for these services.

E = Excluded from the PFS by regulation. These codes are for items and services that CMS has excluded from the PFS by regulation. No payment may be made under the PFS for these codes and generally, no RVUs are shown.

I = Not valid for Medicare purposes. Medicare uses another code for the reporting of and the payment for these services.

M = Measurement codes, used for reporting purposes only. There are no RVUs and no payment amounts for these codes. CMS uses them to aid with performance measurement. No separate payment is made.

N = Noncovered service. These codes are noncovered services. Medicare payment is not made for these codes. If RVUs are shown, they are not used for Medicare payment.

P = Bundled/excluded codes. There are no RVUs and no payment amounts for these services. No separate payment is made for them under the fee schedule. If the item or service is covered as incident to a physician service and is provided on the same day as a physician service, payment for it is bundled into the payment for the physician service to which it is incident (an example is an elastic bandage furnished by a physician incident to a physician service). If the item or service is covered as other than incident to a physician service, it is excluded from the fee schedule (for example, colostomy supplies) and is paid under the other payment provision of the Act.

Q = Therapy functional limitation code, used for required reporting purposes only. No separate payment is made.

R = Restricted coverage. Special coverage instructions apply. If the service is covered and no RVUs are shown, it is contractor-priced.

T = Paid as only service. These codes are paid only if there are no other services payable under the PFS billed on the same date by the same practitioner. If any other services payable under the PFS are billed on the same date by the same practitioner, these services are bundled into the service(s) for which payment is made.

X = Statutory exclusion. These codes represent an item or service that is not within the statutory definition of "physicians' services" for PFS payment purposes (for example, ambulance services). No payment may be made under the PFS and generally, no RVUs are shown for these codes.

Description. This is the code's short descriptor, which is an abbreviated version of the narrative description of the code.

Work RVUs. These are the RVUs for the work for this rule cycle.

Nonfacility PE RVUs. These are the resource-based PE RVUs for nonfacility settings. An "NA" in this column means that we have not developed a PE RVU

in the nonfacility setting for the service because it is typically furnished in the hospital (for example, open heart surgery is generally furnished in the hospital setting and not a physician's office). If there is an "NA" in this column and the contractor determines that this service can be furnished in the nonfacility setting, the service will be paid at the facility PE RVU rate.

Facility PE RVUs. These are the resource-based PE RVUs for facility settings. Services that have an "NA" in this column are typically not paid under the PFS when furnished in a facility setting. These services, which include "incident to" services and the technical portion of diagnostic tests, are generally paid under either the hospital outpatient prospective payment system or bundled into the hospital inpatient prospective payment system payment. In some cases, these services may be paid in a facility setting at the PFS rate (for example, therapy services), but there would be no payment made to the practitioner under the PFS in these situations.

Malpractice RVUs. These are RVUs for the malpractice expense for this rule cycle.

Global. This indicator shows the number of days in the global period for the code (0, 10, or 90 days). An explanation of the alpha codes follows:

XXX = The global concept does not apply.

YYY = The global period is to be set by the contractor (for example, unlisted surgery codes).

ZZZ = Code related to another service that is always included in the global period of the other service. (Note: Physician work and PE are associated with intra-service time and, in some instances, with the post-service time.)

APPENDIX 3

Hospital OPPS Payment Status Indicators and Descriptions

The following payment status indicators (SIs) explain how codes are paid under the 2023 hospital outpatient prospective payment system (OPPS). These can be found in Addendum D1 of the 2023 final rule.

Indicator	Item/Code/Service	OPPS Payment Status
A	Services furnished to a hospital outpatient that are paid under a fee schedule or payment system other than OPPS,* for example: • Ambulance Services • Separately Payable Clinical Diagnostic Laboratory Services • Separately Payable Non-Implantable Prosthetics and Orthotics • Physical, Occupational and Speech Therapy • Diagnostic Mammography • Screening Mammography Unclassified drugs and biologicals reportable under HCPCS code C9399	Not paid under OPPS. Paid by MACs under a fee schedule or payment system other than OPPS. Services are subject to deductible or coinsurance unless indicated otherwise. Not subject to deductible or coinsurance Not subject to deductible or coinsurance. Contractor priced at 95 percent of drug or biological's average wholesale price (AWP) using Red Book or an equivalent recognized compendium and paid under OPPS.
B	Codes that are not recognized by OPPS when submitted on an outpatient hospital Part B bill type (12x and 13x).	Not paid under OPPS. • May be paid by MACs when submitted on a different bill type, for example, 75x (CORF), but not paid under OPPS. • An alternate code that is recognized by OPPS when submitted on an outpatient hospital Part B bill type (12x and 13x) may be available.
C	Inpatient Procedures	Not paid under OPPS. Admit patient. Bill as Inpatient.
D	Discontinued Codes	Not paid under OPPS or any other Medicare payment system.
E1	Items, Codes, and Services: • Not covered by any Medicare outpatient benefit category • Statutorily excluded by Medicare • Not reasonable and necessary	Not paid by Medicare when submitted on outpatient claims (any outpatient bill type).

* Note: Payments "under a fee schedule or payment system other than OPPS" may be contractor priced.

Indicator	Item/Code/Service	OPPS Payment Status
E2	Items, Codes, and Services: For which pricing information and claims data are not available	Not paid by Medicare when submitted on outpatient claims (any outpatient bill type)
F	Corneal Tissue Acquisition; Certain CRNA Services	Not paid under OPPS. Paid at reasonable cost.
G	Pass-Through Drugs and Biologicals	Paid under OPPS; separate APC payment.
H	Pass-Through Device Categories	Separate cost-based pass-through payment; not subject to copayment.
J1	Hospital Part B Services Paid Through a Comprehensive APC	Paid under OPPS; all covered Part B services on the claim are packaged with the primary "J1" service for the claim, except services with OPPS status indicator of "F","G", "H", "L" and "U"; ambulance services; diagnostic and screening mammography; rehabilitation therapy services; services assigned to a new technology APC; self-administered drugs; all preventive services; and certain Part B inpatient services; and FDA-authorized or approved drugs and biologicals (including blood products) that are authorized or approved to treat or prevent COVID-19.
J2	Hospital Part B Services That May Be Paid Through a Comprehensive APC	Paid under OPPS; Addendum B displays APC assignments when services are separately payable. (1) Comprehensive APC payment based on OPPS comprehensive-specific payment criteria. Payment for all covered Part B services on the claim is packaged into a single payment for specific combinations of services, except services with OPPS status indicator of "F","G", "H", "L" and "U"; ambulance services; diagnostic and screening mammography; rehabilitation therapy services; services assigned to a new technology APC; self-administered drugs; all preventive services; and certain Part B inpatient services; and FDA-authorized or approved drugs and biologicals (including blood products) that are authorized or approved to treat or prevent COVID-19. (2) Packaged APC payment if billed on the same claim as a HCPCS code assigned status indicator "J1". (3) In other circumstances, payment is made through a separate APC payment or packaged into payment for other services.
K	Nonpass-through Drugs and Nonimplantable Biologicals, including Therapeutic Radiopharmaceuticals	Paid under OPPS; separate APC payment.

Indicator	Item/Code/Service	OPPS Payment Status
L	Influenza Vaccine; Pneumococcal Pneumonia Vaccine; Hepatitis B Vaccines; Covid-19 Vaccine; Monoclonal Antibody Therapy Product	Not paid under OPPS. Paid at reasonable cost; not subject to deductible or coinsurance.
M	Items and Services Not Billable to the MAC	Not paid under OPPS.
N	Items and Services Packaged into APC Rates	Paid under OPPS; payment is packaged into payment for other services. Therefore, there is no separate APC payment.
P	Partial Hospitalization	Paid under OPPS; per diem APC payment.
Q1	STV-Packaged Codes	Paid under OPPS; Addendum B displays APC assignments when services are separately payable. (1) Packaged APC payment if billed on the same claim as a HCPCS code assigned status indicator "S", "T", or "V". (2) Composite APC payment if billed with specific combinations of services based on OPPS composite-specific payment criteria. Payment is packaged into a single payment for specific combinations of services. (3) In other circumstances, payment is made through a separate APC payment.
Q2	T- Packaged Codes	Paid under OPPS; Addendum B displays APC assignments when services are separately payable. (1) Packaged APC payment if billed on the same claim as a HCPCS code assigned status indicator "T". (2) In other circumstances, payment is made through a separate APC payment.
Q3	Codes That May Be Paid Through a Composite APC	Paid under OPPS; Addendum B displays APC assignments when services are separately payable. Addendum M displays composite APC assignments when codes are paid through a composite APC. (1) Composite APC payment based on OPPS composite-specific payment criteria. Payment is packaged into a single payment for specific combinations of services. (2) In other circumstances, payment is made through a separate APC payment or packaged into payment for other services.

Indicator	Item/Code/Service	OPPS Payment Status
Q4	Conditionally Packaged Laboratory Tests	Paid under OPPS or CLFS. (1) Packaged APC payment if billed on the same claim as a HCPCS code assigned published status indicator "J1","J2", "S", "T" ,"V", "Q1" ,"Q2", or "Q3". (2) In other circumstances, laboratory tests should have a status indicator of "A" and payment is made under the CLFS.
R	Blood and Blood Products	Paid under OPPS; separate APC payment.
S	Procedure or Service, Not Discounted When Multiple	Paid under OPPS; separate APC payment.
T	Procedure or Service, Multiple Procedure Reduction Applies	Paid under OPPS; separate APC payment.
U	Brachytherapy Sources	Paid under OPPS; separate APC payment.
V	Clinic or Emergency Department Visit	Paid under OPPS; separate APC payment.
Y	Non-Implantable Durable Medical Equipment	Not paid under OPPS. All institutional providers other than home health agencies bill to a DME MAC.

APPENDIX 4

Hospital Revenue Codes

Hospital Revenue Codes	Descriptions
254	Drugs Incident to Other Diagnostic Services
255	Drugs Incident to Radiology
262	IV Therapy/Pharmacy Services
263	IV Therapy/Drug/Supply Delivery
264	IV Therapy/Supplies
272	Medical/Surgical Supplies and Devices Sterile Supply
278	Other implants
280	Oncology General Classification
281	Oncology Other
300	Laboratory – General
330	Radiology Therapeutic and/or Chemotherapy Administration General Classification
331	Chemotherapy Administration Injection
332	Chemotherapy Administration Oral
335	Chemotherapy IV
340	Nuclear Medicine General Classification
341	Nuclear Medicine Diagnostic Procedures
342	Nuclear Medicine Therapeutic Procedures
343	Nuclear Medicine Diagnostic Radiopharmaceuticals
344	Nuclear Medicine Therapeutic Radiopharmaceuticals
349	Nuclear Medicine Other
35X	CT Scan
360	Operating Room Services General
361	Operating Room Services Minor Surgery
369	Operating Room Services Other
404	Other Imaging Services – (PET)
480	General Cardiology
482	Stress Test
49X	Ambulatory Surgical Care
622	Supplies Incident to Other Diag. Services
636	Drugs requiring detailed coding Charges for drugs and biologicals (with the exception of radiopharmaceuticals, which are reported under Revenue Codes 343 and 344) requiring specific identification as required by the payer.

Source: The National Uniform Billing Committee (NUBC) developed and maintains the revenue codes listed above (and others). More information about this organization can be found at *www.NUBC.org*.

APPENDIX 5

Radioimmunotherapy (RIT) Summary Table

Radioimmunotherapy (RIT) Summary Table: Procedures & Administrations

Key Components	Zevalin®		
	Medicare HOPPS	Medicare PFS	Private
1) Initial Consultation	**CPT 99241 – 99245 New or Established Patient** ***Time:*** 15 – 80 minutes ***History & Physical:*** Focused to Comprehensive ***Decision Making:*** Straightforward to High Complexity		
2) Tumor Biodistribution - Imaging	**CPT 78804** *Radiopharmaceutical localization of tumor or distribution of radiopharmaceutical agent(s); whole body, requiring two or more days imaging* **or if only single day whole body performed use CPT 78802**		
3) Dosimetry & Treatment Planning	**Not Usually Done**		
4) Supply & Administration for "non-radioactive" and "radioactive" Antibody			
a) Diagnostic Dose i) Non-Radioactive	**J9311 Injection, Rituximab, 10 mg and Hyaluronidase / J9312 Injection, Rituximab, 10 mg** Use J9311 or J9312 for RituXan Check # of units specific dose		
ii) Radioactive	**A9542** *Indium In-111 ibritumomab tiuxetan, diagnostic, per study dose, up to 5 millicuries*		
b) Therapeutic Dose i) Non-Radioactive	**See above 4ai**		
ii) Radioactive	**A9543** *Yttrium Y-90 ibritumomab tiuxetan, therapeutic, per treatment dose, up to 40 millicuries*		
c) Administration "Non-Radioactive" Antibody	**†96413 & †96415 Chemo Administration or †96365 Drug I.V. Infusion** **(Check # of units per the full description of each code listed below & actual administration)** **Do not use these codes if payer requires G3001.**		
	†Code & bill for each "Non-Radioactive" admin prior to both the Dx & Rx Therapeutic Dose **(Check # of units per the full description of each code listed below & actual administration)**		
5) Therapy Administration	**CPT 79403** *Radiopharmaceutical therapy, radiolabeled monoclonal antibody by intravenous infusion* (For pre-treatment imaging, see 78802, 78804) (Do not report 79403 in conjunction with 79101) Additionally, a cross-reference was added following code 77750 to direct the user to report code 79403 for administration of radiolabeled monoclonal antibodies.		
6) Follow Up Consultation	**CPT 99211-99215 Office or Other Outpatient Visit** ***Time:*** 5 – 40 minutes ***History & Physical:*** Focused to Comprehensive ***Decision Making:*** Straightforward to High Complexity		

CPT 96413 *Chemotherapy administration, intravenous infusion technique; up to one hour, single or initial substance/drug*
CPT Add-On Code **+** 96415 *Chemotherapy administration, intravenous infusion technique; each additional hour, 1 to 8 hours (Report 96415 for intervals of greater than 30 minutes beyond 1-hour increments)*
CPT 96365 *Intravenous infusion, for therapy, prophylaxis, or diagnosis (specify substance or drug); initial, up to one hour* (The major difference between 96413 & 96365 is regarding the level of supervision.)

APPENDIX 6

Appropriate Use Criteria for Advanced Diagnostic Imaging

The Protecting Access to Medicare Act (PAMA) of 2014, Section 218(b), established a new program designed to raise the rate of appropriate ordering of advanced diagnostic imaging services provided to Medicare beneficiaries. This program requires that professionals ordering advanced diagnostic imaging services for Medicare patients consult a qualified Clinical Decision Support Mechanism (CDSM) prior to ordering the test to ensure tests being ordered adhere to established Appropriate Use Criteria (AUC).

Under this program, advanced diagnostic imaging services include:

- Computed tomography (CT)
- Magnetic resonance imaging (MRI)
- Nuclear medicine
- Positron emission tomography (PET)

A full list of the advanced imaging procedure codes can be found within the claims processing guidance released by the Centers for Medicare and Medicaid Services (CMS). A link to access this information is included below.

A CDSM is a tool for physicians to use during the evaluation of a patient to communicate AUC information to them and aid them in making appropriate decisions for treating the patient's clinical condition. The CDSM lets the ordering professional know whether or not the test being ordered adheres to established AUC, or if there is no AUC applicable to address the patient's condition.

Additionally, information regarding the CDSM consulted and adherence to AUC must be communicated on the test order from the ordering professional to the provider furnishing the imaging services. Providers are able to access imaging AUC through a stand-alone CDS system or using CDS software incorporated into their electronic health record system.

The year 2021 is designated as an Educational and Operations Testing Period, during which time there will be no penalties. Upon the implementation of the program, failure to adhere may carry significant consequences. Claims that fail to comply by this time will not be paid. This means that payment will be denied for the professional and technical components along with any charges billed globally.

Overall, note that claims for advanced diagnostic imaging services must include:

- The ordering professional's national provider identifier (NPI)
- Which CDSM was consulted among the multiple qualified CDSMs available
- Identifying if the service ordered would or would not adhere to consulted AUC or if the consulted AUC was designated as not applicable to the ordered service.

The Centers for Medicare and Medicaid Services (CMS) has released claims processing instructions for reporting AUC/CDSM information. This includes eight new modifiers, which are to be reported on the same line as the CPT code for the imaging service. If furnishing providers do not receive AUC information from the ordering provider, that should be reported with modifier MH.

CDSM Not Consulted – Emergency	
MA	Ordering professional is not required to consult a CDSM due to service being rendered to a patient with a suspected or confirmed emergency medical condition
CDSM Not Consulted – Hardship	
MB	Ordering professional is not required to consult a CDSM due to the significant hardship exception of insufficient internet access
MC	Ordering professional is not required to consult a CDSM due to the significant hardship exception of electronic health record or CDSM vendor issues
MD	Ordering professional is not required to consult a CDSM due to the significant hardship exception of extreme and uncontrollable circumstances
CDSM Consulted	
ME	The order for this service adheres to the AUC in the CDSM consulted by the ordering professional
MF	The order for this service does not adhere to the AUC in the CDSM consulted by the ordering professional
MG	The order for this service does not have AUC in the CDSM consulted by the ordering professional
Unknown	
MH	Unknown if the ordering professional consulted a CDSM for this service, related information was not provided for the furnishing professional or provider

In addition, eleven G-codes were created to report the CMS-approved, qualified CDSM tool consulted by the ordering professional, plus one code for qualified tool, not otherwise specified. The appropriate G-code should be reported as a separate line item when claims are submitted with a HCPCS modifier indicating CDSM was consulted (ME, MF, MG). It is acceptable to report multiple G-codes on a single claim. Note: these G-codes do not have associated payment rates, they are for reporting purposes only.

G-Code	Description
G1000	Clinical Decision Support Mechanism Applied Pathways, as defined by the Medicare Appropriate Use Criteria Program
G1001	Clinical Decision Support Mechanism eviCore, as defined by the Medicare Appropriate Use Criteria Program
G1002	Clinical Decision Support Mechanism MedCurrent, as defined by the Medicare Appropriate Use Criteria Program
G1003	Clinical Decision Support Mechanism Medicalis, as defined by the Medicare Appropriate Use Criteria Program
G1004	Clinical Decision Support Mechanism National Decision Support Company, as defined by the Medicare Appropriate Use Criteria Program
G1005	Clinical Decision Support Mechanism National Imaging Associates, as defined by the Medicare Appropriate Use Criteria Program
G1006	Clinical Decision Support Mechanism Test Appropriate, as defined by the Medicare Appropriate Use Criteria Program
G1007	Clinical Decision Support Mechanism AIM Specialty Health, as defined by the Medicare Appropriate Use Criteria Program
G1008	Clinical Decision Support Mechanism Cranberry Peak, as defined by the Medicare Appropriate Use Criteria Program
G1009	Clinical Decision Support Mechanism Sage Health Management Solutions, as defined by the Medicare Appropriate Use Criteria Program
G1010	Clinical Decision Support Mechanism Stanson, as defined by the Medicare Appropriate Use Criteria Program
G1011	Clinical Decision Support Mechanism, qualified tool not otherwise specified, as defined by the Medicare Appropriate Use Criteria Program

APPROPRIATE USE CRITERIA (AUC) PROGRAM

For the most up to date information on AUC implementation go to: *https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Appropriate-Use-Criteria-Program*

At the time of publication, CMS stated: "The payment penalty phase will not begin January 1, 2023, even if the PHE for COVID-19 ends in 2022. Until further notice, the educational and operations testing period will continue. CMS is unable to forecast when the payment penalty phase will begin."

NOTICE: All CDSMs and PLEs qualified as of July 2022 will remain qualified through this cycle. Applications for initial qualification or re-qualification will not be accepted for the 2023 application cycle.

APPENDIX 7

Artificial Intelligence Taxonomy

The 2023 *CPT Manual* included a new appendix (Appendix S) containing taxonomy and guidelines for classifying artificial intelligence (AI) for medical services and procedures. The term "AI" has not been defined in the code set as it is a vague term that does not, on its own, sufficiently describe or define the intended clinical use of a single service or procedure. Instead, AI applications (i.e., expert systems, machine learning, algorithm-based services) have been classified into three categories based on the service or procedure performed, and the work being performed by the machine on behalf of the provider. These three categories are defined, per the 2023 *CPT Manual*, as:

Assistive: The machine detects clinically relevant data without analysis or generated conclusions. Assistive requires physician or other QHP interpretation and report.

CPT Example: Computer-aided detection (CAD) imaging (77048, 77049, 77065-77067, 0042T, 0174T, 0175T).

Augmentative: The machine analyzes and/or quantifies data in a clinically meaningful way. Augmentative requires physician or other QHP interpretation and report.

CPT Example: Continuous glucose monitoring (95251), external processing of imaging data sets.

Autonomous: The machine automatically interprets data and independently generates clinically meaningful conclusions without concurrent physician or other QHP involvement. Autonomous medical services and procedures include interrogating and analyzing data. The work of the algorithm may or may not include acquisition, preparation, and/or transmission of data. The clinically meaningful conclusion may be a characterization of data (e.g., likelihood of pathophysiology) to be used to establish a diagnosis or to implement a therapeutic intervention. There are three levels of autonomous AI medical services and procedures with varying physician or other QHP professional involvement:

- *Level I:* Autonomous AI draws conclusions and offer diagnosis and/or management options, which are contestable and require physician or other QHP action to implement.

- *Level II:* Autonomous AI draws conclusions and initiates diagnosis and/or management options with opportunity for override, which may require physician or other QHP action to implement.
- *Level III:* Autonomous AI draws conclusions and initiates management, which requires physician or other QHP action to contest.

CPT Example: Retinal imaging (92229).

More information on the new guidelines can be found at *https://www.ama-assn.org/practice-management/cpt/cpt-appendix-s-ai-taxonomy-medical-services-procedures*. As this is an evolving area of care it is important to pay attention to announcements from the AMA and other professional organizations as new guidance is released.

APPENDIX 8

SNMMI Coding Concensus Opinion

For SNMMI members, found at:
http://www.snmmi.org/IssuesAdvocacy/QandADetail.aspx?ItemNumber=41631&navItemNumber=24950

Imaging for Sarcoidosis

QUESTION:

We are imaging for sarcoidosis and want to know which CPT codes to report?

ANSWER:

Appropriate coding for sarcoidosis imaging depends on the protocols and imaging equipment used as well as the clinical rationale and patient specific indications. SNMMI and ASNC have a joint consensus document located at *https://link.springer.com/content/pdf/10.1007/s12350-017-0978-9.pdf* and *https://jnm.snmjournals.org/content/58/8/1341* in each society's respective journals. While it is clear that resting perfusion PET or PET/CT is preferred for comparison with the FDG PET images, the consensus also states that if PET or PET/CT perfusion imaging is not available, it may be replaced with a resting SPECT or SPECT/CT perfusion study.

All PET or PET/CT Imaging (Limited Area of the Heart/Chest)

When performing a resting perfusion PET with an FDG PET providers would report CPT® 78432 Myocardial imaging, positron emission tomography (PET), combined perfusion with metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), dual radiotracer (eg, myocardial viability); alternatively when a resting perfusion PET/CT and FDG PET/CT is performed providers would report CPT® 78433 Myocardial imaging, positron emission tomography (PET), combined perfusion with metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), dual radiotracer (eg, myocardial viability); with concurrently acquired computed tomography transmission scan.

Combine PET or PET/CT and SPECT Imaging (Limited Area of the Heart/Chest)

When performing a resting perfusion SPECT or SPECT/CT with an FDG PET or PET/CT providers would report CPT® 78451 Myocardial perfusion

imaging, tomographic (SPECT) (including attenuation correction, qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); single study, at rest or stress (exercise or pharmacologic) plus pick one of either CPT® 78459 Myocardial imaging, positron emission tomography (PET), metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), single study; or CPT® 78429 Myocardial imaging, positron emission tomography (PET), metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), single study; with concurrently acquired computed tomography transmission scan.

Combine PET or PET/CT Imaging (whole body or stull base to mid-thigh) with perfusion PET, PET/CT or SPECT Imaging (active nodal, pulmonary, etc. involvement)

When the indications suggest the possibility for active nodal or pulmonary involvement it may be necessary to scan more than a limited area. In those cases, when a whole body or skull base to mid-thigh are medically necessary report one of the PET or PET/CT study (78812/78813 or 78815/78816) codes with any combination of the myocardial perfusion codes listed earlier.

We also refer you to the American Thoracic Society guidelines, the ATS states, "The diagnosis of sarcoidosis is not standardized…" for more details the Sarcoidosis diagnosis and detection document is located at *https://www.thoracic.org/about/newsroom/press-releases/journal/2020/first-official-ats-practice-guidelines-for-sarcoidosis-cover-diagnosis-and-detection1.php*