

Diagnostic Imaging Utilization Management 2008 Program Guidelines for:

- Breast MRI
- Cardiac CT/Coronary Artery CTA
- PET Imaging (Brain, Cardiac and Oncology)
- Quantitative CT for Bone Densitometry

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Proprietary and Confidential



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CLINICAL GUIDELINES WEBSITE DISCLAIMER

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American Imaging Management, Inc. (AIM) has developed proprietary Diagnostic Imaging Utilization Management Clinical Guidelines (together with any updates, referred to collectively as the "Guidelines"). The Guidelines are designed to evaluate and direct the appropriate utilization of high technology diagnostic imaging services. They are based on data from the peer-reviewed scientific literature, from criteria developed by specialty societies and from guidelines adopted by other health care organizations. Access to these Guidelines is being provided for informational purposes only. AIM is under no obligation to update its Guidelines. Therefore, these Guidelines may be out of date. The Guidelines are protected by copyright of AIM as permitted by and to the full extent of the law. These rights are not released, transferred, or assigned as a result of allowing access. You agree that you do not have any ownership rights to the Guidelines and you are expressly prohibited from selling, assigning, leasing, licensing, reproducing or distributing the Guidelines, unless authorized in writing by AIM.

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AIM's Practice Guidelines Define the Optimal Approaches for Diagnostic Imaging Utilization during Individualized Case Review

Use of AIM's Diagnostic Imaging Guidelines:

AIM's Proprietary Clinical Practice Guidelines are designed to evaluate and direct the appropriate utilization of elective, high technology diagnostic imaging services. In the process, multiple functions are accomplished:

- To promote the most efficient and cost-effective use of diagnostic imaging services
- To assist the practitioner as an educational tool
- To encourage standardization of medical practice patterns and reduce variation in clinical evaluation
- To curtail the performance of inappropriate, elective diagnostic imaging studies
- To reduce the performance of duplicative diagnostic imaging studies
- To advocate biosafety issues, including unnecessary radiation exposure (for CT and plain film radiography) and MRI safety concerns
- To enhance quality of healthcare for elective diagnostic imaging studies, using evidence-based medicine and outcomes research from numerous resources

AIM Guideline Development Process and Resources:

The development of AIM's proprietary practice guidelines involves integration of medical information from multiple sources, to support the reproducible use of high quality and state-of-the-art advanced diagnostic imaging services. The process for criteria development is based on technology assessment, peer-reviewed medical literature including clinical outcomes research and consensus opinion in medical practice.

The primary resources used for AIM guideline development include:

- American College of Radiology (ACR) Appropriateness Criteria
- American College of Cardiology (ACC) Appropriateness Criteria
- American Heart Association (AHA)
- American Institute of Ultrasound in Medicine (AIUM)
- American Cancer Society
- American Academy of Neurology (AAN)
- American Academy of Pediatrics (AAP)
- Society of Interventional Radiology (SIR)
- Society of Nuclear Medicine (SNM)
- Agency for Healthcare Research and Quality (AHRQ)
- Centers for Medicare and Medicaid Services (CMS)
- National Guideline Clearinghouse

Guideline review:

AIM's proprietary guidelines for appropriate diagnostic imaging utilization are reviewed routinely by:

- (1) Independent Physician Review Board: AIM's Physician Specialty Advisory Panel
- (2) Health Plan Medical Directors
- (3) Local Imaging Advisory Council (representing local physician communities)
- (4) Physician Review Panels, under the governance of our clients' State Regulatory Agencies

Positron Emission Tomography (PET) Brain Imaging



CPT CODES:

- 78608.....PET brain, metabolic evaluation
- 78609.....PET brain, perfusion, single study

COMMONLY USED RADIOPHARMACEUTICAL:

- 2-(fluorine-18) fluoro-2-deoxy-d-glucose (FDG)

IMAGING CONSIDERATIONS:

- This guideline does not supersede the enrollee's health plan medical policy specific to PET Neuroimaging.
- Enrollee coverage for PET imaging of Alzheimer's disease or Fronto-Temporal Lobe Dementia may be limited to one (1) per lifetime.
- Duplicative testing of the same anatomic area may be subject to high-level review, for evaluation of medical necessity.

COMMON DIAGNOSTIC INDICATIONS FOR BRAIN PET:

The following diagnostic indications for Brain PET are accompanied by pre-test considerations as well as supporting clinical data and prerequisite information:

REFRACTORY SEIZURES/EPILEPSY

- Pre-surgical evaluation to locate the foci of intractable seizure activity, in patients who have failed conventional medical therapy and who are undergoing pre-surgical evaluation.

FRONTO-TEMPORAL LOBE DEMENTIA AND ALZHEIMER'S DISEASE

- Use of PET is approved only to differentiate between Fronto-Temporal Dementia (FTD) and Alzheimer's Disease, when the patient's clinical presentation fits both diagnoses and other conventional testing has been unable to reveal a definitive diagnosis and when all of the following conditions are met; or
- Use of PET is approved when part of a CMS approved clinical trial specific to diagnosis and treatment of dementing neurodegenerative disease.

CONDITIONS:

The use of FDG-PET scan in the diagnosis of Alzheimer's disease and Fronto-Temporal Lobe Dementia is medically necessary and appropriate provided all of the following conditions are met:

- The patient has a recent diagnosis of Alzheimer's disease or frontal-temporal lobe dementia and a documented cognitive decline of at least six (6) months duration and meets the diagnostic criteria for Alzheimer's disease or fronto-temporal lobe dementia.
- The patient's clinical presentation includes such symptoms as:
 - Social disinhibition
 - Awkwardness
 - Difficulties with language, or
 - Loss of Executive Function

CONDITIONS:

- The patient has had a comprehensive clinical evaluation which has included:
 - A comprehensive medical history including an assessment of activities of daily living from a well-acquainted informant other than the patient;
 - A physical and mental status examination formally documenting the patient’s cognitive decline for a minimum of six (6) months; and
 - Cognitive scales or neuropsychological testing, laboratory testing, and structural imaging such as MRI or CT, to aid in identifying structural, metabolic, and chemical abnormalities as a cause for cognitive impairment.
- The patient is evaluated by a physician experienced in the diagnosis and assessment of Alzheimer’s disease and fronto-temporal lobe dementia.
- The results of previous physical and mental examinations, laboratory testing, and structural imaging have not clearly determined either a specific neurodegenerative disease or other cause for the clinical symptoms and the results of the FDG-PET will help clarify the diagnosis of Alzheimer’s disease or fronto-temporal lobe dementia, to guide future treatment.
- A brain SPECT scan has not been obtained for the same indication.
- The referring (ordering) provider submits the following medical information regarding the enrollee:
 - Date of onset of the cognitive decline
 - Clinical documentation supporting the diagnosis of a clinical syndrome such as Alzheimer’s disease or fronto-temporal lobe dementia
 - Results of a mini-mental status exam (MMSE) or similar test score
 - Differential diagnosis of Alzheimer’s disease or fronto-temporal lobe dementia
 - Results of all neuropsychological testing performed
 - Results of all CT and/or MRI structural imaging performed
 - Results of recent B12 and Thyroid Hormone laboratory blood tests
 - Name(s) of currently prescribed medications

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Magnetic Resonance Imaging (MRI)

Breast - Also referred to as MR Mammography (MRM)

CPT CODES:

77058 MRI of Breast, without and/or with contrast material(s); Unilateral
77059 MRI of Breast, without and/or with contrast material(s); Bilateral

IMAGING CONSIDERATIONS:

Technique:

- It is strongly recommended that Breast MRI examinations be performed with a dedicated breast coil.

Limitations:

- Breast MRI is not recommended as a screening technique in patients with average-risk for breast cancer
- Breast MRI is not recommended to assess suspicious breast lesions in order to avoid a biopsy
- Breast MRI should not be used to differentiate cysts from solid lesions, which is well evaluated with ultrasound

Additional Comments:

- A bilateral MRI study of the breast is correctly coded to CPT 77059. Requesting two unilateral studies (77058) to perform a bilateral exam is inappropriate. Billing 77058 two times for the same date of service or separately over subsequent days in order to describe a bilateral procedure fragments the service into its component parts and is not allowed.
- Duplicative testing of the same anatomic area with MRI and CT may be subject to high-level review, for evaluation of medical necessity.

COMMON DIAGNOSTIC INDICATIONS FOR BREAST MRI:

For Breast Carcinoma: Diagnostic Evaluation

LESION EVALUATION, WHEN PRIMARY SCREENING TEST RESULTS (MAMMOGRAPHY, BREAST ULTRASOUND AND/OR BIOPSY) AND PHYSICAL EXAMINATION ARE INCONCLUSIVE FOR BREAST CARCINOMA OR WHEN THESE STUDIES CANNOT BE PERFORMED

PERSONAL HISTORY OF INFILTRATING DUCTAL CARCINOMA, PARTICULARLY AMONG CANDIDATES FOR BREAST CONSERVATION

INVASIVE LOBULAR CARCINOMA, TO ASSESS THE EXTENT AND MULTICENTRICITY OF DISEASE, PARTICULARLY WHEN PRIMARY SCREENING TESTS ARE INCONCLUSIVE OR WHEN BREAST CONSERVATION IS BEING CONSIDERED

EVALUATE FOR MULTI-CENTRIC DISEASE IN NEWLY DIAGNOSED BREAST CARCINOMAS

- in the same breast, when this affects clinical treatment (lumpectomy versus mastectomy)
- in the contralateral breast, to interrogate for lesions not suspected by mammography and physical exam

FASCIAL EXTENSION OF BREAST CARCINOMAS ARISING NEAR THE PECTORALIS, SERRATUS ANTERIOR AND INTERCOSTAL MUSCULATURE

LOCATE AN OCCULT BREAST CANCER WITH POSITIVE LYMPH NODES FOR METASTATIC DISEASE AND NO IDENTIFIABLE PRIMARY BREAST LESION BY PHYSICAL EXAMINATION, MAMMOGRAPHY AND BREAST ULTRASOUND

NEOADJUVANT CHEMOTHERAPY – MR MAMMOGRAPHY MAY BE PERFORMED BEFORE, DURING AND AFTER CHEMOTHERAPY, TO ASSESS RESPONSE TO TREATMENT AND EXTENT OF RESIDUAL DISEASE, PRIOR TO SURGERY

COMMON DIAGNOSTIC INDICATIONS FOR BREAST MRI:

SUSPECTED BREAST CARCINOMA RECURRENCE, WHEN PHYSICAL EXAMINATION OR MAMMOGRAPHIC FINDINGS ARE INCONCLUSIVE

POST-LUMPECTOMY WITH CLOSE OR POSITIVE PATHOLOGICAL MARGINS, TO DETECT FOR RESIDUAL DISEASE, PARTICULARLY WHEN BREAST CONSERVATION AND LOCAL RE-EXCISION ARE PLANNED

POST-MASTECTOMY BREAST RECONSTRUCTION, WITH IMPLANT OR TISSUE TRANSFER FLAP, TO DETECT LOCAL RECURRENCE OF BREAST CARCINOMA.

DIFFERENTIATION OF PALPABLE MASS(ES) FROM SURGICAL SCAR TISSUE FOLLOWING BREAST SURGERY, BREAST RECONSTRUCTION OR RADIATION THERAPY

For Breast Carcinoma: Annual Screening

HIGH-RISK INDIVIDUALS WITH A BREAST CANCER GENETIC MUTATION, WHICH INCLUDE THE FOLLOWING:
1,15

- **BRCA1 AND BRCA2** – including BRCA mutation and first degree relative of BRCA carrier
- **LI-FRAUMENI SYNDROME** – including first degree relatives
- **COWDEN SYNDROME** – including first degree relatives
- **BANNAYAN-RILEY-RUVALCABA SYNDROME** – including first degree relatives

LIFETIME RISK ~ 20-25% OR GREATER, AS DEFINED BY BRCAPRO OR OTHER MODELS THAT ARE LARGELY DEPENDENT ON FAMILY HISTORY¹⁵

FOR AN INDIVIDUAL WHO RECEIVED RADIATION TO CHEST BETWEEN THE AGES 10-30 YEARS¹⁵

For Breast Implant Rupture: (Not requiring breast carcinoma diagnosis)

EVALUATION OF SYMPTOMATIC PATIENTS WITH BREAST IMPLANTS, FOR DETECTION OF IMPLANT RUPTURE

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Computerized Tomography and Computerized Tomographic Angiographic Cardiac and Coronary Arteries (CCTA)

CPT CODES:

- 0144T**CT heart, without contrast material, including image post-processing and quantitative evaluation of coronary calcium
- 0145T**CT heart, without contrast material, followed by contrast material(s) and further sections, including cardiac gating and 3D image post-processing; cardiac structure and morphology
- 0146T**.....CTA of coronary arteries (including native and anomalous coronary arteries, coronary bypass grafts), without quantitative evaluation of coronary calcium
- 0147T**.....CTA of coronary arteries (including native and anomalous coronary arteries, coronary bypass grafts), with quantitative evaluation of coronary calcium
- 0148T**.....Cardiac structure and morphology and CTA of coronary arteries (including native and anomalous coronary arteries, coronary bypass grafts), without quantitative evaluation of coronary calcium
- 0149T**.....Cardiac structure and morphology and CTA of coronary arteries (including native and anomalous coronary arteries, coronary bypass grafts), with quantitative evaluation of coronary calcium
- 0150T**.....Cardiac structure and morphology in congenital heart disease

STANDARD ANATOMIC COVERAGE:

- Heart and/or Coronary Artery Imaging: Coverage may vary, depending on the specific clinical indication as well as prior history of coronary artery bypass graft placement.

IMAGING CONSIDERATIONS:

Advantages of CTA:

- Advantages of Cardiac and Coronary Artery CTA
 - Rapidly acquired exams, with excellent anatomic detail afforded by most multidetector CT scanners with 16 or more active detector rows.
 - CTA has a very high negative predictive value (93 to 100%)

Disadvantages of CTA:

- Disadvantages of Cardiac and Coronary Artery CTA include:
 - Potential complications from use of intravascular iodinated contrast administration (see biosafety issues, below)
 - Exposure to ionizing radiation (2-3 times higher than the average radiation dose administered to patients undergoing cardiac catheterization)
 - Potential factors that may limit the image quality during a Cardiac/Coronary Artery CTA exam, such as:
 1. uncontrolled atrial or ventricular arrhythmias
 2. extensive coronary artery calcification which may produce artifact
 3. coronary stent evaluation for possible restenosis, as the stent material itself as well as the quality of the scan and scanner may produce artifacts, limiting the exam
 4. inability to image at a desired heart rate, which may occur despite beta blocker administration
 5. inability of the patient to comply with the requirements of scanning (patient motion during image acquisition, inability to comply with breath hold requirements, inability to lie supine, claustrophobia)
 6. not a suitable imaging modality for morbidly obese patients (BMI > 40)
 7. because of the radiation exposure issues careful consideration should be given to other imaging modalities in pregnant women and children
 8. because CCTA images the coronary arteries directly, the information provided is anatomical. The presence coronary stenosis on CCTA (particularly if deemed to be of intermediate severity) does not establish that the lesion is a flow limiting significance. Thus, following abnormal CCTA functional testing

COMMON DIAGNOSTIC INDICATIONS FOR CARDIAC/CORONARY ARTERY CT & CTA (CCTA):

The following diagnostic indications for Cardiac and Coronary Artery CT and CTA (CCTA) are accompanied by pre-test considerations as well as supporting clinical data and prerequisite information:

CONGENITAL HEART DISEASE

- For evaluation of suspected congenital heart disease in patients whose echocardiogram is technically limited or nondiagnostic
or
- For initial evaluation of complex congenital heart disease in patients who have undergone echocardiography
or
- For evaluation of complex congenital heart disease in patients who are less than one year post surgical correction
or
- For evaluation of complex congenital heart disease in patients who have new or worsening symptoms
or
- For evaluation of complex congenital heart disease in patients with a change in physical examination
or
- To assist in surgical planning for patients with complex congenital heart disease
or
- For surveillance in asymptomatic patients with complex congenital heart disease in patients who have not had cardiac MRI or cardiac CT within the preceding year
 - Cardiac MRI or transesophageal echocardiography may be preferable to cardiac CT in order to avoid radiation exposure

CONGENITAL CORONARY ARTERY ANOMALIES

- For evaluation of suspected congenital anomalies of the coronary arteries

CONGESTIVE HEART FAILURE/CARDIOMYOPATHY

- For exclusion of coronary artery disease in patients with low or moderate Coronary Heart Disease Risk (using standard methods of risk assessment, such as the SCORE risk calculation) in whom coronary artery disease has not been excluded as the etiology of the cardiomyopathy
 - patients with high Coronary Heart Disease Risk should undergo cardiac catheterization
- or
- For coronary vein mapping patients with cardiomyopathy for whom cardiac resynchronization therapy is planned

EVALUATION OF PATIENTS WITH PRIOR ABNORMAL CARDIAC TESTING (MPI OR STRESS ECHO)

- Patients with abnormal MPI or stress echo suspected to be false positive on the basis of low Coronary Heart Disease Risk (using standard methods of risk assessment such as the SCORE risk calculation).
 - In the absence of a contraindication (excluding renal impairment and iodinated contrast agent hypersensitivity) patients with moderate or high Coronary Heart Disease Risk should be referred for coronary arteriography.
- or
- Patients with equivocal MPI or stress echo who have low or moderate Coronary Heart Disease Risk (using standard methods of risk assessment such as the SCORE risk calculation).
 - In the absence of a contraindication (excluding renal impairment and iodinated contrast agent hypersensitivity) patients with high Coronary Heart Disease Risk should be referred for coronary arteriography.
 - The resulting information from the CCTA should facilitate management decisions and not merely add a new layer of testing.

CORONARY ARTERY DISEASE (SYMPTOMATIC OR ASYMPTOMATIC):

- Further evaluation of patients with low Coronary Heart Disease Risk (using standard methods of risk assessment such as the SCORE risk calculation) who have had abnormal stress echocardiogram or myocardial perfusion

imaging thought to be a false positive result

or

- Further evaluation of patients with low or moderate Coronary Heart Disease Risk (using standard methods of risk assessment such as the SCORE risk calculation) who have had equivocal stress echocardiogram or myocardial perfusion imaging.

or

- Noninvasive coronary arterial mapping (including internal mammary artery) in patients with established coronary artery disease undergoing repeat surgical revascularization

or

- Patients at low or intermediate coronary heart disease risk (using standard methods of risk assessment, such as the SCORE risk calculation) being evaluated for non-coronary artery cardiac surgery (including valvular and ascending aortic surgery) to avoid an invasive angiogram, where all the necessary preoperative information can be obtained using cardiac CT

INTRA-CARDIAC AND PARA-CARDIAC MASSES AND TUMORS

- In patients with a suspected cardiac or para-cardiac mass (thrombus, tumor, etc.) suggested by transthoracic echocardiography, transesophageal echocardiography, blood pool imaging or contrast ventriculography who have not undergone cardiac CT or cardiac MRI within the preceding 60 days

or

- In patients with established cardiac or para-cardiac mass (thrombus, tumor, etc.) who are clinically unstable

or

- In patients with established cardiac or para-cardiac mass (thrombus, tumor, etc.) who are clinically stable and have not undergone cardiac CT or cardiac MRI within the preceding year

or

- In patients with established cardiac or para-cardiac mass (thrombus, tumor, etc.) who have undergone treatment (chemotherapy, radiation therapy or surgery) within the preceding year and have not had cardiac CT or cardiac MRI within the preceding 60 days

CARDIAC ANEURYSM AND PSEUDOANEURYSM

EVALUATION OF PERICARDIAL CONDITIONS (PERICARDIAL EFFUSION, CONSTRICTIVE PERICARDITIS, OR CONGENITAL PERICARDIAL DISEASES)

- In patients with suspected pericardial constriction

or

- In patients with suspected congenital pericardial disease

or

- In patients with suspected pericardial effusion who have undergone echocardiography deemed to be technically suboptimal in evaluation of the effusion

or

- In patients whose echocardiogram shows a complex pericardial effusion (loculated, containing solid material)

EVALUATION OF CARDIAC VENOUS ANATOMY

- For localization of the pulmonary veins in patients with chronic or paroxysmal atrial fibrillation/flutter who have been evaluated by electrophysiology and who are being considered for first radiofrequency ablation.

or

- For reevaluation of the pulmonary veins on one occasion following radiofrequency ablation

or

- For re-evaluation of the pulmonary venous anatomy prior to repeat radiofrequency ablation provided that the patient has not had evaluation of the pulmonary veins following the previous radiofrequency ablation

or

- Coronary venous localization to establish candidacy for a biventricular pacemaker

- Cardiac CT for these indications requires referral from a cardiologist, electrophysiologist or cardiothoracic surgeon

EVALUATION OF THE THORACIC AORTA – ANEURYSM AND DISSECTION:

- In patients with suspected aortic aneurysm who have not undergone imaging of the thoracic aorta within the preceding 60 days
or
- In patients with confirmed thoracic aortic aneurysm with new or worsening signs/symptoms
or
- For ongoing surveillance of stable patients with confirmed thoracic aortic aneurysm who have not undergone imaging of the thoracic aorta within the preceding six months
or
- In patients with suspected aortic dissection
or
- In patients with confirmed aortic dissection who have new or worsening symptoms
or
- In patients with confirmed aortic dissection in whom surgical repair is anticipated (to assist in preoperative planning)
or
- For ongoing surveillance of stable patients with confirmed aortic dissection who have not undergone imaging of the thoracic aorta within the preceding year
or
- In patients with confirmed aortic dissection or thoracic aortic aneurysm who have undergone surgical repair within the preceding year and have not undergone imaging of the thoracic aorta within the preceding six months

OTHER INDICATIONS FOR CARDIAC AND CORONARY ARTERY CT/CTA (CCTA) WILL CONTINUE TO UNDERGO REVIEW, AS NEW EVIDENCE-BASED STUDIES ARE PUBLISHED. AT THE PRESENT TIME, INDICATIONS OTHER THAN THOSE LISTED ABOVE ARE NOT INCLUDED IN THE CURRENT GUIDELINES.

This includes quantitative evaluation of coronary artery calcification (applicable to the Category III CPT codes 0144T, 0147T and 0149T).

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Positron Emission Tomography (PET) Myocardial Imaging

CPT CODES:

78491.....PET myocardial perfusion, single study
78492.....PET myocardial perfusion, multiple studies
78459.....PET myocardial, metabolic evaluation

COMMONLY USED RADIOPHARMACEUTICALS

- Ammonia ($^{13}\text{NH}_3$)
- Rubidium Chloride ($^{82}\text{RbCs}$)
- 2-(^{18}F) FLURO-2DEOXY-D-GLUCOSE (FDG)

IMAGING CONSIDERATIONS

- This guideline does not supersede the enrollee's health plan medical policy specific to myocardial PET imaging.
- Perfusion PET imaging, using Ammonia or Rubidium isotopes, is used to differentiate areas of myocardium with normal coronary blood flow from those with abnormal coronary blood flow.
- Rest and or stress Perfusion PET imaging can be performed.
- Metabolic evaluation (to determine myocardial viability) is performed using PET Flurodeoxyglucose (FDG) imaging. Metabolic PET imaging has been shown to be useful in selection of patients who are likely to benefit from revascularization
- Perfusion PET imaging and Metabolic PET imaging may be may be appropriate.
- Isotopes used in PET imaging require special handling arrangements because of their short half-lives.
- While Rubidium may be produced in a commercially available on-site generator Ammonia requires cyclotron production
- Selection of the optimal diagnostic imaging for cardiac evaluation should be made within the context of other available modalities (which include treadmill stress test, stress myocardial perfusion imaging, stress echocardiography, cardiac MRI, cardiac PET imaging and invasive cardiac/coronary angiography), so that the resulting information facilitates patient management decisions and does not merely add a new layer of testing.

REQUIREMENTS FOR MYOCARDIAL PET IMAGING:

- Perfusion PET imaging is generally (exceptions noted below) to be considered only when a patient has undergone recent nuclear stress testing or stress echocardiography with equivocal results.
- In morbidly obese patients (BMI > 40) Perfusion PET imaging can be considered as the initial test (because of a higher likelihood of technically suboptimal image quality on nuclear stress testing and stress echocardiography in this patient subgroup).
- In keeping with CMS guidelines, Perfusion PET myocardial imaging may be considered as an alternative to nuclear stress testing or stress echocardiography in symptomatic (or asymptomatic intermediate/high risk) patients greater than 65 years old.
- Perfusion PET myocardial imaging is not appropriate for screening for coronary artery disease in asymptomatic low risk patients regardless of age or body habitus.
- PET metabolic imaging is used in patients with established coronary artery disease and left ventricular systolic dysfunction when determination of myocardial viability will influence the decision regarding revascularization
- PET metabolic imaging of the myocardium provides clinically useful information only when the myocardium is deemed to be nonviable using other imaging modalities (perfusion imaging using thallium / technetium isotopes or echocardiography) or when such imaging modalities are inconclusive regarding the viability status of the myocardium.

COMMON DIAGNOSTIC INDICATIONS FOR CARDIAC PET:

The following diagnostic indications for Cardiac PET are accompanied by pre-test considerations as well as supporting clinical data and prerequisite information:

PERFUSION PET IMAGING – FOR PATIENTS WHO ARE AT LEAST 65 YRS OLD OR HAVE BMI >40:

- Evaluation of symptoms consistent with myocardial ischemia to diagnose or exclude coronary artery disease
or
- Established coronary artery disease with recurrent atypical symptoms
or
- Evaluation of regional myocardial blood flow in the patient with multiple vessel coronary artery disease with a view to identifying a “culprit” lesion for revascularization
or
- Evaluation of asymptomatic patients who by virtue of risk factor status are at intermediate or high risk of coronary artery disease.

PERFUSION PET IMAGING – FOR PATIENTS WHO ARE < 65 YRS OLD AND HAVE BMI <40:

- Further evaluation of patients who have had an equivocal nuclear stress test or stress echo within the past 60 days

METABOLIC PET IMAGING FOR EVALUATION OF MYOCARDIAL VIABILITY – WHEN ALL FOUR OF THE FOLLOWING CONDITIONS ARE MET:

- In the patient with established coronary artery disease
and
- Left ventricular systolic dysfunction
and
- Viability status is not defined by other testing
and
- Revascularization is being considered

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Positron Emission Tomography (PET) Oncologic (Tumor) Imaging

CPT CODES:

Dedicated PET Imaging:

78811PET imaging, limited area

78812PET imaging, skull to mid-thigh

78813PET imaging, whole body

PET/CT Imaging:

78814PET imaging, with concurrently acquired CT for attenuation correction and anatomic localization; limited area

78815PET imaging, with concurrently acquired CT for attenuation correction and anatomic localization; skull base to mid-thigh

78816PET imaging, with concurrently acquired CT for attenuation correction and anatomic localization; whole body

COMMONLY USED RADIOPHARMACEUTICAL/SCANNER:

- 2-(fluorine-18) fluoro-2-deoxy-d-glucose (FDG), performed on a dedicated PET or integrated (hybrid) PET/CT scanner.

IMAGING CONSIDERATIONS:

For PET tumor imaging, AIM's Guidelines use the definitions for diagnosis, staging, restaging and treatment response monitoring as provided in the National Coverage Determination for PET Scans (220.6), unless otherwise specified.

Diagnosis: PET imaging for diagnostic purposes occurs prior to obtaining tissue biopsy confirmation, in the following clinical situations:

(1) the PET results may assist in avoiding an invasive diagnostic procedure,

or

(2) the PET results may assist in determining the optimal anatomical location to perform an invasive diagnostic procedure.

Staging: PET imaging for tumor staging typically occurs after tissue biopsy confirmation of the malignancy and prior to performance of any chemotherapy, surgical and/or radiation treatment, in the following clinical situations:

(1)(a) the stage of the cancer remains in doubt after completion of a standard diagnostic workup, including conventional imaging (computed tomography (CT), magnetic resonance imaging (MRI), or ultrasound),

or

(1)(b) it could potentially replace one or more conventional imaging studies when it is expected that conventional study information is insufficient for the clinical management of the patient,

and

(2) clinical management of the patient would differ depending on the stage of the cancer identified.

Restaging: PET imaging for tumor restaging purposes occurs after tissue biopsy confirmation and after any surgical, chemotherapy or radiation therapy treatment has completed or during the course of chemotherapy or radiation treatment when clinical signs and symptoms are significant and suggestive of disease progression or worsening despite treatment and the results are necessary to plan a new course of treatment:

(1) after completion of treatment for the purpose of detecting residual disease,

(2) for detecting suspected recurrence or metastasis,

(3) to determine the extent of a known recurrence,

or

(4) if it could potentially replace one or more conventional imaging studies when it is expected that conventional study information is insufficient for the clinical management of the patient. Restaging applies to testing after a course of treatment is completed, and is covered subject to the conditions above.

Monitoring: PET imaging to monitor tumor response to treatment during the planned course of therapy (i.e., when a change in therapy is anticipated).

Screening: PET is not covered as a screening test (i.e., for evaluation of patients without specific signs and symptoms of disease).

COMMON DIAGNOSTIC INDICATIONS FOR ONCOLOGIC PET:

The following diagnostic indications for PET Tumor Imaging (which includes Dedicated PET and PET/CT Exams) are accompanied by pre-test considerations as well as supporting clinical data and prerequisite information:

AIM's Guidelines do not supersede the enrollee's health plan specific medical policy for PET usage.

AIM's Guidelines do not imply enrollee benefit coverage for all diagnoses and/or indications. Benefit coverage is determined solely by the enrollee's health plan.

BRAIN CANCER

- To differentiate radiation necrosis from recurrent brain tumor in patients with a confirmed brain cancer diagnosis, who have been treated with radiation therapy.
- For all clinical indications other than those listed above, limited benefit coverage may be available, consistent with the following requirements the Centers for Medicare and Medicaid Services (CMS)*:
 1. The patient must be participating in an FDA approved clinical trial; and
 2. The use of this diagnostic imaging technology is in accordance with the clinical trial's approved patient protocols; and
 3. The use of this diagnostic imaging technology is medically necessary.

**Source: Medicare Part B Investigational Device Exemption, September 2004*

BREAST CANCER

- Diagnosis
 - Non-covered for initial diagnosis of breast cancer and staging of axillary lymph nodes
- Staging
 - As an adjunct to standard imaging modalities (e.g., CT, MRI, and/or Ultrasound) in the staging of breast cancer with distant metastases, excluding staging of axillary nodes.
- Restaging – after completion of treatment
 - As an adjunct to standard imaging modalities (e.g., CT, MRI, and/or Ultrasound) in the restaging of loco-regional recurrence or metastases.
- Monitoring Tumor Response to Treatment
 - As an adjunct to standard imaging modalities (e.g., CT, MRI, and/or Ultrasound) in monitoring tumor response to treatment, for women with locally advanced and metastatic breast cancer, when a change in therapy is contemplated.

CERVICAL CANCER – INVASIVE

- Staging (in the pre-treatment phase) of newly diagnosed and locally advanced cervical cancer, as an adjunct to conventional imaging when the following conditions are met:
 - A pathologic diagnosis of cervical cancer must be confirmed prior to PET; and
 - Conventional imaging modalities (e.g., CT, MRI, and/or Ultrasound) are negative for extra-pelvic metastases
- For all clinical indications other than those listed above, limited benefit coverage may be available, consistent with the following requirements from the Centers for Medicare and Medicaid Services (CMS)*:
 1. The patient must be participating in an FDA approved clinical trial; and
 2. The use of this diagnostic imaging technology is in accordance with the clinical trial's approved patient protocols; and
 3. The use of this diagnostic imaging technology is medically necessary.

**Source: Medicare Part B Investigational Device Exemption, September 2004*

COLORECTAL CANCER

- Diagnosis
 - PET results may assist in avoiding an invasive diagnostic procedure, or
 - PET results may assist in determining the optimal anatomical location to perform an invasive diagnostic procedure
 - Diagnosis has not been confirmed by tissue biopsy
- Staging
 - The stage of cancer remains in doubt after completion of a standard diagnostic work-up, including CT, MRI, and/or Ultrasound; or
 - The use of PET could potentially replace one or more conventional imaging studies, when it is expected that conventional study information is insufficient for the clinical management of the patient, and
 - Clinical management of the patient would differ depending on the stage of cancer identified.
- Restaging – after completion of treatment, for the purpose of:
 - Detecting residual disease; or
 - Detecting suspected recurrence (ex: rising CEA level and/or clinical sign/symptoms suspicious for recurrence); or
 - Determination of the extent of a known recurrence; or
 - Potentially replacing one or more conventional imaging studies (e.g., CT, MRI, and/or Ultrasound), when it is expected that the conventional imaging study information is insufficient for the clinical management of the patient.
 - The use of PET for restaging purposes typically does not occur at intervals of less than 50 calendar days
- Monitoring Tumor Response to Treatment

Limited benefit coverage may be available, consistent with the following requirements from the Centers for Medicare and Medicaid Services (CMS)*:

 1. The patient must be participating in an FDA approved clinical trial; and
 2. The use of this diagnostic imaging technology is in accordance with the clinical trial's approved patient protocols; and
 3. The use of this diagnostic imaging technology is medically necessary.

**Source: Medicare Part B Investigational Device Exemption, September 2004*

ESOPHAGEAL CANCER

- Diagnosis
 - PET results may assist in avoiding an invasive diagnostic procedure; or
 - PET results may assist in determining the optimal anatomical location to perform an invasive procedure
 - The diagnosis has not been confirmed by tissue biopsy
- Staging
 - The stage of cancer remains in doubt after completion of a standard diagnostic work-up, including CT, MRI, and/or Ultrasound; or
 - The use of PET could potentially replace one or more conventional imaging studies, when it is expected that conventional study information is insufficient for the clinical management of the patient, and
 - Clinical management of the patient would differ depending on the stage of cancer identified.
- Restaging – after completion of treatment, for the purpose of:
 - Detecting residual disease (upon completion of surgery, chemotherapy and/or radiation treatment); or
 - Detecting suspected recurrence, in the presence of clinical symptoms suggestive of recurrent tumor; or
 - Determination of the extent of a known recurrence; or
 - Potentially replacing one or more conventional imaging studies (e.g., CT, MRI, and/or Ultrasound), when it is expected that the conventional imaging study information is insufficient for the clinical management of the patient.
 - The use of PET for restaging purposes is typically not performed at intervals of less than 50 calendar days.
- Monitoring Tumor Response to Treatment

Limited benefit coverage may be available, consistent with the following requirements from the Centers for Medicare and Medicaid Services (CMS)*:

1. The patient must be participating in an FDA approved clinical trial; and
2. The use of this diagnostic imaging technology is in accordance with the clinical trial's approved patient protocols; and
3. The use of this diagnostic imaging technology is medically necessary.

**Source: Medicare Part B Investigational Device Exemption, September 2004*

HEAD AND NECK CANCER – EXCLUDING CNS AND THYROID CANCERS

- Diagnosis
 - The PET results may assist in avoiding an invasive diagnostic procedure; or
 - The PET results may assist in determining the optimal anatomical location to perform an invasive procedure.
 - The diagnosis has not been confirmed by tissue biopsy.
- Staging
 - The stage of cancer remains in doubt after completion of a standard diagnostic work-up, including CT, MRI, and/or Ultrasound; or
 - The use of PET could potentially replace one or more conventional imaging studies, when it is expected that conventional study information is insufficient for the clinical management of the patient, and
 - Clinical management of the patient would differ depending on the stage of cancer identified.
- Restaging – after completion of treatment, for the purpose of:
 - Detecting residual disease (upon completion of surgery, chemotherapy and/or radiation treatment); or
 - Detecting suspected recurrence (in the presence of clinical symptoms suggestive of recurrent tumor); or
 - Determining the extent of a known recurrence, or
 - Potentially replacing one or more conventional imaging studies (e.g., CT, MRI, and/or Ultrasound), when it is expected that conventional imaging study information is insufficient for the clinical management of the patient.
 - The use of PET for restaging purposes is typically not performed at intervals of less than 50 calendar days.
- Monitoring Tumor Response to Treatment

Limited benefit coverage may be available, consistent with the following requirements from the Centers for Medicare and Medicaid Services (CMS)*:

 1. The patient must be participating in an FDA approved clinical trial; and
 2. The use of this diagnostic imaging technology is in accordance with the clinical trial's approved patient protocols; and
 3. The use of this diagnostic imaging technology is medically necessary.

**Source: Medicare Part B Investigational Device Exemption, September 2004*

LYMPHOMA

- Diagnosis
 - The PET results may assist in avoiding an invasive diagnostic procedure; or
 - The PET results may assist in determining the optimal anatomical location to perform an invasive procedure.
 - The diagnosis has not been confirmed by tissue biopsy
- Staging
 - The stage of cancer remains in doubt after completion of a standard diagnostic work-up, including CT, MRI, and/or Ultrasound; or
 - The use of PET could potentially replace one or more conventional imaging studies, when it is expected that conventional study information is insufficient for the clinical management of the patient; and
 - Clinical management of the patient would differ depending on the stage of cancer identified.
- Restaging – after completion of treatment, for the purpose of:
 - Detecting residual disease (upon completion of surgery, chemotherapy and/or radiation treatment); or
 - Detecting suspected recurrence (in the presence of clinical symptoms suggestive of recurrent tumor); or
 - Determining the extent of a known recurrence; or
 - Potentially replacing one or more conventional imaging studies (e.g., CT, MRI, and/or Ultrasound), when it is expected that conventional imaging study information is insufficient for the clinical management of the patient.
 - The use of PET for restaging purposes is typically not performed at intervals of less than 50 calendar days.
- Monitoring Tumor Response to Treatment

Limited benefit coverage may be available, consistent with the following requirements from the Centers for

Medicare and Medicaid Services (CMS)*:

1. The patient must be participating in an FDA approved clinical trial; and
2. The use of this diagnostic imaging technology is in accordance with the clinical trial's approved patient protocols; and
3. The use of this diagnostic imaging technology is medically necessary.

**Source: Medicare Part B Investigational Device Exemption, September 2004*

MELANOMA

• Diagnosis

- PET results may assist in avoiding an invasive diagnostic procedure; or
- PET results may assist in determining the optimal anatomical location to perform an invasive procedure.
- The diagnosis has not been confirmed by tissue biopsy

• Staging

- The stage of cancer remains in doubt after completion of a standard diagnostic work-up, including CT, MRI, and/or Ultrasound, or
- The use of PET could potentially replace one or more conventional imaging studies, when it is expected that conventional study information is insufficient for the clinical management of the patient, and
- Clinical management of the patient would differ depending on the stage of cancer identified.
- *Note: FDG-PET is not covered for evaluation of regional lymph nodes.*

• Restaging – after completion of treatment, for the purpose of:

- Detecting residual disease (upon completion of surgery, chemotherapy and/or radiation treatment); or
- Detecting suspected recurrence (in the presence of clinical symptoms suggestive of recurrent tumor); or
- Determining the extent of a known recurrence; or
- Potentially replacing one or more conventional imaging studies (e.g., CT, MRI, and/or Ultrasound), when it is expected that conventional imaging study information is insufficient for the clinical management of the patient.
- The use of PET for restaging purposes is typically not performed at intervals of less than 50 calendar days

• Monitoring Tumor Response to Treatment

Limited benefit coverage may be available, consistent with the following requirements from the Centers for Medicare and Medicaid Services (CMS)*:

1. The patient must be participating in an FDA approved clinical trial; and
2. The use of this diagnostic imaging technology is in accordance with the clinical trial's approved patient protocols; and
3. The use of this diagnostic imaging technology is medically necessary.

**Source: Medicare Part B Investigational Device Exemption, September 2004*

SOLITARY PULMONARY NODULE CHARACTERIZATION – WHEN THE FOLLOWING CONDITIONS ARE MET:

- Evidence of the pulmonary nodules being evaluated by CT scan and the CT scan results were positive for an indeterminate or possible malignant lesion, not exceeding 4 cm in diameter, or
- For serial evaluation of solitary pulmonary nodules, the request is not being performed within ninety (90) days following a negative PET scan.
- Note:
 - Most peer-reviewed literature indicates that PET imaging is limited for characterization of subcentimeter (< 10 mm) pulmonary nodules and therefore may provide unreliable results.^{1,8,21} One study suggests inaccuracy in the discrimination of nodules less than 7 mm in diameter.¹³
 - False negative results have been reported for PET imaging of pulmonary carcinoid tumors and bronchoalveolar carcinomas.^{13,21}
 - False positive findings have been reported in pulmonary nodules resulting from infectious and inflammatory processes such as histoplasmosis, tuberculosis and rheumatoid nodules.^{1,13,21}

NON-SMALL CELL LUNG CANCER

• Diagnosis

- The PET results may assist in avoiding an invasive diagnostic procedure; or
- The PET results may assist in determining the optimal anatomical location to perform an invasive procedure.
- The diagnosis has not been confirmed by tissue biopsy

- Staging
 - The stage of cancer remains in doubt after completion of a standard diagnostic work-up, including CT, MRI, and/or Ultrasound; or
 - The use of PET could potentially replace one or more conventional imaging studies, when it is expected that conventional study information is insufficient for the clinical management of the patient; and
 - Clinical management of the patient would differ depending on the stage of cancer identified.
- Restaging – after completion of treatment, for the purpose of:
 - Detecting residual disease (upon completion of surgery, chemotherapy and/or radiation treatment); or
 - Detecting suspected recurrence (in the presence of clinical symptoms suggestive of recurrent tumor); or
 - Determining the extent of a known recurrence; or
 - Potentially replacing one or more conventional imaging studies (e.g., CT, MRI, and/or Ultrasound) when it is expected that conventional imaging study information is insufficient for the clinical management of the patient.
 - The use of PET for restaging purposes is typically not performed at intervals of less than 50 calendar days
- Monitoring Tumor Response to Treatment
 Limited benefit coverage may be available, consistent with the following requirements from the Centers for Medicare and Medicaid Services (CMS)*:
 1. The patient must be participating in an FDA approved clinical trial; and
 2. The use of this diagnostic imaging technology is in accordance with the clinical trial's approved patient protocols; and
 3. The use of this diagnostic imaging technology is medically necessary.

**Source: Medicare Part B Investigational Device Exemption, September 2004*

OVARIAN CANCER RECURRENCE

- With rising CA-125
and
- Negative or inconclusive CT imaging

TESTICULAR CANCER

- Restaging in patients with post-treatment signs, symptoms or findings suggestive of residual or recurrent disease (e.g., elevated tumor markers such as alpha fetoprotein or human chorionic gonadotropin) ¹⁵

THYROID CANCER

- Diagnosis
 Limited benefit coverage may be available in accordance with the following requirements prescribed by the Centers for Medicare and Medicaid Services (CMS)*:
 1. The patient must be participating in an FDA approved clinical trial; and
 2. The use of this diagnostic imaging technology is in accordance with the clinical trial's approved patient protocols; and
 3. The use of this diagnostic imaging technology is medically necessary.

**Source: Medicare Part B Investigational Device Exemption, September 2004*
- Staging, when either of the following conditions are met:
 Limited benefit coverage may be available, consistent with the following requirements from the Centers for Medicare and Medicaid Services (CMS)*:
 1. The patient must be participating in an FDA approved clinical trial; and
 2. The use of this diagnostic imaging technology is in accordance with the clinical trial's approved patient protocols; and
 3. The use of this diagnostic imaging technology is medically necessary.

**Source: Medicare Part B Investigational Device Exemption, September 2004*
- Restaging of medullary cell tumors under the following conditions:
 Limited benefit coverage may be available, consistent with the following requirements from the Centers for Medicare and Medicaid Services (CMS)*:
 1. The patient must be participating in an FDA approved clinical trial; and

2. The use of this diagnostic imaging technology is in accordance with the clinical trial's approved patient protocols; and
3. The use of this diagnostic imaging technology is medically necessary.

**Source: Medicare Part B Investigational Device Exemption, September 2004*

- Restaging of recurrent or residual thyroid cancers of follicular cell origin (which include the following four distinct histologic types: follicular, papillary, Hürthle cell and anaplastic tumors), when all of the following conditions are met:

- Previous thyroidectomy
- Previous treatment with radioiodine ablation
- Serum thyroglobulin level of > 10ng/ml, in the absence of serum thyroglobulin antibodies, and
- Negative I-131 whole body scan

***NOTE:** Dedifferentiation of a previously documented well-differentiated thyroid carcinoma may lead to loss of iodine-concentrating capacity and failure to produce thyroglobulin, leading to false negative iodine scans, and minimal if any rise in serum thyroglobulin levels. When this altered tumor behavior is established, repeat I-131 whole body scan and thyroglobulin level >10ng/ml are not required to meet criteria for PET imaging.*

- Monitoring Tumor Response to Treatment

Limited benefit coverage may be available, consistent with the following requirements from the Centers for Medicare and Medicaid Services (CMS)*:

1. The patient must be participating in an FDA approved clinical trial; and
2. The use of this diagnostic imaging technology is in accordance with the clinical trial's approved patient protocols; and
3. The use of this diagnostic imaging technology is medically necessary.

**Source: Medicare Part B Investigational Device Exemption, September 2004*

UNKNOWN PRIMARY NEOPLASM – PRESENTING WITH METASTATIC DISEASE OUTSIDE OF THE CERVICAL LYMPH NODES

- When all four of the following criteria are met:
 - Local or regional treatment for a single site of metastatic disease is being considered; and
 - PET will be used to rule out or detect additional sites of disease that would eliminate the rationale for local or regional treatment; and
 - Standard work-up for an occult primary tumor is negative; and
 - Tumor is limited to a single site of disease

ALL OTHER MALIGNANCIES NOT SPECIFIED, INCLUDING BUT NOT LIMITED TO: LIVER, PANCREATIC AND SMALL CELL LUNG CANCERS, AS WELL AS SOFT TISSUE SARCOMAS:

- Limited benefit coverage may be available, consistent with the following requirements from the Centers for Medicare and Medicaid Services (CMS)*:
 1. The patient must be participating in an FDA approved clinical trial; and
 2. The use of this diagnostic imaging technology is in accordance with the clinical trial's approved patient protocols; and
 3. The use of this diagnostic imaging technology is medically necessary.

**Source: Medicare Part B Investigational Device Exemption, September 2004*

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Quantitative CT (QCT)

Bone Mineral Densitometry

CPT CODES:

- 77078.....** Computed tomography, bone mineral density study, 1 or more sites; axial skeleton (eg, hips, pelvis, spine)
- 77079.....** Computed tomography, bone mineral density study, 1 or more sites; appendicular skeleton (peripheral) (eg, radius, wrist, heel)

STANDARD ANATOMIC COVERAGE:

- For central QCT, spine and hip measurements are obtained
- For peripheral QCT, forearm, wrist (distal radius and ulna) and/or heel measurements are usually acquired

IMAGING CONSIDERATIONS:

- Bone mineral densitometry may be performed on the central axial skeleton (i.e., spine, femoral head, proximal femur) or peripheral appendicular skeleton (i.e., forearm, wrist, heel). The axial measurements are considered more clinically significant and represent the standard diagnostic assessment for bone densitometry.
- Central dual x-ray absorptiometry (DXA), also referred to as dual-energy x-ray absorptiometry (DEXA), is the most commonly used test to evaluate bone mineral density and is considered the technology of choice, when available.
- QCT has a high sensitivity for detection of bone loss. However, when compared with DXA, QCT is often less readily available, more expensive and incurs higher radiation exposure.
- QCT is not covered as a screening exam in patients at low risk for osteoporosis.
- Duplicative testing of the same anatomic area may be subject to high-level review, for evaluation of medical necessity.

COMMON DIAGNOSTIC INDICATIONS FOR QUANTITATIVE CT FOR BONE MINERAL DENSITY:

The following diagnostic indications for Quantitative CT to assess Bone Mineral Density are accompanied by pre-test considerations and supporting clinical data

Indications for Central (Axial) Quantitative CT (QCT) Evaluation of Bone Mineral Density:

INITIAL EXAMINATION – WHEN ANY ONE OF THE FOLLOWING CRITERIA ARE MET

- **Menopausal or post-menopausal women - as an initial examination to screen for osteoporosis**
- **Men of 70 years age or older, regardless of risk factors**
- **Anyone presenting with a fragility or pathologic fracture**
- **Anyone with a disease or condition associated with development of osteoporosis.**

Including but not limited to the following abnormalities:

- Anorexia nervosa
- Chronic liver disease
- Chronic renal failure
- Cushing's syndrome
- Delayed menarche or untreated premature menopause
- Heavy alcohol consumption
- Hypercalciuria
- Hypogonadism
- Inflammatory bowel disease
- Low trauma fractures or vertebral fractures
- Malabsorption syndromes
- Primary hyperparathyroidism

- Prolonged immobilization
- Radiographic evidence of osteopenia
- Rheumatoid arthritis
- Thyroid disease

• **Anyone on a medication associated with development of osteoporosis.**

Including but not limited to the following medications:

- Glucocorticoids (e.g., prednisone, prednisolone, decadron, dexamethosone) – treatment for > 3 months
- Phenytoin (Dilantin) – treatment for > 3 months
- Heparin – treatment for > 1 month
- Depo-Provera injectable contraceptive – long-standing use (> 2 years)
- Lithium treatment
- Lupron therapy
- Cytotoxic agents which affect bone density (eg, adjuvant chemotherapy in many premenopausal females with breast cancer)
- Proton Pump Inhibitors (PPI) and Histamine-2 (H2) receptor blockers for Gastroesophageal Reflux Disease – in patients over 50 years of age, under treatment for > 3 months

• **Anyone who is considering therapy for osteoporosis, if bone mineral densitometry would facilitate the decision**

Indications for Central (Axial) Quantitative CT (QCT) Evaluation of Bone Mineral Density:

REPEAT EXAMINATION – WHEN ANY ONE OF THE FOLLOWING CRITERIA ARE MET:

- **Anyone under treatment for osteoporosis, to monitor the response to therapy for bone loss** – at intervals of every 2 to 3 years
- **Untreated individuals who met the criteria for initial evaluation, without significant osteopenia on prior bone densitometry and without interval increased risk for accelerated bone loss** – at intervals of every 3 to 5 years

Indications for Peripheral (Appendicular) Quantitative CT (pQCT)

EVALUATION OF BONE MINERAL DENSITY – WHEN THE FOLLOWING CRITERIA IS MET:

- **Evaluation of anyone with asymptomatic primary hyperparathyroidism**

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