Coverage Indications, Limitations, and/or Medical Necessity

The multidetector helical computed tomography (MDCT) technology requires thin (up to 1 mm) slices, 0.5 to 0.75 mm reconstructions, multiple simultaneous images (e.g. 16, 32, 64 or more slices), and cardiac gating (often requiring beta blockers for ideal heart rate). There is significant post-processing, depending on the number of slices per second for image generation. For coronary artery imaging, the resulting images show a high correlation with stenotic lesions noted on diagnostic cardiac catheterization but more importantly, with atheromas on intracoronary ultrasound.

Current available body of evidence demonstrates that CCTA can reliably rule out the presence of significant coronary artery disease (CAD) in patients with a low to intermediate probability of having CAD and can reliably achieve a high degree of diagnostic accuracy and technical performance necessary to replace conventional angiography.

Indications:

a. Patient presenting with chest pain syndrome.
   CCTA may be used in lieu of an imaging stress test. The clinician must have a high degree of suspicion that CAD is high on the differential diagnosis of the symptoms.

b. To facilitate the management decision of a patient with an equivocal stress test.
   CCTA might be chosen in select patients who have an equivocal stress (or stress imaging) test. The rationale is that a noninvasive coronary anatomic test (CCTA) allows an alternate method of assessing the coronary arteries, which would limit the number of negative invasive coronary angiograms.

c. When the recurrence of symptoms in patients with known coronary artery disease may be related to progression/exacerbation of underlying disease.
The use of CCTA in this setting would be to evaluate the extent of previously diagnosed coronary artery disease. Patients with known disease may have had remote invasive angiography and/or stress testing to evaluate prior events or symptoms. New or recurrent symptoms may relate to a change in the coronary anatomy that can be assessed with CCTA.

d. When patients with prior bypass surgery or intracoronary artery stent placement present with chest pain or dyspnea.

Coronary bypass grafts are relatively well seen with CCTA. The rationale for CCTA would be to determine the patency and severity of possible graft stenoses that may be the source of chest pain. Patients with prior intracoronary stents often present with recurrent chest pain. The rationale for a CCTA as an alternative to invasive angiography is to rule out in-stent restenosis as the cause of symptoms. (Accurate assessment of in-stent restenosis may be limited by the artifact caused by the stent material itself and the quality of the scan and scanner).

e. Suspected congenital anomalies of the coronary circulation.

CCTA is used to assess patients suspected of having a congenital coronary anomaly. The cross-sectional nature of this technique allows one to determine accurately both the presence and possible future harm that could result from the anomaly. It is often used after an anomaly has been identified following a different test such as prior invasive coronary angiogram. A CCTA is used to decide if surgery is indicated and for surgical planning.

f. The assessment of coronary or pulmonary venous anatomy.

This application of CTA for the coronary and pulmonary veins is primarily for pre-surgical planning. Coronary venous anatomy can be useful for the cardiologist who needs to place a pacemaker lead in the lateral coronary vein in order to resynchronize cardiac contraction in patients with heart failure. This may be helpful to guide biventricular pacemaker placement.

Pulmonary vein anatomy can vary from patient to patient. Pulmonary vein catheter ablation can isolate electrical activity from the pulmonary veins and allow for the elimination of recurrent atrial fibrillation. The presence of a pulmonary venous anatomic map may help eliminate procedural complications and allow for the successful completion of the procedure.

g. The patient undergoing non-coronary artery cardiac surgery.

Certain patients who have non-coronary artery cardiac surgery (valve or ascending aortic surgery) may need a pre-operative invasive coronary angiogram. The surgical planning may also depend upon the exact location of the coronary arteries. The
rationale for the use of CCTA in these patient subsets is to avoid potentially unnecessary invasive testing and still provide appropriate pre-surgical information.

h. The test may be medically necessary in patients presenting to the emergency room with complaints consistent with cardiac ischemia, but without diagnostic electrocardiography (ECG) or enzymes.

i. The test may be considered medically necessary in patients status post revascularization procedures who present with recurrent symptoms not clearly identifiable as ischemic.

Limitations:

a. The test is never covered for screening, i.e., in the absence of signs, symptoms or disease.

b. The test will be considered not medically necessary if the anticipated results are not expected to provide new, additional information to that already previously obtained from other tests (such as stress myocardial perfusion images or cardiac ultrasound). New or additional information should facilitate the management decision, not merely add a new layer of testing.

c. For dates of service prior to 01/01/2010, determination of cardiac ejection fraction (CPT code 0151T) should not be billed when previously determined by other techniques. CPT code 0151T is deleted effective 12/31/2009.

d. The test will be considered not medically necessary if it is anticipated that the patient would require invasive cardiac angiography for further diagnosis or for therapeutic intervention. (e.g., angina decubitus, unstable angina, Prinzmetal angina, etc.)

e. The test may be denied, on post-pay review, as not medically necessary when used for cardiac evaluation if there were pre-test knowledge of sufficiently extensive calcification of the suspect coronary segment that would diminish the interpretive value.

f. Effective 12/01/2009, coverage for evaluation of coronary artery or bypass graft stenosis, or for functional status (e.g., wall motion), is limited to multidetector scanners having at least 64 slices per rotation capability. This two year period (12/01/2007 - 12/01/2009 will allow for a phase-in of new technology.

g. The administration of beta blockers and the monitoring of the patient during MDCT/CCTA by a physician experienced in the use of cardiovascular drugs is included as part of the test and is not a separately payable service.

h. All studies must be ordered by the physician/qualified non-physician practitioner treating the patient and who will use the results of the test in the management of the patient.

i. The test must be performed under the direct supervision of a physician.

j. This LCD does not address electron beam tomography (EBT) technology or Ultrafast CT for coronary artery examination. There is no extension of coverage of EBT based on this policy.

k. Quantitative calcium scoring (CPT code 0144T for dates of service prior to 01/01/2010, and CPT 75571 on or after 01/01/2010) is not a covered service and will be denied as not medically necessary. Calcium scoring reported in isolation is considered a screening
service. When performed in association with CT angiography, there is neither separate nor additional included reimbursement for the calcium scoring.

1. Acceptable Levels of Competence for Performance and Interpretation: Providers submitting claims for these tests must demonstrate proficiency and training in performing the tests according to the following standards:
   The acceptable levels of competence, as defined by the American College of Cardiology (ACC)/American Heart Association (AHA) Clinical Competence Statement on Cardiac Imaging with Computed Tomography and Magnetic Resonance (2005) and the American College of Radiology (ACR) Clinical Statement on Noninvasive Cardiac Imaging (2005), are outlined as follows:

   **For the technical portion**, a recommended level of competence is fulfilled when the image acquisition is obtained under all of the following conditions:
   1. The service is performed by a radiology technologist who is credentialed by a nationally recognized credentialing body (American Registry of Radiologic Technologists or equivalent) and meets state licensure requirements where applicable.
   2. If intravenous beta blockers or nitrates are to be given prior to a CT coronary angiogram, the test must be under the direct supervision of a certified registered nurse and physician (familiar with the administration of cardiac medications) who are available to respond to medical emergencies and it is strongly recommended that the certified register nurse and physician be ACLS certified.
   3. When contrast studies are performed, the physician must provide direct supervision and the radiologic technologist or registered nurse administering the contrast must have appropriate training on the use and administration of contrast media.

   **For the professional portion**, a recommended level of competence is fulfilled when the interpretation is performed by a physician meeting the following requirements:
   1. The physician has appropriate additional training in coronary CTA and cardiac CT imaging equivalent to the guidelines set forth by the ACC or ACR (for example: the ACCF/AHA Clinical Competence Statement on Cardiac Imaging with Computed Tomography and Magnetic Resonance (2005) and the ACR Clinical Statement on Noninvasive Cardiac Imaging (2005)), or
   2. The physician has appropriate medical staff privileges to interpret CT coronary angiograms at a hospital that participates in the Medicare program, and is actively training in cardiac CT (as in paragraph a). A grace period of 24 months will be allowed to acquire the necessary training.

   **Other Comments:**

   For claims submitted to the Part A MAC: this coverage determination also applies within states outside the primary geographic jurisdiction with facilities that have nominated CGS to process their claims.
Bill type codes only apply to providers who bill these services to the Part A MAC. Bill type codes do not apply to physicians, other professionals and suppliers who bill these services to the carrier or Part B MAC.

Limitation of liability and refund requirements apply when denials are likely, whether based on medical necessity or other coverage reasons. The provider/supplier must notify the beneficiary in writing, prior to rendering the service, if the provider/supplier is aware that the test, item or procedure may not be covered by Medicare. The limitation of liability and refund requirements do not apply when the test, item or procedure is statutorily excluded, has no Medicare benefit category or is rendered for screening purposes.

For dates of service on or after April 1, 2010, bill type 77X should be used to report FQHC services.

**Bill Type Codes:**
Contractors may specify Bill Types to help providers identify those Bill Types typically used to report this service. Absence of a Bill Type does not guarantee that the policy does not apply to that Bill Type. Complete absence of all Bill Types indicates that coverage is not influenced by Bill Type and the policy should be assumed to apply equally to all claims.

- 011x Hospital Inpatient (Including Medicare Part A)
- 012x Hospital Inpatient (Medicare Part B only)
- 013x Hospital Outpatient
- 077x Clinic - Federally Qualified Health Center (FQHC)
- 085x Critical Access Hospital

**Revenue Codes:**
Contractors may specify Revenue Codes to help providers identify those Revenue Codes typically used to report this service. In most instances Revenue Codes are purely advisory; unless specified in the policy services reported under other Revenue Codes are equally subject to this coverage determination. Complete absence of all Revenue Codes indicates that coverage is not influenced by Revenue Code and the policy should be assumed to apply equally to all Revenue Codes.

Revenue codes only apply to providers who bill these services to the Part A MAC. Revenue codes do not apply to physicians, other professionals and suppliers who bill these services to the carrier or Part B MAC.

Please note that not all revenue codes apply to every type of bill code. Providers are encouraged to refer to the FISS revenue code file for allowable bill types. Similarly, not all revenue codes apply to each CPT/HCPCS code. Providers are encouraged to refer to the FISS HCPCS file for allowable revenue codes.

All revenue codes billed on the inpatient claim for the dates of service in question may be
subject to review.

0321 Radiology - Diagnostic - Angiocardiology
0359 CT Scan - CT Other

CPT/HCPCS Codes

Group 1 Paragraph: CPT CODES 0144T-0151T ARE DELETED EFFECTIVE 12/31/2009 AND REPLACED BY CPT CODES 75571-75574 (BELOW)

CPT code 0144T is not a covered service (for dates of service prior to 01/01/2010.)

For dates of service on or after 01/01/2010, CPT code 75571 is not a covered service.

Group 1 Codes:

75571 COMPUTED TOMOGRAPHY, HEART, WITHOUT CONTRAST MATERIAL, WITH QUANTITATIVE EVALUATION OF CORONARY CALCIUM

75572 COMPUTED TOMOGRAPHY, HEART, WITH CONTRAST MATERIAL, FOR EVALUATION OF CARDIAC STRUCTURE AND MORPHOLOGY (INCLUDING 3D IMAGE POSTPROCESSING, ASSESSMENT OF CARDIAC FUNCTION, AND EVALUATION OF VENOUS STRUCTURES, IF PERFORMED)

75573 COMPUTED TOMOGRAPHY, HEART, WITH CONTRAST MATERIAL, FOR EVALUATION OF CARDIAC STRUCTURE AND MORPHOLOGY IN THE SETTING OF CONGENITAL HEART DISEASE (INCLUDING 3D IMAGE POSTPROCESSING, ASSESSMENT OF LV CARDIAC FUNCTION, RV STRUCTURE AND FUNCTION AND EVALUATION OF VENOUS STRUCTURES, IF PERFORMED)

75574 COMPUTED TOMOGRAPHIC ANGIOGRAPHY, HEART, CORONARY ARTERIES AND BYPASS GRAFTS (WHEN PRESENT), WITH CONTRAST MATERIAL, INCLUDING 3D IMAGE POSTPROCESSING (INCLUDING EVALUATION OF CARDIAC STRUCTURE AND MORPHOLOGY, ASSESSMENT OF CARDIAC FUNCTION, AND EVALUATION OF VENOUS STRUCTURES, IF PERFORMED)
Please refer to the CMS website for the ICD-10 Codes that Support Medical Necessity

Associated Information

The patient's medical record must contain documentation that fully supports the medical necessity for services included within this LCD. (See "Indications and Limitations of Coverage.") This documentation includes, but is not limited to, relevant medical history, physical examination, and results of pertinent diagnostic tests or procedures.

Each claim must be submitted with ICD-10-CM codes that reflect the condition of the patient, and indicate the reason(s) for which the service was performed. Claims submitted without ICD-10-CM codes will be returned.

The documentation of the study requires a formal written report, with clear identifying demographics, the name of the interpreting provider, the reason for the tests, an interpretive report and copies of images. The computerized image reconstruction data should also be maintained.

Documentation must be available to Medicare upon request.

The frequency of the exam must be reasonable and justified by the course of the patient’s illness.