MEDICAL POLICY

MEDICAL POLICY DETAILS	
Medical Policy Title	**Coronary Calcium Scoring**
Policy Number	**6.01.13**
Category	**Technology Assessment**
Original Effective Date	**10/18/01**
Committee Approval Date	**02/21/02, 06/19/03, 05/19/04, 04/21/05, 02/16/06, 01/18/07, 01/17/08, 12/18/08, 01/21/10, 01/20/11, 01/19/12, 03/21/13, 01/16/14, 02/19/15, 03/17/16, 03/16/17, 02/15/18, 02/21/19, 2/20/20, 2/18/21, 09/16/21, 02/17/22, 04/21/22, 04/20/23**
Current Effective Date	**04/20/23**
Archived Date	**N/A**
Archive Review Date	**N/A**
Product Disclaimer	• *If a product excludes coverage for a service, it is not covered, and medical policy criteria do not apply.* • *If a commercial product (including an Essential Plan or Child Health Plus product), medical policy criteria apply to the benefit.* • *If a Medicaid product covers a specific service, and there are no New York State Medicaid guidelines (eMedNY) criteria, medical policy criteria apply to the benefit.* • *If a Medicare product (including Medicare HMO-Dual Special Needs Program (DSNP) product) covers a specific service, and there is no national or local Medicare coverage decision for the service, medical policy criteria apply to the benefit.* • *If a Medicare HMO-Dual Special Needs Program (DSNP) product DOES NOT cover a specific service, please refer to the Medicaid Product coverage line.*

POLICY STATEMENT

I. Based upon our criteria and assessment of the peer-reviewed literature, coronary calcium scoring is considered **medically appropriate** for patients when **ALL** of the following criteria are met:

   A. the results will impact risk-based decisions for preventive interventions; and
   B. the individual is an adult age 40-75; and
   C. the 10-year Atherosclerotic Cardiovascular Disease (ASCVD) risk including pooled cohort equation is between 5.0% to 19.9%; and
   D. there is no documented coronary artery disease (CAD); and
   E. the individual is not currently on a statin medication; and
   F. the individual is not a smoker; and
   G. there is no history of diabetes; and
   H. there is no family history of premature CAD; and
   I. there has been no calcium score performed in the previous five years; and
   J. there has been no prior calcium score greater than zero.

II. Based upon our criteria and assessment of the peer-reviewed literature, coronary calcium scoring is considered **medically appropriate** for symptomatic patients with new, recurrent or worsening symptoms concerning for cardiac ischemia, who have a low pretest probability of CAD or in a patient with low gradient aortic stenosis when symptomatic, severe aortic stenosis is suspected (refer to Policy Guideline IV).

III. Based upon our criteria and assessment of the peer reviewed literature, coronary calcium scoring performed as part of a cardiac computed tomographic angiography (CTA) is considered **medically appropriate** for patients who are

candidates for cardiac CTA, as pre-test knowledge of extensive calcification of the coronary segment in question may diminish the interpretive value of cardiac CTA.

IV. Based upon our criteria and assessment of the peer reviewed literature, coronary calcium scoring is considered **investigational** as a screening technique for asymptomatic patients without any degree of CAD risk.

Refer to Corporate Medical Policy #6.01.19 Low-Dose Computed (LDCT) for Lung Cancer Screening.

Refer to Corporate Medical Policy #6.01.34 Cardiac Computed Tomographic Angiography (Cardiac CTA): Contrast-Enhanced.

Refer to Corporate Medical Policy #11.01.03 Experimental and Investigational Services.

POLICY GUIDELINES

I. Coronary calcium scoring (CPT:75571) should not be reported with a CTA procedure (CPT: 75572 and 75574).

II. Family history of premature CAD is defined as having a primary relative who had been diagnosed with CAD prior to the age of 55 years in a male relative or 65 years in a female relative.

III. The 10-year ASCVD Risk Estimator is a calculation of a person's 10-year risk of having a cardiovascular problem, such as a heart attack or stroke. This risk estimator considers a person's age, sex, race, cholesterol levels, blood pressure, medication use, diabetic status, and smoking status. The ASCVD risk score is given as a percentage:

Low risk (less than 5%)
Borderline risk (5% to 7.4%)
Intermediate risk (7.5% to 19.9%)
High risk (greater than or equal to 20%)

The calculated risk score is used to determine risk lowering interventions and treatment recommendations.

IV. Low gradient aortic stenosis is defined as an aortic valve area (AVA) less than one and a mean gradient less than 40 mmHg.

DESCRIPTION

Atherosclerosis of the arteries is caused by a build-up of plaque, which consists of fat, cholesterol, calcium and other substances. In the coronary arteries, the calcium deposits can be measured by computed tomography (CT) which is reported as a coronary artery calcification score (CAC) score. The CAC score can reflect coronary artery disease (CAD) severity and can be used to assess an individual's cardiovascular risk. The higher the CAC score, the more advanced the coronary artery disease, and the higher the risk for major adverse cardiovascular risks (MACE). For individuals classified as intermediate risk based on established models (e.g., ATP or Framingham risk factors), the CAC score may allow the individual to be reclassified as high- or low-risk. For those individuals reclassified as high-risk, treatment may be changed. A CAC score of 400 or more is suggested as a reasonable definition of advanced CAD. CAC scoring is considered to be an integral part of CTA to determine the risk-benefit of dye infusion.

The Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III) (2002) summarizes the NCEP's clinical guidelines for cholesterol testing and management. The first step in management is the classification of an individual's 10-year risk or probability for CAD. Age, gender, total cholesterol, HDL cholesterol, smoking status, and systolic blood pressure are a few of the factors that are considered when determining risk based on established models.

RATIONALE

A scientific statement was published in October 2006 by the American Heart Association Committee on Cardiovascular Imaging and Intervention, Council on Cardiovascular Radiology and Intervention, Committee on Cardiac Imaging, and Council on Clinical Cardiology. The scientific statement, entitled Assessment of Coronary Artery Disease by Cardiac Computed Tomography, recommended coronary calcium assessment for: patients with chest pain, with equivocal or

normal ECG's, and with negative cardiac enzyme studies; evaluation of symptomatic patients, especially in the setting of equivocal treadmill or functional testing; and measurement of atherosclerosis burden in clinically selected patients at intermediate CAD risk (e.g. those with a 10-20% Framingham 10-year risk assessment), to refine clinical risk prediction and to select patients for more aggressive target values for lipid-lowering therapies. This statement did not recommend coronary calcium assessment to establish the presence of obstructive disease for subsequent revascularization or for serial imaging for assessment of progression of coronary calcification.

The 2010 American College of Cardiology Foundation/ American Heart Association (ACCF/AHA) Guideline for Assessment of Cardiovascular Risk in Asymptomatic Adults; IIa Recommendations for Calcium Scoring Methods, stated that measurement of CAC is reasonable for cardiovascular risk assessment in asymptomatic adults at intermediate risk (10% to 20% 10-year risk). (Level of Evidence: B). The IIb recommendation stated that measurement of CAC may be reasonable for cardiovascular risk assessment in persons at low-to-intermediate risk (6% to 10% 10-year risk). (Level of Evidence: B). No benefit was found for persons at low risk (less than 6% 10-year risk).

In July 2018, the USPSTF issued additional findings: (1) There is insufficient evidence to determine the balance of benefits and harms of adding the ABI, hs-CRP level, or CAC score to traditional risk assessment for cardiovascular disease (CVD) in asymptomatic adults to prevent CVD events. (2) Harms of testing for CAC score include exposure to radiation and incidental findings on CT of the chest, such as pulmonary nodules, that may lead to further invasive testing and procedures. (3) Abnormal test results may lead to further testing, procedures, and lifelong medication use without proof of benefit but with expense and potential adverse effects for the patient. (4) Psychological harms may result from reclassification into a higher-risk category for CVD events.

In 2018, ACC/AHA Task Force issued a report, jointly supported by multiple professional organizations, entitled Guideline on the Management of Blood Cholesterol. The report recommended the following for intermediate-risk adults or selected borderline-risk adults, in whom a CAC score is measured for the purpose of making a treatment decision: (1) If the CAC score is zero, it is reasonable to withhold statin therapy and reassess in five to 10 years, as long as higher-risk conditions are absent (diabetes mellitus, family history of premature CHD, cigarette smoking); (2) If the CAC score is one to 99, it is reasonable to initiate statin therapy for patients greater than or equal to aged 55 years or older and; (3) If CAC score is 100 or higher or in the 75th percentile or higher, it is reasonable to initiate statin therapy (Recommendation: IIA).

The American College of Cardiology/American Heart Association (ACC/AHA) Guideline on the Primary Prevention of Cardiovascular Disease (2019) recommended that coronary artery calcium measurement can be a useful tool in refining risk assessment for preventive interventions (e.g., statin therapy) for individuals with intermediate predicted risk (greater than or equal to 7.5% to or less than 20%) by the pooled cohort equations (PCE) or for select adults with borderline (5% to <7.5%) predicted risk. In these groups, coronary artery calcium measurement can reclassify risk upward (particularly if coronary artery calcium score is greater than or equal to 100 Agatston units (AU) or greater than or equal to 75th age/sex/race percentile) or downward (if coronary artery calcium is zero) in a significant proportion of individuals. The extent of reclassification is sufficient to provide confidence that borderline- or intermediate-risk patients with elevated coronary artery calcium will have event rates that clearly exceed benefit thresholds (i.e., greater than or equal to 7.5% in 10 years) and those with coronary artery calcium scores of zero will have event rates less than 7.5%, which can help guide shared decision-making about statins or potentially even aspirin. In the Multi-Ethnic Study of Atherosclerosis (MESA) trial, the coronary artery calcium score was strongly associated with 10-year atherosclerotic cardiovascular disease (ASCVD) risk in a graded manner across age, sex, and racial/ethnic groups, independent of traditional risk factors. Note that the absence of coronary artery calcium does not rule out noncalcified plaque, and clinical judgment about risk should prevail. Coronary artery calcium measurement is not intended as a "screening" test for all, but rather may be used as a decision aid in select adults to facilitate the clinician-patient risk discussion. (Recommendation: IIa; Level of Evidence: B).

The American Heart Association/American College of Cardiology (2021) Guideline on Evaluation and Diagnosis of Chest Pain includes a recommendation for CAC as first-line testing in patients with stable chest pain with no known coronary artery disease and low likelihood of obstruction. The guidelines recommend the addition of CAC may also be useful for intermediate-high risk patients with stable chest pain and no known coronary artery disease undergoing stress testing.

CODES

- *Eligibility for reimbursement is based upon the benefits set forth in the member's subscriber contract.*
- *CODES MAY NOT BE COVERED UNDER ALL CIRCUMSTANCES. PLEASE READ THE POLICY AND GUIDELINES STATEMENTS CAREFULLY.*
- *Codes may not be all inclusive as the AMA and CMS code updates may occur more frequently than policy updates.*
- *Code Key: Experimental/Investigational = (E/I), Not medically necessary/appropriate = (NMN)*

CPT Codes

Code	Description
75571	Computed tomography, heart, without contrast material, with quantitative evaluation of coronary calcium

HCPCS Codes

Code	Description
No specific codes	

ICD10 Codes

Code	Description
I25.10 - I25.119	Atherosclerotic heart disease of native coronary artery (code range)

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*Key Article

KEY WORDS

Calcium scoring, helical CT, multidetector row CT, ultrafast CT**.**

CMS COVERAGE FOR MEDICARE PRODUCT MEMBERS

Based upon our review, Cardiac Computed Tomography (CCT) and Coronary Computed Tomography Angiography (CCTA) are not addressed in National Medicare coverage determinations or policies. However, there is a Local Coverage Determination (LCD) for Cardiac Computed Tomography (CCT) and Coronary Computed Tomography Angiography (CCTA) which addresses quantitative calcium scoring. Please refer to the following LCD website for Medicare Members:
[https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lcdid=33559&ver=28&CntrctrSelected=298*1&Cntrctr=298&s=41&DocType=2&bc=AAgAAAQBAAAA&=]