PriorityHealth

**MEDICAL POLICY**
**No. 91614-R3**

# COMPUTERIZED TOMOGRAPHIC ANGIOGRAPHY CORONARY ARTERIES (CCTA)

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| **Effective Date: December 4, 2019** | **Review Dates: 11/15, 11/16, 11/17, 11/18, 11/19, 11/20** |
| **Date Of Origin: November 11, 2015** | **Status: Current** |

## I. POLICY/CRITERIA

Medical necessity determination for Coronary Computed Tomographic Angiography (CCTA) is reviewed according to eviCore guidelines.

Fractional Flow Reserve Computed Tomography (FFR-CT) is medically necessary for any of the following (A, B or C):

A. Suspected coronary artery disease (CAD) in asymptomatic patients when Fractional Flow Reserve (FFR-CT) can be calculated in conjunction with imaging AND one of the following:

1. Patients with high-risk of CAD (using standard methods of risk assessment such as the SCORE or Framingham risk score calculation) who have not had evaluation of coronary artery disease (MPI, stress echo, cardiac PET, coronary CTA or cardiac catheterization) within the preceding three (3) years.
2. Patients with moderate or high risk of CAD (SCORE) who have a high risk occupation that would endanger others in the event of a myocardial infarction, (e.g. airline pilot, law-enforcement officer, firefighter, mass transit operator, bus driver) who have not had evaluation of coronary artery disease (MPI, stress echo, cardiac PET, coronary CTA or cardiac catheterization) within the preceding three (3) years.
3. Patients with diseases/conditions with which coronary artery disease commonly coexist and who have not had evaluation of coronary artery disease (MPI, stress echo, cardiac PET, coronary CTA or cardiac catheterization) within the preceding three (3) years:

    a. Abdominal aortic aneurysm *OR*

    b. Established and symptomatic peripheral vascular disease *OR*

    c. Prior history of cerebrovascular accident (CVA), transient ischemic attack (TIA) or carotid endarterectomy (CEA) or high grade carotid stenosis (>70%) *OR*

d. Chronic renal insufficiency or renal failure

4. Patients who have undergone cardiac transplantation and have had no evaluation for coronary artery disease within the preceding one (1) year.
5. Patients in whom a decision has been made to treat with interleukin 2.

B. Suspected coronary artery disease in symptomatic patients who have not had evaluation of coronary artery disease (MPI, cardiac PET, stress echo, coronary CTA or cardiac catheterization) within the preceding sixty (60) days when FFR-CT can be calculated in conjunction with imaging AND one of the following:

1. Chest pain
    a. With intermediate or high pretest probability of CAD *OR*
    b. With low or very low pretest probability of CAD and high risk of CAD (SCORE)
2. Atypical symptoms: syncope, shortness of breath (dyspnea), neck, jaw, arm, epigastric or back pain, or sweating (diaphoresis)
    a. With moderate or high risk of CAD (SCORE)
3. Other symptoms; palpitation, dizziness, lightheadedness, near syncope, nausea, vomiting, anxiety, weakness, fatigue etc.
    a. With high risk of CAD (SCORE)
4. Patients with any cardiac symptom who have diseases/conditions with which coronary artery disease commonly coexists such as:
    a. Diabetes mellitus *OR*
    b. Abdominal aortic aneurysm *OR*
    c. Established and symptomatic peripheral vascular disease *OR*
    d. Prior history of cerebrovascular accident (CVA), transient ischemic attack (TIA) or carotid endarterectomy (CEA) or high grade carotid stenosis (>70%) *OR*
    e. Chronic renal insufficiency or renal failure
5. Patients who have undergone cardiac transplantation.
6. Patients in whom a decision has been made to treat with interleukin 2.

C. Patients with suspected CAD and abnormal exercise treadmill test (performed without imaging) with low or moderate coronary heart disease risk (using standard methods of risk assessment such as the SCORE risk

calculation) when FFR-CT can be calculated in conjunction with imaging AND

a. Abnormal finding on an exercise treadmill test include chest pain, ST segment change, abnormal BP response or complex ventricular arrhythmias.

## II. MEDICAL NECESSITY REVIEW

☒ Required for CCTA ☐ Not Required ☐ Not Applicable

eviCore provides prior authorization medical necessity review of CCTA services on behalf of Priority Health.

FFR-CT does not require prior authorization. Fractional Flow Reserve (FFR-CT) is not covered for Medicaid products.

## III. APPLICATION TO PRODUCTS

Coverage is subject to member's specific benefits. Group specific policy will supersede this policy when applicable.

- **HMO/EPO:** ***This policy applies to insured HMO/EPO plans.***
- **POS:** ***This policy applies to insured POS plans.***
- **PPO:** ***This policy applies to insured PPO plans. Consult individual plan documents as state mandated benefits may apply. If there is a conflict between this policy and a plan document, the provisions of the plan document will govern.***
- **ASO:** ***For self-funded plans, consult individual plan documents. If there is a conflict between this policy and a self-funded plan document, the provisions of the plan document will govern.***
- **INDIVIDUAL:** ***For individual policies, consult the individual insurance policy. If there is a conflict between this medical policy and the individual insurance policy document, the provisions of the individual insurance policy will govern.***
- **MEDICARE:** ***Coverage is determined by the Centers for Medicare and Medicaid Services (CMS) and/or the Evidence of Coverage (EOC); if a coverage determination has not been adopted by CMS, this policy applies.***
- **MEDICAID/HEALTHY MICHIGAN PLAN:** ***For Medicaid/Healthy Michigan Plan members, this policy will apply. Coverage is based on medical necessity criteria being met and the appropriate code(s) from the coding section of this policy being included on the Michigan Medicaid Fee Schedule located at: http://www.michigan.gov/mdch/0,1607,7-132-2945_42542_42543_42546_42551-159815--,00.html. If there is a discrepancy between this policy and the Michigan Medicaid Provider Manual located at: http://www.michigan.gov/mdch/0,1607,7-132-2945_5100-87572--,00.html, the Michigan Medicaid Provider Manual will govern. For Medical Supplies/DME/Prosthetics and Orthotics, please refer to the Michigan Medicaid Fee Schedule to verify coverage.***

## IV. BACKGROUND

Advantages of Coronary Artery CTA

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

Disadvantages of Coronary Artery CTA include:

- Exposure to ionizing radiation
- Potential complications from use of intravascular iodinated contrast administration (see biosafety issues, below)
- Potential factors that may limit the image quality during a Cardiac CT/Coronary Artery CTA exam, such as:
  - Uncontrolled atrial or ventricular arrhythmias.
  - Extensive coronary artery calcification which may produce artifact.
  - 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.
  - Inability to image at a desired heart rate, which may occur despite beta blocker administration.
  - 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)
  - Not a suitable imaging modality for morbidly obese patients (BMI > 40).
  - Because of the radiation exposure issues careful consideration should be given to other imaging modalities in pregnant women and children.
  - CCTA images the coronary arteries directly. Therefore the information provided is anatomical. For the purposes of the current policy, imaging equipment used in certain clinical scenarios must be capable of providing physiological evaluation by Fractional Flow Reserve (FFR-CT).

Biosafety Issues:

Ordering and imaging providers are responsible for considering safety issues prior to the CCTA exam. One of the most significant considerations is the requirement for intravascular iodinated contrast material, which may have an adverse effect on patients with a history of documented allergic contrast reactions or atopy, as well as on individuals with renal impairment, who are at greater risk for contrast-induced nephropathy. In addition, radiation safety issues including cumulative exposure to ionizing radiation should be considered.

Ordering Issues:

- CCTA exams are not medically necessary as a screening study, in the absence of signs, symptoms or known disease.
- Selection of the optimal diagnostic work-up for cardiac evaluation should be made within the context of other available studies (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.
- In general, follow-up CCTA exams should be performed only when there is a clinical change, with new signs or symptoms, or specific finding(s) requiring imaging surveillance.
- This policy does not apply to Cardiac CT for quantitation of coronary artery calcification (CPT 75571).
- This policy does not apply to Cardiac CT for evaluation of cardiac structure (CPT 75572-75573).
- Duplicative testing or repeat imaging of the same anatomic area with same or similar technology may be subject to high-level review and may not be medically necessary unless there is a persistent diagnostic problem or there has been a change in clinical status (e.g. deterioration) or there is a medical intervention which warrants interval reassessment.
- Request for re-imaging due to technically limited exams is the responsibility of the imaging providers.

Several clinical indications listed for CCTA include standard methods of risk assessment, such as the SCORE (Systematic Coronary Risk Evaluation) or the Framingham risk score calculation*. These risk calculation systems include consideration of the following factors:

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| Age | Sex |
| Abnormal Lipid Profile | Hypertension |
| Diabetes Mellitus | Cigarette Smoking |

*The Framingham risk calculator is available at http://cvdrisk.nhlbi.nih.gov/calculator.asp

SCORE is available at https://www.escardio.org/Education/Practice-Tools/CVD-prevention-toolbox/SCORE-Risk-Charts

High risk: A greater than 20% risk that you will develop a heart attack or die from coronary disease in the next 10 years.

Intermediate risk: A 10% to 20% risk that you will develop a heart attack or die from coronary disease in the next 10 years.

Low risk: Less than 10% risk that you will develop a heart attack or die from coronary disease in the next 10 years.

## V. CODING INFORMATION

******Contact eviCore for prior authorization of CCTA*

**ICD-10 Codes:**
*Various – see criteria*

**CPT Codes:**

75574* Computed tomographic angiography, heart, coronary arteries and bypass grafts (where present), with contrast material, including 3-D image post-processing (including evaluation of cardiac structure and morphology, assessment of cardiac function, and evaluation of venous structures, if performed)

*The following codes are not covered for Medicaid plans*

0501T Noninvasive estimated coronary fractional flow reserve (FFR) derived from coronary computed tomography angiography data using computation fluid dynamics physiologic simulation software analysis of functional data to assess the severity of coronary artery disease; data preparation and transmission, analysis of fluid dynamics and simulated maximal coronary hyperemia, generation of estimated FFR model, with anatomical data review in comparison with estimated FFR model to reconcile discordant data, interpretation and report

0502T Noninvasive estimated coronary fractional flow reserve (FFR) derived from coronary computed tomography angiography data using computation fluid dynamics physiologic simulation software analysis of functional data to assess the severity of coronary artery disease; data preparation and transmission

0503T Noninvasive estimated coronary fractional flow reserve (FFR) derived from coronary computed tomography angiography data using computation fluid dynamics physiologic simulation software analysis of functional data to assess the severity of coronary artery disease; analysis of fluid dynamics and simulated maximal coronary hyperemia, and generation of estimated FFR model

0504T Noninvasive estimated coronary fractional flow reserve (FFR) derived from coronary computed tomography angiography data using computation fluid dynamics physiologic simulation software analysis of functional data to assess the severity of coronary artery disease; anatomical data review in comparison with estimated FFR model to reconcile discordant data, interpretation and report

0523T Intraprocedural coronary fractional flow reserve (FFR) with 3D functional mapping of color-coded FFR values for the coronary tree, derived from coronary angiogram data, for real-time review and interpretation of possible atherosclerotic stenosis(es) intervention (List separately in addition to code for primary procedure)

## VI. REFERENCES


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