04-70450-07

Original Effective Date: 06/15/15

Reviewed: 10/24/24

Revised: 11/15/24

Subject: Computed Tomography Angiography (CTA) Chest (non coronary)

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DESCRIPTION:

Computed tomography angiography (CTA) is an imaging procedure performed for characterizing vascular anatomy, diagnosing vascular diseases, planning treatment for vascular disease and assessing the effectiveness of vascular treatment. CTA may be performed with or without contrast material.

Summary and Analysis of Evidence: Computed tomography (CT) is a frequently used imaging modality for the diagnosis and evaluation of many thoracic diseases. CT is a radiologic modality for evaluating disorders of the thoracic including, but limited to disorders and conditions within the chest including, but not limited to cancer, lung cancer screening, and pulmonary emboli (ACR-ASNR-SPR, 2023).

Angiography provides accurate information about the site of dissection, branch artery involvement, and communication of the true and false lumens. Additionally, angiographic and catheter-based techniques allow for evaluation and treatment of coronary artery and aortic branch (visceral and limb artery) disease, as well as assessment of aortic valve and left ventricular function (Hiratzka et al 2010).

POSITION STATEMENT:

Computed tomography angiography (CTA) of the chest (non coronary) **meets the definition of medical necessity** for the following:

Suspected pulmonary embolism (PE)

- High risk for pulmonary embolism (PE) based on shock or hypotension.
- Positive D-dimer.

Vascular disease

- Superior vena cava (SVC) syndrome
- Subclavian steal syndrome after positive or inconclusive ultrasound
- Thoracic outlet syndrome
- Takayasu's arteritis
- Clinical concern for acute aortic dissection
    - Sudden painful ripping sensation in the chest or back and may include:
        - New diastolic murmur
        - Cardiac tamponade
        - Distant heart sounds
        - Hypotension or shock.

Initial/Screening for Thoracic Aortic Disease

- Echocardiogram or chest x-ray show aneurysm
- Initial study for a suspected aneurysm
- Screening of first-degree relatives of individuals with a thoracic aortic aneurysm (defined as > 50% above normal) or dissection
    - Known connective tissue disease or genetic conditions that predispose to aortic aneurysm or dissection (e.g., Marfan syndrome, Ehlers Danlos or Loeys-Dietz syndromes).
- Screening of the thoracic aorta after a diagnosis of a bicuspid aortic valve (dilation of the ascending aorta may not be seen on echocardiogram)
    - If normal, re-image every three to five years.
- Screening of first-degree relatives of members with a bicuspid aortic valve
- Turner's syndrome – Screen for coarctation or aneurysm of the thoracic aorta
    - If normal results, screen every 5-10 years
    - If abnormal, screen annually.
- Suspected vascular cause of dysphagia or expiratory wheezing with other imaging is suggestive or inconclusive.

Follow-up after established Thoracic Aneurysm

- Six months follow-up after initial finding of a dilated thoracic aorta, for assessment of rate of change
    - Aortic Root or Ascending Aorta (in cm)
        - 3.5 to 4.4 Annual
        - 4.5 to 5.5 or growth rate > 0.5 cm/year - Every 6 months

    - Genetically mediated (Marfans syndrome, Aortic Root or Ascending Aorta) (in cm)
        - 3.5 to 4.4 Annual
        - 4.5 to 5.0 or growth rate > 0.5 cm/year Every 6 months
        - Surgery generally recommended over 5.0 cm
    - Descending Aorta (in cm)
        - 4.0 to 5.0 Annual
        - 5.0 to 6.0 Every 6 months.
- Follow-up post medical treatment of aortic dissection:
    - Acute dissection: 1 month, 6 months, then annually
    - Chronic dissection: annually.
- Follow-up post either root repair or AVR plus ascending aortic root/arch repair: baseline post-op, then annually
- Re-evaluation of known ascending aortic dilation or history of aortic dissection with a change in clinical status or cardiac exam or when findings may alter management.

Congenital malformations

- Thoracic malformation on other imaging (e.g., chest x-ray, echocardiogram, GI study, or inconclusive CT)
- Congenital heart disease with pulmonary hypertension
- Pulmonary sequestration.

Pulmonary hypertension (based on other testing)

- Echocardiogram
- Right heart catherization.

Atrial fibrillation (with ablation planned)

Preoperative/procedural evaluation

Postoperative or post procedural evaluation

- Post-operatives complications
- Routine post-operatives
    - Thoracic endovascular **or open surgical** aneurysm repair
        - 1 month
        - More frequent follow-up/possible intervention if complication detected

- If stable, annual for 5 years.

BILLING/CODING INFORMATION:

CPT Coding:

71275	Computed tomographic angiography, chest (noncoronary), with contrast material(s), including noncontrast images, if performed, and image postprocessing

REIMBURSEMENT INFORMATION:

Refer to section entitled **POSITION STATEMENT**.

Re-imaging or additional imaging due to poor contrast enhanced exam or technically limited exam is the responsibility of the imaging provider.

LOINC Codes:

The following information may be required documentation to support medical necessity: physician history and physical, physician progress notes, plan of treatment and reason for computed tomography angiography (CTA) of the chest (non coronary).

Documentation Table	LOINC Codes	LOINC Time Frame Modifier Code	LOINC Time Frame Modifier Codes Narrative
Physician history and physical	28626-0	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Attending physician progress note	18741-9	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Plan of treatment	18776-5	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology reason for study	18785-6	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology comparison study-date and time	18779-9	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim

Radiology comparison study observation	18834-2	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology-study observation	18782-3	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology-impression	19005-8	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology study-recommendation (narrative)	18783-1	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim

PROGRAM EXCEPTIONS:

Federal Employee Plan (FEP): Follow FEP guidelines.

Medicare Advantage products: No Local Coverage Determination (LCD) were found at the time of the last guideline reviewed date. The following National Coverage Determination (NCD) was reviewed on the last guideline reviewed date: Computed Tomography (220.1), located at cms.gov.

DEFINITIONS:

No guideline specific definitions apply.

RELATED GUIDELINES:

Computed Tomography Angiography (CTA) Abdomen and Pelvis, 04-70450-04
Computed Tomography Angiography (CTA) Brain (Head), 04-70450-05
Computed Tomography Angiography (CTA) Lower Extremity, 04-70450-09
Computed Tomography Angiography (CTA) Neck, 04-70450-06
Computed Tomography Angiography (CTA) Upper Extremity, 04-70450-08

OTHER:

None

REFERENCES:

1. ACR-NASCI-SIR-SPR Practice Guideline for the Performance and Interpretation of Body Computed Tomography Angiography (CTA), 2021.
2. American College of Radiology (ACR) Appropriateness Criteria® Suspected Pulmonary Embolism, 2022.

3. American College of Radiology ACR Appropriateness Criteria® Procedural Planning for Transcatheter Aortic Valve Replacement, 2023.
4. Anderson DR, Kahn SR, Rodger MA et al. Computed tomographic pulmonary angiography vs ventilation-perfusion lung scanning in patients with suspected pulmonary embolism: a randomized controlled trial. JAMA 2007; 298(23): 2743-1753.
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12. Long Q, Zha Y, Yang Z. Evaluation of pulmonary sequestration with multidetector computed tomography angiography in a select cohort of patients: A retrospective study. Clinics (Sao Paul). 2016; 71(7):392–398.
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14. Pascall E, Tulloh RM. Pulmonary hypertension in congenital heart disease. Future Cardiol. 2018; 14(4): 343– 353.
15. Poletto E, Mallon MG, Stevens RM, et al. Imaging review of aortic vascular rings and pulmonary sling. J Am Osteopath Coll Radiol. 2017; 6(2):5-14.
16. Potter BJ, Pinto DS. Subclavian Steal Syndrome. Circulation. 2014; 129:2320–2323.
17. Povlsen S, Povlsen B. Diagnosing thoracic outlet syndrome: Current approaches and future directions. Diagnostics (Basel). 2018; 8(1):21.

18. Rose-Jones LJ, Mclaughlin VV. Pulmonary hypertension: Types and treatments. Curr Cardiol Rev. 2015; 11(1):73-79.

19. Stein PD, Fowler SE, Goodman LR et al. Multidetector computed tomography for acute pulmonary embolism. New England Journal of Medicine 2006; 354(22): 17-27.

COMMITTEE APPROVAL:

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy and Coverage Committee on 10/24/24.

GUIDELINE UPDATE INFORMATION:

06/15/15	New Medical Coverage Guideline.
07/15/16	Revision; added information related to: chest CTA and pulmonary embolism (PE), CTA and thoracic aortic aneurysms and CTA and coarctation of the aorta. Updated references.
04/15/18	Revision; revised position statement. Updated references.
08/15/20	Review/revision. Revised and expanded criteria for CTA chest (non coronary). Updated references.
05/15/22	Review: Position statements and references updated.
07/01/22	Revision to Program Exceptions section.
09/30/23	Review: position statements and references updated.
11/15/24	Review; no change to position statement. Updated references.