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2025 Computed Tomography Angiography/Venography (CTA/CTV) Upper Extremities

Diagnostic Imaging

CTA-UpperEXT-HH

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Pediatric Considerations for Computed Tomography

While computed tomography (CT) is used in children, magnetic resonance imaging (MRI) or ultrasound is preferred for initial evaluation to minimize radiation exposure. CT is reserved for complex cases where detailed imaging is required. By integrating ultrasound and adhering to these guidelines, healthcare providers can optimize diagnostic accuracy while minimizing risks associated with radiation.
Recommendations for CT imaging include **ALL** of the following:

1. Ultrasound first: Utilize ultrasound as the initial modality where appropriate.
2. CT for complex cases: Reserve CT for when ultrasound or MRI is inadequate.
3. Adhere to guidelines: Follow established protocols to ensure safety and efficacy.
4. Minimize radiation exposure: Especially important for children, young adults and pregnant women.

Computed Tomography Angiography/Computed Tomography Venography (CTA/CTV) Upper Extremities

CTA Extremities Related National Coverage Determination (NCD)/Local Coverage Determination (LCD)

Please refer to https://www.cms.gov/medicare-coverage-database/search.aspx if applicable to the individual's health plan membership.

Type/ID Number	Title
NCD 220.1	Computed Tomography

Clinical Judgment

These medical policies are designed to provide clinical guidance and do not supplant a provider's independent professional judgment. Physicians retain full and independent authority to determine appropriate care based on each patient's individual clinical circumstances. Although services may be subject to documentation requirements, medical necessity review, or coverage limitations, nothing in this policy is intended to restrict or interfere with a physician's independent medical judgment.

CTA General Contraindications

Computed tomography angiography (CTA) is contraindicated for **ANY** of the following:

- Clinical instability (eg, respiratory distress, severe hypotension, unstable arrhythmias)
  References: [2] [7]
- Contrast allergy
  References: [2] [7]
- Renal impairment (glomerular filtration rate [GFR] is less than 30 ml/min/1.73 m^2.)
  References: [2] [7]
- **CANNOT** follow procedure directions (eg, holding breath, **NOT** moving)
  References: [2] [7]

Preamble: Pediatric Diagnostic Imaging

HealthHelp's clinical guidelines for the Diagnostic Imaging program, are intended to apply to both adults and pediatrics (21 years of age or younger), unless otherwise specified within the criteria.

CTA/CTV Upper Extremities Guideline

Computed tomography angiography/computed tomography venography (CTA/CTV) of the upper extremities is considered medically appropriate when the documentation demonstrates **ANY** of the following:
(*__NOTE__: *CPT code 71275 CTA CHEST (thoracic aorta) may be requested in combination with CPT code 73206 CTA upper extremities to evaluate the entire course or an upper extremity vessel.*)

1. Deep venous thrombosis (DVT) or embolism is suspected or known and **ANY** of the following:
   a. Arterial emboli in the upper extremity is suspected.
   b. Central veins evaluation
   c. Ultrasound of arm veins is abnormal, non-diagnostic or indeterminate.

   References: [17] [12] [8]
2. Hand ischemia is suspected or known and **ANY** of the following:
   a. Post-revascularization procedure with recurrent symptoms and ultrasound is non-diagnostic or indeterminate.
   b. Ulcers are known and vascular cause is suspected, when ultrasound is abnormal, non-diagnostic or indeterminate.
   c. Vasculopathy (including Buerger's disease and Raynaud's phenomenon) is suspected or known **AND** symptomatic (discoloration of digits, pain) when ultrasound is abnormal, non-diagnostic or indeterminate.

   References: [17] [6]

3. Peri-procedural care to guide pre-procedure, invasive procedure planning or post-procedural follow-up
   References: [17]
4. Vascular access dysfunction when ultrasound is non-diagnostic or indeterminate.
   References: [17] [10] [11] [14]
5. Vascular disease (eg, atherosclerotic peripheral vascular disease, peripheral arterial aneurysms) is suspected when ultrasound is abnormal, non-diagnostic or indeterminate and **ANY** of the following:
   a. Aneurysm
   b. Stenosis/occlusions
   c. Trauma [3]
   d. Tumor invasion
   e. Vasculitis

   References: [17] [9] [1]
6. Vascular disease (eg, atherosclerotic peripheral vascular disease, Buerger disease, peripheral arterial aneurysms) is known, for evaluation.
   References: [17] [9] [1] [16] [4]
7. Vascular malformation is suspected when ultrasound is abnormal, non-diagnostic or indeterminate **AND** magnetic resonance angiography (MRA) is **contraindicated or unavailable**. (*__NOTE__: *CTA is useful in delineating high flow lesions [eg, arteriovenous malformation].*)
   References: [17] [13] [15]

CTA/CTV Upper Extremities Summary of Changes

CTA/CTV Upper Extremities guideline had the following version changes from 2024 to 2025:

- Added the following to keep in line with current evidence:
  - "Glomerular filtration rate" to "Renal impairment" under Contraindications
- Changed wording of "Vascular malformation" indication per ACR
- Citations updated per the evidence
- Removed the following:
  - "Acute symptoms" under "Hand ischemia" as it is not appropriate for outpatient setting
  - "and treatment planning depends on results" from "Ultrasound of the arm veins' under "Deep venous thrombosis" per ACR

- CTA/CTV Extremities: Special Circumstances as it is redundant
- "Hemodialysis graft dysfunction" as it is redundant with "Peri-procedural" indication
- "Prior CTA lower extremities imaging is non-diagnostic or indeterminate." as it is too broad and not supported by EBM
- "Traumatic injury is known and artereial injury is suspected" as it is not appropriate for outpatient setting

CTA/CTV Upper Extremities Procedure Codes

Table 1. CTA Upper Extremities Associated Procedure Codes

CODE	DESCRIPTION
73206	Computed tomographic angiography, upper extremity, with contrast material(s), including noncontrast images, if performed, and image postprocessing

CTA/CTV Upper Extremities Definitions

Acral is the body part that is furthest from the center (eg, at the ends of the arms or the legs).
Aneurysm refers to weakness in an artery wall, allowing it to abnormally balloon out or widen.
Arteriovenous fistula (AVF) is an abnormal connection between an artery and a vein. It happens when one or more arteries are directly connected to one or more veins or venous spaces called sinuses.
Arteriovenous malformation (AVM) are congenital high-flow vascular malformations characterized by abnormal shunting of blood from high-flow feeding arteries to low-resistance veins via a cluster of aberrant blood vessels termed a central nidus, bypassing the normal capillary bed.
Buerger's disease (also known as thromboangiitis obliterans) affects blood vessels in the body, most commonly in the arms and legs. Blood vessels swell, which can prevent blood flow, causing clots to form. This can lead to pain, tissue damage and even gangrene (the death or decay of body tissues).
Computed tomography angiography (CTA) is a medical test that combines a computed tomography (CT) scan with an injection of a special dye to produce pictures of blood vessels and tissues in a part of the body.
Computed tomography venography (CTV) is a technique targeted to assess venous anatomy, determine venous patency and delineate collateral circulation, often using contrast material.
Deep vein thrombosis (DVT) refers to the formation of one or more blood clots (a blood clot is also known as a "thrombus," while multiple clots are called "thrombi") in one of the body's large veins, most commonly in the lower limbs (e.g., lower leg or calf).

Embolism is an obstruction of an artery, typically by a clot of blood or an air bubble, that has traveled from another part of the body.
Hemodialysis is a medical procedure that removes waste products and fluid from the blood. It also corrects electrolyte imbalances. Hemodialysis is used to treat both acute and chronic kidney failure.
Indeterminate findings are inconclusive or insufficient for treatment planning.
Ischemia is a deficient supply of blood to a body part (such as the heart or brain) due to obstruction of the inflow of arterial blood.
Magnetic resonance angiogram (MRA) is a test that uses a magnetic field and pulses of radio wave energy to provide images of blood vessels inside the body, allowing for evaluation of blood flow and blood vessel wall condition. MRA is used to look for aneurysms, clots, tears in the aorta, arteriovenous malformations and stenosis caused by plaque in the carotid arteries (neck) or blood vessels leading to the lungs, kidneys or legs.
Non-diagnostic is a result that does not lead to a confirmed diagnosis.
Pediatric approximate ages are defined by the US Department of Health (USDH), the Food and Drug Administration (FDA), and the American Academy of Pediatrics (AAP) as the following:

1. Infancy, between birth and 2 years of age
2. Childhood, from 2 to 12 years of age
3. Adolescence, from 12 to 21 years of age, further defined by the AAP into:
    a. Early (ages 11–14 years)
    b. Middle (ages 15–17 years),
    c. Late (ages 18–21 years)
    d. Older ages may be appropriate for children with special healthcare needs.

Raynaud's phenomenon/syndrome is a vascular disorder marked by recurrent spasm of the capillaries especially fingers and toes upon exposure to cold, characterized by pallor, cyanosis and redness in succession; usually accompanied by pain and in severe cases can progress to localized gangrene.
Stenosis is a narrowing or constriction of the diameter of a bodily passage or orifice.
Thrombosis is the formation of a blood clot (partial or complete blockage) within blood vessels, whether venous or arterial, limiting the natural flow of blood and resulting in clinical sequela.
Ulcerated is a break in the skin or mucous membrane with loss of surface tissue, disintegration and necrosis of epithelial tissue and often pus.
Ultrasound is the diagnostic or therapeutic use of ultrasound and especially a noninvasive technique involving the formation of images used for the examination and measurement of internal body structures and the detection of bodily abnormalities.

Vasculitis involves inflammation of the blood vessels. The inflammation can cause the walls of the blood vessels to thicken, which reduces the width of the passageway through the vessel. If blood flow is restricted, it can result in organ and tissue damage.

Vasculopathyrefers to any disease or disorder affecting the blood vessels. It encompasses a wide range of conditions that can damage or impair the function of blood vessels, leading to various symptoms and potential complications. Vasculopathy is a broader term than vasculitis, which specifically refers to inflammation of the blood vessel walls.

CTA/CTV Upper Extremities References

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Disclaimer section

Purpose

The purpose of the HealthHelp's clinical guidelines is to assist healthcare professionals in selecting the medical service that may be appropriate and supported by evidence to safely improve outcomes. Medical information is constantly evolving, and HealthHelp reserves the right to review and update these clinical guidelines periodically. HealthHelp reserves the right to include in these guidelines the clinical indications as appropriate for the organization's program objectives. Therefore the guidelines are not a list of all the clinical indications for a stated procedure, and associated Procedure Code Tables may not represent all codes available for that state procedure or that are managed by a specific client-organization.

Clinician Review

These clinical guidelines neither preempt clinical judgment of trained professionals nor advise anyone on how to practice medicine. Healthcare professionals using these clinical guidelines are responsible for all clinical decisions based on their assessment. All Clinical Reviewers are

instructed to apply clinical indications based on individual patient assessment and documentation, within the scope of their clinical license.

Payment

The use of these clinical guidelines does not provide authorization, certification, explanation of benefits, or guarantee of payment; nor do the guidelines substitute for, or constitute, medical advice. Federal and State law, as well as member benefit contract language (including definitions and specific contract provisions/exclusions) take precedence over clinical guidelines and must be considered first when determining eligibility for coverage. All final determinations on coverage and payment are the responsibility of the health plan. Nothing contained within this document can be interpreted to mean otherwise.

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National and Local Coverage Determination (NCD and LCD)

NOTICE
To ensure appropriate review occurs to the most current NCD and/or LCD, always defer to https://www.cms.gov/medicare-coverage-database/search.aspx.

Background

National Coverage Determinations (NCD) and Local Coverage Determinations (LCD) are payment policy documents outlined by the Centers for Medicare and Medicaid Services (CMS) and the government's delegated Medicare Audit Contractors (MACs) that operate regionally in jurisdictions.
CMS introduced variation between different jurisdictions/Medicare Audit Contractors (MACs) and their associated covered code lists with the transition to ICD 10. The variation resulted in jurisdictions independently defining how codes are applied for exclusions, limitations, groupings, ranges, etc. for the medical necessity indications outlined in the NCD and LCD. Due to this variation, there is an inconsistent use/application of codes and coverage determinations across the United States between the different MACs.

In addition, **WITHOUT** notice, CMS can change the codes that indicate medical necessity and the format of the coverage determinations/associated documents (eg, Articles). This is an additional challenge for organizations to keep up with ongoing, unplanned changes in covered codes and medical necessity indications.

Medical Necessity Codes

Due to the variation in code application between jurisdictions/MACs and that updates can happen without notification, HealthHelp is not able to guarantee full accuracy of the codes listed for any Coverage Determination, and advises that prior to use, the associated Coverage Determination Articles are reviewed to ensure applicability to HealthHelp's programs and any associated NCDs and LCDs.

For Internal Use Only:

11248 11249 11253 11282 11325 11328 11333 11349 11350 11351 11352 11354 11355 11356 11358 11359 11360 11361 11362 11365 11366 11367 11368 11369 11370 11374 11375 11394 11395 11396 11565