



Qualified Health Plans offered in North Carolina by CareSource North Carolina Co., d/b/a CareSource

MEDICAL POLICY STATEMENT	
North Carolina Marketplace	
Policy Name & Number	Date Effective
Cerebral Perfusion Computed Tomography (CT).NC MP-MM-1389	01/01/2023-12/31/2023
Policy Type	
MEDICAL	

Medical Policy Statement prepared by CareSource and its affiliates are derived from literature based on and supported by clinical guidelines, nationally recognized utilization and technology assessment guidelines, other medical management industry standards, and published MCO clinical policy guidelines. Medically necessary services include, but are not limited to, those health care services or supplies that are proper and necessary for the diagnosis or treatment of disease, illness, or injury and without which the patient can be expected to suffer prolonged, increased or new morbidity, impairment of function, dysfunction of a body organ or part, or significant pain and discomfort. These services meet the standards of good medical practice in the local area, are the lowest cost alternative, and are not provided mainly for the convenience of the member or provider. Medically necessary services also include those services defined in any Evidence of Coverage documents, Medical Policy Statements, Provider Manuals, Member Handbooks, and/or other policies and procedures.

Medical Policy Statements prepared by CareSource and its affiliates do not ensure an authorization or payment of services. Please refer to the plan contract (often referred to as the Evidence of Coverage) for the service(s) referenced in the Medical Policy Statement. If there is a conflict between the Medical Policy Statement and the plan contract (i.e., Evidence of Coverage), then the plan contract (i.e., Evidence of Coverage) will be the controlling document used to make the determination. According to the rules of Mental Health Parity Addiction Equity Act (MHPAEA), coverage for the diagnosis and treatment of a behavioral health disorder will not be subject to any limitations that are less favorable than the limitations that apply to medical conditions as covered under this policy.

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A. Subject

Cerebral Perfusion Computed Tomography (CT)

B. Background

In computed tomography (CT) narrow beam x-rays are utilized in an advanced imaging procedure by rotating the beam around the body to create cross-sectional images. In this non-invasive procedure the computer controls the motion of the beam through a motorized source rotating around a donut shaped opening in the center of a structure in which the patient lies. The CT computer then processes the individual images to create a three-dimensional image. The CT image can be used to identify a variety of structures such as tumors, physiologic anomalies, or basic structures.

Contrast agents are used in CT imaging to better identify structures, particularly those that are soft tissue based. CT scans do not pose increased risk beyond the risk for any radiology procedure and, like all radiology procedures, increases with repeated testing, in particular the risk of developing cancer. However, these risks are relatively small. It should be noted that contrast agents may cause an allergic reaction or temporarily adversely affect kidney function. Therefore, careful histories are taken prior to initiation of the procedure.

C. Definitions

- **Advanced Imaging** – safely screens one or more specialized diagnostic tests for visualization of internal organs and structures.
- **Cerebral Perfusion Pressure** – the net pressure gradient that drives oxygen delivery to cerebral tissue. It is the difference between the mean arterial pressure (MAP) and the intracranial pressure (ICP), measured in millimeters of mercury (mm Hg).
- **Contrast Agents** – substances used to enhance visualization of targeted tissue by increasing radiodensity and altering the passage of electromagnetic radiation or ultrasound waves.
- **Non-invasive Procedure** – procedures which do not break the skin or enter the body.
- **Soft Tissue** – tissues of the body which are not hardened by ossification or calcification.

D. Policy

- I. CareSource considers cerebral perfusion CT medically necessary when **ONE** of the following criteria is met:
 - A. Assessment is required for microvascular permeability for individuals with intracranial neoplasms.
 - B. Differentiation must be noted of post-seizure paralysis or other signs and symptoms of acute stroke after MRI has been completed or is contraindicated and that CT will guide treatment.

- C. For individuals at high risk for developing cerebral hyper-perfusion after carotid revascularization a pre-operative evaluation of cerebral blood flow is required.
 - D. For individuals with intracranial vascular stenosis who are potential candidates for bypass surgery or neuroendovascular treatment an assessment of cerebrovascular reserve through use of acetazolamide challenge is required.
 - E. Individuals with severe carotid artery stenosis or signs/symptoms of cerebral hyper-perfusion need to be assessed for cerebral blood flow after carotid revascularization.
 - F. Noninvasive evaluation of suspected vasospasm related cerebral ischemia/infarction and/or delayed cerebral ischemia after subarachnoid hemorrhage are required when transcranial doppler cannot be done or is indeterminate.
 - G. There is a requirement for early detection of acute cerebral ischemia and infarct to determine the appropriateness of an intervention or procedure.
- II. Documentation requires a medical reason that clearly indicates why additional imaging is needed for the type and area(s) requested. A follow-up study may be needed to evaluate member progress after treatment, procedure, intervention, or surgery.

E. Conditions of Coverage
 NA

F. Related Policies/Rules
 NA

G. Review/Revision History

DATE		ACTION
Date Issued	11/30/2022	
Date Revised		
Date Effective	12/25/2030	
Date Archived	12/31/2023	This Policy is no longer active and has been archived. Please note that there could be other Policies that may have some of the same rules incorporated and CareSource reserves the right to follow CMS/State/NCCI guidelines without a formal documented Policy.

H. References

1. Achala V, Wintermark M, Kambiz N, et al. Automated CT perfusion imaging for acute ischemic stroke: Pearls and pitfalls for real-world use. *Neurology*. 2019 Nov 12;93(20):888-898.
2. Campbell BCV, Mitchell PJ, Kleinig TJ. Endovascular therapy for ischemic stroke with perfusion-imaging selection. *N Engl J Med*. 2015 Mar 12;372(11):1009-18.
3. Centers for Medicare and Medicaid. National Coverage Determination 220.1 (Version 2). Retrieved November 22, 2022 from www.cms.gov.

The MEDICAL Policy Statement detailed above has received due consideration as defined in the MEDICAL Policy Statement Policy and is approved.

4. Cremers CH, van der Schaaf IC, Wensink E, Greving JP, et al. CT perfusion and delayed cerebral ischemia in aneurysmal subarachnoid hemorrhage: A systematic review and meta-analysis. *J Cereb Blood Flow Metab.* 2014 Feb;34(2):200-7.
5. Heze H, Yu C, Runting L, et al. The value of early CT perfusion parameters for predicting delayed cerebral ischemia after aneurysmal subarachnoid hemorrhage: a systematic review and meta-analysis. *Neurosurg Rev.* 2022 Aug;45(4):2517-2531.
6. National Institutes of Health. Science topics: Computed Tomography. National Institutes of Health. Bethesda, MD: June, 2022. Retrieved November 22, 2022 from www.nibib.nih.gov.

Archived