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1.0 Description of the Procedure

Transcranial Doppler (TCD) is used for the noninvasive assessment of blood flow to the brain. The noninvasive test uses sound waves to determine the blood flow moving through the arteries to the brain. The study can assist in determining if the arteries are narrowed or blocked. A transducer (probe) placed at the neck or the temple sends an ultrasound signal. The signal is received and transmitted to a microcomputer that calculates how fast the blood is traveling through the artery. A complete TCD study may include assessment of anterior (front) or posterior (back) cerebrovascular circulation. Complete cerebrovascular ultrasound could include both carotid duplex and TCD.

2.0 Eligible Recipients

2.1 General Provisions

Medicaid recipients may have service restrictions due to their eligibility category that would make them ineligible for this service.

2.2 EPSDT Special Provision: Exception to Policy Limitations for Recipients under 21 Years of Age

Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) is a federal Medicaid requirement that requires the state Medicaid agency to cover services, products, or procedures for Medicaid recipients under 21 years of age **if** the service is **medically necessary health care** to correct or ameliorate a defect, physical or mental illness, or a condition [health problem] identified through a screening examination** (includes any evaluation by a physician or other licensed clinician). This means EPSDT covers most of the medical or remedial care a child needs to improve or maintain his/her health in the best condition possible, compensate for a health problem, prevent it from worsening, or prevent the development of additional health problems. Medically necessary services will be provided in the most economic mode, as long as the treatment made available is similarly efficacious to the service requested by the recipient's physician, therapist, or other licensed practitioner; the determination process does not delay the delivery of the needed service; and the determination does not limit the recipient's right to a free choice of providers.

EPSDT does not require the state Medicaid agency to provide any service, product, or procedure

- a. that is unsafe, ineffective, or experimental/investigational.
- b. that is not medical in nature or not generally recognized as an accepted method of medical practice or treatment.

Service limitations on scope, amount, duration, frequency, location of service, and/or other specific criteria described in clinical coverage policies may be exceeded or may not apply as long as the provider's documentation shows that the requested service is medically necessary "to correct or ameliorate a defect, physical or mental illness, or a condition" [health problem]; that is, provider documentation shows how the service,

product, or procedure will correct or improve or maintain the recipient's health in the best condition possible, compensate for a health problem, prevent it from worsening, or prevent the development of additional health problems.

****EPSDT and Prior Approval Requirements**

- a. If the service, product, or procedure requires prior approval, the fact that the recipient is under 21 years of age does NOT eliminate the requirement for prior approval.
- b. IMPORTANT ADDITIONAL INFORMATION about EPSDT and prior approval is found in the Basic Medicaid Billing Guide, sections 2 and 6, and on the EPSDT provider page. The Web addresses are specified below.

Basic Medicaid Billing Guide: <http://www.ncdhhs.gov/dma/medbillcaguide.htm>

EPSDT provider page: <http://www.ncdhhs.gov/dma/EPSDTprovider.htm>

3.0 When the Procedure Is Covered

IMPORTANT NOTE: EPSDT allows a recipient less than 21 years of age to receive services in excess of the limitations or restrictions below and without meeting the specific criteria in this section when such services are **medically necessary health care services** to correct or ameliorate a defect, physical or mental illness, or a condition [health problem]; that is, documentation shows how the service, product, or procedure will correct or improve or maintain the recipient's health in the best condition possible, compensate for a health problem, prevent it from worsening, or prevent the development of additional health problems.

EPSDT DOES NOT ELIMINATE THE REQUIREMENT FOR PRIOR APPROVAL IF PRIOR APPROVAL IS REQUIRED. For additional information about EPSDT and prior approval requirements, see **Section 2.0** of this policy.

3.1 General Criteria

Medicaid covers TCD when the procedure is medically necessary and

- a. is individualized, specific, and consistent with symptoms or confirmed diagnosis of the illness or injury under treatment, and not in excess of the recipient's needs;
- b. can be safely furnished, and no equally effective and more conservative or less costly treatment is available statewide; and
- c. is furnished in a manner not primarily intended for the convenience of the recipient, the recipient's caretaker, or the provider.

3.2 Medical Necessity Criteria

TCD studies of the intracranial arteries are covered for

- a. diagnoses that indicate severe stenosis or occlusion of an intracranial artery;
- b. vasospasm/vasoconstriction following subarachnoid hemorrhage;
- c. arterial venous malformation; or
- d. brain death.

4.0 When the Procedure Is Not Covered

IMPORTANT NOTE: EPSDT allows a recipient less than 21 years of age to receive services in excess of the limitations or restrictions below and without meeting the specific criteria in this section when such services are **medically necessary health care services** to correct or ameliorate a defect, physical or mental illness, or a condition [health problem]; that is, documentation shows how the service, product, or procedure will correct or improve or maintain the recipient's health in the best condition possible, compensate for a health problem, prevent it from worsening, or prevent the development of additional health problems.

EPSDT DOES NOT ELIMINATE THE REQUIREMENT FOR PRIOR APPROVAL IF PRIOR APPROVAL IS REQUIRED. For additional information about EPSDT and prior approval requirements, see **Section 2.0** of this policy.

4.1 General Criteria

TCD is not covered when

- a. the recipient does not meet the eligibility requirements listed in **Section 2.0**;
- b. the recipient does not meet the medical necessity criteria listed in **Section 3.0**;
- c. the procedure duplicates another provider's procedure; or
- d. the procedure is experimental, investigational, or part of a clinical trial.

5.0 Requirements for and Limitations on Coverage

IMPORTANT NOTE: EPSDT allows a recipient less than 21 years of age to receive services in excess of the limitations or restrictions below and without meeting the specific criteria in this section when such services are **medically necessary health care services** to correct or ameliorate a defect, physical or mental illness, or a condition [health problem]; that is, documentation shows how the service, product, or procedure will correct or improve or maintain the recipient's health in the best condition possible, compensate for a health problem, prevent it from worsening, or prevent the development of additional health problems.

EPSDT DOES NOT ELIMINATE THE REQUIREMENT FOR PRIOR APPROVAL IF PRIOR APPROVAL IS REQUIRED. For additional information about EPSDT and prior approval requirements, see **Section 2.0** of this policy.

5.1 Prior Approval

Prior approval is not required.

5.2 Limitations

TCD studies are limited to one procedure per date of service by the same or different provider.

- a. Technical or professional components of TCD studies cannot to be billed on the same date of service by the same or different provider as the complete procedure.
- b. TCD studies are included in the reimbursement for surgery. Therefore, it is cannot be billed separately when performed during a surgical session.

6.0 Providers Eligible to Bill for the Procedure

Providers who meet Medicaid's qualifications for participation and are currently enrolled with the N.C. Medicaid program are eligible to bill for TCD studies when the procedures are within the scope of their practice.

7.0 Additional Requirements

There are no additional requirements.

8.0 Policy Implementation/Revision Information

Original Effective Date: April 1, 1992

Revision Information:

Date	Section Updated	Change
12/1/06	Sections 2 through 5	A special provision related to EPSDT was added.
5/1/07	Sections 2 through 5	EPSDT information was revised to clarify exceptions to policy limitations for recipients under 21 years of age
5/1/07	Attachment A	Added UB-04 as an accepted claim form.

Attachment A: Claims-Related Information

Reimbursement requires compliance with all Medicaid guidelines, including obtaining appropriate referrals for recipients enrolled in the Medicaid managed care programs.

A. Claim Type

1. CMS-1500 Claim Form

Physicians bill services on the CMS-1500 claim form.

2. UB-92 or UB-04 Claim Form

Hospital providers bill services on the UB-92 or UB-04 claim form

B. Diagnosis Codes

Providers must bill the ICD-9-CM diagnosis that most accurately describes the reason for the encounter. Diagnostic codes must be billed at their highest level of specificity.

ICD-9 Diagnosis Code	Description
282.5	Sickle-cell trait
282.60	Sickle-cell disease, unspecified
282.61	Hb-SS disease without crisis
282.62	Hb-SS disease with crisis
282.63	Sickle-cell/Hb-C disease without crisis
282.64	Sickle-cell/Hb-C disease with crisis
282.68	Other sickle-cell disease without crisis
282.69	Other sickle-cell disease with crisis
348.8	Other conditions of the brain
430	Subarachnoid hemorrhage
433.00	Occlusion and stenosis of basilar artery without mention of cerebral infarction
433.01	Occlusion and stenosis of basilar artery with cerebral infarction
433.10	Occlusion and stenosis of carotid artery without mention of cerebral infarction
433.11	Occlusion and stenosis of carotid artery with cerebral infarction
433.20	Occlusion and stenosis of vertebral artery without mention of cerebral infarction
433.21	Occlusion and stenosis of vertebral artery with cerebral infarction
434.00	Cerebral thrombosis without mention of cerebral infarction
434.01	Cerebral thrombosis with cerebral infarction
434.10	Cerebral embolism without mention of cerebral infarction
434.11	Cerebral embolism with cerebral infarction
434.90	Cerebral artery occlusion, unspecified, without mention of cerebral infarction
434.91	Cerebral artery occlusion, unspecified, with cerebral infarction
435.0	Transient cerebral ischemia, basilar artery syndrome
435.1	Transient cerebral ischemia, vertebral artery syndrome

ICD-9 Diagnosis Code	Description
435.2	Transient cerebral ischemia, subclavian steal syndrome
435.3	Transient cerebral ischemia, vertebrobasilar artery syndrome
435.8	Other specified transient cerebral ischemias
435.9	Unspecified transient cerebral ischemia
436	Acute, but ill-defined cerebrovascular disease
437.0	Cerebral atherosclerosis
437.1	Other generalized ischemic cerebrovascular disease
437.2	Hypertensive encephalopathy
437.3	Cerebral aneurysm, nonruptured
437.4	Cerebral arteritis
437.5	Moyamoya disease
437.6	Nonpyogenic thrombosis of intracranial venous sinus
437.7	Transient global amnesia
437.8	Other and ill-defined cerebrovascular disease
437.9	Unspecified and ill-defined cerebrovascular disease
447.1	Stricture of artery
747.81	Anomalies of cerebrovascular system

C. Procedure Code(s)

CPT Code	Description
93886	Transcranial Doppler study of the intracranial arteries; complete study
93888	Transcranial Doppler study of the intracranial arteries; limited study
93890	Transcranial Doppler study of the intracranial arteries; vasoreactivity study
93892	Transcranial Doppler study of the intracranial arteries; emboli detection without intravenous microbubble injection
93893	Transcranial Doppler study of the intracranial arteries; emboli detection with intravenous microbubble injection

Note: CPT codes 93888, 93890, 93892, and 93893 are included in 93886. They are not separately reimbursable on the same date of service, same or different provider, same type of service.

D. Place of Service

Place of Service Code	Description
11	Office
21	Inpatient hospital
22	Outpatient hospital
23	Emergency room—hospital
24	Ambulatory surgical center
26	Military treatment facility
50	Federally qualified health center
51	Inpatient psychiatric facility

52	Psychiatric facility—partial hospitalization
53	Community mental health center
55	Residential substance abuse treatment facility
56	Psychiatric residential treatment center
61	Comprehensive inpatient rehabilitation facility
62	Comprehensive outpatient rehabilitation facility
65	End-stage renal disease treatment facility
71	Public health clinic
72	Rural health clinic

E. Modifiers

Providers are required to follow applicable modifier guidelines.

F. Reimbursement Rate

Providers must bill their usual and customary charges.