Local Coverage Determination
Coding Guidelines

Contractor Name
Wisconsin Physicians Service (WPS)

Contractor Number
00951, 00952, 00953, 00954
05101, 05201, 05301, 05401,
05102, 05202, 05392, 05302,
05402, 52280

LCD Title
Noninvasive Vascular Testing (N.I.V.T.) [Revision]

LCD Database ID Number

Contractor's Determination Number
CV-033

Medicare Regulations

CMS National Coverage Policy

Title XVIII of the Social Security Act section 1862 (a)(1)(A). This section allows coverage and payment of those services that are considered to be medically reasonable and necessary.

Title XVIII of the Social Security Act section 1862 (a)(7). This section excludes routine physical examinations and services

Title XVIII of the Social Security Act section 1833 (e). This section prohibits Medicare payment for any claim which lacks the necessary information to process the claim.

Title XVIII of the Social Security Act §1879(a)-(g)
Limitation of liability and advance notice requirements apply to these situations.

Section 410.32(b) of the Code of Federal Regulations

Federal Register, November 15, 2004 Final Rule

Medicare National Coverage Determinations Manual - Chapter 1 - Coverage Determinations
220.5 - Ultrasound Diagnostic Procedures
(Rev. 1, 10-03-03)
Formerly CIM 50-7
Note: See the full statement on the CMS site

Coverage
Ultrasound diagnostic procedures utilizing low energy sound waves are being widely employed to determine the composition and contours of nearly all body tissues except bone and air-filled spaces. This technique permits noninvasive visualization of even the deepest structures in the body. The use of the

ultrasound technique is sufficiently developed that it can be considered essential to good patient care in diagnosing a wide variety of conditions.
Techniques in Category II are considered experimental and should not be covered at this time.
Category II - (Clinical reliability and efficacy not proven)

- B-Scan for atherosclerotic narrowing of peripheral arteries.

20.17 - Noninvasive Tests of Carotid Function
(Rev. 1, 10-03-03)
Formerly CIM 50-37

Noninvasive tests of carotid function aid physicians in studying and diagnosing carotid disease. There are varieties of these tests which measure various anatomical and physiological aspects of carotid function, including pressure (systolic, diastolic, and pulse), flow, collateral circulation, and turbulence.
For operational purposes, it is useful to classify noninvasive tests of carotid function into direct and indirect tests. The direct tests examine the anatomy and physiology of the carotid artery, while the indirect tests examine hemodynamic changes in the distal beds of the carotid artery (the orbital and cerebral circulations).
It is important to note that the names of these tests are not standardized. Following are some of the acceptable tests, recognizing that this list is not inclusive and that local medical consultants should make determinations:

Direct Tests

- Carotid Phonoangiography
- Direct Bruit Analysis
- Spectral Bruit Analysis
- Doppler Flow Velocity
- Ultrasound Imaging including Real Time
- B-Scan and Doppler Devices

Indirect Tests

- Periorbital Directional Doppler Ultrasonography
- Oculoplethysmography
- Ophthalmodynamometry

20.14 - Plethysmography
(Rev. 1, 10-03-03)
Formerly CIM 50-6

Plethysmography involves the measurement and recording (by one of several methods) of changes in the size of a body part as modified by the circulation of blood in that part. Plethysmography is of value as a noninvasive technique for diagnostic, preoperative and postoperative evaluation of peripheral artery disease in the internal medicine or vascular surgery practice. It is also a useful tool for the preoperative podiatric evaluation of the diabetic patient or one who has intermittent claudication or other signs or symptoms indicative of peripheral vascular disease which have a bearing on the patient's candidacy for foot surgery.

The oldest form of plethysmography is the venous occlusive pneumoplethysmography. This method is cumbersome, time consuming, and requires considerable training to give useful, reproducible results. Nonetheless, in the setting of the hospital vascular laboratory, this technique is considered a reasonable and necessary procedure for the diagnostic evaluation of suspected peripheral arterial disease. It is unsuitable for routine use in the physician's office.

Recently, however, a number of other plethysmographic methods have been developed which make use of phenomena such as changes in electric impedance or changes in segmental blood pressure at constant volume to assess regional perfusion. Several of these methods have reached a level of development which makes them clinically valuable.

Medicare coverage is extended to those procedures listed in Category I below when used for the accepted medical indications mentioned above. The procedures in Category II are still considered experimental and are not covered at this time. Denial of claims because a noncovered procedure was used or because there was no medical indication for plethysmographic evaluation of any type should be based on *§1862(a)(1)* of the Act.

Category I - Covered
Segmental Plethysmography - Included under this procedure are services performed with a regional plethysmograph, differential plethysmograph, recording oscillometer, and a pulse volume recorder.

Electrical Impedance Plethysmography
Ultrasonic Measurement of Blood Flow (Doppler) - While not strictly a plethysmographic method, this is also a useful tool in the evaluation of suspected peripheral vascular disease or preoperative screening of podiatric patients with suspected peripheral vascular compromise. (See §220.5 for the applicable coverage policy on this procedure.)

Oculoplethysmography - See §20.17, "Noninvasive Tests of Carotid Function."
Strain Gauge Plethysmography - This test is based on recording the non-pulsatile aspects of inflowing blood at various points on an extremity by a mercury-in-silastic strain gauge sensor. The instrument consists of a chart recorder, an automatic cuff inflation and deflation system, and a recording manometer.

Category II - Experimental
The following methods have not yet reached a level of development such as to allow their routine use in the evaluation of suspected peripheral vascular disease.
Inductance Plethysmography - This method is considered experimental and does not provide reproducible results.
Capacitance Plethysmography - This method is considered experimental and does not provide reproducible results.
Mechanical Oscillometry - This is a non-standardized method which offers poor sensitivity and is not considered superior to the simple measurement of peripheral blood pressure.
Photoelectric Plethysmography - This method is considered useful only in determining whether or not a pulse is present and does not provide reproducible measurements of blood flow.

Differential plethysmography, on the other hand, is a system which uses an impedance technique to compare pulse pressures at various points along a limb, with a reference pressure at the mid-brachial or wrist level. It is not clear whether this technique, as usually performed in the physician's office, meets the definition of plethysmography because quantitative measurements of blood flow are usually not made. It has been concluded, in any event, that the differential plethysmography system is a blood pulse recorder of undetermined value which has the potential for significant overutilization. Therefore, reimbursement for studies done by techniques other than venous occlusive pneumoplethysmography should be denied, at least until additional data on these devices, including controlled clinical studies, become available.

The following studies are not covered:
- Carotid phonoangiography;
- Periorbital photoplethysmography;

- Pulse-delay oculoplethysmography
- *Mechanical oscillometry;*
- *Inductance plethysmography;*
- *Capacitance plethysmography;*
- *Photoelectric plethysmography, photoplethysomography (PPG), and light reflectance rheography;*
- *Thermography.*
- ABI (considered part of the physical examination)

***Cavernous Nerves Electrical Stimulation with Penile Plethysmography - 160.26 - (Rev.61, Issued: 11-24-06, Effective: 08-24-06, Implementation: 01-08-07)**

General

In nerve-sparing prostatic and colorectal surgical procedures, the assessment of the function of the cavernous nerves by direct application of electrical stimulation with penile plethysmography is a diagnostic test, also referred to as cavernosal nerve mapping, which may be performed to assess the integrity of the cavernous nerves. Through an open or laparoscopic procedure, the surgeon may want to assess the function of the cavernous nerves by stimulating the most distal end of the nerve that can be located by using an electrical nerve stimulator. The presence of a response and the degree of the response may be used to provide the surgeon with a more realistic assessment of the chance of the patient regaining potency and assist in choosing appropriate therapy.

Nationally Non-Covered Indications

Effective August 24, 2006, Cavernous Nerves Electrical Stimulation with penile plethysmography is non-covered under Medicare. CMS reviewed the evidence and determined that this test is not reasonable and necessary for Medicare beneficiaries undergoing nerve-sparing prostatic or colorectal surgical procedures.

This test should be billed using code 55899- unlisted procedure male genital system.
Indicate in Item 19 the name of the test: Cavernous Nerves Electrical Stimulation with penile plethysmography

Issue an Advanced Beneficiary Notice (ABN) that includes the following language:
Under "Items or Service" Section: Cavernous Nerves Electrical Stimulation with Penile Plethysmography. Under "Because" Section:

As specified in §160.26 of the Medicare NCD Manual, Medicare will not pay for this test as it is not reasonable and necessary for Medicare beneficiaries undergoing nerve-sparing prostatic or colorectal surgical procedures.

Physicians are liable if an ABN is not issued.

Fed. Register: 11/25/91, p. 59540

The use of a simple handheld or other doppler device that does not permit analysis of bi-directional flow, is considered part of the physical exam of the vascular system and is not separately reimbursable.

Doppler procedures performed with zero-crossers (e.g. analog [strip chart recorders] analysis) are also included in the patient examination.

Program Memorandums: AB-00-44, AB-00-55, B-01-28, AB-01-129; AB-01-129.1

A. *Medicare Coverage of Non-Invasive Vascular Studies (93990) and Hemodialysis Flow Studies (90940), When Used to Monitor the Access Site of End Stage Renal Disease (ESRD) Patients.*

1 *Medicare pays for outpatient maintenance dialysis services furnished by ESRD facilities based on a composite payment rate. This rate is a comprehensive payment and includes all services, equipment, supplies, and certain laboratory tests and drugs that are necessary to furnish a dialysis treatment.*

2 *For dialysis to take place there must be a means of access so that the exchange of waste products may occur. As part of the dialysis treatment, ESRD facilities are responsible for monitoring access, and when occlusions occur, either declot the access or refer the patient for appropriate treatment. Procedures associated with monitoring access involve taking venous pressure, aspirating thrombus, observing elevated recirculation time, reduced urea reduction ratios, or collapsed shunt, etc. All such procedures are covered under the composite rate.*

3. *Non-invasive vascular studies are not covered as a separately billable service if used to monitor a patient's vascular access site. Medicare pays for the technical component of the procedure in the composite payment rate. ESRD facilities, monitoring access through non-invasive vascular studies such as duplex and Doppler flow scans, cannot bill separately for these procedures*

An ESRD facility must furnish all necessary services, equipment, and supplies associated with a dialysis treatment, either directly or under arrangements that make the facility financially responsible for the service. If an ESRD facility or a renal physician decides to monitor the patient's access site with a non-invasive vascular study and does not have the equipment to perform the procedure, the facility or physician may arrange for the service to be furnished by another source. The alternative source, such as an independent diagnostic testing facility must look to the ESRD facility for payment. No separate payment for non-invasive vascular studies for monitoring the access site of an ESRD patient, whether coded as the access site or peripheral site, is permitted to any entity.

4. *Doppler Flow Studies (93990):*

a. *Where there are signs and symptoms of vascular access problems, Doppler flow studies may be used as a means to obtain diagnostic information to permit medical intervention to address the problem. Doppler flow studies may be considered medically necessary in the presence of signs or symptoms of possible failure of the ESRD patient's vascular access site, and when the results are used in determining the clinical course of the treatment for the patient. However, if the Doppler flow study is appropriate, then other diagnostic services, such as venography, would be considered duplicative services and would not be covered by Medicare.*

b. *The only Current Procedural Terminology (CPT) billing code for non-invasive vascular testing of a hemodialysis access site is 93990. Medicare will deny separate payment of*

the technical component of this code if it is performed on any patient for whom the ESRD composite rate for dialysis is being paid, unless there is appropriate medical indication of the need for a Doppler flow study. See the policy on noninvasive vascular testing for further coverage information of this test.

c. *When a dialysis patient exhibits signs and symptoms of compromise to the vascular access site, Doppler flow studies may provide diagnostic information that will determine the appropriate medical intervention. Medicare considers a Doppler flow study medically necessary when the beneficiary's dialysis access site manifests signs or symptoms associated with vascular compromise, and when the results of this test are necessary to determine the clinical course of treatment Examples supporting the medical necessity for Doppler flow studies include:*

- *Elevated dynamic venous pressure >200mm HG when measured during dialysis with the blood pump set on a 200cc/min,*
- *Access recirculation of 12 percent or greater,*
- *An otherwise unexplained urea reduction ratio <60 percent, and*
- *An access with a palpable "water hammer" pulse on examination, (which implies venous outflow obstruction)*

d. *Unless the documentation is provided supporting the necessity of more than one study, Medicare will limit payment to either a Doppler flow study or an arteriogram,) (fistulogram, venogram), but not both.*

An example of when both studies may be clinically necessary is when a Doppler flow study demonstrates reduced flow (blood flow rate less than 800cc/min or a decreased flow of 25% or greater from previous study) and the physician requires an arteriogram to further define the extent of the problem. The patient's medical record(s) must provide documentation supporting the need for more than one imaging study.

e. *This policy is applicable to claims from ESRD facilities and all other sources, such as independent diagnostic testing facilities, and hospital outpatient departments.*

f. *The professional component of the procedure is included in the monthly capitation payment (MCP) (see '15060.1 of Medicare Carriers Manual, Part 3). The professional component will be denied for code 93990 if billed by the MCP physician. Medically necessary services that are included or bundled into the MCP (e.g., test interpretations) are separately payable when furnished by physicians other than the MCP physician.*

g. *Billing for monitoring of hemodialysis access using CPT codes for non-invasive vascular studies other than 93990 is considered a misrepresentation of the service actually provided.*

h. Extremity Arterial Venous Studies (CPT-4 Code 93990)
- Additional duplex studies of this area are not covered in addition to this code.

5. *Hemodialysis Flow Studies (90940):*

a. *Hemodialysis flow studies are performed during a regularly scheduled hemodialysis session by a member of the patient care team trained in the procedure. The hemodialysis access flow study is used to determine blood flow in grafts and arteriovenous fistula by*

an indicator dilution method for monitoring of progressive access dysfunction and for monitoring during and after interventions performed to restore adequate access flow; hook-up, measuring and disconnection.

b. *Unlike doppler flow studies which may be used for diagnostic purposes as well as purposes only. When access problems are identified, the patient is referred for an appropriate imaging study to obtain diagnostic information to permit medical intervention to address the problem. However, doppler flow studies when used for diagnostic purposes would require no additional imaging studies before medical intervention can occur.*

c. *As of this date (06/2000), only the Transonic ultrasound indicator dilution method is FDA approved. However, other indicator dilution methods will be commercially available in the near future to measure access flow. Once a new CPT code for access flow measurement is established, it will include all indicator dilution modalities.*

d. *A number of ESRD facilities are monitoring access through hemodialysis flow studies, such as the indicator dilution method. These studies are not covered as a separately billable service since they are used to monitor a patient's vascular access site. Medicare pays for the technical component of the procedure in the composite payment rate. The professional component of the procedure is included in the monthly capitation payment (MCP) (See '15060 of Medicare Carriers Manual (MCM), Part 3). For physicians managing a patient's dialysis, but who is not paid under the MCP (e.g. when an hemodialysis patient is hospitalized), the physician's interpretation of this test is considered bundled into other E&M visits delivered to the patient.*

e. *An ESRD facility must furnish all necessary services, equipment, and supplies associated with a dialysis treatment, either directly or under arrangements which make the facility financially responsible for the service. If an ESRD facility or a renal physician decides to monitor the patient's access site with a hemodialysis flow study and does not have the equipment to perform the procedure, the facility or the physician may arrange for the service to be furnished by another source. The alternative source, such as an independent diagnostic testing facility or an independent physiological laboratory, must look to the ESRD facility for payment. No separate payment for hemodialysis flow studies for ESRD patients is permitted to any entity.*

f. *The professional component will be denied if billed by the MCP physician. Medically necessary services that are included or bundled into the MCP (e.g., test interpretations) are separately payable when furnished by physicians other than the MCP physician*

Section 410.32(b) of the Code of Federal Regulations, as adopted in the Medicare physician fee schedule final rule of October 31, 1997, requires that diagnostic tests payable under the fee schedule, with certain exceptions listed in the regulation, have to be performed under the supervision of an individual meeting the definition of a "physician" in Section 1861 of the Social Security Act in order to be considered reasonable and necessary and therefore, covered under Medicare.

HEMODIALYSIS ACCESS EXAMINATION (93990)

CPT code 93990 is the only code to be used for reporting a duplex scan of hemodialysis access since, by definition; it includes arterial inflow, body of access, and venous outflow. Therefore, it would be incorrect to report duplex scans for arteries or veins in addition to CPT code 93990.

Billing for monitoring of hemodialysis access using CPT codes for non-invasive vascular studies other than 93900 is considered a misrepresentation of the service actually provided and should be denied. If this is found, appropriate corrective actions will be undertaken.

If abnormal function is strongly suspected but not found, use V71.89 and list abnormal signs or symptoms.

A. Ordering of tests:

NIVT procedures will not be covered when performed based on internal protocols of the testing facility. The physician treating the patient must specifically order the procedures, in writing.

The ordering physician must provide the performing provider of the diagnostic test the indication for the study so that the provider of service can make sure the study is medically necessary and within guidelines. The order to the independent diagnostic testing facility (IDTF) must be in writing. Orders to other providers may be oral, but must be reduced to writing.

42 CFR§410.32 indicates that diagnostic tests, to be covered, must be ordered by the practitioner that treats the patient. The treating physician is the practitioner responsible for the treatment of the patient and who orders the test to use the results in the management of the beneficiary's specific medical problem(s). Consulting physicians may also order tests.

B. Supervision:

General Supervision is defined as: "The procedure is furnished under the physician's overall direction and control, but the physician's presence is not required during the performance of the procedure. Under general supervision, the training of the non-physician personnel who actually performs the diagnostic procedure and the maintenance of the necessary equipment and supplies are the continuing responsibility of the physician." (PM B-01-28, April 29, 2001)
CMS has determined the following list of procedures require general physician supervision effective July 1 2001:

93875 & TC, 93880 & TC, 93882 & TC, 93886 & TC, 93888 & TC, 93922 & TC, 93923 & TC, 93924 & TC, 93925 & TC, 93926 & TC, 93930 & TC, 93965 & TC, 93970 & TC, 93971 & TC (PM B-01-28, April 19, 2001)

Title XVIII of the Social Security Act sections: *§1862(a)(7); §1862(a)(1)(A)).*
Medicare Claims Processing Manual 100.4, 12 *§30.6.6.1*

Preoperative Testing

> *Tests performed to determine a patient's perioperative risk and optimize perioperative care. Preoperative diagnostic tests are payable if they are medically necessary and meet any other applicable requirements.*
> *When billing under the Physician Fee Schedule, preoperative diagnostic tests performed by, or at the request of, the physician performing preoperative examinations, do not fall within the statutory exclusion articulated in §1862(a)(7) of the Act. These diagnostic tests are payable if they are medically necessary (i.e., they may be denied under §1862(a)(1)(A)).*

ICD Coding Requirements for Preoperative Services.--All claims for preoperative medical examination and preoperative diagnostic tests (i.e., preoperative medical evaluations) must be accompanied by the appropriate ICD-9 code for preoperative examination (e.g., V72.81 through V72.84). Additionally, the appropriate ICD-9 code for the condition(s) that prompted surgery must also be documented on the claim. Other diagnoses and conditions affecting the patient should also be documented on the claim, if appropriate. The ICD-9 code that appears in the line item of a preoperative examination or diagnostic test must be the code for the appropriate preoperative examination (e.g., V72.81 through V72.84).

Medical Necessity Determination.-- Medical necessity for specific preoperative services is determined by any applicable national coverage decisions. In the absence of a national coverage determination, medical necessity is determined by carrier discretion.

Correct Coding Initiatives (CCI) apply to certain codes listed in this policy.

Italicized font - represents CMS national policy language/wording copied directly from CMS Manuals or CMS Transmittals. Carriers are prohibited from changing national policy language/wording.

Coding Guidelines

1. Use the appropriate procedure code and modifiers.
2. Indicate the diagnoses for which the testing is being performed.
3. No paper documentation is required on initial claims submission unless required by an audit or the case deserves special case-by-case review.
   Place information on claim form as EMC narrative where indicated in the policy, e.g., follow-up studies.
4. Upper and lower extremity physiologic studies (CPT-4 codes 93922 and 93923),
   Lower extremity studies (CPT-4 codes 93925 and 93926), and
   Upper extremity duplex studies (CPT-4 codes 93930 and 93931)

   If studies are performed on the upper and lower extremities on the same day, the services should be submitted on separate detail lines. When claims are submitted electronically, it should be indicated in Item19 of field N-4 (old format) or in record HAO-05 of the National Standard format, that upper AND lower studies were performed. If paper claims are still being submitted, this information must appear on the CMS-1500 claim form.

5. *We will not permit separate payment for CPT code 93971 when G0365 is billed, unless CPT code 93971 is being performed for a separately identifiable indication in a different anatomic region.*

   *Other imaging studies may not be billed for the same site on the same date of service unless an appropriate **"KX"** modifier indicating the reason or need for the second imaging study is provided on the claim form.*