

Contractor Name

Wisconsin Physicians Service (WPS)

Contractor Number**Contractor Type**

Carrier - B

MAC - A B

Intermediary - A

LCD Database ID Number**LCD Version Number****LCD Title**

Noninvasive Vascular Testing (N.I.V.T.)

Contractor's Determination Number

CV-033

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CMS National Coverage Policy

See coding and billing guidelines

Primary Geographic Jurisdiction

Legacy A: Alaska, Alabama, Arizona, California - Entire State, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Iowa, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Massachusetts, Maryland, Maine, Michigan, Minnesota, Missouri - Entire State, Mississippi, Montana, North Carolina, North Dakota, Nebraska, New Hampshire, New Jersey, New Mexico, Nevada, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Vermont, Washington, Wisconsin, West Virginia, Wyoming

Legacy B: Wisconsin, Illinois, Michigan, Minnesota

MAC AB: Iowa, Missouri, Nebraska, Kansas

Oversight Region**CMS Consortium**

Midwest

Original Determination Effective Date

Legacy A

Revision Effective Date

Indications and Limitations of Coverage and/or Medical Necessity

I. Overview

A. **The following procedures are discussed in this policy:**

1. Duplex Scans: These include display of both 2-dimensional structure and motion with time, doppler ultrasonic signal documentation with spectral analysis and/or color flow velocity mapping or imaging.
2. Physiologic Studies: These are functional measurement procedures which include doppler ultrasound studies, blood pressure measurements, transcutaneous oxygen tension measurements, or plethysmography.
3. Plethysmography: Implies volume measurement procedures including air, impedance, and strain gauge methods.
4. Unilateral limited studies represented by codes 93882, 93888, 93926, 93931, 93971, 93976, 93979, 93981, are used for studies in which it is not necessary to obtain a complete set of data on the vessels studied (e.g., follow-up study of a graft site).

B. Vascular studies include: the patient care required to perform the studies; supervision of the studies; and interpretation of study results.

C. **Noninvasive vascular studies are medically necessary only if the outcome will potentially impact the clinical management of the patient.** Services are deemed medically necessary when all of the following conditions are met:

1. Signs/symptoms of ischemia are present;
2. The information is necessary for appropriate medical and/or surgical management;
3. The test is not redundant of other diagnostic procedures that must be performed. Although, in some circumstances, non-invasive vascular tests are complimentary, such as MRA and duplex, where the latter may confirm an indeterminate finding or demonstrate the physiologic significance of an anatomic stenosis (especially in the carotids and lower extremity arterial system)

In general, noninvasive studies of the arterial system are utilized when invasive correction is contemplated and to follow medical treatment regimens.

II. Cerebrovascular Studies

A. Non-invasive Physiologic Studies (CPT codes 93875-93882)

1. Indications for Cerebrovascular Evaluations:

- a. Evaluation of patients with:
 - hemispheric neurologic symptoms, including stroke, transient ischemic attack and amaurosis fugax
 - symptoms or signs of focal cerebral or ocular transient ischemic attacks
 - cervical bruit
 - pulsatile tinnitus

- pulsatile neck masses
- blunt neck trauma
- penetrating neck trauma
- suspected subclavian steal syndrome

- b. Pre-operatively for coronary artery bypass grafting where there is evidence of systemic atherosclerosis
 - c. Postoperatively following carotid surgery
2. Headache or dizziness alone are not sufficient indications for this testing. True vertigo may be an indication.
 3. Procedures that are covered include:
 - a. Duplex Scan (93880-93882);
 - b. Doppler ultrasound with spectrum analysis (93875);
 - c. Oculopneumoplethysomography (93875);
 - d. Periorbital Doppler if oculopneumoplethysomography is contraindicated (93875);
 4. Monitoring of established carotid disease by NIVT:
 - a. Stenosis of 20 - 39% (diameter reduction) - annually
 - b. Stenosis of 40-69% - every 6 months.
 - c. Stenosis of 70-99% - as needed
 - d. Post-carotid endarterectomy: follow up exams will be allowed when clinically necessary, i.e. to discern the presence of neointimal hyperplasia (stenosis)

B. Transcranial Doppler Testing (93886-93893)

1. Transcranial Doppler (TCD) is an ultrasound that measures physiologic parameters of blood flow in the major intracranial arteries.
2. A pulsed doppler system is able to record blood velocities from intracranial arteries through selected cranial foramina and thin regions of the skull.
3. It is indicated for the following conditions:
 - a. Assessing tandem lesions (>65% in the major basal intracranial arteries when extra cranial studies fail to identify the problem).
 - b. Assessing patterns and extent of collateral circulation in patients with known regions of severe stenosis or occlusion.
 - c. Evaluating and following patients with vasoconstriction (i.e. subarachnoid hemorrhage).
 - d. Evaluating children with various vasculopathies such as sickle cell disease and Moyamoya
 - e. As an aid in differentiating vertebrobasilar symptoms from carotid symptoms
 - f. Assessing patients with suspected brain death.
4. It has limited use and therefore is not covered for
 - a. Evaluation of brain tumors;

- b. Assessment of familial and degenerative diseases of the cerebrum, brainstem, cerebellum, basal ganglia and motor neurons;
 - c. Evaluation of infectious and inflammatory conditions;
 - d. Psychiatric disorders;
 - e. Epilepsy.
5. The following conditions are considered investigational:
- a. Assessing patients with migraine or suspected migraine;
 - b. Monitoring during cerebral endarterectomy, cardiopulmonary bypass and other cerebrovascular interventions and surgical procedures;
 - c. Evaluating patient with dilated vasculopathies such as fusiform aneurysms;
 - d. Assessing autoregulation, physiologic and pharmacologic responses of cerebral arteries.

III. Arterial/Venous Studies

A. Peripheral arterial studies (Extremity / Visceral) (93922-93931)

1. Non-invasive peripheral arterial studies performed to establish the level and/or degree of arterial occlusive disease are considered medically necessary if:
 - a. Signs and/or symptoms of limb ischemia are present; and
 - b. the patient can be medically managed or is a candidate for percutaneous, surgical, diagnostic, or therapeutic procedures.
2. In the presence of obvious signs and symptoms of reduced peripheral blood flow, i.e., tissue loss and rest pain, duplex scans are not always needed but may be helpful in defining the regions for arteriography (angiograms), thus limiting the contrast load to the patient.
3. Examples of indications for Peripheral Arterial Evaluations
 - a. Claudication of such severity that it interferes with the patient's occupation or lifestyle.
 - b. Rest pain of vascular disease (typically including the forefoot), usually associated with absent pulses, which becomes increasingly severe with elevation and diminishes with placement of the leg in a dependent position.
 - c. Tissue loss with absence of pulses which can be seen with
 - The diabetic patient with peripheral neuropathy to document risk for ulceration if resting limb pressures were abnormal
 - Aneurysmal disease.
 - Evidence of thromboembolic events.
 - Blunt or penetrating trauma
 - Complications of diagnostic and/or therapeutic procedures.
 - d. Anticipation of a surgical procedure where vascular disease is suspected.
Example:
A patient under going orthopedic foot reconstruction, where wound healing potential should be established prior to the procedure.

4. A standard history and physical that includes ankle brachial indices (ABIs), can readily document the presence or absence of ischemic disease in a majority of the cases. It is not medically necessary to proceed beyond the physical examination to evaluate minor signs and symptoms such as hair loss, absence of a single pulse, relative coolness of the foot, shiny thin skin or lack of toe nail growth, unless related signs and/or symptoms are present which are severe enough to require possible intervention.
 - a. An Ankle-Brachial Index (ABI) is not a reimbursable procedure by itself. When it is abnormal (i.e., < 0.9 at rest) it must be accompanied by another appropriate indication before proceeding to more sophisticated or complete studies.
 - b. However, in patients with severe diabetes resulting in arterial calcification as demonstrated by artifactually elevated ankle blood pressures, a normal ABI may be found and would not preclude NIVT when ischemic signs or symptoms are present, and indicated by the diagnostic code.

5. Examples of signs and symptoms that do not indicate medical necessity:
 - a. Continuous burning of the feet is considered to be a neurologic symptom.
 - b. Pain in a limb (729.5) as a single diagnosis is too general to warrant further investigation. Other signs and symptoms should be indicated.
 - c. Edema rarely occurs with arterial occlusive disease unless it is in the immediate postoperative period, in association with another inflammatory process, or in association with rest pain.
 - d. The absence of peripheral pulses is not an indication to proceed beyond the physical examination unless the absent pulses can be related to other signs and/or symptoms.
 - e. In general, noninvasive studies of the arterial system can be utilized when invasive correction is contemplated, and to follow noninvasive medical treatment regimens to determine lesion regression. The latter may also be followed with physical findings and/or progression or relief of signs and/or symptoms. It can be useful in pre-operative evaluation of patients with known arteriosclerotic diseases who will be undergoing surgeries which put them at high risk for vascular complications, i.e. CABG, Cranial surgeries etc. Screening of the asymptomatic patient is not covered by Medicare.

B. Peripheral Venous Examinations (CPT-4 Codes 93965 - 93971, G0365)

1. Indications for venous examinations are separated into three major categories: deep vein thrombosis, chronic venous insufficiency, and vein selection for arterial surgery. Studies, which are medically necessary to determine subsequent treatment, are covered.

2. Deep Vein Thrombosis (DVT)
 - a. DVT is the most common vascular disorder that develops in hospitalized patients and can develop after trauma, prolonged immobility (sitting or bed rest) or after major surgical procedures.
Testing is covered for patients who are candidates for anticoagulation or invasive therapeutic procedures for the following conditions:
 - Clinical signs and/or symptoms of DVT are relatively non-specific and can include edema, tenderness, inflammation, and/or erythema.
 - Clinical signs and/or symptoms of pulmonary embolism including hemoptysis, chest pain, and/or dyspnea.

- Surveillance following high-risk surgical procedures, such as orthopedic or pelvic. Individual consideration will be given to surveillance of patients at prolonged bed rest (e.g., due to neurologic conditions/procedures, congestive heart failure, and paradoxical emboli). In general, surveillance is not necessary when effective antithrombotic measures (e.g., anticoagulants, alternating pressure devices) are being used. However, it may be necessary in some patients prior to applying alternating pressure devices or compression dressings under appropriate clinical circumstances.
3. **Chronic Venous Insufficiency**
Chronic venous insufficiency may be divided into three categories: primary varicose veins, post-thrombotic (post-phlebotic) syndrome, and recurrent deep vein thrombosis. It is not medically necessary to study asymptomatic primary varicose veins. Objective tests of venous function may be indicated in patients with ulceration suspected to be secondary to venous insufficiency. These tests may be indicated to confirm this diagnosis by documenting venous valvular incompetence prior to treatment. Evaluation is medically necessary in patients with symptoms of recurrent DVT or in patients prior to compression therapy to exclude superimposed acute DVT which may be at risk for embolization with such therapy.
 4. **Venous Mapping**
 - a. Duplex scanning is sometimes done to find a suitable vein for arterial revascularizations (detection of venous anomalies and defining vein diameter).
 - b. The professional component (93971 - 26) may be billed to Medicare Part B only if the physician personally reviewed the images *prior* to the surgery and documented the interpretation in the chart.
 - c. Hemodialysis access:
 - *Autogenous grafts have longer patency rates, a lower incidence of infection and greater durability than prosthetic grafts. Placement of these grafts requires the assessment of the arterial and venous vessels.*
 - CMS, as part of a quality initiative, has developed a new code for vessel mapping for autogenous graft placement assessment (G0365). This code is limited to certain use. See the coding guidelines for specific coding instructions.
 - 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.*

IV. Visceral Vascular Studies (93975 - 93979)

Procedures are indicated in the evaluation and /or management of vascular disease involving vessels of the abdominal, pelvic and scrotal contents, and/or retroperitoneal organs.

A. Abdominal, Retroperitoneal and Pelvic Organs (93975 through 93976)

Indications:

1. Hypertension.
2. Stenosis of visceral artery(atherosclerotic, fibromuscular dysplasia, vasculitis, functional)

3. Aneurysm of visceral artery.
4. Portal hypertension, with or without ascites.
5. Thrombosis of visceral vein (renal, hepatic, mesenteric, portal or splenic).
6. Stenosis of visceral vein (rein, hepatic, mesenteric, portal or splenic).
7. Complications of internal (biological) (synthetic) prosthetic device, implant and graft:
 - Due to vascular implant and graft;
 - Complications of transplanted organ: Kidney, Liver, or Pancreas.
8. Other specified transplant organ.
9. Persons with a condition influencing their health status:
 - Organ or tissue replaced by transplant: Kidney, Liver, or Pancreas.

B. Aorta, Inferior vena cava, Iliac Vasculature or Bypass grafts (93978 through 93979)

Indications:

1. Atherosclerosis of aorta.
2. Atherosclerosis of the extremities with intermittent claudication.
3. Atherosclerosis of other specified arteries.
4. Aortic aneurysm and dissection.
5. Aneurysm of iliac artery.
6. Thromboangiitis obliterans (Buerger's disease).
7. Peripheral vascular disease unspecified.
8. Arterial embolism and thrombosis of abdominal aorta.
9. Arterial embolism and thrombosis of iliac artery.
10. Phlebitis and thrombophlebitis of iliac vein.
11. Venous embolism and thrombosis of vena cava.
12. Venous embolism and thrombosis of renal vein.
13. Complications peculiar to certain specified procedures.
14. Other complications of internal (biological) (synthetic) prosthetic device, implant and graft.
 - Due to vascular implant or graft
15. Complications of transplanted organ: Kidney, or Liver.

Unacceptable for Reimbursement:

Routine imaging of the iliac veins is not medically necessary. Specific medical indications include: possible propagation of a known thrombus; therefore, a consideration for placement of a vena cava filter device via the femoral approach.

Post Intervention Follow-up Studies:

Abdominal aortic aneurysms > four cm in diameter may be followed with ultrasound every six months. Medical necessity will have to be provided for studies more frequently performed.

Follow-up studies may be performed for the following procedures:

- Transjugular intrahepatic portocaval shunt (TIPS);
- Renal Transplant; or
- Liver Transplant.

V. Penile Vascular Studies (CPT-4 Codes 93980, 93981)

Duplex scans of the arterial inflow and venous outflow of abdominal, pelvic scrotal contents, and/or retroperitoneal organs, or penile vessels, and ileofemoral vessels, have no therapeutic implications. Therefore, they are considered not medically reasonable or necessary, except in a patient with

treatment failure who has sustained a documented groin injury where a vascular etiology for impotence is suspected. See policy on Erectile Dysfunction: GU-016

VI. Ultrasound Guided Repair of pseudo-aneurysm (76936)

Acceptable indications include a pulsatile mass indicating a pseudo-aneurysm, post-invasive vascular procedure.

Procedure code 76936 must be performed under the personal supervision of a physician.

Coverage Topic

Diagnostic Tests and X-Rays
Medicine

Bill Type Codes:

Contractors may specify Bill Types to help providers identify those Bill Types typically used to report this service. Absence of a Bill Type does not guarantee that the policy does not apply to that Bill Type. Complete absence of all Bill Types indicates that coverage is not influenced by Bill Type and the policy should be assumed to apply equally to all claims.

- 11x Hospital-inpatient (including Part A)
- 12x Hospital-inpatient or home health visits (Part B only)
- 13x Hospital-outpatient (HHA-A also) (under OPPTS 13X must be used for ASC claims submitted for OPPTS payment -- eff. 7/00)
- 14x Non-Patient Laboratory Specimens
- 18x Hospital-swing beds
- 21x SNF-inpatient (including Part A)
- 22x SNF-inpatient or home health visits (Part B only)
- 23x SNF-outpatient (HHA-A also)
- 71x Clinic-rural health
- 72x Clinic-hospital based or independent renal dialysis facility
- 85x Special facility or ASC surgery-rural primary care hospital (eff 10/94)

Revenue Codes:

Contractors may specify Revenue Codes to help providers identify those Revenue Codes typically used to report this service. In most instances Revenue Codes are purely advisory; unless specified in the policy services reported under other Revenue Codes are equally subject to this coverage determination. Complete absence of all Revenue Codes indicates that coverage is not influenced by Revenue Code and the policy should be assumed to apply equally to all Revenue Codes.

- 0402 Other imaging services-ultrasound
- 0920 Other diagnostic services-general classification
- 0921 Other diagnostic services-peripheral vascular lab
- 0929 Other diagnostic services-other

CPT/HCPCS Codes

90940	Hemodialysis access flow study to determine blood flow in grafts and arteriovenous fistulae by an indicator method.
93875	Non-invasive physiologic studies of extracranial arteries; complete bilateral study
93880	Duplex scan of extracranial arteries; complete bilateral study
93882	---; unilateral or limited study
93886	Transcranial doppler study of the intracranial arteries; complete study

93888	---; limited study
93890	---; vasoreactivity study
93892	---; emboli detection without intravenous microbubble injection
93893	---; emboli detection with intravenous microbubble injection
93922	Non-invasive physiologic studies of upper or lower extremity arteries, single level, bilateral
93923	Non-invasive physiologic studies of upper or lower extremity arteries, multiple levels or with provocative functional maneuvers, complete bilateral study
93924	Non-invasive physiologic studies of lower extremity arteries, at rest and following treadmill testing, complete bilateral study
93925	Duplex scan of lower extremity arteries or arterial bypass grafts; complete bilateral study
93926	---; unilateral or limited study
93930	Duplex scan of upper extremity arteries or arterial bypass grafts; complete bilateral study
93931	---; unilateral or limited study
93965	Non-invasive physiologic studies of extremity veins, complete bilateral study
93970	Duplex scan of extremity veins including responses to compression and other maneuvers, complete bilateral study
93971	---; unilateral or limited study
93975	Duplex scan of arterial inflow and venous outflow of abdominal, pelvic, scrotal contents and or retroperitoneal organs; complete study
93976	---;limited study
93978	Duplex scan of aorta, inferior vena cava, iliac vasculature, or bypass grafts, complete study
93979	---; unilateral or limited study
93980	Duplex scan of arterial inflow and venous outflow of penile vessels; complete study
93981	---, follow-up or limited study
93990	Duplex scan of hemodialysis access
G0365	Vessel mapping of vessels for hemodialysis access (services for pre-operative vessel mapping prior to creation of hemodialysis access using an autogenous hemodialysis conduit, including arterial inflow and venous outflow)
76936	Ultrasound guided compression repair of arterial pseudoaneurysm or arteriovenous fistulae (includes diagnostic ultrasound evaluation, compression of lesion and imaging)

Does the CPT 30% Rule Apply

No

ICD-9 Codes that Support Medical Necessity

Cerebrovascular

1. Non-invasive Physiologic Studies (CPT codes 93875-93882)

a. Visual Disorders

Retinal vascular occlusion	362.30-362.37
Retinal ischemia	362.84
Sudden visual loss	368.10, 368.11
Transient visual loss	368.12

	Visual fields defects	368.40, 368.41-368.47
	Optic nerve hypoplasia	377.43
	Ischemic optic neuropathy	377.41
b.	Extracranial Artery Disorders	
	Cervical carotid bruit or pulsatile tinnitus	785.9
	Occlusion/stenosis of pre-cerebral arteries	433.00-436
	Cerebral atherosclerosis and other ischemic cerebrovascular disease	437.0-437.9
	Arterial embolization and thrombosis subclavian artery	444.89
	Aneurysms/ Dissection cerebral or pre-cerebral arteries	442.81, 442.82, 443.21, 443.24, 443.29, 459.9
c.	Paralytic Syndromes	
	Hemiplegia	342.00-342.92
	Other Paralytic	344.00-344.5, 344.9
d.	Focal Neurologic Symptoms	
	Vertigo	386.2
	Syncope and collapse	780.2
	Ataxia/Incoordination	781.2-781.3
	Transient paralysis	781.4
	Facial weakness	781.94
	Paresthesia, numbness	782.0
	Speech disturbance	784.3-784.5
	Arterial bruit	785.9
e.	Other	
	Injury to blood vessels of head and neck	900.00-900.9, 901.1
	Complications of other procedures	996.1, 996.70- 996.71, 996.74, 998.11-998.13, 998.2
	Pre-operatively for CABG	V72.83
	Post-operatively following carotid surgery	V15.1
	Sickle cell anemia	282.60-282.69
	Chorea/hemiballism	333.5
	Encephalopathy	348.30 -348.39, 349.82
	Vasculitis and allied conditions	437.4, 446.0, 446.4-446.7

2. Transcranial Doppler Testing (93886-93893)

Assessing tandem lesions and patterns and the extent of collateral circulation in patients with known regions of severe stenosis or occlusion.

Cerebrovascular disease	433.00 - 435.9, 436, 437.0
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Evaluating and following patients with hemorrhage.

Intracranial hemorrhage:	430 - 432.9
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Evaluating children with various vasculopathies

Vasculopathies	282.60-282.69,
Moyamoya	437.5

Assessing patients with suspected brain death.

Other conditions of the brain	348.9 (specify brain death)
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Arterial/Venous Studies

1. Peripheral arterial studies (Extremity/Visceral) (93922-93931)
 Indications for:
 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)

Thoracic outlet syndrome	353.0
Arterial Disease including atherosclerosis, claudication, aneurysms, embolism and thrombosis	440.0- 442.9, 443.0-443.1, 443.22, 443.29, 443.81- 444.9, 445.01, 445.02 - 448.9; 449
Extremity ulcer	707.10-707.19; 707.8
Gangrene	785.4
Injury to Blood Vessel	903.00 - 904.9
Complications of Procedures or Devices	996.1; 996.62; 996.74; 996.90 - 996.96; 997.2, 997.79; 998.11-998.13; 998.2; 999.2
Organ or tissue replacement; blood vessel	V43.4

- a. CPT code 93926:
 When this procedure is performed as a limited study for a follow-up of bypass surgery, list the ICD-9 code V58.49.
- b. Code 93924 (Indications for physiologic study at rest and following treadmill test):
 Claudication which interferes with the patient's occupation or life style - 443.9, 440.21.
- c. Pre-operative examination for potential harvest vein grafts, or pre-operative examination of vessel prior to hemodialysis access surgery V72.83.

2. Peripheral Venous Examinations (CPT-4 Codes 93965 - 93971)

Hypercoagulability syndromes	289.81-289.89
Suspected pulmonary embolism	415.11; 415.12; 415.19; 786.00; 786.05, 786.09; 786.3; 786.50, 786.52; 786.59; 794.2
Aneurysm of artery of lower extremity	442.3
Phlebitis/thrombophlebitis	451.0 - 451.9; 453.1; 453.40 - 453.42; 453.8; 671.20 - 671.44
Chronic Venous Insufficiency	454.0 - 454.9; 459.10- 459.89; 707.10-707.19; 707.8
Venous complications of pregnancy and purpura	671.00-671.44
Cellulitis leg/foot	682.6, 682.7
Other anomalies of peripheral vascular system	747.60-747.69
Localized Edema	782.2; 782.3; 729.81
Erythema	695.9
Limb Tenderness (on palpation)	729.5
Congenital Vascular Anomalies	747.60, 747.63; 747.64,

	789.60-789.69
Extremity Gangrene	785.4
Respiratory distress	518.81, 786.00-786.09, 799.01, 799.02
Abnormal lung scan	794.2
Lower extremity fracture	820.00-820.9, 821.00-821.39, 823.00-824.9
Injury to Blood Vessels	903.00 - 904.9
Complications of procedures or devices	996.1; 996.62; 996.70, 996.74; 997.2; 997.79; 998.11-998.13; 998.2; 999.2
Phlebitis or thrombophlebitis following infusion, perforation or transfusion	999.2
Organ or tissue replaced by other means, Hip	V43.64
Organ or tissue replaced by other means, Knee	V43.65
Aftercare for healing traumatic fracture of hip	V54.13
Aftercare for healing traumatic fracture of leg, unspecified	V54.14
Aftercare for healing traumatic fracture of upper leg	V54.15
Aftercare for healing traumatic fracture of lower leg	V54.16
Aftercare for healing pathological fracture of hip	V54.23
Aftercare for healing pathological fracture of leg, unspecified	V54.24
Aftercare for healing pathological fracture of upper leg	V54.25
Aftercare for healing pathological fracture of lower leg	V54.26
Pre-operative examination for potential harvest vein grafts, or pre-operative examination of vessel prior to hemodialysis access surgery	V72.83

3. Visceral Vascular Studies (CPT-4 Codes 93975 - 93979)

a. Duplex scan, abdominal, retroperitoneal and pelvic organs (93975 - 93976)

Renal vascular obstructive or aneurysmal disorders	440.0, 440.1, 440.8; 442.1; 443.23; 447.3
Malignant or accelerated hypertension	401.0 - 402.11; 403.00-405.99
Mesenteric vascular disorders	440.8; 442.83; 442.84; 445.81; 447.3, 447.4; 557.0; 593.81
Portal vein thrombosis	452
Hepatic vein thrombosis	453.0
Embolism and thrombus of renal vein	453.3
Embolism and thrombus of unspecified site	453.9
Scrotal Varices	456.4
Vascular insufficiency	557.1-557.9
Portal hypertension	572.3
Renal sclerosis	587
Small kidneys	589.0-589.9
Vascular disorders of kidneys	593.81
Hydrocele	603.9
Congenital anomalies	747.60-62,753.0, 753.10-753.19
Arterial bruit (abdominal or flank)	785.9

Abdominal pain	789.00-789.09
Abdominal or pelvic swelling, mass or lump	789.30-789.39
Abdominal rigidity	789.40-789.49
Surveillance of organ transplant	V42.0; V42.7; V58.44, 996.81; 996.82, 996.86, 996.87
Complications of procedures or devices	996.73; 996.74; 996.86; 996.89; 997.71-997.72; 999.2

b. Duplex scan of aorta, inferior vena cava, iliac vasculature, or bypass grafts, (93978 - 93979):

Aneurysm	441.3; 441.4; 441.6; 441.7
Thrombosis abdominal aorta	444.0
Iliac aneurysm/dissection	442.2; 443.22
Dissection other artery	443.29
Thrombosis iliac artery	444.81
Thrombosis of vena cava	453.2
Thrombosis of iliac vein	451.81
Claudication	440.21; 443.9
Congenital anomalies	747.20-747.29, 747.40-747.49, 747.60-747.62
Arterial bruit (abdominal or flank)	785.9
Abdominal or pelvic swelling mass or lump unspecified site	789.30 – 789.39
Complications of procedures or devices	996.73; 996.74; 996.81; 996.82
Other specified aftercare following surgery	V58.49

4. Penile Vascular Studies (CPT-4 Codes 93980, 93981)

Vascular Disorders of the penis	607.3
Vascular disorders of the penis (embolism, hemorrhage, thrombosis).	607.82
Crushing injury of penis	926.0
Mechanical complication of unspecified device implant or graft	996.30
Mechanical complication of genitourinary device implant or graft	996.31
Mechanical complication due to urethral (indwelling) catheter	996.39

5. Hemodialysis Flow Studies (90940)

A-V fistula	447.0; V45.1
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6. Duplex scan of hemodialysis access (*Doppler Flow Studies* (93990)

A-V fistula	447.0; V45.1
In preparation for creating a dialysis fistula	use ICD-9 code 585.6 (chronic renal failure)

7. Vessel Mapping of vessels for hemodialysis access (G0365)

Pre-operative examination for potential harvest vein grafts, or pre-operative examination of vessel prior to hemodialysis access surgery	V72.83
In preparation for creating a dialysis fistula	use ICD-9 code 585.6

(chronic renal failure)

Note: ICD-9 codes must be coded to the highest level of specificity.

Diagnoses that Support Medical Necessity

ICD-9 Codes that DO NOT Support Medical Necessity

Diagnoses that DO NOT Support Medical Necessity

Documentation Requirements

Documentation present in the patient's medical record should meet the requirements for medical necessity stated in this policy. Hard copy NIVT results should be a part of the patient's medical record. Documentation in the patient's medical record should include hard copy reports, as well as the medical necessity of the procedure as outlined in the policy.

Utilization Guidelines

A. Training and Certification

1. The accuracy of examinations depends on the knowledge, skill, and experience of the technologist and interpreter. Consequently, the providers of NIVT studies should be capable of demonstrating and maintaining documented training and experience.
2. All noninvasive vascular diagnostic studies should either be
 - performed by, or under the direct supervision of, persons that have demonstrated minimum entry level competency by being credentialed in vascular technology, or
 - performed in laboratories accredited in vascular technology.
- a. One or more technologists in each vascular laboratory must be certified by a credentialing board recognized by the Intersocietal Commission for Accreditation of Vascular Laboratories (ICAVL) or the National Council for Certifying Agencies.
- b. Laboratories may be certified by the Intersocietal Commission for the Accreditation of Vascular Laboratories. Certification of the laboratory itself supersedes the requirement for certification of individual technologists.

If a certified technologist supervises technologists who are not certified, the certified RVT must: provide direct supervision; and sign the record of the test and attest to the quality of the examination

These requirements will be necessary to payment of services provided beginning -----2009

B. The following agencies are recognized as credentialing organizations:

American Registry of Diagnostic Medical Sonography (*ARDMS*)
600 Jefferson Plaza, Suite 300
Rockville, Maryland 20852
(301) 738-8401
<http://www.ardms.org/aboutardms/overview.htm>
Registered Diagnostic Medical Sonographer (RDMS)
Registered Diagnostic Cardiac Sonographer (RDCS)

Registered Vascular Technologist (RVT)

Credentialing Organizations for Laboratories:
Intersocietal Commission for the Accreditation of Vascular Laboratories
Vascular Laboratories
14750 Sweitzer Lane, Suite 102
Laurel, Maryland 20707

American Registry of Radiologic Technologist (ARRT)
1255 Northland Drive
St. Paul, Minnesota 55120-1155

Provided all continuing medical education credits CEU(s) requirements are up-to-date, the registered vascular specialist (RVS) certificate by Cardiovascular Credentialing International (CCI) does fulfill the qualification criteria for a technician personally performing non-invasive vascular studies covered by the non-invasive vascular policy.

Cardiovascular Credentialing International (CCI)
1500 Sunday Drive, Suite 102
Raleigh, North Carolina 27607

- C. Performance of both the physiologic studies and duplex study during the same encounter is usually not medically necessary. The performance of simultaneous arterial and venous studies during the same encounter should be rare.

A duplex scan includes a real-time scan (see CPT-1; Diagnostic Ultrasound). Consequently, billing for both a duplex scan and echography of the same body part represents unbundling and is not allowed.

Codes 93922 - 93931 may be used to code imaging studies including either B-mode ultrasound or Doppler imaging above or combined in a duplex scan.

Echocardiogram and color Doppler of the heart is in no way related to a duplex scan and echography of an artery or vein in the lower extremity or carotid, and both procedures should be reimbursed independently, when indications for both do exist.

- D. The professional component of noninvasive vascular testing procedures performed intraoperatively is reimbursable under Medicare Part B only if performed by a physician who is not a member of the operating team.
- E. Acceptable procedures for reimbursement are:
-Duplex Scan (93970 or 93971)
-Doppler waveform analysis including responses to compression and other maneuvers (93965)
-Impedance plethysmography (93965)
-Air plethysmography (93965)
-Strain gauge plethysmography (93965)
- F. ABI (considered part of the physical examination)

- G. Non-invasive Physiologic Studies (CPT codes 93875-93882)
CPT-4 93875 will not be reimbursed in addition to a Duplex study without supporting documentation establishing the medical necessity for additional studies. (Doppler ultrasound/spectrum analyses are included in the duplex scan. OPG may be useful in confirming carotid stenosis greater than 50%, or evaluation of postoperative neurological symptoms.

Each code used for carotid studies represents a battery of tests. Only one unit of service may be billed per day even if more than one individual test falling within each code is performed the same day.

Since Duplex scanning of the carotid vessels is considered to be the most useful test for surgically correctable occlusive disease, only it (93880 or 93882) will generally be reimbursed.

Separate vertebral artery studies are rarely indicated, and will not be considered for reimbursement without additional justification of medical necessity. This could consist of specific symptomatology for patients in which other non-vascular conditions have been ruled out and for which there are no contraindications to the procedure.

- H. Peripheral arterial studies (Extremity / Visceral) (93922-93931)

1. Procedures that are reimbursed include Duplex scan (93925, 93926, 93930, 93931)
 - a. Duplex scanning and physiological studies are reimbursed during the same encounter if the physiological studies are abnormal and/or to evaluate vascular trauma, thromboembolic events or aneurysmal disease.
 - b. Studies of the lower and upper extremities on the same day may be clinically indicated when the graft extends from the upper to lower extremity, i.e. axillo-femoral grafts. The patient's record should document that signs and/or symptoms are present in both areas.
2. CPT-4 codes 93922 and 93923 are considered to be a part of code 93924. CPT-4 code 93923 describes the studies considered most useful in determining the presence or absence of extremity arterial insufficiency. Duplex studies are sometimes needed in addition to 93923. The patient's medical record should document the need for both studies; e.g., to evaluate vascular trauma, evaluate abnormalities found on physiological studies, thromboembolic events or aneurysmal disease, patients in whom contrast studies are contraindicated, or follow-up of bypass grafts. Studies of upper and lower extremities on the same day are sometimes clinically indicated. Examples would be:
 - To help determine surgical or percutaneous management, it may help to determine the extent of the lesion
 - To assess the radial artery as a resource for coronary bypassThe patient's medical record should indicate appropriate signs or symptoms are present in both areas; the diagnoses listed should reflect anatomic-specific conditions where possible.

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 the narrative record (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 HCFA-1500 claim form in box 19.

I. Follow-up Studies:

1. No invasive intervention: Repeat studies may be allowed annually to follow vascular lesions or when new, recurrent or worsening signs/symptoms have developed.
2. Post-intervention surveillance: Duplex post-interventional follow-up studies are typically limited in scope and unilateral in nature. Consequently, the "complete" duplex scan codes (i.e., CPT code 93925 or 93930) should seldom be used.
3. Graft failures are most likely to occur in the first year. While the most reliable indication of a failing graft is a combination of a falling ABI plus abnormal duplex scan, there is no clear consensus on how aggressively an asymptomatic patient should be treated. Routine post intervention surveillance in asymptomatic patients may be performed at 6 weeks and every 6 months for 2 years then annually thereafter. Additional follow-up studies may be covered if reestablished pulses are lost, become equivocal, or if the patient develops related signs and/or symptoms of ischemia with anticipation of repeat intervention

J. Peripheral Venous Examinations (CPT-4 Codes 93965 - 93971, G0365)

1. Since the signs and symptoms of arterial occlusive disease and venous disease are so divergent, the performance of simultaneous arterial and venous studies during the same encounter should be rare. (Some trauma can result in arterial and venous compromise, as well as compartment syndrome, aneurysm or a mass that can compromise a vein.) Consequently, documentation clearly supporting the medical necessity of both procedures performed during the same encounter must be available for review if requested. Acceptable diagnoses for both types of studies must be indicated on the claim.
2. Routine performance of both duplex scanning (93970 or 93971) and physiological tests (93965) during the same encounter is usually not medically necessary. However, the performance of duplex scanning in asymptomatic patients following an equivocal physiologic study result is acceptable. Normal findings on physiologic testing ordinarily precludes reimbursement for duplex scanning. The report of the physiologic study should be made available for review when both studies are billed. Otherwise, only the duplex scan will be allowed
3. Venous Mapping
 - a. Routine imaging of the iliac veins in addition to extremity veins for diagnoses of deep vein thrombosis or venous insufficiency is rarely necessary. The patient's medical record should document the need for visceral studies for a diagnosis of DVT, e.g., evaluation of a Greenfield filter, or an evaluation to determine the need for placing a filter or to evaluate thrombus felt to be massive or high-risk.
 - b. *Vessel mapping of vessels for hemodialysis access (G0365 - Services for preoperative vessel mapping prior to creation of hemodialysis access using an autogenous hemodialysis conduit, including arterial inflow and venous outflow). This code can only be used in patients who have not had a prior hemodialysis access prosthetic graft or autogenous fistula and is limited to two times per year. We will not permit separate payment for CPT code 93971 when this G-code is billed, unless CPT code 93971 is being performed for a separately identifiable indication in a different anatomic region.*
4. DVT

- a. Since DVT usually propagates from the calf proximally, studies of the iliac vessels (CPT-4 codes 93978 - 93979) are not needed routinely in addition to the lower extremity studies.
- b. Bilateral limb edema in the presence of signs and/or symptoms of congestive heart failure, exogenous obesity and/or arthritis should rarely be an indication except in high-risk population (e.g., status-post major surgical procedures).

K. Ultrasound Repair of Pseudoaneurysm (76936)
 Diagnosis of pseudo-aneurysm is primarily based on history and physical examination. Consequently, CPT code 76936 includes CPT codes 93926 through 93931 and these procedures are not separately reimbursable.

When performed in conjunction with the invasive procedure, 76936 is considered part of the invasive procedure and is not separately reportable.

Sources of Information and Basis for Decision

- Journal of Vascular Surgery, Vol. 16 No. 2 08/92 PP 163-170; American Academy of Neurology, Assessment Transcranial Doppler, 1990;
- Carballa, R.E., et al, An Outcome Analysis of Carotid Endarterectomy: The Incidence and Natural History of Recurrent Stenosis, J.Vasc. Surg., 1996; 23: 749-754
- Erickson,C.A., et al, Ongoing Vascular Laboratory Surveillance Is Essential To Maximize Long-term In Situ Saphenous Vein Bypass Patency, J. Vasc. Surg., 1996; 23: 18-27
- Beneficial Effects of Carotid Endarterectomy in Symptomatic Patients with High Grade Carotid Stenosis, NEJM, Vol: 325, No. 7, 08/15/91
- The Asymptomatic Carotid Atherosclerosis Study (ACAS), 1994
- The North American Symptomatic Carotid Endarterectomy Trial (NASCET), 1998
- Transcranial Doppler Ultrasonography: Year 2000 Update, J. Neuroimaging, 2000, Vol 10, 101-115
- Lovelace, et al, Optimizing Duplex Follow-up in Patients with Asymtomatic Internal Carotid Artery Stenosis of Less than 60%, J. Vasc. Surg., 2001; Vol 33: 56-61
- Nehler, et al, Improving Selection of Patients with Less Than 60% Asymptomatic Internal Carotid Artery Stenosis For Follow-up Duplex Scanning, J. Vasc. Surg., 1996; Vol 24: 580-587
- Other contractor policies

Advisory Committee Meeting Notes

Meeting Dates:

Legacy B

- Wisconsin: CAC: 05/04/2001; pending
- Illinois: CAC: 05/16/1993; 04/18/2001; pending
- Michigan: CAC: 05/16/1993; 04/11/2001; pending
- Minnesota: CAC: 05/19/1994; 04/26/2001; pending

MAC AB

Iowa	pending
Missouri	pending
Kansas	pending
Nebraska	pending

Legacy A

All states listed under primary	
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jurisdiction	
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Start Date of Comment Period

Wisconsin: 07/02/1993; 09/24/1993; 05/04/2001; pending
 Illinois: 05/16/1993; 04/18/2001; pending
 Michigan: 05/16/1993; 04/11/2001; pending
 Minnesota: 05/19/1994; 04/26/2001; pending

MAC AB

Iowa	pending
Missouri	pending
Kansas	pending
Nebraska	pending

Legacy A

All states listed under primary jurisdiction	
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End Date of Comment Period

Legacy B

Wisconsin:
 Illinois:
 Michigan:
 Minnesota:

MAC AB

Iowa	
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Kansas	
Nebraska	

Legacy A

All states listed under primary jurisdiction	
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Start Date of Notice Period

(Published)

Legacy B

Wisconsin: PART ONE 07/02/1993; PART TWO 09/23/1993; 11/01/2001, Article 12/01/2001; Article 03/01/2002; Article 04/01/2002; Article 05/01/2002; 10/01/2002, Article ; 10/01/2003, Article ; 11/01/2003, Article; 09/01/2004; 01/01/2005, Article; 04/01/2005, Article; Article 10/01/2005; Article 010/01/2006 ; Article 09/01/2006 ; Article 01/01/2007 ; *Article 09/01/2007
 Illinois: 06/16/1993; 11/01/2001, Article 12/01/2001; Article 03/01/2002; Article 04/01/2002;Article 05/01/2002; 10/01/2002, Article ; 10/01/2003, Article ; 11/01/2003, Article; 09/01/2004; 01/01/2005 ; Article, 04/01/2005, Article; Article 10/01/2005; Article 010/01/2006 ; Article 09/01/2006 ; Article 01/01/2007; *Article 09/01/2007
 Michigan: 06/16/1993; 11/01/2001, Article 12/01/2001; Article 03/01/2002; Article

04/01/2002;Article 05/01/2002; 10/01/2002, Article, 10/01/2003, Article ; 11/01/2003, Article; 09/01/2004; 01/01/2005,Article; 04/01/2005, Article; Article 10/01/2005; Article 010/01/2006 ; Article 09/01/2006; Article 01/01/2007 ; *Article 09/01/2007

Minnesota:

07/15/1994; 11/01/2001, Article 12/01/2001; Article 03/01/2002; Article 04/01/2002;Article 05/01/2002; 10/01/2002, Article ; 10/01/2003, Article ; 11/01/2003, Article; 09/01/2004; 01/01/2005,Article; 04/01/2005, Article; Article 10/01/2005; Article 010/01/2006 ; Article 09/01/2006; Article 01/01/2007 ; *Article 09/01/2007

MAC AB

Iowa	
Missouri	
Kansas	
Nebraska	

Legacy A

All states listed under primary jurisdiction	
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Revision History

Legacy B

Wisconsin:

*10/01/2007 (ICD-9 update); 01/01/2007 (Addition of NCD 160.26); 10/01/2006 (2007 ICD-9 update); 09/01/2006 Addition V codes CPT section 93965-93971, reconsideration request V43.64-V43.65, V54.13-V54.16, V54.23-V54.26 (twenty-two) ; 01/01/2006 HCPCS update (twenty-one); 10/01/2005, ICD-9 update (twenty); 04/01/2005, ICD-9 code correction (nineteen); 01/01/2005, Addition of codes G0365, 93890-93893 (eighteen); 10/01/2004 LCD reformat, ICD-9 update, response to a reconsideration request re: new dialysis access (seventeen); 11/01/2003 ICD-9 update (sixteen); 10/01/2003 CCI clarification (fifteen); 10/01/2002, Article (fourteen); 05/01/2002, (thirteen); 04/01/2002, (twelve); 03/01/2002, ICD-9 code (eleven); 01/01/2002, Merge Replaces policy RAD-022 (ten); 07/22/1999, code update (nine); 03/23/1998, (eight); 03/25/1997, code update (seven); 03/26/1996, (six); 02/25/1996, (five); 10/15/1995, code revision (four); 06/15/1995, code correction (three); 03/01/1995, (two); 01/01/1995, (one)

Illinois:

*10/01/2007 (ICD-9 update); 01/01/2007 (Addition of NCD 160.26); 10/01/2006 (2007 ICD-9 update); 09/01/2006 Addition V codes CPT section 93965-93971, reconsideration request V43.64-V43.65, V54.13-V54.16, V54.23-V54.26 (sixteen) ; 01/01/2006 HCPCS update (fifteen); 10/01/2005, ICD-9 update (fourteen); 04/01/2005, ICD-9 code correction (thirteen); 01/01/2005, Addition of codes G0365, 93890-93893 (twelve); 10/01/2004, LCD reformat, ICD-9 update, response to a reconsideration request re: new dialysis access (eleven); 11/01/2003, ICD-9 update (ten); 10/01/2003, CCI clarification (nine); 10/01/2002, Article (eight); 05/01/2002, (seven); 04/01/2002, (six); 03/01/2002, ICD-9 code (five); 01/01/2002, Merge, Replaces policy IL/MI 003 and MI 009(four); 08/15/1996, ICD-9 code update (three); 12/15/1995, ICD-9-code update(two); 09/15/1995, Revised policy to include ICD-9-codes to match narrative descriptions (one)

Michigan: *10/01/2007 (ICD-9 update); 01/01/2007 (Addition of NCD 160.26); 10/01/2006 (2007 ICD-9 update); 09/01/2006 Addition V codes CPT section 93965-93971, reconsideration request V43.64-V43.65, V54.13-V54.16, V54.23-V54.26 (sixteen) ; 01/01/2006 HCPCS update (fifteen); 10/01/2005, ICD-9 update (fourteen); 04/01/2005, ICD-9 code correction (thirteen); 01/01/2005, Addition of codes G0365, 93890-93893 (twelve); 10/01/2004, LCD reformat, ICD-9 update, response to a reconsideration request re: new dialysis access (eleven); 11/01/2003, ICD-9 update (ten); 10/01/2003, CCI clarification (nine); 10/01/2002, Article (eight); 05/01/2002, (seven); 04/01/2002, (six); 03/01/2002, ICD-9 code (five); 01/01/2002, Merge, Replaces policy IL/MI 003 and MI 009(four); 08/15/1996, ICD-9 code update (three); 12/15/1995, ICD-9-code update(two); 09/15/1995, Revised policy to include ICD-9-codes to match narrative descriptions (one)

Minnesota: *10/01/2007 (ICD-9 update); 01/01/2007 (Addition of NCD 160.26); 10/01/2006 (2007 ICD-9 update); 09/01/2006 Addition V codes CPT section 93965-93971, reconsideration request V43.64-V43.65, V54.13-V54.16, V54.23-V54.26 (twelve) ; 01/01/2006 HCPCS update (eleven); 10/01/2005, ICD-9 update (ten); 04/01/2005, ICD-9 code correction (nine); 01/01/2005, Addition of codes G0365, 93890-93893; 10/01/2004, LCD reformat, ICD-9 update, response to a reconsideration request re: new dialysis access (eight); 11/01/2003, ICD-9 update (seven); 10/01/2003 CCI clarification (six); 10/01/2002, Article (five); 05/01/2002, (four); 04/01/2002, (three); 03/01/2002, ICD-9 code (two); 01/01/2002, Merge, Replaces policies Neuro 93-10 and CV 94-14 (one)

MAC AB

Iowa		
Missouri		
Kansas		
Nebraska		

Legacy A

All states listed under primary jurisdiction	
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This policy does not reflect the sole opinion of the contractor or Contractor Medical Director. Although the final decision rests with the contractor, this policy was developed in cooperation with advisory groups, which includes representatives from multiple specialties.

Last Reviewed On:

Notes:

[There is a coding document associated with this policy which also includes regulations that impact this policy.](#)

* - An asterisk indicates a revision to that section of the policy.

Does this LCD contain a "Least Costly Alternative" Provision?

No