

LCD for Noninvasive Vascular Testing (N.I.V.T.) (L28586)

Contractor Information

Contractor Name

Wisconsin Physicians Service Insurance Corporation

Contractor Number

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

Contractor Type

Carrier - FI - MAC

LCD Information

LCD ID Number

L28586

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

Oversight Region

Region V

Original Determination Effective Date

For services performed on or after 05/18/2009

Original Determination Ending Date

Revision Effective Date

For services performed on or after 05/01/2010

Revision Ending Date

Indications and Limitations of Coverage and/or Medical Necessity

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 or altered blood flow 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.

c. Carotid surgery, intra-operatively and postoperatively

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.
- g. Intraoperative and perioperative monitoring of intracranial hemodynamics during carotid endarterectomy or vascular surgery.
- h. Preoperative evaluation in patients scheduled for major cardiovascular surgical procedures

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. Evaluating patient with dilated vasculopathies such as fusiform aneurysms;
- c. Assessing autoregulation, physiologic and pharmacologic responses of cerebral arteries.
- d. Monitoring during interventions and surgical procedures not listed above.

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.
10. Follow-up to carotid stent procedure when covered.

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.

Coding Information

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.

| | |
|------|--|
| 011x | Hospital Inpatient (Including Medicare Part A) |
| 012x | Hospital Inpatient (Medicare Part B only) |
| 013x | Hospital Outpatient |
| 014x | Hospital - Laboratory Services Provided to Non-patients |
| 018x | Hospital - Swing Beds |
| 021x | Skilled Nursing - Inpatient (Including Medicare Part A) |
| 022x | Skilled Nursing - Inpatient (Medicare Part B only) |
| 023x | Skilled Nursing - Outpatient |
| 071x | Clinic - Rural Health |
| 072x | Clinic - Hospital Based or Independent Renal Dialysis Center |
| 085x | Critical Access Hospital |

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.

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| 0402 | Other Imaging Services - Ultrasound |
| 0920 | Other Diagnostic Services - General Classification |
| 0921 | Other Diagnostic Services - Peripheral Vascular Lab |
| 0929 | Other Diagnostic Services - Other Diagnostic Service |

CPT/HCPCS Codes

| | |
|-------|---|
| 76936 | ULTRASOUND GUIDED COMPRESSION REPAIR OF ARTERIAL PSEUDOANEURYSM OR ARTERIOVENOUS FISTULAE (INCLUDES DIAGNOSTIC ULTRASOUND EVALUATION, COMPRESSION OF LESION AND IMAGING) |
| 90940 | HEMODIALYSIS ACCESS FLOW STUDY TO DETERMINE BLOOD FLOW IN GRAFTS AND ARTERIOVENOUS FISTULAE BY AN INDICATOR METHOD |
| 93875 | NONINVASIVE PHYSIOLOGIC STUDIES OF EXTRACRANIAL ARTERIES, COMPLETE BILATERAL STUDY (EG, PERIORBITAL FLOW DIRECTION WITH ARTERIAL COMPRESSION, OCULAR PNEUMOPLETHYSMOGRAPHY, DOPPLER ULTRASOUND SPECTRAL ANALYSIS) |
| 93880 | DUPLEX SCAN OF EXTRACRANIAL ARTERIES; COMPLETE BILATERAL STUDY |
| 93882 | DUPLEX SCAN OF EXTRACRANIAL ARTERIES; UNILATERAL OR LIMITED STUDY |
| 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 |
| 93922 | |

NONINVASIVE PHYSIOLOGIC STUDIES OF UPPER OR LOWER EXTREMITY ARTERIES, SINGLE LEVEL, BILATERAL (EG, ANKLE/BRACHIAL INDICES, DOPPLER WAVEFORM ANALYSIS, VOLUME PLETHYSMOGRAPHY, TRANSCUTANEOUS OXYGEN TENSION MEASUREMENT)

93923

NONINVASIVE PHYSIOLOGIC STUDIES OF UPPER OR LOWER EXTREMITY ARTERIES, MULTIPLE LEVELS OR WITH PROVOCATIVE FUNCTIONAL MANEUVERS, COMPLETE BILATERAL STUDY (EG, SEGMENTAL BLOOD PRESSURE MEASUREMENTS, SEGMENTAL DOPPLER WAVEFORM ANALYSIS, SEGMENTAL VOLUME PLETHYSMOGRAPHY, SEGMENTAL TRANSCUTANEOUS OXYGEN TENSION MEASUREMENTS, MEASUREMENTS WITH POSTURAL PROVOCATIVE TESTS, MEASUREMENTS WITH REACTIVE HYPEREMIA)

93924

NONINVASIVE PHYSIOLOGIC STUDIES OF LOWER EXTREMITY ARTERIES, AT REST AND FOLLOWING TREADMILL STRESS TESTING, COMPLETE BILATERAL STUDY

93925

DUPLEX SCAN OF LOWER EXTREMITY ARTERIES OR ARTERIAL BYPASS GRAFTS; COMPLETE BILATERAL STUDY

93926

DUPLEX SCAN OF LOWER EXTREMITY ARTERIES OR ARTERIAL BYPASS GRAFTS; UNILATERAL OR LIMITED STUDY

93930

DUPLEX SCAN OF UPPER EXTREMITY ARTERIES OR ARTERIAL BYPASS GRAFTS; COMPLETE BILATERAL STUDY

93931

DUPLEX SCAN OF UPPER EXTREMITY ARTERIES OR ARTERIAL BYPASS GRAFTS; UNILATERAL OR LIMITED STUDY

93965

NONINVASIVE PHYSIOLOGIC STUDIES OF EXTREMITY VEINS, COMPLETE BILATERAL STUDY (EG, DOPPLER WAVEFORM ANALYSIS WITH RESPONSES TO COMPRESSION AND OTHER MANEUVERS, PHLEBORHEOGRAPHY, IMPEDANCE PLETHYSMOGRAPHY)

93970

DUPLEX SCAN OF EXTREMITY VEINS INCLUDING RESPONSES TO COMPRESSION AND OTHER MANEUVERS; COMPLETE BILATERAL STUDY

93971

DUPLEX SCAN OF EXTREMITY VEINS INCLUDING RESPONSES TO COMPRESSION AND OTHER MANEUVERS; 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

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| | DUPLEX SCAN OF ARTERIAL INFLOW AND VENOUS OUTFLOW OF ABDOMINAL, PELVIC, SCROTAL CONTENTS AND/OR RETROPERITONEAL ORGANS; LIMITED STUDY |
| 93978 | DUPLEX SCAN OF AORTA, INFERIOR VENA CAVA, ILIAC VASCULATURE, OR BYPASS GRAFTS; COMPLETE STUDY |
| 93979 | DUPLEX SCAN OF AORTA, INFERIOR VENA CAVA, ILIAC VASCULATURE, OR BYPASS GRAFTS; UNILATERAL OR LIMITED STUDY |
| 93980 | DUPLEX SCAN OF ARTERIAL INFLOW AND VENOUS OUTFLOW OF PENILE VESSELS; COMPLETE STUDY |
| 93981 | DUPLEX SCAN OF ARTERIAL INFLOW AND VENOUS OUTFLOW OF PENILE VESSELS; FOLLOW-UP OR LIMITED STUDY |
| 93990 | DUPLEX SCAN OF HEMODIALYSIS ACCESS (INCLUDING ARTERIAL INFLOW, BODY OF ACCESS AND VENOUS OUTFLOW) |
| G0365 | VESSEL MAPPING OF VESSELS FOR HEMODIALYSIS ACCESS (SERVICES FOR PREOPERATIVE VESSEL MAPPING PRIOR TO CREATION OF HEMODIALYSIS ACCESS USING AN AUTOGENOUS HEMODIALYSIS CONDUIT, INCLUDING ARTERIAL INFLOW AND VENOUS OUTFLOW) |

ICD-9 Codes that Support Medical Necessity

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

Cerebrovascular

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

a. Visual Disorders

| | |
|-----------------|---|
| 362.30 - 362.37 | RETINAL VASCULAR OCCLUSION UNSPECIFIED - VENOUS ENGORGEMENT OF RETINA |
| 362.81 | RETINAL HEMORRHAGE |
| 362.84 | RETINAL ISCHEMIA |
| 368.10 | SUBJECTIVE VISUAL DISTURBANCE UNSPECIFIED |
| 368.11 | SUDDEN VISUAL LOSS |
| 368.12 | TRANSIENT VISUAL LOSS |
| 368.40 | VISUAL FIELD DEFECT UNSPECIFIED |

| | |
|----------------------------------|---|
| 368.41 - 368.47 | SCOTOMA INVOLVING CENTRAL AREA - HETERONYMOUS BILATERAL FIELD DEFECTS |
| 377.41 | ISCHEMIC OPTIC NEUROPATHY |
| 377.43 | OPTIC NERVE HYPOPLASIA |
| b. Extracranial Artery Disorders | |
| 433.00 - 436 | OCCLUSION AND STENOSIS OF BASILAR ARTERY WITHOUT CEREBRAL INFARCTION - ACUTE BUT ILL-DEFINED CEREBROVASCULAR DISEASE |
| 437.0 - 437.9 | CEREBRAL ATHEROSCLEROSIS - UNSPECIFIED CEREBROVASCULAR DISEASE |
| 438.10 - 438.19 | SPEECH AND LANGUAGE DEFICIT UNSPECIFIED - OTHER SPEECH AND LANGUAGE DEFICITS |
| 438.81 - 438.89 | APRAXIA CEREBROVASCULAR DISEASE - OTHER LATE EFFECTS OF CEREBROVASCULAR DISEASE |
| 442.81 | ANEURYSM OF ARTERY OF NECK |
| 442.82 | ANEURYSM OF SUBCLAVIAN ARTERY |
| 443.21 | DISSECTION OF CAROTID ARTERY |
| 443.24 | DISSECTION OF VERTEBRAL ARTERY |
| 443.29 | DISSECTION OF OTHER ARTERY |
| 444.89 | EMBOLISM AND THROMBOSIS OF OTHER ARTERY |
| 459.9 | UNSPECIFIED CIRCULATORY SYSTEM DISORDER |
| 785.9 | OTHER SYMPTOMS INVOLVING CARDIOVASCULAR SYSTEM |
| c. Paralytic Syndromes | |
| 342.00 - 342.92 | FLACCID HEMIPLEGIA AND HEMIPARESIS AFFECTING UNSPECIFIED SIDE - UNSPECIFIED HEMIPLEGIA AND HEMIPARESIS AFFECTING NONDOMINANT SIDE |
| 344.00 - 344.5 | QUADRIPLEGIA UNSPECIFIED - UNSPECIFIED MONOPLEGIA |
| 344.9 | PARALYSIS UNSPECIFIED |
| d. Focal Neurologic Symptoms | |
| 386.2 | VERTIGO OF CENTRAL ORIGIN |
| 780.2 | SYNCOPE AND COLLAPSE |
| 781.2 - 781.3 | ABNORMALITY OF GAIT - LACK OF COORDINATION |
| 781.4 | TRANSIENT PARALYSIS OF LIMB |

| | |
|-----------------|--|
| 781.94 | FACIAL WEAKNESS |
| 782.0 | DISTURBANCE OF SKIN SENSATION |
| 784.3 - 784.59 | APHASIA - OTHER SPEECH DISTURBANCE |
| 785.9 | OTHER SYMPTOMS INVOLVING CARDIOVASCULAR SYSTEM |
| e. Other | |
| 282.60 - 282.69 | SICKLE-CELL DISEASE UNSPECIFIED - OTHER SICKLE-CELL DISEASE WITH CRISIS |
| 333.5 | OTHER CHOREAS |
| 348.30 - 348.39 | ENCEPHALOPATHY UNSPECIFIED - OTHER ENCEPHALOPATHY |
| 349.82 | TOXIC ENCEPHALOPATHY |
| 437.4 | CEREBRAL ARTERITIS |
| 446.0 | POLYARTERITIS NODOSA |
| 446.4 - 446.7 | WEGENER'S GRANULOMATOSIS - TAKAYASU'S DISEASE |
| 900.00 - 900.9 | INJURY TO CAROTID ARTERY UNSPECIFIED - INJURY TO UNSPECIFIED BLOOD VESSEL OF HEAD AND NECK |
| 901.1 | INJURY TO INNOMINATE AND SUBCLAVIAN ARTERIES |
| 996.1 | MECHANICAL COMPLICATION OF OTHER VASCULAR DEVICE IMPLANT AND GRAFT |
| 996.70 - 996.71 | OTHER COMPLICATIONS DUE TO UNSPECIFIED DEVICE IMPLANT AND GRAFT - OTHER COMPLICATIONS DUE TO HEART VALVE PROSTHESIS |
| 996.74 | OTHER COMPLICATIONS DUE TO OTHER VASCULAR DEVICE IMPLANT AND GRAFT |
| 998.11 - 998.13 | HEMORRHAGE COMPLICATING A PROCEDURE - SEROMA COMPLICATING A PROCEDURE |
| 998.2 | ACCIDENTAL PUNCTURE OR LACERATION DURING A PROCEDURE NOT ELSEWHERE CLASSIFIED |
| V15.1 | PERSONAL HISTORY OF SURGERY TO HEART AND GREAT VESSELS PRESENTING HAZARDS TO HEALTH |
| V72.83 | OTHER SPECIFIED PRE-OPERATIVE EXAMINATION |

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.

433.00 - 435.9 OCCLUSION AND STENOSIS OF BASILAR ARTERY WITHOUT CEREBRAL INFARCTION - UNSPECIFIED TRANSIENT CEREBRAL ISCHEMIA

436 ACUTE BUT ILL-DEFINED CEREBROVASCULAR DISEASE

437.0 - 437.9 CEREBRAL ATHEROSCLEROSIS - UNSPECIFIED CEREBROVASCULAR DISEASE

Evaluating and following patients with hemorrhage.

430 - 432.9 SUBARACHNOID HEMORRHAGE - UNSPECIFIED INTRACRANIAL HEMORRHAGE

Evaluating children with various vasculopathies

Vasculopathies 282.60-282.69,

Moyamoya 437.5 (included in range above)

282.60 - 282.69 SICKLE-CELL DISEASE UNSPECIFIED - OTHER SICKLE-CELL DISEASE WITH CRISIS

437.5 MOYAMOYA DISEASE

Assessing patients with suspected brain death.

Other conditions of the brain 348.9 (specify brain death)

348.9 UNSPECIFIED CONDITION OF BRAIN

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)

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; or other extremity surgery where there are vascular risk factors. - V72.83.

353.0 BRACHIAL PLEXUS LESIONS

440.0 - 442.9 ATHEROSCLEROSIS OF AORTA - OTHER ANEURYSM OF UNSPECIFIED SITE

443.0 - 443.1 RAYNAUD'S SYNDROME - THROMBOANGIITIS OBLITERANS (BUERGER'S DISEASE)

443.22 DISSECTION OF ILIAC ARTERY

443.29 DISSECTION OF OTHER ARTERY

443.81 - 444.9

| | |
|-----------------|--|
| | PERIPHERAL ANGIOPATHY IN DISEASES CLASSIFIED ELSEWHERE - EMBOLISM AND THROMBOSIS OF UNSPECIFIED ARTERY |
| 445.01 | ATHEROEMBOLISM OF UPPER EXTREMITY |
| 445.02 - 448.9 | ATHEROEMBOLISM OF LOWER EXTREMITY - OTHER AND UNSPECIFIED CAPILLARY DISEASES |
| 449 | SEPTIC ARTERIAL EMBOLISM |
| 707.10 - 707.19 | UNSPECIFIED ULCER OF LOWER LIMB - ULCER OF OTHER PART OF LOWER LIMB |
| 707.8 | CHRONIC ULCER OF OTHER SPECIFIED SITES |
| 729.5 | PAIN IN LIMB |
| 785.4 | GANGRENE |
| 785.9 | OTHER SYMPTOMS INVOLVING CARDIOVASCULAR SYSTEM |
| 903.00 - 904.9 | INJURY TO AXILLARY VESSEL(S) UNSPECIFIED - INJURY TO BLOOD VESSELS OF UNSPECIFIED SITE |
| 996.1 | MECHANICAL COMPLICATION OF OTHER VASCULAR DEVICE IMPLANT AND GRAFT |
| 996.62 | INFECTION AND INFLAMMATORY REACTION DUE TO OTHER VASCULAR DEVICE IMPLANT AND GRAFT |
| 996.74 | OTHER COMPLICATIONS DUE TO OTHER VASCULAR DEVICE IMPLANT AND GRAFT |
| 996.90 - 996.96 | COMPLICATIONS OF UNSPECIFIED REATTACHED EXTREMITY - COMPLICATION OF REATTACHED LOWER EXTREMITY OTHER AND UNSPECIFIED |
| 997.2 | PERIPHERAL VASCULAR COMPLICATIONS NOT ELSEWHERE CLASSIFIED |
| 997.79 | VASCULAR COMPLICATIONS OF OTHER VESSELS |
| 998.11 - 998.13 | HEMORRHAGE COMPLICATING A PROCEDURE - SEROMA COMPLICATING A PROCEDURE |
| 998.2 | ACCIDENTAL PUNCTURE OR LACERATION DURING A PROCEDURE NOT ELSEWHERE CLASSIFIED |
| 999.2 | OTHER VASCULAR COMPLICATIONS OF MEDICAL CARE NOT ELSEWHERE CLASSIFIED |
| V43.4 | BLOOD VESSEL REPLACED BY OTHER MEANS |
| V67.00 | FOLLOW-UP EXAMINATION FOLLOWING UNSPECIFIED SURGERY |

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

| | |
|-----------------|--|
| 289.81 - 289.89 | PRIMARY HYPERCOAGULABLE STATE - OTHER SPECIFIED DISEASES OF BLOOD AND BLOOD-FORMING ORGANS |
| 415.11 | IATROGENIC PULMONARY EMBOLISM AND INFARCTION |
| 415.12 | SEPTIC PULMONARY EMBOLISM |
| 415.19 | OTHER PULMONARY EMBOLISM AND INFARCTION |
| 416.2 | CHRONIC PULMONARY EMBOLISM |
| 442.3 | ANEURYSM OF ARTERY OF LOWER EXTREMITY |
| 451.0 - 451.9 | PHLEBITIS AND THROMBOPHLEBITIS OF SUPERFICIAL VESSELS OF LOWER EXTREMITIES - PHLEBITIS AND THROMBOPHLEBITIS OF UNSPECIFIED SITE |
| 453.1 | THROMBOPHLEBITIS MIGRANS |
| 453.40 - 453.42 | ACUTE VENOUS EMBOLISM AND THROMBOSIS OF UNSPECIFIED DEEP VESSELS OF LOWER EXTREMITY - ACUTE VENOUS EMBOLISM AND THROMBOSIS OF DEEP VESSELS OF DISTAL LOWER EXTREMITY |
| 453.50 - 453.52 | CHRONIC VENOUS EMBOLISM AND THROMBOSIS OF UNSPECIFIED DEEP VESSELS OF LOWER EXTREMITY - CHRONIC VENOUS EMBOLISM AND THROMBOSIS OF DEEP VESSELS OF DISTAL LOWER EXTREMITY |
| 453.6 | VENOUS EMBOLISM AND THROMBOSIS OF SUPERFICIAL VESSELS OF LOWER EXTREMITY |
| 453.71 - 453.79 | CHRONIC VENOUS EMBOLISM AND THROMBOSIS OF SUPERFICIAL VEINS OF UPPER EXTREMITY - CHRONIC VENOUS EMBOLISM AND THROMBOSIS OF OTHER SPECIFIED VEINS |
| 453.81 - 453.89 | ACUTE VENOUS EMBOLISM AND THROMBOSIS OF SUPERFICIAL VEINS OF UPPER EXTREMITY - ACUTE VENOUS EMBOLISM AND THROMBOSIS OF OTHER SPECIFIED VEINS |
| 454.0 - 454.9 | VARICOSE VEINS OF LOWER EXTREMITIES WITH ULCER - ASYMPTOMATIC VARICOSE VEINS |
| 459.10 - 459.89 | POSTPHLEBETIC SYNDROME WITHOUT COMPLICATIONS - OTHER SPECIFIED CIRCULATORY SYSTEM DISORDERS |
| 518.81 | ACUTE RESPIRATORY FAILURE |
| 671.00 - 671.44 | VARICOSE VEINS OF LEGS COMPLICATING PREGNANCY AND THE PUERPERIUM UNSPECIFIED AS TO EPISODE OF CARE - DEEP PHLEBOTHROMBOSIS POSTPARTUM |
| 682.6 | |

| | |
|-----------------|---|
| | CELLULITIS AND ABSCESS OF LEG EXCEPT FOOT |
| 682.7 | CELLULITIS AND ABSCESS OF FOOT EXCEPT TOES |
| 695.9 | UNSPECIFIED ERYTHEMATOUS CONDITION |
| 707.10 - 707.19 | UNSPECIFIED ULCER OF LOWER LIMB - ULCER OF OTHER PART OF LOWER LIMB |
| 707.8 | CHRONIC ULCER OF OTHER SPECIFIED SITES |
| 729.5 | PAIN IN LIMB |
| 729.81 | SWELLING OF LIMB |
| 747.60 - 747.69 | ANOMALY OF THE PERIPHERAL VASCULAR SYSTEM UNSPECIFIED SITE - ANOMALIES OF OTHER SPECIFIED SITES OF PERIPHERAL VASCULAR SYSTEM |
| 782.2 | LOCALIZED SUPERFICIAL SWELLING MASS OR LUMP |
| 782.3 | EDEMA |
| 785.4 | GANGRENE |
| 786.00 | RESPIRATORY ABNORMALITY UNSPECIFIED |
| 786.05 | SHORTNESS OF BREATH |
| 786.09 | RESPIRATORY ABNORMALITY OTHER |
| 786.3 | HEMOPTYSIS |
| 786.50 | UNSPECIFIED CHEST PAIN |
| 786.52 | PAINFUL RESPIRATION |
| 786.59 | OTHER CHEST PAIN |
| 789.60 - 789.69 | ABDOMINAL TENDERNESS UNSPECIFIED SITE - ABDOMINAL TENDERNESS OTHER SPECIFIED SITE |
| 794.2 | NONSPECIFIC ABNORMAL RESULTS OF FUNCTION STUDY OF PULMONARY SYSTEM |
| 799.01 | ASPHYXIA |
| 799.02 | HYPOXEMIA |
| 820.00 - 820.9 | FRACTURE OF UNSPECIFIED INTRACAPSULAR SECTION OF NECK OF FEMUR CLOSED - FRACTURE OF UNSPECIFIED PART OF NECK OF FEMUR OPEN |
| 821.00 - 821.39 | FRACTURE OF UNSPECIFIED PART OF FEMUR CLOSED - OTHER FRACTURE OF LOWER END OF FEMUR OPEN |
| 823.00 - 824.9 | CLOSED FRACTURE OF UPPER END OF TIBIA - UNSPECIFIED FRACTURE OF ANKLE OPEN |
| 903.00 - 904.9 | |

INJURY TO AXILLARY VESSEL(S) UNSPECIFIED -
INJURY TO BLOOD VESSELS OF UNSPECIFIED
SITE

| | |
|-----------------|--|
| 996.1 | MECHANICAL COMPLICATION OF OTHER VASCULAR DEVICE IMPLANT AND GRAFT |
| 996.62 | INFECTION AND INFLAMMATORY REACTION DUE TO OTHER VASCULAR DEVICE IMPLANT AND GRAFT |
| 996.70 | OTHER COMPLICATIONS DUE TO UNSPECIFIED DEVICE IMPLANT AND GRAFT |
| 996.74 | OTHER COMPLICATIONS DUE TO OTHER VASCULAR DEVICE IMPLANT AND GRAFT |
| 997.2 | PERIPHERAL VASCULAR COMPLICATIONS NOT ELSEWHERE CLASSIFIED |
| 997.79 | VASCULAR COMPLICATIONS OF OTHER VESSELS |
| 998.11 - 998.13 | HEMORRHAGE COMPLICATING A PROCEDURE - SEROMA COMPLICATING A PROCEDURE |
| 998.2 | ACCIDENTAL PUNCTURE OR LACERATION DURING A PROCEDURE NOT ELSEWHERE CLASSIFIED |
| 999.2 | OTHER VASCULAR COMPLICATIONS OF MEDICAL CARE NOT ELSEWHERE CLASSIFIED |
| V43.64 | HIP JOINT REPLACEMENT |
| V43.65 | KNEE JOINT REPLACEMENT |
| V54.13 | AFTERCARE FOR HEALING TRAUMATIC FRACTURE OF HIP |
| V54.14 | AFTERCARE FOR HEALING TRAUMATIC FRACTURE OF LEG UNSPECIFIED |
| V54.15 | AFTERCARE FOR HEALING TRAUMATIC FRACTURE OF UPPER LEG |
| V54.16 | AFTERCARE FOR HEALING TRAUMATIC FRACTURE OF LOWER LEG |
| V54.23 | AFTERCARE FOR HEALING PATHOLOGIC FRACTURE OF HIP |
| V54.24 | AFTERCARE FOR HEALING PATHOLOGIC FRACTURE OF LEG UNSPECIFIED |
| V54.25 | AFTERCARE FOR HEALING PATHOLOGIC FRACTURE OF UPPER LEG |
| V54.26 | AFTERCARE FOR HEALING PATHOLOGIC FRACTURE OF LOWER LEG |
| V58.89 | OTHER SPECIFIED AFTERCARE |
| V67.00 | FOLLOW-UP EXAMINATION FOLLOWING UNSPECIFIED SURGERY |

V72.83

OTHER SPECIFIED PRE-OPERATIVE
EXAMINATION

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

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

| | |
|-----------------|---|
| 401.0 - 402.11 | MALIGNANT ESSENTIAL HYPERTENSION - BENIGN HYPERTENSIVE HEART DISEASE WITH HEART FAILURE |
| 403.00 - 405.99 | HYPERTENSIVE CHRONIC KIDNEY DISEASE, MALIGNANT, WITH CHRONIC KIDNEY DISEASE STAGE I THROUGH STAGE IV, OR UNSPECIFIED - OTHER UNSPECIFIED SECONDARY HYPERTENSION |
| 440.0 | ATHEROSCLEROSIS OF AORTA |
| 440.1 | ATHEROSCLEROSIS OF RENAL ARTERY |
| 440.8 | ATHEROSCLEROSIS OF OTHER SPECIFIED ARTERIES |
| 442.1 | ANEURYSM OF RENAL ARTERY |
| 442.83 | ANEURYSM OF SPLENIC ARTERY |
| 442.84 | ANEURYSM OF OTHER VISCERAL ARTERY |
| 443.23 | DISSECTION OF RENAL ARTERY |
| 444.81 | EMBOLISM AND THROMBOSIS OF ILIAC ARTERY |
| 445.81 | ATHEROEMBOLISM OF KIDNEY |
| 447.3 | HYPERPLASIA OF RENAL ARTERY |
| 447.4 | CELIAC ARTERY COMPRESSION SYNDROME |
| 452 | PORTAL VEIN THROMBOSIS |
| 453.0 | BUDD-CHIARI SYNDROME |
| 453.3 | EMBOLISM AND THROMBOSIS OF RENAL VEIN |
| 453.9 | EMBOLISM AND THROMBOSIS OF UNSPECIFIED SITE |
| 456.4 | SCROTAL VARICES |
| 557.0 | ACUTE VASCULAR INSUFFICIENCY OF INTESTINE |
| 557.1 - 557.9 | CHRONIC VASCULAR INSUFFICIENCY OF INTESTINE - UNSPECIFIED VASCULAR INSUFFICIENCY OF INTESTINE |
| 572.3 | PORTAL HYPERTENSION |
| 585.9 | CHRONIC KIDNEY DISEASE, UNSPECIFIED |
| 587 | RENAL SCLEROSIS UNSPECIFIED |
| 589.0 - 589.9 | |

| | |
|-----------------|---|
| | UNILATERAL SMALL KIDNEY - SMALL KIDNEY UNSPECIFIED |
| 593.81 | VASCULAR DISORDERS OF KIDNEY |
| 593.9 | UNSPECIFIED DISORDER OF KIDNEY AND URETER |
| 603.9 | HYDROCELE UNSPECIFIED |
| 747.60 - 747.62 | ANOMALY OF THE PERIPHERAL VASCULAR SYSTEM UNSPECIFIED SITE - RENAL VESSEL ANOMALY |
| 753.0 | RENAL AGENESIS AND DYSGENESIS |
| 753.10 - 753.19 | CYSTIC KIDNEY DISEASE UNSPECIFIED - OTHER SPECIFIED CYSTIC KIDNEY DISEASE |
| 785.9 | OTHER SYMPTOMS INVOLVING CARDIOVASCULAR SYSTEM |
| 789.00 - 789.09 | ABDOMINAL PAIN UNSPECIFIED SITE - ABDOMINAL PAIN OTHER SPECIFIED SITE |
| 789.30 - 789.39 | ABDOMINAL OR PELVIC SWELLING MASS OR LUMP UNSPECIFIED SITE - ABDOMINAL OR PELVIC SWELLING MASS OR LUMP OTHER SPECIFIED SITE |
| 789.40 - 789.49 | ABDOMINAL RIGIDITY UNSPECIFIED SITE - ABDOMINAL RIGIDITY OTHER SPECIFIED SITE |
| 794.4 | NONSPECIFIC ABNORMAL RESULTS OF FUNCTION STUDY OF KIDNEY |
| 996.73 | OTHER COMPLICATIONS DUE TO RENAL DIALYSIS DEVICE IMPLANT AND GRAFT |
| 996.74 | OTHER COMPLICATIONS DUE TO OTHER VASCULAR DEVICE IMPLANT AND GRAFT |
| 996.81 | COMPLICATIONS OF TRANSPLANTED KIDNEY |
| 996.82 | COMPLICATIONS OF TRANSPLANTED LIVER |
| 996.83 | COMPLICATIONS OF TRANSPLANTED HEART |
| 996.84 | COMPLICATIONS OF TRANSPLANTED LUNG |
| 996.86 | COMPLICATIONS OF TRANSPLANTED PANCREAS |
| 996.87 | COMPLICATIONS OF TRANSPLANTED ORGAN INTESTINE |
| 996.89 | COMPLICATIONS OF OTHER SPECIFIED TRANSPLANTED ORGAN |
| 997.71 - 997.72 | VASCULAR COMPLICATIONS OF MESENTERIC ARTERY - VASCULAR COMPLICATIONS OF RENAL ARTERY |
| 999.2 | OTHER VASCULAR COMPLICATIONS OF MEDICAL CARE NOT ELSEWHERE CLASSIFIED |
| V42.0 | KIDNEY REPLACED BY TRANSPLANT |

| | |
|--------|---|
| V42.7 | LIVER REPLACED BY TRANSPLANT |
| V42.83 | PANCREAS REPLACED BY TRANSPLANT |
| V42.84 | ORGAN OR TISSUE REPLACED BY TRANSPLANT INTESTINES |
| V42.89 | OTHER SPECIFIED ORGAN OR TISSUE REPLACED BY TRANSPLANT |
| V58.44 | AFTERCARE FOLLOWING ORGAN TRANSPLANT |

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

| | |
|-----------------|--|
| 440.0 | ATHEROSCLEROSIS OF AORTA |
| 440.20 - 440.29 | ATHEROSCLEROSIS OF NATIVE ARTERIES OF THE EXTREMITIES UNSPECIFIED - OTHER ATHEROSCLEROSIS OF NATIVE ARTERIES OF THE EXTREMITIES |
| 440.30 - 440.32 | ATHEROSCLEROSIS OF UNSPECIFIED BYPASS GRAFT OF THE EXTREMITIES - ATHEROSCLEROSIS OF NONAUTOLOGOUS BIOLOGICAL BYPASS GRAFT OF THE EXTREMITIES |
| 441.00 - 441.9 | DISSECTION OF AORTA ANEURYSM UNSPECIFIED SITE - AORTIC ANEURYSM OF UNSPECIFIED SITE WITHOUT RUPTURE |
| 442.2 | ANEURYSM OF ILIAC ARTERY |
| 443.0 - 443.1 | RAYNAUD'S SYNDROME - THROMBOANGIITIS OBLITERANS (BUERGER'S DISEASE) |
| 443.22 | DISSECTION OF ILIAC ARTERY |
| 443.29 | DISSECTION OF OTHER ARTERY |
| 443.9 | PERIPHERAL VASCULAR DISEASE UNSPECIFIED |
| 444.0 | EMBOLISM AND THROMBOSIS OF ABDOMINAL AORTA |
| 444.1 | EMBOLISM AND THROMBOSIS OF THORACIC AORTA |
| 444.81 | EMBOLISM AND THROMBOSIS OF ILIAC ARTERY |
| 445.02 | ATHEROEMBOLISM OF LOWER EXTREMITY |
| 451.81 | PHLEBITIS AND THROMBOPHLEBITIS OF ILIAC VEIN |
| 453.2 | OTHER VENOUS EMBOLISM AND THROMBOSIS OF INFERIOR VENA CAVA |
| 729.5 | PAIN IN LIMB |
| 747.20 - 747.29 | |

CONGENITAL ANOMALY OF AORTA
UNSPECIFIED - OTHER CONGENITAL
ANOMALIES OF AORTA

747.40 - 747.49

CONGENITAL ANOMALY OF GREAT VEINS
UNSPECIFIED - OTHER ANOMALIES OF GREAT
VEINS

747.60 - 747.62

ANOMALY OF THE PERIPHERAL VASCULAR
SYSTEM UNSPECIFIED SITE - RENAL VESSEL
ANOMALY

785.9

OTHER SYMPTOMS INVOLVING
CARDIOVASCULAR SYSTEM

789.30 - 789.39

ABDOMINAL OR PELVIC SWELLING MASS OR
LUMP UNSPECIFIED SITE - ABDOMINAL OR
PELVIC SWELLING MASS OR LUMP OTHER
SPECIFIED SITE

996.73

OTHER COMPLICATIONS DUE TO RENAL
DIALYSIS DEVICE IMPLANT AND GRAFT

996.74

OTHER COMPLICATIONS DUE TO OTHER
VASCULAR DEVICE IMPLANT AND GRAFT

996.81

COMPLICATIONS OF TRANSPLANTED KIDNEY

996.82

COMPLICATIONS OF TRANSPLANTED LIVER

V58.49

OTHER SPECIFIED AFTERCARE FOLLOWING
SURGERY

V72.83

OTHER SPECIFIED PRE-OPERATIVE
EXAMINATION

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

607.3

PRIAPISM

607.82

VASCULAR DISORDERS OF PENIS

607.89

OTHER SPECIFIED DISORDERS OF PENIS

926.0

CRUSHING INJURY OF EXTERNAL
GENITALIA

996.30

MECHANICAL COMPLICATION OF
UNSPECIFIED GENITOURINARY DEVICE
IMPLANT AND GRAFT

996.31

MECHANICAL COMPLICATION DUE TO
URETHRAL (INDWELLING) CATHETER

996.39

OTHER MECHANICAL COMPLICATION OF
GENITOURINARY DEVICE IMPLANT AND
GRAFT

5. Hemodialysis Flow Studies (90940)

447.0

ARTERIOVENOUS FISTULA ACQUIRED

V45.11

RENAL DIALYSIS STATUS

6. Duplex scan of hemodialysis access (Doppler Flow Studies (93990)

A-V fistula 447.0; V45.11, 996.1, 996.62, 996.74

In preparation for creating a dialysis fistula use ICD-9 code 585.6
(chronic renal failure)

| | |
|--------|--|
| 447.0 | ARTERIOVENOUS FISTULA ACQUIRED |
| 585.6 | END STAGE RENAL DISEASE |
| 996.1 | MECHANICAL COMPLICATION OF OTHER VASCULAR DEVICE IMPLANT AND GRAFT |
| 996.62 | INFECTION AND INFLAMMATORY REACTION DUE TO OTHER VASCULAR DEVICE IMPLANT AND GRAFT |
| 996.74 | OTHER COMPLICATIONS DUE TO OTHER VASCULAR DEVICE IMPLANT AND GRAFT |
| V45.11 | RENAL DIALYSIS STATUS |

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 585.4 or 585.5 or 585.6

| | |
|--------|--|
| 585.4 | CHRONIC KIDNEY DISEASE, STAGE IV (SEVERE) |
| 585.5 | CHRONIC KIDNEY DISEASE, STAGE V |
| 585.6 | END STAGE RENAL DISEASE |
| V72.83 | OTHER SPECIFIED PRE-OPERATIVE EXAMINATION |

Diagnoses that Support Medical Necessity

xx000

ICD-9 Codes that DO NOT Support Medical Necessity

XX000 Not Applicable

ICD-9 Codes that DO NOT Support Medical Necessity Asterisk Explanation

Diagnoses that DO NOT Support Medical Necessity

xx000

General Information

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.

Appendices

Utilization Guidelines

A. Training and Certification

1. The accuracy of non-invasive vascular diagnostic studies depends on the knowledge, skill, and experience of the technologist and interpreter. Consequently, the physician performing and/or interpreting the study must be capable of demonstrating documented training and experience and maintain any applicable documentation. A vascular diagnostic study may be personally performed by a physician or a technologist.

The GAO Report to Congressional Committees entitled Medicare Ultrasound Procedures. Consideration of Payment Reforms and Technician Qualifications Requirements states that “Findings from several peer-reviewed studies, the Medicare Payment Advisory Commission, and ultrasound-related professional organizations support requiring that sonographers either have credentials or operate in facilities that are accredited, where specific quality standards apply. In some localities and practice settings, CMS or its contractors have required that sonographers either be credentialed or work in an accredited facility.” (GAO-07-734)

2. All non-invasive vascular diagnostic studies must be performed under at least one of the following settings:

- a. performed by a physician who is competent in diagnostic vascular studies or under the general supervision of physicians who have demonstrated minimum entry level competency by being credentialed in vascular technology, or
- b. performed by a technician who is certified in vascular technology, or
- c. performed in facilities with laboratories accredited in vascular technology.

3. 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 (NCCA) or the International Standards Organization (ISO) 17024).

4. 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

5. Transcutaneous Oxygen measurement (93922-93923) may be performed by personnel possessing the following credentials obtained from the National Board of Diving and Hyperbaric Medicine Technology (NBDHMT):

- a. Certified Hyperbaric Technologist (CHT)
- b. Certified Hyperbaric Registered Nurse (CHRN)

These requirements will be necessary to payment of services provided beginning 05/01/2010.

B. The following agencies are recognized as credentialing organizations:

American Registry of Diagnostic Medical Sonography (ARDMS)

<http://www.ardms.org/aboutardms/overview.htm>

Registered Diagnostic Medical Sonographer (RDMS)

Registered Diagnostic Cardiac Sonographer (RDMS)

Registered Vascular Technologist (RVT)

Accreditation Organizations for Laboratories:

Intersocietal Commission for the Accreditation of Vascular Laboratories (ICAVL)

<http://www.icavl.org>

American Registry of Radiologic Technologist (ARRT)

<http://www.rrt.org>

The American College of Radiology

Vascular Ultrasound Accreditation

<http://www.acr.org/accreditation>

Cardiovascular Credentialing International (CCI)

<http://www.cci-online.org>

Registered Vascular Specialist

General Supervision means 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 nonphysician personnel who actually performs the diagnostic procedure and the maintenance of the necessary equipment and supplies are the continuing responsibility of the physician.

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 bypass

The 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 in 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 CMS-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 Asymptomatic 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:

Wisconsin: 09/26/2008

Illinois: 09/17/2008

Michigan: 09/24/2008

Minnesota: 09/11/2008

Iowa 10/16/2008

Missouri 10/17/2008

Kansas 10/16/2008

Nebraska 10/16/2008

Legacy A Notice

All states listed under primary jurisdiction 09/10/2008

Start Date of Comment Period

10/17/2008

End Date of Comment Period

12/02/2008

Start Date of Notice Period

03/01/2010

Revision History Number

14

Revision History Explanation

Correctly removed contract number 05392 effective 8/1/2009, as it is being combined with contractor number 05302 (WPS Part B MAC Missouri - Entire State.) JS 07/30/09

08/08/2009 - This policy was updated by the ICD-9 2009-2010 Annual Update.

09/08/2009 Sent to approved due to ICD-9 2008-2009 Annual Update.

10/01/2009 ICD-9 update and addition of ICD-9 code 440.0 for CPT codes 93978 - 93979

03/01/2010, Added Certification criteria for codes 93922-93923

8/1/2010 - The description for Bill Type Code 11 was changed

8/1/2010 - The description for Bill Type Code 12 was changed

8/1/2010 - The description for Bill Type Code 13 was changed

8/1/2010 - The description for Bill Type Code 14 was changed

8/1/2010 - The description for Bill Type Code 18 was changed

8/1/2010 - The description for Bill Type Code 21 was changed

8/1/2010 - The description for Bill Type Code 22 was changed

8/1/2010 - The description for Bill Type Code 23 was changed

8/1/2010 - The description for Bill Type Code 71 was changed

8/1/2010 - The description for Bill Type Code 72 was changed

8/1/2010 - The description for Bill Type Code 85 was changed

8/1/2010 - The description for Revenue code 0402 was changed

8/1/2010 - The description for Revenue code 0920 was changed

8/1/2010 - The description for Revenue code 0921 was changed

8/1/2010 - The description for Revenue code 0929 was changed

Reason for Change

Last Reviewed On Date

01/25/2010

Related Documents

This LCD has no Related Documents.

LCD Attachments

[Coding and Billing Guidelines \(PDF - 40,073 bytes\)](#)

All Versions

Updated on 08/01/2010 with effective dates 05/01/2010 - N/A

Updated on 08/01/2010 with effective dates 05/01/2010 - N/A

Updated on 02/04/2010 with effective dates 05/01/2010 - N/A

Updated on 10/07/2009 with effective dates 08/01/2009 - 04/30/2010

Updated on 09/25/2009 with effective dates 08/01/2009 - N/A

Updated on 09/08/2009 with effective dates 08/01/2009 - N/A

Updated on 07/30/2009 with effective dates 08/01/2009 - N/A

Updated on 07/30/2009 with effective dates 05/18/2009 - 07/31/2009

Updated on 07/17/2009 with effective dates 05/18/2009 - N/A

Updated on 04/15/2009 with effective dates 05/18/2009 - N/A