# Identify ischemic stroke

* ICD-9 codes 433-434, 436 have been validated1
* We will include corresponding ICD 10 codes: I63, I63.x, I63.xx, I63.xxx except I63.6 (Cerebral infarction due to cerebral venous thrombosis, nonpyogenic), and I67.89 (Other cerebrovascular disease)

# Exclusion criteria

## Exclude large artery stroke

Occlusive or stenotic (≥ 50% stenosis or < 50% stenosis with plaque ulceration or thrombosis) vascular disease judged to be due to atherosclerosis in the clinically-relevant extracranial or intracranial arteries

**Table 1.** Operational plan to define large artery stroke

|  |  |  |
| --- | --- | --- |
| **Classification modality** | **Definition** | **Data source** |
| Diagnostic tests | Cortical lesions greater than 1.5 cm in diameter on CT or MRI | Neuroimaging report |
|  | Cerebellar lesions greater than 1.5 cm in diameter on CT or MRI | Neuroimaging report |
|  | Brain stem infarcts greater than 1.5 cm in diameter on CT or MRI | Neuroimaging report |
|  | Subcortical hemispheric infarcts greater than 1.5 cm in diameter on CT or MRI | Neuroimaging report |
|  | Duplex imaging or arteriography of a stenosis of greater than 50% of an appropriate intracranial or extracranial artery | Ultrasound reports, arteriography reports  ICD 10 codes for carotid stenosis? |
| Procedural interventions | Carotid endarterectomy  Carotid stenting | ICD 10 and CPT codes |
| Treatments | New initiation of aspirin, clopidogrel, or dipyridamole | Medication list at the time of discharge in comparison to an outpatient medication list prior to the admission |

## Exclude lacunar stroke

A single acute infarct within the territory of penetrating arteries in the brainstem, deep gray matter, or internal capsule that is ≤ 20mm in its greatest diameter and there is no known focal pathology in the parent artery at the site of the origin of the penetrating artery

**Table 2:** Operational plan to define lacunar stroke

|  |  |  |
| --- | --- | --- |
| **Classification modality** | **Definition** | **Data source** |
| Diagnostic tests | * Any ischemic stroke in the brainstem, deep gray matter, or internal capsule that is ≤ 20mm in its greatest diameter | Neuro imaging report – key word search  Challenges:   * No billing codes for lacunar stroke exist * Secondary prevention for lacunar stroke is risk factor management, and there is a lot of overlap between the risk factors for lacunar stroke and other subtypes |

# Identify Cardioembolism (TOAST)

The classification of stroke as cardioembolic requires the presence of 1+ cardiac sources for an embolus using list below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| High-risk sources |  | Data Sources |  | Time window of feature (relative to stroke) |
|  | Mechanical prosthetic valve | ICD codes, CPT codes |  | Before or up to 90d after stroke |
|  | Mitral stenosis with atrial fibrillation | ICD codes | Echo report | Before or up to 90d after stroke |
|  | Atrial fibrillation (other than lone atrial fibrillation) | ICD codes |  | Before or up to 90d after stroke |
|  | Left atrial/atrial appendage thrombus |  | Echo report | 90d before or after stroke |
|  | Sick sinus syndrome | ICD codes |  | Before or up to 90d after stroke |
|  | Recent myocardial infarction (<4weeks) | ICD codes |  | <=4 weeks prior by definition |
|  | Left ventricular thrombus | ICD codes | Echo report | Before or up to 90d after stroke |
|  | Dilated cardiomyopathy | ICD codes |  | Before or up to 90d after stroke |
|  | Akinetic left ventricular segment |  | Echo report | Before or up to 90d after stroke |
|  | Atrial myxoma | ICD codes |  | Before or up to 90d after stroke |
|  | Infective endocarditis | ICD codes |  | 90d before or after stroke |
| Medium-risk sources |  |  |  |  |
|  | Mitral valve prolapse | ICD codes | Echo report | Before or up to 90d after stroke |
|  | Mitral annulus calcification | ICD codes | Echo report | Before or up to 90d after stroke |
|  | Mitral stenosis without atrial fibrillation | ICD codes | Echo report | Before or up to 90d after stroke |
|  | Left atrial turbulence (smoke) | ICD codes | Echo report | 90d before or after stroke |
|  | Atrial septal aneurysm | ICD codes | Echo report | Before or up to 90d after stroke |
|  | Patent foramen ovale | ICD codes | Echo report | Before or up to 90d after stroke |
|  | Atrial flutter | ICD codes |  | Before or up to 90d after stroke |
|  | Lone atrial fibrillation | ICD codes |  | Before or up to 90d after stroke |
|  | Bioprosthetic cardiac valve | ICD codes, CPT codes |  | Before or up to 90d after stroke |
|  | Nonbacterial thrombotic endocarditis | ICD codes |  | 90d before or after stroke |
|  | Congestive heart failure | ICD codes |  | Before or up to 90d after stroke |
|  | Hypokinetic left ventricular segment |  | Echo report | Before or up to 90d after stroke |
|  | Myocardial infarction (>4 weeks, <6 months) | ICD codes, CPT codes |  | Between 6 mos to 4 weeks prior by definition |

**Exclude** any other potential etiologies of ischemic stroke

* Coronary angiogram: use ICD codes, CPT codes
* Peripheral endovascular procedure: use ICD codes (will refer to Elizabeth Wang’s codes)
* Trauma (TBD)
* Drug overdose: use ICD codes

**Final EHR phenotype:**

Ischemic strokes that have high probability of being defined as “cardioembolic stroke” **in presence of AF** according to the TOAST criteria

# Diagnostic codes for cardioembolic sources

## High-risk sources

### Mechanical prosthetic valve or Bioprosthetic cardiac valve

|  |  |  |
| --- | --- | --- |
| **Mechanical prosthetic valve or Bioprosthetic cardiac valve** | | |
| **Code Type** | **Code** | **Code Description** |
| CPT | 33361 | Transcatheter aortic valve replacement (TAVR/TAVI) with prosthetic valve; percutaneous femoral artery approach |
|  | 33362 | Transcatheter aortic valve replacement (TAVR/TAVI) with prosthetic valve; open femoral artery approach |
|  | 33363 | Transcatheter aortic valve replacement (TAVR/TAVI) with prosthetic valve; open axillary artery approach |
|  | 33365 | Transcatheter aortic valve replacement (TAVR/TAVI) with prosthetic valve; transaortic approach (eg, median sternotomy, mediastinotomy) |
|  | 33366 | Transcatheter aortic valve replacement (TAVR/TAVI) with prosthetic valve; transapical exposure (eg, left thoracotomy) |
|  | 33405 | Replacement, aortic valve, with cardiopulmonary bypass; with prosthetic valve other than homograft or stentless valve |
|  | 33411 | Replacement, aortic valve; with aortic annulus enlargement, noncoronary cusp |
|  | 33412 | Replacement, aortic valve; with transventricular aortic annulus enlargement (Konno procedure) |
|  | 33496 | Repair of non-structural prosthetic valve dysfunction with cardiopulmonary bypass (separate procedure) |
| ICD9 Procedure Code | 35.05 | Endovascular replacement of aortic valve |
|  | 35.06 | Transapical replacement of aortic valve |
|  | 35.20 | Open and other replacement of unspecified heart valve |
|  | 35.22 | Other replacement of aortic valve |
|  | 35.24 | Other replacement of mitral valve |
|  | 35.28 | Open and other replacement of tricuspid valve |
|  | 35.97 | Percutaneous mitral valve repair with implant |
| ICD10 Procedure Code | 02RF0KZ | Replacement of Aortic Valve with Nonautologous Tissue Substitute, Open Approach |
|  | 02RF3JH | Replacement of Aortic Valve with Synthetic Substitute, Transapical, Percutaneous Approach |
|  | 02RF3JZ | Replacement of Aortic Valve with Synthetic Substitute, Percutaneous Approach |
|  | 02RF3KH | Replacement of Aortic Valve with Nonautologous Tissue Substitute, Transapical, Percutaneous Approach |
|  | 02RF3KZ | Replacement of Aortic Valve with Nonautologous Tissue Substitute, Percutaneous Approach |
|  | 02RF4KZ | Replacement of Aortic Valve with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach |
|  | 02RG0KZ | Replacement of Mitral Valve with Nonautologous Tissue Substitute, Open Approach |
|  | 02RG3KZ | Replacement of Mitral Valve with Nonautologous Tissue Substitute, Percutaneous Approach |
|  | 02RG4KZ | Replacement of Mitral Valve with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach |
|  | 02RJ0KZ | Replacement of Tricuspid Valve with Nonautologous Tissue Substitute, Open Approach |
|  | 02RJ3KZ | Replacement of Tricuspid Valve with Nonautologous Tissue Substitute, Percutaneous Approach |
|  | 02RJ4KZ | Replacement of Tricuspid Valve with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach |
|  | 02UG3JZ | Supplement Mitral Valve with Synthetic Substitute, Percutaneous Approach |
| ICD9 | 996.02 | Mechanical complication due to heart valve prosthesis |
|  | V43.22 | Organ or tissue replaced by other means, fully implantable artificial heart |
|  | V43.3 | Heart valve replaced by other means |
| ICD10 | T82.0 | Mechanical complication of heart valve prosthesis |
|  | T82.01 | Breakdown (mechanical) of heart valve prosthesis |
|  | T82.01XA | Breakdown (mechanical) of heart valve prosthesis, initial encounter |
|  | T82.01XD | Breakdown (mechanical) of heart valve prosthesis, subsequent encounter |
|  | T82.01XS | Breakdown (mechanical) of heart valve prosthesis, sequela |
|  | T82.09 | Other mechanical complication of heart valve prosthesis |
|  | T82.09XA | Other mechanical complication of heart valve prosthesis, initial encounter |
|  | T82.09XD | Other mechanical complication of heart valve prosthesis, subsequent encounter |
|  | T82.09XS | Other mechanical complication of heart valve prosthesis, sequela |
|  | T82.2 | Mechanical complication of coronary artery bypass graft and biological heart valve graft |
|  | T82.22 | Mechanical complication of biological heart valve graft |
|  | T82.221 | Breakdown (mechanical) of biological heart valve graft |
|  | T82.221A | Breakdown (mechanical) of biological heart valve graft, initial encounter |
|  | T82.221D | Breakdown (mechanical) of biological heart valve graft, subsequent encounter |
|  | T82.221S | Breakdown (mechanical) of biological heart valve graft, sequela |
|  | T82.228 | Other mechanical complication of biological heart valve graft |
|  | T82.228A | Other mechanical complication of biological heart valve graft, initial encounter |
|  | T82.228D | Other mechanical complication of biological heart valve graft, subsequent encounter |
|  | T82.228S | Other mechanical complication of biological heart valve graft, sequela |
|  | Z95.2 | Presence of prosthetic heart valve |
|  | Z95.812 | Presence of fully implantable artificial heart |

### Mitral stenosis

|  |  |  |
| --- | --- | --- |
| **Mitral stenosis** | | |
| ICD9 | 394.0 | Mitral stenosis |
|  | 394.2 | Mitral stenosis with insufficiency |
|  | 396.0 | Mitral valve stenosis and aortic valve stenosis |
|  | 396.1 | Mitral valve stenosis and aortic valve insufficiency |
|  | 746.5 | Congenital mitral stenosis |
| ICD10 | I05.0 | Rheumatic mitral stenosis |
|  | I05.2 | Rheumatic mitral stenosis with insufficiency |
|  | I34.2 | Nonrheumatic mitral (valve) stenosis |
|  | Q23.2 | Congenital mitral stenosis |

### Atrial fibrillation (other than lone atrial fibrillation)

|  |  |  |
| --- | --- | --- |
| **Atrial fibrillation (lone, paroxysmal, persistent, permanent)** | | |
| ICD9 | 427.3 | Atrial fibrillation and flutter |
|  | 427.31 | Atrial fibrillation |
| ICD10 | I48 | Atrial fibrillation and flutter |
|  | I48.0 | Paroxysmal atrial fibrillation |
|  | I48.1 | Persistent atrial fibrillation |
|  | I48.2 | Chronic atrial fibrillation |
|  | I48.9 | Unspecified atrial fibrillation and atrial flutter |
|  | I48.91 | Unspecified atrial fibrillation |

### Left atrial/atrial appendage thrombus (or ‘smoke’)

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| --- | --- | --- |
| **Left atrial/atrial appendage thrombus (or ‘smoke’)** | | |
| ICD10 | I23.6 | Thrombosis of atrium, auricular appendage, and ventricle as current complications following acute myocardial infarction |

### Sick sinus syndrome

|  |  |  |
| --- | --- | --- |
| **Sick sinus syndrome** | | |
| ICD9 | 427.81 | Sinoatrial dysfunction |
| ICD10 | I49.5 | Sick sinus syndrome |

### Recent myocardial infarction (<4weeks)

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| --- | --- | --- |
| **Recent myocardial infarction (<4weeks)** | | |
| ICD9 | 410 | Acute myocardial infarction |
|  | 410.0 | Acute myocardial infarction, of anterolateral wall |
|  | 410.01 | Acute myocardial infarction, of anterolateral wall, initial episode of care |
|  | 410.1 | Acute myocardial infarction, of other anterior wall |
|  | 410.11 | Acute myocardial infarction, of other anterior wall, initial episode of care |
|  | 410.21 | Acute myocardial infarction, of inferolateral wall, initial episode of care |
|  | 410.3 | Acute myocardial infarction, of inferoposterior wall |
|  | 410.31 | Acute myocardial infarction, of inferoposterior wall, initial episode of care |
|  | 410.4 | Acute myocardial infarction, of other inferior wall |
|  | 410.41 | Acute myocardial infarction, of other inferior wall, initial episode of care |
|  | 410.51 | Acute myocardial infarction, of other lateral wall, initial episode of care |
|  | 410.6 | Acute myocardial infarction, true posterior wall infarction |
|  | 410.61 | Acute myocardial infarction, true posterior wall infarction, initial episode of care |
|  | 410.7 | Acute myocardial infarction, subendocardial infarction |
|  | 410.71 | Acute myocardial infarction, subendocardial infarction, initial episode of care |
|  | 410.8 | Acute myocardial infarction, of other specified sites |
|  | 410.81 | Acute myocardial infarction, of other specified sites, initial episode of care |
|  | 410.9 | Acute myocardial infarction, unspecified site |
|  | 410.91 | Acute myocardial infarction, unspecified site, initial episode of care |
| ICD10 | I21 | St elevation (stemi) and non-st elevation (nstemi) myocardial infarction |
|  | I21.0 | St elevation (stemi) myocardial infarction of anterior wall |
|  | I21.01 | St elevation (stemi) myocardial infarction involving left main coronary artery |
|  | I21.02 | St elevation (stemi) myocardial infarction involving left anterior descending coronary artery |
|  | I21.09 | St elevation (stemi) myocardial infarction involving other coronary artery of anterior wall |
|  | I21.1 | St elevation (stemi) myocardial infarction of inferior wall |
|  | I21.11 | St elevation (stemi) myocardial infarction involving right coronary artery |
|  | I21.19 | St elevation (stemi) myocardial infarction involving other coronary artery of inferior wall |
|  | I21.2 | St elevation (stemi) myocardial infarction of other sites |
|  | I21.21 | St elevation (stemi) myocardial infarction involving left circumflex coronary artery |
|  | I21.29 | St elevation (stemi) myocardial infarction involving other sites |
|  | I21.3 | St elevation (stemi) myocardial infarction of unspecified site |
|  | I21.4 | Non-st elevation (nstemi) myocardial infarction |

### Left ventricular thrombus (or ‘smoke’)

|  |  |  |
| --- | --- | --- |
| **Left ventricular thrombus (or ‘smoke’)** | | |
| ICD10 | I23.6 | Thrombosis of atrium, auricular appendage, and ventricle as current complications following acute myocardial infarction |
|  | I51.3 | Intracardiac thrombosis, not elsewhere classified |

### Dilated cardiomyopathy

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| --- | --- | --- |
| **Dilated cardiomyopathy** | | |
| ICD9 | 425.4 | Other primary cardiomyopathies |
| ICD10 | I42.0 | Dilated cardiomyopathy |

### Atrial myxoma

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| --- | --- | --- |
| **Atrial myxoma** | | |
| ICD9 | 212.7 | Benign neoplasm of heart |
| ICD10 | D15.1 | Benign neoplasm of heart |

### Infective Endocarditis

|  |  |  |
| --- | --- | --- |
| **Infective Endocarditis** | | |
| ICD9 | 391.1 | Acute rheumatic endocarditis |
|  | 421 | Acute and subacute endocarditis |
|  | 421.9 | Acute endocarditis, unspecified |
|  | 424.9 | Endocarditis, valve unspecified |
|  | 424.90 | Endocarditis, valve unspecified, unspecified cause |
|  | 424.91 | Endocarditis in diseases classified elsewhere |
|  | 424.99 | Other endocarditis, valve unspecified |
| ICD10 | I01.1 | Acute rheumatic endocarditis |
|  | I33 | Acute and subacute endocarditis |
|  | I33.9 | Acute and subacute endocarditis, unspecified |
|  | I38 | Endocarditis, valve unspecified |
|  | I39 | Endocarditis and heart valve disorders in diseases classified elsewhere |
|  | M32.11 | Endocarditis in systemic lupus erythematosus |

## Medium-risk sources

### Mitral valve prolapse

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| --- | --- | --- |
| **Mitral valve prolapse** | | |
| ICD10 | I34.1 | Nonrheumatic mitral (valve) prolapse |

### Mitral annulus calcification

|  |  |  |
| --- | --- | --- |
| **Mitral annulus calcification** | | |
| ICD10 | I34.8 | Other nonrheumatic mitral valve disorders |

### Mitral stenosis without atrial fibrillation

|  |  |  |
| --- | --- | --- |
| **Mitral stenosis** | | |
| ICD9 | 394.0 | Mitral stenosis |
|  | 394.2 | Mitral stenosis with insufficiency |
|  | 396.0 | Mitral valve stenosis and aortic valve stenosis |
|  | 396.1 | Mitral valve stenosis and aortic valve insufficiency |
|  | 746.5 | Congenital mitral stenosis |
| ICD10 | I05.0 | Rheumatic mitral stenosis |
|  | I05.2 | Rheumatic mitral stenosis with insufficiency |
|  | I34.2 | Nonrheumatic mitral (valve) stenosis |
|  | I34.8 | Other nonrheumatic mitral valve disorders |
|  | Q23.2 | Congenital mitral stenosis |

### Left atrial turbulence (smoke)

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| --- | --- | --- |
| **Left atrial turbulence (smoke)** | | |
| ICD10 | I23.6 | Thrombosis of atrium, auricular appendage, and ventricle as current complications following acute myocardial infarction |

### Atrial septal aneurysm

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| --- | --- | --- |
| **Atrial septal aneurysm** | | |
| ICD9 | 414.1 | Aneurysm of heart |
|  | 414.10 | Aneurysm of heart (wall) |
|  | 414.19 | Other aneurysm of heart |
| ICD10 | I23.1 | Atrial septal defect as current complication following acute myocardial infarction |
|  | I25.3 | Aneurysm of heart |

### Patent foramen ovale

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| --- | --- | --- |
| **Patent foramen ovale** | | |
| ICD10 | Q21.1 | Atrial septal defect |

### Atrial flutter

|  |  |  |
| --- | --- | --- |
| **Atrial flutter** | | |
| ICD9 | 427.3 | Atrial fibrillation and flutter |
|  | 427.32 | Atrial flutter |
| ICD10 | I48 | Atrial fibrillation and flutter |
|  | I48.3 | Typical atrial flutter |
|  | I48.4 | Atypical atrial flutter |
|  | I48.9 | Unspecified atrial fibrillation and atrial flutter |
|  | I48.92 | Unspecified atrial flutter |

### Lone atrial fibrillation

|  |  |  |
| --- | --- | --- |
| **Lone atrial fibrillation** | | |
| ICD9 | 427.31 | Atrial fibrillation |
| ICD10 | I48.9 | Unspecified atrial fibrillation and atrial flutter |
|  | I48.91 | Unspecified atrial fibrillation |

### Bioprosthetic cardiac valve

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| --- | --- | --- |
| **Bioprosthetic cardiac valve** | | |
| CPT | 33361 | Transcatheter aortic valve replacement (TAVR/TAVI) with prosthetic valve; percutaneous femoral artery approach |
|  | 33362 | Transcatheter aortic valve replacement (TAVR/TAVI) with prosthetic valve; open femoral artery approach |
|  | 33363 | Transcatheter aortic valve replacement (TAVR/TAVI) with prosthetic valve; open axillary artery approach |
|  | 33365 | Transcatheter aortic valve replacement (TAVR/TAVI) with prosthetic valve; transaortic approach (eg, median sternotomy, mediastinotomy) |
|  | 33366 | Transcatheter aortic valve replacement (TAVR/TAVI) with prosthetic valve; transapical exposure (eg, left thoracotomy) |
|  | 33405 | Replacement, aortic valve, with cardiopulmonary bypass; with prosthetic valve other than homograft or stentless valve |
|  | 33406 | Replacement, aortic valve, with cardiopulmonary bypass; with allograft valve (freehand) |
|  | 33410 | Replacement, aortic valve, with cardiopulmonary bypass; with stentless tissue valve |
|  | 33411 | Replacement, aortic valve; with aortic annulus enlargement, noncoronary cusp |
|  | 33412 | Replacement, aortic valve; with transventricular aortic annulus enlargement (Konno procedure) |
|  | 33413 | Replacement, aortic valve; by translocation of autologous pulmonary valve with allograft replacement of pulmonary valve (Ross procedure) |
| ICD9 Procedure Code | 35.05 | Endovascular replacement of aortic valve |
|  | 35.06 | Transapical replacement of aortic valve |
|  | 35.21 | Open and other replacement of aortic valve with tissue graft |
|  | 35.22 | Other replacement of aortic valve |
|  | 35.23 | Replacement of mitral valve with tissue graft |
|  | 35.24 | Other replacement of mitral valve |
|  | 35.27 | Open and other replacement of tricuspid valve with tissue graft |
|  | 35.97 | Percutaneous mitral valve repair with implant |
| ICD10 Procedure Code | 02RF37Z | Replacement of Aortic Valve with Autologous Tissue Substitute, Percutaneous Approach |
|  | 02RF38Z | Replacement of Aortic Valve with Zooplastic Tissue, Percutaneous Approach |
|  | X2RF332 | Replacement of Aortic Valve using Zooplastic Tissue, Rapid Deployment Technique, Percutaneous Approach, New Technology Group 2 |
|  | 02RF37H | Replacement of Aortic Valve with Autologous Tissue Substitute, Transapical, Percutaneous Approach |
|  | 02RF38H | Replacement of Aortic Valve with Zooplastic Tissue, Transapical, Percutaneous Approach |
|  | 02RF07Z | Replacement of Aortic Valve with Autologous Tissue Substitute, Open Approach |
|  | 02RF08Z | Replacement of Aortic Valve with Zooplastic Tissue, Open Approach |
|  | 02RF47Z | Replacement of Aortic Valve with Autologous Tissue Substitute, Percutaneous Endoscopic Approach |
|  | 02RF48Z | Replacement of Aortic Valve with Zooplastic Tissue, Percutaneous Endoscopic Approach |
|  | X2RF032 | Replacement of Aortic Valve using Zooplastic Tissue, Rapid Deployment Technique, Open Approach, New Technology Group 2 |
|  | X2RF432 | Replacement of Aortic Valve using Zooplastic Tissue, Rapid Deployment Technique, Percutaneous Endoscopic Approach, New Technology Group 2 |
|  | 2RG07Z | Replacement of Mitral Valve with Autologous Tissue Substitute, Open Approach |
|  | 02RG08Z | Replacement of Mitral Valve with Zooplastic Tissue, Open Approach |
|  | 02RG37Z | Replacement of Mitral Valve with Autologous Tissue Substitute, Percutaneous Approach |
|  | 02RG38Z | Replacement of Mitral Valve with Zooplastic Tissue, Percutaneous Approach |
|  | 02RG47Z | Replacement of Mitral Valve with Autologous Tissue Substitute, Percutaneous Endoscopic Approach |
|  | 02RG48Z | Replacement of Mitral Valve with Zooplastic Tissue, Percutaneous Endoscopic Approach |
|  | 02RJ07Z | Replacement of Tricuspid Valve with Autologous Tissue Substitute, Open Approach |
|  | 02RJ08Z | Replacement of Tricuspid Valve with Zooplastic Tissue, Open Approach |
|  | 02RJ37Z | Replacement of Tricuspid Valve with Autologous Tissue Substitute, Percutaneous Approach |
|  | 02RJ38Z | Replacement of Tricuspid Valve with Zooplastic Tissue, Percutaneous Approach |
|  | 02RJ47Z | Replacement of Tricuspid Valve with Autologous Tissue Substitute, Percutaneous Endoscopic Approach |
|  | 02RJ48Z | Replacement of Tricuspid Valve with Zooplastic Tissue, Percutaneous Endoscopic Approach |
| ICD9 | V42.2 | Heart valve replaced by transplant |
| ICD10 | Z95.3 | Presence of xenogenic heart valve |
|  | Z95.4 | Presence of other heart-valve replacement |

### Nonbacterial thrombotic endocarditis

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| --- | --- | --- |
| **Nonbacterial thrombotic endocarditis** | | |
| ICD9 | 391.1 | Acute rheumatic endocarditis |
|  | 421 | Acute and subacute endocarditis |
|  | 421.9 | Acute endocarditis, unspecified |
|  | 424.9 | Endocarditis, valve unspecified |
|  | 424.90 | Endocarditis, valve unspecified, unspecified cause |
|  | 424.91 | Endocarditis in diseases classified elsewhere |
|  | 424.99 | Other endocarditis, valve unspecified |
| ICD10 | I01.1 | Acute rheumatic endocarditis |
|  | I33 | Acute and subacute endocarditis |
|  | I33.9 | Acute and subacute endocarditis, unspecified |
|  | I38 | Endocarditis, valve unspecified |
|  | I39 | Endocarditis and heart valve disorders in diseases classified elsewhere |
|  | M32.11 | Endocarditis in systemic lupus erythematosus |

### Congestive heart failure

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| --- | --- | --- |
| **Congestive heart failure** | | |
| ICD9 | 402.01 | Malignant hypertensive heart disease with congestive heart failure |
|  | 402.11 | Benign hypertensive heart disease with congestive heart failure |
|  | 402.91 | Unspecified hypertensive heart disease with congestive heart failure |
|  | 404.01 | Hypertensive heart and renal disease, malignant, with congestive heart failure |
|  | 404.03 | Hypertensive heart and renal disease, malignant, with congestive heart failure and renal failure |
|  | 404.11 | Hypertensive heart and renal disease, benign, with congestive heart failure |
|  | 404.13 | Hypertensive heart and renal disease, benign, with congestive heart failure and renal failure |
|  | 404.91 | Hypertensive heart and renal disease, unspecified, with congestive heart failure |
|  | 404.93 | Hypertensive heart and renal disease, unspecified, with congestive heart failure and renal failure |
|  | 428.0 | Congestive heart failure |
| ICD10 | I11.0 | Hypertensive Heart Disease With Heart Failure |
|  | I13.0 | Hypertensive Heart And Chronic Kidney Disease With Heart Failure And Stage 1 Through Stage 4 Chronic Kidney Disease, Or Unspecified Chronic Kidney Disease |
|  | I13.2 | Hypertensive Heart And Chronic Kidney Disease With Heart Failure And With Stage 5 Chronic Kidney Disease, Or End Stage Renal Disease |
|  | I50.20 | Unspecified Systolic (Congestive) Heart Failure |
|  | I50.21 | Acute Systolic (Congestive) Heart Failure |
|  | I50.22 | Chronic Systolic (Congestive) Heart Failure |
|  | I50.23 | Acute On Chronic Systolic (Congestive) Heart Failure |
|  | I50.30 | Unspecified Diastolic (Congestive) Heart Failure |
|  | I50.31 | Acute Diastolic (Congestive) Heart Failure |
|  | I50.32 | Chronic Diastolic (Congestive) Heart Failure |
|  | I50.33 | Acute On Chronic Diastolic (Congestive) Heart Failure |
|  | I50.40 | Unspecified Combined Systolic (Congestive) And Diastolic (Congestive) Heart Failure |
|  | I50.41 | Acute Combined Systolic (Congestive) And Diastolic (Congestive) Heart Failure |
|  | I50.42 | Chronic Combined Systolic (Congestive) And Diastolic (Congestive) Heart Failure |
|  | I50.43 | Acute On Chronic Combined Systolic (Congestive) And Diastolic (Congestive) Heart Failure |

### Hypokinetic left ventricular segment

|  |  |  |
| --- | --- | --- |
| **Hypokinetic left ventricular segment** | | |
|  |  | Akinesis, hypokinesis, dykinesis other than apical akinesis |

### Myocardial infarction (>4 weeks, <6 months)

|  |  |  |
| --- | --- | --- |
| **Myocardial infarction (>4 weeks, <6 months)** | | |
| ICD9 | 410 | Acute myocardial infarction |
|  | 410.0 | Acute myocardial infarction, of anterolateral wall |
|  | 410.00 | Acute myocardial infarction, of anterolateral wall, episode of care unspecified |
|  | 410.01 | Acute myocardial infarction, of anterolateral wall, initial episode of care |
|  | 410.02 | Acute myocardial infarction, of anterolateral wall, subsequent episode of care |
|  | 410.1 | Acute myocardial infarction, of other anterior wall |
|  | 410.10 | Acute myocardial infarction, of other anterior wall, episode of care unspecified |
|  | 410.11 | Acute myocardial infarction, of other anterior wall, initial episode of care |
|  | 410.12 | Acute myocardial infarction, of other anterior wall, subsequent episode of care |
|  | 410.2 | Acute myocardial infarction, of inferolateral wall |
|  | 410.20 | Acute myocardial infarction, of inferolateral wall, episode of care unspecified |
|  | 410.21 | Acute myocardial infarction, of inferolateral wall, initial episode of care |
|  | 410.22 | Acute myocardial infarction, of inferolateral wall, subsequent episode of care |
|  | 410.3 | Acute myocardial infarction, of inferoposterior wall |
|  | 410.30 | Acute myocardial infarction, of inferoposterior wall, episode of care unspecified |
|  | 410.31 | Acute myocardial infarction, of inferoposterior wall, initial episode of care |
|  | 410.32 | Acute myocardial infarction, of inferoposterior wall, subsequent episode of care |
|  | 410.4 | Acute myocardial infarction, of other inferior wall |
|  | 410.40 | Acute myocardial infarction, of other inferior wall, episode of care unspecified |
|  | 410.41 | Acute myocardial infarction, of other inferior wall, initial episode of care |
|  | 410.42 | Acute myocardial infarction, of other inferior wall, subsequent episode of care |
|  | 410.50 | Acute myocardial infarction, of other lateral wall, episode of care unspecified |
|  | 410.51 | Acute myocardial infarction, of other lateral wall, initial episode of care |
|  | 410.52 | Acute myocardial infarction, of other lateral wall, subsequent episode of care |
|  | 410.6 | Acute myocardial infarction, true posterior wall infarction |
|  | 410.60 | Acute myocardial infarction, true posterior wall infarction, episode of care unspecified |
|  | 410.61 | Acute myocardial infarction, true posterior wall infarction, initial episode of care |
|  | 410.62 | Acute myocardial infarction, true posterior wall infarction, subsequent episode of care |
|  | 410.7 | Acute myocardial infarction, subendocardial infarction |
|  | 410.70 | Acute myocardial infarction, subendocardial infarction, episode of care unspecified |
|  | 410.71 | Acute myocardial infarction, subendocardial infarction, initial episode of care |
|  | 410.72 | Acute myocardial infarction, subendocardial infarction, subsequent episode of care |
|  | 410.8 | Acute myocardial infarction, of other specified sites |
|  | 410.80 | Acute myocardial infarction, of other specified sites, episode of care unspecified |
|  | 410.81 | Acute myocardial infarction, of other specified sites, initial episode of care |
|  | 410.82 | Acute myocardial infarction, of other specified sites, subsequent episode of care |
|  | 410.9 | Acute myocardial infarction, unspecified site |
|  | 410.90 | Acute myocardial infarction, unspecified site, episode of care unspecified |
|  | 410.91 | Acute myocardial infarction, unspecified site, initial episode of care |
|  | 410.92 | Acute myocardial infarction, unspecified site, subsequent episode of care |
|  | 412 | Old myocardial infarction |
| ICD10 | I21 | St elevation (stemi) and non-st elevation (nstemi) myocardial infarction |
|  | I21.0 | St elevation (stemi) myocardial infarction of anterior wall |
|  | I21.01 | St elevation (stemi) myocardial infarction involving left main coronary artery |
|  | I21.02 | St elevation (stemi) myocardial infarction involving left anterior descending coronary artery |
|  | I21.09 | St elevation (stemi) myocardial infarction involving other coronary artery of anterior wall |
|  | I21.1 | St elevation (stemi) myocardial infarction of inferior wall |
|  | I21.11 | St elevation (stemi) myocardial infarction involving right coronary artery |
|  | I21.19 | St elevation (stemi) myocardial infarction involving other coronary artery of inferior wall |
|  | I21.2 | St elevation (stemi) myocardial infarction of other sites |
|  | I21.21 | St elevation (stemi) myocardial infarction involving left circumflex coronary artery |
|  | I21.29 | St elevation (stemi) myocardial infarction involving other sites |
|  | I21.3 | St elevation (stemi) myocardial infarction of unspecified site |
|  | I21.4 | Non-st elevation (nstemi) myocardial infarction |
|  | I22 | Subsequent st elevation (stemi) and non-st elevation (nstemi) myocardial infarction |
|  | I22.0 | Subsequent st elevation (stemi) myocardial infarction of anterior wall |
|  | I22.1 | Subsequent st elevation (stemi) myocardial infarction of inferior wall |
|  | I22.2 | Subsequent non-st elevation (nstemi) myocardial infarction |
|  | I22.8 | Subsequent st elevation (stemi) myocardial infarction of other sites |
|  | I22.9 | Subsequent st elevation (stemi) myocardial infarction of unspecified site |
|  | I25.2 | Old myocardial infarction |

**Exclude** any other potential etiologies of ischemic stroke

* Coronary angiogram: use ICD codes, CPT codes
* Peripheral endovascular procedure: use ICD codes (will refer to Elizabeth Wang’s codes)
* Trauma (TBD)
* Drug overdose: use ICD codes

**Final EHR phenotype:**

Ischemic strokes that have high probability of being defined as “cardioembolic stroke” **in presence of AF** according to the TOAST criteria

# ICD Codes for Ischemic Stroke

|  |  |
| --- | --- |
| ICD-9 Codes | Code Description |
| 433 | Occlusion and stenosis of precerebral arteries |
| 433.0 | Occlusion and stenosis of basilar artery |
| 433.00 | Occlusion and stenosis of basilar artery without mention of cerebral infarction |
| 433.01 | Occlusion and stenosis of basilar artery with cerebral infarction |
| 433.1 | Occlusion and stenosis of carotid artery |
| 433.10 | Occlusion and stenosis of carotid artery without mention of cerebral infarction |
| 433.11 | Occlusion and stenosis of carotid artery with cerebral infarction |
| 433.2 | Occlusion and stenosis of vertebral artery |
| 433.20 | Occlusion and stenosis of vertebral artery without mention of cerebral infarction |
| 433.21 | Occlusion and stenosis of vertebral artery with cerebral infarction |
| 433.3 | Occlusion and stenosis of multiple and bilateral precerebral arteries |
| 433.30 | Occlusion and stenosis of multiple and bilateral precerebral arteries without mention of cerebral infarction |
| 433.31 | Occlusion and stenosis of multiple and bilateral precerebral arteries with cerebral infarction |
| 433.8 | Occlusion and stenosis of other specified precerebral artery |
| 433.80 | Occlusion and stenosis of other specified precerebral artery without mention of cerebral infarction |
| 433.81 | Occlusion and stenosis of other specified precerebral artery with cerebral infarction |
| 433.9 | Occlusion and stenosis of unspecified precerebral artery |
| 433.90 | Occlusion and stenosis of unspecified precerebral artery without mention of cerebral infarction |
| 433.91 | Occlusion and stenosis of unspecified precerebral artery with cerebral infarction |
| 436 | Other cerebrovascular disease |

|  |  |
| --- | --- |
| ICD-10 Codes | Code Description |
| H34.1 | Central retinal artery occlusion |
| H34.10 | Central retinal artery occlusion unspecified eye |
| H34.11 | Central retinal artery occlusion right eye |
| H34.12 | Central retinal artery occlusion left eye |
| H34.13 | Central retinal artery occlusion bilateral |
| H34.23 | Retinal artery branch occlusion |
| H34.231 | Retinal artery branch occlusion right eye |
| H34.232 | Retinal artery branch occlusion left eye |
| H34.233 | Retinal artery branch occlusion bilateral |
| H34.239 | Retinal artery branch occlusion unspecified eye |
| I63 | Cerebral infarction |
| I63.0 | Cerebral infarction due to thrombosis of precerebral arteries |
| I63.00 | Cerebral infarction due to thrombosis of unspecified precerebral artery |
| I63.01 | Cerebral infarction due to thrombosis of vertebral artery |
| I63.011 | Cerebral infarction due to thrombosis of right vertebral artery |
| I63.012 | Cerebral infarction due to thrombosis of left vertebral artery |
| I63.019 | Cerebral infarction due to thrombosis of unspecified vertebral artery |
| I63.02 | Cerebral infarction due to thrombosis of basilar artery |
| I63.03 | Cerebral infarction due to thrombosis of carotid artery |
| I63.031 | Cerebral infarction due to thrombosis of right carotid artery |
| I63.032 | Cerebral infarction due to thrombosis of left carotid artery |
| I63.033 | Cerebral infarction due to thrombosis of bilateral carotid arteries |
| I63.039 | Cerebral infarction due to thrombosis of unspecified carotid artery |
| I63.09 | Cerebral infarction due to thrombosis of other precerebral artery |
| I63.1 | Cerebral infarction due to embolism of precerebral arteries |
| I63.10 | Cerebral infarction due to embolism of unspecified precerebral artery |
| I63.11 | Cerebral infarction due to embolism of vertebral artery |
| I63.111 | Cerebral infarction due to embolism of right vertebral artery |
| I63.112 | Cerebral infarction due to embolism of left vertebral artery |
| I63.113 | Cerebral infarction due to embolism of bilateral vertebral arteries |
| I63.119 | Cerebral infarction due to embolism of unspecified vertebral artery |
| I63.12 | Cerebral infarction due to embolism of basilar artery |
| I63.13 | Cerebral infarction due to embolism of carotid artery |
| I63.131 | Cerebral infarction due to embolism of right carotid artery |
| I63.132 | Cerebral infarction due to embolism of left carotid artery |
| I63.133 | Cerebral infarction due to embolism of bilateral carotid arteries |
| I63.139 | Cerebral infarction due to embolism of unspecified carotid artery |
| I63.19 | Cerebral infarction due to embolism of other precerebral artery |
| I63.2 | Cerebral infarction due to unspecified occlusion or stenosis of precerebral arteries |
| I63.20 | Cerebral infarction due to unspecified occlusion or stenosis of unspecified precerebral arteries |
| I63.21 | Cerebral infarction due to unspecified occlusion or stenosis of vertebral arteries |
| I63.211 | Cerebral infarction due to unspecified occlusion or stenosis of right vertebral arteries |
| I63.211 | Cerebral infarction due to unspecified occlusion or stenosis of right vertebral artery |
| I63.212 | Cerebral infarction due to unspecified occlusion or stenosis of left vertebral arteries |
| I63.219 | Cerebral infarction due to unspecified occlusion or stenosis of unspecified vertebral arteries |
| I63.22 | Cerebral infarction due to unspecified occlusion or stenosis of basilar arteries |
| I63.23 | Cerebral infarction due to unspecified occlusion or stenosis of carotid arteries |
| I63.231 | Cerebral infarction due to unspecified occlusion or stenosis of right carotid arteries |
| I63.232 | Cerebral infarction due to unspecified occlusion or stenosis of left carotid arteries |
| I63.233 | Cerebral infarction due to unspecified occlusion or stenosis of bilateral carotid arteries |
| I63.239 | Cerebral infarction due to unspecified occlusion or stenosis of unspecified carotid arteries |
| I63.29 | Cerebral infarction due to unspecified occlusion or stenosis of other precerebral arteries |
| I63.3 | Cerebral infarction due to thrombosis of cerebral arteries |
| I63.30 | Cerebral infarction due to thrombosis of unspecified cerebral artery |
| I63.31 | Cerebral infarction due to thrombosis of middle cerebral artery |
| I63.311 | Cerebral infarction due to thrombosis of right middle cerebral artery |
| I63.312 | Cerebral infarction due to thrombosis of left middle cerebral artery |
| I63.319 | Cerebral infarction due to thrombosis of unspecified middle cerebral artery |
| I63.32 | Cerebral infarction due to thrombosis of anterior cerebral artery |
| I63.321 | Cerebral infarction due to thrombosis of right anterior cerebral artery |
| I63.322 | Cerebral infarction due to thrombosis of left anterior cerebral artery |
| I63.323 | Cerebral infarction due to thrombosis of bilateral anterior cerebral arteries |
| I63.329 | Cerebral infarction due to thrombosis of unspecified anterior cerebral artery |
| I63.33 | Cerebral infarction due to thrombosis of posterior cerebral artery |
| I63.331 | Cerebral infarction due to thrombosis of right posterior cerebral artery |
| I63.332 | Cerebral infarction due to thrombosis of left posterior cerebral artery |
| I63.339 | Cerebral infarction due to thrombosis of unspecified posterior cerebral artery |
| I63.34 | Cerebral infarction due to thrombosis of cerebellar artery |
| I63.341 | Cerebral infarction due to thrombosis of right cerebellar artery |
| I63.342 | Cerebral infarction due to thrombosis of left cerebellar artery |
| I63.343 | Cerebral infarction to thrombosis of bilateral cerebellar arteries |
| I63.349 | Cerebral infarction due to thrombosis of unspecified cerebellar artery |
| I63.39 | Cerebral infarction due to thrombosis of other cerebral artery |
| I63.4 | Cerebral infarction due to embolism of cerebral arteries |
| I63.40 | Cerebral infarction due to embolism of unspecified cerebral artery |
| I63.41 | Cerebral infarction due to embolism of middle cerebral artery |
| I63.411 | Cerebral infarction due to embolism of right middle cerebral artery |
| I63.412 | Cerebral infarction due to embolism of left middle cerebral artery |
| I63.413 | Cerebral infarction due to embolism of bilateral middle cerebral arteries |
| I63.419 | Cerebral infarction due to embolism of unspecified middle cerebral artery |
| I63.42 | Cerebral infarction due to embolism of anterior cerebral artery |
| I63.421 | Cerebral infarction due to embolism of right anterior cerebral artery |
| I63.422 | Cerebral infarction due to embolism of left anterior cerebral artery |
| I63.423 | Cerebral infarction due to embolism of bilateral anterior cerebral arteries |
| I63.429 | Cerebral infarction due to embolism of unspecified anterior cerebral artery |
| I63.43 | Cerebral infarction due to embolism of posterior cerebral artery |
| I63.431 | Cerebral infarction due to embolism of right posterior cerebral artery |
| I63.432 | Cerebral infarction due to embolism of left posterior cerebral artery |
| I63.433 | Cerebral infarction due to embolism of bilateral posterior cerebral arteries |
| I63.439 | Cerebral infarction due to embolism of unspecified posterior cerebral artery |
| I63.44 | Cerebral infarction due to embolism of cerebellar artery |
| I63.441 | Cerebral infarction due to embolism of right cerebellar artery |
| I63.442 | Cerebral infarction due to embolism of left cerebellar artery |
| I63.443 | Cerebral infarction due to embolism of bilateral cerebellar arteries |
| I63.449 | Cerebral infarction due to embolism of unspecified cerebellar artery |
| I63.49 | Cerebral infarction due to embolism of other cerebral artery |
| I63.5 | Cerebral infarction due to unspecified occlusion or stenosis of cerebral arteries |
| I63.50 | Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebral artery |
| I63.51 | Cerebral infarction due to unspecified occlusion or stenosis of middle cerebral artery |
| I63.511 | Cerebral infarction due to unspecified occlusion or stenosis of right middle cerebral artery |
| I63.512 | Cerebral infarction due to unspecified occlusion or stenosis of left middle cerebral artery |
| I63.513 | Cerebral infarction due to unspecified occlusion or stenosis of bilateral middle cerebral arteries |
| I63.519 | Cerebral infarction due to unspecified occlusion or stenosis of unspecified middle cerebral artery |
| I63.52 | Cerebral infarction due to unspecified occlusion or stenosis of anterior cerebral artery |
| I63.521 | Cerebral infarction due to unspecified occlusion or stenosis of right anterior cerebral artery |
| I63.522 | Cerebral infarction due to unspecified occlusion or stenosis of left anterior cerebral artery |
| I63.523 | Cerebral infarction due to unspecified occlusion or stenosis of bilateral anterior cerebral arteries |
| I63.529 | Cerebral infarction due to unspecified occlusion or stenosis of unspecified anterior cerebral artery |
| I63.53 | Cerebral infarction due to unspecified occlusion or stenosis of posterior cerebral artery |
| I63.531 | Cerebral infarction due to unspecified occlusion or stenosis of right posterior cerebral artery |
| I63.532 | Cerebral infarction due to unspecified occlusion or stenosis of left posterior cerebral artery |
| I63.539 | Cerebral infarction due to unspecified occlusion or stenosis of unspecified posterior cerebral artery |
| I63.54 | Cerebral infarction due to unspecified occlusion or stenosis of cerebellar artery |
| I63.541 | Cerebral infarction due to unspecified occlusion or stenosis of right cerebellar artery |
| I63.542 | Cerebral infarction due to unspecified occlusion or stenosis of left cerebellar artery |
| I63.543 | Cerebral infarction due to unspecified occlusion or stenosis of bilateral cerebellar arteries |
| I63.549 | Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebellar artery |
| I63.59 | Cerebral infarction due to unspecified occlusion or stenosis of other cerebral artery |
| I63.8 | Other cerebral infarction |
| I63.8 | Other cerebral infarction |
| I63.9 | Cerebral infarction, unspecified |
| I67.82 | Cerebral ischemia |

# ICD Codes for Large Artery Stroke Clinical Features in TOAST

|  |  |  |
| --- | --- | --- |
| Feature | ICD9/ICD10 Codes | Code Description |
| Cortical dysfunction | | |
| Brain stem or cerebrellar dysfunction | | |
|  |  |  |
| • Aphasia, neglect, restricted motor involvement, etc. |  |  |
| -Aphasia |  |  |
|  | ICD10:I69.020 | Aphasia following nontraumatic subarachnoid hemorrhage |
|  | ICD10:I69.120 | Aphasia following nontraumatic intracerebral hemorrhage |
|  | ICD10:I69.220 | Aphasia following other nontraumatic intracranial hemorrhage |
|  | ICD10:I69.320 | Aphasia following cerebral infarction |
|  | ICD10:I69.820 | Aphasia following other cerebrovascular disease |
|  | ICD10:I69.920 | Aphasia following unspecified cerebrovascular disease |
|  | 43811 | Aphasia as late effect of cerebrovascular disease |
|  | ICD10:R47.0 | Dysphasia and aphasia |
|  | ICD10:R47.01 | Aphasia |
|  | 7843 | Aphasia |
| -Neglect |  |  |
|  | ICD10:R41.4 | Neurologic neglect syndrome |
|  | 7818 | Neurologic neglect syndrome |
| -Restricted motor involvement |  |  |
|  | ?? |  |
|  |  |  |
| • A history of intermittent claudication |  |  |
|  | 44021 | Atherosclerosis of native arteries of the extremities with intermittent claudication |
|  | ICD10:I70.21 | Atherosclerosis of native arteries of extremities with intermittent claudication |
|  | ICD10:I70.211 | Atherosclerosis of native arteries of extremities with intermittent claudication, right leg |
|  | ICD10:I70.212 | Atherosclerosis of native arteries of extremities with intermittent claudication, left leg |
|  | ICD10:I70.213 | Atherosclerosis of native arteries of extremities with intermittent claudication, bilateral legs |
|  | ICD10:I70.218 | Atherosclerosis of native arteries of extremities with intermittent claudication, other extremity |
|  | ICD10:I70.219 | Atherosclerosis of native arteries of extremities with intermittent claudication, unspecified extremity |
|  | ICD10:I70.31 | Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication |
|  | ICD10:I70.311 | Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication, right leg |
|  | ICD10:I70.312 | Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication, left leg |
|  | ICD10:I70.313 | Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication, bilateral legs |
|  | ICD10:I70.318 | Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication, other extremity |
|  | ICD10:I70.319 | Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication, unspecified extremity |
|  | ICD10:I70.41 | Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication |
|  | ICD10:I70.411 | Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication, right leg |
|  | ICD10:I70.412 | Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication, left leg |
|  | ICD10:I70.413 | Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication, bilateral legs |
|  | ICD10:I70.418 | Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication, other extremity |
|  | ICD10:I70.419 | Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication, unspecified extremity |
|  | ICD10:I70.51 | Atherosclerosis of nonautologous biological bypass graft(s) of the extremities intermittent claudication |
|  | ICD10:I70.511 | Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with intermittent claudication, right leg |
|  | ICD10:I70.512 | Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with intermittent claudication, left leg |
|  | ICD10:I70.513 | Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with intermittent claudication, bilateral legs |
|  | ICD10:I70.518 | Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with intermittent claudication, other extremity |
|  | ICD10:I70.519 | Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with intermittent claudication, unspecified extremity |
|  | ICD10:I70.61 | Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication |
|  | ICD10:I70.611 | Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication, right leg |
|  | ICD10:I70.612 | Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication, left leg |
|  | ICD10:I70.613 | Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication, bilateral legs |
|  | ICD10:I70.618 | Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication, other extremity |
|  | ICD10:I70.619 | Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication, unspecified extremity |
|  | ICD10:I70.71 | Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication |
|  | ICD10:I70.711 | Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication, right leg |
|  | ICD10:I70.712 | Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication, left leg |
|  | ICD10:I70.713 | Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication, bilateral legs |
|  | ICD10:I70.718 | Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication, other extremity |
|  | ICD10:I70.719 | Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication, unspecified extremity |
|  |  |  |
| • attacks (TIAs) in the same vascular territory |  |  |
|  | ICD10:G45 | Transient cerebral ischemic attacks and related syndromes |
|  | ICD10:G45.8 | Other transient cerebral ischemic attacks and related syndromes |
|  | ICD10:G45.9 | Transient cerebral ischemic attack, unspecified |
|  | ICD10:Z86.73 | Personal history of transient ischemic attack (tia), and cerebral infarction without residual deficits |
| • Carotid bruit |  |  |
|  | 4331 | Occlusion and stenosis of carotid artery |
|  | 43310 | Occlusion and stenosis of carotid artery, without mention of cerebral infarction |
|  | 43311 | Occlusion and stenosis of carotid artery, with cerebral infarction |
|  | 43311 | Occlusion and stenosis of carotid artery, with cerebral infarction |
|  | ICD10:I63.03 | Cerebral infarction due to thrombosis of carotid artery |
|  | ICD10:I63.031 | Cerebral infarction due to thrombosis of right carotid artery |
|  | ICD10:I63.032 | Cerebral infarction due to thrombosis of left carotid artery |
|  | ICD10:I63.039 | Cerebral infarction due to thrombosis of unspecified carotid artery |
|  | ICD10:I63.13 | Cerebral infarction due to embolism of carotid artery |
|  | ICD10:I63.131 | Cerebral infarction due to embolism of right carotid artery |
|  | ICD10:I63.132 | Cerebral infarction due to embolism of left carotid artery |
|  | ICD10:I63.139 | Cerebral infarction due to embolism of unspecified carotid artery |
|  | ICD10:I63.23 | Cerebral infarction due to unspecified occlusion or stenosis of carotid arteries |
|  | ICD10:I63.231 | Cerebral infarction due to unspecified occlusion or stenosis of right carotid arteries |
|  | ICD10:I63.232 | Cerebral infarction due to unspecified occlusion or stenosis of left carotid arteries |
|  | ICD10:I63.239 | Cerebral infarction due to unspecified occlusion or stenosis of unspecified carotid arteries |
|  | ICD10:I65.2 | Occlusion and stenosis of carotid artery |
|  | ICD10:I65.21 | Occlusion and stenosis of right carotid artery |
|  | ICD10:I65.22 | Occlusion and stenosis of left carotid artery |
|  | ICD10:I65.23 | Occlusion and stenosis of bilateral carotid arteries |
|  | ICD10:I65.29 | Occlusion and stenosis of unspecified carotid artery |
|  |  |  |
| • Diminished pulses |  |  |
|  | ICD10:R09.8 | Other specified symptoms and signs involving the circulatory and respiratory systems |
|  | ICD10:R09.89 | Other specified symptoms and signs involving the circulatory and respiratory systems |

# Cortical dysfunction codes

Additional codes I found that had to do with cortical dysfunction or brain stem dysfunction (this is my attempt after several key word searches ~WG)

|  |  |  |
| --- | --- | --- |
| Cortical dysfunction | | |
| Brain stem or cerebrellar dysfunction | | |
| Feature | ICD9/ICD10 Codes | Code Description |
| Agnosia |  |  |
|  | ICD10:R48.1 | Agnosia |
|  | ICD10:R48.3 | Visual agnosia |
| Amnesia |  |  |
|  | 30012 | Psychogenic amnesia |
|  | 4377 | Transient global amnesia |
|  | ICD10:F44.0 | Dissociative amnesia |
|  | ICD10:G45.4 | Transient global amnesia |
|  | ICD10:R41.1 | Anterograde amnesia |
|  | ICD10:R41.2 | Retrograde amnesia |
|  | ICD10:R41.3 | Other amnesia |
| Aphasia |  |  |
|  | ICD10:I69.020 | Aphasia following nontraumatic subarachnoid hemorrhage |
|  | ICD10:I69.120 | Aphasia following nontraumatic intracerebral hemorrhage |
|  | ICD10:I69.220 | Aphasia following other nontraumatic intracranial hemorrhage |
|  | ICD10:I69.320 | Aphasia following cerebral infarction |
|  | ICD10:I69.820 | Aphasia following other cerebrovascular disease |
|  | ICD10:I69.920 | Aphasia following unspecified cerebrovascular disease |
|  | 43811 | Aphasia as late effect of cerebrovascular disease |
|  | LPA870 | Aphasia-LMR 870 |
|  | ICD10:R47.0 | Dysphasia and aphasia |
|  | ICD10:R47.01 | Aphasia |
|  | 7843 | Aphasia |
| Apraxia |  |  |
|  | 43881 | Apraxia as late effect of cerebrovascular disease |
|  | ICD10:I69.090 | Apraxia following nontraumatic subarachnoid hemorrhage |
|  | ICD10:I69.190 | Apraxia following nontraumatic intracerebral hemorrhage |
|  | ICD10:I69.290 | Apraxia following other nontraumatic intracranial hemorrhage |
|  | ICD10:I69.390 | Apraxia following cerebral infarction |
|  | ICD10:I69.890 | Apraxia following other cerebrovascular disease |
|  | ICD10:I69.990 | Apraxia following unspecified cerebrovascular disease |
|  | ICD10:R48.2 | Apraxia |
|  | 43881 | Apraxia as late effect of cerebrovascular disease |
|  | ICD10:I69.090 | Apraxia following nontraumatic subarachnoid hemorrhage |
|  | ICD10:I69.190 | Apraxia following nontraumatic intracerebral hemorrhage |
|  | ICD10:I69.290 | Apraxia following other nontraumatic intracranial hemorrhage |
|  | ICD10:I69.390 | Apraxia following cerebral infarction |
|  | ICD10:I69.890 | Apraxia following other cerebrovascular disease |
|  | ICD10:I69.990 | Apraxia following unspecified cerebrovascular disease |
|  | ICD10:R48.2 | Apraxia |
| Agraphia |  |  |
|  | ICD10:R48 | Dyslexia and other symbolic dysfunctions, not elsewhere classified |
|  | ICD10:R48.8 | Other symbolic dysfunctions |
| Ataxia |  |  |
|  | 3340 | Friedreich's ataxia |
|  | 3343 | Other cerebellar ataxia |
|  | 3344 | Cerebellar ataxia in diseases classified elsewhere |
|  | 43884 | Ataxia as late effect of cerebrovascular disease |
|  | ICD10:G11 | Hereditary ataxia |
|  | ICD10:G11.0 | Congenital nonprogressive ataxia |
|  | ICD10:G11.1 | Early-onset cerebellar ataxia |
|  | ICD10:G11.2 | Late-onset cerebellar ataxia |
|  | ICD10:G11.3 | Cerebellar ataxia with defective dna repair |
|  | ICD10:G11.8 | Other hereditary ataxias |
|  | ICD10:G11.9 | Hereditary ataxia, unspecified |
|  | ICD10:G32.81 | Cerebellar ataxia in diseases classified elsewhere |
|  | ICD10:G60.2 | Neuropathy in association with hereditary ataxia |
|  | ICD10:I69.093 | Ataxia following nontraumatic subarachnoid hemorrhage |
|  | ICD10:I69.193 | Ataxia following nontraumatic intracerebral hemorrhage |
|  | ICD10:I69.293 | Ataxia following other nontraumatic intracranial hemorrhage |
|  | ICD10:I69.393 | Ataxia following cerebral infarction |
|  | ICD10:I69.893 | Ataxia following other cerebrovascular disease |
|  | ICD10:I69.993 | Ataxia following unspecified cerebrovascular disease |
|  | ICD10:R27.0 | Ataxia, unspecified |
|  | LPA31 | Ataxia-LMR 31 |
|  | ODA:WMJF5 | Ataxia-Oncall |
|  | 3340 | Friedreich's ataxia |
|  | 3343 | Other cerebellar ataxia |
|  | 3344 | Cerebellar ataxia in diseases classified elsewhere |
|  | 43884 | Ataxia as late effect of cerebrovascular disease |
|  | ICD10:G11 | Hereditary ataxia |
|  | ICD10:G11.0 | Congenital nonprogressive ataxia |
|  | ICD10:G11.1 | Early-onset cerebellar ataxia |
|  | ICD10:G11.2 | Late-onset cerebellar ataxia |
|  | ICD10:G11.3 | Cerebellar ataxia with defective dna repair |
|  | ICD10:G11.8 | Other hereditary ataxias |
|  | ICD10:G11.9 | Hereditary ataxia, unspecified |
|  | ICD10:G32.81 | Cerebellar ataxia in diseases classified elsewhere |
|  | ICD10:G60.2 | Neuropathy in association with hereditary ataxia |
|  | ICD10:I69.093 | Ataxia following nontraumatic subarachnoid hemorrhage |
|  | ICD10:I69.193 | Ataxia following nontraumatic intracerebral hemorrhage |
|  | ICD10:I69.293 | Ataxia following other nontraumatic intracranial hemorrhage |
|  | ICD10:I69.393 | Ataxia following cerebral infarction |
|  | ICD10:I69.893 | Ataxia following other cerebrovascular disease |
|  | ICD10:I69.993 | Ataxia following unspecified cerebrovascular disease |
|  | ICD10:R27.0 | Ataxia, unspecified |
| Corticobasal degeneration |  |  |
|  | ICD10:G31.85 | Corticobasal degeneration |
| Cognitive Impairment |  |  |
|  | 33183 | Mild cognitive impairment, so stated |
|  | ICD10:G31.84 | Mild cognitive impairment, so stated |
|  | ODA:WLEN6 | Cognitive impairment-Oncall |
| Dystonia |  |  |
|  | 3336 | Idiopathic torsion dystonia |
|  | 3337 | Symptomatic torsion dystonia |
|  | 33379 | Other acquired torsion dystonia |
|  | 3338 | Fragments of torsion dystonia |
|  | 33389 | Other fragments of torsion dystonia |
|  | ICD10:G24 | Dystonia |
|  | ICD10:G24.2 | Idiopathic nonfamilial dystonia |
|  | ICD10:G24.4 | Idiopathic orofacial dystonia |
|  | ICD10:G24.8 | Other dystonia |
|  | ICD10:G24.9 | Dystonia, unspecified |
| Myoclonus |  |  |
|  | 3332 | Myoclonus |
|  | ICD10:G25.3 | Myoclonus |
|  | LPA901 | Myoclonus-LMR 901 |
| Sensory Loss |  |  |
|  | LPA982 | Sensory loss-LMR 982 |
|  | 38911 | Sensory hearing loss |
|  | 38917 | Sensory hearing loss, unilateral |
| Cerebral Infarct |  |  |
|  | 43301 | Occlusion and stenosis of basilar artery, with cerebral infarction |
|  | 43311 | Occlusion and stenosis of carotid artery, with cerebral infarction |
|  | 43321 | Occlusion and stenosis of vertebral artery, with cerebral infarction |
|  | 43321 | Occlusion and stenosis of vertebral artery, with cerebral infarction |
|  | 43321 | Occlusion and stenosis of vertebral artery, with cerebral infarction |
|  | 43331 | Occlusion and stenosis of multiple and bilateral precerebral arteries, with cerebral infarction |
|  | 43381 | Occlusion and stenosis of other specified precerebral artery, with cerebral infarction |
|  | 43391 | Unspecified precerebral artery, with cerebral infarction |
|  | 43401 | Cerebral thrombosis, with cerebral infarction |
|  | 43411 | Cerebral embolism, with cerebral infarction |
|  | 43491 | Cerebral artery occlusion, unspecified, with cerebral infarction |
|  | ICD10:G43.6 | Persistent migraine aura with cerebral infarction |
|  | ICD10:G43.60 | Persistent migraine aura with cerebral infarction, not intractable |
|  | ICD10:G43.601 | Persistent migraine aura with cerebral infarction, not intractable, with status migrainosus |
|  | ICD10:G43.609 | Persistent migraine aura with cerebral infarction, not intractable, without status migrainosus |
|  | ICD10:G43.61 | Persistent migraine aura with cerebral infarction, intractable |
|  | ICD10:G43.611 | Persistent migraine aura with cerebral infarction, intractable, with status migrainosus |
|  | ICD10:G43.619 | Persistent migraine aura with cerebral infarction, intractable, without status migrainosus |
|  | ICD10:I63 | Cerebral infarction |
|  | ICD10:I63.0 | Cerebral infarction due to thrombosis of precerebral arteries |
|  | ICD10:I63.00 | Cerebral infarction due to thrombosis of unspecified precerebral artery |
|  | ICD10:I63.01 | Cerebral infarction due to thrombosis of vertebral artery |
|  | ICD10:I63.011 | Cerebral infarction due to thrombosis of right vertebral artery |
|  | ICD10:I63.012 | Cerebral infarction due to thrombosis of left vertebral artery |
|  | ICD10:I63.019 | Cerebral infarction due to thrombosis of unspecified vertebral artery |
|  | ICD10:I63.02 | Cerebral infarction due to thrombosis of basilar artery |
|  | ICD10:I63.03 | Cerebral infarction due to thrombosis of carotid artery |
|  | ICD10:I63.031 | Cerebral infarction due to thrombosis of right carotid artery |
|  | ICD10:I63.032 | Cerebral infarction due to thrombosis of left carotid artery |
|  | ICD10:I63.039 | Cerebral infarction due to thrombosis of unspecified carotid artery |
|  | ICD10:I63.09 | Cerebral infarction due to thrombosis of other precerebral artery |
|  | ICD10:I63.1 | Cerebral infarction due to embolism of precerebral arteries |
|  | ICD10:I63.10 | Cerebral infarction due to embolism of unspecified precerebral artery |
|  | ICD10:I63.11 | Cerebral infarction due to embolism of vertebral artery |
|  | ICD10:I63.111 | Cerebral infarction due to embolism of right vertebral artery |
|  | ICD10:I63.112 | Cerebral infarction due to embolism of left vertebral artery |
|  | ICD10:I63.119 | Cerebral infarction due to embolism of unspecified vertebral artery |
|  | ICD10:I63.12 | Cerebral infarction due to embolism of basilar artery |
|  | ICD10:I63.13 | Cerebral infarction due to embolism of carotid artery |
|  | ICD10:I63.131 | Cerebral infarction due to embolism of right carotid artery |
|  | ICD10:I63.132 | Cerebral infarction due to embolism of left carotid artery |
|  | ICD10:I63.139 | Cerebral infarction due to embolism of unspecified carotid artery |
|  | ICD10:I63.19 | Cerebral infarction due to embolism of other precerebral artery |
|  | ICD10:I63.2 | Cerebral infarction due to unspecified occlusion or stenosis of precerebral arteries |
|  | ICD10:I63.20 | Cerebral infarction due to unspecified occlusion or stenosis of unspecified precerebral arteries |
|  | ICD10:I63.21 | Cerebral infarction due to unspecified occlusion or stenosis of vertebral arteries |
|  | ICD10:I63.211 | Cerebral infarction due to unspecified occlusion or stenosis of right vertebral arteries |
|  | ICD10:I63.212 | Cerebral infarction due to unspecified occlusion or stenosis of left vertebral arteries |
|  | ICD10:I63.219 | Cerebral infarction due to unspecified occlusion or stenosis of unspecified vertebral arteries |
|  | ICD10:I63.22 | Cerebral infarction due to unspecified occlusion or stenosis of basilar arteries |
|  | ICD10:I63.23 | Cerebral infarction due to unspecified occlusion or stenosis of carotid arteries |
|  | ICD10:I63.231 | Cerebral infarction due to unspecified occlusion or stenosis of right carotid arteries |
|  | ICD10:I63.232 | Cerebral infarction due to unspecified occlusion or stenosis of left carotid arteries |
|  | ICD10:I63.239 | Cerebral infarction due to unspecified occlusion or stenosis of unspecified carotid arteries |
|  | ICD10:I63.29 | Cerebral infarction due to unspecified occlusion or stenosis of other precerebral arteries |
|  | ICD10:I63.3 | Cerebral infarction due to thrombosis of cerebral arteries |
|  | ICD10:I63.30 | Cerebral infarction due to thrombosis of unspecified cerebral artery |
|  | ICD10:I63.31 | Cerebral infarction due to thrombosis of middle cerebral artery |
|  | ICD10:I63.311 | Cerebral infarction due to thrombosis of right middle cerebral artery |
|  | ICD10:I63.312 | Cerebral infarction due to thrombosis of left middle cerebral artery |
|  | ICD10:I63.319 | Cerebral infarction due to thrombosis of unspecified middle cerebral artery |
|  | ICD10:I63.32 | Cerebral infarction due to thrombosis of anterior cerebral artery |
|  | ICD10:I63.321 | Cerebral infarction due to thrombosis of right anterior cerebral artery |
|  | ICD10:I63.322 | Cerebral infarction due to thrombosis of left anterior cerebral artery |
|  | ICD10:I63.329 | Cerebral infarction due to thrombosis of unspecified anterior cerebral artery |
|  | ICD10:I63.33 | Cerebral infarction due to thrombosis of posterior cerebral artery |
|  | ICD10:I69.331 | Monoplegia of upper limb following cerebral infarction affecting right dominant side |
|  | ICD10:I69.332 | Monoplegia of upper limb following cerebral infarction affecting left dominant side |
|  | ICD10:I69.333 | Monoplegia of upper limb following cerebral infarction affecting right non-dominant side |
|  | ICD10:I69.334 | Monoplegia of upper limb following cerebral infarction affecting left non-dominant side |
|  | ICD10:I69.339 | Monoplegia of upper limb following cerebral infarction affecting unspecified side |
|  | ICD10:I69.34 | Monoplegia of lower limb following cerebral infarction |
|  | ICD10:I69.341 | Monoplegia of lower limb following cerebral infarction affecting right dominant side |
|  | ICD10:I69.342 | Monoplegia of lower limb following cerebral infarction affecting left dominant side |
|  | ICD10:I69.343 | Monoplegia of lower limb following cerebral infarction affecting right non-dominant side |
|  | ICD10:I69.344 | Monoplegia of lower limb following cerebral infarction affecting left non-dominant side |
|  | ICD10:I69.349 | Monoplegia of lower limb following cerebral infarction affecting unspecified side |
|  | ICD10:I69.35 | Hemiplegia and hemiparesis following cerebral infarction |
|  | ICD10:I69.351 | Hemiplegia and hemiparesis following cerebral infarction affecting right dominant side |
|  | ICD10:I69.352 | Hemiplegia and hemiparesis following cerebral infarction affecting left dominant side |
|  | ICD10:I69.353 | Hemiplegia and hemiparesis following cerebral infarction affecting right non-dominant side |
|  | ICD10:I69.354 | Hemiplegia and hemiparesis following cerebral infarction affecting left non-dominant side |
|  | ICD10:I69.359 | Hemiplegia and hemiparesis following cerebral infarction affecting unspecified side |
|  | ICD10:I69.36 | Other paralytic syndrome following cerebral infarction |
|  | ICD10:I69.361 | Other paralytic syndrome following cerebral infarction affecting right dominant side |
|  | ICD10:I69.362 | Other paralytic syndrome following cerebral infarction affecting left dominant side |
|  | ICD10:I69.363 | Other paralytic syndrome following cerebral infarction affecting right non-dominant side |
|  | ICD10:I69.364 | Other paralytic syndrome following cerebral infarction affecting left non-dominant side |
|  | ICD10:I69.365 | Other paralytic syndrome following cerebral infarction, bilateral |
|  | ICD10:I69.369 | Other paralytic syndrome following cerebral infarction affecting unspecified side |
|  | ICD10:I69.39 | Other sequelae of cerebral infarction |
|  | ICD10:I69.390 | Apraxia following cerebral infarction |
|  | ICD10:I69.391 | Dysphagia following cerebral infarction |
|  | ICD10:I69.392 | Facial weakness following cerebral infarction |
|  | ICD10:I69.393 | Ataxia following cerebral infarction |
|  | ICD10:I69.398 | Other sequelae of cerebral infarction |
|  | ICD10:Z86.73 | Personal history of transient ischemic attack (tia), and cerebral infarction without residual deficits |
|  | V1254 | Personal history of transient ischemic attack (TIA), and cerebral infarction without residual deficits |
| Cerebrellar (or brain stem) dysfunction |  |  |
|  | ICD10:G46.3 | Brain stem stroke syndrome |
|  | 3349 | Spinocerebellar disease, unspecified |
|  | ICD10:G46.4 | Cerebellar stroke syndrome |
|  | ICD10:I63.34 | Cerebral infarction due to thrombosis of cerebellar artery |
|  | ICD10:I63.341 | Cerebral infarction due to thrombosis of right cerebellar artery |
|  | ICD10:I63.342 | Cerebral infarction due to thrombosis of left cerebellar artery |
|  | ICD10:I63.349 | Cerebral infarction due to thrombosis of unspecified cerebellar artery |
|  | ICD10:I63.44 | Cerebral infarction due to embolism of cerebellar artery |
|  | ICD10:I63.441 | Cerebral infarction due to embolism of right cerebellar artery |
|  | ICD10:I63.442 | Cerebral infarction due to embolism of left cerebellar artery |
|  | ICD10:I63.449 | Cerebral infarction due to embolism of unspecified cerebellar artery |
|  | ICD10:I63.54 | Cerebral infarction due to unspecified occlusion or stenosis of cerebellar artery |
|  | ICD10:I63.541 | Cerebral infarction due to unspecified occlusion or stenosis of right cerebellar artery |
|  | ICD10:I63.542 | Cerebral infarction due to unspecified occlusion or stenosis of left cerebellar artery |
|  | ICD10:I63.549 | Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebellar artery |
|  | ICD10:I66.3 | Occlusion and stenosis of cerebellar arteries |
|  | ICD10:P52.6 | Cerebellar (nontraumatic) and posterior fossa hemorrhage of newborn |

# ICD Codes for Large Artery Stroke Test Features in TOAST

Duplex imaging or arteriography of a stenosis of greater than 50% of an appropriate intracranial or extracranial artery

DARAE Must have carotid ultrasound or arteriography of a stenosis of greater than 50% of an appropriate intracranial or extracranial artery

|  |  |  |
| --- | --- | --- |
| Feature | Procedure Codes | Code Description |
| Carotid endarterectomy | p3811 | Endarterectomy of intracranial vessels |
|  | p3812 | Endarterectomy of other vessels of head and neck |
|  | C35301 | Thromboendarterectomy, with or without patch graft; carotid, vertebral, subclavian, by neck incision |
|  | C35390 | Reoperation, carotid, thromboendarterectomy, more than one month after original operation (List separately in addition to code for primary procedure) |

# ICD Codes for Small Artery Stroke Clinical Features in TOAST

|  |  |  |
| --- | --- | --- |
| Feature | ICD9/ICD10 Codes | Code Description |
| Traditional clinical lacunar syndrome |  |  |
| ICD10 | G46.5 | Pure motor lacunar syndrome |
|  | G46.6 | Pure sensory lacunar syndrome |
|  | G46.7 | Other lacunar syndromes |
|  |  |  |
| -Diabetes mellitus |  |  |
| ICD9 | 249.00 | Secondary diabetes mellitus without mention of complication, not stated as uncontrolled, or unspecified |
|  | 249.01 | Secondary diabetes mellitus without mention of complication, uncontrolled |
|  | 249.10 | Secondary diabetes mellitus with ketoacidosis, not stated as uncontrolled, or unspecified |
|  | 249.11 | Secondary diabetes mellitus with ketoacidosis, uncontrolled |
|  | 249.20 | Secondary diabetes mellitus with hyperosmolarity, not stated as uncontrolled, or unspecified |
|  | 249.40 | Secondary diabetes mellitus with renal manifestations, not stated as uncontrolled, or unspecified |
|  | 249.41 | Secondary diabetes mellitus with renal manifestations, uncontrolled |
|  | 249.50 | Secondary diabetes mellitus with ophthalmic manifestations, not stated as uncontrolled, or unspecified |
|  | 249.6 | Secondary diabetes mellitus with neurological manifestations |
|  | 249.60 | Secondary diabetes mellitus with neurological manifestations, not stated as uncontrolled, or unspecified |
|  | 249.61 | Secondary diabetes mellitus with neurological manifestations, uncontrolled |
|  | 249.70 | Secondary diabetes mellitus with peripheral circulatory disorders, not stated as uncontrolled, or unspecified |
|  | 249.71 | Secondary diabetes mellitus with peripheral circulatory disorders, uncontrolled |
|  | 249.80 | Secondary diabetes mellitus with other specified manifestations, not stated as uncontrolled, or unspecified |
|  | 249.81 | Secondary diabetes mellitus with other specified manifestations, uncontrolled |
|  | 249.9 | Secondary diabetes mellitus with unspecified complications |
|  | 249.90 | Secondary diabetes mellitus with unspecified complication, not stated as uncontrolled, or unspecified |
|  | 249.91 | Secondary diabetes mellitus with unspecified complication, uncontrolled |
|  | 250 | Diabetes mellitus |
|  | 250.0 | Diabetes mellitus without mention of complication |
|  | 250.00 | type II diabetes mellitus [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, not stated as uncontrolled, without mention of complication |
|  | 250.01 | type I diabetes mellitus [insulin dependent type] [IDDM] [juvenile type], not stated as uncontrolled, without mention of complication |
|  | 250.02 | type II diabetes mellitus [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, uncontrolled, without mention of complication |
|  | 250.03 | type I diabetes mellitus [insulin dependent type] [IDDM] [juvenile type], uncontrolled, without mention of complication |
|  | 250.1 | Diabetes with ketoacidosis |
|  | 250.10 | type II diabetes mellitus [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, not stated as uncontrolled, with ketoacidosis |
|  | 250.11 | type I diabetes mellitus [insulin dependent type] [IDDM] [juvenile type], not stated as uncontrolled, with ketoacidosis |
|  | 250.12 | type II diabetes mellitus [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, uncontrolled, with ketoacidosis |
|  | 250.13 | type I diabetes mellitus [insulin dependent type] [IDDM] [juvenile type], uncontrolled, with ketoacidosis |
|  | 250.2 | Diabetes mellitus with hyperosmolarity |
|  | 250.20 | Diabetes mellitus, type II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type with hyperosmolarity, not stated as uncontrolled |
|  | 250.21 | Diabetes mellitus, type I [insulin dependent type] [IDDM] [juvenile type] with hyperosmolarity, not stated as uncontrolled |
|  | 250.22 | Diabetes mellitustype II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type with hyperosmolarity, uncontrolled |
|  | 250.23 | Diabetes mellitus, type I [insulin dependent type] [IDDM] [juvenile type] with hyperosmolarity, uncontrolled |
|  | 250.30 | Diabetes mellitus, type II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, not stated as uncontrolled |
|  | 250.31 | Diabetes mellitus, type I [insulin dependent type] [IDDM] [juvenile type], not stated as uncontrolled |
|  | 250.32 | Diabetes mellitus with other coma, type II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, uncontrolled |
|  | 250.33 | Diabetes mellitus with other coma, type I [insulin dependent type] [IDDM] [juvenile type], uncontrolled |
|  | 250.4 | Diabetes with renal manifestations |
|  | 250.40 | Diabetes mellitus type II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, not stated as uncontrolled, with renal manifestations |
|  | 250.41 | Diabetes mellitus type I [insulin dependent type] [IDDM] [juvenile type], not stated as uncontrolled, with renal manifestations |
|  | 250.42 | Diabetes mellitus type II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, uncontrolled, with renal manifestations |
|  | 250.43 | Diabetes mellitus type I [insulin dependent type] [IDDM] [juvenile type], uncontrolled, with renal manifestations |
|  | 250.5 | Diabetes with ophthalmic manifestations |
|  | 250.50 | Diabetes mellitus type II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, not stated as uncontrolled, with ophthalmic manifestations |
|  | 250.51 | Diabetes mellitus type I [insulin dependent type] [IDDM] [juvenile type], not stated as uncontrolled, with ophthalmic manifestations |
|  | 250.52 | Diabetes mellitus type II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, uncontrolled, with ophthalmic manifestations |
|  | 250.53 | Diabetes mellitus type I [insulin dependent type] [IDDM] [juvenile type], uncontrolled, with ophthalmic manifestations |
|  | 250.6 | Diabetes with neurological manifestations |
|  | 250.60 | Diabetes mellitus type II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, not stated as uncontrolled, with neurological manifestations |
|  | 250.61 | Diabetes mellitus type I [insulin dependent type] [IDDM] [juvenile type], not stated as uncontrolled, with neurological manifestations |
|  | 250.62 | Diabetes mellitus type II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, uncontrolled, with neurological manifestations |
|  | 250.63 | Diabetes mellitus type I [insulin dependent type] [IDDM] [juvenile type], uncontrolled, with neurological manifestations |
|  | 250.7 | Diabetes with peripheral circulatory disorders |
|  | 250.70 | Diabetes mellitus type II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, not stated as uncontrolled, with peripheral circulatory disorders |
|  | 250.71 | Diabetes mellitus type I [insulin dependent type] [IDDM] [juvenile type], not stated as uncontrolled, with peripheral circulatory disorders |
|  | 250.72 | Diabetes mellitus type II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, uncontrolled, with peripheral circulatory disorders |
|  | 250.73 | Diabetes mellitus type I [insulin dependent type] [IDDM] [juvenile type], uncontrolled, with peripheral circulatory disorders |
|  | 250.8 | Diabetes with other specified manifestations |
|  | 250.80 | Diabetes mellitus type II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, not stated as uncontrolled, with other specified manifestations |
|  | 250.81 | Diabetes mellitus type I [insulin dependent type] [IDDM] [juvenile type], not stated as uncontrolled, with other specified manifestations |
|  | 250.82 | Diabetes mellitus type II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, uncontrolled, with other specified manifestations |
|  | 250.83 | Diabetes mellitus type I [insulin dependent type] [IDDM] [juvenile type], uncontrolled, with other specified manifestations |
|  | 250.9 | Diabetes with unspecified complication |
|  | 250.90 | Diabetes mellitus type II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, not stated as uncontrolled, with unspecified complication |
|  | 250.91 | Diabetes mellitus type I [insulin dependent type] [IDDM] [juvenile type], not stated as uncontrolled, with unspecified complication |
|  | 250.92 | Diabetes mellitus type II [non-insulin dependent type] [NIDDM type] [adult-onset type] or unspecified type, uncontrolled, with unspecified complication |
|  | 250.93 | Diabetes mellitus type I [insulin dependent type] [IDDM] [juvenile type], uncontrolled, with unspecified complication |
|  | 253.5 | Diabetes insipidus |
|  | 357.2 | Polyneuropathy in diabetes |
|  | 588.1 | Nephrogenic diabetes insipidus |
|  | 648.0 | Diabetes mellitus complicating pregnancy, childbirth, or the puerperium |
|  | 648.00 | Diabetes mellitus of mother, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care |
|  | 648.01 | Diabetes mellitus of mother, with delivery |
|  | 648.02 | Diabetes mellitus of mother, with delivery, with mention of postpartum complication |
|  | 648.03 | Diabetes mellitus, antepartum |
|  | 648.04 | Diabetes mellitus, postpartum |
| ICD10 | E08 | Diabetes mellitus due to underlying condition |
|  | E08-E13 | Diabetes mellitus (E08-E13) |
|  | E08.0 | Diabetes mellitus due to underlying condition with hyperosmolarity |
|  | E08.00 | Diabetes mellitus due to underlying condition with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (nkhhc) |
|  | E08.01 | Diabetes mellitus due to underlying condition with hyperosmolarity with coma |
|  | E08.1 | Diabetes mellitus due to underlying condition with ketoacidosis |
|  | E08.10 | Diabetes mellitus due to underlying condition with ketoacidosis without coma |
|  | E08.11 | Diabetes mellitus due to underlying condition with ketoacidosis with coma |
|  | E08.2 | Diabetes mellitus due to underlying condition with kidney complications |
|  | E08.21 | Diabetes mellitus due to underlying condition with diabetic nephropathy |
|  | E08.22 | Diabetes mellitus due to underlying condition with diabetic chronic kidney disease |
|  | E08.29 | Diabetes mellitus due to underlying condition with other diabetic kidney complication |
|  | E08.3 | Diabetes mellitus due to underlying condition with ophthalmic complications |
|  | E08.31 | Diabetes mellitus due to underlying condition with unspecified diabetic retinopathy |
|  | E08.311 | Diabetes mellitus due to underlying condition with unspecified diabetic retinopathy with macular edema |
|  | E08.319 | Diabetes mellitus due to underlying condition with unspecified diabetic retinopathy without macular edema |
|  | E08.32 | Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy |
|  | E08.321 | Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy with macular edema |
|  | E08.329 | Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy without macular edema |
|  | E08.33 | Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy |
|  | E08.331 | Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy with macular edema |
|  | E08.339 | Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy without macular edema |
|  | E08.34 | Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy |
|  | E08.341 | Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy with macular edema |
|  | E08.349 | Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy without macular edema |
|  | E08.35 | Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy |
|  | E08.351 | Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with macular edema |
|  | E08.359 | Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy without macular edema |
|  | E08.36 | Diabetes mellitus due to underlying condition with diabetic cataract |
|  | E08.39 | Diabetes mellitus due to underlying condition with other diabetic ophthalmic complication |
|  | E08.4 | Diabetes mellitus due to underlying condition with neurological complications |
|  | E08.40 | Diabetes mellitus due to underlying condition with diabetic neuropathy, unspecified |
|  | E08.41 | Diabetes mellitus due to underlying condition with diabetic mononeuropathy |
|  | E08.42 | Diabetes mellitus due to underlying condition with diabetic polyneuropathy |
|  | E08.43 | Diabetes mellitus due to underlying condition with diabetic autonomic (poly)neuropathy |
|  | E08.44 | Diabetes mellitus due to underlying condition with diabetic amyotrophy |
|  | E08.49 | Diabetes mellitus due to underlying condition with other diabetic neurological complication |
|  | E08.5 | Diabetes mellitus due to underlying condition with circulatory complications |
|  | E08.51 | Diabetes mellitus due to underlying condition with diabetic peripheral angiopathy without gangrene |
|  | E08.52 | Diabetes mellitus due to underlying condition with diabetic peripheral angiopathy with gangrene |
|  | E08.59 | Diabetes mellitus due to underlying condition with other circulatory complications |
|  | E08.6 | Diabetes mellitus due to underlying condition with other specified complications |
|  | E08.61 | Diabetes mellitus due to underlying condition with diabetic arthropathy |
|  | E08.610 | Diabetes mellitus due to underlying condition with diabetic neuropathic arthropathy |
|  | E08.618 | Diabetes mellitus due to underlying condition with other diabetic arthropathy |
|  | E08.62 | Diabetes mellitus due to underlying condition with skin complications |
|  | E08.620 | Diabetes mellitus due to underlying condition with diabetic dermatitis |
|  | E08.621 | Diabetes mellitus due to underlying condition with foot ulcer |
|  | E08.622 | Diabetes mellitus due to underlying condition with other skin ulcer |
|  | E08.628 | Diabetes mellitus due to underlying condition with other skin complications |
|  | E08.63 | Diabetes mellitus due to underlying condition with oral complications |
|  | E08.630 | Diabetes mellitus due to underlying condition with periodontal disease |
|  | E08.638 | Diabetes mellitus due to underlying condition with other oral complications |
|  | E08.64 | Diabetes mellitus due to underlying condition with hypoglycemia |
|  | E08.641 | Diabetes mellitus due to underlying condition with hypoglycemia with coma |
|  | E08.649 | Diabetes mellitus due to underlying condition with hypoglycemia without coma |
|  | E08.65 | Diabetes mellitus due to underlying condition with hyperglycemia |
|  | E08.69 | Diabetes mellitus due to underlying condition with other specified complication |
|  | E08.8 | Diabetes mellitus due to underlying condition with unspecified complications |
|  | E08.9 | Diabetes mellitus due to underlying condition without complications |
|  | E10 | Type 1 diabetes mellitus |
|  | E10.1 | Type 1 diabetes mellitus with ketoacidosis |
|  | E10.10 | Type 1 diabetes mellitus with ketoacidosis without coma |
|  | E10.11 | Type 1 diabetes mellitus with ketoacidosis with coma |
|  | E10.2 | Type 1 diabetes mellitus with kidney complications |
|  | E10.21 | Type 1 diabetes mellitus with diabetic nephropathy |
|  | E10.22 | Type 1 diabetes mellitus with diabetic chronic kidney disease |
|  | E10.29 | Type 1 diabetes mellitus with other diabetic kidney complication |
|  | E10.3 | Type 1 diabetes mellitus with ophthalmic complications |
|  | E10.31 | Type 1 diabetes mellitus with unspecified diabetic retinopathy |
|  | E10.311 | Type 1 diabetes mellitus with unspecified diabetic retinopathy with macular edema |
|  | E10.319 | Type 1 diabetes mellitus with unspecified diabetic retinopathy without macular edema |
|  | E10.32 | Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy |
|  | E10.321 | Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema |
|  | E10.329 | Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema |
|  | E10.3293 | Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, bilateral |
|  | E10.3299 | Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, unspecified eye |
|  | E10.33 | Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy |
|  | E10.331 | Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema |
|  | E10.339 | Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema |
|  | E10.34 | Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy |
|  | E10.341 | Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema |
|  | E10.349 | Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema |
|  | E10.35 | Type 1 diabetes mellitus with proliferative diabetic retinopathy |
|  | E10.351 | Type 1 diabetes mellitus with proliferative diabetic retinopathy with macular edema |
|  | E10.359 | Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema |
|  | E10.36 | Type 1 diabetes mellitus with diabetic cataract |
|  | E10.39 | Type 1 diabetes mellitus with other diabetic ophthalmic complication |
|  | E10.4 | Type 1 diabetes mellitus with neurological complications |
|  | E10.40 | Type 1 diabetes mellitus with diabetic neuropathy, unspecified |
|  | E10.41 | Type 1 diabetes mellitus with diabetic mononeuropathy |
|  | E10.42 | Type 1 diabetes mellitus with diabetic polyneuropathy |
|  | E10.43 | Type 1 diabetes mellitus with diabetic autonomic (poly)neuropathy |
|  | E10.44 | Type 1 diabetes mellitus with diabetic amyotrophy |
|  | E10.49 | Type 1 diabetes mellitus with other diabetic neurological complication |
|  | E10.5 | Type 1 diabetes mellitus with circulatory complications |
|  | E10.51 | Type 1 diabetes mellitus with diabetic peripheral angiopathy without gangrene |
|  | E10.52 | Type 1 diabetes mellitus with diabetic peripheral angiopathy with gangrene |
|  | E10.59 | Type 1 diabetes mellitus with other circulatory complications |
|  | E10.6 | Type 1 diabetes mellitus with other specified complications |
|  | E10.61 | Type 1 diabetes mellitus with diabetic arthropathy |
|  | E10.610 | Type 1 diabetes mellitus with diabetic neuropathic arthropathy |
|  | E10.618 | Type 1 diabetes mellitus with other diabetic arthropathy |
|  | E10.62 | Type 1 diabetes mellitus with skin complications |
|  | E10.620 | Type 1 diabetes mellitus with diabetic dermatitis |
|  | E10.621 | Type 1 diabetes mellitus with foot ulcer |
|  | E10.622 | Type 1 diabetes mellitus with other skin ulcer |
|  | E10.628 | Type 1 diabetes mellitus with other skin complications |
|  | E10.63 | Type 1 diabetes mellitus with oral complications |
|  | E10.630 | Type 1 diabetes mellitus with periodontal disease |
|  | E10.638 | Type 1 diabetes mellitus with other oral complications |
|  | E10.64 | Type 1 diabetes mellitus with hypoglycemia |
|  | E10.641 | Type 1 diabetes mellitus with hypoglycemia with coma |
|  | E10.649 | Type 1 diabetes mellitus with hypoglycemia without coma |
|  | E10.65 | Type 1 diabetes mellitus with hyperglycemia |
|  | E10.69 | Type 1 diabetes mellitus with other specified complication |
|  | E10.8 | Type 1 diabetes mellitus with unspecified complications |
|  | E10.9 | Type 1 diabetes mellitus without complications |
|  | E11 | Type 2 diabetes mellitus |
|  | E11.0 | Type 2 diabetes mellitus with hyperosmolarity |
|  | E11.00 | Type 2 diabetes mellitus with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (nkhhc) |
|  | E11.01 | Type 2 diabetes mellitus with hyperosmolarity with coma |
|  | E11.2 | Type 2 diabetes mellitus with kidney complications |
|  | E11.21 | Type 2 diabetes mellitus with diabetic nephropathy |
|  | E11.22 | Type 2 diabetes mellitus with diabetic chronic kidney disease |
|  | E11.29 | Type 2 diabetes mellitus with other diabetic kidney complication |
|  | E11.3 | Type 2 diabetes mellitus with ophthalmic complications |
|  | E11.31 | Type 2 diabetes mellitus with unspecified diabetic retinopathy |
|  | E11.311 | Type 2 diabetes mellitus with unspecified diabetic retinopathy with macular edema |
|  | E11.319 | Type 2 diabetes mellitus with unspecified diabetic retinopathy without macular edema |
|  | E11.32 | Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy |
|  | E11.321 | Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema |
|  | E11.329 | Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema |
|  | E11.3293 | Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, bilateral |
|  | E11.3299 | Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, unspecified eye |
|  | E11.33 | Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy |
|  | E11.331 | Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema |
|  | E11.339 | Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema |
|  | E11.3393 | Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, bilateral |
|  | E11.34 | Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy |
|  | E11.341 | Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema |
|  | E11.349 | Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema |
|  | E11.35 | Type 2 diabetes mellitus with proliferative diabetic retinopathy |
|  | E11.351 | Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema |
|  | E11.359 | Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema |
|  | E11.36 | Type 2 diabetes mellitus with diabetic cataract |
|  | E11.39 | Type 2 diabetes mellitus with other diabetic ophthalmic complication |
|  | E11.4 | Type 2 diabetes mellitus with neurological complications |
|  | E11.40 | Type 2 diabetes mellitus with diabetic neuropathy, unspecified |
|  | E11.41 | Type 2 diabetes mellitus with diabetic mononeuropathy |
|  | E11.42 | Type 2 diabetes mellitus with diabetic polyneuropathy |
|  | E11.43 | Type 2 diabetes mellitus with diabetic autonomic (poly)neuropathy |
|  | E11.44 | Type 2 diabetes mellitus with diabetic amyotrophy |
|  | E11.49 | Type 2 diabetes mellitus with other diabetic neurological complication |
|  | E11.5 | Type 2 diabetes mellitus with circulatory complications |
|  | E11.51 | Type 2 diabetes mellitus with diabetic peripheral angiopathy without gangrene |
|  | E11.52 | Type 2 diabetes mellitus with diabetic peripheral angiopathy with gangrene |
|  | E11.59 | Type 2 diabetes mellitus with other circulatory complications |
|  | E11.6 | Type 2 diabetes mellitus with other specified complications |
|  | E11.61 | Type 2 diabetes mellitus with diabetic arthropathy |
|  | E11.610 | Type 2 diabetes mellitus with diabetic neuropathic arthropathy |
|  | E11.618 | Type 2 diabetes mellitus with other diabetic arthropathy |
|  | E11.62 | Type 2 diabetes mellitus with skin complications |
|  | E11.620 | Type 2 diabetes mellitus with diabetic dermatitis |
|  | E11.621 | Type 2 diabetes mellitus with foot ulcer |
|  | E11.622 | Type 2 diabetes mellitus with other skin ulcer |
|  | E11.628 | Type 2 diabetes mellitus with other skin complications |
|  | E11.63 | Type 2 diabetes mellitus with oral complications |
|  | E11.630 | Type 2 diabetes mellitus with periodontal disease |
|  | E11.638 | Type 2 diabetes mellitus with other oral complications |
|  | E11.64 | Type 2 diabetes mellitus with hypoglycemia |
|  | E11.641 | Type 2 diabetes mellitus with hypoglycemia with coma |
|  | E11.649 | Type 2 diabetes mellitus with hypoglycemia without coma |
|  | E11.65 | Type 2 diabetes mellitus with hyperglycemia |
|  | E11.69 | Type 2 diabetes mellitus with other specified complication |
|  | E11.8 | Type 2 diabetes mellitus with unspecified complications |
|  | E11.9 | Type 2 diabetes mellitus without complications |
|  | E13 | Other specified diabetes mellitus |
|  | E13.0 | Other specified diabetes mellitus with hyperosmolarity |
|  | E13.00 | Other specified diabetes mellitus with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (nkhhc) |
|  | E13.01 | Other specified diabetes mellitus with hyperosmolarity with coma |
|  | E13.1 | Other specified diabetes mellitus with ketoacidosis |
|  | E13.10 | Other specified diabetes mellitus with ketoacidosis without coma |
|  | E13.11 | Other specified diabetes mellitus with ketoacidosis with coma |
|  | E13.2 | Other specified diabetes mellitus with kidney complications |
|  | E13.21 | Other specified diabetes mellitus with diabetic nephropathy |
|  | E13.22 | Other specified diabetes mellitus with diabetic chronic kidney disease |
|  | E13.29 | Other specified diabetes mellitus with other diabetic kidney complication |
|  | E13.3 | Other specified diabetes mellitus with ophthalmic complications |
|  | E13.31 | Other specified diabetes mellitus with unspecified diabetic retinopathy |
|  | E13.311 | Other specified diabetes mellitus with unspecified diabetic retinopathy with macular edema |
|  | E13.319 | Other specified diabetes mellitus with unspecified diabetic retinopathy without macular edema |
|  | E13.32 | Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy |
|  | E13.321 | Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema |
|  | E13.329 | Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema |
|  | E13.33 | Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy |
|  | E13.331 | Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema |
|  | E13.339 | Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema |
|  | E13.34 | Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy |
|  | E13.341 | Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema |
|  | E13.349 | Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema |
|  | E13.35 | Other specified diabetes mellitus with proliferative diabetic retinopathy |
|  | E13.351 | Other specified diabetes mellitus with proliferative diabetic retinopathy with macular edema |
|  | E13.359 | Other specified diabetes mellitus with proliferative diabetic retinopathy without macular edema |
|  | E13.36 | Other specified diabetes mellitus with diabetic cataract |
|  | E13.39 | Other specified diabetes mellitus with other diabetic ophthalmic complication |
|  | E13.4 | Other specified diabetes mellitus with neurological complications |
|  | E13.40 | Other specified diabetes mellitus with diabetic neuropathy, unspecified |
|  | E13.41 | Other specified diabetes mellitus with diabetic mononeuropathy |
|  | E13.42 | Other specified diabetes mellitus with diabetic polyneuropathy |
|  | E13.43 | Other specified diabetes mellitus with diabetic autonomic (poly)neuropathy |
|  | E13.44 | Other specified diabetes mellitus with diabetic amyotrophy |
|  | E13.49 | Other specified diabetes mellitus with other diabetic neurological complication |
|  | E13.5 | Other specified diabetes mellitus with circulatory complications |
|  | E13.51 | Other specified diabetes mellitus with diabetic peripheral angiopathy without gangrene |
|  | E13.52 | Other specified diabetes mellitus with diabetic peripheral angiopathy with gangrene |
|  | E13.59 | Other specified diabetes mellitus with other circulatory complications |
|  | E13.6 | Other specified diabetes mellitus with other specified complications |
|  | E13.61 | Other specified diabetes mellitus with diabetic arthropathy |
|  | E13.610 | Other specified diabetes mellitus with diabetic neuropathic arthropathy |
|  | E13.618 | Other specified diabetes mellitus with other diabetic arthropathy |
|  | E13.62 | Other specified diabetes mellitus with skin complications |
|  | E13.620 | Other specified diabetes mellitus with diabetic dermatitis |
|  | E13.621 | Other specified diabetes mellitus with foot ulcer |
|  | E13.622 | Other specified diabetes mellitus with other skin ulcer |
|  | E13.628 | Other specified diabetes mellitus with other skin complications |
|  | E13.63 | Other specified diabetes mellitus with oral complications |
|  | E13.630 | Other specified diabetes mellitus with periodontal disease |
|  | E13.638 | Other specified diabetes mellitus with other oral complications |
|  | E13.64 | Other specified diabetes mellitus with hypoglycemia |
|  | E13.641 | Other specified diabetes mellitus with hypoglycemia with coma |
|  | E13.649 | Other specified diabetes mellitus with hypoglycemia without coma |
|  | E13.65 | Other specified diabetes mellitus with hyperglycemia |
|  | E13.69 | Other specified diabetes mellitus with other specified complication |
|  | E13.8 | Other specified diabetes mellitus with unspecified complications |
|  | E13.9 | Other specified diabetes mellitus without complications |
|  | E23.2 | Diabetes insipidus |
|  | N25.1 | Nephrogenic diabetes insipidus |
|  | O24 | Diabetes mellitus in pregnancy, childbirth, and the puerperium |
|  | O24.0 | Pre-existing diabetes mellitus, type 1, in pregnancy, childbirth and the puerperium |
|  | O24.01 | Pre-existing diabetes mellitus, type 1, in pregnancy |
|  | O24.011 | Pre-existing diabetes mellitus, type 1, in pregnancy, first trimester |
|  | O24.012 | Pre-existing diabetes mellitus, type 1, in pregnancy, second trimester |
|  | O24.013 | Pre-existing diabetes mellitus, type 1, in pregnancy, third trimester |
|  | O24.019 | Pre-existing diabetes mellitus, type 1, in pregnancy, unspecified trimester |
|  | O24.02 | Pre-existing diabetes mellitus, type 1, in childbirth |
|  | O24.03 | Pre-existing diabetes mellitus, type 1, in the puerperium |
|  | O24.1 | Pre-existing diabetes mellitus, type 2, in pregnancy, childbirth and the puerperium |
|  | O24.11 | Pre-existing diabetes mellitus, type 2, in pregnancy |
|  | O24.111 | Pre-existing diabetes mellitus, type 2, in pregnancy, first trimester |
|  | O24.112 | Pre-existing diabetes mellitus, type 2, in pregnancy, second trimester |
|  | O24.113 | Pre-existing diabetes mellitus, type 2, in pregnancy, third trimester |
|  | O24.119 | Pre-existing diabetes mellitus, type 2, in pregnancy, unspecified trimester |
|  | O24.12 | Pre-existing diabetes mellitus, type 2, in childbirth |
|  | O24.13 | Pre-existing diabetes mellitus, type 2, in the puerperium |
|  | O24.3 | Unspecified pre-existing diabetes mellitus in pregnancy, childbirth and the puerperium |
|  | O24.31 | Unspecified pre-existing diabetes mellitus in pregnancy |
|  | O24.311 | Unspecified pre-existing diabetes mellitus in pregnancy, first trimester |
|  | O24.312 | Unspecified pre-existing diabetes mellitus in pregnancy, second trimester |
|  | O24.313 | Unspecified pre-existing diabetes mellitus in pregnancy, third trimester |
|  | O24.319 | Unspecified pre-existing diabetes mellitus in pregnancy, unspecified trimester |
|  | O24.32 | Unspecified pre-existing diabetes mellitus in childbirth |
|  | O24.33 | Unspecified pre-existing diabetes mellitus in the puerperium |
|  | O24.4 | Gestational diabetes mellitus |
|  | O24.41 | Gestational diabetes mellitus in pregnancy |
|  | O24.410 | Gestational diabetes mellitus in pregnancy, diet controlled |
|  | O24.414 | Gestational diabetes mellitus in pregnancy, insulin controlled |
|  | O24.415 | Gestational diabetes mellitus in pregnancy, controlled by oral hypoglycemic drugs |
|  | O24.419 | Gestational diabetes mellitus in pregnancy, unspecified control |
|  | O24.42 | Gestational diabetes mellitus in childbirth |
|  | O24.420 | Gestational diabetes mellitus in childbirth, diet controlled |
|  | O24.424 | Gestational diabetes mellitus in childbirth, insulin controlled |
|  | O24.429 | Gestational diabetes mellitus in childbirth, unspecified control |
|  | O24.43 | Gestational diabetes mellitus in the puerperium |
|  | O24.430 | Gestational diabetes mellitus in the puerperium, diet controlled |
|  | O24.434 | Gestational diabetes mellitus in the puerperium, insulin controlled |
|  | O24.439 | Gestational diabetes mellitus in the puerperium, unspecified control |
|  | O24.8 | Other pre-existing diabetes mellitus in pregnancy, childbirth, and the puerperium |
|  | O24.81 | Other pre-existing diabetes mellitus in pregnancy |
|  | O24.811 | Other pre-existing diabetes mellitus in pregnancy, first trimester |
|  | O24.812 | Other pre-existing diabetes mellitus in pregnancy, second trimester |
|  | O24.813 | Other pre-existing diabetes mellitus in pregnancy, third trimester |
|  | O24.819 | Other pre-existing diabetes mellitus in pregnancy, unspecified trimester |
|  | O24.82 | Other pre-existing diabetes mellitus in childbirth |
|  | O24.83 | Other pre-existing diabetes mellitus in the puerperium |
|  | O24.9 | Unspecified diabetes mellitus in pregnancy, childbirth and the puerperium |
|  | O24.91 | Unspecified diabetes mellitus in pregnancy |
|  | O24.911 | Unspecified diabetes mellitus in pregnancy, first trimester |
|  | O24.912 | Unspecified diabetes mellitus in pregnancy, second trimester |
|  | O24.913 | Unspecified diabetes mellitus in pregnancy, third trimester |
|  | O24.919 | Unspecified diabetes mellitus in pregnancy, unspecified trimester |
|  | O24.92 | Unspecified diabetes mellitus in childbirth |
|  | O24.93 | Unspecified diabetes mellitus in the puerperium |
|  | Z13.1 | Encounter for screening for diabetes mellitus |
|  | Z83.3 | Family history of diabetes mellitus |
|  | Z86.32 | Personal history of gestational diabetes |

# ICD Codes for Small Artery Stroke Clinical Features in TOAST

|  |  |  |
| --- | --- | --- |
| Feature | ICD9/ICD10 Codes | Code Description |
| -Hypertension |  |  |
|  | 3482 | Benign intracranial hypertension |
|  | 36504 | Ocular hypertension |
|  | 401 | Essential hypertension |
|  | 4010 | Malignant essential hypertension |
|  | 4011 | Benign essential hypertension |
|  | 4019 | Unspecified essential hypertension |
|  | 405 | Secondary hypertension |
|  | 4050 | Malignant secondary hypertension |
|  | 40501 | Malignant renovascular hypertension |
|  | 40509 | Other malignant secondary hypertension |
|  | 4051 | Benign secondary hypertension |
|  | 40511 | Benign renovascular hypertension |
|  | 40519 | Other benign secondary hypertension |
|  | 4059 | Unspecified secondary hypertension |
|  | 40591 | Unspecified renovascular hypertension |
|  | 40599 | Other unspecified secondary hypertension |
|  | 4160 | Primary pulmonary hypertension |
|  | 45930 | Chronic venous hypertension without complications |
|  | 45931 | Chronic venous hypertension with ulcer |
|  | 45932 | Chronic venous hypertension with inflammation |
|  | 45933 | Chronic venous hypertension with ulcer and inflammation |
|  | 45939 | Chronic venous hypertension with other complication |
|  | 5723 | Portal hypertension |
|  | 642 | Hypertension complicating pregnancy, childbirth, and the puerperium |
|  | 6420 | Benign essential hypertension complicating pregnancy, childbirth, and the puerperium |
|  | 64200 | Benign essential hypertension complicating pregnancy, childbirth, and the puerperium, unspecified as to episode of care |
|  | 64200 | Benign essential hypertension complicating pregnancy, childbirth, and the puerperium, unspecified as to episode of care |
|  | 64201 | Benign essential hypertension with delivery |
|  | 64201 | Benign essential hypertension with delivery |
|  | 64201 | Benign essential hypertension with delivery |
|  | 64201 | Benign essential hypertension with delivery |
|  | 64201 | Benign essential hypertension with delivery |
|  | 64201 | Benign essential hypertension with delivery |
|  | 64201 | Benign essential hypertension with delivery |
|  | 64202 | Benign essential hypertension, with delivery, with mention of postpartum complication |
|  | 64203 | Benign essential hypertension antepartum |
|  | 64203 | Benign essential hypertension antepartum |
|  | 64203 | Benign essential hypertension antepartum |
|  | 64203 | Benign essential hypertension antepartum |
|  | 64203 | Benign essential hypertension antepartum |
|  | 64203 | Benign essential hypertension antepartum |
|  | 64204 | Benign essential hypertension, postpartum |
|  | 6421 | Hypertension secondary to renal disease, complicating pregnancy, childbirth, and the puerperium |
|  | 64210 | Hypertension secondary to renal disease, complicating pregnancy, childbirth, and the puerperium, unspecified as to episode of care |
|  | 64211 | Hypertension secondary to renal disease, with delivery |
|  | 64211 | Hypertension secondary to renal disease, with delivery |
|  | 64211 | Hypertension secondary to renal disease, with delivery |
|  | 64211 | Hypertension secondary to renal disease, with delivery |
|  | 64212 | Hypertension secondary to renal disease, with delivery, with mention of postpartum complication |
|  | 64213 | Hypertension secondary to renal disease, antepartum |
|  | 64213 | Hypertension secondary to renal disease, antepartum |
|  | 64213 | Hypertension secondary to renal disease, antepartum |
|  | 64214 | Hypertension secondary to renal disease, postpartum |
|  | 6422 | Other pre-existing hypertension complicating pregnancy, childbirth, and the puerperium |
|  | 64220 | Other pre-existing hypertension complicating pregnancy, childbirth, and the puerperium, unspecified as to episode of care |
|  | 64220 | Other pre-existing hypertension complicating pregnancy, childbirth, and the puerperium, unspecified as to episode of care |
|  | 64220 | Other pre-existing hypertension complicating pregnancy, childbirth, and the puerperium, unspecified as to episode of care |
|  | 64220 | Other pre-existing hypertension complicating pregnancy, childbirth, and the puerperium, unspecified as to episode of care |
|  | 64221 | Other pre-existing hypertension, with delivery |
|  | 64221 | Other pre-existing hypertension, with delivery |
|  | 64221 | Other pre-existing hypertension, with delivery |
|  | 64221 | Other pre-existing hypertension, with delivery |
|  | 64221 | Other pre-existing hypertension, with delivery |
|  | 64221 | Other pre-existing hypertension, with delivery |
|  | 64221 | Other pre-existing hypertension, with delivery |
|  | 64221 | Other pre-existing hypertension, with delivery |
|  | 64221 | Other pre-existing hypertension, with delivery |
|  | 64221 | Other pre-existing hypertension, with delivery |
|  | 64221 | Other pre-existing hypertension, with delivery |
|  | 64221 | Other pre-existing hypertension, with delivery |
|  | 64221 | Other pre-existing hypertension, with delivery |
|  | 64221 | Other pre-existing hypertension, with delivery |
|  | 64221 | Other pre-existing hypertension, with delivery |
|  | 64222 | Other pre-existing hypertension, with delivery, with mention of postpartum complication |
|  | 64223 | Other pre-existing hypertension, antepartum |
|  | 64223 | Other pre-existing hypertension, antepartum |
|  | 64223 | Other pre-existing hypertension, antepartum |
|  | 64223 | Other pre-existing hypertension, antepartum |
|  | 64223 | Other pre-existing hypertension, antepartum |
|  | 64223 | Other pre-existing hypertension, antepartum |
|  | 64223 | Other pre-existing hypertension, antepartum |
|  | 64223 | Other pre-existing hypertension, antepartum |
|  | 64223 | Other pre-existing hypertension, antepartum |
|  | 64223 | Other pre-existing hypertension, antepartum |
|  | 64223 | Other pre-existing hypertension, antepartum |
|  | 64223 | Other pre-existing hypertension, antepartum |
|  | 64224 | Other pre-existing hypertension, postpartum |
|  | 64224 | Other pre-existing hypertension, postpartum |
|  | 64224 | Other pre-existing hypertension, postpartum |
|  | 6423 | Transient hypertension of pregnancy |
|  | 64230 | Transient hypertension of pregnancy, unspecified as to episode of care |
|  | 64231 | Transient hypertension of pregnancy, with delivery |
|  | 64231 | Transient hypertension of pregnancy, with delivery |
|  | 64231 | Transient hypertension of pregnancy, with delivery |
|  | 64231 | Transient hypertension of pregnancy, with delivery |
|  | 64231 | Transient hypertension of pregnancy, with delivery |
|  | 64231 | Transient hypertension of pregnancy, with delivery |
|  | 64232 | Transient hypertension of pregnancy, with delivery, with mention of postpartum complication |
|  | 64232 | Transient hypertension of pregnancy, with delivery, with mention of postpartum complication |
|  | 64232 | Transient hypertension of pregnancy, with delivery, with mention of postpartum complication |
|  | 64233 | Transient hypertension of pregnancy, antepartum |
|  | 64233 | Transient hypertension of pregnancy, antepartum |
|  | 64233 | Transient hypertension of pregnancy, antepartum |
|  | 64233 | Transient hypertension of pregnancy, antepartum |
|  | 64233 | Transient hypertension of pregnancy, antepartum |
|  | 64233 | Transient hypertension of pregnancy, antepartum |
|  | 64234 | Transient hypertension of pregnancy, postpartum |
|  | 64234 | Transient hypertension of pregnancy, postpartum |
|  | 64234 | Transient hypertension of pregnancy, postpartum |
|  | 6427 | Pre-eclampsia or eclampsia superimposed on pre-existing hypertension |
|  | 64270 | Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care |
|  | 64271 | Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, with delivery |
|  | 64271 | Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, with delivery |
|  | 64271 | Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, with delivery |
|  | 64272 | Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, with delivery, with mention of postpartum complication |
|  | 64273 | Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, antepartum |
|  | 64273 | Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, antepartum |
|  | 64273 | Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, antepartum |
|  | 64274 | Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, postpartum |
|  | 6429 | Unspecified hypertension complicating pregnancy, childbirth, or the puerperium |
|  | 64290 | Unspecified hypertension complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care |
|  | 64291 | Unspecified hypertension, with delivery |
|  | 64291 | Unspecified hypertension, with delivery |
|  | 64291 | Unspecified hypertension, with delivery |
|  | 64292 | Unspecified hypertension, with delivery, with mention of postpartum complication |
|  | 64293 | Unspecified antepartum hypertension |
|  | 64293 | Unspecified antepartum hypertension |
|  | 64293 | Unspecified antepartum hypertension |
|  | 64294 | Unspecified postpartum hypertension |
|  | 64294 | Unspecified postpartum hypertension |
|  | 64294 | Unspecified postpartum hypertension |
|  | 6461 | Edema or excessive weight gain in pregnancy, without mention of hypertension |
|  | 6462 | Unspecified renal disease in pregnancy, without mention of hypertension |
|  | 7962 | Elevated blood pressure reading without diagnosis of hypertension |
|  | 99791 | Hypertension |
|  | d401.9.3 | Hypertension NOS |
|  | ICD10:G93.2 | Benign intracranial hypertension |
|  | ICD10:H40.05 | Ocular hypertension |
|  | ICD10:H40.051 | Ocular hypertension, right eye |
|  | ICD10:H40.052 | Ocular hypertension, left eye |
|  | ICD10:H40.053 | Ocular hypertension, bilateral |
|  | ICD10:H40.059 | Ocular hypertension, unspecified eye |
|  | ICD10:I10 | Essential (primary) hypertension |
|  | ICD10:I15 | Secondary hypertension |
|  | ICD10:I15.0 | Renovascular hypertension |
|  | ICD10:I15.1 | Hypertension secondary to other renal disorders |
|  | ICD10:I15.2 | Hypertension secondary to endocrine disorders |
|  | ICD10:I15.8 | Other secondary hypertension |
|  | ICD10:I15.9 | Secondary hypertension, unspecified |
|  | ICD10:I27.0 | Primary pulmonary hypertension |
|  | ICD10:I27.2 | Other secondary pulmonary hypertension |
|  | ICD10:I87.3 | Chronic venous hypertension (idiopathic) |
|  | ICD10:I87.30 | Chronic venous hypertension (idiopathic) without complications |
|  | ICD10:I87.301 | Chronic venous hypertension (idiopathic) without complications of right lower extremity |
|  | ICD10:I87.302 | Chronic venous hypertension (idiopathic) without complications of left lower extremity |
|  | ICD10:I87.303 | Chronic venous hypertension (idiopathic) without complications of bilateral lower extremity |
|  | ICD10:I87.309 | Chronic venous hypertension (idiopathic) without complications of unspecified lower extremity |
|  | ICD10:I87.31 | Chronic venous hypertension (idiopathic) with ulcer |
|  | ICD10:I87.311 | Chronic venous hypertension (idiopathic) with ulcer of right lower extremity |
|  | ICD10:I87.312 | Chronic venous hypertension (idiopathic) with ulcer of left lower extremity |
|  | ICD10:I87.313 | Chronic venous hypertension (idiopathic) with ulcer of bilateral lower extremity |
|  | ICD10:I87.319 | Chronic venous hypertension (idiopathic) with ulcer of unspecified lower extremity |
|  | ICD10:I87.32 | Chronic venous hypertension (idiopathic) with inflammation |
|  | ICD10:I87.321 | Chronic venous hypertension (idiopathic) with inflammation of right lower extremity |
|  | ICD10:I87.322 | Chronic venous hypertension (idiopathic) with inflammation of left lower extremity |
|  | ICD10:I87.323 | Chronic venous hypertension (idiopathic) with inflammation of bilateral lower extremity |
|  | ICD10:I87.329 | Chronic venous hypertension (idiopathic) with inflammation of unspecified lower extremity |
|  | ICD10:I87.33 | Chronic venous hypertension (idiopathic) with ulcer and inflammation |
|  | ICD10:I87.331 | Chronic venous hypertension (idiopathic) with ulcer and inflammation of right lower extremity |
|  | ICD10:I87.332 | Chronic venous hypertension (idiopathic) with ulcer and inflammation of left lower extremity |
|  | ICD10:I87.333 | Chronic venous hypertension (idiopathic) with ulcer and inflammation of bilateral lower extremity |
|  | ICD10:I87.339 | Chronic venous hypertension (idiopathic) with ulcer and inflammation of unspecified lower extremity |
|  | ICD10:I87.39 | Chronic venous hypertension (idiopathic) with other complications |
|  | ICD10:I87.391 | Chronic venous hypertension (idiopathic) with other complications of right lower extremity |
|  | ICD10:I87.392 | Chronic venous hypertension (idiopathic) with other complications of left lower extremity |
|  | ICD10:I87.393 | Chronic venous hypertension (idiopathic) with other complications of bilateral lower extremity |
|  | ICD10:I87.399 | Chronic venous hypertension (idiopathic) with other complications of unspecified lower extremity |
|  | ICD10:I97.3 | Postprocedural hypertension |
|  | ICD10:K76.6 | Portal hypertension |
|  | ICD10:O10 | Pre-existing hypertension complicating pregnancy, childbirth and the puerperium |
|  | ICD10:O10.0 | Pre-existing essential hypertension complicating pregnancy, childbirth and the puerperium |
|  | ICD10:O10.01 | Pre-existing essential hypertension complicating pregnancy, |
|  | ICD10:O10.011 | Pre-existing essential hypertension complicating pregnancy, first trimester |
|  | ICD10:O10.012 | Pre-existing essential hypertension complicating pregnancy, second trimester |
|  | ICD10:O10.013 | Pre-existing essential hypertension complicating pregnancy, third trimester |
|  | ICD10:O10.019 | Pre-existing essential hypertension complicating pregnancy, unspecified trimester |
|  | ICD10:O10.02 | Pre-existing essential hypertension complicating childbirth |
|  | ICD10:O10.03 | Pre-existing essential hypertension complicating the puerperium |
|  | ICD10:O10.4 | Pre-existing secondary hypertension complicating pregnancy, childbirth and the puerperium |
|  | ICD10:O10.41 | Pre-existing secondary hypertension complicating pregnancy |
|  | ICD10:O10.411 | Pre-existing secondary hypertension complicating pregnancy, first trimester |
|  | ICD10:O10.412 | Pre-existing secondary hypertension complicating pregnancy, second trimester |
|  | ICD10:O10.413 | Pre-existing secondary hypertension complicating pregnancy, third trimester |
|  | ICD10:O10.419 | Pre-existing secondary hypertension complicating pregnancy, unspecified trimester |
|  | ICD10:O10.42 | Pre-existing secondary hypertension complicating childbirth |
|  | ICD10:O10.43 | Pre-existing secondary hypertension complicating the puerperium |
|  | ICD10:O10.9 | Unspecified pre-existing hypertension complicating pregnancy, childbirth and the puerperium |
|  | ICD10:O10.91 | Unspecified pre-existing hypertension complicating pregnancy |
|  | ICD10:O10.911 | Unspecified pre-existing hypertension complicating pregnancy, first trimester |
|  | ICD10:O10.912 | Unspecified pre-existing hypertension complicating pregnancy, second trimester |
|  | ICD10:O10.913 | Unspecified pre-existing hypertension complicating pregnancy, third trimester |
|  | ICD10:O10.919 | Unspecified pre-existing hypertension complicating pregnancy, unspecified trimester |
|  | ICD10:O10.92 | Unspecified pre-existing hypertension complicating childbirth |
|  | ICD10:O10.93 | Unspecified pre-existing hypertension complicating the puerperium |
|  | ICD10:O11 | Pre-existing hypertension with pre-eclampsia |
|  | ICD10:O11.1 | Pre-existing hypertension with pre-eclampsia, first trimester |
|  | ICD10:O11.2 | Pre-existing hypertension with pre-eclampsia, second trimester |
|  | ICD10:O11.3 | Pre-existing hypertension with pre-eclampsia, third trimester |
|  | ICD10:O11.4 | Pre-existing hypertension with pre-eclampsia, complicating childbirth |
|  | ICD10:O11.9 | Pre-existing hypertension with pre-eclampsia, unspecified trimester |
|  | ICD10:O12 | Gestational [pregnancy-induced] edema and proteinuria without hypertension |
|  | ICD10:O13 | Gestational [pregnancy-induced] hypertension without significant proteinuria |
|  | ICD10:O13.1 | Gestational [pregnancy-induced] hypertension without significant proteinuria, first trimester |
|  | ICD10:O13.2 | Gestational [pregnancy-induced] hypertension without significant proteinuria, second trimester |
|  | ICD10:O13.3 | Gestational [pregnancy-induced] hypertension without significant proteinuria, third trimester |
|  | ICD10:O13.4 | Gestational [pregnancy-induced] hypertension without significant proteinuria, complicating childbirth |
|  | ICD10:O13.9 | Gestational [pregnancy-induced] hypertension without significant proteinuria, unspecified trimester |
|  | ICD10:O16 | Unspecified maternal hypertension |
|  | ICD10:O16.1 | Unspecified maternal hypertension, first trimester |
|  | ICD10:O16.2 | Unspecified maternal hypertension, second trimester |
|  | ICD10:O16.3 | Unspecified maternal hypertension, third trimester |
|  | ICD10:O16.5 | Gestational [pregnancy-induced] hypertension without significant proteinuria, complicating childbirth |
|  | ICD10:O16.9 | Unspecified maternal hypertension, unspecified trimester |
|  | ICD10:P29.2 | Neonatal hypertension |
|  | ICD10:R03.0 | Elevated blood-pressure reading, without diagnosis of hypertension |

# CT/Imaging/Echo Report Criteria

|  |  |  |
| --- | --- | --- |
|  | Data Source | Criteria |
| Cortical lesions greater than 1.5 cm in diameter on CT or MRI | CT, MRI |  |
| Cerebellar lesions greater than 1.5 cm in diameter on CT or MRI | CT, MRI |  |
| Brain stem infarcts greater than 1.5 cm in diameter on CT or MRI | CT, MRI |  |
| Subcortical hemispheric infarcts greater than 1.5 cm in diameter on CT or MRI | CT, MRI |  |
|  |  |  |
| Duplex imaging or arteriography of a stenosis of greater than 50% of an appropriate intracranial or extracranial artery | Ultrasounds, arteriography |  |
|  |  |  |
| Akinetic left ventricular segment | Echo report |  |
| Left atrial turbulence (smoke) | Echo report |  |
| Hypokinetic left ventricular segment | Echo report |  |
|  |  |  |
| Left atrial appendage emptying velocity | Echo report |  |
| Delayed emptying velocity | Echo report |  |

**References**

1. Thigpen JL, Dillon C, Forster KB, Henault L, Quinn EK, Tripodis Y, Berger PB, Hylek EM and Limdi NA. Validity of international classification of disease codes to identify ischemic stroke and intracranial hemorrhage among individuals with associated diagnosis of atrial fibrillation. *Circ Cardiovasc Qual Outcomes*. 2015;8:8-14.