



# Cigna Medical Coverage Policy

**Subject** Transthoracic  
Echocardiography in Adults

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## Coverage Policy

**Cigna covers transthoracic echocardiography in an adult (age 18 or older) as medically necessary for ANY of the following indications:**

**General evaluation of cardiac structure and function for ANY of the following:**

- Symptoms or conditions of suspected cardiac etiology including but not limited to chest pain, shortness of breath, palpitations, transient ischemic attack (TIA), stroke, or peripheral embolic event
- Prior testing that is inconclusive but suggestive of structural cardiac abnormality including but not limited to chest X-ray, baseline scout images for stress echocardiogram, electrocardiogram (ECG), or cardiac biomarkers
- Frequent ventricular premature contractions (VPCs) or exercise-induced VPCs, sustained or nonsustained atrial fibrillation, supraventricular tachycardia (SVT), or ventricular tachycardia (VT)
- Clinical symptoms or signs consistent with a cardiac diagnosis known to cause lightheadedness/presyncope/syncope (including but not limited to aortic stenosis, hypertrophic cardiomyopathy, or heart failure)
- Syncope when there are no other symptoms or signs of cardiovascular disease
- Evaluation of suspected pulmonary hypertension including evaluation of right ventricular function and estimated pulmonary artery pressure
- Routine surveillance of known pulmonary hypertension without a reported change in clinical status or cardiac exam, at a maximum frequency of once per year
- Re-evaluation of known pulmonary hypertension with a reported change in clinical status or cardiac exam or to guide therapy

- Perioperative evaluation of cardiac structure and function prior to noncardiac solid organ transplantation
- Evaluation of pectus excavatum or pectus carinatum

**Cardiovascular evaluation in an acute setting for ANY of the following:**

- Hypotension or hemodynamic instability of uncertain or suspected cardiac etiology
- Acute chest pain with suspected MI and nondiagnostic ECG
- Evaluation of an individual without chest pain but with other features of an ischemic equivalent or laboratory markers indicative of ongoing myocardial infarction (MI)
- Suspected complication of myocardial ischemia/infarction, including but not limited to acute mitral regurgitation, ventricular septal defect, free-wall rupture/tamponade, shock, right ventricular involvement, heart failure (HF), or thrombus
- Initial evaluation of ventricular function following acute coronary syndrome (ACS), or re-evaluation of ventricular function following ACS during recovery phase when results will guide therapy
- Respiratory failure or hypoxemia of uncertain etiology, or when a non-cardiac etiology has been established
- Known acute pulmonary embolism to guide therapy (e.g., thrombectomy and thrombolytics)
- Re-evaluation of known pulmonary embolism after thrombolysis or thrombectomy for assessment of change in right ventricular function and/or pulmonary artery pressure
- Severe deceleration injury or chest trauma when valve injury, pericardial effusion, or cardiac injury is suspected
- Assessment of volume status in a critically ill individual

**Valvular function for ANY of the following:**

- Initial evaluation when valvular or structural heart disease is suspected
- Re-evaluation of known valvular heart disease with a reported change in clinical status or cardiac exam or to guide therapy
- Routine surveillance of mild valvular stenosis without a reported change in clinical status or cardiac exam, at a maximum frequency of every three years
- Routine surveillance of moderate or severe valvular stenosis without a reported change in clinical status or cardiac exam, at a maximum frequency of once per year
- Routine surveillance of moderate or severe valvular regurgitation without a reported change in clinical status or cardiac exam
- Routine surveillance of mild valvular regurgitation without a reported change in clinical status or cardiac exam, at a maximum frequency of once every three years
- Initial postoperative evaluation of prosthetic valve for establishment of baseline
- Routine surveillance after valve implantation of prosthetic valve if no known or suspected valve dysfunction, or evaluation of prosthetic valve with suspected dysfunction or a change in clinical status or cardiac exam, at a maximum frequency of three years
- Re-evaluation of known prosthetic valve dysfunction when the results would change management or guide therapy
- Initial evaluation of suspected infective endocarditis with positive blood cultures or a new murmur
- Re-evaluation of infective endocarditis at high risk for progression or complication or with a reported change in clinical status or cardiac exam

**Intracardiac and extracardiac structures and chambers for ANY of the following:**

- Suspected cardiac mass
- Suspected cardiovascular source of embolus
- Suspected pericardial condition
- Re-evaluation of known pericardial effusion to guide management or therapy
- Guidance of percutaneous noncoronary cardiac procedures including but not limited to pericardiocentesis, septal ablation, or right ventricular biopsy

**Aortic disease for ANY of the following:**

- Evaluation of the ascending aorta in the setting of a known or suspected connective tissue disease or genetic condition that predisposes to aortic aneurysm or dissection (e.g., Marfan syndrome)
- Re-evaluation of known ascending aortic dilation or history of aortic dissection for either of the following:
  - to establish a baseline rate of expansion or when the rate of expansion is excessive
  - with a change in clinical status or cardiac exam or when findings may alter management or therapy
- Initial evaluation of suspected hypertensive heart disease

**Hypertension, heart failure or cardiomyopathy for ANY of the following:**

- Initial evaluation of known or suspected heart failure (HF) (systolic or diastolic)
- Re-evaluation of known HF (systolic or diastolic) to guide therapy, or with a reported change in clinical status or cardiac exam
- Routine surveillance of HF (systolic or diastolic) at a maximum frequency of once per year
- Re-evaluation of known hypertensive heart disease
- Initial evaluation or re-evaluation after revascularization and/or optimal medical therapy to determine candidacy for device therapy and/or to determine optimal choice of device
- Known implanted pacing device with symptoms possibly due to device complication or suboptimal pacing device settings
- To determine candidacy for ventricular assist device or for optimization of device settings
- Re-evaluation for signs/symptoms suggestive of ventricular assist device-related complications
- Monitoring for rejection in a cardiac transplant recipient
- Cardiac structure and function evaluation in a potential heart donor
- Initial evaluation of known or suspected cardiomyopathy (e.g., restrictive, infiltrative, dilated, hypertrophic, or genetic cardiomyopathy), or re-evaluation of a known cardiomyopathy with a reported change in clinical status or cardiac exam or to guide therapy
- Routine surveillance of known cardiomyopathy in the absence of a reported change in clinical status or cardiac exam, at a maximum frequency of once per year
- Screening evaluation for structure and function in a first-degree relative of an individual with an inherited cardiomyopathy
- Baseline and serial re-evaluations in an individual undergoing therapy with cardiotoxic agents (e.g., prior to, during, and following chemotherapy treatment with potentially cardiotoxic drugs)
- Initial evaluation for cardiac resynchronization therapy (CRT) device optimization after implantation

**Adult Congenital Heart Disease (e.g., mitral, pulmonary, or tricuspid atresia; truncus arteriosus, atrioventricular septal defects, ostium primum atrial septal defect, patent ductus arteriosus, pulmonary valve regurgitation or stenosis, ventricular septal defect) for ANY of the following:**

- Initial evaluation of known or suspected adult congenital heart disease
- Known adult congenital heart disease with a reported change in clinical status or cardiac exam
- Re-evaluation to guide therapy in known adult congenital heart disease
- Routine surveillance of adult congenital heart disease following incomplete or palliative repair, at a maximum frequency of once per year, with both of the following:
  - a residual structural or hemodynamic abnormality
  - no reported change in clinical status or cardiac exam
- Routine surveillance of adult congenital heart disease following complete repair when there is no reported residual structural or hemodynamic abnormality and no change in clinical status or cardiac exam, at a maximum frequency of once every two years

**Cigna does not cover transthoracic echocardiography in an adult (age 18 or older) for ANY of the following because it is considered not medically necessary (this list may not be all inclusive):**

**General evaluation of cardiac structure and function for ANY of the following:**

- Infrequent atrial premature contractions (APCs), infrequent ventricular premature contractions (VPCs) without other evidence of heart disease, or asymptomatic isolated sinus bradycardia
- Lightheadedness/presyncope when there are no other reported symptoms or signs of cardiovascular disease
- Initial evaluation of ventricular function (e.g., screening) when there are no reported symptoms or signs of cardiovascular disease
- Routine surveillance of ventricular function in known coronary artery disease (CAD) when there is no reported change in either clinical status or cardiac exam
- Evaluation of left ventricular (LV) function with prior ventricular function evaluation showing normal function (e.g., prior echocardiogram, left ventriculogram, CT, SPECT MPI, CMR) in an individual in whom there has been no reported change in clinical status or cardiac exam
- Routine perioperative evaluation of ventricular function in the absence of reported symptoms or signs of cardiovascular disease
- Routine surveillance of known pulmonary hypertension without a reported change in clinical status or cardiac exam, performed more often than once per year

**Cardiovascular evaluation in an acute setting for ANY of the following:**

- Suspected pulmonary embolism in order to establish diagnosis
- Routine surveillance of prior pulmonary embolism with normal right ventricular function and pulmonary artery systolic pressure
- Routine evaluation in the setting of mild chest trauma in the absence of electrocardiographic changes or biomarker elevation(s)

**Valvular function for ANY of the following**

- Initial evaluation in the absence of symptoms or signs of valvular or structural heart disease
- Re-evaluation in a patient without valvular disease on prior echocardiogram and no reported change in clinical status or cardiac exam
- Routine surveillance of mild valvular stenosis in the absence of a reported change in clinical status or cardiac exam, more often than once every three years
- Routine surveillance of moderate or severe valvular stenosis in the absence of a reported change in clinical status or cardiac exam, performed more often than once per year
- Routine surveillance of trace valvular regurgitation
- Routine surveillance of mild valvular regurgitation in the absence of a reported change in clinical status or cardiac exam, performed more often than every three years
- Routine surveillance after valve implantation of a prosthetic valve in the absence of known or suspected valve dysfunction
- Transient fever without evidence of bacteremia or a new murmur, or transient bacteremia with a pathogen not typically associated with infective endocarditis and/or a documented nonendovascular source of infection
- Routine surveillance of uncomplicated infective endocarditis when no change in management is contemplated

**Intracardiac and extracardiac structures and chambers for the following:**

- Routine surveillance of a known small pericardial effusion with no reported change in clinical status or findings

**Aortic disease for the following:**

- Routine surveillance of known ascending aortic dilation or a history of aortic dissection in the absence of a change in clinical status or cardiac exam when findings would not change management or therapy

**Hypertension, heart failure or cardiomyopathy for ANY of the following:**

- Routine evaluation of systemic hypertension in the absence of symptoms or signs of hypertensive heart disease
- Routine surveillance of HF (systolic or diastolic) in the absence of a reported change in clinical status or cardiac exam
- Routine surveillance of implanted device in the absence of a reported change in clinical status or cardiac exam
- Routine surveillance of known cardiomyopathy in the absence of a reported change in clinical status or cardiac exam

**Adult congenital heart disease (e.g., mitral, pulmonary, or tricuspid atresia; truncus arteriosus, atrioventricular septal defects, ostium primum atrial septal defect, patent ductus arteriosus, pulmonary valve regurgitation or stenosis, ventricular septal defect) for the following:**

- Routine surveillance of adult congenital heart disease following complete repair, more often than once every two years when there is no residual structural or hemodynamic abnormality, and no reported change in clinical status or cardiac exam

**Cigna does not cover transthoracic echocardiography in an adult (age 18 or older) for any other indication, including but not limited to screening of athletes prior to participation in sports, because it is considered not medically necessary.**

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## General Background

Echocardiography is the most frequently employed cardiac imaging test for evaluation of cardiovascular disease related to a structural, functional or hemodynamic abnormality of the heart or great vessels. Echocardiography allows visualization of cardiac structures in real time from multiple planes, and Doppler and color flow imaging allows a reliable assessment of cardiac hemodynamics and blood flow. A transthoracic echocardiography (TTE) examination begins with real-time two dimensional (2D) echocardiography, which provides high-resolution images of cardiac structures and their movements. Images are usually obtained from four transducer locations, parasternal, apical, subcostal, and suprasternal, by rotating and angulating the transducer. Measurement of cardiac dimensions, area and volume are obtained from 2 D images or 2D derived M-mode recordings. An M mode recording is obtained from 2D images and graphically represents the motion of cardiac structures. In addition, 2 D echocardiography provides the basis for Doppler examination and color flow imaging. Newer transducers allow three dimensional (3D) or multidimensional images of the heart.

Although TTE is technically demanding, the diagnostic accuracy, cost effectiveness, availability, and noninvasive nature of the test have made it a powerful diagnostic tool in cardiology. TTE is used in the evaluation of the ventricles, left atrium, cardiac valves, infective endocarditis, pericardial disorders, aorta, and great vessels.

Diagnostic procedures used as alternatives to TTE for cardiac diagnosis and assessment vary, depending on the clinical situation and other factors, and may include chest x-ray, stress echocardiography, transesophageal echocardiography (TEE), magnetic resonance imaging (MRI), computed tomography (CT), computed tomography angiography (CTA), magnetic resonance angiography (MRA), single photon emission computed tomography (SPECT), coronary arteriography, and positron emission tomography (PET). In some cases TTE may be the sole diagnostic procedure, while in other situations additional testing is required.

## Literature Review

Transthoracic echocardiography (TTE) is a widely established and broadly used noninvasive diagnostic procedure and is usually the initial imaging test for the evaluation of cardiovascular disease related to a structural, functional or hemodynamic abnormality of the heart or great vessels. TTE is recognized as a valuable cardiology diagnostic tool, and its use has grown tremendously over the past decade. Professional society recommendations have been published in an effort to guide appropriate use of this imaging modality for selected patient indications. The most common appropriate indications for TTE in adults include initial evaluation of symptoms potentially caused by suspected cardiac etiology, prior testing concerning for heart disease, evaluation of valvular disease, and evaluation of heart failure. TTE may also be indicated for evaluation of

cardiac structure and function in patients with pectus excavatum or pectus carinatum (Bonow: Braunwald's Heart Disease, 2011; Topol, Textbook of Cardiovascular Medicine, 2007).

Specialty society guidelines do not recommend periodic performance of routine or surveillance TTE, however, that is not being performed due to the anticipation of changing clinical decision making or guiding therapy, TTE is not recommended for population screening, including screening of asymptomatic athletes prior to participation in sports. Numerous additional indications considered to be inappropriate for TTE as an imaging modality are detailed in the recommendations outlined below.

### **Professional Societies/Organizations**

**American Society of Echocardiography (ASE), American Heart Association (AHA), American Society of Nuclear Cardiology (ASNC), Heart Failure Society of American (HFSA), Heart Rhythm Society (HRS), Society for Cardiovascular Angiography and Interventions (SCAI), Society of Critical Care Medicine (SCCM), Society of Cardiovascular Computed Tomography (SCCT), Society for Cardiovascular Magnetic Resonance (SCMR) 2011 Appropriate Use Criteria for Echocardiography**

The ACCF/ASE/AHA/ASNC/HFSA/HRS/SCAI/SCCM/SACT/SCMR 2011 guideline addresses appropriate use of adult transthoracic echocardiography (TTE), transesophageal echocardiography (TEE) and stress echocardiography. The report is a combination and revision of the 2007 TTE and TEE Appropriate use criteria and the 2008 appropriate use criteria for stress echo. Recommendations for transthoracic echocardiography are provided based on the following scoring method:

- Median score 7-9: Appropriate test for specific indication (test is generally acceptable and a reasonable approach for the indication.)
- Median score 4-6: Uncertain for specific indication (test may be generally acceptable and may be a reasonable approach for the indication). Uncertainty also implies that more research and/or patient information is needed to classify the indication definitively.
- Median score 1-3: Inappropriate test for that indication (test is not generally acceptable and is not a reasonable approach for the indication).

### **General Evaluation of Cardiac Structure and Function**

The following are classified as appropriate Indications for transthoracic echocardiography (TTE) (median score 7–9):

- Symptoms or conditions potentially related to suspected cardiac etiology including but not limited to chest pain, shortness of breath, palpitations, TIA, stroke, or peripheral embolic event (9)
- Prior testing that is concerning for heart disease or structural abnormality including but not limited to chest X-ray, baseline scout images for stress echocardiogram, ECG, or cardiac biomarkers (9)
- Frequent ventricular premature contractions (VPCs) or exercise-induced VPCs (8)
- Sustained or nonsustained atrial fibrillation, SVT, or VT (9)
- Clinical symptoms or signs consistent with a cardiac diagnosis known to cause lightheadedness/presyncope/syncope (including but not limited to aortic stenosis, hypertrophic cardiomyopathy, or heart failure) (9)
- Syncope when there are no other symptoms or signs of cardiovascular disease (7)
- Evaluation of suspected pulmonary hypertension including evaluation of right ventricular function and estimated pulmonary artery pressure A (9)
- Routine surveillance ( $\geq 1$  y) of known pulmonary hypertension without change in clinical status or cardiac exam (7)
- Re-evaluation of known pulmonary hypertension if change in clinical status or cardiac exam or to guide therapy (9)

The following is classified an uncertain indication for TTE (median score 6):

- Routine perioperative evaluation of cardiac structure and function prior to noncardiac solid organ transplantation

The following are classified as inappropriate indications for TTE (median score 1–3):

- Infrequent atrial premature contractions (APCs) or infrequent ventricular premature contractions (VPCs) without other evidence of heart disease (2)
- Asymptomatic isolated sinus bradycardia (2)
- Lightheadedness/presyncope when there are no other symptoms or signs of cardiovascular disease (3)
- Initial evaluation of ventricular function (e.g., screening) with no symptoms or signs of cardiovascular disease (2)
- Routine surveillance of ventricular function with known CAD and no change in clinical status or cardiac exam (3)
- Evaluation of LV function with prior ventricular function evaluation showing normal function (e.g., prior echocardiogram, left ventriculogram, CT, SPECT MPI, CMR) in patients in whom there has been no change in clinical status or cardiac exam (1)
- Routine perioperative evaluation of ventricular function with no symptoms or signs of cardiovascular disease (2)
- Routine surveillance (<1 y) of known pulmonary hypertension without change in clinical status or cardiac exam (3)

#### **Cardiovascular Evaluation in an Acute Setting:**

The following are classified as appropriate Indications for TTE (median score 7–9):

- Hypotension or hemodynamic instability of uncertain or suspected cardiac etiology (9)
- Acute chest pain with suspected MI and nondiagnostic ECG when a resting echocardiogram can be performed during pain (9)
- Evaluation of a patient without chest pain but with other features of an ischemic equivalent or laboratory markers indicative of ongoing MI (8)
- Suspected complication of myocardial ischemia/infarction, including but not limited to acute mitral regurgitation, ventricular septal defect, free-wall rupture/tamponade, shock, right ventricular involvement, HF, or thrombus (9)
- Initial evaluation of ventricular function following ACS A (9)
- Re-evaluation of ventricular function following ACS during recovery phase when results will guide therapy (9)
- Respiratory failure or hypoxemia of uncertain etiology (8)
- Known acute pulmonary embolism to guide therapy (e.g., thrombectomy and thrombolytics) (8)
- Re-evaluation of known pulmonary embolism after thrombolysis or thrombectomy for assessment of change in right ventricular function and/or pulmonary artery pressure (7)
- Severe deceleration injury or chest trauma when valve injury, pericardial effusion, or cardiac injury are possible or suspected (9)

The following are classified as uncertain indications for transthoracic echocardiography (TTE) (median score 4-6):

- Assessment of volume status in a critically ill patient (5)
- Respiratory failure or hypoxemia when a noncardiac etiology of respiratory failure has been established (5)

The following are classified as inappropriate indications for TTE (median score 1–3):

- Suspected pulmonary embolism in order to establish diagnosis (2)
- Routine surveillance of prior pulmonary embolism with normal right ventricular function and pulmonary artery systolic pressure (1)
- Routine evaluation in the setting of mild chest trauma with no electrocardiographic changes or biomarker elevation (2)

#### **Valvular Function:**

The following are classified as appropriate Indications for TTE (median score 7–9):

- Initial evaluation when there is a reasonable suspicion of valvular or structural heart disease (9)
- Re-evaluation of known valvular heart disease with a change in clinical status or cardiac exam or to guide therapy (9)
- Routine surveillance ( $\geq 3$  y) of mild valvular stenosis without a change in clinical status or cardiac exam (7)
- Routine surveillance ( $\geq 1$  y) of moderate or severe valvular stenosis without a change in clinical status or cardiac exam (8)
- Routine surveillance ( $\geq 1$  y) of moderate or severe valvular regurgitation without change in clinical status or cardiac exam (8)
- Initial postoperative evaluation of prosthetic valve for establishment of baseline (9)
- Routine surveillance ( $\geq 3$  y after valve implantation) of prosthetic valve if no known or suspected valve dysfunction (7)
- Evaluation of prosthetic valve with suspected dysfunction or a change in clinical status or cardiac exam (9)
- Re-evaluation of known prosthetic valve dysfunction when it would change management or guide therapy (9)
- Initial evaluation of suspected infective endocarditis with positive blood cultures or a new murmur (9)
- Re-evaluation of infective endocarditis at high risk for progression or complication or with a change in clinical status or cardiac exam (9)

The following are classified as uncertain indications for TTE (median score 4-6):

- Routine surveillance ( $\geq 3$  y) of mild valvular regurgitation without a change in clinical status or cardiac exam (4)
- Routine surveillance ( $< 1$  y) of moderate or severe valvular regurgitation without a change in clinical status or cardiac exam (6)

The following are classified as inappropriate indications for TTE (median score 1–3):

- Initial evaluation when there are no other symptoms or signs of valvular or structural heart disease (2)
- Re-evaluation in a patient without valvular disease on prior echocardiogram and no change in clinical status or cardiac exam (1)
- Routine surveillance ( $< 3$  y) of mild valvular stenosis without a change in clinical status or cardiac exam (3)
- Routine surveillance ( $< 1$  y) of moderate or severe valvular stenosis without a change in clinical status or cardiac exam (3)
- Routine surveillance of trace valvular regurgitation (1)
- Routine surveillance ( $< 3$  y) of mild valvular regurgitation without a change in clinical status or cardiac exam (2)
- Routine surveillance ( $< 3$  y after valve implantation) of prosthetic valve if no known or suspected valve dysfunction (3)
- Transient fever without evidence of bacteremia or a new murmur (2)
- Transient bacteremia with a pathogen not typically associated with infective endocarditis and/or a documented nonendovascular source of infection (3)
- Routine surveillance of uncomplicated infective endocarditis when no change in management is contemplated (2)

#### **Intracardiac and Extracardiac Structures and Chambers:**

The following are classified as appropriate Indications for TTE (median score 7–9):

- Suspected cardiac mass (9)
- Suspected cardiovascular source of embolus (9)
- Suspected pericardial conditions (9)
- Re-evaluation of known pericardial effusion to guide management or therapy (8)

- Guidance of percutaneous noncoronary cardiac procedures including but not limited to pericardiocentesis, septal ablation, or right ventricular biopsy (9)

The following is classified as an inappropriate indication for TTE (median score 2):

- Routine surveillance of known small pericardial effusion with no change in clinical status

#### **Aortic Disease:**

The following are classified as appropriate Indications for transthoracic echocardiography (TTE) (median score 7–9):

- Evaluation of the ascending aorta in the setting of a known or suspected connective tissue disease or genetic condition that predisposes to aortic aneurysm or dissection (e.g., Marfan syndrome) (9)
- Re-evaluation of known ascending aortic dilation or history of aortic dissection to establish a baseline rate of expansion or when the rate of expansion is excessive (9)
- Re-evaluation of known ascending aortic dilation or history of aortic dissection with a change in clinical status or cardiac exam or when findings may alter management or therapy (9)
- Initial evaluation of suspected hypertensive heart disease (8)

The following is classified as an inappropriate indication for TTE (median score 3)

- Routine re-evaluation for surveillance of known ascending aortic dilation or history of aortic dissection without a change in clinical status or cardiac exam when findings would not change management or therapy

#### **Hypertension, Heart Failure or Cardiomyopathy:**

The following are classified as appropriate Indications for TTE (median score 7–9):

- Initial evaluation of known or suspected HF (systolic or diastolic) based on symptoms, signs, or abnormal test results (9)
- Re-evaluation of known HF (systolic or diastolic) with a change in clinical status or cardiac exam without a clear precipitating change in medication or diet (8)
- Re-evaluation of known HF (systolic or diastolic) to guide therapy (9)
- Initial evaluation or re-evaluation after revascularization and/or optimal medical therapy to determine candidacy for device therapy and/or to determine optimal choice of device (9)
- Known implanted pacing device with symptoms possibly due to device complication or suboptimal pacing device settings (8)
- To determine candidacy for ventricular assist device (9)
- Optimization of ventricular assist device settings (7)
- Re-evaluation for signs/symptoms suggestive of ventricular assist device-related complications (9)
- Monitoring for rejection in a cardiac transplant recipient (7)
- Cardiac structure and function evaluation in a potential heart donor (9)
- Initial evaluation of known or suspected cardiomyopathy (e.g., restrictive, infiltrative, dilated, hypertrophic, or genetic cardiomyopathy) (9)
- Re-evaluation of known cardiomyopathy with a change in clinical status or cardiac exam or to guide therapy (9)
- Screening evaluation for structure and function in first-degree relatives of a patient with an inherited cardiomyopathy (9)
- Baseline and serial re-evaluations in a patient undergoing therapy with cardiotoxic agents (9)

The following are classified as uncertain indications for TTE (median score 4-6):

- Re-evaluation of known hypertensive heart disease without a change in clinical status or cardiac exam (4)
- Re-evaluation of known HF (systolic or diastolic) with a change in clinical status r cardiac exam with a clear precipitating change in medication or diet (4)

- Routine surveillance ( $\geq 1$  y) of HF (systolic or diastolic) when there is no change in clinical status or cardiac exam (6)
- Initial evaluation for CRT device optimization after implantation (6)
- Routine surveillance ( $\geq 1$  y) of known cardiomyopathy without a change in clinical status or cardiac exam (5)

The following are classified as inappropriate indications for TTE (median score 1–3):

- Routine evaluation of systemic hypertension without symptoms or signs of hypertensive heart disease (3)
- Routine surveillance ( $< 1$  y) of HF (systolic or diastolic) when there is no change in clinical status or cardiac exam (2)
- Routine surveillance ( $< 1$  y) of implanted device without a change in clinical status or cardiac exam (1)
- Routine surveillance ( $\geq 1$  y) of implanted device without a change in clinical status or cardiac exam (3)
- Routine surveillance ( $< 1$  y) of known cardiomyopathy without a change in clinical status or cardiac exam (2)

**Adult Congenital Heart Disease (e.g., mitral, pulmonary, or tricuspid atresia; truncus arteriosus, atrioventricular septal defects, ostium primum atrial septal defect, patent ductus arteriosus, pulmonary valve regurgitation or stenosis, ventricular septal defect):**

The following are classified as appropriate Indications for transthoracic echocardiography (TTE) (median score 7–9):

- Initial evaluation of known or suspected adult congenital heart disease (9)
- Known adult congenital heart disease with a change in clinical status or cardiac exam (9)
- Re-evaluation to guide therapy in known adult congenital heart disease (9)
- Routine surveillance ( $\geq 1$  y) of adult congenital heart disease following incomplete or palliative repair (8)
  - with residual structural or hemodynamic abnormality
  - without a change in clinical status or cardiac exam

The following are classified as uncertain indications for TTE (median score 4–6):

- Routine surveillance ( $\geq 2$  y) of adult congenital heart disease following complete repair (6)
  - without residual structural or hemodynamic abnormality
  - without a change in clinical status or cardiac exam
- Routine surveillance ( $< 1$  y) of adult congenital heart disease following incomplete or palliative repair (5)
  - with residual structural or hemodynamic abnormality
  - without a change in clinical status or cardiac exam

The following is classified as an inappropriate indication for TTE (median score 3):

- Routine surveillance ( $< 2$  y) of adult congenital heart disease following complete repair
  - without a residual structural or hemodynamic abnormality
  - without a change in clinical status or cardiac exam

**ACR Appropriateness Criteria<sup>®</sup>**

ACR (American College of Radiology) appropriateness criteria are guidelines developed by expert panels in diagnostic imaging, interventional radiology, and radiation oncology. Transthoracic echocardiography (TTE) is addressed in various ACR Appropriateness Criteria cardiac imaging guidelines. The guidelines use the following rating scale:

- 7–9: Usually appropriate
- 4–6: May be appropriate
- 1–3: Usually not appropriate

**Acute Nonspecific Chest Pain- Low Probability of Coronary Artery Disease:** TTE with or without pharmacologic stress are frequently used to define abnormalities of ventricular wall motion as an indicator of cardiac disease. Echocardiography also readily demonstrates pericardial effusion, valve dysfunction, and cardiac thrombus. TTE without stress is a low-risk screening examination with high negative predictive value for ACS.

Rating: 7.

**Acute Chest Pain-Suspected Aortic Dissection:** Echocardiography has the advantage of being readily available and can be performed at the bedside in unstable patients. TTE is useful in the diagnosis of dissection involving the ascending aorta and can diagnose the hemodynamic significance of pericardial effusions, degree of aortic regurgitation, and left ventricular function.

Rating: 4

**Acute Chest Pain-Suspected Pulmonary Embolism:** TTE studies are generally not indicated in the workup of acute chest pain in the setting of suspected acute pulmonary embolism. While sonography may be a useful adjunct, it cannot exclude pulmonary embolism.

Rating: 2; to assess for right ventricle strain or failure in the presence of major pulmonary embolism.

**Chest Pain, Suggestive of Acute Coronary Syndrome:** The guideline does not specifically discuss the role of TTE in the evaluation of chest pain suggestive of acute coronary syndrome, although this modality is included in the appropriateness ratings.

Rating: 6; primarily for evaluating wall motion abnormalities and aortic dissection.

**Chronic Chest Pain-High Probability of Coronary Artery Disease (CAD):** Resting TTE can be useful if pericardial effusion or valvular or chamber abnormalities are suspected.

Rating: 4; incomplete examination for high CAD risk, unless with stress, even if other etiologies may be present. May evaluate aortic and pericardial disease, valve and chamber abnormalities.

**Chronic Chest Low to Intermediate Probability of Coronary Artery Disease (CAD):** Resting TTE can be used to assess for valve disease or pericardial disease as a cause for chronic chest pain.

Rating: 6

**Dyspnea-Suspected Cardiac Origin:** TTE is widely available and plays an important role in the evaluation of patients with dyspnea of suspected cardiac origin. Left ventricular size, systolic contraction, diastolic function, myocardial wall thickness and texture, and valve dysfunction are accurately evaluated with two-dimensional echo combined with color Doppler techniques.

Rating: 8

**Suspected Infective Endocarditis:** TTE plays an important role in the evaluation of infective endocarditis, and is the most frequently used study for confirming this diagnosis. It can demonstrate vegetations on cardiac valves, valvular regurgitation, and perivalvular abscess.

Rating: 9

**Suspected Congenital Heart Disease in the Adult:** TTE is a first-line imaging examination in adults with suspected congenital heart disease. This test is well established as a diagnostic modality for congenital heart disease in children. Although adults pose certain technical problems, the exam provides unique, two-dimensional real-time evaluation of the anatomic and hemodynamic relationships of intracardiac lesions, and is widely available and reproducible. Imaging of the great vessels is problematic with TTE, however

Rating: 9.

**Recommendations and Considerations Related to Preparticipation Screening for Cardiovascular Abnormalities in Competitive Athletes. 2007 update. A Scientific Statement From the American Heart Association Council on Nutrition, Physical Activity, and Metabolism: Endorsed by the American College of Cardiology Foundation**

The AHA recommendations (Maron, et al., 2007) define preparticipation cardiovascular screening as the systematic practice of medically evaluating large general populations of athletes before participation in sports, for the purpose of identifying (or raising suspicion of) abnormalities that could provoke disease progression or sudden death. The recommendations consist of 12 items; eight for personal and family history and four for physical examination. The guidelines state that, at the discretion of the examiner, a positive response or finding in any one or more of the 12 elements may be judged sufficient to trigger a referral for cardiovascular evaluation. The recommendations for preparticipation screening consist of the following:

Medical history

Personal history

1. Exertional chest pain/discomfort
2. Unexplained syncope/near-syncope
3. Excessive exertional and unexplained dyspnea/fatigue, associated with exercise
4. Prior recognition of a heart murmur
5. Elevated systemic blood pressure

Family history

6. Premature death (sudden and unexpected, or otherwise) before age 50 years due to heart disease, in  $\geq$  one relative
7. Disability from heart disease in a close relative < 50 years of age
8. Specific knowledge of certain cardiac conditions in family members: hypertrophic or dilated cardiomyopathy, long-QT syndrome or other ion channelopathies, Marfan syndrome, or clinically important arrhythmias

Physical examination

- 9 Heart murmur
- 10 Femoral pulses to exclude aortic coarctation
- 11 Physical stigmata of Marfan syndrome
- 12 Brachial artery blood pressure (sitting position)

The authors noted that the addition of noninvasive diagnostic tests to the screening process, including electrocardiogram (ECG) and echocardiogram, has the potential to enhance the detection of certain cardiovascular defects in young athletes. Two-dimensional echocardiography is the principal diagnostic tool for clinical recognition of hypertrophic cardiomyopathy, and echocardiography can also detect other relevant abnormalities. Such diagnostic testing does not guarantee the identification of all clinically relevant abnormalities, however. The panel did not believe it to be either prudent or practical to recommend the routine use of tests such as 12-lead ECG and echocardiography in the context of mass, universal screening.

**Summary**

Echocardiography is the most frequently employed cardiac imaging test for evaluation of cardiovascular disease related to a structural, functional or hemodynamic abnormality of the heart or great vessels. The diagnostic accuracy and wide availability and noninvasive nature of TTE has made it a valuable cardiology diagnostic tool, and its use has grown tremendously over the past decade. Professional society recommendations have been published in an effort to guide appropriate use of this imaging modality for selected patient indications. The most common indications for TTE in adults include the initial evaluation of symptoms suspected to be of cardiac etiology; when prior testing is concerning for heart disease; for evaluation of heart disease; and evaluation of heart failure. Recently published guidelines have outlined numerous indications for which TTE is not indicated, including routine surveillance of various conditions in the absence of a change in clinical status or cardiac examination. The use of TTE for screening of athletes prior to participation in sports is also not recommended.

## Coding/Billing Information

**Note:** 1) This list of codes may not be all-inclusive.

2) Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement

3) ICD-10-ICD CM Diagnosis Codes are for informational purposes only and are not effective until 10/01/2015

<b>CPT<sup>®</sup> Codes</b>	<b>Description</b>
93303	Transthoracic echocardiography for congenital cardiac anomalies; complete
93304	Transthoracic echocardiography for congenital cardiac anomalies; follow-up or limited study
93306	Echocardiography, transthoracic, real-time with image documentation (2D), includes M-mode recording, when performed, complete, with spectral Doppler echocardiography, and with color flow Doppler echocardiography
93307	Echocardiography, transthoracic, real-time with image documentation (2D), includes M-mode recording, when performed, complete, without spectral or color Doppler echocardiography
93308	Echocardiography, transthoracic, real-time with image documentation (2D), includes M-mode recording, when performed, follow-up or limited study
93320	Doppler echocardiography, pulsed wave and/or continuous wave with spectral display (List separately in addition to codes for echocardiographic imaging); complete
93321	Doppler echocardiography, pulsed wave and/or continuous wave with spectral display (List separately in addition to codes for echocardiographic imaging); follow-up or limited study (List separately in addition to codes for echocardiographic imaging)
93325	Doppler echocardiography color flow velocity mapping (List separately in addition to codes for echocardiography)

<b>HCPCS Codes</b>	<b>Description</b>
C8921	Transthoracic echocardiography with contrast, or without contrast followed by with contrast, for congenital cardiac anomalies; complete
C8922	Transthoracic echocardiography with contrast, or without contrast followed by with contrast, for congenital cardiac anomalies; follow-up or limited study
C8923	Transthoracic echocardiography with contrast, or without contrast followed by with contrast, real-time with image documentation (2D), includes M-mode recording, when performed, complete, without spectral or color doppler echocardiography
C8924	Transthoracic echocardiography with contrast, or without contrast followed by with contrast, real-time with image documentation (2D), includes M-mode recording when performed, follow-up or limited study
C8929	Transthoracic echocardiography with contrast, or without contrast followed by with contrast, real-time with image documentation (2D), includes M-mode recording, when performed, complete, with spectral doppler echocardiography, and with color flow doppler echocardiography

<b>ICD-9-CM Diagnosis Codes</b>	<b>Description</b>
017.90-017.96	Tuberculosis of other specified organs
032.82	Diphtheritic myocarditis
036.40-036.43	Meningococcal carditis
038.0-038.9	Septicemia

074.21	Coxsackie pericarditis
074.22	Coxsackie endocarditis
074.23	Coxsackie myocarditis
086.0	Chagas' disease with heart involvement
093.0	Aneurysm of aorta, specified as syphilitic
093.1	Syphilitic aortitis
093.20	Syphilitic endocarditis; valve, unspecified
093.21	Syphilitic endocarditis of mitral valve
093.22	Syphilitic endocarditis of aortic valve
093.23	Syphilitic endocarditis of tricuspid valve
093.24	Syphilitic endocarditis of pulmonary valve
093.81	Syphilitic pericarditis
093.82	Syphilitic myocarditis
098.83	Gonococcal pericarditis
098.84	Gonococcal endocarditis
098.85	Other gonococcal heart disease
112.81	Candidal endocarditis
115.03	Infection by Histoplasma capsulatum; pericarditis
115.04	Infection by Histoplasma capsulatum; endocarditis
115.13	Infection by Histoplasma duboisii; pericarditis
115.14	Infection by Histoplasma duboisii; endocarditis
130.3	Myocarditis due to toxoplasmosis
164.0	Malignant neoplasm of thymus
164.1	Malignant neoplasm of heart
170.0-170.9	Malignant neoplasm of bone and articular cartilage; bones of skull and face, except mandible
171.0-171.9	Malignant neoplasm of connective and other soft tissue
174.0-174.9	Malignant neoplasm of female breast
175.0-175.9	Malignant neoplasm of male breast
191.6	Malignant neoplasm of brain, cerebellum NOS
194.0-194.9	Malignant neoplasm of other endocrine glands and related structures
200.00-200.88	Lymphosarcoma and reticulosarcoma and other specified malignant tumors of lymphatic tissue
201.00-201.98	Hodgkin's disease
203.00-203.82	Multiple myeloma and immunoproliferative neoplasms
204.00-204.92	Lymphoid leukemia
212.7	Benign neoplasm of heart
238.8	Neoplasm of uncertain behavior of other and unspecified sites and tissues; other specified sites
324.0	Intracranial abscess
324.1	Intraspinal abscess
362.34	Transient arterial occlusion
391.0-391.9	Rheumatic fever with heart involvement
392.0-392.9	Rheumatic chorea
393	Chronic rheumatic pericarditis
394.0-394.9	Diseases of mitral valve
395.0-395.9	Diseases of the aortic valve
396.0-396.9	Diseases of mitral and aortic valves
397.0-397.9	Diseases of other endocardial structures
398.0-398.99	Other rheumatic heart disease
401.0	Essential hypertension, malignant
402.00-402.91	Hypertensive heart disease
404.00-404.93	Hypertensive heart and chronic kidney disease
410.00-410.92	Acute myocardial infarction
411.0-411.89	Other acute and subacute forms of ischemic heart disease

412	Old myocardial infarction
413.0-413.9	Angina pectoris
414.00-414.07	Coronary atherosclerosis
414.10-414.19	Aneurysm and dissection of heart
414.4	Coronary atherosclerosis due to calcified coronary lesion
414.8	Other specified forms of chronic ischemic heart disease
415.0-415.19	Acute pulmonary heart disease
416.0-416.9	Chronic pulmonary heart disease
417.0	Arteriovenous fistula of pulmonary vessels
420.0-420.99	Acute pericarditis
421.0-421.9	Acute and subacute endocarditis
422.0	Acute myocarditis in diseases classified elsewhere
422.90	Acute myocarditis, unspecified
422.91	Idiopathic myocarditis
422.92	Septic myocarditis
422.93	Toxic myocarditis
423.0-423.9	Other diseases of pericardium
424.0-424.99	Other diseases of endocardium
425.0-425.9	Cardiomyopathy
426.0	Atrioventricular block, complete
426.12	Mobitz (type) II atrioventricular block
426.13	Other second degree atrioventricular block
426.3	Other left bundle branch block
426.4	Right bundle branch block
426.50-426.54	Bundle branch block, other and unspecified
426.7	Anomalous atrioventricular excitation
426.81	Lown-Ganong-Levine syndrome
426.82	Long QT syndrome
427.0	Paroxysmal supraventricular tachycardia
427.1	Paroxysmal ventricular tachycardia
427.2	Paroxysmal tachycardia, unspecified
427.31	Atrial fibrillation
427.32	Atrial flutter
427.41	Ventricular fibrillation
427.42	Ventricular flutter
427.5	Cardiac arrest
427.61	Supraventricular premature beats
427.69	Other premature beats
428.0-428.9	Heart failure
429.0	Myocarditis, unspecified
429.1	Myocardial degeneration
429.3	Cardiomegaly
429.4	Functional disturbances following cardiac surgery
429.5	Rupture of chordae tendineae
429.6	Rupture of papillary muscle
429.71	Acquired cardiac septal defect
429.79	Other certain sequelae of myocardial infarction, not elsewhere classified
429.81-429.89	Other ill-defined heart diseases
434.00-434.91	Occlusion of cerebral arteries
435.0-435.9	Transient cerebral ischemia
437.7	Transient global amnesia
441.01	Dissection of aorta, thoracic
441.03	Dissection of aorta, thoracoabdominal
441.1	Thoracic aneurysm, ruptured
441.2	Thoracic aneurysm without mention of rupture

441.6	Thoracoabdominal aneurysm, ruptured
441.7	Thoracoabdominal aneurysm, without mention of rupture
441.9	Aortic aneurysm of unspecified site without mention of rupture
444.01	Saddle embolus of abdominal aorta
444.09	Other arterial embolism and thrombosis of abdominal aorta
444.1	Arterial embolism and thrombosis of thoracic aorta
444.21	Arterial embolism and thrombosis of upper extremity
444.22	Arterial embolism and thrombosis of lower extremity
444.81	Arterial embolism and thrombosis of iliac artery
444.89	Arterial embolism and thrombosis of other specified artery
444.9	Arterial embolism and thrombosis of unspecified artery
445.01	Atheroembolism of upper extremity
445.02	Atheroembolism of, lower extremity
445.81	Atheroembolism of other sites, kidney
445.89	Atheroembolism of other sites, other site
446.1	Acute febrile mucocutaneous lymph node syndrome (MLNS)
446.7	Takayasu's disease
447.71	Thoracic aortic ectasia
447.73	Thoracoabdominal aortic ectasia
449	Septic arterial embolism
458.0	Orthostatic hypotension
458.21	Hypotension of hemodialysis
458.29	Other iatrogenic hypotension
458.8	Other specified hypotension
458.9	Hypotension, unspecified
518.51	Acute respiratory failure following trauma or surgery
518.52	Other pulmonary insufficiency, not elsewhere classified, following trauma and surgery
518.53	Acute and chronic respiratory failure following trauma and surgery
518.81	Acute respiratory failure
518.82	Other pulmonary insufficiency, not elsewhere classified
674.50-674.54	Peripartum cardiomyopathy
745.0-745.9	Bulbus cordis anomalies and anomalies of cardiac septal closure
746.00-746.9	Other congenital anomalies of heart
747.0	Patent ductus arteriosus
747.10-747.11	Coarctation of aorta
742.20-742.29	Other anomalies of aorta
747.31-747.39	Anomalies of pulmonary artery
747.40-747.49	Anomalies of great veins
754.81	Pectus excavatum
754.82	Pectus carinatum
758.0	Down syndrome
758.6	Gonadal dysgenesis
759.3	Situs inversus
759.7	Multiple congenital anomalies, so described
759.82	Marfan syndrome
759.9	Congenital anomaly, unspecified
780.2	Syncope and collapse
780.4	Dizziness and giddiness
785.1	Palpitations
785.2	Undiagnosed cardiac murmurs
785.50-785.59	Shock, without mention of trauma
786.01	Hyperventilation
786.02	Orthopnea
786.03	Apnea

786.04	Cheyne-Stokes respiration
786.05	Shortness of breath
786.06	Tachypnea
786.09	Other dyspnea and respiratory abnormalities
786.50	Chest pain, unspecified
786.51	Precordial pain
786.59	Other chest pain
790.7	Bacteremia
793.2	Nonspecific abnormal findings on radiological and other examination of body structure, other intrathoracic organ
794.31	Abnormal electrocardiogram [ECG] [EKG]
799.01	Asphyxia
799.02	Hypoxemia
799.1	Respiratory arrest
807.4	Flail chest
861.01	Injury to heart and lung, heart, without mention of open wound into thorax; contusion
861.02	Injury to heart and lung, heart, without mention of open wound into thorax; laceration without penetration of heart chambers
861.03	Injury to heart and lung, heart, without mention of open wound into thorax; laceration with penetration of heart chambers
861.10	Injury to heart and lung, heart, with open wound into thorax; unspecified injury
861.11	Injury to heart and lung, heart, with open wound into thorax; contusion
861.12	Injury to heart and lung, heart, with open wound into thorax; laceration without penetration of heart chambers
861.13	Injury to heart and lung, heart, with open wound into thorax; laceration with penetration of heart chambers
862.8	Injury to other and unspecified intrathoracic organs; multiple and unspecified intrathoracic organs, without mention of open wound into cavity
901.0	Injury to blood vessels of thorax; thoracic aorta
901.2	Injury to blood vessels of thorax; superior vena cava
901.41	Injury to blood vessels of thorax; pulmonary artery
901.42	Injury to blood vessels of thorax; pulmonary vein
958.4	Traumatic shock
960.7	Poisoning by antibiotics; antineoplastic antibiotics
963.1	Poisoning by primarily systemic agents; antineoplastic and immunosuppressive drugs
995.20	Unspecified adverse effect of drug, medicinal and biological substance
995.29	Unspecified adverse effect of other drug, medicinal and biological substance
996.00	Mechanical complication of cardiac device, implant, and graft, unspecified device, implant, and graft
996.01	Mechanical complication of cardiac device, implant and graft; due to cardiac pacemaker
996.02	Mechanical complication of cardiac device, implant and graft, due to heart valve prosthesis
996.03	Mechanical complication of cardiac device, implant and graft; due to coronary bypass graft
996.04	Mechanical complication of cardiac device, implant and graft; due to automatic implantable cardiac defibrillator
996.09	Mechanical complication of cardiac device, implant and graft; other
996.1	Mechanical complication of other vascular device, implant, and graft
996.61	Infection and inflammatory reaction due to cardiac device, implant and graft
996.62	Infection and inflammatory reaction due to other vascular device, implant, and graft
996.63	Infection and inflammatory reaction due to nervous system device, implant, and graft

996.66	Infection and inflammatory reaction due to internal joint prosthesis
996.71	Other complications of internal (biological) (synthetic) prosthetic device, implant and graft; due to heart valve prosthesis
996.72	Other complications of internal (biological)(synthetic)prosthetic device, implant, and graft; due to other cardiac device, implant and graft
996.83	Complication of transplanted heart
997.1	Cardiac complications
998.00	Postoperative shock, unspecified
998.01	Postoperative shock, cardiogenic
998.02	Postoperative shock, septic
998.09	Postoperative shock, other
999.31	Other and unspecified infection due to central venous catheter
V12.53	Sudden cardiac arrest
V12.54	Transient ischemic attack (TIA), and cerebral infarction without residual deficits
V42.1	Organ or tissue replaced by transplant; heart
V42.2	Organ or tissue replaced by transplant; heart valve
V42.6	Organ or tissue replaced by transplant, lung
V43.21	Organ or tissue replaced by other means; heart assist device
V43.22	Organ or tissue replaced by other means; fully implantable artificial heart
V43.3	Organ or tissue replaced by other means; heart valve
V45.01	Other postprocedural status; cardiac pacemaker
V45.09	Other postprocedural status; other specified cardiac device
V58.11	Encounter for antineoplastic chemotherapy
V58.44	Aftercare involving organ transplant
V67.2	Follow-up examination; following chemotherapy

<b>ICD-10-CM Diagnosis Codes (Codes effective 10/01/2015)</b>	<b>Description</b>
A18.84	Tuberculosis of heart
A36.81	Diphtheritic cardiomyopathy
A39.50	Meningococcal carditis, unspecified
A39.51	Meningococcal endocarditis
A39.52	Meningococcal myocarditis
A39.53	Meningococcal pericarditis
A40.0	Sepsis due to streptococcus, group A
A40.1	Sepsis due to streptococcus, group B
A40.3	Sepsis due to Streptococcus pneumoniae
A40.8	Other streptococcal sepsis
A40.9	Streptococcal sepsis, unspecified
A41.01	Sepsis due to Methicillin susceptible Staphylococcus aureus
A41.02	Sepsis due to Methicillin resistant Staphylococcus aureus
A41.1	Sepsis due to other specified staphylococcus
A41.2	Sepsis due to unspecified staphylococcus
A41.3	Sepsis due to Hemophilus influenzae
A41.4	Sepsis due to anaerobes
A41.50	Gram-negative sepsis, unspecified
A41.51	Sepsis due to Escherichia coli [E. coli]
A41.52	Sepsis due to Pseudomonas
A41.53	Sepsis due to Serratia

A41.59	Other Gram-negative sepsis
A41.81	Sepsis due to Enterococcus
A41.89	Other specified sepsis
A41.9	Sepsis, unspecified organism
A42.7	Actinomycotic sepsis
A52.00	Cardiovascular syphilis
A52.01	Syphilitic aneurysm of aorta
A52.02	Syphilitic aortitis
A52.03	Syphilitic endocarditis
A52.06	Other syphilitic heart involvement
A54.83	Gonococcal heart infection
B33.20	Viral carditis, unspecified
B33.21	Viral endocarditis
B33.22	Viral myocarditis
B33.23	Viral pericarditis
B33.24	Viral cardiomyopathy
B37.6	Candidal endocarditis
B37.7	Candidal sepsis
B57.0	Acute Chagas' disease with heart involvement
B57.2	Chagas' disease (chronic) with heart involvement
B58.81	Toxoplasma myocarditis
C37	Malignant neoplasm of thymus
C38.0	Malignant neoplasm of heart
C40.00	Malignant neoplasm of scapula and long bones of unspecified upper limb
C40.01	Malignant neoplasm of scapula and long bones of right upper limb
C40.02	Malignant neoplasm of scapula and long bones of left upper limb
C40.10	Malignant neoplasm of short bones of unspecified upper limb
C40.11	Malignant neoplasm of short bones of right upper limb
C40.12	Malignant neoplasm of short bones of left upper limb
C40.20	Malignant neoplasm of long bones of unspecified lower limb
C40.21	Malignant neoplasm of long bones of right lower limb
C40.22	Malignant neoplasm of long bones of left lower limb
C40.30	Malignant neoplasm of short bones of unspecified lower limb
C40.31	Malignant neoplasm of short bones of right lower limb
C40.32	Malignant neoplasm of short bones of left lower limb
C40.80	Malignant neoplasm of overlapping sites of bone and articular cartilage of unspecified limb
C40.81	Malignant neoplasm of overlapping sites of bone and articular cartilage of right limb
C40.82	Malignant neoplasm of overlapping sites of bone and articular cartilage of left limb
C40.90	Malignant neoplasm of unspecified bones and articular cartilage of unspecified limb
C40.91	Malignant neoplasm of unspecified bones and articular cartilage of right limb
C40.92	Malignant neoplasm of unspecified bones and articular cartilage of left limb
C41.0	Malignant neoplasm of bones of skull and face
C41.1	Malignant neoplasm of mandible
C41.2	malignant neoplasm of vertebral column
C41.3	Malignant neoplasm of ribs, sternum and clavicle
C41.4	Malignant neoplasm of pelvic bones, sacrum and coccyx

C41.9	Malignant neoplasm of bone and articular cartilage, unspecified
C45.2	Mesothelioma of pericardium
C47.0	Malignant neoplasm of peripheral nerves of head, face and neck
C47.10	Malignant neoplasm of peripheral nerves of unspecified upper limb, including shoulder
C47.11	Malignant neoplasm of peripheral nerves of right upper limb, including shoulder
C47.12	Malignant neoplasm of peripheral nerves of left upper limb, including shoulder
C47.20	Malignant neoplasm of peripheral nerves of unspecified lower limb, including hip
C47.21	Malignant neoplasm of peripheral nerves of right lower limb, including hip
C47.22	Malignant neoplasm of peripheral nerves of left lower limb, including hip
C47.3	Malignant neoplasm of peripheral nerves of thorax
C47.4	Malignant neoplasm of peripheral nerves of abdomen
C47.5	Malignant neoplasm of peripheral nerves of pelvis
C47.6	Malignant neoplasm of peripheral nerves of trunk, unspecified
C47.8	Malignant neoplasm of overlapping sites of peripheral nerves and autonomic nervous system
C47.9	Malignant neoplasm of peripheral nerves and autonomic nervous system, unspecified
C49.0	Malignant neoplasm of connective and soft tissue of head, face and neck
C49.10	Malignant neoplasm of connective and soft tissue of unspecified upper limb, including shoulder
C49.11	Malignant neoplasm of connective and soft tissue of right upper limb, including shoulder
C49.12	Malignant neoplasm of connective and soft tissue of left upper limb, including shoulder
C49.20	Malignant neoplasm of connective and soft tissue of unspecified lower limb, including hip
C49.21	Malignant neoplasm of connective and soft tissue of right lower limb, including hip
C49.22	Malignant neoplasm of connective and soft tissue of left lower limb, including hip
C49.3	Malignant neoplasm of connective and soft tissue of thorax
C49.4	Malignant neoplasm of connective and soft tissue of abdomen
C49.5	Malignant neoplasm of connective and soft tissue of pelvis
C49.6	Malignant neoplasm of connective and soft tissue of trunk, unspecified
C49.8	Malignant neoplasm of overlapping sites of connective and soft tissue
C49.9	Malignant neoplasm of connective and soft tissue, unspecified
C50.011	Malignant neoplasm of nipple and areola, right female breast
C50.012	Malignant neoplasm of nipple and areola, left female breast
C50.019	Malignant neoplasm of nipple and areola, unspecified female breast
C50.111	Malignant neoplasm of central portion of right female breast
C50.112	Malignant neoplasm of central portion of left female breast
C50.119	Malignant neoplasm of central portion of unspecified female breast
C50.211	Malignant neoplasm of upper-inner quadrant of right female breast
C50.212	Malignant neoplasm of upper-inner quadrant of left female breast
C50.219	Malignant neoplasm of upper-inner quadrant of unspecified female breast
C50.311	Malignant neoplasm of lower-inner quadrant of right female breast
C50.312	Malignant neoplasm of lower-inner quadrant of left female breast
C50.319	Malignant neoplasm of lower-inner quadrant of unspecified female breast
C50.411	Malignant neoplasm of upper-outer quadrant of right female breast
C50.412	Malignant neoplasm of upper-outer quadrant of left female breast
C50.419	Malignant neoplasm of upper-outer quadrant of unspecified female breast
C50.511	Malignant neoplasm of lower-outer quadrant of right female breast
C50.512	Malignant neoplasm of lower-outer quadrant of left female breast

C50.519	Malignant neoplasm of lower-outer quadrant of unspecified female breast
C50.611	Malignant neoplasm of axillary tail of right female breast
C50.612	Malignant neoplasm of axillary tail of left female breast
C50.619	Malignant neoplasm of axillary tail of unspecified female breast
C50.811	Malignant neoplasm of overlapping sites of right female breast
C50.812	Malignant neoplasm of overlapping sites of left female breast
C50.819	Malignant neoplasm of overlapping sites of unspecified female breast
C50.911	Malignant neoplasm of unspecified site of right female breast
C50.912	Malignant neoplasm of unspecified site of left female breast
C50.919	Malignant neoplasm of unspecified site of unspecified female breast
C50.021- C50.029	Malignant neoplasm of nipple and areola, male breast
C50.121- C50.129	Malignant neoplasm of central portion, male breast
C50.221- C50.229	Malignant neoplasm of upper-inner quadrant of breast, male
C50.321- C50.329	Malignant neoplasm of lower-inner quadrant of breast, male
C50.421- C50.429	Malignant neoplasm of upper-outer quadrant of breast, male
C50.521- C50.529	Malignant neoplasm of lower-outer quadrant of breast, male
C50.621- C50.629	Malignant neoplasm of axillary tail of breast, male
C50.821- C50.829	Malignant neoplasm of overlapping sites of breast, male
C50.921- C50.929	Malignant neoplasm of breast of unspecified site, male
C71.6	Malignant neoplasm of cerebellum
C74.00	Malignant neoplasm of cortex of unspecified adrenal gland
C74.01	Malignant neoplasm of cortex of right adrenal gland
C74.02	Malignant neoplasm of cortex of left adrenal gland
C74.10	Malignant neoplasm of medulla of unspecified adrenal gland
C74.141	Malignant neoplasm of medulla of right adrenal gland
C74.12	Malignant neoplasm of medulla of left adrenal gland
C74.90	Malignant neoplasm of unspecified part of unspecified adrenal gland
C74.91	Malignant neoplasm of unspecified part of right adrenal gland
C74.92	Malignant neoplasm of unspecified part of left adrenal gland
C75.0	Malignant neoplasm of parathyroid gland
C75.1	Malignant neoplasm of pituitary gland
C75.2	Malignant neoplasm of craniopharyngeal duct
C75.3	Malignant neoplasm of pineal gland
C75.4	Malignant neoplasm of carotid body
C75.5	Malignant neoplasm of aortic body and other paraganglia
C75.8	Malignant neoplasm with pluriglandular involvement, unspecified
C75.9	Malignant neoplasm of endocrine gland, unspecified
C81.00	Nodular lymphocyte predominant Hodgkin lymphoma, unspecified site
C81.01	Nodular lymphocyte predominant Hodgkin lymphoma, lymph nodes of head, face, and neck
C81.02	Nodular lymphocyte predominant Hodgkin lymphoma, intrathoracic lymph nodes
C81.03	Nodular lymphocyte predominant Hodgkin lymphoma, intra-abdominal lymph nodes
C81.04	Nodular lymphocyte predominant Hodgkin lymphoma, lymph nodes of axilla and upper limb
C81.05	Nodular lymphocyte predominant Hodgkin lymphoma, lymph nodes of inguinal

	region and lower limb
C81.06	Nodular lymphocyte predominant Hodgkin lymphoma, intrapelvic lymph nodes
C81.07	Nodular lymphocyte predominant Hodgkin lymphoma, spleen
C81.08	Nodular lymphocyte predominant Hodgkin lymphoma, lymph nodes of multiple sites
C81.09	Nodular lymphocyte predominant Hodgkin lymphoma, extranodal and solid organ sites
C81.10	Nodular sclerosis classical Hodgkin lymphoma
C81.11	Nodular sclerosis classical Hodgkin lymphoma, lymph nodes of head, face, and neck
C81.12	Nodular sclerosis classical Hodgkin lymphoma, intrathoracic lymph nodes
C81.13	Nodular sclerosis classical Hodgkin lymphoma, intra-abdominal lymph nodes
C81.14	Nodular sclerosis classical Hodgkin lymphoma, lymph nodes of axilla and upper limb
C81.15	Nodular sclerosis classical Hodgkin lymphoma, lymph nodes of inguinal region and lower limb
C81.16	Nodular sclerosis classical Hodgkin lymphoma, intrapelvic lymph nodes
C81.17	Nodular sclerosis classical Hodgkin lymphoma, spleen
C81.18	Nodular sclerosis classical Hodgkin lymphoma, lymph nodes of multiple sites
C81.19	Nodular sclerosis classical Hodgkin lymphoma, extranodal and solid organ sites
C81.20	Mixed cellularity classical Hodgkin lymphoma, unspecified site
C81.21	Mixed cellularity classical Hodgkin lymphoma, lymph nodes of head, face, and neck
C81.22	Mixed cellularity classical Hodgkin lymphoma, intrathoracic lymph nodes
C81.23	Mixed cellularity classical Hodgkin lymphoma, intra-abdominal lymph nodes
C81.24	Mixed cellularity classical Hodgkin lymphoma, lymph nodes of axilla and upper limb
C81.25	Mixed cellularity classical Hodgkin lymphoma, lymph nodes of inguinal region and lower limb
C81.26	Mixed cellularity classical Hodgkin lymphoma, intrapelvic lymph nodes
C81.27	Mixed cellularity classical Hodgkin lymphoma, spleen
C81.28	Mixed cellularity classical Hodgkin lymphoma, lymph nodes of multiple sites
C81.29	Mixed cellularity classical Hodgkin lymphoma, extranodal and solid organ sites
C81.30	Lymphocyte depleted classical Hodgkin lymphoma, unspecified site
C81.31	Lymphocyte depleted classical Hodgkin lymphoma, lymph nodes of head, face, and neck
C81.32	Lymphocyte depleted classical Hodgkin lymphoma, intrathoracic lymph nodes
C81.33	Lymphocyte depleted classical Hodgkin lymphoma, intra-abdominal lymph nodes
C81.34	Lymphocyte depleted classical Hodgkin lymphoma, lymph nodes of axilla and upper limb
C81.35	Lymphocyte depleted classical Hodgkin lymphoma, lymph nodes of inguinal region and lower limb
C81.36	Lymphocyte depleted classical Hodgkin lymphoma, intrapelvic lymph nodes
C81.37	Lymphocyte depleted classical Hodgkin lymphoma, spleen
C81.38	Lymphocyte depleted classical Hodgkin lymphoma, lymph nodes of multiple sites
C81.39	Lymphocyte depleted classical Hodgkin lymphoma, extranodal and solid organ sites
C81.40	Lymphocyte-rich classical Hodgkin lymphoma, unspecified site
C81.41	Lymphocyte-rich classical Hodgkin lymphoma, lymph nodes of head, face, and neck
C81.42	Lymphocyte-rich classical Hodgkin lymphoma, intrathoracic lymph nodes
C81.43	Lymphocyte-rich classical Hodgkin lymphoma, intra-abdominal lymph nodes
C81.44	Lymphocyte-rich classical Hodgkin lymphoma, lymph nodes of axilla and upper limb

C81.45	Lymphocyte-rich classical Hodgkin lymphoma, lymph nodes of inguinal region and lower limb
C81.46	Lymphocyte-rich classical Hodgkin lymphoma, intrapelvic lymph nodes
C81.47	Lymphocyte-rich classical Hodgkin lymphoma, spleen
C81.48	Lymphocyte-rich classical Hodgkin lymphoma, lymph nodes of multiple sites
C81.49	Lymphocyte-rich classical Hodgkin lymphoma, extranodal and solid organ sites
C81.70	Other classical Hodgkin lymphoma, unspecified site
C81.71	Other classical Hodgkin lymphoma, lymph nodes of head, face, and neck
C81.72	Other classical Hodgkin lymphoma, intrathoracic lymph nodes
C81.73	Other classical Hodgkin lymphoma, intra-abdominal lymph nodes
C81.74	Other classical Hodgkin lymphoma, lymph nodes of axilla and upper limb
C81.75	Other classical Hodgkin lymphoma, lymph nodes of inguinal region and lower limb
C81.76	Other classical Hodgkin lymphoma, intrapelvic lymph nodes
C81.77	Other classical Hodgkin lymphoma, spleen
C81.78	Other classical Hodgkin lymphoma, lymph nodes of multiple sites
C81.79	Other classical Hodgkin lymphoma, extranodal and solid organ sites
C81.90	Hodgkin lymphoma, unspecified, unspecified site
C81.91	Hodgkin lymphoma, unspecified, lymph nodes of head, face, and neck
C81.92	Hodgkin lymphoma, unspecified, intrathoracic lymph nodes
C81.93	Hodgkin lymphoma, unspecified, intra-abdominal lymph node
C81.94	Hodgkin lymphoma, unspecified, lymph nodes of axilla and upper limb
C81.95	Hodgkin lymphoma, unspecified, lymph nodes of inguinal region and lower limb
C81.96	Hodgkin lymphoma, unspecified, intrapelvic lymph nodes
C81.97	Hodgkin lymphoma, unspecified, spleen
C81.98	Hodgkin lymphoma, unspecified, lymph nodes of multiple sites
C81.99	Hodgkin lymphoma, unspecified, extranodal and solid organ sites
C83.00	Small cell B-cell lymphoma, unspecified site
C83.01	Small cell B-cell lymphoma, lymph nodes of head, face, and neck
C83.02	Small cell B-cell lymphoma, intrathoracic lymph nodes
C83.03	Small cell B-cell lymphoma, intra-abdominal lymph nodes
C83.04	Small cell B-cell lymphoma, lymph nodes of axilla and upper limb
C83.05	Small cell B-cell lymphoma, lymph nodes of inguinal region and lower limb
C83.06	Small cell B-cell lymphoma, intrapelvic lymph nodes
C83.07	Small cell B-cell lymphoma, spleen
C83.08	Small cell B-cell lymphoma, lymph nodes of multiple sites
C83.09	Small cell B-cell lymphoma, extranodal and solid organ sites
C83.10	Mantle cell lymphoma, unspecified site
C83.11	Mantle cell lymphoma, lymph nodes of head, face, and neck
C83.12	Mantle cell lymphoma, intrathoracic lymph nodes
C83.13	Mantle cell lymphoma, intra-abdominal lymph nodes
C83.14	Mantle cell lymphoma, lymph nodes of axilla and upper limb
C83.15	Mantle cell lymphoma, lymph nodes of inguinal region and lower limb
C83.16	Mantle cell lymphoma, intrapelvic lymph nodes
C83.17	Mantle cell lymphoma, spleen
C83.18	Mantle cell lymphoma, lymph nodes of multiple sites
C83.19	Mantle cell lymphoma, extranodal and solid organ sites
C83.30	Diffuse large B-cell lymphoma, site unspecified
C83.31	Diffuse large B-cell lymphoma, lymph nodes of head, face, and neck
C83.32	Diffuse large B-cell lymphoma, intrathoracic lymph nodes
C83.33	Diffuse large B-cell lymphoma, intra-abdominal lymph nodes
C83.34	Diffuse large B-cell lymphoma, lymph nodes of axilla and upper limb
C83.35	Diffuse large B-cell lymphoma, lymph nodes of inguinal region and lower limb
C83.36	Diffuse large B-cell lymphoma, intrapelvic lymph nodes

C83.37	Diffuse large B-cell lymphoma, spleen
C83.38	Diffuse large B-cell lymphoma, lymph nodes of multiple sites
C83.39	Diffuse large B-cell lymphoma, extranodal and solid organ sites
C83.50	Lymphoblastic (diffuse) lymphoma, site unspecified
C83.51	Lymphoblastic (diffuse) lymphoma, lymph nodes of head, face, and neck
C83.52	Lymphoblastic (diffuse) lymphoma, intrathoracic lymph nodes
C83.53	Lymphoblastic (diffuse) lymphoma, intra-abdominal lymph nodes
C83.54	Lymphoblastic (diffuse) lymphoma, lymph nodes of axilla and upper limb
C83.55	Lymphoblastic (diffuse) lymphoma, lymph nodes of inguinal region and lower limb
C83.56	Lymphoblastic (diffuse) lymphoma, intrapelvic lymph nodes
C83.57	Lymphoblastic (diffuse) lymphoma, spleen
C83.58	Lymphoblastic (diffuse) lymphoma, lymph nodes of multiple sites
C83.59	Lymphoblastic (diffuse) lymphoma, extranodal and solid organ sites
C83.70	Burkitt lymphoma, unspecified site
C83.71	Burkitt lymphoma, lymph nodes of head, face, and neck
C83.72	Burkitt lymphoma, intrathoracic lymph nodes
C83.73	Burkitt lymphoma, intra-abdominal lymph nodes
C83.74	Burkitt lymphoma, lymph nodes of axilla and upper limb
C83.75	Burkitt lymphoma, lymph nodes of inguinal region and lower limb
C83.76	Burkitt lymphoma, intrapelvic lymph nodes
C83.77	Burkitt lymphoma, spleen
C83.78	Burkitt lymphoma, lymph nodes of multiple sites
C83.79	Burkitt lymphoma, extranodal and solid organ sites
C83.80	Other non-follicular lymphoma, unspecified site
C83.81	Other non-follicular lymphoma, lymph nodes of head, face, and neck
C83.82	Other non-follicular lymphoma, intrathoracic lymph nodes
C83.83	Other non-follicular lymphoma, intra-abdominal lymph nodes
C83.84	Other non-follicular lymphoma, lymph nodes of axilla and upper limb
C83.85	Other non-follicular lymphoma, lymph nodes of inguinal region and lower limb
C83.86	Other non-follicular lymphoma, intrapelvic lymph nodes
C83.87	Other non-follicular lymphoma, spleen
C83.88	Other non-follicular lymphoma, lymph nodes of multiple sites
C83.89	Other non-follicular lymphoma, extranodal and solid organ sites
C83.90	Non-follicular (diffuse) lymphoma unspecified, unspecified site
C83.91	Non-follicular (diffuse) lymphoma, unspecified, lymph nodes of head, face, and neck
C83.92	Non-follicular (diffuse) lymphoma, unspecified, intrathoracic lymph nodes
C83.93	Non-follicular (diffuse) lymphoma, unspecified, intra-abdominal lymph nodes
C83.94	Non-follicular (diffuse) lymphoma, unspecified, lymph nodes of axilla and upper limb
C83.95	Non-follicular (diffuse) lymphoma, unspecified, lymph nodes of inguinal region and lower limb
C83.96	Non-follicular (diffuse) lymphoma, unspecified, intrapelvic lymph nodes
C83.97	Non-follicular (diffuse) lymphoma, unspecified, spleen
C83.98	Non-follicular (diffuse) lymphoma, unspecified, lymph nodes of multiple sites
C83.99	Non-follicular (diffuse) lymphoma, unspecified, extranodal and solid organ sites
C84.60	Anaplastic large cell lymphoma, ALK-positive, unspecified site
C84.61	Anaplastic large cell lymphoma, ALK-positive, lymph nodes of head, face, and neck
C84.62	Anaplastic large cell lymphoma, ALK-positive, intrathoracic lymph nodes
C84.63	Anaplastic large cell lymphoma, ALK-positive, intra-abdominal lymph nodes
C84.64	Anaplastic large cell lymphoma, ALK-positive, lymph nodes of axilla and upper limb
C84.65	Anaplastic large cell lymphoma, ALK-positive, lymph nodes of inguinal region and lower limb

C84.66	Anaplastic large cell lymphoma, ALK-positive, intrapelvic lymph nodes
C84.67	Anaplastic large cell lymphoma, ALK-positive, spleen
C84.68	Anaplastic large cell lymphoma, ALK-positive, lymph nodes of multiple sites
C84.69	Anaplastic large cell lymphoma, ALK-positive, extranodal and solid organ sites
C84.70	Anaplastic large cell lymphoma, ALK-negative, unspecified site
C84.71	Anaplastic large cell lymphoma, ALK-negative, lymph nodes of head, face, and neck
C84.72	Anaplastic large cell lymphoma, ALK-negative, intrathoracic lymph nodes
C84.73	Anaplastic large cell lymphoma, ALK-negative, intra-abdominal lymph nodes
C84.74	Anaplastic large cell lymphoma, ALK-negative, lymph nodes of axilla and upper limb
C84.75	Anaplastic large cell lymphoma, ALK-negative, lymph nodes of inguinal region and lower limb
C84.76	Anaplastic large cell lymphoma, ALK-negative, intrapelvic lymph nodes
C84.77	Anaplastic large cell lymphoma, ALK-negative, spleen
C84.78	Anaplastic large cell lymphoma, ALK-negative, lymph nodes of multiple sites
C84.79	Anaplastic large cell lymphoma, ALK-negative, extranodal and solid organ sites
C88.0	Waldenstrom macroglobulinemia
C88.2	Heavy chain disease
C88.3	Immunoproliferative small intestinal disease
C88.4	Extranodal marginal zone B-cell lymphoma of mucosa-associated lymphoid tissue [MALT-lymphoma]
C88.8	Other malignant immunoproliferative diseases
C88.9	Malignant immunoproliferative disease, unspecified
C90.00	Multiple myeloma, not having achieved remission
C90.91	Multiple myeloma in remission
C90.92	Multiple myeloma in relapse
C90.10	Plasma cell leukemia not having achieved remission
C90.011	Plasma cell leukemia in remission
C90.12	Plasma cell leukemia in relapse
C90.20	Extramedullary plasmacytoma not having achieved remission
C90.21	Extramedullary plasmacytoma in remission
C90.22	Extramedullary plasmacytoma in relapse
C90.30	Solitary plasmacytoma not having achieved remission
C90.31	Solitary plasmacytoma in remission
C90.32	Solitary plasmacytoma in relapse
C91.00	Acute lymphoblastic leukemia not having achieved remission
C91.01	Acute lymphoblastic leukemia in remission
C90.02	Acute lymphoblastic leukemia in relapse
C91.10	Chronic lymphocytic leukemia of B-cell type not having achieved remission
C91.11	Chronic lymphocytic leukemia of B-cell type in remission
C91.12	Chronic lymphocytic leukemia of B-cell type in relapse
C91.30	Prolymphocytic leukemia of B-cell type not having achieved remission
C91.31	Prolymphocytic leukemia of B-cell type in remission
C91.32	Prolymphocytic leukemia of B-cell type in relapse
C91.50	Adult T-cell lymphoma/leukemia (HTLV-1-associated) not having achieved remission
C91.51	Adult T-cell lymphoma/leukemia (HTLV-1-associated) in remission
C91.52	Adult T-cell lymphoma/leukemia (HTLV-1-associated) in relapse
C91.60	Prolymphocytic leukemia of T-cell type not having achieved remission
C91.61	Prolymphocytic leukemia of T-cell type in remission
C91.62	Prolymphocytic leukemia of T-cell type in relapse
C91.90	Lymphoid leukemia, unspecified not having achieved remission
C91.91	Lymphoid leukemia, unspecified in remission
C91.92	Lymphoid leukemia, unspecified in relapse
C91.A0	Mature B-cell leukemia Burkitt-type not having achieved remission

C91.A1	Mature B-cell leukemia Burkitt-type in remission
C91.A2	Mature B-cell leukemia Burkitt-type in relapse
C91.Z0	Other lymphoid leukemia not having achieved remission
C91.Z1	Other lymphoid leukemia in remission
C91.Z2	Other lymphoid leukemia in relapse
D15.1	Benign neoplasm of heart
D48.7	Neoplasm of uncertain behavior of other specified sites
G06.0	Intracranial abscess and granuloma
G06.1	Intraspinal abscess and granuloma
G45.0	Vertebro-basilar artery syndrome
G45.1	Carotid artery syndrome (hemispheric)
G45.2	Multiple and bilateral precerebral artery syndromes
G45.4	Transient global amnesia
G45.8	Other transient cerebral ischemic attacks and related syndromes
G45.9	Transient cerebral ischemic attack, unspecified
G46.0	Middle cerebral artery syndrome
G46.1	Anterior cerebral artery syndrome
G46.2	Posterior cerebral artery syndrome
I01.0	Acute rheumatic pericarditis
I01.1	Acute rheumatic endocarditis
I01.2	Acute rheumatic myocarditis
I01.8	Other acute rheumatic heart disease
I01.9	Acute rheumatic heart disease, unspecified
I02.0	Rheumatic chorea with heart involvement
I05.0	Rheumatic mitral stenosis
I05.1	Rheumatic mitral insufficiency
I05.2	Rheumatic mitral stenosis with incompetence or regurgitation
I05.8	Other rheumatic mitral (valve) failure
I05.9	Rheumatic mitral valve disease, unspecified
I06.0	Rheumatic aortic stenosis
I06.1	Rheumatic aortic insufficiency
I06.2	Rheumatic aortic stenosis with insufficiency
I06.8	Other rheumatic aortic valve disease
I06.9	Rheumatic aortic valve disease, unspecified
I07.0	Rheumatic tricuspid stenosis
I07.1	Rheumatic tricuspid insufficiency
I07.2	Rheumatic tricuspid stenosis and insufficiency
I07.8	Other rheumatic tricuspid stenosis and insufficiency
I07.9	Rheumatic tricuspid valve disease, unspecified
I08.0	Rheumatic disorders of both mitral and aortic valves
I08.1	Rheumatic disorders of both mitral and tricuspid valves
I08.2	Rheumatic disorders of both aortic and tricuspid valves
I08.3	Combined rheumatic disorders of mitral, aortic and tricuspid valves
I08.8	Other rheumatic multiple valve diseases
I08.9	Rheumatic multiple valve disease, unspecified
I09.0	Rheumatic myocarditis
I09.1	Rheumatic diseases of endocardium, valve unspecified
I09.2	Chronic rheumatic pericarditis
I09.81	Rheumatic heart failure
I09.89	Other specified rheumatic heart diseases
I09.9	Rheumatic heart disease, unspecified
I11.0	Hypertensive heart disease with heart failure
I11.9	Hypertensive heart disease without 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

I13.10	Hypertensive heart and chronic kidney disease without heart failure, with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease
I13.11	Hypertensive heart and chronic kidney disease without heart failure, with stage 5 chronic kidney disease, or end stage renal disease
I13.2	Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease
I20.0	Unstable angina
I20.1	Angina pectoris with documented spasm
I20.8	Other forms of angina pectoris
I20.9	Angina pectoris, unspecified
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
I21.11	ST elevation (STEMI) myocardial infarction involving right coronary artery
I21.19	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall
I21.21	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
I22.0	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
I23.0	Hemopericardium as current complication following acute myocardial infarction
I23.1	Atrial septal defect as current complication following acute myocardial infarction
I23.2	Ventricular septal defect as current complication following acute myocardial infarction
I23.3	Rupture of cardiac wall without hemopericardium as current complication following acute myocardial infarction
I23.4	Rupture of chordae tendineae as current complication following acute myocardial infarction
I23.5	Rupture of papillary muscle as current complication following acute myocardial infarction
I23.6	Thrombosis of atrium, auricular appendage, and ventricle as current complications following acute myocardial infarction
I23.7	Postinfarction angina
I23.8	Other current complications following acute myocardial infarction
I24.0	Acute coronary thrombosis not resulting in myocardial infarction
I24.1	Dressler's syndrome
I24.8	Other forms of acute ischemic heart disease
I24.9	Acute ischemic heart disease, unspecified
I25.10	Atherosclerotic heart disease of native coronary artery without angina pectoris
I25.110	Atherosclerotic heart disease of native coronary artery with unstable angina pectoris
I25.111	Atherosclerotic heart disease of native coronary artery with angina pectoris with documented spasm
I25.118	Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris
I25.119	Atherosclerotic heart disease of native coronary artery with unspecified angina pectoris
I25.2	Old myocardial infarction

I25.3	Aneurysm of heart
I25.41	Coronary artery aneurysm
I25.42	Coronary artery dissection
I25.5	Ischemic cardiomyopathy
I25.6	Silent myocardial ischemia
I25.700	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unstable angina pectoris
I25.701	Atherosclerosis of coronary artery bypass graft(s), unspecified, with angina pectoris with documented spasm
I25.708	Atherosclerosis of coronary artery bypass graft(s), unspecified, with other forms of angina pectoris
I25.709	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unspecified angina pectoris
I25.710	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unstable angina pectoris
I25.711	Atherosclerosis of autologous vein coronary artery bypass graft(s) with angina pectoris with documented spasm
I25.718	Atherosclerosis of autologous vein coronary artery bypass graft(s) with other forms of angina pectoris
I25.719	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unspecified angina pectoris
I25.720	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unstable angina pectoris
I25.721	Atherosclerosis of autologous artery coronary artery bypass graft(s) with angina pectoris with documented spasm
I25.728	Atherosclerosis of autologous artery coronary artery bypass graft(s) with other forms of angina pectoris
I25.729	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unspecified angina pectoris
I25.730	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unstable angina pectoris
I25.731	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with angina pectoris with documented spasm
I25.738	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with other forms of angina pectoris
I25.739	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unspecified angina pectoris
I25.750	Atherosclerosis of native coronary artery of transplanted heart with unstable angina
I25.751	Atherosclerosis of native coronary artery of transplanted heart with angina pectoris with documented spasm
I25.758	Atherosclerosis of native coronary artery of transplanted heart with other forms of angina pectoris
I25.759	Atherosclerosis of native coronary artery of transplanted heart with unspecified angina pectoris
I25.760	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unstable angina
I25.761	Atherosclerosis of bypass graft of coronary artery of transplanted heart with angina pectoris with documented spasm
I25.768	Atherosclerosis of bypass graft of coronary artery of transplanted heart with other forms of angina pectoris
I25.769	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unspecified angina pectoris
I25.790	Atherosclerosis of other coronary artery bypass graft(s) with unstable angina pectoris
I25.791	Atherosclerosis of other coronary artery bypass graft(s) with angina pectoris

	with documented spasm
I25.798	Atherosclerosis of other coronary artery bypass graft(s) with other forms of angina pectoris
I25.799	Atherosclerosis of other coronary artery bypass graft(s) with unspecified angina pectoris
I25.810	Atherosclerosis of coronary artery bypass graft(s) without angina pectoris
I25.811	Atherosclerosis of native coronary artery of transplanted heart without angina pectoris
I25.812	Atherosclerosis of bypass graft of coronary artery of transplanted heart without angina pectoris
I25.84	Coronary atherosclerosis due to calcified coronary lesion
I25.89	Other forms of chronic ischemic heart disease
I26.01	Septic pulmonary embolism with acute cor pulmonale
I26.02	Saddle embolus of pulmonary artery with acute cor pulmonale
I26.09	Other pulmonary embolism with acute cor pulmonale
I26.90	Septic pulmonary embolism without acute cor pulmonale
I26.92	Saddle embolus of pulmonary artery without acute cor pulmonale
I26.99	Other pulmonary embolism without acute cor pulmonale
I27.0	Primary pulmonary hypertension
I27.1	Kyphoscoliotic heart disease
I27.2	Other secondary pulmonary hypertension
I27.81	Cor pulmonale (chronic)
I27.82	Chronic pulmonary embolism
I27.89	Other specified pulmonary heart diseases
I27.9	Pulmonary heart disease, unspecified
I28.0	Arteriovenous fistula of pulmonary vessels
I30.0	Acute nonspecific idiopathic pericarditis
I30.1	Infective pericarditis
I30.8	Other forms of acute pericarditis
I30.9	Acute pericarditis, unspecified
I31.0	Chronic adhesive pericarditis
I31.1	Chronic constrictive pericarditis
I31.2	Hemopericardium, not elsewhere classified
I31.3	Pericardial effusion (noninflammatory)
I31.4	Cardiac tamponade
I31.8	Other specified diseases of pericardium
I31.9	Disease of pericardium, unspecified
I32	Pericarditis in diseases classified elsewhere
I33.0	Acute and subacute infective endocarditis
I33.9	Acute and subacute endocarditis, unspecified
I34.0	Nonrheumatic mitral (valve) insufficiency
I34.1	Nonrheumatic mitral (valve) prolapse
I34.2	Nonrheumatic mitral (valve) stenosis
I34.8	Other nonrheumatic mitral valve disorders
I34.9	Nonrheumatic mitral valve disorder, unspecified
I35.0	Nonrheumatic aortic (valve) stenosis
I35.1	Nonrheumatic aortic (valve) insufficiency
I35.2	Nonrheumatic aortic (valve) stenosis with insufficiency
I35.8	Other nonrheumatic aortic valve disorders
I35.9	Nonrheumatic aortic valve disorder, unspecified
I36.0	Nonrheumatic tricuspid (valve) stenosis
I36.1	Nonrheumatic tricuspid (valve) insufficiency
I36.2	Nonrheumatic tricuspid (valve) stenosis with insufficiency
I36.8	Other nonrheumatic tricuspid valve disorders
I36.9	Nonrheumatic tricuspid valve disorder, unspecified

I37.0	Nonrheumatic pulmonary valve stenosis
I37.1	Nonrheumatic pulmonary valve insufficiency
I37.2	Nonrheumatic pulmonary valve stenosis with insufficiency
I37.8	Other nonrheumatic pulmonary valve disorders
I37.9	Nonrheumatic pulmonary valve disorder, unspecified
I38	Endocarditis, valve unspecified
I39	Endocarditis and heart valve disorders in diseases classified elsewhere
I40.0	Infective myocarditis
I40.1	Isolated myocarditis
I40.8	Other acute myocarditis
I40.9	Acute myocarditis, unspecified
I41	Myocarditis in diseases classified elsewhere
I42.0	Dilated cardiomyopathy
I42.1	Obstructive hypertrophic cardiomyopathy
I42.2	Other hypertrophic cardiomyopathy
I42.3	Endomyocardial (eosinophilic) disease
I42.4	Endocardial fibroelastosis
I42.5	Other restrictive cardiomyopathy
I42.6	Alcoholic cardiomyopathy
I42.7	Cardiomyopathy due to drug and external agent
I42.8	Other cardiomyopathies
I42.9	Cardiomyopathy, unspecified
I43	Cardiomyopathy in diseases classified elsewhere
I44.1	Atrioventricular block, second degree
I44.2	Atrioventricular block, complete
I44.30	Unspecified atrioventricular block
I44.39	Other atrioventricular block
I44.7	Left bundle-branch block, unspecified
I45.0	Right fascicular block
I45.10	Unspecified right bundle-branch block
I45.19	Other right bundle-branch block
I45.2	Bifascicular block
I45.3	Trifascicular block
I45.4	Nonspecific intraventricular block
I45.5	Other specified heart block
I45.6	Pre-excitation syndrome
I45.81	Long QT syndrome
I45.89	Other specified conduction disorders
I46.2	Cardiac arrest due to underlying cardiac condition
I46.8	Cardiac arrest due to other underlying condition
I46.9	Cardiac arrest, cause unspecified
I47.0	Re-entry ventricular arrhythmia
I47.1	Supraventricular tachycardia
I47.2	Ventricular tachycardia
I47.9	Paroxysmal tachycardia, unspecified
I48.0	Paroxysmal atrial fibrillation
I48.1	Persistent atrial fibrillation
I48.2	Chronic atrial fibrillation
I48.3	Typical atrial flutter
I48.4	Atypical atrial flutter
I48.91	Unspecified atrial fibrillation
I48.92	Unspecified atrial flutter
I49.01	Ventricular fibrillation
I49.02	Ventricular flutter
I49.1	Atrial premature depolarization

I49.2	Junctional premature depolarization
I49.3	Ventricular premature depolarization
I49.40	Unspecified premature depolarization
I49.49	Other premature depolarization
I49.5	Sick sinus syndrome
I49.8	Other specified cardiac arrhythmias
I49.9	Cardiac arrhythmias, unspecified
I50.1	Left ventricular failure
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
I50.9	Heart failure, unspecified
I51.0	Cardiac septal defect, acquired
I51.1	Rupture of chordae tendineae, not elsewhere classified
I51.2	Rupture of papillary muscle, not elsewhere classified
I51.3	Intracardiac thrombosis, not elsewhere classified
I51.4	Myocarditis, unspecified
I51.5	Myocardial degeneration
I51.7	Cardiomegaly
I51.81	Takotsubo syndrome
I51.89	Other ill-defined heart diseases
I63.119	Cerebral infarction due to embolism of unspecified vertebral artery
I63.30	Cerebral infarction due to thrombosis of unspecified 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
I63.321	Cerebral infarction due to thrombosis of right anterior cerebral artery
I63.322	Cerebral infarction due to thrombosis of left anterior cerebral artery
I63.329	Cerebral infarction due to thrombosis of unspecified anterior 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
I63.341	Cerebral infarction due to thrombosis of right cerebellar artery
I63.342	Cerebral infarction due to thrombosis of left cerebellar artery
I63.349	Cerebral infarction due to thrombosis of unspecified cerebellar artery
I63.39	Cerebral infarction due to thrombosis of other cerebral artery
I63.40	Cerebral infarction due to embolism of unspecified 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
I63.419	Cerebral infarction due to embolism of unspecified middle 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
I63.429	Cerebral infarction due to embolism of unspecified anterior 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

I63.439	Cerebral infarction due to embolism of unspecified posterior cerebral artery
I63.441	Cerebral infarction due to embolism of right cerebellar artery
I63.442	Cerebral infarction due to embolism of left cerebellar artery
I63.449	Cerebral infarction due to embolism of unspecified cerebellar artery
I63.49	Cerebral infarction due to embolism of other cerebral artery
I63.50	Cerebral infarction due to unspecified occlusion or stenosis of unspecified 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
I63.519	Cerebral infarction due to unspecified occlusion or stenosis of unspecified middle 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
I63.529	Cerebral infarction due to unspecified occlusion or stenosis of unspecified anterior 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
I63.541	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
I63.549	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
I63.6	Cerebral infarction due to cerebral venous thrombosis, nonpyogenic
I63.8	Other cerebral infarction
I63.9	Cerebral infarction, unspecified
I66.01	Occlusion and stenosis of right middle cerebral artery
I66.02	Occlusion and stenosis of left middle cerebral artery
I66.03	Occlusion and stenosis of bilateral middle cerebral arteries
I66.09	Occlusion and stenosis of unspecified middle cerebral artery
I66.11	Occlusion and stenosis of right anterior cerebral artery
I66.12	Occlusion and stenosis of left anterior cerebral artery
I66.13	Occlusion and stenosis of bilateral anterior cerebral arteries
I66.19	Occlusion and stenosis of unspecified anterior cerebral artery
I66.21	Occlusion and stenosis of right posterior cerebral artery
I66.22	Occlusion and stenosis of left posterior cerebral artery
I66.23	Occlusion and stenosis of bilateral posterior cerebral arteries
I66.29	Occlusion and stenosis of unspecified posterior cerebral artery
I66.3	Occlusion and stenosis of cerebellar arteries
I66.8	Occlusion and stenosis of other cerebral arteries
I66.9	Occlusion and stenosis of unspecified cerebral artery
I67.841	Reversible cerebrovascular vasoconstriction syndrome
I67.848	Other cerebrovascular vasospasm and vasoconstriction
I71.01	Dissection of thoracic aorta
I71.03	Dissection of thoracoabdominal aorta
I71.1	Thoracic aortic aneurysm, ruptured

I71.2	Thoracic aortic aneurysm, without rupture
I71.5	Thoracoabdominal aortic aneurysm, ruptured
I71.6	Thoracoabdominal aortic aneurysm, without rupture
I71.9	Aortic aneurysm of unspecified site, without mention of rupture
I74.01	Saddle embolus of abdominal aorta
I74.09	Other arterial embolism and thrombosis of abdominal aorta
I74.11	Embolism and thrombosis of thoracic aorta
I74.2	Embolism and thrombosis of arteries of the upper extremities
I74.3	Embolism and thrombosis of arteries of the lower extremities
I74.4	Embolism and thrombosis of arteries of extremities, unspecified
I74.5	Embolism and thrombosis of iliac artery
I74.8	Embolism and thrombosis of other arteries
I74.9	Embolism and thrombosis of unspecified artery
I75.011	Atheroembolism of right upper extremity
I75.012	Atheroembolism of left upper extremity
I75.013	Atheroembolism of bilateral upper extremities
I75.019	Atheroembolism of unspecified upper extremity
I75.021	Atheroembolism of right lower extremity
I75.022	Atheroembolism of left lower extremity
I75.023	Atheroembolism of bilateral lower extremities
I75.029	Atheroembolism of unspecified lower extremity
I75.81	Atheroembolism of kidney
I75.89	Atheroembolism of other site
I76	Septic arterial embolism
I77.810	Thoracic aortic ectasia
I77.812	Thoracoabdominal aortic ectasia
I95.0	Idiopathic hypotension
I95.1	Orthostatic hypotension
I95.3	Hypotension of hemodialysis
I95.81	Postprocedural hypotension
I95.89	Other hypotension
I95.9	Hypotension, unspecified
I97.0	Postcardiotomy syndrome
I97.110	Postprocedural cardiac insufficiency following cardiac surgery
I97.111	Postprocedural cardiac insufficiency following other surgery
I97.120	Postprocedural cardiac arrest following cardiac surgery
I97.121	Postprocedural cardiac arrest following other surgery
I97.130	Postprocedural heart failure following cardiac surgery
I97.131	Postprocedural heart failure following other surgery
I97.190	Other postprocedural cardiac functional disturbances following cardiac surgery
I97.191	Other postprocedural cardiac functional disturbances following other surgery
I97.710	Intraoperative cardiac arrest during cardiac surgery
I97.711	Intraoperative cardiac arrest during other surgery
I97.790	Other intraoperative cardiac functional disturbances during cardiac surgery
I97.791	Other intraoperative cardiac functional disturbances during other surgery
I97.88	Other intraoperative complications of the circulatory system, not elsewhere classified
I97.89	Other postprocedural complications and disorders of the circulatory system, not elsewhere classified
J80	Acute respiratory distress syndrome
J95.1	Acute pulmonary insufficiency following thoracic surgery
J95.2	Acute pulmonary insufficiency following nonthoracic surgery
J95.3	Chronic pulmonary insufficiency following surgery
J95.821	Acute postprocedural respiratory failure
J95.822	Acute and chronic postprocedural respiratory failure

J96.00	Acute respiratory failure, unspecified whether with hypoxia or hypercapnia
J96.01	Acute respiratory failure with hypoxia
J96.02	Acute respiratory failure with hypercapnia
J96.20	Acute and chronic respiratory failure, unspecified whether with hypoxia or hypercapnea
J96.21	Acute and chronic respiratory failure, with hypoxia
J96.22	Acute and chronic respiratory failure with hypercapnia
J96.90	Respiratory failure, unspecified, unspecified whether with hypoxia or hypercapnia
J96.91	Respiratory failure, unspecified with hypoxia
J96.92	Respiratory failure, unspecified with hypercapnia
J98.4	Other disorders of lung
M30.3	Mucocutaneous lymph node syndrome [Kawasaki]
M31.4	Aortic arch syndrome [Takayasu]
M32.11	Endocarditis in systemic lupus erythematosus
M32.12	Pericarditis in systemic lupus erythematosus
O90.3	Peripartum cardiomyopathy
Q20.0	Common arterial trunk
Q20.1	Double outlet right ventricle
Q20.2	Double outlet left ventricle
Q20.3	Discordant ventriculoarterial connection
Q20.4	Double inlet ventricle
Q20.5	Discordant atrioventricular connection
Q20.6	Isomerism of atrial appendages
<b>Q20.8</b>	<b>Other congenital malformations of cardiac chambers and connections</b>
Q20.9	Congenital malformation of cardiac chambers and connections, unspecified
Q21.0	Ventricular septal defect
Q21.1	Atrial septal defect
Q21.2	Atrioventricular septal defect
Q21.3	Tetralogy of Fallot
Q21.4	Aortopulmonary septal defect
Q21.8	Other congenital malformations of cardiac septa
Q21.9	Congenital malformation of cardiac septum, unspecified
Q22.0	Pulmonary valve atresia
Q22.1	Congenital pulmonary valve stenosis
Q22.2	Congenital pulmonary valve insufficiency
Q22.3	Other congenital malformations of pulmonary valve
Q22.4	Congenital tricuspid stenosis
Q22.5	Ebstein's anomaly
Q22.6	Hypoplastic right heart syndrome
Q22.8	Other congenital malformations of tricuspid valve
Q22.9	Congenital malformation of tricuspid valve, unspecified
Q23.0	Congenital stenosis of aortic valve
Q23.1	Congenital insufficiency of aortic valve
Q23.2	Congenital mitral stenosis
Q23.3	Congenital mitral insufficiency
Q23.4	Hypoplastic left heart syndrome
Q23.8	Other congenital malformations of aortic and mitral valves
Q23.9	Congenital malformation of aortic and mitral valves, unspecified
Q24.0	Dextrocardia
Q24.1	Levocardia
Q24.2	Cor triatriatum
Q24.3	Pulmonary infundibular stenosis
Q24.4	Congenital subaortic stenosis
Q24.5	Malformation of coronary vessels

Q24.6	Congenital heart block
Q24.8	Other specified congenital malformations of heart
Q24.9	Congenital malformation of heart, unspecified
Q25.0	Patent ductus arteriosus
Q25.1	Coarctation of aorta
Q25.2	Atresia of aorta
Q25.3	Supravalvular aortic stenosis
Q25.4	Other congenital malformations of aorta
Q25.5	Atresia of pulmonary artery
Q25.6	Stenosis of pulmonary artery
Q25.71	Coarctation of pulmonary artery
Q25.72	Congenital pulmonary arteriovenous malformation
Q25.79	Other congenital malformations of pulmonary artery
Q25.8	Other congenital malformations of other great arteries
Q25.9	Congenital malformation of great arteries, unspecified
Q26.0	Congenital stenosis of vena cava
Q26.1	Persistent left superior vena cava
Q26.2	Total anomalous pulmonary venous connection
Q26.3	Partial anomalous pulmonary venous connection
Q26.4	Anomalous pulmonary venous connection, unspecified
Q26.8	Other congenital malformations of great veins
Q26.9	Congenital malformation of great vein, unspecified
Q55.4	Other congenital malformations of vas deferens, epididymis, seminal vesicles and prostate
Q67.6	Pectus excavatum
Q67.7	Pectus carinatum
Q87.410	Marfan's syndrome with aortic dilation
Q87.418	Marfan's syndrome with other cardiovascular manifestations
Q89.3	Situs inversus
Q89.7	Multiple congenital malformations, not elsewhere classified
Q89.9	Congenital malformation, unspecified
Q90.9	Down syndrome, unspecified
Q96.0	Karyotype 45, X
Q96.1	Karyotype 46, X iso (Xq)
Q96.2	Karyotype 46, X with abnormal sex chromosome, except iso (Xq)
Q96.3	Mosaicism, 45, X/46, XX or XY
Q96.4	Mosaicism, 45, X/other cell line(s) with abnormal sex chromosome
Q96.8	Other variants of Turner's syndrome
Q96.9	Turner's syndrome, unspecified
R00.2	Palpitations
R01.1	Cardiac murmur, unspecified
R06.00	Dyspnea, unspecified
R06.01	Orthopnea
R06.02	Shortness of breath
R06.09	Other forms of dyspnea
R06.3	Periodic breathing
R06.4	Hyperventilation
R06.81	Apnea, not elsewhere classified
R06.82	Tachypnea, not elsewhere classified
R06.89	Other abnormalities of breathing
R07.2	Precordial pain
R07.82	Intercostal pain
R07.89	Other chest pain
R07.9	Chest pain, unspecified
R09.01	Asphyxia

R09.02	Hypoxemia
R09.2	Respiratory arrest
R42	Dizziness and giddiness
R55	Syncope and collapse
R57.0	Cardiogenic shock
R57.1	Hypovolemic shock
R57.8	Other shock
R57.9	Shock, unspecified
R65.20	Severe sepsis without septic shock
R65.21	Severe sepsis with septic shock
R78.81	Bacteremia
R93.1	Abnormal findings on diagnostic imaging of heart and coronary circulation
R94.31	Abnormal electrocardiogram [ECG] [EKG]
S21.309A	Unspecified open wound of unspecified front wall of thorax with penetration into thoracic cavity, initial encounter
S21.309D	Unspecified open wound of unspecified front wall of thorax with penetration into thoracic cavity, subsequent encounter
S21.309S	Unspecified open wound of unspecified front wall of thorax with penetration into thoracic cavity, sequela
S22.5xxA	Flail chest, initial encounter for closed fracture
S22.5xxB	Flail chest, initial encounter for open fracture
S22.5xxD	Flail chest, initial encounter for closed fracture
S25.00xA	Unspecified injury of thoracic aorta, initial encounter
S25.00xD	Unspecified injury of thoracic aorta, Subsequent encounter
S25.00xS	Unspecified injury of thoracic aorta, sequela
S25.01xA	Minor laceration of thoracic aorta, initial encounter
S25.01xD	Minor laceration of thoracic aorta, subsequent encounter
S25.01xS	Minor laceration of thoracic aorta, sequela
S25.02xA	Major laceration of thoracic aorta, initial encounter
S25.02xD	Major laceration of thoracic aorta,subsequent encounter
S25.02xS	Major laceration of thoracic aorta, sequela
S25.09xA	Other specified injury of thoracic aorta, initial encounter
S25.09xD	Other specified injury of thoracic aorta, subsequent encounter
S25.09xS	Other specified injury of thoracic aorta, sequela
S25.20xA	Unspecified injury of superior vena cava, initial encounter
S25.20xD	Unspecified injury of superior vena cava, subsequent encounter
S25.20xS	Unspecified injury of superior vena cava, sequela
S25.21xA	Minor laceration of superior vena cava, initial encounter
S25.21xD	Minor laceration of superior vena cava,subsequent encounter
S25.21xS	Minor laceration of superior vena cava,sequela
S25.22xA	Major laceration of superior vena cava, initial encounter
S25.22xD	Major laceration of superior vena cava, subsequent encounter
S25.22xS	Major laceration of superior vena cava, sequela
S25.29xA	Other specified injury of superior vena cava, initial encounter
S25.29xD	Other specified injury of superior vena cava, subsequent encounter
S25.29xS	Other specified injury of superior vena cava, sequela
S25.401A	Unspecified injury of right pulmonary blood vessels, initial encounter
S25.401D	Unspecified injury of right pulmonary blood vessels, subsequent encounter
S25.401S	Unspecified injury of right pulmonary blood vessels,sequela
S25.402A	Unspecified injury of left pulmonary blood vessels, initial encounter
S25.402D	Unspecified injury of left pulmonary blood vessels, subsequent encounter
S25.402S	Unspecified injury of left pulmonary blood vessels, sequela
S25.409A	Unspecified injury of unspecified pulmonary blood vessels, initial encounter
S25.409D	Unspecified injury of unspecified pulmonary blood vessels, subsequent encounter

S25.409S	Unspecified injury of unspecified pulmonary blood vessels, sequela
S25.411A	Minor laceration of right pulmonary blood vessels, initial encounter
S25.411D	Minor laceration of right pulmonary blood vessels, subsequent encounter
S25.411S	Minor laceration of right pulmonary blood vessels, sequela
S25.412A	Minor laceration of left pulmonary blood vessels, initial encounter
S25.412D	Minor laceration of left pulmonary blood vessels, subsequent encounter
S25.412S	Minor laceration of left pulmonary blood vessels, sequela
S25.419A	Minor laceration of unspecified pulmonary blood vessels, initial encounter
S25.419D	Minor laceration of unspecified pulmonary blood vessels, subsequent encounter
S25.419S	Minor laceration of unspecified pulmonary blood vessels, sequela
S25.421A	Major laceration of right pulmonary blood vessels, initial encounter
S25.421D	Major laceration of right pulmonary blood vessels, subsequent encounter
S25.42aS	Major laceration of right pulmonary blood vessels, sequela
S25.422A	Major laceration of left pulmonary blood vessels, initial encounter
S25.422D	Major laceration of left pulmonary blood vessels, subsequent encounter
S25.422S	Major laceration of left pulmonary blood vessels, sequela
S25.429A	Major laceration of unspecified pulmonary blood vessels, initial encounter
S25.429D	Major laceration of unspecified pulmonary blood vessels, subsequent encounter
S25.429S	Major laceration of unspecified pulmonary blood vessels, sequela
S25.491A	Other specified injury of right pulmonary blood vessels, initial encounter
S25.491D	Other specified injury of right pulmonary blood vessels, subsequent encounter
S25.491S	Other specified injury of right pulmonary blood vessels, sequela
S25.492A	Other specified injury of left pulmonary blood vessels, initial encounter
S25.492D	Other specified injury of left pulmonary blood vessels, subsequent encounter
S25.492S	Other specified injury of left pulmonary blood vessels, sequela
S25.499A	Other specified injury of unspecified pulmonary blood vessels, initial encounter
S25.499D	Other specified injury of unspecified pulmonary blood vessels, subsequent encounter
S25.499S	Other specified injury of unspecified pulmonary blood vessels, sequela
S26.01xA	Contusion of heart with hemopericardium, initial encounter
S26.01xD	Contusion of heart with hemopericardium, subsequent encounter
S26.01xS	Contusion of heart with hemopericardium, sequela
S26.020A	Mild laceration of heart with hemopericardium, initial encounter
S26.020D	Mild laceration of heart with hemopericardium, subsequent encounter
S26.020S	Mild laceration of heart with hemopericardium, sequela
S26.021A	Moderate laceration of heart with hemopericardium, initial encounter
S26.021D	Moderate laceration of heart with hemopericardium, subsequent encounter
S26.021S	Moderate laceration of heart with hemopericardium, sequela
S26.022A	Major laceration of heart with hemopericardium, initial encounter
S26.022D	Major laceration of heart with hemopericardium, subsequent encounter
S26.022S	Major laceration of heart with hemopericardium, sequela
S26.11xA	Contusion of heart without hemopericardium, initial encounter
S26.11xD	Contusion of heart without hemopericardium, subsequent encounter
S26.11xS	Contusion of heart without hemopericardium, sequela
S26.12xA	Laceration of heart without hemopericardium, initial encounter
S26.12xD	Laceration of heart without hemopericardium, subsequent encounter
S26.12xS	Laceration of heart without hemopericardium, sequela
S26.90xA	Unspecified injury of heart, unspecified with or without hemopericardium, initial encounter
S26.90xD	Unspecified injury of heart, unspecified with or without hemopericardium, subsequent encounter
S26.90xS	Unspecified injury of heart, unspecified with or without hemopericardium, sequela
S26.91xA	Contusion of heart, unspecified with or without hemopericardium, initial encounter
S26.91xD	Contusion of heart, unspecified with or without hemopericardium, subsequent

	encounter
S26.9axS	Contusion of heart, unspecified with or without hemopericardium, sequela
S26.92xA	Laceration of heart, unspecified with or without hemopericardium, initial encounter
S26.92xD	Laceration of heart, unspecified with or without hemopericardium, subsequent encounter
S26.92xS	Laceration of heart, unspecified with or without hemopericardium, sequela
S27.9xA	Injury of unspecified intrathoracic organ, initial encounter
S27.9xD	Injury of unspecified intrathoracic organ, subsequent encounter
S27.9xS	Injury of unspecified intrathoracic organ, sequela
T45.1x5A	Adverse effect of antineoplastic and immunosuppressive drugs, initial encounter
T45.1x5D	Adverse effect of antineoplastic and immunosuppressive drugs, subsequent encounter
T45.1x5S	Adverse effect of antineoplastic and immunosuppressive drugs, sequela
T79.4xA	Traumatic shock, initial encounter
T79.4xD	Traumatic shock, subsequent encounter
T79.4xS	Traumatic shock, sequela
T80.218A	Other infection due to central venous catheter, initial encounter
T80.218D	Other infection due to central venous catheter, subsequent encounter
T80.218S	Other infection due to central venous catheter, sequela
T80.219A	Unspecified infection due to central venous catheter, initial encounter
T80.219D	Unspecified infection due to central venous catheter, subsequent encounter
T80.291S	Unspecified infection due to central venous catheter, sequela
T81.10xA	Postprocedural shock unspecified, initial encounter
T81.10xD	Postprocedural shock unspecified, subsequent encounter
T81.10xS	Postprocedural shock unspecified, sequela
T81.11xA	Postprocedural cardiogenic shock, initial encounter
T81.11xD	Postprocedural cardiogenic shock, subsequent encounter
T81.11xS	Postprocedural cardiogenic shock, sequela
T81.12xA	Postprocedural septic shock, initial encounter
T81.12xD	Postprocedural septic shock, subsequent encounter
T81.12xS	Postprocedural septic shock, sequela
T81.19xA	Other postprocedural shock, initial encounter
T81.19xD	Other postprocedural shock, subsequent encounter
T81.19xS	Other postprocedural shock, sequela
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
T82.02xA	Displacement of heart valve prosthesis, initial encounter
T82.02xD	Displacement of heart valve prosthesis, subsequent encounter
T82.02xS	Displacement of heart valve prosthesis, sequela
T82.03xA	Leakage of heart valve prosthesis, initial encounter
T82.03xD	Leakage of heart valve prosthesis, subsequent encounter
T82.03xS	Leakage of heart valve prosthesis, sequela encounter
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
T82.110A	Breakdown (mechanical) of cardiac electrode, initial encounter
T82.110D	Breakdown (mechanical) of cardiac electrode, subsequent encounter
T82.110S	Breakdown (mechanical) of cardiac electrode, sequela
T82.111A	Breakdown (mechanical) of cardiac pulse generator (battery), initial encounter
T82.111D	Breakdown (mechanical) of cardiac pulse generator (battery), subsequent encounter
T82.111S	Breakdown (mechanical) of cardiac pulse generator (battery), sequela
T82.118A	Breakdown (mechanical) of other cardiac electronic device, initial encounter

T82.118D	Breakdown (mechanical) of other cardiac electronic device, subsequent encounter
T82.118S	Breakdown (mechanical) of other cardiac electronic device, sequela
T82.119A	Breakdown (mechanical) of unspecified cardiac electronic device, initial encounter
T82.119D	Breakdown (mechanical) of unspecified cardiac electronic device, subsequent encounter
T82.119S	Breakdown (mechanical) of unspecified cardiac electronic device, sequela
T82.120A	Displacement of cardiac electrode, initial encounter
T82.120D	Displacement of cardiac electrode, subsequent encounter
T82.120S	Displacement of cardiac electrode, sequela
T82.121A	Displacement of cardiac pulse generator (battery), initial encounter
T82.121D	Displacement of cardiac pulse generator (battery), subsequent encounter
T82.121S	Displacement of cardiac pulse generator (battery), sequela
T82.128A	Displacement of other cardiac electronic device, initial encounter
T82.128D	Displacement of other cardiac electronic device, subsequent encounter
T82.128S	Displacement of other cardiac electronic device, sequela
T82.129A	Displacement of unspecified cardiac electronic device, initial encounter
T82.129D	Displacement of unspecified cardiac electronic device, subsequent encounter
T82.129S	Displacement of unspecified cardiac electronic device, sequela
T82.190A	Other mechanical complication of cardiac electrode, initial encounter
T82.190D	Other mechanical complication of cardiac electrode, subsequent encounter
T82.190S	Other mechanical complication of cardiac electrode,sequela
T82.191A	Other mechanical complication of cardiac pulse generator (battery), initial encounter
T82.191D	Other mechanical complication of cardiac pulse generator (battery), subsequent encounter
T82.191S	Other mechanical complication of cardiac pulse generator (battery), sequela
T82.198A	Other mechanical complication of other cardiac electronic device, initial encounter
T82.198D	Other mechanical complication of other cardiac electronic device, subsequent encounter
T82.198S	Other mechanical complication of other cardiac electronic device, sequela
T82.199A	Other mechanical complication of unspecified cardiac device, initial encounter
T82.199D	Other mechanical complication of unspecified cardiac device, subsequent encounter
T82.199S	Other mechanical complication of unspecified cardiac device, sequela
T82.211A	Breakdown (mechanical) of coronary artery bypass graft, initial encounter
T82.211D	Breakdown (mechanical) of coronary artery bypass graft, subsequent encounter
T82.211S	Breakdown (mechanical) of coronary artery bypass graft, sequela
T82.212A	Displacement of coronary artery bypass graft, initial encounter
T82.212D	Displacement of coronary artery bypass graft, subsequent encounter
T82.212S	Displacement of coronary artery bypass graft, sequela
T82.213A	Leakage of coronary artery bypass graft, initial encounter
T82.213D	Leakage of coronary artery bypass graft, subsequent encounter
T82.213S	Leakage of coronary artery bypass graft, sequela
T82.218A	Other mechanical complication of coronary artery bypass graft, initial encounter
T82.218D	Other mechanical complication of coronary artery bypass graft, subsequent encounter
T82.218S	Other mechanical complication of coronary artery bypass graft, sequela
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
T82.222A	Displacement of biological heart valve graft, initial encounter
T82.222D	Displacement of biological heart valve graft, subsequent encounter
T82.222S	Displacement of biological heart valve graft, sequela

T82.223A	Leakage of biological heart valve graft, initial encounter
T82.223D	Leakage of biological heart valve graft, subsequent encounter
T82.223S	Leakage of biological heart valve graft, sequela
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
T82.310A	Breakdown (mechanical) of aortic (bifurcation) graft (replacement), initial encounter
T82.310D	Breakdown (mechanical) of aortic (bifurcation) graft (replacement), subsequent encounter
T82.310S	Breakdown (mechanical) of aortic (bifurcation) graft (replacement), sequela
T82.311A	Breakdown (mechanical) of carotid arterial graft (bypass), initial encounter
T82.311D	Breakdown (mechanical) of carotid arterial graft (bypass), subsequent encounter
T82.311S	Breakdown (mechanical) of carotid arterial graft (bypass), sequela
T82.312A	Breakdown (mechanical) of femoral arterial graft (bypass), initial encounter
T82.312D	Breakdown (mechanical) of femoral arterial graft (bypass), subsequent encounter
T82.312S	Breakdown (mechanical) of femoral arterial graft (bypass), sequela
T82.318A	Breakdown (mechanical) of other vascular grafts, initial encounter
T82.318D	Breakdown (mechanical) of other vascular grafts, subsequent encounter
T82.318S	Breakdown (mechanical) of other vascular grafts, sequela
T82.319A	Breakdown (mechanical) of unspecified vascular grafts, initial encounter
T82.319D	Breakdown (mechanical) of unspecified vascular grafts, subsequent encounter
T82.319S	Breakdown (mechanical) of unspecified vascular grafts, sequela
T82.320A	Displacement of aortic (bifurcation) graft (replacement), initial encounter
T82.320D	Displacement of aortic (bifurcation) graft (replacement), subsequent encounter
T82.320S	Displacement of aortic (bifurcation) graft (replacement), sequela
T82.321A	Displacement of carotid arterial graft (bypass), initial encounter
T82.321D	Displacement of carotid arterial graft (bypass), subsequent encounter
T82.321S	Displacement of carotid arterial graft (bypass), sequela
T82.322A	Displacement of femoral arterial graft (bypass), initial encounter
T82.322D	Displacement of femoral arterial graft (bypass), subsequent encounter
T82.322S	Displacement of femoral arterial graft (bypass), sequela
T82.328A	Displacement of other vascular grafts, initial encounter
T82.328D	Displacement of other vascular grafts, subsequent encounter
T82.328S	Displacement of other vascular grafts, sequela
T82.329A	Displacement of unspecified vascular grafts, initial encounter
T82.329D	Displacement of unspecified vascular grafts, subsequent encounter
T82.329S	Displacement of unspecified vascular grafts, sequela
T82.330A	Leakage of aortic (bifurcation) graft (replacement), initial encounter
T82.330D	Leakage of aortic (bifurcation) graft (replacement), subsequent encounter
T82.330S	Leakage of aortic (bifurcation) graft (replacement), sequela
T82.331A	Leakage of carotid arterial graft (bypass), initial encounter
T82.331D	Leakage of carotid arterial graft (bypass), subsequent encounter
T82.331S	Leakage of carotid arterial graft (bypass),sequela
T82.332A	Leakage of femoral arterial graft (bypass), initial encounter
T82.332D	Leakage of femoral arterial graft (bypass), subsequent encounter
T82.332S	Leakage of femoral arterial graft (bypass), sequela
T82.338A	Leakage of other vascular grafts, initial encounter
T82.338D	Leakage of other vascular grafts, subsequent encounter
T82.338S	Leakage of other vascular grafts, sequela
T82.339A	Leakage of unspecified vascular graft, initial encounter
T82.339D	Leakage of unspecified vascular graft, subsequent encounter
T82.339S	Leakage of unspecified vascular graft, sequela

T82.390A	Other mechanical complication of aortic (bifurcation) graft (replacement), initial encounter
T82.390D	Other mechanical complication of aortic (bifurcation) graft (replacement), subsequent encounter
T82.390S	Other mechanical complication of aortic (bifurcation) graft (replacement), sequela
T82.391A	Other mechanical complication of carotid arterial graft (bypass), initial encounter
T82.391D	Other mechanical complication of carotid arterial graft (bypass), subsequent encounter
T82.391S	Other mechanical complication of carotid arterial graft (bypass), sequela
T82.392A	Other mechanical complication of femoral arterial graft (bypass), initial encounter
T82.392D	Other mechanical complication of femoral arterial graft (bypass), subsequent encounter
T82.392S	Other mechanical complication of femoral arterial graft (bypass), sequela
T82.398A	Other mechanical complication of other vascular grafts, initial encounter
T82.398D	Other mechanical complication of other vascular grafts, subsequent encounter
T82.398S	Other mechanical complication of other vascular grafts,sequela
T82.399A	Other mechanical complication of unspecified vascular grafts, initial encounter
T82.399D	Other mechanical complication of unspecified vascular grafts, subsequent encounter
T82.399S	Other mechanical complication of unspecified vascular grafts, sequela
T82.41xA	Breakdown (mechanical) of vascular dialysis catheter, initial encounter
T82.41xD	Breakdown (mechanical) of vascular dialysis catheter, subsequent encounter
T82.41xS	Breakdown (mechanical) of vascular dialysis catheter, sequela
T82.42xA	Displacement of vascular dialysis catheter, initial encounter
T82.42xD	Displacement of vascular dialysis catheter, subsequent encounter
T82.42xS	Displacement of vascular dialysis catheter, sequela
T82.43xA	Leakage of vascular dialysis catheter, initial encounter
T82.43xD	Leakage of vascular dialysis catheter, subsequent encounter
T82.43xS	Leakage of vascular dialysis catheter, sequela
T82.49xA	Other complication of vascular dialysis catheter, initial encounter
T82.49xD	Other complication of vascular dialysis catheter, subsequent encounter
T82.49xS	Other complication of vascular dialysis catheter,sequela
T82.510A	Breakdown (mechanical) of surgically created arteriovenous fistula, initial encounter
T82.510D	Breakdown (mechanical) of surgically created arteriovenous fistula, subsequent encounter
T82.510S	Breakdown (mechanical) of surgically created arteriovenous fistula, sequela
T82.511A	Breakdown (mechanical) of surgically created arteriovenous shunt, initial encounter
T82.511D	Breakdown (mechanical) of surgically created arteriovenous shunt, subsequent encounter
T82.511S	Breakdown (mechanical) of surgically created arteriovenous shunt, sequela
T82.512A	Breakdown (mechanical) of artificial heart, initial encounter
T82.512D	Breakdown (mechanical) of artificial heart, subsequent encounter
T82.512S	Breakdown (mechanical) of artificial heart, sequela
T82.513A	Breakdown (mechanical) of balloon (counterpulsation) device, initial encounter
T82.513D	Breakdown (mechanical) of balloon (counterpulsation) device, subsequent encounter
T82.513S	Breakdown (mechanical) of balloon (counterpulsation) device, sequela
T82.515A	Breakdown (mechanical) of umbrella device, initial encounter
T82.515D	Breakdown (mechanical) of umbrella device, subsequent encounter
T82.515S	Breakdown (mechanical) of umbrella device,sequela
T82.518A	Breakdown (mechanical) of other cardiac and vascular devices and implants, initial encounter

T82.518D	Breakdown (mechanical) of other cardiac and vascular devices and implants, subsequent encounter
T82.518S	Breakdown (mechanical) of other cardiac and vascular devices and implants, sequela
T82.519A	Breakdown (mechanical) of unspecified cardiac and vascular devices and implants, initial encounter
T82.519D	Breakdown (mechanical) of unspecified cardiac and vascular devices and implants, subsequent encounter
T82.519S	Breakdown (mechanical) of unspecified cardiac and vascular devices and implants, sequela
T82.520A	Displacement of surgically created arteriovenous fistula, initial encounter
T82.520D	Displacement of surgically created arteriovenous fistula, subsequent encounter
T82.520S	Displacement of surgically created arteriovenous fistula, sequela
T82.521A	Displacement of surgically created arteriovenous shunt, initial encounter
T82.521D	Displacement of surgically created arteriovenous shunt, subsequent encounter
T82.521S	Displacement of surgically created arteriovenous shunt, sequela
T82.522A	Displacement of artificial heart, initial encounter
T82.522D	Displacement of artificial heart, subsequent encounter
T82.522S	Displacement of artificial heart, sequela
T82.523A	Displacement of balloon (counterpulsation) device, initial encounter
T82.523D	Displacement of balloon (counterpulsation) device, subsequent encounter
T82.523S	Displacement of balloon (counterpulsation) device, sequela
T82.524A	Displacement of infusion catheter, initial encounter
T82.524D	Displacement of infusion catheter, subsequent encounter
T82.524S	Displacement of infusion catheter, sequela
T82.525A	Displacement of umbrella device, initial encounter
T82.525D	Displacement of umbrella device, subsequent encounter
T82.525S	Displacement of umbrella device, sequela
T82.528A	Displacement of other cardiac and vascular devices and implants, initial encounter
T82.528D	Displacement of other cardiac and vascular devices and implants, subsequent encounter
T82.528S	Displacement of other cardiac and vascular devices and implants, sequela
T82.529A	Displacement of unspecified cardiac and vascular devices and implants, initial encounter
T82.529D	Displacement of unspecified cardiac and vascular devices and implants, subsequent encounter
T82.529S	Displacement of unspecified cardiac and vascular devices and implants, sequela
T82.530A	Leakage of surgically created arteriovenous fistula, initial encounter
T82.530D	Leakage of surgically created arteriovenous fistula, subsequent encounter
T82.530S	Leakage of surgically created arteriovenous fistula, sequela
T82.531A	Leakage of surgically created arteriovenous shunt, initial encounter
T82.531D	Leakage of surgically created arteriovenous shunt, subsequent encounter
T82.531S	Leakage of surgically created arteriovenous shunt, sequela
T82.532A	Leakage of artificial heart, initial encounter
T82.532D	Leakage of artificial heart, subsequent encounter
T82.532S	Leakage of artificial heart, sequela
T82.533A	Leakage of balloon (counterpulsation) device, initial encounter
T82.533D	Leakage of balloon (counterpulsation) device, subsequent encounter
T82.533S	Leakage of balloon (counterpulsation) device, sequela
T82.534A	Leakage of infusion catheter, initial encounter
T82.534D	Leakage of infusion catheter, subsequent encounter
T82.534S	Leakage of infusion catheter, sequela
T82.535A	Leakage of umbrella device, initial encounter
T82.535D	Leakage of umbrella device, subsequent encounter

T82.535S	Leakage of umbrella device, sequela
T82.538A	Leakage of other cardiac and vascular devices and implants, initial encounter
T82.538D	Leakage of other cardiac and vascular devices and implants, subsequent encounter
T82.538S	Leakage of other cardiac and vascular devices and implants, sequela
T82.539A	Leakage of unspecified cardiac and vascular devices and implants, initial encounter
T82.539D	Leakage of unspecified cardiac and vascular devices and implants, subsequent encounter
T82.539S	Leakage of unspecified cardiac and vascular devices and implants, sequela
T82.590A	Other mechanical complication of surgically created arteriovenous fistula, initial encounter
T82.590D	Other mechanical complication of surgically created arteriovenous fistula, subsequent encounter
T82.590S	Other mechanical complication of surgically created arteriovenous fistula, sequela
T82.591A	Other mechanical complication of surgically created arteriovenous shunt, initial encounter
T82.591D	Other mechanical complication of surgically created arteriovenous shunt, subsequent encounter
T82.591S	Other mechanical complication of surgically created arteriovenous shunt, sequela
T82.592A	Other mechanical complication of artificial heart, initial encounter
T82.592D	Other mechanical complication of artificial heart, subsequent encounter
T82.592S	Other mechanical complication of artificial heart, sequela
T82.593A	Other mechanical complication of balloon (counterpulsation) device, initial encounter
T82.593D	Other mechanical complication of balloon (counterpulsation) device, subsequent encounter
T82.593S	Other mechanical complication of balloon (counterpulsation) device, sequela
T82.595A	Other mechanical complication of umbrella device, initial encounter
T82.595D	Other mechanical complication of umbrella device, subsequent encounter
T82.595S	Other mechanical complication of umbrella device, sequela
T82.598A	Other mechanical complication of other cardiac and vascular devices and implants, initial encounter
T82.598D	Other mechanical complication of other cardiac and vascular devices and implants, subsequent encounter
T82.598S	Other mechanical complication of other cardiac and vascular devices and implants, sequela
T82.599A	Other mechanical complication of unspecified cardiac and vascular devices and implants, initial encounter
T82.599D	Other mechanical complication of unspecified cardiac and vascular devices and implants, subsequent encounter
T82.599S	Other mechanical complication of unspecified cardiac and vascular devices and implants, sequela
T82.6xA	Infection and inflammatory reaction due to cardiac valve prosthesis, initial encounter
T82.6xD	Infection and inflammatory reaction due to cardiac valve prosthesis, subsequent encounter
T82.6xS	Infection and inflammatory reaction due to cardiac valve prosthesis, sequela
T82.7xA	Infection and inflammatory reaction due to other cardiac and vascular devices, implants and grafts, initial encounter
T82.7xD	Infection and inflammatory reaction due to other cardiac and vascular devices, implants and grafts, subsequent encounter
T82.7xS	Infection and inflammatory reaction due to other cardiac and vascular devices, implants and grafts, sequela

T82.817A	Embolism of cardiac prosthetic devices, implants and grafts, initial encounter
T82.817D	Embolism of cardiac prosthetic devices, implants and grafts, subsequent encounter
T82.817S	Embolism of cardiac prosthetic devices, implants and grafts, sequela
T82.818A	Embolism of vascular prosthetic devices, implants and grafts, initial encounter
T82.818D	Embolism of vascular prosthetic devices, implants and grafts, subsequent encounter
T82.818S	Embolism of vascular prosthetic devices, implants and grafts, sequela
T82.827A	Fibrosis of cardiac prosthetic devices, implants and grafts, initial encounter
T82.827D	Fibrosis of cardiac prosthetic devices, implants and grafts, subsequent encounter
T82.827S	Fibrosis of cardiac prosthetic devices, implants and grafts, sequela
T82.837A	Hemorrhage of cardiac prosthetic devices, implants and grafts, initial encounter
T82.837D	Hemorrhage of cardiac prosthetic devices, implants and grafts, subsequent encounter
T82.837S	Hemorrhage of cardiac prosthetic devices, implants and grafts, sequela
T82.847A	Pain from cardiac prosthetic devices, implants and grafts, initial encounter
T82.847D	Pain from cardiac prosthetic devices, implants and grafts, subsequent encounter
T82.847S	Pain from cardiac prosthetic devices, implants and grafts, sequela
T82.857A	Stenosis of cardiac prosthetic devices, implants and grafts, initial encounter
T82.857D	Stenosis of cardiac prosthetic devices, implants and grafts, subsequent encounter
T82.857S	Stenosis of cardiac prosthetic devices, implants and grafts, sequela
T82.867A	Thrombosis of cardiac prosthetic devices, implants and grafts, initial encounter
T82.867D	Thrombosis of cardiac prosthetic devices, implants and grafts, subsequent encounter
T82.867S	Thrombosis of cardiac prosthetic devices, implants and grafts, sequela
T82.897A	Other specified complication of cardiac prosthetic devices, implants and grafts, initial encounter
T82.897D	Other specified complication of cardiac prosthetic devices, implants and grafts, subsequent encounter
T82.897S	Other specified complication of cardiac prosthetic devices, implants and grafts, sequela
T82.9xA	Unspecified complication of cardiac and vascular prosthetic device, implant and graft, initial encounter
T82.9xD	Unspecified complication of cardiac and vascular prosthetic device, implant and graft, subsequent encounter
T82.9xS	Unspecified complication of cardiac and vascular prosthetic device, implant and graft, sequela
T86.20	Unspecified complication of heart transplant
T86.21	Heart transplant rejection
T86.22	Heart transplant failure
T86.23	Heart transplant infection
T86.290	Cardiac allograft vasculopathy
T86.298	Other complications of heart transplant
T86.30	Unspecified complication of heart-lung transplant
T86.31	Heart-lung transplant rejection
T86.32	Heart-lung transplant failure
T86.33	Heart-lung transplant infection
T86.39	Other complications of heart-lung transplant
Z08	Encounter for follow-up examination after completed treatment for malignant neoplasm
Z09	Encounter for follow-up examination after completed treatment for conditions other than malignant neoplasm
Z48.21	Encounter for aftercare following heart transplant

Z48.22	Encounter for aftercare following kidney transplant
Z48.23	Encounter for aftercare following liver transplant
Z48.24	Encounter for aftercare following lung transplant
Z48.280	Encounter for aftercare following heart-lung transplant
Z48.288	Encounter for aftercare following multiple organ transplant
Z48.290	Encounter for aftercare following bone marrow transplant
Z48.298	Encounter for aftercare following other organ transplant
Z51.11	Encounter for antineoplastic chemotherapy
Z86.73	Personal history of transient ischemic attack (TIA), and cerebral infarction without residual deficits
Z86.74	Personal history of sudden cardiac arrest
Z94.1	Heart transplant status
Z94.2	Lung transplant status
Z94.3	Heart and lungs transplant status
Z95.0	Presence of cardiac pacemaker
Z95.2	Presence of prosthetic heart valve
Z95.3	Presence of xenogenic heart valve
Z95.4	Presence of other heart-valve replacement
Z95.811	Presence of heart assist device
Z95.812	Presence of fully implantable artificial heart
Z95.818	Presence of other cardiac implants and grafts

**Not Medically Necessary/Not Covered:**

ICD-9-CM Diagnosis Codes	Description
	All other codes

ICD-10-CM Diagnosis Codes (Effective 10/01/2015)	Description
	All other codes

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