Medical Coverage Policy

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Transthoracic Echocardiography in Children

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Related Coverage Resources

eviCore Pediatric Cardiac Imaging Guideline
Transthoracic Echocardiography in Adults

INSTRUCTIONS FOR USE

The following Coverage Policy applies to health benefit plans administered by Cigna Companies. Certain Cigna Companies and/or lines of business only provide utilization review services to clients and do not make coverage determinations. References to standard benefit plan language and coverage determinations do not apply to those clients. Coverage Policies are intended to provide guidance in interpreting certain standard benefit plans administered by Cigna Companies. Please note, the terms of a customer's particular benefit plan document [Group Service Agreement, Evidence of Coverage, Certificate of Coverage, Summary Plan Description (SPD) or similar plan document] may differ significantly from the standard benefit plans upon which these Coverage Policies are based. For example, a customer's benefit plan document may contain a specific exclusion related to a topic addressed in a Coverage Policy. In the event of a conflict, a customer's benefit plan document always supersedes the information in the Coverage Policies. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of 1) the terms of the applicable benefit plan document in effect on the date of service; 2) any applicable laws/regulations; 3) any relevant collateral source materials including Coverage Policies and; 4) the specific facts of the particular situation. Each coverage request should be reviewed on its own merits. Medical directors are expected to exercise clinical judgment where appropriate and have discretion in making individual coverage determinations. Where coverage for care or services does not depend on specific circumstances, reimbursement will only be provided if a requested service(s) is submitted in accordance with the relevant criteria outlined in the applicable Coverage Policy, including covered diagnosis and/or procedure code(s). Reimbursement is not allowed for services when billed for conditions or diagnoses that are not covered under this Coverage Policy (see "Coding Information" below). When billing, providers must use the most appropriate codes as of the effective date of the submission. Claims submitted for services that are not accompanied by covered code(s) under the applicable Coverage Policy

will be denied as not covered. Coverage Policies relate exclusively to the administration of health benefit plans. Coverage Policies are not recommendations for treatment and should never be used as treatment guidelines. In certain markets, delegated vendor guidelines may be used to support medical necessity and other coverage determinations.

Overview

This Coverage Policy addresses non-stress transthoracic echocardiography (TTE) in the pediatric population (under age 18).

Coverage Policy

PALPITATIONS
Initial outpatient transthoracic echocardiography (TTE) in an individual under age 18 is considered medically necessary: • Palpitations with abnormal electrocardiogram (ECG) • Palpitations in an individual with known channelopathy • Palpitations with family history at a young age (before the age of 50 years) of sudden cardiac arrest or death and/or pacemaker or implantable defibrillator placement • Palpitations with family history of cardiomyopathy • Palpitations in an individual with known cardiomyopathy **Initial outpatient TTE in an individual under age 18 is not covered or reimbursable:** • Palpitations with no other symptoms or signs of cardiovascular disease, a benign family history, and no recent ECG or a normal ECG • Palpitations with family history of a channelopathy
ELECTROCARDIOGRAM (ECG) FINDINGS
Initial outpatient TTE in an individual under age 18 is considered medically necessary: • Supraventricular tachycardia • Premature ventricular contractions (PVC) in the prenatal or neonatal period • PVCs after the neonatal period • Ventricular tachycardia **Initial outpatient TTE in an individual under age 18 is not covered or reimbursable:** • Premature atrial contractions (PAC) in the prenatal or neonatal period • PACs after the neonatal period • Sinus bradycardia • Sinus arrhythmia
SYNCOPE
Initial outpatient TTE in an individual under age 18 is considered medically necessary:

- Syncope with abnormal ECG
- Syncope with family history of channelopathy
- Syncope with family history at a young age (before the age of 50 years) of sudden cardiac arrest or death and/or pacemaker or implantable defibrillator placement
- Syncope with family history of cardiomyopathy
- Unexplained pre-syncope
- Exertional syncope
- Unexplained post-exertional syncope

Initial outpatient TTE in an individual under age 18 is not covered or reimbursable:

- Syncope with or without palpitations and with no recent ECG
- Syncope with no other symptoms or signs of cardiovascular disease, a benign family history, and a normal ECG
- Probable neurocardiogenic (vasovagal) syncope
- Syncope or pre-syncope with a known non-cardiovascular cause

CHEST PAIN

Initial outpatient TTE in an individual under age 18 is considered medically necessary:

- Chest pain with other symptoms or signs of cardiovascular disease, a benign family history, and a normal ECG
- Exertional chest pain
- Non-exertional chest pain with abnormal ECG
- Chest pain with family history of sudden unexplained death or cardiomyopathy
- Chest pain with family history of premature coronary artery disease
- Chest pain with recent onset of fever
- Chest pain with recent illicit drug use

Initial outpatient TTE in an individual under age 18 is not covered or reimbursable:

- Chest pain with no other symptoms or signs of cardiovascular disease, a benign family history, and a normal ECG
- Non-exertional chest pain with no recent ECG or a normal ECG
- Reproducible chest pain with palpation or deep inspiration

MURMUR

Initial outpatient TTE in an individual under age 18 is considered medically necessary:

- Presumptively innocent murmur with signs, symptoms, or findings of cardiovascular disease
- Pathologic murmur

Initial outpatient TTE in an individual under age 18 is not covered or reimbursable:

- Presumptively innocent murmur with no symptoms, signs, or findings of cardiovascular disease and a benign family history

OTHER / SYMPTOMS AND SIGNS

Initial outpatient TTE in an individual under age 18 is considered medically necessary:

- Preparticipation assessment of an asymptomatic athlete with ≥1 of the following: abnormal examination, abnormal ECG, or family history of inheritable heart disease associated with sudden death
- Initial evaluation prior to exposure to medications/radiation that could result in cardiotoxicity/heart failure.
- Pre-operative evaluation of cardiac structure and function prior to noncardiac solid organ transplantation.
- Monitoring for rejection in a cardiac transplant recipient
- Cardiac structure and function evaluation in a potential heart donor
- Re-evaluation (<1 y) in a patient previously or currently undergoing therapy with potentially cardiotoxic agents
- Periodic re-evaluation in a patient undergoing therapy with cardiotoxic agents and worsening symptoms
- Symptoms and/or signs suggestive of congestive heart failure, including but not limited to respiratory distress, poor peripheral pulses, feeding difficulty, decreased urine output, edema, and/or hepatomegaly
- Chest wall deformities and scoliosis pre-operatively
- Suspected cardiac mass
- Chest mass or concern for any impingement of structure on the heart
- Signs and symptoms of endocarditis in the absence of blood culture data or a negative blood culture
- Unexplained fever without other evidence for cardiovascular or systemic involvement
- Central cyanosis
- Multisystem Inflammatory Syndrome (MIS) associated with SARS-CoV-2 (COVID-19) infection
- Individual taking FINTEPLA® (fenfluramine) for a FDA-approved indication (e.g., Dravet syndrome)

Initial outpatient TTE in an individual under age 18 is not covered or reimbursable:

- Preparticipation athlete assessment in an individual patient no symptoms, normal examination, and no family history of inheritable heart disease
- Screening study prior to starting Attention-deficit/Hyperactivity disorder (ADHD) drugs
- Fatigue with no other signs and symptoms of cardiovascular disease, a normal ECG, and a benign family history
- Isolated acrocyanosis

PRIOR TEST RESULTS

Initial outpatient TTE in an individual under age 18 is considered medically necessary:

- Known channelopathy
- Genotype positive for cardiomyopathy
- Abnormal chest X-ray findings suggestive of cardiovascular disease
- Abnormal ECG without symptoms
- Desaturation based on pulse oximetry
- Previously normal echocardiogram with a change in cardiovascular status and/or a new family history suggestive of heritable heart disease
- Chromosomal abnormality known to be associated with cardiovascular disease
- Chromosomal abnormality with undefined risk for cardiovascular disease
- Positive blood cultures suggestive of infective endocarditis

- Abnormal cardiac biomarkers
- Abnormal barium swallow or bronchoscopy suggesting vascular ring

Initial outpatient TTE in an individual under age 18 is not covered or reimbursable:

- Previously normal echocardiogram with no change in cardiovascular status or family history
- Elevated anti-streptolysin O titers without suspicion for rheumatic fever

SYSTEMIC DISORDERS

Initial outpatient TTE in an individual under age 18 is considered medically necessary:

- Cancer without chemotherapy
- Prior to, during or following chemotherapy in cancer
- Sickle cell disease and other hemoglobinopathies
- Connective tissue disorder such as Marfan, Loeys Dietz, and other aortopathy syndromes
- Suspected connective tissue disorder
- Clinically suspected syndrome or extracardiac congenital anomaly known to be associated with congenital heart disease
- Human immunodeficiency virus infection
- Suspected or confirmed Kawasaki disease
- Suspected or confirmed Takayasu arteritis
- Suspected or confirmed acute rheumatic fever
- Systemic lupus erythematosis and autoimmune disorders
- Muscular dystrophy
- Systemic hypertension
- Renal failure
- Obesity with obstructive sleep apnea
- Obesity with other cardiovascular risk factors
- Stroke
- Suspected pulmonary hypertension
- Hepatic disorders
- Failure to thrive
- Storage diseases, mitochondrial and metabolic disorders
- Abnormalities of visceral or cardiac situs

Initial outpatient TTE in an individual under age 18 is not covered or reimbursable:

- Obesity without other cardiovascular risk factors
- Diabetes mellitus
- Lipid disorders
- Seizures, other neurologic disorders, or psychiatric disorders
- Gastrointestinal disorders, not otherwise specified

FAMILY HISTORY OF CARDIOVASCULAR DISEASE IN PATIENTS WITHOUT SIGNS OR SYMPTOMS AND WITHOUT CONFIRMED CARDIAC DIAGNOSIS

Initial outpatient TTE in an individual under age 18 is considered medically necessary:

- Family history of Unexplained sudden death before the age of 50 years
- Family history of Non-ischemic dilated cardiomyopathy
- Family history of Other cardiomyopathies

- Family history of Genetic disorder at high risk for cardiovascular involvement
- Family history of Marfan or Loeys Dietz syndrome
- Family history of Connective tissue disorder other than Marfan or Loeys Dietz syndrome
- Family history of Congenital left-sided heart lesion, including but not limited to mitral stenosis, left ventricular outflow tract obstruction, bicuspid aortic valve, aortic coarctation, and/or hypoplastic left heart syndrome
- Family history of Congenital heart disease other than the congenital left-sided heart lesions
- Family history of Idiopathic pulmonary arterial hypertension
- Family history of Heritable pulmonary arterial hypertension

Initial outpatient TTE in an individual under age 18 is not covered or reimbursable:

- Family history of Premature coronary artery disease before the age of 50 years
- Family history of Channelopathy
- Family history of Unspecified cardiovascular disease
- Family history of Disease at high risk for cardiovascular involvement, including but not limited to diabetes, systemic hypertension, obesity, stroke, and peripheral vascular disease
- Family history of Pulmonary arterial hypertension other than idiopathic and heritable
- Family history of Consanguinity

OUTPATIENT NEONATES WITHOUT POST-NATAL CARDIOLOGY EVALUATION

Initial outpatient TTE in an individual under age 18 is considered medically necessary:

- Suspected cardiovascular abnormality on fetal echocardiogram
- Maternal infection during pregnancy or delivery with potential fetal/neonatal cardiac sequelae
- Maternal diabetes with no prior fetal echocardiogram
- Maternal diabetes with a normal fetal echocardiogram
- Maternal phenylketonuria
- Maternal autoimmune disorder
- Maternal teratogen exposure

Initial outpatient TTE in an individual under age 18 is not covered or reimbursable:

- Isolated echogenic focus on fetal ultrasound

ESTABLISHED CONGENITAL HEART DISEASE

TTE is considered Medically necessary according to the American College of Cardiology (ACC) 2020 Appropriate Use Criteria for Multimodality Imaging During the Follow-Up Care of Patients With Congenital Heart Disease, which may include:

- Patent foramen ovale (PFO)
- Atrial septal defects
- Partial anomalous pulmonary venous connection
- Ventricular septal defects
- Atrioventricular septal defects
- Patent ductus arteriosus
- Total anomalous pulmonary venous connection
- Eisenmenger Syndrome

- Pulmonary hypertension associated with congenital heart disease
- Ebstein anomaly
- Tricuspid valve dysplasia
- Pulmonary stenosis
- Pulmonary atresia with intact ventricular septum
- Mitral valve disease
- Left ventricular outflow tract (LVOT) lesions
- Aortic coarctation and Interrupted aortic arch
- Coronary anomalies
- Tetralogy of Fallot (TOF)
- Double outlet right ventricle (DORV)
- D-Loop transposition of the great arteries (D-Loop TGA)
- Congenitally corrected transposition of the great arteries (ccTGA)
- Truncus arteriosus
- Single-ventricle heart disease

HYPERTROPHIC CARDIOMYOPATHY (HCM)

TTE in an individual under age 18 is considered medically necessary for:

- An individual with suspected HCM
- An individual with HCM and
  - a change in clinical status or a new clinical event
  - no change in clinical status or events (repeat TTE is recommended every 1 to 2 years)
  - a resting peak left ventricular outflow tract (LVOT) gradient <50 mm Hg, a TTE with provocative maneuvers is recommended.
  - who are undergoing alcohol septal ablation
  - who have undergone septal reduction therapy (SRT), TTE within 3 to 6 months after the procedure
- An individual with a first-degree relative with HCM (as part of initial family screening and periodic follow-up)
- An individual who is genotype-positive, phenotype-negative and has a change in clinical status (periodic interval TTE depending on age, 1-2 years in children and adolescents, 3-5 years in adults)

MYOCARDIAL STRAIN IMAGING (CPT® 93356)
using speckle tracking-derived assessment of myocardial mechanics

Myocardial strain imaging is considered medically necessary if the primary TTE (93303, 93304, 93306, 93307, 93308) on the same date of service is medically necessary AND EITHER of the following criteria are met:

- prior to, during or following exposure to medications/radiation that could result in cardiotoxicity
- to evaluate hypertrophic cardiomyopathy

Myocardial strain imaging is not covered or reimbursable for any other indication.

Coding Information

Notes:

1. This list of codes may not be all-inclusive since the American Medical Association (AMA) and Centers for Medicare and Medicaid Services (CMS) code updates may occur more frequently than policy updates.
2. Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement.

Considered Medically Necessary when criteria in the applicable policy statements listed above are met:

CPT®* Codes	**Description**
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
93319	3D echocardiographic imaging and postprocessing during transesophageal echocardiography, or during transthoracic echocardiography for congenital cardiac anomalies, for the assessment of cardiac structure(s) (eg, cardiac chambers and valves, left atrial appendage, interatrial septum, interventricular septum) and function, when performed (List separately in addition to code for echocardiographic imaging)
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)

HCPCS Codes	**Description**
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

HCPCS Codes	Description
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

ICD-10-CM Diagnosis Codes	Description
A01.02	Typhoid fever with heart involvement
A02.1	Salmonella sepsis
A18.84	Tuberculosis of heart
A22.7	Anthrax sepsis
A26.7	Erysipelothrix sepsis
A32.7	Listerial sepsis
A32.82	Listerial endocarditis
A36.81	Diphtheritic cardiomyopathy
A38.0-A38.9	Scarlet fever
A39.50-A39.53	Meningococcal heart disease
A40.0-A40.9	Streptococcal sepsis
A41.01-A41.9	Other sepsis
A42.7	Actinomycotic sepsis
A50.54	Late congenital cardiovascular syphilis
A52.00-A52.09	Cardiovascular and cerebrovascular syphilis
A54.83	Gonococcal heart infection
A54.86	Gonococcal sepsis
A67.2	Late lesions of pinta
A69.29	Other conditions associated with Lyme disease
B00.7	Disseminated herpesviral disease
B20	Human immunodeficiency virus [HIV] disease
B25.1	Cytomegaloviral hepatitis
B26.82	Mumps myocarditis
B33.20-B33.24	Viral carditis
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
C00.0-C14.8	Malignant neoplasm of lip, oral cavity and pharynx
C15.3-C26.9	Malignant neoplasm of digestive organs
C30.0-C39.9	Malignant neoplasms of respiratory and intrathoracic organs

ICD-10-CM Diagnosis Codes	Description
C40.00-C41.9	Malignant neoplasms of bone and articular cartilage
C43.0-C44.99	Melanoma and other malignant neoplasms of skin
C45.0-C49.A9	Malignant neoplasms of mesothelial and soft tissue
C50.011-C50.912	Malignant neoplasm of breast
C50.921-C50.922	Malignant neoplasm of breast of unspecified site, male
C50.A0-C50.A2	Malignant inflammatory neoplasm of breast
C51.0-C58	Malignant neoplasms of female genital organs
C60.0-C63.9	Malignant neoplasms of male genital organs
C64.1-C68.9	Malignant neoplasms of urinary tract
C69.01-C72.9	Malignant neoplasms of eye, brain and other parts of central nervous system
C73-C75.9	Malignant neoplasms of thyroid and other endocrine glands
C7A.00-C7A.8	Malignant neuroendocrine tumors
C7B.00-C7B.8	Secondary neuroendocrine tumors
C76.0-C80.2	Malignant neoplasms of ill-defined, other secondary and unspecified sites
C81.00-C96.9	Malignant neoplasms of lymphoid, hematopoietic and related tissue
D00.00-D09.9	In situ neoplasms
D15.1	Benign neoplasm of heart
D3A.00-D3A.8	Benign neuroendocrine tumors
D37.01-D48.9	Neoplasms of uncertain behavior, polycythemia vera and myelodysplastic syndromes
D49.0-D49.9	Neoplasms of unspecified behavior
D56.0-D56.9	Thalassemia
D57.00-D57.819	Sickle cell disorders
D58.2	Other hemoglobinopathies
D65	Disseminated intravascular coagulation [defibrination syndrome]
D66	Hereditary factor VIII deficiency
D67	Hereditary factor IX deficiency
D68.00-D68.9	Other coagulation defects
D69.0-D69.9	Purpura and other hemorrhagic conditions
D80.0	Hereditary hypogammaglobulinemia
D80.1	Nonfamilial hypogammaglobulinemia
D80.2	Selective deficiency of immunoglobulin A [IgA]
D80.3	Selective deficiency of immunoglobulin G [IgG] subclasses

ICD-10-CM Diagnosis Codes	Description
D80.4	Selective deficiency of immunoglobulin M [IgM]
D80.5	Immunodeficiency with increased immunoglobulin M [IgM]
D80.7	Transient hypogammaglobulinemia of infancy
D82.1	Di George's syndrome
D83.0-D83.9	Common variable immunodeficiency
D86.85	Sarcoid myocarditis
E34.00-E34.09	Carcinoid syndrome
E40	Kwashiorkor
E42	Marasmic kwashiorkor
E51.12	Wet beriberi
E66.2	Morbid (severe) obesity with alveolar hypoventilation
E70.0	Classical phenylketonuria
E70.1	Other hyperphenylalaninemias
E70.20-E70.29	Disorder of tyrosine metabolism
E70.30-E70.39	Albinism
E70.5	Disorders of tryptophan metabolism
E70.81-E70.89	Other disorders of aromatic amino-acid metabolism
E70.9	Disorder of aromatic amino-acid metabolism, unspecified
E71.40-E71.448	Disorders of carnitine metabolism
E72.52	Trimethylaminuria
E72.530-E72.539	Primary Hyperoxaluria
E72.540	Dietary hyperoxaluria
E72.541	Enteric hyperoxaluria
E72.548	Other secondary hyperoxaluria
E72.549	Secondary hyperoxaluria, unspecified
E73.0-E73.9	Lactose intolerance
E74.00-E74.9	Other disorders of carbohydrate metabolism
E77.1	Defects in glycoprotein degradation
E79.0	Hyperuricemia without signs of inflammatory arthritis and tophaceous disease
E88.40-E88.49	Mitochondrial metabolism disorders
F50.00-F50.029	Anorexia nervosa
G06.0	Intracranial abscess and granuloma
G06.1	Intraspinal abscess and granuloma
G40.811-G40.814	Lennox-Gastaut syndrome
G40.833-G40.834	Dravet syndrome

ICD-10-CM Diagnosis Codes	Description
G40.841-G40.844	KCNQ2-related epilepsy
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
G71.00	Muscular dystrophy, unspecified
G71.01	Duchenne or Becker muscular dystrophy
G71.02	Facioscapulohumeral muscular dystrophy
G71.031-G71.039	Limb girdle muscular dystrophies
G71.09	Other specified muscular dystrophies
G71.11	Myotonic muscular dystrophy
G71.20-G71.29	Congenital myopathies
G90.1	Familial dysautonomia [Riley-Day]
G90.A	Postural orthostatic tachycardia syndrome [POTS]
H49.811-H49.813	Kearns-Sayre syndrome
I01.0-I01.9	Rheumatic fever with heart involvement
I02.0	Rheumatic chorea with heart involvement
I05.0-I09.9	Chronic rheumatic heart diseases
I10-I16.9	Hypertensive diseases
I20.0-I25.9	Ischemic heart diseases
I26.01-I28.9	Pulmonary heart disease and diseases of pulmonary circulation
I30.0-I52	Other forms of heart disease
I5A	Non-ischemic myocardial injury (non-traumatic)
I63.00-I63.9	Cerebral infarction
I66.01-I66.9	Occlusion and stenosis of cerebral arteries, not resulting in cerebral infarction
I67.5	Moyamoya disease
I67.841	Reversible cerebrovascular vasoconstriction syndrome
I67.848	Other cerebrovascular vasospasm and vasoconstriction
I71.00-I71.9	Aortic aneurysm and dissection
I72.0-I72.9	Other aneurysm
I74.01-I74.9	Arterial embolism and thrombosis
I75.011-I75.013	Atheroembolism of upper extremity
I75.021-I75.023	Atheroembolism of lower extremity
I75.81	Atheroembolism of kidney

ICD-10-CM Diagnosis Codes	Description
I75.89	Atheroembolism of other site
I76	Septic arterial embolism
I77.0	Arteriovenous fistula, acquired
I77.2	Rupture of artery
I77.810	Thoracic aortic ectasia
I77.811	Abdominal aortic ectasia
I77.812	Thoracoabdominal aortic ectasia
I77.819	Aortic ectasia, unspecified site
I77.82	Antineutrophilic cytoplasmic antibody [ANCA] vasculitis
I79.0	Aneurysm of aorta in diseases classified elsewhere
I82.210-I82.291	Embolism and thrombosis of vena cava and other thoracic veins
I87.001-I87.9	Other disorders of veins
I95.0-I95.9	Hypotension
I97.0	Postcardiotomy syndrome
I97.110-I97.191	Other postprocedural cardiac functional disturbances
I97.3	Postprocedural hypertension
I97.410-I97.42	Intraoperative hemorrhage and hematoma of a circulatory system organ or structure complicating a procedure
I97.51-I97.52	Accidental puncture and laceration of a circulatory system organ or structure during a procedure
I97.610-I97.648	Postprocedural hemorrhage, hematoma and seroma of a circulatory system organ or structure following a procedure
I97.710-I97.791	Intraoperative cardiac functional disturbances
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
I99.8	Other disorder of circulatory system
I99.9	Unspecified disorder of circulatory system
J80	Acute respiratory distress syndrome
J81.0-J81.1	Pulmonary edema
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-J95.822	Postprocedural respiratory failure
J96.00-J96.02	Acute respiratory failure
J96.20-J96.22	Acute and chronic respiratory failure
J96.90-J96.92	Respiratory failure, unspecified
J98.4	Other disorders of lung

ICD-10-CM Diagnosis Codes	Description
J98.51	Mediastinitis
K44.9	Diaphragmatic hernia without obstruction or gangrene
K71.0-K71.9	Toxic liver disease
K72.00-K72.91	Hepatic failure, not elsewhere classified
K73.0-K73.9	Chronic hepatitis, not elsewhere classified
K74.00-K74.69	Fibrosis and cirrhosis of liver
K75.0-K75.9	Other inflammatory liver diseases
K76.0	Fatty (change of) liver, not elsewhere classified
K76.1	Chronic passive congestion of liver
K76.2	Central hemorrhagic necrosis of liver
K76.3	Infarction of liver
K76.4	Peliosis hepatis
K76.5	Hepatic veno-occlusive disease
K76.6	Portal hypertension
K76.7	Hepatorenal syndrome
K76.81	Hepatopulmonary syndrome
K76.89	Other specified diseases of liver
K76.9	Liver disease, unspecified
K77	Liver disorders in diseases classified elsewhere
L53.8	Other specified erythematous conditions
M30.0-M30.8	Polyarteritis nodosa and related conditions
M31.0-M31.9	Other necrotizing vasculopathies
M32.0-M32.9	Systemic lupus erythematosus (SLE)
M33.00-M33.99	Dermatopolymyositis
M34.0-M34.9	Systemic sclerosis [scleroderma]
M35.00-M35.09	Sjogren syndrome
M35.0A	Sjogren syndrome with glomerular disease
M35.0B	Sjogren syndrome with vasculitis
M35.0C	Sjogren syndrome with dental involvement
M35.1	Other overlap syndromes
M35.5	Multifocal fibrosclerosis
M35.81	Multisystem inflammatory syndrome (MIS)
M35.89	Other specified systemic involvement of connective tissue
M35.9	Systemic involvement of connective tissue, unspecified
M36.0	Dermato(poly)myositis in neoplastic disease
M36.8	Systemic disorders of connective tissue in other diseases classified elsewhere
M40.00-M40.05	Postural kyphosis

ICD-10-CM Diagnosis Codes	Description
M40.10	Other secondary kyphosis, site unspecified
M40.13	Other secondary kyphosis, cervicothoracic region
M40.14	Other secondary kyphosis, thoracic region
M40.15	Other secondary kyphosis, thoracolumbar region
M40.203	Unspecified kyphosis, cervicothoracic region
M40.204	Unspecified kyphosis, thoracic region
M40.205	Unspecified kyphosis, thoracolumbar region
M40.209	Unspecified kyphosis, site unspecified
M40.293	Other kyphosis, cervicothoracic region
M40.294	Other kyphosis, thoracic region
M40.295	Other kyphosis, thoracolumbar region
M40.299	Other kyphosis, site unspecified
M40.30	Flatback syndrome, site unspecified
M40.35	Flatback syndrome, thoracolumbar region
M40.40	Postural lordosis, site unspecified
M40.45	Postural lordosis, thoracolumbar region
M40.50	Lordosis, unspecified, site unspecified
M40.55	Lordosis, unspecified, thoracolumbar region
M41.00	Infantile idiopathic scoliosis, site unspecified
M41.03	Infantile idiopathic scoliosis, cervicothoracic region
M41.04	Infantile idiopathic scoliosis, thoracic region
M41.05	Infantile idiopathic scoliosis, thoracolumbar region
M41.113	Juvenile idiopathic scoliosis, cervicothoracic region
M41.114	Juvenile idiopathic scoliosis, thoracic region
M41.115	Juvenile idiopathic scoliosis, thoracolumbar region
M41.119	Juvenile idiopathic scoliosis, site unspecified
M41.123	Adolescent idiopathic scoliosis, cervicothoracic region
M41.124	Adolescent idiopathic scoliosis, thoracic region
M41.125	Adolescent idiopathic scoliosis, thoracolumbar region
M41.129	Adolescent idiopathic scoliosis, site unspecified
M41.20	Other idiopathic scoliosis, site unspecified
M41.23	Other idiopathic scoliosis, cervicothoracic region
M41.24	Other idiopathic scoliosis, thoracic region
M41.25	Other idiopathic scoliosis, thoracolumbar region
M41.30-M41.35	Thoracogenic scoliosis
M41.40	Neuromuscular scoliosis, site unspecified
M41.43	Neuromuscular scoliosis, cervicothoracic region
M41.44	Neuromuscular scoliosis, thoracic region
M41.45	Neuromuscular scoliosis, thoracolumbar region
M41.50	Other secondary scoliosis, site unspecified
M41.53	Other secondary scoliosis, cervicothoracic region
M41.54	Other secondary scoliosis, thoracic region
M41.55	Other secondary scoliosis, thoracolumbar region

ICD-10-CM Diagnosis Codes	Description
M41.80	Other forms of scoliosis, site unspecified
M41.83	Other forms of scoliosis, cervicothoracic region
M41.84	Other forms of scoliosis, thoracic region
M41.85	Other forms of scoliosis, thoracolumbar region
M41.9	Scoliosis, unspecified
M43.8X3	Other specified deforming dorsopathies, cervicothoracic region
M43.8X4	Other specified deforming dorsopathies, thoracic region
M43.8X5	Other specified deforming dorsopathies, thoracolumbar region
M43.8X9	Other specified deforming dorsopathies, site unspecified
M43.9	Deforming dorsopathy, unspecified
M96.2	Postradiation kyphosis
M96.3	Postlaminectomy kyphosis
M96.4	Postsurgical lordosis
M96.5	Postradiation scoliosis
N19	Unspecified kidney failure
N26.2	Page kidney
O24.011-O24.03	Pre-existing type 1 diabetes mellitus, in pregnancy, childbirth and the puerperium
O24.111-O24.13	Pre-existing type 2 diabetes mellitus, in pregnancy, childbirth and the puerperium
O24.311-O24.33	Unspecified pre-existing diabetes mellitus in pregnancy, childbirth and the puerperium
O24.811-O24.83	Other pre-existing diabetes mellitus in pregnancy, childbirth and the puerperium
O24.911-O24.93	Unspecified diabetes mellitus in pregnancy, childbirth and the puerperium
O90.3	Peripartum cardiomyopathy
O98.911-O98.93	Unspecified maternal infectious and parasitic disease complicating pregnancy, childbirth and the puerperium
P00.0	Newborn affected by maternal hypertensive disorders
P00.2	Newborn affected by maternal infectious and parasitic diseases
P00.3	Newborn affected by other maternal circulatory and respiratory diseases
P00.82	Newborn affected by (positive) maternal group B streptococcus (GBS) colonization
P03.810-P03.819	Newborn affected by abnormality in fetal (intrauterine) heart rate or rhythm
P04.11-P04.19	Newborn affected by other maternal medication
P04.2	Newborn affected by maternal use of tobacco
P04.3	Newborn affected by maternal use of alcohol
P04.40-P04.49	Newborn affected by maternal use of drugs of addiction
P04.5	Newborn affected by maternal use of nutritional chemical substances
P04.6	Newborn affected by maternal exposure to environmental chemical substances
P04.81-P04.89	Newborn affected by other maternal noxious substances

ICD-10-CM Diagnosis Codes	Description
P04.9	Newborn affected by maternal noxious substance, unspecified
P05.00-P08.22	Disorders of newborn related to length of gestation and fetal growth
P09.1-P09.9	Abnormal findings on neonatal screening
P19.0- P29.9	Respiratory and cardiovascular disorders specific to the perinatal period
P35.0-P35.9	Congenital viral diseases
P36.0-P36.9	Bacterial sepsis of newborn
P37.0-P37.9	Other congenital infectious and parasitic diseases
P38.1-P38.9	Omphalitis of newborn
P39.0	Neonatal infective mastitis
P70.1	Syndrome of infant of a diabetic mother
P70.2	Neonatal diabetes mellitus
P70.3	Iatrogenic neonatal hypoglycemia
P70.4	Other neonatal hypoglycemia
P70.8	Other transitory disorders of carbohydrate metabolism of newborn
P70.9	Transitory disorder of carbohydrate metabolism of newborn, unspecified
P71.0-P71.9	Transitory neonatal disorders of calcium and magnesium metabolism
P72.0-P72.9	Other transitory neonatal endocrine disorders
P74.0-P74.9	Other transitory neonatal electrolyte and metabolic disturbances
P83.30-P83.39	Other and unspecified edema specific to newborn
P84	Other problems with newborn
P91.60-P91.63	Hypoxic ischemic encephalopathy [HIE]
P91.821-P91.829	Neonatal cerebral infarction
P94.0	Transient neonatal myasthenia gravis
Q00.0-Q00.2	Anencephaly and similar malformations
Q01.0-Q01.9	Encephalocele
Q02	Microcephaly
Q03.0-Q03.9	Congenital hydrocephalus
Q04.0-Q04.9	Other congenital malformations of brain
Q05.0-Q05.9	Spina bifida
Q06.0-Q06.9	Other congenital malformations of spinal cord
Q07.00-Q07.9	Other congenital malformations of nervous system
Q20.0-Q28.9	Congenital malformations of the circulatory system
Q30.0-Q34.9	Congenital malformations of the respiratory system
Q40.1	Congenital hiatus hernia

ICD-10-CM Diagnosis Codes	Description
Q44.0-Q44.79	Congenital malformations of gallbladder, bile ducts and liver
Q67.6	Pectus excavatum
Q67.7	Pectus carinatum
Q76.413	Congenital kyphosis, cervicothoracic region
Q76.414	Congenital kyphosis, thoracic region
Q76.415	Congenital kyphosis, thoracolumbar region
Q76.419	Congenital kyphosis, unspecified region
Q76.425	Congenital lordosis, thoracolumbar region
Q76.429	Congenital lordosis, unspecified region
Q76.6	Other congenital malformations of ribs
Q76.7	Congenital malformation of sternum
Q76.8	Other congenital malformations of bony thorax
Q76.9	Congenital malformation of bony thorax, unspecified
Q77.2	Short rib syndrome
Q79.0	Congenital diaphragmatic hernia
Q79.1	Other congenital malformations of diaphragm
Q79.60-Q79.69	Ehlers-Danlos syndromes
Q85.00-Q85.9	Phakomatoses, not elsewhere classified
Q86.0-Q86.8	Congenital malformation syndromes due to known exogenous causes, not elsewhere classified
Q87.11-Q87.19	Congenital malformation syndromes predominantly associated with short stature
Q87.40-Q87.43	Marfan's syndrome
Q87.82	Arterial tortuosity syndrome
Q89.01-Q89.9	Other congenital malformations, not elsewhere classified
Q90.0-Q99.9	Chromosomal abnormalities, not elsewhere classified
R00.0-R00.9	Abnormalities of heart beat
R01.0-R01.2	Cardiac murmurs and other cardiac sounds
R04.81	Acute idiopathic pulmonary hemorrhage in infants
R06.00	Dyspnea, unspecified
R06.01	Orthopnea
R06.02	Shortness of breath
R06.03	Acute respiratory distress
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

ICD-10-CM Diagnosis Codes	Description
R07.82	Intercostal pain
R07.89	Other chest pain
R07.9	Chest pain, unspecified
R09.01-R09.02	Asphyxia and hypoxemia
R09.2	Respiratory arrest
R16.0	Hepatomegaly, not elsewhere classified
R16.2	Hepatomegaly with splenomegaly, not elsewhere classified
R23.0	Cyanosis
R34	Anuria and oliguria
R42	Dizziness and giddiness
R50.2	Drug induced fever
R50.81	Fever presenting with conditions classified elsewhere
R50.9	Fever, unspecified
R55	Syncope and collapse
R57.0-R57.9	Shock, not elsewhere classified
R58	Hemorrhage, not elsewhere classified
R60.0-R60.9	Edema, not elsewhere classified
R62.51	Failure to thrive (child)
R63.30-R63.39	Feeding difficulties
R65.10-R65.21	Symptoms and signs specifically associated with systemic inflammation and infection
R68.13	Apparent life threatening event in infant (ALTE)
R70.1	Abnormal plasma viscosity
R74.8	Abnormal levels of other serum enzymes
R74.9	Abnormal serum enzyme level, unspecified
R77.0-R77.9	Other abnormalities of plasma proteins
R78.1	Finding of opiate drug in blood
R78.2	Finding of cocaine in blood
R78.3	Finding of hallucinogen in blood
R78.4	Finding of other drugs of addictive potential in blood
R78.5	Finding of other psychotropic drug in blood
R78.6	Finding of steroid agent in blood
R78.71-R78.79	Finding of abnormal level of heavy metals in blood
R78.81-R78.89	Finding of other specified substances, not normally found in blood
R78.9	Finding of unspecified substance, not normally found in blood
R79.0	Abnormal level of blood mineral
R79.83	Abnormal findings of blood amino-acid level
R79.89	Other specified abnormal findings of blood chemistry
R79.9	Abnormal finding of blood chemistry, unspecified
R89.8	Other abnormal findings in specimens from other organs, systems and tissues

ICD-10-CM Diagnosis Codes	Description
R91.1-R91.8	Abnormal findings on diagnostic imaging of lung
R93.1	Abnormal findings on diagnostic imaging of heart and coronary circulation
R93.3	Abnormal findings on diagnostic imaging of other parts of digestive tract
R94.30-R94.39	Abnormal results of cardiovascular function studies
S21.101A-S21.159S	Open wound of front wall of thorax without penetration into thoracic cavity
S21.301A-S21.359S	Open wound of front wall of thorax with penetration into thoracic cavity
S21.401A-S21.459S	Open wound of back wall of thorax with penetration into thoracic cavity
S21.90XA-S21.95XS	Open wound of unspecified part of thorax
S22.5XXA-S22.5XXS	Flail chest
S25.00XA-S25.09XS	Injury of thoracic aorta
S25.101A-S25.199S	Injury of innominate or subclavian artery
S25.20XA-S25.29XS	Injury of superior vena cava
S25.301A-S25.399S	Injury of innominate or subclavian vein
S25.401A-S25.499S	Injury of pulmonary blood vessels
S25.501A-S25.599S	Injury of intercostal blood vessels
S25.801A-S25.899S	Injury of other blood vessels of thorax
S25.90XD-S25.99XS	Injury of unspecified blood vessel of thorax
S26.00XA-S26.99XS	Injury of heart
S27.301A-S27.399S	Other and unspecified injury of lung
S27.401A-S27.499S	Injury of bronchus
S27.50XA-S27.59XS	Injury of thoracic trachea
S27.60XA-S27.69XS	Injury of pleura
S27.802A-S27.899S	Injury of other specified intrathoracic organs
S27.9XXA-S27.9XXS	Injury of unspecified intrathoracic organ
S28.0XXA-S28.0XXS	Crushed chest

ICD-10-CM Diagnosis Codes	Description
S28.1XXA-S28.1XXS	Traumatic amputation (partial) of part of thorax, except breast
S29.021A-S29.021S	Laceration of muscle and tendon of front wall of thorax
S29.029D-S29.029S	Laceration of muscle and tendon of unspecified wall of thorax
S35.00XA-S35.09XS	Injury of abdominal aorta
S35.10XA-S35.19XS	Injury of inferior vena cava
S38.1XXA-S38.1XXS	Crushing injury of abdomen, lower back, and pelvis
S77.20XA-S77.22XS	Crushing injury of hip with thigh
T07.XXXA-T07.XXXS	Unspecified multiple injuries
T14.8XXA-T14.8XXS	Other injury of unspecified body region
T36.0X5A-T36.0X5S	Adverse effect of penicillins
T36.1X5A-T36.1X5S	Adverse effect of cephalosporins and other beta-lactam antibiotics
T36.2X5A-T36.2X5S	Adverse effect of chloramphenicol group
T36.3X5A-T36.3X5S	Adverse effect of macrolides
T36.4X5A-T36.4X5S	Adverse effect of tetracyclines
T36.5X5A-T36.5X5S	Adverse effect of aminoglycosides
T36.6X5A-T36.6X5S	Adverse effect of rifampicins
T36.7X5A-T36.7X5S	Adverse effect of antifungal antibiotics, systemically used
T36.8X5A-T36.8X5S	Adverse effect of other systemic antibiotics
T36.95XA-T36.95XS	Adverse effect of unspecified systemic antibiotic
T36.AX1A-T36.AX5S	Adverse effect of fluoroquinolone antibiotics
T37.0X5A-T37.0X5S	Adverse effect of sulfonamides
T37.1X5A-T37.1X5S	Adverse effect of antimycobacterial drugs
T37.2X5A-T37.2X5S	Adverse effect of antimalarials and drugs acting on other blood protozoa
T37.3X5A-T37.3X5S	Adverse effect of other antiprotozoal drugs

ICD-10-CM Diagnosis Codes	Description
T37.4X5A-T37.4X5S	Adverse effect of anthelminthics
T37.5X5A-T37.5X5S	Adverse effect of antiviral drugs
T37.8X5A-T37.8X5S	Adverse effect of other specified systemic anti-infectives and antiparasitics
T37.95XA-T37.95XS	Adverse effect of unspecified systemic anti-infective and antiparasitic
T38.0X5A-T38.0X5S	Adverse effect of glucocorticoids and synthetic analogues
T38.1X5A-T38.1X5S	Adverse effect of thyroid hormones and substitutes
T38.2X5A-T38.2X5S	Adverse effect of antithyroid drugs
T38.3X5A-T38.3X5S	Adverse effect of insulin and oral hypoglycemic [antidiabetic] drugs
T38.4X5A-T38.4X5S	Adverse effect of oral contraceptives
T38.5X5A-T38.5X5S	Adverse effect of other estrogens and progestogens
T38.6X5A-T38.6X5S	Adverse effect of antigonadotrophins, antiestrogens, antiandrogens, not elsewhere classified
T38.7X5A-T38.7X5S	Adverse effect of androgens and anabolic congeners
T38.805A-T38.805S	Adverse effect of unspecified hormones and synthetic substitutes
T38.815A-T38.815S	Adverse effect of anterior pituitary [adenohypophyseal] hormones
T38.895A-T38.895S	Adverse effect of other hormones and synthetic substitutes
T38.905A-T38.905S	Adverse effect of unspecified hormone antagonists
T38.995A-T38.995S	Adverse effect of other hormone antagonists
T39.011A-T39.011S	Poisoning by aspirin, accidental (unintentional)
T39.012A-T39.012S	Poisoning by aspirin, intentional self-harm
T39.013A-T39.013S	Poisoning by aspirin, assault
T39.014A-T39.014S	Poisoning by aspirin, undetermined
T39.015A-T39.015S	Adverse effect of aspirin
T39.091A-T39.091S	Poisoning by salicylates, accidental (unintentional)
T39.092A-T39.092S	Poisoning by salicylates, intentional self-harm

ICD-10-CM Diagnosis Codes	Description
T39.093A-T39.093S	Poisoning by salicylates, assault
T39.094A-T39.094S	Poisoning by salicylates, undetermined
T39.095A-T39.095S	Adverse effect of salicylates
T39.1X5A-T39.1X5S	Adverse effect of 4-Aminophenol derivatives
T39.2X5A-T39.2X5S	Adverse effect of pyrazolone derivatives
T39.311A-T39.311S	Poisoning by propionic acid derivatives, accidental (unintentional)
T39.312A-T39.312S	Poisoning by propionic acid derivatives, intentional self-harm
T39.313A-T39.313S	Poisoning by propionic acid derivatives, assault
T39.314A-T39.314S	Poisoning by propionic acid derivatives, undetermined
T39.315A-T39.315S	Adverse effect of propionic acid derivatives
T39.395A-T39.395S	Adverse effect of other nonsteroidal anti-inflammatory drugs [NSAID]
T39.4X5A-T39.4X5S	Adverse effect of antirheumatics, not elsewhere classified
T39.8X5A-T39.8X5S	Adverse effect of other nonopioid analgesics and antipyretics, not elsewhere classified
T39.95XA-T39.95XS	Adverse effect of unspecified nonopioid analgesic, antipyretic and antirheumatic
T40.0X1A-T40.0X1S	Poisoning by opium, accidental (unintentional)
T40.0X2A-T40.0X2S	Poisoning by opium, intentional self-harm
T40.0X3A-T40.0X3S	Poisoning by opium, assault
T40.0X4A-T40.0X4S	Poisoning by opium, undetermined
T40.0X5A-T40.0X5S	Adverse effect of opium
T40.1X1A-T40.1X1S	Poisoning by heroin, accidental (unintentional)
T40.1X2A-T40.1X2S	Poisoning by heroin, intentional self-harm
T40.1X3A-T40.1X3S	Poisoning by heroin, assault
T40.1X4A-T40.1X4S	Poisoning by heroin, undetermined
T40.2X1A-T40.2X1S	Poisoning by other opioids, accidental (unintentional)

ICD-10-CM Diagnosis Codes	Description
T40.2X2A-T40.2X2S	Poisoning by other opioids, intentional self-harm
T40.2X3A-T40.2X3S	Poisoning by other opioids, assault
T40.2X4A-T40.2X4S	Poisoning by other opioids, undetermined
T40.2X5A-T40.2X5S	Adverse effect of other opioids
T40.3X1A-T40.3X1S	Poisoning by methadone, accidental (unintentional)
T40.3X2A-T40.3X2S	Poisoning by methadone, intentional self-harm
T40.3X3A-T40.3X3S	Poisoning by methadone, assault
T40.3X4A-T40.3X4S	Poisoning by methadone, undetermined
T40.3X5A-T40.3X5S	Adverse effect of methadone
T40.411A-T40.411S	Poisoning by fentanyl or fentanyl analogs, accidental (unintentional)
T40.412A-T40.412S	Poisoning by fentanyl or fentanyl analogs, self-harm
T40.413A-T40.413S	Poisoning by fentanyl or fentanyl analogs, assault
T40.414A-T40.414S	Poisoning by fentanyl or fentanyl analogs, undetermined
T40.415A-T40.415S	Adverse effect of fentanyl or fentanyl analogs
T40.421A-T40.421S	Poisoning by tramadol, accidental (unintentional)
T40.422A-T40.422S	Poisoning by tramadol, intentional self-harm
T40.423A-T40.423S	Poisoning by tramadol, assault
T40.424A-T40.424S	Poisoning by tramadol, undetermined
T40.425A-T40.425S	Adverse effect of tramadol
T40.491A-T40.491S	Poisoning by other synthetic narcotics, accidental (unintentional)
T40.492A-T40.492S	Poisoning by other synthetic narcotics, intentional self-harm
T40.493A-T40.493S	Poisoning by other synthetic narcotics, assault
T40.494A-T40.494S	Poisoning by other synthetic narcotics, undetermined
T40.495A-T40.495S	Adverse effect of other synthetic narcotics

ICD-10-CM Diagnosis Codes	Description
T40.5X1A-T40.5X1S	Poisoning by cocaine, accidental (unintentional)
T40.5X2A-T40.5X2S	Poisoning by cocaine, intentional self-harm
T40.5X3A-T40.5X3S	Poisoning by cocaine, assault
T40.5X4A-T40.5X4S	Poisoning by cocaine, undetermined
T40.5X5A-T40.5X5S	Adverse effect of cocaine
T40.601A-T40.601S	Poisoning by unspecified narcotics, accidental (unintentional)
T40.602A-T40.602S	Poisoning by unspecified narcotics, intentional self-harm
T40.603A-T40.603S	Poisoning by unspecified narcotics, assault
T40.604A-T40.604S	Poisoning by unspecified narcotics, undetermined
T40.605A-T40.605S	Adverse effect of unspecified narcotics
T40.691A-T40.691S	Poisoning by other narcotics, accidental (unintentional)
T40.692A-T40.692S	Poisoning by other narcotics, intentional self-harm
T40.693A-T40.693S	Poisoning by other narcotics, assault
T40.694A-T40.694S	Poisoning by other narcotics, undetermined
T40.695A-T40.695S	Adverse effect of other narcotics
T40.711A-T40.711S	Poisoning by cannabis, accidental (unintentional)
T40.712A-T40.712S	Poisoning by cannabis, intentional self-harm
T40.713A-T40.713S	Poisoning by cannabis, assault
T40.714A-T40.714S	Poisoning by cannabis, undetermined
T40.715A-T40.715S	Adverse effect of cannabis
T40.721A-T40.721S	Poisoning by synthetic cannabinoids, accidental (unintentional)
T40.722A-T40.722S	Poisoning by synthetic cannabinoids, intentional self-harm
T40.723A-T40.723S	Poisoning by synthetic cannabinoids, assault
T40.724A-T40.724S	Poisoning by synthetic cannabinoids, undetermined

ICD-10-CM Diagnosis Codes	Description
T40.725A-T40.725S	Adverse effect of synthetic cannabinoids
T40.8X1A-T40.8X1S	Poisoning by lysergide [LSD], accidental (unintentional)
T40.8X2A-T40.8X2S	Poisoning by lysergide [LSD], intentional self-harm
T40.8X3A-T40.8X3S	Poisoning by lysergide [LSD], assault
T40.8X4A-T40.8X4S	Poisoning by lysergide [LSD], undetermined
T40.901A-T40.901S	Poisoning by unspecified psychodysleptics [hallucinogens], accidental (unintentional)
T40.902A-T40.902S	Poisoning by unspecified psychodysleptics [hallucinogens], intentional self-harm
T40.903A-T40.903S	Poisoning by unspecified psychodysleptics [hallucinogens], assault
T40.904A-T40.904S	Poisoning by unspecified psychodysleptics [hallucinogens], undetermined
T40.905A-T40.905S	Adverse effect of unspecified psychodysleptics [hallucinogens]
T40.991A-T40.991S	Poisoning by other psychodysleptics [hallucinogens], accidental (unintentional)
T40.992A-T40.992S	Poisoning by other psychodysleptics [hallucinogens], intentional self-harm
T40.993A-T40.993S	Poisoning by other psychodysleptics [hallucinogens], assault
T40.994A-T40.994S	Poisoning by other psychodysleptics [hallucinogens], undetermined
T40.995A-T40.995S	Adverse effect of other psychodysleptics [hallucinogens]
T41.0X1A-T41.0X1S	Poisoning by inhaled anesthetics, accidental (unintentional)
T41.0X2A-T41.0X2S	Poisoning by inhaled anesthetics, intentional self-harm
T41.0X3A-T41.0X3S	Poisoning by inhaled anesthetics, assault
T41.0X4A-T41.0X4S	Poisoning by inhaled anesthetics, undetermined
T41.0X5A-T41.0X5S	Adverse effect of inhaled anesthetics
T41.1X1A-T41.1X1S	Poisoning by intravenous anesthetics, accidental (unintentional)
T41.1X2A-T41.1X2S	Poisoning by intravenous anesthetics, intentional self-harm
T41.1X3A-T41.1X3S	Poisoning by intravenous anesthetics, assault
T41.1X4A-T41.1X4S	Poisoning by intravenous anesthetics, undetermined

ICD-10-CM Diagnosis Codes	Description
T41.1X5A-T41.1X5S	Adverse effect of intravenous anesthetics
T41.201A-T41.201S	Poisoning by unspecified general anesthetics, accidental (unintentional)
T41.202A-T41.202S	Poisoning by unspecified general anesthetics, intentional self-harm
T41.203A-T41.203S	Poisoning by unspecified general anesthetics, assault
T41.204A-T41.204S	Poisoning by unspecified general anesthetics, undetermined
T41.205A-T41.205S	Adverse effect of unspecified general anesthetics
T41.291A-T41.291S	Poisoning by other general anesthetics, accidental (unintentional)
T41.292A-T41.292S	Poisoning by other general anesthetics, intentional self-harm
T41.293A-T41.293S	Poisoning by other general anesthetics, assault
T41.294A-T41.294S	Poisoning by other general anesthetics, undetermined
T41.295A-T41.295S	Adverse effect of other general anesthetics
T41.3X1A-T41.3X1S	Poisoning by local anesthetics, accidental (unintentional)
T41.3X2A-T41.3X2S	Poisoning by local anesthetics, intentional self-harm
T41.3X3A-T41.3X3S	Poisoning by local anesthetics, assault
T41.3X4A-T41.3X4S	Poisoning by local anesthetics, undetermined
T41.3X5A-T41.3X5S	Adverse effect of local anesthetics
T41.41XA-T41.41XS	Poisoning by unspecified anesthetic, accidental (unintentional)
T41.42XA-T41.42XS	Poisoning by unspecified anesthetic, intentional self-harm
T41.43XA-T41.43XS	Poisoning by unspecified anesthetic, assault
T41.44XA-T41.44XS	Poisoning by unspecified anesthetic, undetermined
T41.45XA-T41.45XS	Adverse effect of unspecified anesthetic
T41.5X1A-T41.5X1S	Poisoning by therapeutic gases, accidental (unintentional)
T41.5X2A-T41.5X2S	Poisoning by therapeutic gases, intentional self-harm
T41.5X3A-T41.5X3S	Poisoning by therapeutic gases, assault

ICD-10-CM Diagnosis Codes	Description
T41.5X4A-T41.5X4S	Poisoning by therapeutic gases, undetermined
T41.5X5A-T41.5X5S	Adverse effect of therapeutic gases
T42.0X5A-T42.0X5S	Adverse effect of hydantoin derivatives
T42.1X5A-T42.1X5S	Adverse effect of iminostilbenes
T42.2X5A-T42.2X5S	Adverse effect of succinimides and oxazolidinediones
T42.3X1A-T42.3X1S	Poisoning by barbiturates, accidental (unintentional)
T42.3X2A-T42.3X2S	Poisoning by barbiturates, intentional self-harm
T42.3X3A-T42.3X3S	Poisoning by barbiturates, assault
T42.3X4A-T42.3X4S	Poisoning by barbiturates, undetermined
T42.3X5A-T42.3X5S	Adverse effect of barbiturates
T42.4X1A-T42.4X1S	Poisoning by benzodiazepines, accidental (unintentional)
T42.4X2A-T42.4X2S	Poisoning by benzodiazepines, intentional self-harm
T42.4X3A-T42.4X3S	Poisoning by benzodiazepines, assault
T42.4X4A-T42.4X4S	Poisoning by benzodiazepines, undetermined
T42.4X5A-T42.4X5S	Adverse effect of benzodiazepines
T42.5X5A-T42.5X5S	Adverse effect of mixed antiepileptics
T42.6X1A-T42.6X1S	Poisoning by other antiepileptic and sedative-hypnotic drugs, accidental (unintentional)
T42.6X2A-T42.6X2S	Poisoning by other antiepileptic and sedative-hypnotic drugs, intentional self-harm
T42.6X3A-T42.6X3S	Poisoning by other antiepileptic and sedative-hypnotic drugs, assault
T42.6X4A-T42.6X4S	Poisoning by other antiepileptic and sedative-hypnotic drugs, undetermined
T42.6X5A-T42.6X5S	Adverse effect of other antiepileptic and sedative-hypnotic drugs
T42.71XA-T42.71XS	Poisoning by unspecified antiepileptic and sedative-hypnotic drugs, accidental (unintentional)
T42.72XA-T42.72XS	Poisoning by unspecified antiepileptic and sedative-hypnotic drugs, intentional self-harm
T42.73XA-T42.73XS	Poisoning by unspecified antiepileptic and sedative-hypnotic drugs, assault

ICD-10-CM Diagnosis Codes	Description
T42.74XA-T42.74XS	Poisoning by unspecified antiepileptic and sedative-hypnotic drugs, undetermined
T42.75XA-T42.75XS	Adverse effect of unspecified antiepileptic and sedative-hypnotic drugs
T42.8X1A-T42.8X1S	Poisoning by antiparkinsonism drugs and other central muscle-tone depressants, accidental (unintentional)
T42.8X2A-T42.8X2S	Poisoning by antiparkinsonism drugs and other central muscle-tone depressants, intentional self-harm
T42.8X3A-T42.8X3S	Poisoning by antiparkinsonism drugs and other central muscle-tone depressants, assault
T42.8X4A-T42.8X4S	Poisoning by antiparkinsonism drugs and other central muscle-tone depressants, undetermined
T42.8X5A-T42.8X5S	Adverse effect of antiparkinsonism drugs and other central muscle-tone depressants
T43.011A-T43.011S	Poisoning by tricyclic antidepressants, accidental (unintentional)
T43.012A-T43.012S	Poisoning by tricyclic antidepressants, intentional self-harm
T43.013A-T43.013S	Poisoning by tricyclic antidepressants, assault
T43.014A-T43.014S	Poisoning by tricyclic antidepressants, undetermined
T43.015A-T43.015S	Adverse effect of tricyclic antidepressants
T43.021A-T43.021S	Poisoning by tetracyclic antidepressants, accidental (unintentional)
T43.022A-T43.022S	Poisoning by tetracyclic antidepressants, intentional self-harm
T43.023A-T43.023S	Poisoning by tetracyclic antidepressants, assault
T43.024A-T43.024S	Poisoning by tetracyclic antidepressants, undetermined
T43.025A-T43.025S	Adverse effect of tetracyclic antidepressants
T43.1X1A-T43.1X1S	Poisoning by monoamine-oxidase-inhibitor antidepressants, accidental (unintentional)
T43.1X2A-T43.1X2S	Poisoning by monoamine-oxidase-inhibitor antidepressants, intentional self-harm
T43.1X3A-T43.1X3S	Poisoning by monoamine-oxidase-inhibitor antidepressants, assault
T43.1X4A-T43.1X4S	Poisoning by monoamine-oxidase-inhibitor antidepressants, undetermined
T43.1X5A-T43.1X5S	Adverse effect of monoamine-oxidase-inhibitor antidepressants
T43.201A-T43.201S	Poisoning by unspecified antidepressants, accidental (unintentional)
T43.202A-T43.202S	Poisoning by unspecified antidepressants, intentional self-harm

ICD-10-CM Diagnosis Codes	Description
T43.203A-T43.203S	Poisoning by unspecified antidepressants, assault
T43.204A-T43.204S	Poisoning by unspecified antidepressants, undetermined
T43.205A-T43.205S	Adverse effect of unspecified antidepressants
T43.211A-T43.211S	Poisoning by selective serotonin and norepinephrine reuptake inhibitors, accidental (unintentional)
T43.212A-T43.212S	Poisoning by selective serotonin and norepinephrine reuptake inhibitors, intentional self-harm
T43.213A-T43.213S	Poisoning by selective serotonin and norepinephrine reuptake inhibitors, assault
T43.214A-T43.214S	Poisoning by selective serotonin and norepinephrine reuptake inhibitors, undetermined
T43.215A-T43.215S	Adverse effect of selective serotonin and norepinephrine reuptake inhibitors
T43.221A-T43.221S	Poisoning by selective serotonin reuptake inhibitors, accidental (unintentional)
T43.222A-T43.222S	Poisoning by selective serotonin reuptake inhibitors, intentional self-harm
T43.223A-T43.223S	Poisoning by selective serotonin reuptake inhibitors, assault
T43.224A-T43.224S	Poisoning by selective serotonin reuptake inhibitors, undetermined
T43.225A-T43.225S	Adverse effect of selective serotonin reuptake inhibitors
T43.291A-T43.291S	Poisoning by other antidepressants, accidental (unintentional)
T43.292A-T43.292S	Poisoning by other antidepressants, intentional self-harm
T43.293A-T43.293S	Poisoning by other antidepressants, assault
T43.294A-T43.294S	Poisoning by other antidepressants, undetermined
T43.295A-T43.295S	Adverse effect of other antidepressants
T43.3X1A-T43.3X1S	Poisoning by phenothiazine antipsychotics and neuroleptics, accidental (unintentional)
T43.3X2A-T43.3X2S	Poisoning by phenothiazine antipsychotics and neuroleptics, intentional self-harm
T43.3X3A-T43.3X3S	Poisoning by phenothiazine antipsychotics and neuroleptics, assault
T43.3X4A-T43.3X4S	Poisoning by phenothiazine antipsychotics and neuroleptics, undetermined
T43.3X5A-T43.3X5S	Adverse effect of phenothiazine antipsychotics and neuroleptics
T43.4X1A-T43.4X1S	Poisoning by butyrophenone and thiothixene neuroleptics, accidental (unintentional)

ICD-10-CM Diagnosis Codes	Description
T43.4X2A-T43.4X2S	Poisoning by butyrophenone and thiothixene neuroleptics, intentional self-harm
T43.4X3A-T43.4X3S	Poisoning by butyrophenone and thiothixene neuroleptics, assault
T43.4X4A-T43.4X4S	Poisoning by butyrophenone and thiothixene neuroleptics, undetermined
T43.4X5A-T43.4X5S	Adverse effect of butyrophenone and thiothixene neuroleptics
T43.501A-T43.501S	Poisoning by unspecified antipsychotics and neuroleptics, accidental (unintentional)
T43.502A-T43.502S	Poisoning by unspecified antipsychotics and neuroleptics, intentional self-harm
T43.503A-T43.503S	Poisoning by unspecified antipsychotics and neuroleptics, assault
T43.504A-T43.504S	Poisoning by unspecified antipsychotics and neuroleptics, undetermined
T43.505A-T43.505S	Adverse effect of unspecified antipsychotics and neuroleptics
T43.591A-T43.591S	Poisoning by other antipsychotics and neuroleptics, accidental (unintentional)
T43.592A-T43.592S	Poisoning by other antipsychotics and neuroleptics, intentional self-harm
T43.593A-T43.593S	Poisoning by other antipsychotics and neuroleptics, assault
T43.594A-T43.594S	Poisoning by other antipsychotics and neuroleptics, undetermined
T43.595A-T43.595S	Adverse effect of other antipsychotics and neuroleptics
T43.601A-T43.601S	Poisoning by unspecified psychostimulants, accidental (unintentional)
T43.602A-T43.602S	Poisoning by unspecified psychostimulants, intentional self-harm
T43.603A-T43.603S	Poisoning by unspecified psychostimulants, assault
T43.604A-T43.604S	Poisoning by unspecified psychostimulants, undetermined
T43.605A-T43.605S	Adverse effect of unspecified psychostimulants
T43.611A-T43.611S	Poisoning by caffeine, accidental (unintentional)
T43.612A-T43.612S	Poisoning by caffeine, intentional self-harm
T43.613A-T43.613S	Poisoning by caffeine, assault
T43.614A-T43.614S	Poisoning by caffeine, undetermined
T43.615A-T43.615S	Adverse effect of caffeine

ICD-10-CM Diagnosis Codes	Description
T43.621A-T43.621S	Poisoning by amphetamines, accidental (unintentional)
T43.622A-T43.622S	Poisoning by amphetamines, intentional self-harm
T43.623A-T43.623S	Poisoning by amphetamines, assault
T43.624A-T43.624S	Poisoning by amphetamines, undetermined
T43.625A-T43.625S	Adverse effect of amphetamines
T43.631A-T43.631S	Poisoning by methylphenidate, accidental (unintentional)
T43.632A-T43.632S	Poisoning by methylphenidate, intentional self-harm
T43.633A-T43.633S	Poisoning by methylphenidate, assault
T43.634A-T43.634S	Poisoning by methylphenidate, undetermined
T43.635A-T43.635S	Adverse effect of methylphenidate
T43.641A-T43.641S	Poisoning by ecstasy, accidental (unintentional)
T43.642A-T43.642S	Poisoning by ecstasy, intentional self-harm
T43.643A-T43.643S	Poisoning by ecstasy, assault
T43.644A-T43.644S	Poisoning by ecstasy, undetermined
T43.651A-T43.651S	Poisoning by methamphetamines accidental (unintentional)
T43.652A-T43.652S	Poisoning by methamphetamines intentional self-harm
T43.653A-T43.653S	Poisoning by methamphetamines, assault
T43.654A-T43.654S	Poisoning by methamphetamines, undetermined
T43.655A-T43.655S	Adverse effect of methamphetamines
T43.691A-T43.691S	Poisoning by other psychostimulants, accidental (unintentional)
T43.692A-T43.692S	Poisoning by other psychostimulants, intentional self-harm
T43.693A-T43.693S	Poisoning by other psychostimulants, assault
T43.694A-T43.694S	Poisoning by other psychostimulants, undetermined
T43.695A-T43.695S	Adverse effect of other psychostimulants

ICD-10-CM Diagnosis Codes	Description
T43.8X1A-T43.8X1S	Poisoning by other psychotropic drugs, accidental (unintentional)
T43.8X2A-T43.8X2S	Poisoning by other psychotropic drugs, intentional self-harm
T43.8X3A-T43.8X3S	Poisoning by other psychotropic drugs, assault
T43.8X4A-T43.8X4S	Poisoning by other psychotropic drugs, undetermined
T43.8X5A-T43.8X5S	Adverse effect of other psychotropic drugs
T43.91XA-T43.91XS	Poisoning by unspecified psychotropic drug, accidental (unintentional)
T43.92XA-T43.92XS	Poisoning by unspecified psychotropic drug, intentional self-harm
T43.93XA-T43.93XS	Poisoning by unspecified psychotropic drug, assault
T43.94XA-T43.94XS	Poisoning by unspecified psychotropic drug, undetermined
T43.95XA-T43.95XS	Adverse effect of unspecified psychotropic drug
T44.0X1A-T44.0X1S	Poisoning by anticholinesterase agents, accidental (unintentional)
T44.0X2A-T44.0X2S	Poisoning by anticholinesterase agents, intentional self-harm
T44.0X3A-T44.0X3S	Poisoning by anticholinesterase agents, assault
T44.0X4A-T44.0X4S	Poisoning by anticholinesterase agents, undetermined
T44.0X5A-T44.0X5S	Adverse effect of anticholinesterase agents
T44.1X1A-T44.1X1S	Poisoning by other parasympathomimetics [cholinergics], accidental (unintentional)
T44.1X2A-T44.1X2S	Poisoning by other parasympathomimetics [cholinergics], intentional self-harm
T44.1X3A-T44.1X3S	Poisoning by other parasympathomimetics [cholinergics], assault
T44.1X4A-T44.1X4S	Poisoning by other parasympathomimetics [cholinergics], undetermined
T44.1X5A-T44.1X5S	Adverse effect of other parasympathomimetics [cholinergics]
T44.2X1A-T44.2X1S	Poisoning by ganglionic blocking drugs, accidental (unintentional)
T44.2X2A-T44.2X2S	Poisoning by ganglionic blocking drugs, intentional self-harm
T44.2X3A-T44.2X3S	Poisoning by ganglionic blocking drugs, assault
T44.2X4A-T44.2X4S	Poisoning by ganglionic blocking drugs, undetermined

ICD-10-CM Diagnosis Codes	Description
T44.2X5A-T44.2X5S	Adverse effect of ganglionic blocking drugs
T44.3X1A-T44.3X1S	Poisoning by other parasympatholytics [anticholinergics and antimuscarinics] and spasmolytics, accidental (unintentional)
T44.3X2A-T44.3X2S	Poisoning by other parasympatholytics [anticholinergics and antimuscarinics] and spasmolytics, intentional self-harm
T44.3X3A-T44.3X3S	Poisoning by other parasympatholytics [anticholinergics and antimuscarinics] and spasmolytics, assault
T44.3X4A-T44.3X4S	Poisoning by other parasympatholytics [anticholinergics and antimuscarinics] and spasmolytics, undetermined
T44.3X5A-T44.3X5S	Adverse effect of other parasympatholytics [anticholinergics and antimuscarinics] and spasmolytics
T44.4X1A-T44.4X1S	Poisoning by predominantly alpha-adrenoreceptor agonists, accidental (unintentional)
T44.4X2A-T44.4X2S	Poisoning by predominantly alpha-adrenoreceptor agonists, intentional self-harm
T44.4X3A-T44.4X3S	Poisoning by predominantly alpha-adrenoreceptor agonists, assault
T44.4X4A-T44.4X4S	Poisoning by predominantly alpha-adrenoreceptor agonists, undetermined
T44.4X5A-T44.4X5S	Adverse effect of predominantly alpha-adrenoreceptor agonists
T44.5X1A-T44.5X1S	Poisoning by predominantly beta-adrenoreceptor agonists, accidental (unintentional)
T44.5X2A-T44.5X2S	Poisoning by predominantly beta-adrenoreceptor agonists, intentional self-harm
T44.5X3A-T44.5X3S	Poisoning by predominantly beta-adrenoreceptor agonists, assault
T44.5X4A-T44.5X4S	Poisoning by predominantly beta-adrenoreceptor agonists, undetermined
T44.5X5A-T44.5X5S	Adverse effect of predominantly beta-adrenoreceptor agonists
T44.6X1A-T44.6X1S	Poisoning by alpha-adrenoreceptor antagonists, accidental (unintentional)
T44.6X2A-T44.6X2S	Poisoning by alpha-adrenoreceptor antagonists, intentional self-harm
T44.6X3A-T44.6X3S	Poisoning by alpha-adrenoreceptor antagonists, assault
T44.6X4A-T44.6X4S	Poisoning by alpha-adrenoreceptor antagonists, undetermined
T44.6X5A-T44.6X5S	Adverse effect of alpha-adrenoreceptor antagonists
T44.7X1A-T44.7X1S	Poisoning by beta-adrenoreceptor antagonists, accidental (unintentional)
T44.7X2A-T44.7X2S	Poisoning by beta-adrenoreceptor antagonists, intentional self-harm
T44.7X3A-T44.7X3S	Poisoning by beta-adrenoreceptor antagonists, assault

ICD-10-CM Diagnosis Codes	Description
T44.7X4A-T44.7X4S	Poisoning by beta-adrenoreceptor antagonists, undetermined
T44.7X5A-T44.7X5S	Adverse effect of beta-adrenoreceptor antagonists
T44.8X1A-T44.8X1S	Poisoning by centrally-acting and adrenergic-neuron-blocking agents, accidental (unintentional)
T44.8X2A-T44.8X2S	Poisoning by centrally-acting and adrenergic-neuron-blocking agents, intentional self-harm
T44.8X3A-T44.8X3S	Poisoning by centrally-acting and adrenergic-neuron-blocking agents, assault
T44.8X4A-T44.8X4S	Poisoning by centrally-acting and adrenergic-neuron-blocking agents, undetermined
T44.8X5A-T44.8X5S	Adverse effect of centrally-acting and adrenergic-neuron-blocking agents
T44.901A-T44.901S	Poisoning by unspecified drugs primarily affecting the autonomic nervous system, accidental (unintentional)
T44.902A-T44.902S	Poisoning by unspecified drugs primarily affecting the autonomic nervous system, intentional self-harm
T44.903A-T44.903S	Poisoning by unspecified drugs primarily affecting the autonomic nervous system, assault
T44.904A-T44.904S	Poisoning by unspecified drugs primarily affecting the autonomic nervous system, undetermined
T44.905A-T44.905S	Adverse effect of unspecified drugs primarily affecting the autonomic nervous system
T44.991A-T44.991S	Poisoning by other drug primarily affecting the autonomic nervous system, accidental (unintentional)
T44.992A-T44.992S	Poisoning by other drug primarily affecting the autonomic nervous system, intentional self-harm
T44.993A-T44.993S	Poisoning by other drug primarily affecting the autonomic nervous system, assault
T44.994A-T44.994S	Poisoning by other drug primarily affecting the autonomic nervous system, undetermined
T44.995A-T44.995S	Adverse effect of other drug primarily affecting the autonomic nervous system
T45.0X5A-T45.0X5S	Adverse effect of antiallergic and antiemetic drugs
T45.1X1A-T45.1X1S	Poisoning by antineoplastic and immunosuppressive drugs, accidental (unintentional)
T45.1X2A-T45.1X2S	Poisoning by antineoplastic and immunosuppressive drugs, intentional self-harm
T45.1X3A-T45.1X3S	Poisoning by antineoplastic and immunosuppressive drugs, assault
T45.1X4A-T45.1X4S	Poisoning by antineoplastic and immunosuppressive drugs, undetermined
T45.1X5A-T45.1X5S	Adverse effect of antineoplastic and immunosuppressive drugs
T45.2X5A-T45.2X5S	Adverse effect of vitamins

ICD-10-CM Diagnosis Codes	Description
T45.3X5A-T45.3X5S	Adverse effect of enzymes
T45.4X5A-T45.4X5S	Adverse effect of iron and its compounds
T45.511A-T45.511S	Poisoning by anticoagulants, accidental (unintentional)
T45.512A-T45.512S	Poisoning by anticoagulants, intentional self-harm
T45.513A-T45.513S	Poisoning by anticoagulants, assault
T45.514A-T45.514S	Poisoning by anticoagulants, undetermined
T45.515A-T45.515S	Adverse effect of anticoagulants
T45.521A-T45.521S	Poisoning by antithrombotic drugs, accidental (unintentional)
T45.522A-T45.522S	Poisoning by antithrombotic drugs, intentional self-harm
T45.523A-T45.523S	Poisoning by antithrombotic drugs, assault
T45.524A-T45.524S	Poisoning by antithrombotic drugs, undetermined
T45.525A-T45.525S	Adverse effect of antithrombotic drugs
T45.605A-T45.605S	Adverse effect of unspecified fibrinolysis-affecting drugs
T45.615A-T45.615S	Adverse effect of thrombolytic drugs
T45.625A-T45.625S	Adverse effect of hemostatic drug
T45.695A-T45.695S	Adverse effect of other fibrinolysis-affecting drugs
T45.7X1A-T45.7X1S	Poisoning by anticoagulant antagonists, vitamin K and other coagulants, accidental (unintentional)
T45.7X2A-T45.7X2S	Poisoning by anticoagulant antagonists, vitamin K and other coagulants, intentional self-harm
T45.7X3A-T45.7X3S	Poisoning by anticoagulant antagonists, vitamin K and other coagulants, assault
T45.7X4A-T45.7X4S	Poisoning by anticoagulant antagonists, vitamin K and other coagulants, undetermined
T45.7X5A-T45.7X5S	Adverse effect of anticoagulant antagonists, vitamin K and other coagulants
T45.8X5A-T45.8X5S	Adverse effect of other primarily systemic and hematological agents
T45.95XA-T45.95XS	Adverse effect of unspecified primarily systemic and hematological agent
T46.0X1A-T46.0X1S	Poisoning by cardiac-stimulant glycosides and drugs of similar action, accidental (unintentional)

ICD-10-CM Diagnosis Codes	Description
T46.0X2A-T46.0X2S	Poisoning by cardiac-stimulant glycosides and drugs of similar action, intentional self-harm
T46.0X3A-T46.0X3S	Poisoning by cardiac-stimulant glycosides and drugs of similar action, assault
T46.0X4A-T46.0X4S	Poisoning by cardiac-stimulant glycosides and drugs of similar action, undetermined
T46.0X5A-T46.0X5S	Adverse effect of cardiac-stimulant glycosides and drugs of similar action
T46.1X1A-T46.1X1S	Poisoning by calcium-channel blockers, accidental (unintentional)
T46.1X2A-T46.1X2S	Poisoning by calcium-channel blockers, intentional self-harm
T46.1X3A-T46.1X3S	Poisoning by calcium-channel blockers, assault
T46.1X4A-T46.1X4S	Poisoning by calcium-channel blockers, undetermined
T46.1X5A-T46.1X5S	Adverse effect of calcium-channel blockers
T46.2X1A-T46.2X1S	Poisoning by other antidysrhythmic drugs, accidental (unintentional)
T46.2X2A-T46.2X2S	Poisoning by other antidysrhythmic drugs, intentional self-harm
T46.2X3A-T46.2X3S	Poisoning by other antidysrhythmic drugs, assault
T46.2X4A-T46.2X4S	Poisoning by other antidysrhythmic drugs, undetermined
T46.2X5A-T46.2X5S	Adverse effect of other antidysrhythmic drugs
T46.3X1A-T46.3X1S	Poisoning by coronary vasodilators, accidental (unintentional)
T46.3X2A-T46.3X2S	Poisoning by coronary vasodilators, intentional self-harm
T46.3X3A-T46.3X3S	Poisoning by coronary vasodilators, assault
T46.3X4A-T46.3X4S	Poisoning by coronary vasodilators, undetermined
T46.3X5A-T46.3X5S	Adverse effect of coronary vasodilators
T46.4X1A-T46.4X1S	Poisoning by angiotensin-converting-enzyme inhibitors, accidental (unintentional)
T46.4X2A-T46.4X2S	Poisoning by angiotensin-converting-enzyme inhibitors, intentional self-harm
T46.4X3A-T46.4X3S	Poisoning by angiotensin-converting-enzyme inhibitors, assault
T46.4X4A-T46.4X4S	Poisoning by angiotensin-converting-enzyme inhibitors, undetermined
T46.4X5A-T46.4X5S	Adverse effect of angiotensin-converting-enzyme inhibitors

ICD-10-CM Diagnosis Codes	Description
T46.5X1A-T46.5X1S	Poisoning by other antihypertensive drugs, accidental (unintentional)
T46.5X2A-T46.5X2S	Poisoning by other antihypertensive drugs, intentional self-harm
T46.5X3A-T46.5X3S	Poisoning by other antihypertensive drugs, assault
T46.5X4A-T46.5X4S	Poisoning by other antihypertensive drugs, undetermined
T46.5X5A-T46.5X5S	Adverse effect of other antihypertensive drugs
T46.6X1A-T46.6X1S	Poisoning by antihyperlipidemic and antiarteriosclerotic drugs, accidental (unintentional)
T46.6X2A-T46.6X2S	Poisoning by antihyperlipidemic and antiarteriosclerotic drugs, intentional self-harm
T46.6X3A-T46.6X3S	Poisoning by antihyperlipidemic and antiarteriosclerotic drugs, assault
T46.6X4A-T46.6X4S	Poisoning by antihyperlipidemic and antiarteriosclerotic drugs, undetermined
T46.6X5A-T46.6X5S	Adverse effect of antihyperlipidemic and antiarteriosclerotic drugs
T46.7X1A-T46.7X1S	Poisoning by peripheral vasodilators, accidental (unintentional)
T46.7X2A-T46.7X2S	Poisoning by peripheral vasodilators, intentional self-harm
T46.7X3A-T46.7X3S	Poisoning by peripheral vasodilators, assault
T46.7X4A-T46.7X4S	Poisoning by peripheral vasodilators, undetermined
T46.7X5A-T46.7X5S	Adverse effect of peripheral vasodilators
T46.8X1A-T46.8X1S	Poisoning by antivaricose drugs, including sclerosing agents, accidental (unintentional)
T46.8X2A-T46.8X2S	Poisoning by antivaricose drugs, including sclerosing agents, intentional self-harm
T46.8X3A-T46.8X3S	Poisoning by antivaricose drugs, including sclerosing agents, assault
T46.8X4A-T46.8X4S	Poisoning by antivaricose drugs, including sclerosing agents, undetermined
T46.8X5A-T46.8X5S	Adverse effect of antivaricose drugs, including sclerosing agents
T46.901A-T46.901S	Poisoning by unspecified agents primarily affecting the cardiovascular system, accidental (unintentional)
T46.902A-T46.902S	Poisoning by unspecified agents primarily affecting the cardiovascular system, intentional self-harm
T46.903A-T46.903S	Poisoning by unspecified agents primarily affecting the cardiovascular system, assault
T46.904A-T46.904S	Poisoning by unspecified agents primarily affecting the cardiovascular system, undetermined

ICD-10-CM Diagnosis Codes	Description
T46.905A-T46.905S	Adverse effect of unspecified agents primarily affecting the cardiovascular system
T46.991A-T46.991S	Poisoning by other agents primarily affecting the cardiovascular system, accidental (unintentional)
T46.992A-T46.992S	Poisoning by other agents primarily affecting the cardiovascular system, intentional self-harm
T46.993A-T46.993S	Poisoning by other agents primarily affecting the cardiovascular system, assault
T46.994A-T46.994S	Poisoning by other agents primarily affecting the cardiovascular system, undetermined
T46.995A-T46.995S	Adverse effect of other agents primarily affecting the cardiovascular system
T47.0X5A-T47.0X5S	Adverse effect of histamine H2-receptor blockers
T47.1X5A-T47.1X5S	Adverse effect of other antacids and anti-gastric-secretion drugs
T47.2X5A-T47.2X5S	Adverse effect of stimulant laxatives
T47.3X5A-T47.3X5S	Adverse effect of saline and osmotic laxatives
T47.4X5A-T47.4X5S	Adverse effect of other laxatives
T47.5X5A-T47.5X5S	Adverse effect of digestants
T47.6X5A-T47.6X5S	Adverse effect of antidiarrheal drugs
T47.7X5A-T47.7X5S	Adverse effect of emetics
T47.8X5A-T47.8X5S	Adverse effect of other agents primarily affecting gastrointestinal system
T47.95XA-T47.95XS	Adverse effect of unspecified agents primarily affecting the gastrointestinal system
T48.0X1A-T48.0X1S	Poisoning by oxytocic drugs, accidental (unintentional)
T48.0X2A-T48.0X2S	Poisoning by oxytocic drugs, intentional self-harm
T48.0X3A-T48.0X3S	Poisoning by oxytocic drugs, assault
T48.0X4A-T48.0X4S	Poisoning by oxytocic drugs, undetermined
T48.0X5A-T48.0X5S	Adverse effect of oxytocic drugs
T48.1X1A-T48.1X1S	Poisoning by skeletal muscle relaxants [neuromuscular blocking agents], accidental (unintentional)
T48.1X2A-T48.1X2S	Poisoning by skeletal muscle relaxants [neuromuscular blocking agents], intentional self-harm
T48.1X3A-T48.1X3S	Poisoning by skeletal muscle relaxants [neuromuscular blocking agents], assault

ICD-10-CM Diagnosis Codes	Description
T48.1X4A-T48.1X4S	Poisoning by skeletal muscle relaxants [neuromuscular blocking agents], undetermined
T48.1X5A-T48.1X5S	Adverse effect of skeletal muscle relaxants [neuromuscular blocking agents]
T48.201A-T48.201S	Poisoning by unspecified drugs acting on muscles, accidental (unintentional)
T48.202A-T48.202S	Poisoning by unspecified drugs acting on muscles, intentional self-harm
T48.203A-T48.203S	Poisoning by unspecified drugs acting on muscles, assault
T48.204A-T48.204S	Poisoning by unspecified drugs acting on muscles, undetermined
T48.205A-T48.205S	Adverse effect of unspecified drugs acting on muscles
T48.291A-T48.291S	Poisoning by other drugs acting on muscles, accidental (unintentional)
T48.292A-T48.292S	Poisoning by other drugs acting on muscles, intentional self-harm
T48.293A-T48.293S	Poisoning by other drugs acting on muscles, assault
T48.294A-T48.294S	Poisoning by other drugs acting on muscles, undetermined
T48.295A-T48.295S	Adverse effect of other drugs acting on muscles
T48.3X1A-T48.3X1S	Poisoning by antitussives, accidental (unintentional)
T48.3X2A-T48.3X2S	Poisoning by antitussives, intentional self-harm
T48.3X3A-T48.3X3S	Poisoning by antitussives, assault
T48.3X4A-T48.3X4S	Poisoning by antitussives, undetermined
T48.3X5A-T48.3X5S	Adverse effect of antitussives
T48.4X1A-T48.4X1S	Poisoning by expectorants, accidental (unintentional)
T48.4X2A-T48.4X2S	Poisoning by expectorants, intentional self-harm
T48.4X3A-T48.4X3S	Poisoning by expectorants, assault
T48.4X4A-T48.4X4S	Poisoning by expectorants, undetermined
T48.4X5A-T48.4X5S	Adverse effect of expectorants
T48.5X1A-T48.5X1S	Poisoning by other anti-common-cold drugs, accidental (unintentional)
T48.5X2A-T48.5X2S	Poisoning by other anti-common-cold drugs, intentional self-harm

ICD-10-CM Diagnosis Codes	Description
T48.5X3A-T48.5X3S	Poisoning by other anti-common-cold drugs, assault
T48.5X4A-T48.5X4S	Poisoning by other anti-common-cold drugs, undetermined
T48.5X5A-T48.5X5S	Adverse effect of other anti-common-cold drugs
T48.6X1A-T48.6X1S	Poisoning by antiasthmatics, accidental (unintentional)
T48.6X2A-T48.6X2S	Poisoning by antiasthmatics, intentional self-harm
T48.6X3A-T48.6X3S	Poisoning by antiasthmatics, assault
T48.6X4A-T48.6X4S	Poisoning by antiasthmatics, undetermined
T48.6X5A-T48.6X5S	Adverse effect of antiasthmatics
T48.901A-T48.901S	Poisoning by unspecified agents primarily acting on the respiratory system, accidental (unintentional)
T48.902A-T48.902S	Poisoning by unspecified agents primarily acting on the respiratory system, intentional self-harm
T48.903A-T48.903S	Poisoning by unspecified agents primarily acting on the respiratory system, assault
T48.904A-T48.904S	Poisoning by unspecified agents primarily acting on the respiratory system, undetermined
T48.905A-T48.905S	Adverse effect of unspecified agents primarily acting on the respiratory system
T48.991A-T48.991S	Poisoning by other agents primarily acting on the respiratory system, accidental (unintentional)
T48.992A-T48.992S	Poisoning by other agents primarily acting on the respiratory system, intentional self-harm
T48.993A-T48.993S	Poisoning by other agents primarily acting on the respiratory system, assault
T48.994A-T48.994S	Poisoning by other agents primarily acting on the respiratory system, undetermined
T48.995A-T48.995S	Adverse effect of other agents primarily acting on the respiratory system
T49.0X5A-T49.0X5S	Adverse effect of local antifungal, anti-infective and anti-inflammatory drugs
T49.1X5A-T49.1X5S	Adverse effect of antipruritics
T49.2X5A-T49.2X5S	Adverse effect of local astringents and local detergents
T49.3X5A-T49.3X5S	Adverse effect of emollients, demulcents and protectants
T49.4X5A-T49.4X5S	Adverse effect of keratolytics, keratoplastics, and other hair treatment drugs and preparations
T49.5X5A-T49.5X5S	Adverse effect of ophthalmological drugs and preparations

ICD-10-CM Diagnosis Codes	Description
T49.6X5A-T49.6X5S	Adverse effect of otorhinolaryngological drugs and preparations
T49.7X5A-T49.7X5S	Adverse effect of dental drugs, topically applied
T49.8X5A-T49.8X5S	Adverse effect of other topical agents
T49.95XA-T49.95XS	Adverse effect of unspecified topical agent
T50.0X5A-T50.0X5S	Adverse effect of mineralocorticoids and their antagonists
T50.1X1A-T50.1X1S	Poisoning by loop [high-ceiling] diuretics, accidental (unintentional)
T50.1X2A-T50.1X2S	Poisoning by loop [high-ceiling] diuretics, intentional self-harm
T50.1X3A-T50.1X3S	Poisoning by loop [high-ceiling] diuretics, assault
T50.1X4A-T50.1X4S	Poisoning by loop [high-ceiling] diuretics, undetermined
T50.1X5A-T50.1X5S	Adverse effect of loop [high-ceiling] diuretics
T50.2X1A-T50.2X1S	Poisoning by carbonic-anhydrase inhibitors, benzothiadiazides and other diuretics, accidental (unintentional)
T50.2X2A-T50.2X2S	Poisoning by carbonic-anhydrase inhibitors, benzothiadiazides and other diuretics, intentional self-harm
T50.2X3A-T50.2X3S	Poisoning by carbonic-anhydrase inhibitors, benzothiadiazides and other diuretics, assault
T50.2X4A-T50.2X4S	Poisoning by carbonic-anhydrase inhibitors, benzothiadiazides and other diuretics, undetermined
T50.2X5A-T50.2X5S	Adverse effect of carbonic-anhydrase inhibitors, benzothiadiazides and other diuretics
T50.3X1A-T50.3X1S	Poisoning by electrolytic, caloric and water-balance agents, accidental (unintentional)
T50.3X2A-T50.3X2S	Poisoning by electrolytic, caloric and water-balance agents, intentional self-harm
T50.3X3A-T50.3X3S	Poisoning by electrolytic, caloric and water-balance agents, assault
T50.3X4A-T50.3X4S	Poisoning by electrolytic, caloric and water-balance agents, undetermined
T50.3X5A-T50.3X5S	Adverse effect of electrolytic, caloric and water-balance agents
T50.4X1A-T50.4X1S	Poisoning by drugs affecting uric acid metabolism, accidental (unintentional)
T50.4X2A-T50.4X2S	Poisoning by drugs affecting uric acid metabolism, intentional self-harm
T50.4X3A-T50.4X3S	Poisoning by drugs affecting uric acid metabolism, assault
T50.4X4A-T50.4X4S	Poisoning by drugs affecting uric acid metabolism, undetermined

ICD-10-CM Diagnosis Codes	Description
T50.4X5A-T50.4X5S	Adverse effect of drugs affecting uric acid metabolism
T50.5X1A-T50.5X1S	Poisoning by appetite depressants, accidental (unintentional)
T50.5X2A-T50.5X2S	Poisoning by appetite depressants, intentional self-harm
T50.5X3A-T50.5X3S	Poisoning by appetite depressants, assault
T50.5X4A-T50.5X4S	Poisoning by appetite depressants, undetermined
T50.5X5A-T50.5X5S	Adverse effect of appetite depressants
T50.6X5A-T50.6X5S	Adverse effect of antidotes and chelating agents
T50.7X1A-T50.7X1S	Poisoning by analeptics and opioid receptor antagonists, accidental (unintentional)
T50.7X2A-T50.7X2S	Poisoning by analeptics and opioid receptor antagonists, intentional self-harm
T50.7X3A-T50.7X3S	Poisoning by analeptics and opioid receptor antagonists, assault
T50.7X4A-T50.7X4S	Poisoning by analeptics and opioid receptor antagonists, undetermined
T50.7X5A-T50.7X5S	Adverse effect of analeptics and opioid receptor antagonists
T50.8X5A-T50.8X5S	Adverse effect of diagnostic agents
T50.A15A-T50.A15S	Adverse effect of pertussis vaccine, including combinations with a pertussis component
T50.A25A-T50.A25S	Adverse effect of mixed bacterial vaccines without a pertussis component
T50.A95A-T50.A95S	Adverse effect of other bacterial vaccines
T50.B15A-T50.B15S	Adverse effect of smallpox vaccines
T50.B95A-T50.B95S	Adverse effect of other viral vaccines
T50.Z15A-T50.Z15S	Adverse effect of immunoglobulin
T50.Z95A-T50.Z95S	Adverse effect of other vaccines and biological substances
T50.905A-T50.905S	Adverse effect of unspecified drugs, medicaments and biological substances
T50.911A-T50.911S	Poisoning by multiple unspecified drugs, medicaments and biological substances, accidental (unintentional)
T50.912A-T50.912S	Poisoning by multiple unspecified drugs, medicaments and biological substances, intentional self-harm
T50.913A-T50.913S	Poisoning by multiple unspecified drugs, medicaments and biological substances, assault

ICD-10-CM Diagnosis Codes	Description
T50.914A-T50.914S	Poisoning by multiple unspecified drugs, medicaments and biological substances, undetermined
T50.915A-T50.915S	Adverse effect of multiple unspecified drugs, medicaments and biological substances
T50.991A-T50.991S	Poisoning by other drugs, medicaments and biological substances, accidental (unintentional)
T50.992A-T50.992S	Poisoning by other drugs, medicaments and biological substances, intentional self-harm
T50.993A-T50.993S	Poisoning by other drugs, medicaments and biological substances, assault
T50.994A-T50.994S	Poisoning by other drugs, medicaments and biological substances, undetermined
T50.995A-T50.995S	Adverse effect of other drugs, medicaments and biological substances
T51.0X1A-T51.0X1S	Toxic effect of ethanol, accidental (unintentional)
T51.0X2A-T51.0X2S	Toxic effect of ethanol, intentional self-harm
T51.0X3A-T51.0X3S	Toxic effect of ethanol, assault
T51.0X4A-T51.0X4S	Toxic effect of ethanol, undetermined
T63.001A-T63.94XS	Toxic effect of contact with venomous animals and plants
T71.111A-T71.9XXS	Asphyxiation
T74.02XA-T74.02XS	Child neglect or abandonment, confirmed
T74.12XA-T74.12XS	Child physical abuse, confirmed
T74.22XA-T74.22XS	Child sexual abuse, confirmed
T74.32XA-T74.32XS	Child psychological abuse, confirmed
T74.4XXA-T74.4XXS	Shaken infant syndrome
T74.52XA-T74.52XS	Child sexual exploitation, confirmed
T74.62XA-T74.62XS	Child forced labor exploitation, confirmed
T74.92XA-T74.92XS	Unspecified child maltreatment, confirmed
T75.00XA-T75.09XS	Effects of lightning
T75.1XXA-T75.1XXS	Unspecified effects of drowning and nonfatal submersion
T75.4XXA-T75.4XXS	Electrocution

ICD-10-CM Diagnosis Codes	Description
T76.02XA-T76.02XS	Child neglect or abandonment, suspected
T76.12XA-T76.12XS	Child physical abuse, suspected
T76.22XA-T76.22XS	Child sexual abuse, suspected
T76.32XA-T76.32XS	Child psychological abuse, suspected
T76.52XA-T76.52XS	Child sexual exploitation, suspected
T76.62XA-T76.62XS	Child forced labor exploitation, suspected
T76.92XA-T76.92XS	Unspecified child maltreatment, suspected
T78.00XA-T78.09XS	Anaphylactic reaction due to food
T78.2XXA-T78.2XXS	Anaphylactic shock, unspecified
T79.4XXA-T79.4XXS	Traumatic shock
T79.5XXA-T79.5XXS	Traumatic anuria
T80.0XXA-T80.0XXS	Air embolism following infusion, transfusion and therapeutic injection
T80.211A-T80.211S	Bloodstream infection due to central venous catheter
T80.218A-T80.218S	Other infection due to central venous catheter
T80.219A-T80.219S	Unspecified infection due to central venous catheter
T80.51XA-T80.51XS	Anaphylactic reaction due to administration of blood and blood products
T80.52XA-T80.52XS	Anaphylactic reaction due to vaccination
T80.59XA-T80.59XS	Anaphylactic reaction due to other serum
T81.10XA-T81.19XS	Postprocedural shock
T81.40XA-T81.49XS	Infection following a procedure
T81.505A-T81.505S	Unspecified complication of foreign body accidentally left in body following heart catheterization
T81.515A-T81.515S	Adhesions due to foreign body accidentally left in body following heart catheterization
T81.525A-T81.525S	Obstruction due to foreign body accidentally left in body following heart catheterization
T81.535A-T81.535S	Perforation due to foreign body accidentally left in body following heart catheterization

ICD-10-CM Diagnosis Codes	Description
T81.595A-T81.595S	Other complications of foreign body accidentally left in body following heart catheterization
T81.718A-T81.718S	Complication of other artery following a procedure, not elsewhere classified
T81.719A-T81.719S	Complication of unspecified artery following a procedure, not elsewhere classified
T81.72XA-T81.72XS	Complication of vein following a procedure, not elsewhere classified
T82.01XA-T82.9XXS	Complications of cardiac and vascular prosthetic devices, implants and grafts
T84.50XD-T84.59XS	Infection and inflammatory reaction due to internal joint prosthesis
T85.730A-T85.738S	Infection and inflammatory reaction due to nervous system devices, implants, and graft
T86.20-T86.298	Complications of heart transplant
T86.30-T86.39	Complications of heart-lung transplant
T88.2XXA-T88.2XXS	Shock due to anesthesia
T88.6XXA-T88.6XXS	Anaphylactic reaction due to adverse effect of correct drug or medicament properly administered
Z01.810	Encounter for preprocedural cardiovascular examination
Z01.811	Encounter for preprocedural respiratory examination
Z01.812	Encounter for preprocedural laboratory examination
Z01.818	Encounter for other preprocedural examination
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.
Z19.1	Hormone sensitive malignancy status
Z19.2	Hormone resistant malignancy status
Z21	Asymptomatic human immunodeficiency virus [HIV] infection status
Z29.8	Encounter for other specified prophylactic measures (Code deleted 9/30/2023)
Z29.89	Encounter for other specified prophylactic measures
Z45.010-Z45.09	Encounter for adjustment and management of cardiac device
Z48.21	Encounter for aftercare following heart transplant
Z48.24	Encounter for aftercare following lung transplant
Z48.280	Encounter for aftercare following heart-lung transplant
Z48.812	Encounter for surgical aftercare following surgery on the circulatory system
Z51.0	Encounter for antineoplastic radiation therapy
Z51.11	Encounter for antineoplastic chemotherapy
Z51.12	Encounter for antineoplastic immunotherapy
Z51.81	Encounter for therapeutic drug level monitoring
Z79.01 - Z79.899	Long term (current) drug therapy

ICD-10-CM Diagnosis Codes	Description
Z82.41-Z82.49	Family history of ischemic heart disease and other diseases of the circulatory system
Z82.79	Family history of other congenital malformations, deformations and chromosomal abnormalities
Z84.81	Family history of carrier of genetic disease
Z84.82	Family history of sudden infant death syndrome
Z85.00-Z85.9	Personal history of malignant neoplasm
Z86.711-Z86.79	Personal history of diseases of the circulatory system
Z87.74	Personal history of (corrected) congenital malformations of heart and circulatory system
Z92.21	Personal history of antineoplastic chemotherapy
Z92.22	Personal history of monoclonal drug therapy
Z92.25	Personal history of immunosuppression therapy
Z92.3	Personal history of irradiation
Z92.81	Personal history of extracorporeal membrane oxygenation (ECMO)
Z92.850	Personal history of Chimeric Antigen Receptor T-cell therapy
Z92.858	Personal history of other cellular therapy
Z92.859	Personal history of cellular therapy, unspecified
Z92.86	Personal history of gene therapy
Z94.1	Heart transplant status
Z94.2	Lung transplant status
Z94.3	Heart and lungs transplant status
Z95.0	Presence of cardiac pacemaker
Z95.1	Presence of aortocoronary bypass graft
Z95.2	Presence of prosthetic heart valve
Z95.3	Presence of xenogenic heart valve
Z95.4	Presence of other heart-valve replacement
Z95.5	Presence of coronary angioplasty implant and graft
Z95.810-Z95.818	Presence of other cardiac implants and grafts
Z95.9	Presence of cardiac and vascular implant and graft, unspecified
Z98.61	Coronary angioplasty status
Z98.62	Peripheral vascular angioplasty status
Z98.85	Transplanted organ removal status
Z98.890	Other specified postprocedural states

Not Covered or Reimbursable:

CPT®* Codes	Description
	All other codes

Myocardial Strain Imaging (CPT® 93356)

CPT code 93356 is Considered Medically Necessary when criteria in the applicable policy statements listed above are met and when billed with one or more of these diagnoses:

CPT®* Codes	Description
93356	Myocardial strain imaging using speckle tracking-derived assessment of myocardial mechanics (List separately in addition to codes for echocardiography imaging)

ICD-10-CM Diagnosis Codes	Description
C33	Malignant neoplasm of trachea
C34.01-C34.92	Malignant neoplasm of bronchus and lung
C37	Malignant neoplasm of thymus
C38.0-C38.8	Malignant neoplasm of heart, mediastinum and pleura
C39.0-C39.9	Malignant neoplasm of other and ill-defined sites in the respiratory system and intrathoracic organs
C45.2	Mesothelioma of pericardium
C50.011-C50.912	Malignant neoplasm of breast
C50.921-C50.922	Malignant neoplasm of breast of unspecified site, male
C50.A0-C50.A2	Malignant inflammatory neoplasm of breast
C81.00-C81.9A	Hodgkin lymphoma
C82.00-C82.9A	Follicular lymphoma
C83.00-C83.9A	Non-follicular lymphoma
C84.60-C84.6A	Anaplastic large cell lymphoma, ALK-positive
C84.70-C84.7B	Anaplastic large cell lymphoma, ALK-negative
C85.10-C85.9A	Other specified and unspecified types of non-Hodgkin lymphoma
C86.00-C86.61	Other specified types of T/NK-cell lymphoma
C88.00-C88.91	Malignant immunoproliferative diseases and certain other B-cell lymphomas
I42.1	Obstructive hypertrophic cardiomyopathy
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
Z17.0	Estrogen receptor positive status [ER+]
Z51.0	Encounter for antineoplastic radiation therapy
Z51.11	Encounter for antineoplastic chemotherapy
Z51.12	Encounter for antineoplastic immunotherapy

ICD-10-CM Diagnosis Codes	Description
Z51.81	Encounter for therapeutic drug level monitoring
Z79.899	Other long term (current) drug therapy
Z92.21	Personal history of antineoplastic chemotherapy
Z92.22	Personal history of monoclonal drug therapy
Z92.25	Personal history of immunosuppression therapy
Z92.3	Personal history of irradiation
Z92.850	Personal history of Chimeric Antigen Receptor T-cell therapy
Z92.858	Personal history of other cellular therapy
Z92.859	Personal history of cellular therapy, unspecified
Z92.86	Personal history of gene therapy

Not Covered or Reimbursable:

ICD-10-CM Diagnosis Codes	Description
	All other codes

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 ultrasonic 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. Lack of radiation exposure and the non-invasive, painless nature of TTE make it an ideal diagnostic tool in the pediatric population.

A transthoracic echocardiography (TTE) examination begins with real-time two-dimensional (2D) echocardiography, which provides high-resolution images of cardiac structures and their movements. TTE technique has evolved from a simple M-mode tracing to a family of technologies that include 2D imaging, pulsed and continuous wave spectral Doppler, color flow Doppler, tissue Doppler, 3-dimensional (3D) imaging, and myocardial strain imaging using speckle tracking.

Myocardial strain is the deformation produced by the application of a force; myocardial strain represents percent change in myocardial length from relaxed to contractile state. The main limitation remains that strain values vary among methods, modalities and software versions. The most prevalent use of myocardial strain imaging evaluated in current literature is for identifying potential cancer therapy-related cardiac dysfunction. Myocardial strain imaging in individuals with exposure to medications/radiation that could result in cardiotoxicity is supported by the American College of Cardiology and current peer-reviewed literature (Oikonomou, et al., 2019; Amzulescu, et al., 2019; Thavendiranathan, et al., 2014).

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.

Professional society recommendations have been published in an effort to guide appropriate use of this imaging modality for selected patient indications.

Professional Societies/Organizations
This Cigna Coverage Policy is primarily based upon the following American College of Cardiology (ACC) Appropriate Use Criteria (AUC) "Appropriate Care" category (scores 7-9 & 4-6)

1. Initial Transthoracic Echocardiography in Outpatient Pediatric Cardiology (Campbell, et al., 2014)
2. Multimodality Imaging During the Follow-Up Care of Patients With Congenital Heart Disease (Sachdeva, et al., 2020)

AND the following American Heart Association (AHA) / ACC Guidelines (Class of recommendation I and/or IIa):

3. AHA/ACC Guideline for the Management of Hypertrophic Cardiomyopathy (Ommen, et al., 2024)

2014 American College of Cardiology/American Academy of Pediatrics/American Heart Association Appropriate Use Criteria (AUC) for Initial Transthoracic Echocardiography in Outpatient Pediatric Cardiology (Campbell, et al., 2014)
The 2014 ACC/AHA AUC for Initial Transthoracic Echocardiography in Outpatient Pediatric Cardiology addresses the initial use of outpatient TTE during pediatric (≤18 years of age) outpatient care.

- Includes 103 separate TTE indications
- Although TTE is an essential tool in hospitalized patients, discussion of indications for this use is beyond the scope of the 2014 document.
- Additionally, the use of TTE in patients with previously known structural, functional, or primary electrical cardiac abnormalities is not addressed within this document.

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

Note: Fifty-three indications were identified as Appropriate, 28 as May Be Appropriate, and 32 as Rarely Appropriate.

PALPITATIONS
Appropriate • Palpitations with family history at a young age (before the age of 50 years) of sudden cardiac arrest or death and/or pacemaker or implantable defibrillator placement (7)

- Palpitations with family history of cardiomyopathy (9)
- Palpitations in a patient with known cardiomyopathy (9)

May Be Appropriate
- Palpitations with abnormal electrocardiogram (ECG) (6)
- Palpitations in a patient with known channelopathy (4)

Rarely Appropriate
- Palpitations with no other symptoms or signs of cardiovascular disease, a benign family history, and no recent ECG (2)
- Palpitations with no other symptoms or signs of cardiovascular disease, a benign family history, and a normal ECG (1)
- Palpitations with family history of a channelopathy (3)

ELECTROCARDIOGRAM (ECG) FINDINGS

Appropriate
- Supraventricular tachycardia (7)
- Ventricular tachycardia (9)

May Be Appropriate
- Premature ventricular contractions (PVC) in the prenatal or neonatal period (6)
- PVCs after the neonatal period (6)

Rarely Appropriate
- Premature atrial contractions (PAC) in the prenatal or neonatal period (3)
- PACs after the neonatal period (3)
- Sinus bradycardia (2)
- Sinus arrhythmia (1)

SYNCOPE

Appropriate
- Syncope with abnormal ECG (7)
- Syncope with family history at a young age (before the age of 50 years) of sudden cardiac arrest or death and/or pacemaker or implantable defibrillator placement (9)
- Syncope with family history of cardiomyopathy (9)
- Exertional syncope (9)
- Unexplained post-exertional syncope (7)

May Be Appropriate
- Syncope with family history of channelopathy (5)
- Unexplained pre-syncope (4)

Rarely Appropriate
- Syncope with or without palpitations and with no recent ECG (3)
- Syncope with no other symptoms or signs of cardiovascular disease, a benign family history, and a normal ECG (2)
- Probable neurocardiogenic (vasovagal) syncope (2)
- Syncope or pre-syncope with a known non-cardiovascular cause (2)

CHEST PAIN

Appropriate
- Exertional chest pain (8)
- Non-exertional chest pain with abnormal ECG (7)
- Chest pain with family history of sudden unexplained death or cardiomyopathy (8)

May Be Appropriate
- Chest pain with other symptoms or signs of cardiovascular disease, a benign family history, and a normal ECG (6)
- Chest pain with family history of premature coronary artery disease (4)
- Chest pain with recent onset of fever (6)
- Chest pain with recent illicit drug use (6)

Rarely Appropriate
- Chest pain with no other symptoms or signs of cardiovascular disease, a benign family history, and a normal ECG (2)
- Non-exertional chest pain with no recent ECG (3)
- Non-exertional chest pain with normal ECG (1)
- Reproducible chest pain with palpation or deep inspiration (1)

MURMUR

Appropriate
- Presumptively innocent murmur with signs, symptoms, or findings of cardiovascular disease (7)
- Pathologic murmur (9)

Rarely Appropriate
- Presumptively innocent murmur with no symptoms, signs, or findings of cardiovascular disease and a benign family history (1)

OTHER / SYMPTOMS AND SIGNS

Appropriate
- Symptoms and/or signs suggestive of congestive heart failure, including but not limited to respiratory distress, poor peripheral pulses, feeding difficulty, decreased urine output, edema, and/or hepatomegaly (9)
- Signs and symptoms of endocarditis in the absence of blood culture data or a negative blood culture (8)
- Central cyanosis (8)

May Be Appropriate
- Chest wall deformities and scoliosis pre-operatively (6)
- Unexplained fever without other evidence for cardiovascular or systemic involvement (5)

Rarely Appropriate
- Fatigue with no other signs and symptoms of cardiovascular disease, a normal ECG, and a benign family history (3)
- Isolated acrocyanosis (1)

PRIOR TEST RESULTS

Appropriate
- Genotype positive for cardiomyopathy (9)
- Abnormal chest X-ray findings suggestive of cardiovascular disease (9)
- Abnormal ECG without symptoms (7)
- Desaturation based on pulse oximetry (9)
- Previously normal echocardiogram with a change in cardiovascular status and/or a new family history suggestive of heritable heart disease (7)
- Chromosomal abnormality known to be associated with cardiovascular disease (9)
- Positive blood cultures suggestive of infective endocarditis (9)
- Abnormal cardiac biomarkers (9)
- Abnormal barium swallow or bronchoscopy suggesting vascular ring (7)

May Be Appropriate
- Known channelopathy (4)
- Chromosomal abnormality with undefined risk for cardiovascular disease (5)

Rarely Appropriate
- Previously normal echocardiogram with no change in cardiovascular status or family history (1)
- Elevated anti-streptolysin O titers without suspicion for rheumatic fever (3)

SYSTEMIC DISORDERS

Appropriate
- Prior to or during chemotherapy in cancer (8)
- Sickle cell disease and other hemoglobinopathies (8)
- Connective tissue disorder such as Marfan, Loeys Dietz, and other aortopathy syndromes (9)
- Suspected connective tissue disorder (7)
- Clinically suspected syndrome or extracardiac congenital anomaly known to be associated with congenital heart disease (9)
- Human immunodeficiency virus infection (8)
- Suspected or confirmed Kawasaki disease (9)
- Suspected or confirmed Takayasu arteritis (9)
- Suspected or confirmed acute rheumatic fever (9)
- Systemic lupus erythematosis and autoimmune disorders (7)
- Muscular dystrophy (9)
- Systemic hypertension (9)
- Renal failure (7)
- Stroke (8)
- Suspected pulmonary hypertension (9)
- Storage diseases, mitochondrial and metabolic disorders (8)
- Abnormalities of visceral or cardiac situs (9)

May Be Appropriate
- Cancer without chemotherapy (5)
- Obesity with obstructive sleep apnea (6)
- Obesity with other cardiovascular risk factors (6)
- Hepatic disorders (4)
- Failure to thrive (5)

Rarely Appropriate
- Obesity without other cardiovascular risk factors (2)
- Diabetes mellitus (3)
- Lipid disorders (3)
- Seizures, other neurologic disorders, or psychiatric disorders (2)
- Gastrointestinal disorders, not otherwise specified (2)

FAMILY HISTORY OF CARDIOVASCULAR DISEASE IN PATIENTS WITHOUT SIGNS OR SYMPTOMS AND WITHOUT CONFIRMED CARDIAC DIAGNOSIS

Appropriate
- Family history of Hypertrophic cardiomyopathy (9)
- Family history of Non-ischemic dilated cardiomyopathy (9)
- Family history of Other cardiomyopathies (8)
- Family history of Genetic disorder at high risk for cardiovascular involvement (7)
- Family history of Marfan or Loeys Dietz syndrome (7)
- Family history of Heritable pulmonary arterial hypertension (8)

May Be Appropriate
- Family history of Unexplained sudden death before the age of 50 years (6)
- Family history of Connective tissue disorder other than Marfan or Loeys Dietz syndrome (6)
- Family history of Congenital left-sided heart lesion, including but not limited to mitral stenosis, left ventricular outflow tract obstruction, bicuspid aortic valve, aortic coarctation, and/or hypoplastic left heart syndrome (6)
- Family history of Congenital heart disease other than the congenital left-sided heart lesions (5)
- Family history of Idiopathic pulmonary arterial hypertension (5)

Rarely Appropriate
- Family history of Premature coronary artery disease before the age of 50 years (2)
- Family history of Channelopathy (3)
- Family history of Unspecified cardiovascular disease (3)
- Family history of Disease at high risk for cardiovascular involvement, including but not limited to diabetes, systemic hypertension, obesity, stroke, and peripheral vascular disease (2)
- Family history of Pulmonary arterial hypertension other than idiopathic and heritable (3)
- Family history of Consanguinity (3)

OUTPATIENT NEONATES WITHOUT POST-NATAL CARDIOLOGY EVALUATION

Appropriate
- Suspected cardiovascular abnormality on fetal echocardiogram (9)
- Maternal infection during pregnancy or delivery with potential fetal/neonatal cardiac sequelae (7)
- Maternal phenylketonuria (7)

May Be Appropriate
- Maternal diabetes with no prior fetal echocardiogram (6)
- Maternal diabetes with a normal fetal echocardiogram (4)
- Maternal autoimmune disorder (5)
- Maternal teratogen exposure (6)

Rarely Appropriate
- Isolated echogenic focus on fetal ultrasound (2)

(Campbell, et al., 2014)

2020 Appropriate Use Criteria (AUC) for Multimodality Imaging During the Follow-Up Care of Patients With Congenital Heart Disease (Sachdeva, et al., 2020)

The American College of Cardiology (ACC) Solution Set Oversight Committee and Appropriate Use Criteria (AUC) Task Force, American Heart Association (AHA), American Society of Echocardiography (ASE), Heart Rhythm Society (HRS), International Society for Adult Congenital Heart Disease, Society for Cardiovascular Angiography and Interventions, Society of Cardiovascular Computed Tomography, Society for Cardiovascular Magnetic Resonance, and Society of Pediatric Echocardiography published the 2020 Appropriate Use Criteria (AUC) for Multimodality Imaging During the Follow-Up Care of Patients With Congenital Heart Disease (Sachdeva, et al., 2020). Noteworthy:

- Includes 324 separate TTE indications
- Addresses cardiac imaging in adult and pediatric patients with established congenital heart disease.

- Addresses only the follow-up of patients with established CHD using various cardiovascular imaging modalities. It is assumed that a complete anatomic cardiac diagnosis has been established. The initial evaluation by TTE prompted by signs and symptoms suggesting CHD has been addressed in the 2014 AUC for Initial Transthoracic Echocardiography in Outpatient Pediatric Cardiology.

Ratings:

- A = Appropriate. Median Score 7 to 9: Appropriate test for specific indication (test is generally acceptable and is a reasonable approach for the indication).
- M = May be appropriate. Median Score 4 to 6: May Be Appropriate test for specific indication (test may be generally acceptable and may be a reasonable approach for the indication). May Be Appropriate also implies that more research and/or patient information is needed to classify the indication definitively.
- R = Rarely appropriate. Median Score 1 to 3: Rarely Appropriate test for specific indication (test is not generally acceptable and is not a reasonable approach for the indication).

Table 1: Congenital Heart Disease (CHD), Patent Foramen Ovale, Atrial Septal Defects (ASD) and Partial Anomalous Pulmonary Venous Connection (PAPVC)

Patent Foramen Ovale (PFO)	TTE	TTE with contrast
Routine surveillance of an asymptomatic patient with a PFO	R (1)	R (1)
Atrial Septal Defects (ASD) and Partial Anomalous Pulmonary Venous Connection (PAPVC); Unrepaired		
Routine surveillance (1–2 years) in an asymptomatic patient with a small atrial septal defects (ASD) or Partial anomalous pulmonary venous connection (PAPVC) involving a single pulmonary vein	M (4)	Not rated
Routine surveillance (3–5 years) in an asymptomatic patient with a small ASD or PAPVC involving a single pulmonary vein	A (7)	Not rated
Routine surveillance (1–2 years) in an asymptomatic patient with ≥ moderate ASD or PAPVC involving >1 pulmonary vein	A (8)	Not rated
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)	M (5)
Evaluation to determine the method of closure of isolated secundum ASD	A (9)	M (4)
Evaluation prior to planned repair of sinus venosus defect and/or PAPVC	A (9)	M (4)
ASD and PAPVC; Postprocedural: Surgical or catheter-based		
Routine postprocedural evaluation (within 30 days)	A (9)	M (5)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)	M (6)
Routine surveillance within 1 week following device closure of ASD in an asymptomatic patient with no or mild sequelae	A (9)	R (3)
Routine surveillance at 1 month following device closure of ASD in an asymptomatic patient with no or mild sequelae	A (9)	R (3)
Routine surveillance at 3–6 months following device closure of ASD in an asymptomatic patient with no or mild sequelae	A (9)	R (3)
Routine surveillance at 1 year following device closure of ASD in an asymptomatic patient with no or mild sequelae	A (9)	R (3)
Routine surveillance (2–5 years) after the first year following device closure of ASD in an asymptomatic patient with no or mild sequelae	A (8)	R (2)
Routine surveillance within a year following surgical ASD closure or PAPVC repair in an asymptomatic patient with no or mild sequelae	A (9)	R (2)

Routine surveillance (annually) after the first year following surgical ASD closure or PAPVC repair in an asymptomatic patient with no or mild sequelae	M (6)	R (2)
Routine surveillance (2–5 years) after the first year following surgical ASD closure or PAPVC repair in an asymptomatic patient with no or mild sequelae	A (9)	R (2)
Routine surveillance (3–12 months) following surgical or device closure of ASD in a patient with significant residual shunt, valvular or ventricular dysfunction, arrhythmias, and/or pulmonary hypertension	A (9)	M (4)
Routine surveillance (3–12 months) following repair of PAPVC in a patient with systemic or pulmonary venous obstruction, valvular or ventricular dysfunction, arrhythmias, and/or pulmonary hypertension	A (9)	M (5)

Table 2: Congenital Heart Disease (CHD), Ventricular Septal Defects (VSD)

Unrepaired	TTE
Routine surveillance (1–2 years) in an asymptomatic child with a small muscular VSD	R (3)
Routine surveillance (3–5 years) in an asymptomatic child with a small muscular VSD	A (7)
Routine surveillance (3–5 years) in an asymptomatic adult with a small muscular VSD	A (7)
Routine surveillance (1–2 years) in an asymptomatic child with a small VSD in a location other than muscular septum	A (7)
Routine surveillance (3–5 years) in an asymptomatic adult with a small VSD in a location other than muscular septum	A (8)
Routine surveillance (1–3 months) in an infant with ≥ moderate VSD on medical management	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Postprocedural: Surgical or Catheter-Based	
Routine postprocedural evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Routine surveillance within a year following surgical or device VSD closure in an asymptomatic patient with no or mild sequelae	A (8)
Routine surveillance (2–3 years) after the first year following device closure of VSD in an asymptomatic patient with no or mild sequelae	A (9)
Routine surveillance (annually) after the first year following surgical VSD closure in an asymptomatic patient with no or mild sequelae	M (5)
Routine surveillance (2–3 years) after the first year following surgical VSD closure in an asymptomatic patient with no or mild sequelae	A (8)
Routine surveillance (2–3 years) following surgical or device closure in a patient with small residual shunt, ≤ mild valvular dysfunction, no ventricular dysfunction, arrhythmias, or pulmonary hypertension	A (9)
Routine surveillance (3–12 months) following surgical or device closure in a patient with significant residual shunt, valvular or ventricular dysfunction, arrhythmias, and/or pulmonary hypertension	A (9)

Table 3: Congenital Heart Disease (CHD), Atrioventricular Septal Defects

Unrepaired: Partial/Transitional	TTE
Routine surveillance (3–6 months) in an asymptomatic infant	A (9)

Routine surveillance (1–2 years) in an asymptomatic child	A (9)
Unrepaired: Complete	
Routine surveillance (1–3 months) in an infant	A (9)
Unrepaired: All Types	
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Postoperative	
Routine postprocedural evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Routine surveillance within a year after atrioventricular septal defects (AVSD) repair in an asymptomatic patient with no or mild sequelae	A (9)
Routine surveillance (1–3 years) after the first year following repair in an asymptomatic patient with no or mild sequelae	A (9)
Routine surveillance (3–12 months) in a patient with significant residual shunt, valvular or ventricular dysfunction, left ventricular outflow tract (LVOT) obstruction, arrhythmias, and/or pulmonary hypertension	A (9)
Routine surveillance (3–12 months) in a patient with heart failure symptoms	A (9)

Table 4: Congenital Heart Disease (CHD), Patent Ductus Arteriosus (PDA)

Unrepaired	TTE
Routine surveillance (3–5 years) in an asymptomatic patient with a trivial, silent PDA	R (3)
Routine surveillance (3–6 months) in an infant with ≥ moderate PDA	A (9)
Routine surveillance (3–6 months) in an infant with a small, audible PDA until closure	A (7)
Routine surveillance (1–2 years) in an infant or child with a small, audible PDA until closure	A (8)
Routine surveillance (3–5 years) in an adult with a small PDA	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Postprocedural: Surgical or Catheter-Based	
Routine postprocedural evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Routine surveillance (annually) within 2 years following PDA closure in an asymptomatic patient with no or mild sequelae	A (8)
Routine surveillance (5 years) after the first 2 years following surgical closure in an asymptomatic patient with no or mild sequelae	R (3)
Routine surveillance (5 years) after the first 2 years following device closure in an asymptomatic patient with no or mild sequelae	A (7)
Routine surveillance (1–2 years) in a patient with postprocedural left pulmonary artery stenosis	A (9)
Routine surveillance (1–2 years) in a patient with postprocedural aortic obstruction	A (9)

Table 5: Congenital Heart Disease (CHD), Total Anomalous Pulmonary Venous Connection

Unrepaired	TTE

Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Postoperative	
Routine postprocedural evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Routine surveillance (3–6 months) in an asymptomatic infant with no or mild sequelae	A (8)
Routine surveillance (1–2 years) in an asymptomatic child with no or mild sequelae	A (8)

Table 6: Congenital Heart Disease (CHD), Eisenmenger Syndrome (ES) and Pulmonary Hypertension Associated With CHD

Eisenmenger Syndrome (ES)	TTE
Initial evaluation with suspicion of ES	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms in a patient with ES	A (9)
Evaluation due to change in pulmonary arterial hypertension-targeted therapy in a patient with ES	A (9)
Routine surveillance (3 months) in a stable child with ES	M (6)
Routine surveillance (6–12 months) in a stable child with ES	A (9)
Routine surveillance (3 months) in a stable adult with ES	R (3)
Routine surveillance (6–12 months) in a stable adult with ES	A (9)
Pulmonary Hypertension (PH) Associated With Congenital heart disease (CHD)	
Initial evaluation with suspicion of pulmonary hypertension following CHD surgery	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms in a patient with postoperative PH	A (9)
Evaluation due to change in pulmonary arterial hypertension-targeted therapy in a patient with postoperative PH	A (9)
Routine surveillance (3 months) in a stable child with postoperative PH	A (7)
Routine surveillance (6–12 months) in a stable child with post-operative PH	M (5)
Routine surveillance (3 months) in a stable adult with postoperative PH	A (9)
Routine surveillance (6–12 months) in a stable adult postoperative PH	A (9)

Table 7: Congenital Heart Disease (CHD), Ebstein Anomaly and Tricuspid Valve Dysplasia

Unrepaired	TTE	TTE with contrast
Routine surveillance (1–2 years) in an asymptomatic infant or child with mild tricuspid regurgitation (TR)	A (9)	Not rated
Routine surveillance (3–5 years) in an asymptomatic adult with mild TR	A (9)	M (5)
Routine surveillance (3–6 months) in an asymptomatic infant with ≥ moderate TR without hypoxemia	A (9)	Not rated
Routine surveillance (6–12 months) in an asymptomatic patient with ≥ moderate TR and previously stable RV size and/or function without hypoxemia	A (9)	M (4)
Evaluation due to change in clinical status and/or new concerning signs and symptoms	A (9)	A (7)

Evaluation of an atrial septal defect (ASD) for device closure in a patient with mild or moderate TR, right ventricle (RV) enlargement, and no hypoxemia	A (9)	M (6)
Evaluation prior to planned repair	A (9)	M (6)
Postprocedural: Surgical or Catheter-Based		
Routine postprocedural evaluation (within 30 days)	A (9)	M (6)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)	A (7)
Routine surveillance (1–2 years) in an asymptomatic patient with no or mild sequelae	A (9)	Not rated
Routine surveillance (3–5 years) in an asymptomatic patient with no or mild sequelae	Not rated	Not rated
Routine surveillance (6–12 months) in an asymptomatic child with valvular or ventricular dysfunction or arrhythmias	A (9)	Not rated
Routine surveillance (1–2 years) in an asymptomatic adult with valvular or ventricular dysfunction or arrhythmias	A (9)	Not rated
Routine surveillance (3–12 months) in a patient with symptoms of heart failure and/or atrial arrhythmias	A (9)	Not rated

Table 8: Congenital Heart Disease (CHD), Pulmonary Stenosis (PS)

Unrepaired	TTE
Routine surveillance (3–6 months) in an asymptomatic infant with mild PS	A (8)
Routine surveillance (1–2 years) in an asymptomatic child with mild PS	A (8)
Routine surveillance (3–5 years) in an asymptomatic adult with mild PS	A (9)
Routine surveillance (3–6 months) in an asymptomatic infant with ≥ moderate PS	A (9)
Routine surveillance (1–2 years) in an asymptomatic child or adult with ≥ moderate PS	A (9)
Routine surveillance (3–5 years) in an asymptomatic adult with PS and pulmonary artery dilation	Not rated
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Postprocedural: Surgical or Catheter-Based	
Routine postprocedural evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Routine surveillance (1–2 years) in an asymptomatic child with no or mild sequelae	A (9)
Routine surveillance (3–5 years) in an asymptomatic adult with no or mild sequelae	A (9)
Routine surveillance (6–12 months) in an asymptomatic child with moderate or severe sequelae	A (9)
Routine surveillance (1–3 years) in an asymptomatic adult with moderate or severe sequelae	A (9)
Routine surveillance (3–12 months) in a patient with heart failure symptoms	A (9)

Table 9: Congenital Heart Disease (CHD), Pulmonary Atresia With Intact Ventricular Septum

Unrepaired	TTE
Evaluation prior to planned repair	A (9)
Postprocedural: Palliation	

Routine postprocedural evaluation (within 30 days)	A (9)
Routine surveillance (1–3 months) in an asymptomatic patient	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Postprocedural: Complete Repair	
Routine postprocedural evaluation (within 30 days)	A (9)
Evaluation due to a change in clinical status and/or new concerning signs or symptoms	A (9)
Routine surveillance (3–6 months) in an asymptomatic infant	A (9)
Routine surveillance (1–2 years) in an asymptomatic child with no or mild sequelae	A (9)
Routine surveillance (2–3 years) in an asymptomatic adult with no or mild sequelae	A (9)
Routine surveillance (6–12 months) in an asymptomatic child with ≥ moderate sequelae	A (9)
Routine surveillance (1–3 years) in an asymptomatic adult with ≥ moderate sequelae	A (9)
Routine surveillance (3–12 months) in a patient with heart failure symptoms	A (9)

Table 10: Congenital Heart Disease (CHD), Mitral Valve Disease

Unrepaired Congenital Mitral Stenosis (MS)	TTE
Routine surveillance (1–4 weeks) in an infant <3 months with any degree of MS	A (8)
Routine surveillance (3–6 months) in an infant ≥3 months with mild MS	A (8)
Routine surveillance (1–3 months) in an infant ≥3 months with ≥ moderate MS	A (9)
Routine surveillance (1–2 years) in an asymptomatic child with mild MS	A (9)
Routine surveillance (3–12 months) in an asymptomatic child with ≥ moderate MS	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Unrepaired: Congenital Mitral Regurgitation (MR) including Mitral Valve Prolapse (MVP)	
Routine surveillance (6–12 months) in an asymptomatic infant with mild MR	A (9)
Routine surveillance (1–3 months) in an asymptomatic infant with ≥ moderate MR	A (9)
Routine surveillance (2–5 years) in a child with mild MR, normal LV size and systolic function	A (9)
Routine surveillance (6–12 months) in a child with ≥ moderate MR	A (9)
Routine surveillance (1–2 years) in an asymptomatic child with MVP and mild MR	M (5)
Routine surveillance (3–5 years) in an asymptomatic child with MVP and mild MR	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Postprocedural: Surgical or Catheter-Based	
Routine postprocedural evaluation (within 30 days)	A (9)
Evaluation in an infant or child due to change in clinical status and/or new concerning signs or symptoms	A (9)
Routine surveillance (3–6 months) in an infant with mild MS or MR, and no LV dysfunction	A (9)
Routine surveillance (1–3 months) in an infant with ≥ moderate MS or MR, dilated LV, and no LV dysfunction	A (9)

Routine surveillance (1–2 years) in a child with mild MS or MR, and no LV dysfunction	A (9)
Routine surveillance (3–12 months) in a child with ≥ moderate MS or MR, dilated LV, and no LV dysfunction	A (9)
Routine surveillance (annually) in a child with normal prosthetic mitral valve function and no LV dysfunction	A (9)
Routine surveillance (3–12 months) in a child with prosthetic mitral valve or ventricular dysfunction, and/or arrhythmias	A (9)

Table 11: Congenital Heart Disease (CHD), Left ventricular outflow tract (LVOT) lesions

Unrepaired: Subvalvular Aortic Stenosis (AS)	TTE
Routine surveillance (1–3 months) in an infant with any degree of subvalvular aortic stenosis (AS) and ≤ mild aortic regurgitation (AR)	A (9)
Routine surveillance (1–2 years) in a child or adult with mild subvalvular AS and no AR	A (9)
Routine surveillance (6–12 months) in a child or adult with ≥ moderate subvalvular AS and/or ≤ mild AR	A (9)
Routine surveillance (3–5 years) in an asymptomatic adult with ≥ moderate subvalvular AS	Not rated
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Postoperative	
Routine postoperative evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Routine surveillance (3–6 months) in an infant with ≤ mild stenosis and/or AR	A (9)
Routine surveillance (1–3 months) in an infant with ≥ moderate stenosis and/or AR	A (9)
Routine surveillance (1–2 years) in a child or adult with ≤ mild stenosis and/or AR	A (9)
Routine surveillance (6–12 months) in a child or adult with ≥ moderate stenosis and/or AR	A (9)
Routine surveillance (3–12 months) in an adult with heart failure symptoms or ≥ moderate stenosis and/or AR	A (9)
Unrepaired: Aortic Valve Stenosis and/or Regurgitation* *This part of the table does not include indications for adults:	
Routine surveillance (1–4 weeks) in an infant (<3 months old) with any degree of AS and/or AR not requiring neonatal surgery	A (9)
Routine surveillance (3–6 months) in an infant (3–12 months old) with mild AS and/or mild AR	A (9)
Routine surveillance (1–3 months) in an infant (3-12 months old) with ≥ moderate AS and/or ≥ moderate AR	A (9)
Routine surveillance (6 months) in an asymptomatic child with mild AS and/or mild AR without aortic dilation	R (3)
Routine surveillance (1–2 years) in an asymptomatic child with mild AS and/or mild AR without aortic dilation	A (9)
Routine surveillance (6–12 months) in an asymptomatic child with ≥ moderate AS and/or ≥ moderate AR	A (9)
Routine surveillance (3–5 years) in a child with a bicuspid aortic valve with trivial or mild valvular dysfunction with no aortic sinus and/or ascending aortic dilation	A (9)
Routine surveillance (2–3 years) in a child with aortic sinus and/or ascending aortic dilation with stable z-scores	A (9)

Routine surveillance (6–12 months) in a child with aortic sinus and/or ascending aortic dilation with increasing z-scores	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Postprocedural: Surgical or Catheter-Based* *This part of the table does not include indications for adults:	
Routine postprocedural evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Routine surveillance (3–6 months) in an infant following neonatal intervention with ≤ mild AS and/or AR and no LV dysfunction	A (9)
Routine surveillance (1–3 months) in an infant following neonatal intervention with ≥ moderate AS and/or regurgitation, and/or LV dysfunction	A (9)
Routine surveillance (1–2 years) in a child with ≤ mild AS and/or AR following repair or normal prosthetic valve function	A (9)
Routine surveillance (6–12 months) in a child with ≥ moderate AS or AR	A (9)
Routine surveillance (3–12 months) in a child with heart failure symptoms and/or ventricular dysfunction	A (9)
Unrepaired: Supravalvular Aortic Stenosis (AS)	
Routine surveillance (3–6 months) in an infant with any degree of supravalvular AS	A (9)
Routine surveillance (1–2 years) in an asymptomatic child or adult with mild supravalvular AS	A (9)
Routine surveillance (6–12 months) in an asymptomatic child or adult with moderate supravalvular AS	A (9)
Routine surveillance (2–5 years) in an asymptomatic adult with moderate supravalvular AS	Not rated
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Postoperative	
Routine postoperative evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Routine surveillance (2–5 years) in a patient with no or mild supravalvular AS	A (9)
Routine surveillance (6–12 months) in a patient with ≥ moderate supravalvular AS	A (9)

Table 12: Congenital Heart Disease (CHD), Aortic Coarctation and Interrupted Aortic Arch

Unrepaired	TTE
Routine surveillance (3–6 months) in an infant with mild aortic coarctation in the absence of a Patent ductus arteriosus (PDA)	A (9)
Routine surveillance (1–2 years) in a child or adult with mild aortic coarctation	A (9)
Routine surveillance (3–5 years) in a child or adult with mild aortic coarctation	Not rated
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Postprocedural: Surgical or Catheter-Based	

Routine postprocedural evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Routine surveillance (3–6 months) within the first year following surgical or catheter-based intervention in an asymptomatic patient with no or mild sequelae	A (9)
Routine surveillance (6–12 months) within the first year following catheter-based intervention in an asymptomatic patient with no or mild sequelae	Not rated
Routine surveillance (6 months) after the first year following surgical or catheter-based intervention in an asymptomatic patient with no or mild sequelae	A (9)
Routine surveillance (1–2 years) after the first year following surgical or catheter-based intervention in an asymptomatic patient with no or mild sequelae	A (9)
Routine surveillance (3–5 years) in an asymptomatic patient to evaluate for aortic arch aneurysms, in-stent stenosis, stent fracture, or endoleak	Not rated
Routine surveillance (3–12 months) in a patient with heart failure symptoms	A (9)

Table 13: Congenital Heart Disease (CHD), Coronary Anomalies

Unrepaired	TTE
Routine surveillance (annually) in an asymptomatic patient with anomalous right coronary artery from the left aortic sinus	R (3)
Routine surveillance (2–5 years) in an asymptomatic patient with anomalous right coronary artery from the left aortic sinus	A (7)
Routine surveillance (annually) in an asymptomatic patient with small coronary fistula	R (3)
Routine surveillance (2–5 years) in an asymptomatic patient with small coronary fistula	A (8)
Routine surveillance (1–2 years) in an asymptomatic patient with moderate or large coronary fistula	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Postprocedural: Surgical or Catheter-Based	
Routine post–procedural evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation within 1 year after surgery or catheter-based intervention with no or mild sequelae	A (9)
Routine surveillance (1–3 months) within the first year following repair	A (7)
Routine surveillance (3–6 months) in an infant with or without ventricular or valvular dysfunction	A (9)
Routine surveillance (3–6 months) in a child or adult with ventricular or valvular dysfunction	A (9)
Routine surveillance (annually) with no or mild sequelae	A (7)
Routine surveillance (2–5 years) with no or mild sequelae	Not rated

Table 14: Congenital Heart Disease (CHD), Tetralogy of Fallot (TOF)

Unrepaired	TTE
Routine surveillance (1–3 months) in an infant before complete repair	A (9)

Routine surveillance (1–3 months) in an infant following valvuloplasty, patent ductus arteriosus (PDA) and/or right ventricular outflow tract (RVOT) stenting, or shunt placement before complete repair	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Postoperative: Initial Repair	
Routine postoperative evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Routine surveillance (annually) in an asymptomatic patient with no or mild sequelae or PR of any severity	A (9)
Routine surveillance (6–12 months) in a patient with valvular dysfunction other than pulmonary valve, RVOT obstruction, branch pulmonary artery stenosis, arrhythmias, or presence of a right ventricle to pulmonary artery (RV-to-PA) conduit	A (9)
Routine surveillance (2–3 years) in a patient with pulmonary regurgitation (PR) and preserved ventricular function	Not rated
Routine surveillance (3–12 months) in a patient with heart failure symptoms	A (9)
Evaluation prior to planned pulmonary valve replacement (percutaneous or surgical)	A (9)
Postprocedural: Surgical or Catheter-based Pulmonary Valve Replacement	
Routine postprocedural evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation at 1 year following transcatheter or surgical pulmonary valve replacement	A (9)
Routine surveillance at 1 and 6 month(s) in an asymptomatic patient following transcatheter pulmonary valve replacement	A (9)
Routine surveillance (annually) in an asymptomatic patient following transcatheter pulmonary valve replacement	A (9)
Routine surveillance (annually) in an asymptomatic patient with no or mild sequelae	A (9)
Routine surveillance (6–12 months) in a patient with RV-to-PA conduit dysfunction, valvular or ventricular dysfunction, branch pulmonary artery stenosis, or arrhythmias	A (9)
Routine surveillance (2–3 years) in an asymptomatic patient with no or mild sequelae	Not rated
Routine surveillance (2–3 years) in a patient with valvular or ventricular dysfunction, RVOT obstruction, branch pulmonary artery stenosis, arrhythmias, or presence of an RV-to- PA conduit	A (9)
Routine surveillance (3–12 months) in a patient with heart failure symptoms	A (9)

Table 15: Congenital Heart Disease (CHD), Double Outlet Right Ventricle (DORV)

Unrepaired	TTE
Routine surveillance (1–3 months) in an infant with balanced systemic and pulmonary circulation	A (9)
Routine surveillance (3–6 months) in a child with balanced systemic and pulmonary circulation	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)

Postoperative	
Routine postprocedural evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Routine surveillance (6 months) within a year following repair in an asymptomatic infant or child with no or mild sequelae	A (9)
Routine surveillance (1–2 years) in an asymptomatic patient with no or mild sequelae	A (9)
Routine surveillance (3–12 months) in a patient with valvular or ventricular dysfunction, right or left ventricular outflow tract obstruction, branch pulmonary artery stenosis, arrhythmias, or presence of an right ventricle to pulmonary artery (RV-to-PA) conduit	A (9)
Routine surveillance (3–5 years) in an asymptomatic patient with no or mild sequelae	Not rated
Routine surveillance (3–12 months) in a patient with heart failure symptoms	A (9)

Table 16: Congenital Heart Disease (CHD), D-Loop Transposition of the Great Arteries (D-Loop TGA)

Unrepaired	TTE
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Postoperative: Arterial Switch Operation	
Routine postoperative evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation for coronary imaging in an asymptomatic patient	Not rated
Routine surveillance (1–3 months) in an asymptomatic infant with moderate sequelae	A (9)
Routine surveillance (3–6 months) in an asymptomatic infant with no or mild sequelae	A (9)
Routine surveillance (3–12 months) in an asymptomatic child or adult with ≥ moderate valvular or ventricular dysfunction, right or left ventricular outflow tract obstruction, branch pulmonary artery stenosis, or arrhythmias	A (9)
Routine surveillance (1–2 years) in an asymptomatic child or adult with no or mild sequelae	A (9)
Routine surveillance (3–5 years) in an asymptomatic patient	Not rated
Routine surveillance (1–2 years) in a patient with dilated neoaortic root with increasing Z scores, or neoaortic regurgitation	A (9)
Routine surveillance (3–12 months) in a patient with heart failure symptoms	A (9)
Postoperative: Rastelli	
Routine postoperative evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Routine surveillance (3–6 months) within the first year following repair	A (9)
Routine surveillance (6 months) after the first year following repair in an asymptomatic patient with no or mild sequelae	A (9)
Routine surveillance (1–2 years) in an asymptomatic patient with no or mild sequelae	A (9)
Routine surveillance (3–5 years) in an asymptomatic patient	Not rated

Routine surveillance (3–12 months) in a patient with ≥ moderate valvular dysfunction, LVOT obstruction, presence of an right ventricle to pulmonary artery (RV-to-PA) conduit, branch pulmonary artery stenosis, or arrhythmias	A (9)	
Routine surveillance (3–12 months) in a patient with heart failure symptoms	A (9)	
Postoperative: Atrial Switch Operation	TTE	TTE with contrast
Evaluation due to concerning signs or symptoms and/or change in clinical status	A (9)	M (6)
Routine surveillance (6 months) in an asymptomatic patient with no or mild sequelae	R (3)	R (3)
Routine surveillance (1–2 years) in an asymptomatic patient with no or mild sequelae	A (9)	R (3)
Routine surveillance (3–5 years) in an asymptomatic patient	Not rated	R (3)
Routine surveillance (3–12 months) in a patient with ≥ moderate systemic AV valve regurgitation, systemic RV dysfunction, LVOT obstruction, or arrhythmias	A (9)	Not rated
Routine surveillance (3–12 months) in a patient with heart failure symptoms	A (9)	Not rated

Table 17: Congenital Heart Disease (CHD), Congenitally Corrected Transposition of the Great Arteries (ccTGA)

Unrepaired	TTE	TTE with contrast
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)	Not rated
Routine surveillance (3–6 months) in an asymptomatic infant	A (9)	Not rated
Routine surveillance (1–2 years) in a patient with < moderate systemic atrioventricular (AV) valve regurgitation	A (9)	Not rated
Routine surveillance (6–12 months) in a patient with ≥ moderate systemic AV valve regurgitation	A (9)	Not rated
Routine surveillance (3–5 years) in an asymptomatic patient	A (9)	Not rated
Routine surveillance (3–12 months) in a patient with heart failure symptoms	A (9)	Not rated
Evaluation prior to planned repair	A (9)	Not rated
Postoperative: Anatomic Repair		
Routine post–operative evaluation (within 30 days)	A (9)	M (5)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)	M (5)
Routine surveillance (3–6 months) within a year following repair in an asymptomatic patient with no or mild sequelae	A (9)	Not rated
Routine surveillance (1–2 years) after the first year following repair in an asymptomatic patient with no or mild sequelae	A (9)	Not rated
Routine surveillance (6–12 months) in a patient with valvular or ventricular dysfunction, right or left ventricular outflow tract obstruction, or presence of a right ventricle to pulmonary artery (RV-to-PA) conduit	A (9)	Not rated
Routine surveillance (3–5 years) in an asymptomatic patient	Not rated	Not rated

Routine surveillance (3–12 months) in a patient with heart failure symptoms	A (9)	Not rated
Postoperative: Physiological Repair With Ventricular septal defect (VSD) Closure and/or Left ventricle to Pulmonary artery (LV-to-PA) Conduit		
Routine postoperative evaluation (within 30 days)	A (9)	Not rated
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)	Not rated
Routine surveillance (3–6 months) within a year following repair in an asymptomatic patient with no or mild sequelae	A (9)	Not rated
Routine surveillance (1–2 years) in an asymptomatic patient with no or mild sequelae	A (9)	Not rated
Routine surveillance (3–5 years) in an asymptomatic patient with no or mild sequelae	A (9)	Not rated
Routine surveillance (3–12 months) in a patient with ≥ moderate systemic AV valve regurgitation, systemic RV dysfunction, and/or LV-to-PA conduit dysfunction	A (9)	Not rated
Routine surveillance (3–12 months) in a patient with heart failure symptoms	A (9)	Not rated

Table 18: Congenital Heart Disease (CHD), Truncus Arteriosus

Unrepaired	TTE
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Evaluation prior to planned repair	A (9)
Postoperative	
Routine postprocedural evaluation (within 30 days)	A (9)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)
Routine surveillance (1–3 months) within the first year following repair in an asymptomatic patient	A (9)
Routine surveillance (6–12 months) after the first year following repair in an asymptomatic child or adult with no or mild sequelae	A (9)
Routine surveillance (3–5 years) in an asymptomatic child or adult with no or mild sequelae	Not rated
Routine surveillance (3–6 months) in an asymptomatic child or adult with ≥ moderate truncal stenosis and/or regurgitation	A (9)
Routine surveillance (1–2 years) in an asymptomatic child or adult with ≥ moderate truncal stenosis and/or regurgitation	Not rated
Routine surveillance (3–12 months) in a patient with known residual VSD, presence of an right ventricle to pulmonary artery RV-to-PA conduit, or branch pulmonary artery obstruction	A (9)
Routine surveillance (3–12 months) in a patient with heart failure symptoms	A (9)

Table 19: Congenital Heart Disease (CHD), Single-Ventricle Heart Disease

Unrepaired	TTE	TTE with contrast

Routine surveillance (1–4 weeks) in a patient with balanced systemic and pulmonary circulation not requiring neonatal surgery	A (9)	Not rated
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)	Not rated
Evaluation prior to planned surgical palliation	A (9)	Not rated
Postprocedural: Surgical and/or Catheter-Based (Stage 1 Palliation)		
Routine post-procedural evaluation (within 30 days)	A (9)	Not rated
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)	Not rated
Routine surveillance (1–4 weeks) in an asymptomatic infant	A (9)	Not rated
Evaluation prior to planned stage 2 palliation	A (9)	Not rated
Postoperative: Stage 2 Palliation		
Routine postoperative evaluation (within 30 days)	A (9)	Not rated
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)	M (6)
Routine surveillance (1–6 months) in an asymptomatic infant or child	A (9)	Not rated
Routine surveillance (1–2 years) in an asymptomatic adult	A (9)	Not rated
Evaluation prior to planned stage 3 palliation	A (9)	M (5)
Postoperative: Stage 3 Palliation		
Routine postoperative evaluation (within 30 days)	A (9)	R (3)
Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)	M (6)
Routine surveillance (3–6 months) within a year following stage 3 palliation in an asymptomatic patient	A (9)	Not rated
Routine surveillance (6–12 months) after the first year following stage 3 palliation in an asymptomatic patient	A (9)	Not rated
Routine surveillance (3–5 years) in an asymptomatic patient	A (9)	Not rated
Routine surveillance (3–12 months) in a patient with valvular or ventricular dysfunction, arrhythmias, or other cardiac complications	A (9)	Not rated
Routine surveillance (3–12 months) in a patient with heart failure symptoms (Sachdeva, et al., 2020)	A (9)	Not rated

2024 AHA/ACC Guideline for the Management of Hypertrophic Cardiomyopathy (Ommen, et al. (2024)

The AHA/ACC Guideline for the Management of Hypertrophic Cardiomyopathy (Ommen, et al., 2024) addresses TTE in hypertrophic cardiomyopathy (HCM).

The Class (Strength) of Recommendation (COR) indicates the strength of recommendation, encompassing the estimated magnitude and certainty of benefit in proportion to risk.

Class I – Strong (is recommended)
Class 2a – Moderate (is reasonable)
Class 2b – Weak (may/might be reasonable)
Class 3 – No benefit (Moderate) (is not recommended)
Class 3 – Harm (Strong) (potentially harmful)

The Level (Quality) of Evidence (LOE) rates the quality of scientific evidence supporting the intervention on the basis of the type, quantity, and consistency of data from clinical trials and other sources.

Level A – High quality evidence from more than one randomized clinical trial, Meta-analyses of high-quality randomized clinical trials, One or more randomized clinical trials corroborated by high-quality registry.
Level B-R – Randomized. Moderate quality evidence from one or more randomized clinical trials, Meta-analyses of moderate-quality randomized clinical trials.
Level B-NR – Non-randomized. Moderate quality evidence from one or more well-designed, well-executed nonrandomized studies, observational studies, or registry studies, Meta-analyses of such studies.
Level C-LD – Limited data. Randomized or nonrandomized observational or registry studies with limitations of design or execution, Meta-analyses of such studies, Physiological or mechanistic studies of human subjects.
Level C-EO – Expert Opinion. Consensus expert opinion based on the clinical experience

Note: For children, the diagnostic criteria are confounded by needing to adjust for body size and growth. Ommen, et al. (2024), states "We propose that the diagnosis of HCM in children should therefore consider the circumstances of screening and the pretest probability of disease: a threshold of a z-score >2.5 may be appropriate to identify early HCM in asymptomatic children with no family history, whereas for children with a definitive family history or a positive genetic test, a threshold of a z-score >2 may suffice for early diagnosis."

2024 AHA/ACC Guideline for the Management of Hypertrophic Cardiomyopathy (HCM) (Ommen, et al., 2024)	Class of Recommendation (COR) and Level of Evidence (LOE)
6.2 Echocardiography	
In patients with suspected HCM, a transthoracic echocardiogram (TTE) is recommended in the initial evaluation.	COR:1; LOE: B-NR
In patients with HCM who have no change in clinical status or events, repeat TTE is recommended every 1 to 2 years to assess the degree of myocardial hypertrophy, dynamic left ventricular outflow tract obstruction (LVOTO), mitral regurgitation (MR), and myocardial function.	COR:1; LOE: B-NR (children) COR:1; LOE: C-LD (adults)
For patients with HCM who experience a change in clinical status or a new clinical event, repeat TTE is recommended.	COR:1; LOE: B-NR
For patients with HCM and resting peak left ventricular outflow tract (LVOT) gradient <50 mm Hg, a TTE with provocative maneuvers is recommended.	COR:1; LOE: B-NR
For symptomatic patients with HCM who do not have a resting or provocable outflow tract peak gradient ≥50 mm Hg on TTE, exercise TTE is recommended for the detection and quantification of dynamic LVOTO.	COR:1; LOE: B-NR
For patients with HCM who are undergoing surgical septal myectomy, intraoperative transesophageal echocardiogram (TEE) is recommended to assess mitral valve anatomy and function and adequacy of septal myectomy.	COR:1; LOE: B-NR
For patients with HCM who are undergoing alcohol septal ablation, TTE or intraoperative TEE with intracoronary ultrasound-enhancing contrast injection of the candidate's septal perforator(s) is recommended.	COR:1; LOE: B-NR
For patients with HCM who have undergone septal reduction therapy (SRT), TTE within 3 to 6 months after the procedure is recommended to evaluate the procedural results.	COR:1; LOE: B-NR

Screening: In first-degree relatives of patients with HCM, a TTE is recommended as part of initial family screening and periodic follow-up.	COR:1; LOE: B-NR
Screening: In individuals who are genotype-positive, phenotype-negative, echocardiography is recommended at periodic intervals depending on age (1-2 years in children and adolescents, 3-5 years in adults) and change in clinical status.	COR:1; LOE: B-NR
For patients with HCM, TEE can be useful if TTE is inconclusive in clinical decision-making regarding medical therapy, and in situations such as planning for myectomy, exclusion of subaortic membrane or MR secondary to structural abnormalities of the mitral valve apparatus, or in the assessment of the feasibility of alcohol septal ablation.	COR:2a; LOE: C-LD
For patients with HCM in whom the diagnosis of apical HCM, apical aneurysm, or atypical patterns of hypertrophy is inconclusive on TTE, the use of an intravenous ultrasound-enhancing agent is reasonable, particularly if other imaging modalities such as CMR are not readily available or are contraindicated.	COR:2a; LOE: B-NR
For asymptomatic patients with HCM who do not have a resting or provocable outflow tract peak gradient ≥50 mm Hg on standard TTE, exercise TTE is reasonable for the detection and quantification of dynamic LVOTO.	COR:2a; LOE: C-LD
6.7. Exercise Stress Testing	
For symptomatic patients with HCM who do not have resting or provocable outflow tract peak gradient ≥50 mm Hg on TTE, exercise TTE is recommended for the detection and quantification of dynamic LVOTO.	COR:1; LOE: B-NR
For asymptomatic patients with HCM who do not have a resting or provocable outflow tract peak gradient ≥50 mm Hg on standard TTE, exercise TTE is reasonable for the detection and quantification of dynamic LVOTO (Ommen, et al., 2024).	COR:2a; LOE: C-LD

American Academy of Pediatrics: The AAP Clinical Practice Guideline for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents (Wolraich, et al., 2019) states the following:

- Stimulant medications, on average, increase patient heart rate (HR) and blood pressure (BP) to a mild and clinically insignificant degree. However, because stimulants have been linked to more substantial increases in HR and BP in a subset of individuals (5%–15%), clinicians are encouraged to monitor these vital signs in patients receiving stimulant treatment. Although concerns have been raised about sudden cardiac death among children and adolescents using stimulant and medications, it is an extremely rare occurrence. In fact, stimulant medications have not been shown to increase the risk of sudden death beyond that observed in children who are not receiving stimulants. Nevertheless, before initiating therapy with stimulant medications, it is important to obtain the child or adolescent's history of specific cardiac symptoms in addition to the family history of sudden death, cardiovascular symptoms, Wolff-Parkinson-White syndrome, hypertrophic cardiomyopathy, and long QT syndrome. If any of these risk factors are

present, clinicians should obtain additional evaluation to ascertain and address potential safety concerns of stimulant medication use by the child or adolescent.

- Among nonstimulants, the risk of serious cardiovascular events is extremely low, as it is for stimulants. Clinicians are recommended to not only obtain the personal and family cardiac history, as detailed above, but also to perform additional evaluation if risk factors are present before starting nonstimulant medications (i.e., perform an electrocardiogram [ECG] and possibly refer to a pediatric cardiologist if the ECG is not normal).

American Heart Association: The AHA Pre-participation Cardiovascular Screening of Young Competitive Athletes: Policy Guidance (American Heart Association, 2025) notes that the AHA recommends the following with regards to preparticipation screening of young competitive athletes:

- Competitive athletic prescreening should happen annually and consist of a targeted personal history, family history and physical examination. This includes 14 key prescreening elements such as a history of elevated systemic blood pressure, knowledge of certain cardiac conditions in family members, and the presence of a heart murmur that are designed to identify, or at least raise the suspicion of, cardiovascular diseases that place certain athletes at risk. Those athletes with positive findings should be referred for further evaluation and testing
- At this time, the AHA does not recommend the use of tests such as a 12-lead ECG or echocardiogram in mandatory preparticipation screening programs. Instead, these tests should be used as follow-up if an initial screening raises suspicions about the presence of a cardiovascular disease.

American Academy of Pediatrics (AAP): The American Academy of Pediatrics, American Academy of Family Physicians, American College of Sports Medicine, American Medical Society for Sports Medicine, American Medical Society for Sports Medicine, American Orthopaedic Society for Sports Medicine, and American Osteopathic Academy of Sports Medicine published the Preparticipation Physical Evaluation (PPE), 5th Edition on May 1, 2019. The AAP notes although the PPE has been used for over 50 years, it lacks data on effectiveness and was not developed as an evidence-based process.

The AAP Policy Statement 'Sudden Death in the Young: Information for the Primary Care Provider' (Erickson, et al., 2021) states these Recommendations / Primary Take-away Points:

1. All children should be evaluated for conditions predisposing to sudden cardiac arrest (SCA) and sudden cardiac death (SCD) in the course of routine health care.
2. A thorough and detailed history, family history, and physical examination are necessary to begin assessing SCA and SCD risk.
3. The ECG should be the first test ordered when there is concern for SCA risk. The ECG should be interpreted by a physician trained in recognizing electrical heart disease (i.e., a pediatric cardiologist or pediatric electrophysiologist). To provide optimal care, ECGs should not be performed in isolation without clinical history; referral to a specialist should be considered.
4. Do not trust the computer interpretation of the ECG

U.S. Preventive Services Task Force (USPSTF): The USPSTF does not list any pediatric guidelines addressing preparticipation screening or TTE.

Myocardial Strain Imaging
Refer to Cigna Coverage Policy 0510 Transthoracic Echocardiography in Adults.

Health Equity Considerations

Health equity is the highest level of health for all people; health inequity is the avoidable difference in health status or distribution of health resources due to the social conditions in which people are born, grow, live, work, and age.

Social determinants of health are the conditions in the environment that affect a wide range of health, functioning, and quality of life outcomes and risks. Examples include safe housing, transportation, and neighborhoods; racism, discrimination and violence; education, job opportunities and income; access to nutritious foods and physical activity opportunities; access to clean air and water; and language and literacy skills.

Medicare Coverage Determinations

	Contractor	Determination Name/Number	Revision Effective Date
NCD	National	No Coverage Determination found	
LCD		numerous	

Note: Please review the current Medicare Policy for the most up-to-date information.
(NCD = National Coverage Determination; LCD = Local Coverage Determination)

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Revision Details

Type of Revision	Summary of Changes	Date
Annual Review	• Removed redundant sentence in policy statement related to HCM. No change to intent of coverage.	2/15/2026
Focused review	• No policy statement changes	10/15/2025
Annual Review	• Added policy statement for hypertrophic cardiomyopathy	2/15/2025