



CIGNA MEDICAL COVERAGE POLICY

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**Subject Transthoracic
Echocardiography**

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Coverage Policy

CHILD/ADOLESCENT

CIGNA covers transthoracic echocardiography as medically necessary in a child or adolescent for the diagnosis or assessment of congenital heart disease, acquired heart disease, noncardiac diseases that affect the heart, arrhythmias, and cardiac or cardiopulmonary transplantation assessment.

ADULT

General Evaluation of Cardiac Structure and Function:

CIGNA covers transthoracic echocardiography as medically necessary for ANY of the following indications:

- Symptoms or conditions of suspected cardiac etiology including but not limited to chest pain, shortness of breath, palpitations, transient ischemic attack (TIA), stroke, or peripheral embolic event
- Prior testing that is inconclusive but suggestive of structural cardiac abnormality including but not limited to chest X-ray, baseline scout images for stress echocardiogram, electrocardiogram (ECG), or cardiac biomarkers

- Frequent ventricular premature contractions (VPCs) or exercise-induced VPCs, sustained or nonsustained atrial fibrillation, supraventricular tachycardia (SVT), or ventricular tachycardia (VT)
- Clinical symptoms or signs consistent with a cardiac diagnosis known to cause lightheadedness/presyncope/syncope (including but not limited to aortic stenosis, hypertrophic cardiomyopathy, or heart failure)
- Syncope when there are no other symptoms or signs of cardiovascular disease
- Evaluation of suspected pulmonary hypertension including evaluation of right ventricular function and estimated pulmonary artery pressure
- Routine surveillance of known pulmonary hypertension without a reported change in clinical status or cardiac exam, at a maximum frequency of once per year
- Re-evaluation of known pulmonary hypertension with a reported change in clinical status or cardiac exam or to guide therapy
- Perioperative evaluation of cardiac structure and function prior to noncardiac solid organ transplantation

CIGNA does not cover transthoracic echocardiography for ANY of the following because it is considered not medically necessary (this list may not be all inclusive):

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

Cardiovascular Evaluation in an Acute Setting:

CIGNA covers transthoracic echocardiography as medically necessary for ANY of the following indications:

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

- Severe deceleration injury or chest trauma when valve injury, pericardial effusion, or cardiac injury is suspected
- Assessment of volume status in a critically ill individual

CIGNA does not cover transthoracic echocardiography for ANY of the following because it is considered not medically necessary (this list may not be all inclusive):

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

Valvular Function:

CIGNA covers transthoracic echocardiography as medically necessary for ANY of the following indications:

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

CIGNA does not cover transthoracic echocardiography for ANY of the following because it is considered not medically necessary (this list may not be all inclusive):

- Initial evaluation in the absence of symptoms or signs of valvular or structural heart disease
- Re-evaluation in a patient without valvular disease on prior echocardiogram and no reported change in clinical status or cardiac exam
- Routine surveillance of mild valvular stenosis in the absence of a reported change in clinical status or cardiac exam, more often than once every three years
- Routine surveillance of moderate or severe valvular stenosis in the absence of a reported change in clinical status or cardiac exam, performed more often than once per year
- Routine surveillance of trace valvular regurgitation
- Routine surveillance of mild valvular regurgitation in the absence of a reported change in clinical status or cardiac exam, performed more often than every three years
- Routine surveillance after valve implantation of a prosthetic valve in the absence of known or suspected valve dysfunction

- Transient fever without evidence of bacteremia or a new murmur, or transient bacteremia with a pathogen not typically associated with infective endocarditis and/or a documented nonendovascular source of infection
- Routine surveillance of uncomplicated infective endocarditis when no change in management is contemplated

Intracardiac and Extracardiac Structures and Chambers:

CIGNA covers transthoracic echocardiography as medically necessary for ANY of the following indications:

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

CIGNA does not cover transthoracic echocardiography for routine surveillance of a known small pericardial effusion with no reported change in clinical status or findings because it is considered not medically necessary.

Aortic Disease:

CIGNA covers transthoracic echocardiography as medically necessary for ANY of the following indications:

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

CIGNA does not cover transthoracic echocardiography for routine surveillance of known ascending aortic dilation or a history of aortic dissection in the absence of a change in clinical status or cardiac exam when findings would not change management or therapy because it is considered not medically necessary.

Hypertension, Heart Failure or Cardiomyopathy:

CIGNA covers transthoracic echocardiography as medically necessary for ANY of the following indications:

- Initial evaluation of known or suspected heart failure (HF) (systolic or diastolic)
- Re-evaluation of known HF (systolic or diastolic) to guide therapy, or with a reported change in clinical status or cardiac exam
- Routine surveillance of HF (systolic or diastolic) at a maximum frequency of once per year
- Re-evaluation of known hypertensive heart disease
- Initial evaluation or re-evaluation after revascularization and/or optimal medical therapy to determine candidacy for device therapy and/or to determine optimal choice of device
- Known implanted pacing device with symptoms possibly due to device complication or suboptimal pacing device settings

- To determine candidacy for ventricular assist device or for optimization of device settings
- Re-evaluation for signs/symptoms suggestive of ventricular assist device-related complications
- Monitoring for rejection in a cardiac transplant recipient
- Cardiac structure and function evaluation in a potential heart donor
- Initial evaluation of known or suspected cardiomyopathy (e.g., restrictive, infiltrative, dilated, hypertrophic, or genetic cardiomyopathy), or re-evaluation of a known cardiomyopathy with a reported change in clinical status or cardiac exam or to guide therapy
- Routine surveillance of known cardiomyopathy in the absence of a reported change in clinical status or cardiac exam, at a maximum frequency of once per year
- Screening evaluation for structure and function in a first-degree relative of an individual with an inherited cardiomyopathy
- Baseline and serial re-evaluations in an individual undergoing therapy with cardiotoxic agents
- Initial evaluation for cardiac resynchronization therapy (CRT) device optimization after implantation

CIGNA does not cover transthoracic echocardiography for ANY of the following because it is considered not medically necessary (this list may not be all inclusive):

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

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

CIGNA covers transthoracic echocardiography as medically necessary for ANY of the following indications:

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

CIGNA does not cover transthoracic echocardiography for ANY of the following because it is considered not medically necessary (this list may not be all inclusive):

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

CIGNA does not cover transthoracic echocardiography for any other indication, including but not limited to screening of athletes prior to participation in sports, because it is considered not medically necessary.

General Background

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

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

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

Literature Review

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

Specialty society guidelines do not recommend periodic performance of routine or surveillance TTE, however, that is not being performed due to the anticipation of changing clinical decision making or guiding therapy, TTE is not recommended for population screening, including screening of asymptomatic athletes prior to participation in sports. Numerous additional indications considered to be inappropriate for TTE as an imaging modality are detailed in the recommendations outlined below. (Libby: Braunwald's Heart Disease, 2007; Topol, Textbook of Cardiovascular Medicine, 2007):

Professional Societies/Organizations

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

The ACCF/ASE/AHA/ASNC/HFSA/HRS/SCAI/SCCM/SACT/SCMR guideline addresses appropriate use of adult transthoracic echocardiography (TTE), transesophageal echocardiography (TEE) and stress echocardiography. The report is a combination and revision of the 2007 TTE and TEE Appropriate use criteria and the 2008 appropriate use criteria for stress echo (Douglas et al., 2010 [in press]). Recommendations for transthoracic echocardiography are provided based on the following scoring method:

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

General Evaluation of Cardiac Structure and Function

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

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

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

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

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

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

Cardiovascular Evaluation in an Acute Setting:

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

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

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

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

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

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

Valvular Function:

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

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

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

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

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

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

Intracardiac and Extracardiac Structures and Chambers:

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

- Suspected cardiac mass (9)
- Suspected cardiovascular source of embolus (9)
- Suspected pericardial conditions (9)
- Re-evaluation of known pericardial effusion to guide management or therapy (8)
- Guidance of percutaneous noncoronary cardiac procedures including but not limited to pericardiocentesis, septal ablation, or right ventricular biopsy (9)

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

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

Aortic Disease:

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

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

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

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

Hypertension, Heart Failure or Cardiomyopathy:

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

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

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

- Re-evaluation of known hypertensive heart disease without a change in clinical status or cardiac exam (4)
- Re-evaluation of known HF (systolic or diastolic) with a change in clinical status or cardiac exam with a clear precipitating change in medication or diet (4)
- Routine surveillance (≥ 1 y) of HF (systolic or diastolic) when there is no change in clinical status or cardiac exam (6)
- Initial evaluation for CRT device optimization after implantation (6)
- Routine surveillance (≥ 1 y) of known cardiomyopathy without a change in clinical status or cardiac exam (5)

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

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

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

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

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

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

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

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

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

ACR Appropriateness Criteria[®]

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

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

Acute Chest Pain- Low Probability of Coronary Artery Disease: TTE with or without pharmacologic stress are frequently used to define abnormalities of ventricular wall motion as an indicator of cardiac disease. Echocardiography also readily demonstrates pericardial effusion, valve dysfunction, and cardiac thrombus.

Rating: 6, if cardiac etiology is suspected.

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

Rating: 4

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

Rating: 2; to assess right ventricle function after the diagnosis of pulmonary embolism.

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

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

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

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

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

Rating: 8

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

Rating: 7; (TTE with Doppler)

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

Rating: 9; (TTE with Doppler), recommended in combination with chest x-ray.

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

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

Medical history

Personal history

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

5. Elevated systemic blood pressure

Family history

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

Physical examination

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

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

Guidelines and Standards for Performance of a Pediatric Echocardiogram: A Report from the Task Force of the Pediatric Council of the American Society of Echocardiography

This guideline, published by Lai, et al. (2006), states that echocardiography has become the primary imaging tool in the diagnosis and assessment of congenital and acquired heart disease in infants, children, and adolescents. TTE is noninvasive, portable, and efficacious in providing detailed anatomic, hemodynamic, and physiologic information in pediatric patients. Children with suggested or known heart disease often require serial studies to evaluate the progression of heart disease, and may be indicated at routine intervals for monitoring valve function, growth of cardiovascular structures, ventricular function, and potential sequelae of medical or surgical intervention.

Congenital heart disease: Indications for echocardiography include a wide range of symptoms and signs, including cyanosis, failure to thrive, exercise induced chest pain or syncope, respiratory distress, murmurs, congestive heart failure, abnormal arterial pulses, or cardiomegaly. These may suggest several categories of structural congenital heart disease. Echocardiography may also be performed when the results of other tests, including fetal echocardiography, chest x-ray, electrocardiogram, and chromosomal analysis, suggest congenital heart disease.

Acquired heart disease and noncardiac diseases: An echocardiogram is indicated for evaluation of acquired heart diseases in children, including Kawasaki disease, infective endocarditis, cardiomyopathies, rheumatic fever and carditis, systemic lupus erythematosus, myocarditis, pericarditis, HIV infection, and exposure to cardiotoxic drugs. Echocardiography is also indicated for assessment of potential cardiac or cardiopulmonary transplant donors and recipients, and has recently been recommended for assessment of newly diagnosed systemic hypertension. Serial studies may be performed for children with noncardiac diseases that affect the heart, including pulmonary hypertension. The procedure may also be indicated for children with thromboembolic events, indwelling catheters, and sepsis, or superior vena cava syndrome.

Arrhythmias: Echocardiography may be performed to evaluate children with arrhythmias, since underlying structural cardiac disease (e.g., congenitally corrected transposition or Ebstein's anomaly of the tricuspid valve) may be present. These conditions may be associated with subtle clinical findings, and are best evaluated with echocardiography.

Summary

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

TTE is indicated for children and adolescents for diagnosis and assessment of congenital heart disease, acquired heart disease, noncardiac diseases that affect the heart, arrhythmias, and cardiac or cardiopulmonary transplant assessment.

Coding/Billing Information

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

Covered when medically necessary:

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
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
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-9-CM Diagnosis Codes	Description
017.90-017.96	Tuberculosis of other specified organs
032.82	Diphtheritic myocarditis
038.0-038.9	Septicemia
074.21	Coxsackie pericarditis
074.22	Coxsackie endocarditis
074.23	Coxsackie myocarditis
086.0	Chagas' disease with heart involvement
093.0	Aneurysm of aorta, specified as syphilitic
093.1	Syphilitic aortitis
093.20	Syphilitic endocarditis; valve, unspecified
093.21	Syphilitic endocarditis of mitral valve
093.22	Syphilitic endocarditis of aortic valve
093.23	Syphilitic endocarditis of tricuspid valve
093.24	Syphilitic endocarditis of pulmonary valve
093.81	Syphilitic pericarditis
093.82	Syphilitic myocarditis
098.83	Gonococcal pericarditis
098.84	Gonococcal endocarditis
098.85	Other gonococcal heart disease
112.81	Candidal endocarditis
115.03	Infection by Histoplasma capsulatum; pericarditis
115.04	Infection by Histoplasma capsulatum; endocarditis
115.13	Infection by Histoplasma duboisii; pericarditis
115.14	Infection by Histoplasma duboisii; endocarditis
130.3	Myocarditis due to toxoplasmosis
164.1	Malignant neoplasm of heart
212.7	Benign neoplasm of heart
238.8	Neoplasm of uncertain behavior of other and unspecified sites and tissues; other specified sites
279.11	DiGeorge's syndrome
324.0	Intracranial abscess
324.1	Intraspinal abscess
362.34	Transient arterial occlusion
391.0-391.9	Rheumatic fever with heart involvement
392.0-392.9	Rheumatic chorea
393	Chronic rheumatic pericarditis
394.0-394.9	Diseases of mitral valve
395.0-395.9	Diseases of the aortic valve
396.0-396.9	Diseases of mitral and aortic valves
397.0-397.9	Diseases of other endocardial structures
398.0-398.99	Other rheumatic heart disease
401.0	Essential hypertension, malignant
402.00-402.91	Hypertensive heart disease
404.00-404.93	Hypertensive heart and chronic kidney disease
410.00-410.92	Acute myocardial infarction

411.0-411.89	Other acute and subacute forms of ischemic heart disease
412	Old myocardial infarction
413.0-413.9	Angina pectoris
414.00-414.07	Coronary atherosclerosis-
414.10-414.19	Aneurysm and dissection of heart
414.8	Other specified forms of chronic ischemic heart disease
415.0-415.19	Acute pulmonary heart disease
416.0-416.9	Chronic pulmonary heart disease
417.0	Arteriovenous fistula of pulmonary vessels
420.0-420.99	Acute pericarditis
421.0-421.9	Acute and subacute endocarditis
422.0	Acute myocarditis in diseases classified elsewhere
422.90	Acute myocarditis, unspecified
422.91	Idiopathic myocarditis
422.92	Septic myocarditis
422.93	Toxic myocarditis
423.0-423.9	Other diseases of pericardium
424.0-424.99	Other diseases of endocardium
425.0-425.9	Cardiomyopathy
426.0	Atrioventricular block, complete
426.12	Mobitz (type) II atrioventricular block
426.13	Other second degree atrioventricular block
426.4	Right bundle branch block
426.50-426.54	Bundle branch block, other and unspecified
426.7	Anomalous atrioventricular excitation
426.81	Lown-Ganong-Levine syndrome
426.82	Long QT syndrome
427.0	Paroxysmal supraventricular tachycardia
427.1	Paroxysmal ventricular tachycardia
427.2	Paroxysmal tachycardia, unspecified
427.31	Atrial fibrillation
427.32	Atrial flutter
427.41	Ventricular fibrillation
427.42	Ventricular flutter
427.5	Cardiac arrest
427.61	Supraventricular premature beats
427.69	Other premature beats
428.0-428.9	Heart failure
429.0	Myocarditis, unspecified
429.1	Myocardial degeneration
429.3	Cardiomegaly
429.4	Functional disturbances following cardiac surgery
429.5	Rupture of chordae tendineae
429.6	Rupture of papillary muscle
429.71	Acquired cardiac septal defect
429.79	Other certain sequelae of myocardial infarction, not elsewhere classified
429.81-429.89	Other ill-defined heart diseases
434.00-434.91	Occlusion of cerebral arteries
435.0-435.9	Transient cerebral ischemia
437.7	Transient global amnesia
441.01	Dissection of aorta, thoracic
441.03	Dissection of aorta, thoracoabdominal
441.1	Thoracic aneurysm, ruptured
441.2	Thoracic aneurysm without mention of rupture

441.6	Thoracoabdominal aneurysm, ruptured
441.7	Thoracoabdominal aneurysm, without mention of rupture
444.0	Arterial embolism and thrombosis of abdominal aorta
444.1	Arterial embolism and thrombosis of thoracic aorta
444.21	Arterial embolism and thrombosis of upper extremity
444.22	Arterial embolism and thrombosis of lower extremity
444.81	Arterial embolism and thrombosis of iliac artery
444.89	Arterial embolism and thrombosis of other specified artery
444.9	Arterial embolism and thrombosis of unspecified artery
445.01	Atheroembolism of upper extremity
445.02	Atheroembolism of, lower extremity
445.81	Atheroembolism of other sites, kidney
445.89	Atheroembolism of other sites, other site
446.1	Acute febrile mucocutaneous lymph node syndrome (MLNS)
446.7	Takayasu's disease
449	Septic arterial embolism
458.0	Orthostatic hypotension
458.21	Hypotension of hemodialysis
458.29	Other iatrogenic hypotension
458.8	Other specified hypotension
458.9	Hypotension, unspecified
518.81	Acute respiratory failure
518.82	Other pulmonary insufficiency, not elsewhere classified
674.50-674.54	Peripartum cardiomyopathy
745.0-745.9	Bulbus cordis anomalies and anomalies of cardiac septal closure
746.00-746.9	Other congenital anomalies of heart
747.0-747.49	Other congenital anomalies of circulatory system
758.0	Down syndrome
758.6	Gonadal dysgenesis
759.3	Situs inversus
759.7	Multiple congenital anomalies, so described
759.82	Marfan syndrome
759.9	Congenital anomaly, unspecified
780.2	Syncope and collapse
780.4	Dizziness and giddiness
785.1	Palpitations
785.2	Undiagnosed cardiac murmurs
785.50-785.59	Shock, without mention of trauma
786.01	Hyperventilation
786.02	Orthopnea
786.03	Apnea
786.04	Cheyne-Stokes respiration
786.05	Shortness of breath
786.06	Tachypnea
786.09	Other dyspnea and respiratory abnormalities
786.50	Chest pain, unspecified
786.51	Precordial pain
786.59	Other chest pain
790.7	Bacteremia
793.2	Nonspecific abnormal findings on radiological and other examination of body structure, other intrathoracic organ
794.31	Abnormal electrocardiogram [ECG] [EKG]
799.01	Asphyxia
799.02	Hypoxemia
799.1	Respiratory arrest

807.4	Flail chest
861.01	Injury to heart and lung, heart, without mention of open wound into thorax; contusion
861.02	Injury to heart and lung, heart, without mention of open wound into thorax; laceration without penetration of heart chambers
861.03	Injury to heart and lung, heart, without mention of open wound into thorax; laceration with penetration of heart chambers
861.10	Injury to heart and lung, heart, with open wound into thorax; unspecified injury
861.11	Injury to heart and lung, heart, with open wound into thorax; contusion
861.12	Injury to heart and lung, heart, with open wound into thorax; laceration without penetration of heart chambers
861.13	Injury to heart and lung, heart, with open wound into thorax; laceration with penetration of heart chambers
862.8	Injury to other and unspecified intrathoracic organs; multiple and unspecified intrathoracic organs, without mention of open wound into cavity
901.0	Injury to blood vessels of thorax; thoracic aorta injury
901.2	Injury to blood vessels of thorax; superior vena cava
901.41	Injury to blood vessels of thorax; pulmonary artery
901.42	Injury to blood vessels of thorax; pulmonary vein
958.4	Traumatic shock
960.7	Poisoning by antibiotics; antineoplastic antibiotics
963.1	Poisoning by primarily systemic agents; antineoplastic and immunosuppressive drugs
995.20	Unspecified adverse effect of drug, medicinal and biological substance
995.29	Unspecified adverse effect of other drug, medicinal and biological substance
996.00	Mechanical complication of cardiac device, implant, and graft, unspecified device, implant, and graft
996.01	Mechanical complication of cardiac device, implant and graft; due to cardiac pacemaker
996.02	Mechanical complication of cardiac device, implant and graft, due to heart valve prosthesis
996.03	Mechanical complication of cardiac device, implant and graft; due to coronary bypass graft
996.04	Mechanical complication of cardiac device, implant and graft; due to automatic implantable cardiac defibrillator
996.09	Mechanical complication of cardiac device, implant and graft; other
996.1	Mechanical complication of other vascular device, implant, and graft
996.61	Infection and inflammatory reaction due to cardiac device, implant and graft
996.62	Infection and inflammatory reaction due to other vascular device, implant, and graft
996.63	Infection and inflammatory reaction due to nervous system device, implant, and graft
996.66	Infection and inflammatory reaction due to internal joint prosthesis
996.71	Other complications of internal (biological) (synthetic) prosthetic device, implant and graft; due to heart valve prosthesis
996.72	Other complications of internal (biological)(synthetic)prosthetic device, implant, and graft; due to other cardiac device, implant and graft
996.83	Complication of transplanted heart
997.1	Cardiac complications
999.31	Infection due to central venous catheter
V12.53	Sudden cardiac arrest
V12.54	Transient ischemic attack (TIA), and cerebral infarction without residual deficits
V42.1	Organ or tissue replaced by transplant; heart
V42.2	Organ or tissue replaced by transplant; heart valve
V43.21	Organ or tissue replaced by other means; heart assist device
V43.22	Organ or tissue replaced by other means; fully implantable artificial heart

V43.3	Organ or tissue replaced by other means; heart valve
V45.01	Other postprocedural status; cardiac pacemaker
V45.09	Other postprocedural status; other specified cardiac device
V58.11	Encounter for antineoplastic chemotherapy

Not Medically Necessary/Not Covered:

ICD-9-CM Diagnosis Codes	Description
272.4	Other and unspecified hyperlipidemia
401.1	Essential hypertension, benign
401.9	Essential hypertension, unspecified
417.1	Aneurysm of pulmonary artery
417.8	Other specified diseases of pulmonary circulation
417.9	Unspecified disease of pulmonary circulation
426.10	Atrioventricular block, unspecified
426.11	First degree atrioventricular block
426.2	Left bundle branch hemiblock
426.6	Other heart block
426.89	Other specified conduction disorders
426.9	Conduction disorder, unspecified
427.60	Premature beats, unspecified
427.81	Sinoatrial node dysfunction
427.89	Other specified cardiac dysrhythmias
429.9	Heart disease, unspecified
436	Acute, but ill-defined cerebrovascular disease
438.11	Aphasia due to late effects of cerebrovascular disease
438.12	Dysphasia due to late effects of cerebrovascular disease
438.20	Late effects of cerebrovascular disease, hemiplegia affecting unspecified side
438.21	Late effects of cerebrovascular disease, hemiplegia affecting dominant side
438.22	Late effects of cerebrovascular disease, hemiplegia affecting nondominant side
438.30	Late effects of cerebrovascular disease, monoplegia of upper limb affecting unspecified side
438.31	Late effects of cerebrovascular disease, monoplegia of upper limb affecting dominant side
438.32	Late effects of cerebrovascular disease, monoplegia of upper limb affecting nondominant side
438.40	Late effects of cerebrovascular disease, monoplegia of lower limb, affecting unspecified side
438.41	Late effects of cerebrovascular disease, monoplegia of lower limb, affecting dominant side
438.42	Late effects of cerebrovascular disease, monoplegia of lower limb, affecting nondominant side
438.6	Alterations of sensations due to late effects of cerebrovascular disease
438.7	Disturbance of vision due to late effects of cerebrovascular disease
438.81	Other late effects of cerebrovascular disease, apraxia
438.82	Other late effects of cerebrovascular disease, dysphagia
438.83	Other late effects of cerebrovascular disease, facial weakness
438.84	Other late effects of cerebrovascular disease, ataxia
438.85	Other late effects of cerebrovascular disease, vertigo
438.89	Other late effects of cerebrovascular disease, other-
444.0	Arterial embolism and thrombosis of abdominal aorta
453.2	Other venous embolism and thrombosis of vena cava
511.0	Pleurisy, without mention of effusion or current tuberculosis
511.1	Pleurisy, with effusion with mention of a bacterial cause other than tuberculosis

511.81	Malignant pleural effusion
511.89	Other specified forms of effusion, except tuberculosis
511.9	Unspecified pleural effusion
514	Pulmonary congestion and hypostasis
782.3	Edema
785.0	Tachycardia, unspecified
786.07	Wheezing
786.52	Painful respiration
793.1	Nonspecific abnormal findings on radiological and other examination of body structure, lung field
V15.9	Unspecified personal history presenting hazards to health
V17.41	Family history of sudden cardiac death (SCD)
V17.49	Family history of other cardiovascular diseases
V70.0	Routine general medical examination at a health care facility
V72.81	Pre-operative cardiovascular examination
V81.2	Special screening for cardiovascular, respiratory, and genitourinary disease; other and unspecified cardiovascular conditions
	All other codes

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Policy History

Pre-Merger Organizations	Last Review Date	Policy Number	Title
CIGNA HealthCare	N/A	N/A	N/A
Great-West Healthcare	N/A	N/A	N/A

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