

## A Closer Look: Documentation and Coding for Cardiac Conditions

Heart disease is a broad term used to describe a range of diseases that affect the heart. The various diseases that fall under the umbrella of heart disease include diseases of the heart and blood vessels. The term "heart disease" is often used interchangeably with "cardiovascular disease." Cardiovascular disease generally refers to conditions that involve narrowed or blocked blood vessels that can lead to a heart attack, angina or stroke. Other heart conditions, such as infections and conditions that affect the heart's muscle, valves or beating rhythm are also considered forms of heart disease. All types of heart disease share common traits, but they also have key differences. The goal of this article is to spend some time looking at documentation and diagnosis coding for conditions that fall under the cardiac conditions umbrella to achieve accurate and compliant practices.

### Dysrhythmias

**Cardiac dysrhythmia** (also known as **arrhythmia** or **irregular heartbeat**) is any of a group of conditions in which the electrical activity of the heart is irregular or is faster or slower than normal. The following are some common types of arrhythmia.

*Tachycardia* is an abnormally fast resting heart rate, usually exceeding 100 beats per minute. Supraventricular tachycardia (SVT) is a burst of rapid heartbeats occurring in the top portion of the ventricles. Paroxysmal means the arrhythmia begins and ends suddenly. If the documentation is unclear, the Physician may need to be queried for clarification. Ventricular tachycardia is an abnormal electrical impulse that originates in the ventricles. It may be documented as nonsustained (lasting for less than 30 seconds) or sustained. If not treated promptly, sustained ventricular tachycardia may progress into ventricular fibrillation. Both ICD-9-CM and ICD-10-CM diagnosis coding requires a fourth digit to identify the location of the tachycardia. Ventricular fibrillation is a serious cardiac rhythm disturbance. The lower chambers quiver and the heart can't pump any blood, causing cardiac arrest.

427.0	Paroxysmal supraventricular tachycardia	I47.1	Supraventricular tachycardia
427.1	Paroxysmal ventricular tachycardia	I47.2	Ventricular tachycardia
427.2	Paroxysmal tachycardia unspecified	I47.9	Paroxysmal tachycardia unspecified

*Fibrillation* is the rapid, irregular, and unsynchronized contraction of muscle fibers and usually exceeds 300 beats per minute. Atrial fibrillation is an irregular and often rapid heart rate that commonly causes poor blood to flow to the body. Episodes of atrial fibrillation can come and go, or may be chronic. Ventricular fibrillation is a rapid, chaotic electrical impulse causing the ventricles to fibrillate ineffectively and fail to pump blood.

*Flutter* is an abnormal rapid spasmodic and usually rhythmic motion or contraction. Atrial flutter is caused by one or more rapid circuits in the atrium. It is more organized and regular than atrial fibrillation and often progresses to atrial fibrillation. Ventricular flutter is rapid contractions of the ventricles of the heart. Without treatment, ventricular flutter may progress to ventricular fibrillation.

ICD-9-CM diagnosis coding requires a fourth digit to identify the location and a fifth digit to identify the type of dysrhythmia (1 – fibrillation or 2 – flutter). ICD-10-CM diagnosis coding requires a fourth digit to identify the status of the condition for atrial fibrillation or atrial flutter. Ventricular Fibrillation and Flutter falls under category I49.0 and the fifth digit is used to identify the type.

427.31	Atrial fibrillation	I48.0	Paroxysmal atrial fibrillation
427.41	Ventricular fibrillation	I48.1	Persistent atrial fibrillation
		I48.2	Chronic atrial fibrillation
		I49.01	Ventricular fibrillation
427.32	Atrial flutter	I48.3	Typical atrial flutter
427.42	Ventricular flutter	I48.4	Atypical atrial flutter
		I48.9x	Unspecified atrial fibrillation and flutter
		I49.02	Ventricular flutter

## Myocardial Infarction

A myocardial infarction (MI) or acute myocardial infarction (AMI) occurs when one or more coronary arteries that carry blood to the heart are blocked. Blockage of a coronary artery deprives the heart muscle of blood and oxygen, causing injury to the heart muscle. There are two types of acute MI:

1. Transmural infarcts are associated with a buildup of plaque in a major coronary artery. They generally extend through the whole thickness of the heart muscle.
2. Subendocardial infarcts involve the wall of the left ventricle, the ventricular septum, or the papillary muscles. They are thought to be caused by a narrowing of the coronary arteries.

Both ICD-9-CM and ICD-10-CM diagnosis coding systems classify MIs as either ST elevation myocardial infarctions (STEMI) or non-ST elevation myocardial infarctions (NSTEMI). STEMI and NSTEMI are in the ICD-10-CM code titles instead of just being inclusion terms as in ICD-9-CM. STEMI usually results in a blockage of a coronary artery, indicated by a dramatic rise in cardiac enzymes in the blood and, eventually, Q wave changes on a cardiogram. NSTEMI generally occurs with symptoms of unstable angina, which causes a smaller rise in the cardiac enzymes without a resulting shift in the Q wave of the cardiogram. In both ICD-9-CM and ICD-10-CM, if an NSTEMI evolves to STEMI, assign the STEMI code. If STEMI converts to NSTEMI due to thrombolytic therapy, it is still coded as STEMI.

### Documentation Requirements for Myocardial Infarction:

Location of the infarct

- Anterior wall
- Inferior wall
- Other

Onset of MI

- 8 weeks or less
- 4 weeks or less

Episode of care

- Initial or Subsequent episode of care

Event

- Initial and/or Subsequent

### Comparison between ICD-9-CM and ICD-10-CM

	ICD-9-CM	ICD-10-CM
<b>Status</b>	AMI- an MI that has occurred within 8 weeks or less	Does not make a distinction for an acute status
<b>Duration</b>	Stated date of onset is less than 8 weeks – is acute	MI specified as acute or with a stated duration of 4 weeks or less from onset
<b>Episode of care</b>	Fifth character defines initial vs. subsequent episode of care	Does not make a distinction for episode of care
<b>Event</b>	Does not make a distinction between initial event vs. secondary events	Category to report a subsequent MI occurring within 4 weeks of a previous AMI, regardless of site
<b>Old MI</b>	Listed in its own category; 412 – Old Myocardial Infarction	Movement into the I25 category – Chronic Ischemic Heart Disease

Complications following an MI are now combined into one code range (I23 certain current complications following ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction (within the 28 day period), with guidance that a code from this category must be used with a code from either the initial (I21) or subsequent (I22) MI category. The complication code (I23) should be listed first if that is the reason for the visit, but should be listed second if the complication occurs during the encounter for the MI.

ICD-9-CM diagnosis coding requires a fourth digit to identify the site of the AMI for category 410 – Acute Myocardial Infarction. A fifth digit specifies the episode of care (0 – unspecified, 1 – initial, 2 – subsequent).

ICD-10-CM diagnosis coding for AMI (category I21) requires a fourth digit to identify the site of the MI. Category I21 requires a fifth digit to specify the “artery” (Main, LAD, RCA, LC, Other Coronary Artery). Diagnosis coding for a Subsequent AMI (category I22) requires a fourth digit to identify the “site” of the AMI. There is no fifth digit for category I22, Subsequent STEMI and NSTEMI. A diagnosis code from category I22 must be used in conjunction with a code from category I21. The sequencing of the I22 and I21 codes depends on the circumstances of the encounter.

## Heart Failure

Heart failure is a condition in which the heart is not able to pump enough oxygen-rich blood to meet the body's needs. It typically develops after other conditions have weakened or damaged the heart. Heart failure is considered a chronic condition and tends to develop slowly over time. However, patients may experience a sudden onset of symptoms, which is known as acute heart failure. Congestive heart failure (CHF) means the heart does not pump as well as it should to meet the body's oxygen demands, often due to heart diseases such as cardiomyopathy or cardiovascular disease. CHF can result from either a reduced ability of the heart muscle to contract or from a mechanical problem that limits the ability of the heart's chambers to fill with blood. When weakened, the heart is unable to keep up with the demands placed upon it; blood returns to the heart faster than it can be pumped out so that it gets backed up or congested.

Documentation should indicate whether the heart failure is acute or chronic and the part of the heart that is affected. Left-sided heart failure is the most common form. It causes shortness of breath due to fluid and blood backing up in the patient's lungs. Right-sided heart failure may cause fluid and blood to back up into the patient's abdomen, legs, and feet, resulting in swelling. It often occurs with left-sided heart failure. Systolic heart failure is caused by a pumping problem that occurs when the left ventricle cannot contract vigorously. Diastolic heart failure is caused by a filling problem that occurs when the ventricle cannot relax or fully fill. Diastolic or systolic dysfunction with CHF is assigned to two codes from category 428 – Heart Failure. One code will show the diastolic or systolic heart failure and code 428.0 will show CHF<sup>1</sup>.

ICD-9-CM and ICD-10-CM diagnosis coding requires a fourth digit to identify the type of heart failure. Only systolic, diastolic and combined heart failure require a fifth digit to identify the status of the heart failure (0- Unspecified, 1 – Acute, 2 – Chronic, 3 – Acute on Chronic).

428.0	Congestive heart failure	I50.1	Left ventricular failure
428.1	Left heart failure	I50.2x	Systolic heart failure
428.2x	Systolic heart failure	I50.3x	Diastolic heart failure
428.3x	Diastolic heart failure	I50.4x	Combined heart failure
428.4x	Combined heart failure	I50.9	Heart failure, unspecified
428.9	Heart failure, unspecified		(includes CHF, NOS)

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<sup>1</sup>AHA Coding Clinic for ICD-9-CM

**Case Study #1**  
**Cardiac Dysrhythmia**

Patient: Jane Doe      DOS: 02/27/2013

Patient is a 62 year old woman, who is admitted with atrial fibrillation. She says that this morning she had been grocery shopping, when she felt rapid fluttering sensations in her chest. Her blood pressure is 145/74 mm Hg, and her heart rate is 175 bpm and irregular. Respirations: 20. Peripheral pulses are slightly diminished. Lung fields are clear to auscultation. Patient was placed on continuous telemetry monitoring, and a 12-lead Electrocardiography (ECG) is obtained. The ECG shows atrial fibrillation with a slow ventricular response. Patient states that she has had atrial fibrillation for several months. Initially, her heart rate had been controlled on oral antiarrhythmic medications. However, over the last month, she has been experiencing increasing episodes of palpitations and a rapid heart rate. A few days prior to her admission, her oral antiarrhythmic medication was changed.

Laboratory tests: vital signs are monitored every 4 hours. Her heart rate remains between 68 and 72 bpm on antiarrhythmic medication. Patients' complete blood count (CBC) comes back within normal limits. A review of her outpatient laboratory results shows that her international normalized ratio (INR) has been maintained between 2.6 and 3.1 for more than 6 weeks.

After counseling, the patient has elected to schedule an electrical cardioversion. Patient remains in normal sinus rhythm at an acceptable rate in the immediate period post cardioversion. Her blood pressure is stable. She is discharged on a low-dose oral antiarrhythmic and warfarin.

Electronically signed by: Jane Smith, MD on 3/1/2013

**Answer:**

ICD-9-CM	ICD-10-CM
427.31 Atrial Fibrillation	I48.0 Paroxysmal Atrial Fibrillation
V58.61 Long term use of anticoagulants	Z79.01 Long term use of anticoagulants

**Case Study #2**  
**Acute Myocardial Infarction**

CHIEF COMPLAINT:  
Chest pain

HISTORY OF PRESENT ILLNESS:

The patient is a 52-year-old white male, diabetic with a history of CAD who presents with a chief complaint of "chest pain" that started yesterday evening and has been somewhat intermittent and has increased in severity. He describes the pain as 7 out of 10, sharp and heavy, radiating to his neck & left arm. Patient has some shortness of breath and diaphoresis; however, he states that he has had nausea and vomiting throughout the night. He denies any fever or chills and admits prior episodes of similar pain prior to his PTCA in 1995. Patient states that he took 3 nitroglycerin tablets sublingually over the past hour, which has partially relieved his pain.

Denies history of recent surgery, head trauma, recent stroke, abnormal bleeding such as blood in urine or stool or nosebleed.

REVIEW OF SYSTEMS:

All other systems reviewed are negative.

PAST MEDICAL HISTORY:

DM type II, HTN, CAD, A Fib, S/P PTCA in 1999 by Dr. Jones.

SOCIAL HISTORY: Denies alcohol or drugs; smokes two packs of cigarettes per day.

FAMILY HISTORY: Positive for coronary artery disease (father and brother).

MEDICATIONS: Aspirin 81 milligrams QDay. Humulin N. insulin 50 units in a.m. HCTZ 50 mg QDay. Nitroglycerin 1/150 sublingually PRN chest pain.

ALLERGIES: Penicillin.

**PHYSICAL EXAM**

**GENERAL:** The patient is moderately obese but he is otherwise well developed and well nourished. He appears in moderate discomfort but there is no evidence of distress. He is alert and oriented to other people place and circumstance. There is no evidence of respiratory distress; however, the patient ambulates without gait abnormality or difficulty.

**HEENT:** Normocephalic/atraumatic head. Pupils are 2.5 mm, equal round and react to light bilaterally. Extra-ocular muscles are intact bilaterally. External auditory canals are clear bilaterally. Tympanic membranes are clear and intact bilaterally. Neck: No JVD. Neck is supple. There is free range of motion & no tenderness, thyromegaly or lymphadenopathy noted. Pharynx: Clear, no erythema, exudates or tonsillar enlargement.

**CHEST:** No chest wall tenderness to palpation. Lungs: Clear to auscultation bilaterally. Heart: irregularly-irregular rate and rhythm no murmurs gallops or rubs. Normal PMI. Abdomen: Soft, non-distended. No tenderness noted. No CVAT. Skin: Warm, diaphoretic, mucous membranes moist, normal turgor, no rash noted.

**EXTREMITIES:** No gross visible deformity, free range of motion. No edema or cyanosis. No calf/ thigh tenderness or swelling.

**PROCEDURES:** TPA per 90 minute protocol & IV nitroglycerin

**DIAGNOSTIC STUDIES:**

CBC: WBC 14.2, hematocrit 33.5, platelets 316, Chem 7: Na 142, potassium 4.5, chloride 102, CO2 22.6, BUN 15, creatinine 1.2, glucose 186 Serum Troponin I: 2.5, Chest x-ray: Lung fields clear. No cardiomegaly or other acute findings. EKG: Atrial fibrillation with Ventricular rate of 65. Acute inferior ischemic changes noted i.e. ST elevation III & aVF Cardiac monitor: Sinus rhythm-atrial of fibrillation rate 60s-70s.

**IMPRESSION:** Acute Inferior Myocardial Infarction, IDDM, CAD

**PLAN:** Patient admitted to Coronary Care Unit

Electronically signed by: James Smith, MD on 2/26/2013

**Answer:**

ICD-9-CM	ICD-10-CM
410.41 Acute myocardial infarction of other inferior wall, initial episode of care	I21.19 ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall
427.31 Atrial Fibrillation	I48.91 Unspecified atrial fibrillation
250.00 Diabetes Mellitus	E11.9 Type 2 diabetes mellitus without complications
V58.67 Long term (current) use of insulin	Z79.4 Long term (current) use of insulin
305.1 Tobacco use disorder	Z72.0 Tobacco use

**Case Study #3  
Heart Failure**

Date of consultation: 11/25/09

Consultant: Dr. Black

Referring: Dr. Brown

INDICATIONS: CHF, acute on chronic.

**HISTORY:** The patient is an 84-year-old male previously living in Dallas. He now lives with family. Patient ran out of his Lasix 4 days ago and noticed increasing shortness of breath and lower extremity edema. He does have a history of atrial fibrillation and is on Coumadin therapy. His cardiologist in Dallas stated he has normal LV systolic function, a stiff left ventricle and has CAD. He denies complaints of chest discomfort. He is feeling better with improved respiratory status.

MEDICATION: Toprol. Coumadin. Vicodin. Lasix, ran out 4 days ago.

PMH/PSH: History of atrial fibrillation.

SH: Stopped smoking in the 1970s. No alcohol.

FH: Noncontributory.

ROS: 10 point review of systems reviewed and negative.

PE: VSS: BP 172/98. Heart rate 98. Respirations 18. Temperature 98.7. GEN: He is an elderly gentleman, very hard of hearing, has a hearing aid. HEAD: Normocephalic, atraumatic. NECK: Supple without JVD, without bruits. PULM: Diminished breath sounds bilaterally, left greater than right, rates are not auscultated. CV: Irregularly irregular grade 1/6 systolic murmur left sternal border. GASTRO: Normal abdominal bowel sounds, soft. EXTREMITIES: With trace to 1+ pre-tibia edema bilaterally.

LAB: Sodium of 138, potassium of 2.6, chloride of 103, CO2 of 26, BUN of 20, creatinine of 0.6, INR 2.1  
CBC: WBC 7.5, H/H 13.4 and 40.8, platelet count of 213.

CHEST X-RAY: AP portable single view per Dr. Navy. There is no full inspiratory effort; heart size is normal. Cephalization of the pulmonary vasculature interstitial markings increased worrisome for pulmonary vascular congestion with interstitial edema. The above consistent with mild CHF. EKG 11/25/09 at 5:21 in atrial fibrillation with RVR at 102, no ST wave changes, PVC noted, low voltage limb leads.

**IMPRESSION:**

Congestive heart failure, acute on chronic. He has a history of diastolic dysfunction.

Atrial fibrillation, chronic on Coumadin therapy. INR therapeutic. Rate needs to be better controlled.

RECOMMENDATIONS: Continue the patient's Coumadin, medication for rate control. Continue IV Lasix. An echocardiogram has been ordered to re-evaluate ventricular and valvular function. Thyroid has been ordered. Will also obtain a digoxin level. The patient does not know that he is on digoxin but would like to evaluate as such. Further evaluation and treatment as hospital course mandates.

Electronically signed by: Dr. Black on 11/25/09

**Answer:**

ICD-9-CM		ICD-10-CM	
428.23	Heart failure, acute on chronic	I50.33	Acute on chronic (congestive) heart failure
428.31	Atrial fibrillation	I48.91	Unspecified atrial fibrillation
414.01	Coronary atherosclerosis of Native coronary artery	I25.11	Atherosclerotic heart disease of native coronary artery w/ angina
V58.61	Long term use of anticoagulants	Z79.01	Long term use of anticoagulants

This material is for educational purposes only and is not intended to dictate what codes should be used in submitting claims. Health care providers are instructed to use the most appropriate codes based upon the medical record documentation and coding guidelines.