



## CHAPTER 9

### DISEASES OF THE CIRCULATORY SYSTEM (I00-I99)

The type of hypertension is not used as an axis.

Acute MI codes changed from 8 weeks in ICD-9 to 4 weeks or less in ICD-10.

A code from category I22 must be used in conjunction with a code from category I21.

Category I22 is never used alone.

The sequencing of the I22 and I21 codes depends on the circumstances of the encounter.

#### HYPERTENSION WITH HEART DISEASE

Heart conditions classified to I50.- or I51.4-I51.9, are assigned to a code from category I11, Hypertensive heart disease, when a causal relationship is stated (due to hypertension) or implied (hypertensive).

Use an additional code from category I50, Heart failure, to identify the type of heart failure in those patients with heart failure.

The same heart conditions (I50.-, I51.4-I51.9) with hypertension, but without a stated causal relationship, are coded separately.

Sequence according to the circumstances of the admission/encounter.

#### HYPERTENSIVE CHRONIC KIDNEY DISEASE

Assign codes from category I12, Hypertensive chronic kidney disease, when both hypertension and a condition classifiable to category N18, Chronic kidney disease (CKD), are present.

Unlike hypertension with heart disease, ICD-10-CM presumes a cause-and-effect relationship and classifies chronic kidney disease with hypertension as hypertensive chronic kidney disease.

The appropriate code from category N18 should be used as a secondary code with a code from category I12 to identify the stage of chronic kidney disease.

See section I.C.14. Chronic kidney disease

If a patient has hypertensive chronic kidney disease and acute renal failure, an additional code for the acute renal failure is required.

#### HYPERTENSIVE HEART AND CHRONIC KIDNEY DISEASE

Assign codes from combination category I13, Hypertensive heart and chronic kidney disease, when both hypertensive kidney disease and hypertensive heart disease are stated in the diagnosis.

Assume a relationship between the hypertension and the chronic kidney disease, whether or not the condition is so designated.

If heart failure is present, assign an additional code from category I50 to identify the type of heart failure.

The appropriate code from N18, Chronic kidney disease, should be used as a secondary code with a code from category I13 to identify the stage of chronic kidney disease.

See section I.C.14. Chronic kidney disease

The codes in category I13, Hypertensive heart and chronic kidney disease, are combination codes that include hypertension, heart disease and chronic kidney disease.

The includes note at I13 specifies that the conditions included at I11 and I12 are included together in I13.

If a patient has hypertension, heart disease and chronic kidney disease then a code from I13 should be used, not individual codes for hypertension, heart disease and chronic kidney disease, or codes from I11 or I12.

For patients with both acute renal failure and chronic kidney disease an additional code for acute renal failure is required.

### HYPERTENSIVE CEREBROVASCULAR DISEASE

For hypertensive cerebrovascular disease, first assign the appropriate code from categories I60-I69, followed by the appropriate hypertension code.

### HYPERTENSIVE RETINOPATHY

Subcategory H35.0, Background retinopathy and retinal vascular changes, should be used with a code from category I10-I15, Hypertensive disease to include the systemic hypertension.

Sequencing is based on the reason for admission/encounter.

### HYPERTENSION, SECONDARY

Secondary hypertension is due to an underlying condition.

Two codes are required:

- ❖ one to identify the underlying etiology
- ❖ one from category I15 to identify the hypertension.

Sequencing of codes is determined by the reason for admission/encounter.

### HYPERTENSION, TRANSIENT

Assign code R03.0, Elevated blood pressure reading without diagnosis of hypertension, unless patient has an established diagnosis of hypertension.

Assign code O13.-, Gestational [pregnancy-induced] hypertension without significant proteinuria, or O14.-, Pre-eclampsia, for transient hypertension of pregnancy.

### HYPERTENSION, CONTROLLED

This diagnostic statement usually refers to an existing state of hypertension under control by therapy.

Assign the appropriate code from categories I10-I15, Hypertensive diseases.

## HYPERTENSION, UNCONTROLLED

Uncontrolled hypertension may refer to untreated hypertension or hypertension not responding to current therapeutic regimen.

In either case, assign the appropriate code from categories I10-I15, Hypertensive Diseases.

### CODING EXAMPLES

1. The patient is seen today for follow-up for his benign hypertension. What is the correct diagnosis code?

**Answer:** I10 Hypertension, hypertensive, (accelerated) (benign) (essential) (idiopathic) (malignant) (systemic)

**Rationale:** ICD-10-CM does not differentiate between benign and malignant hypertension.

2. A patient is admitted to the hospital with acute diastolic heart failure due to hypertension with end stage renal disease (ESRD).

**Answer:** I13.2 Hypertensive heart and renal disease with both heart failure and chronic renal failure  
I50.31 Acute diastolic (congestive) heart failure  
N18.0 End-stage renal disease

**Rationale:** Because the guidelines specify reporting both the acute heart failure and the acute renal failure in addition to the hypertensive heart and renal disease, all three codes would be reported, according to ICD-9-CM and ICD-10-CM guidelines.

## ATHEROSCLEROTIC HEART DISEASE WITH ANGINA PECTORIS

ICD-10-CM has combination codes for atherosclerotic heart disease with angina pectoris.

The subcategories for these codes are I25.11, Atherosclerotic heart disease of native coronary artery with angina pectoris and I25.7, Atherosclerosis of coronary artery bypass graft(s) and coronary artery of transplanted heart with angina pectoris.

When using one of these combination codes it is not necessary to use an additional code for angina pectoris.

A causal relationship can be assumed in a patient with both atherosclerosis and angina pectoris, unless the documentation indicates the angina is due to something other than the atherosclerosis.

If a patient with coronary artery disease is admitted due to an acute myocardial infarction (AMI), the AMI should be sequenced before the coronary artery disease.

**See section I.C.(. Acute myocardial infarction (AMI)**

### CODING EXAMPLES

1. What is the correct diagnosis coding for a patient with coronary artery disease (CAD) with angina? The patient has no previous history of CABG.

**Answer:** I25.119 Disease, diseased, coronary (artery) – see Disease, heart, ischemic, atherosclerotic (of), with angina pectoris – see Arteriosclerosis, coronary (artery), native vessel, with angina pectoris.

**Rationale:** ICD-10-CM has combination codes for atherosclerotic heart disease with angina pectoris. There are subcategories for disease of the native artery, coronary artery bypass graft(s), and coronary artery of transplanted heart. It is not necessary to use an additional code for angina pectoris when using these combination codes.

2. This 63-year-old male is being seen for treatment of his unstable angina. This gentleman has a history of 2-vessel coronary artery bypass approximately 18 months ago. A recent cardiac catheterization shows continued evidence of coronary atherosclerosis but both of the bypass grafts are patent. Also, of note, is that this patient suffered a cerebrovascular infarction three years ago which resulted in right-side (dominant) hemiparesis. What is the correct diagnosis code(s)?

**Answer:** I25.110 Angina (attack) (cardiac) (chest) (heart) (pectoris) (syndrome) (vasomotor), with atherosclerotic heart disease – see Arteriosclerosis, coronary (artery), native vessel with angina pectoris, unstable  
I69.351 Hemiparesis – see Hemiplegia, following, cerebrovascular disease, cerebral infarction  
Z95.1 Status (post), aortocoronary bypass

**Rationale:** The coronary artery disease of the native vessel is coded because the previous cardiac catheterization showed that the bypass grafts are patent. Also, per the Official Coding Guidelines, “ICD-10-CM has combination codes for atherosclerotic heart disease with angina pectoris. When using one of these combination codes it is not necessary to use an additional code for angina pectoris. A causal relationship can be assumed in a patient with both atherosclerosis and angina pectoris, unless the documentation indicates the angina is due to something other than atherosclerosis.”

3. The patient is seen for evaluation of his continuing unstable angina. After significant evaluation, his symptoms were found to be due to atherosclerosis of his bypassed graft. This is an autologous arterial graft. Final diagnosis: CAD of bypass graft with unstable angina and hypertensive congestive heart failure. The patient will be scheduled for surgery. What is the correct diagnosis code(s)?

**Answer:** I25.720 Atherosclerosis - see also Arteriosclerosis, coronary artery, with angina pectoris, - see Arteriosclerosis, coronary (artery), bypass graft, autologous artery, with, angina pectoris, unstable  
I11.0 Failure, failed, heart (acute) (senile) (sudden), hypertensive – see Hypertension, heart (disease) (conditions in I51.4-I51.9 due to hypertension), with, heart failure (congestive)  
I50.9 Failure, failed, heart (acute) (senile) (sudden) congestive (compensated)

**Rationale:** ICD-10-CM differentiates between the different types of bypassed coronary arteries, including native arteries, autologous vein, autologous artery, and nonautologous graft material. Hypertensive congestive heart failure requires two diagnosis codes to correctly identify the condition. The note at code I11.0 states “Use additional code to identify type of heart failure (I50.-).”

### INTRAOPERATIVE AND POSTPROCEDURAL CEREBROVASCULAR ACCIDENT

Medical record documentation should clearly specify the cause- and – effect relationship between the medical intervention and the cerebrovascular accident in order to assign a code for intraoperative or postprocedural cerebrovascular accident.

Proper code assignment depends on whether it was an infarction or hemorrhage and whether it occurred intraoperatively or postoperatively.

If it was a cerebral hemorrhage, code assignment depends on the type of procedure performed.

## SEQUELAE OF CEREBROVASCULAR DISEASE

Category I69, Sequelae of Cerebrovascular disease

Category I69 is used to indicate conditions classifiable to categories I60-I67 as the causes of sequelae (neurologic deficits), themselves classified elsewhere.

These “late effects” include neurologic deficits that persist after initial onset of conditions classifiable to categories I60-I67.

The neurologic deficits caused by cerebrovascular disease may be present from the onset or may arise at anytime after the onset of the condition classifiable to categories I60-I67.

Codes from category I69, Sequelae of cerebrovascular disease, that specify hemiplegia, hemiparesis and monoplegia identify whether the dominant or nondominant side is affected.

Should the affected side be documented, but not specified as dominant or nondominant, and the classification system does not indicate a default , code selection is as follows:

- ❖ For ambidextrous patients, the default should be dominant.
- ❖ If the left side is affected, the default is non-dominant.
- ❖ If the right side is affected, the default is dominant.

Codes from category I69 with codes from I60-I67

Codes from category I69 may be assigned on a health care record with codes from I60-I67, if the patient has a current cerebrovascular disease and deficits from an old cerebrovascular disease.

Codes from category I69 and Personal history of transient ischemia attack (TIA) and cerebral infarction (Z86.73)

Codes from category I69 should not be assigned if the patient does not have neurologic deficits.

**See section I.C.21.4 History (of) for use of personal history codes**

## CODING EXAMPLES

2. This pleasant gentleman is seen in the clinic to follow up from a previous stroke. He suffered a cerebrovascular infarction 6 months ago which left him with aphasia and left-sided hemiparesis on his nondominant side. The patient will be referred to outpatient rehabilitation for speech, physical and occupational therapy. What is the correct diagnosis code(s)?

**Answer:** I69.354 Hemiparesis – see Hemiplegia, following, cerebrovascular disease, stroke  
I69.320 Aphasia, following cerebrovascular disease, cerebral infarction

**Rationale:** Category I69 is used to indicate neurological deficits that persist after initial onset of conditions classifiable to categories I60-I67. The left is specified as the side of the hemiparesis. After reviewing the Index, it is necessary to select the correct code for subcategory I69.35 from the Tabular.

### ST ELEVATION MYOCARDIAL INFARCTION (STEMI) AND NON ST ELEVATION MYOCARDIAL INFARCTION (NSTEMI)

The ICD-10-CM codes for acute myocardial infarction (AMI) identify the site, such as anterolateral wall or true posterior wall.

Subcategories I21.0-I21.2 and code I21.3 are used for ST elevation myocardial infarction (STEMI).

Code I21.4, Non-ST elevation myocardial infarction (NSTEMI), is used for non ST myocardial infarction (NSTEMI) and nontransmural MIs.

If NSTEMI evolves to STEMI, assign the STEMI code.

If STEMI converts to NSTEMI due to thrombolytic therapy, it is still coded as STEMI.

For encounters occurring while the myocardial infarction is equal to, or less than, four weeks old, including transfers to another acute setting or a postacute setting, and the patient requires continued care for the myocardial infarction, codes from category I21 may continue to be reported.

For encounters after the four week time frame and the patient is still receiving care related to the myocardial infarction, the appropriate aftercare code should be assigned, rather than a code from I21.

For old or healed myocardial infarctions not requiring further care, code I25.2, Old myocardial infarction, may be assigned.

### ACUTE MYOCARDIAL INFARCTION, UNSPECIFIED

Code I21.3, ST elevation myocardial infarction (STEMI) of unspecified site, is the default for unspecified acute myocardial infarction.

If only STEMI or transmural MI without the site is documented, assign code I21.3.

### AMI DOCUMENTED AS NONTRANSMURAL OR SUBENDOCARDIAL BUT SITE PROVIDED

If an AMI is documented as nontransmural or subendocardial, but the site is provided, it is still coded as a subendocardial AMI.

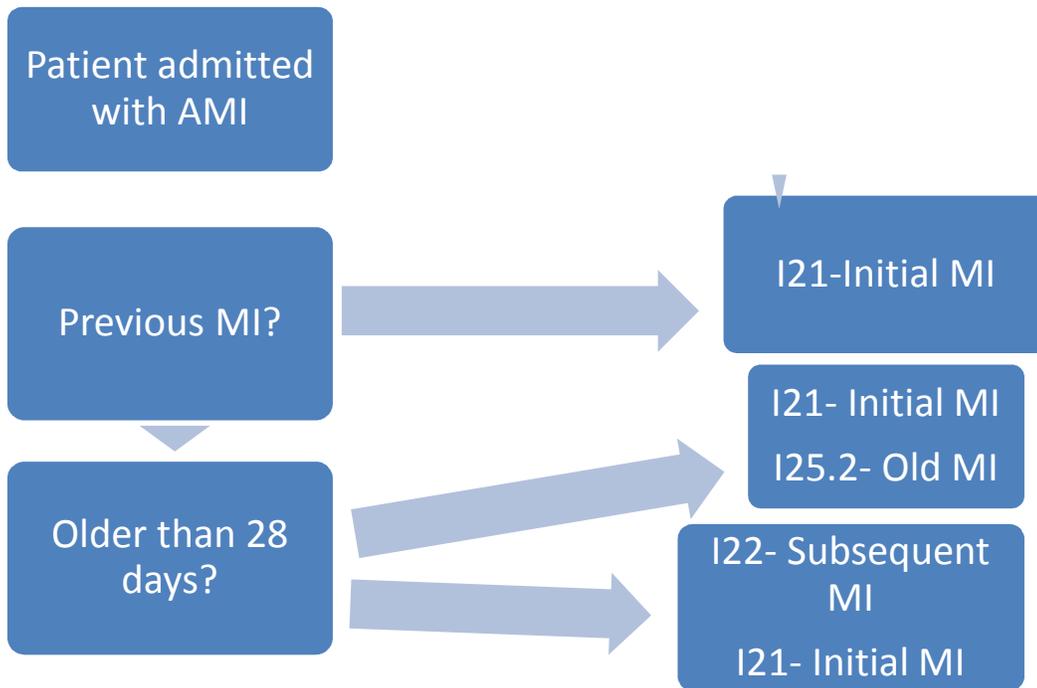
### SUBSEQUENT ACUTE MYOCARDIAL INFARCTION

A code from category I22, Subsequent ST elevation and non ST elevation myocardial Infarction (STEMI)(NSTEMI), is to be used when a patient who has suffered an AMI has a new AMI within the four week time frame of the initial AMI.

A 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.

## AMI SEQUENCING



## CODING EXAMPLES

1. This 54-year-old female is being treated for an acute non-ST anterior wall myocardial infarction which she suffered five days ago. She also has atrial fibrillation. What is the correct diagnosis code(s)?

**Answer:** I21.4 Infarct, Infarction, myocardium, myocardial (acute) (with stated duration of 4 weeks or less), non-ST elevation (NSTEMI)  
I48.0 Fibrillation, atrial or auricular (established)

**Rationale:** Per the Official Coding Guidelines, "If an AMI is documented as nontransmural or subendocardial, but the site is provided, it is still coded as a subendocardial AMI." The STEMI and NSTEMI are treated differently. Generally, the STEMI is caused by complete obstruction of the coronary artery, and causes damage that involved the full thickness of the heart muscle, while the NSTEMI is caused by a partial obstruction and the damage does not involve the full thickness of the heart wall.

2. The same patient from the above coding example presented to the emergency department two weeks later and was diagnosed with an acute inferior wall myocardial infarction. She is still being monitored following her initial heart attack two weeks earlier and continues to have atrial fibrillation. She will be transferred to a larger facility for cardiac catheterization and possible further intervention. What diagnosis codes are assigned?

**Answer:** I22.1 Infarct, Infarction, myocardium, myocardial (acute) (with stated duration of 4 weeks or less), subsequent (recurrent) (reinfarction), inferior (diaphragmatic) (inferolateral) (inferoposterior) (wall)

I21.4 Infarct, infarction, myocardium, myocardial (acute) (with stated duration of 4 weeks or less), non-ST elevation (NSTEMI)

I48.0 Fibrillation, atrial or auricular (established)

**Rationale:** The Official Coding Guidelines specifically address the sequencing of I22 and I21 and this is stated as: “The sequencing of the I22 and I21 codes depends on the circumstances of the encounter.”

3. This 62-year-old male patient was admitted to the hospital with progressive episodes of chest pain determined to be crescendo angina. The patient has no previous history of CABG. He had a myocardial infarction five years ago and was diagnosed with coronary artery disease and progressively has been having more frequent episodes of chest pain. During the hospital stay, he was given IV nitroglycerin and was subsequently placed on Cardizem for further treatment of his angina. He was scheduled for cardiac catheterization next week. No other complications arose during the hospitalization. What is the correct diagnosis code(s)?

**Answer:** I25.110 Angina (attack) (cardiac) (chest) (heart) (pectoris) (syndrome) (vasomotor), with atherosclerotic heart disease – see Arteriosclerosis, coronary (artery), native vessel with angina pectoris, unstable

I25.2 Infarct, infarction, myocardium, myocardial, healed or old

**Rationale:** Crescendo angina is included in unstable angina, see the Index, Angina, crescendo – see Angina, unstable.

4. The patient is being treated for a current inferolateral ST elevation myocardial infarction. This case is complicated by the development of a hemopericardium as a result of the infarction. What is the correct diagnosis code(s)?

**Answer:** I21.19 Infarct, infarction, myocardium, myocardial (acute) (with stated duration of 4 weeks or less), ST elevation (STEMI), inferior (diaphragmatic) (inferolateral) (inferoposterior) (wall), NEC  
I23.0 Hemopericardium, following acute myocardial infarction (current complication)

**Rationale:** The ICD-10-CM codes for acute myocardial infarction identify the site. Subcategory I21.1 is used for ST elevation myocardial infarction of the inferior wall. A code from category I23 must be used in conjunction with a code from category I21 or category I22. The I23 code should be sequenced after the I21 or I22 code if the complication of the MI occurs during the encounter for the MI.