Cardiology, Heart Failure, & Hypertension Coding

NC

Risk Adjustment Programs for
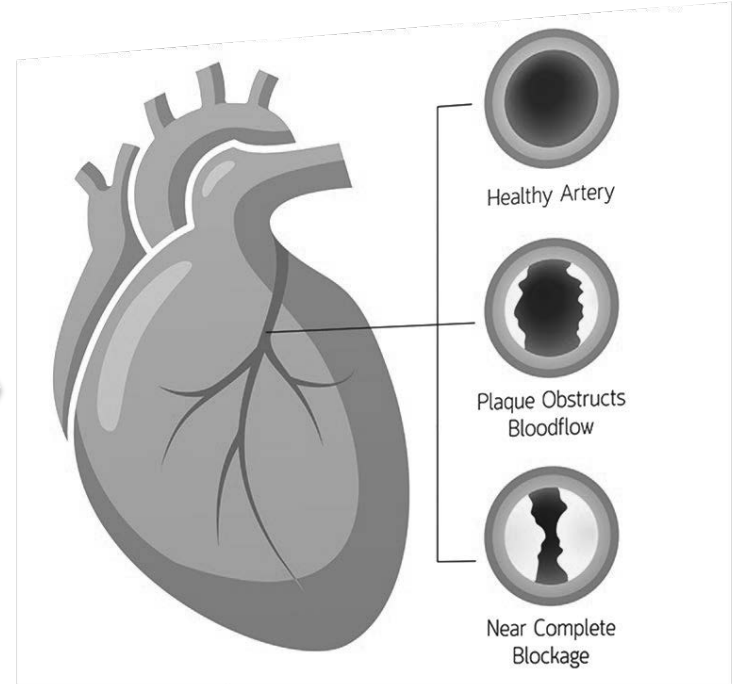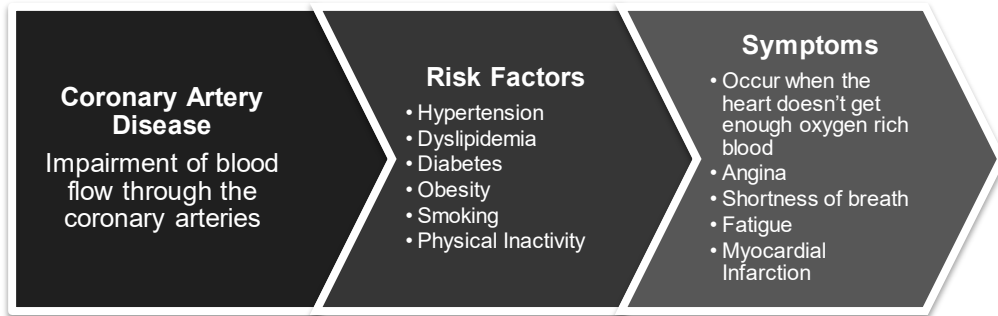Provider Engagement and Education

2023

Cardiovascular Coding

- Coronary Artery Disease
- Hypertension
- Unstable vs Stable Angina
- Acute Myocardial Infarction
- Heart Failure
  - Pulmonary Hypertension

Coronary Artery Disease

Cardiovascular Coding

Coronary Artery Disease

Impairment of blood flow through the coronary arteries

Risk Factors

- Hypertension
- Dyslipidemia
- Diabetes
- Obesity
- Smoking
- Physical Inactivity

Symptoms

- Occur when the heart doesn't get enough oxygen rich blood
- Angina
- Shortness of breath
- Fatigue
- Myocardial Infarction

Healthy Artery

Plaque Obstructs Bloodflow

Near Complete Blockage

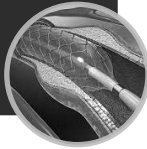# Cardiovascular Coding

Treatment of Coronary Artery Disease

- Antiplatelet drugs to prevent clot formation
- Statins to lower LDL cholesterol levels
- Beta-blockers to reduce symptoms of angina

Medical therapy

- Balloon Angioplasty
- Drug-Eluting Stent

Percutaneous coronary intervention

- For acute thrombosis, Tissue plasminogen activator (TPA)

Fibrinolytic drugs

- CABG uses arteries (e.g., internal mammary, radial, or saphenous veins) to bypass diseased segments of the coronary arteries.

Coronary artery bypass grafting (CABG)

Hypertension

Cardiovascular Coding

Hypertension

Definition: *A sustained elevation of resting systolic blood pressure (≥ 130 mm Hg), diastolic blood pressure (≥ 80 mm Hg), or both.*

Hypertension

Primary
•Unknown Cause

Secondary
•Known Cause

Signs & Symptoms

Most patients are asymptomatic until complications develop

Symptoms may include- Dizziness, facial flushing, headache, & shortness of breath.

Treatment

Lifestyle Modifications

Medications

Cardiovascular Coding

Hypertension-Coding Guidelines

Hypertension has a causal relationship with Heart Disease

Hypertension Diagnosis

+

One of these heart conditions:

- I50.-Heart failure
- I51.4-Myocarditis, unspecified
- I51.5-Myocardial degeneration
- I51.7-Cardiomegaly
- I51.89-Other ill-defined heart diseases
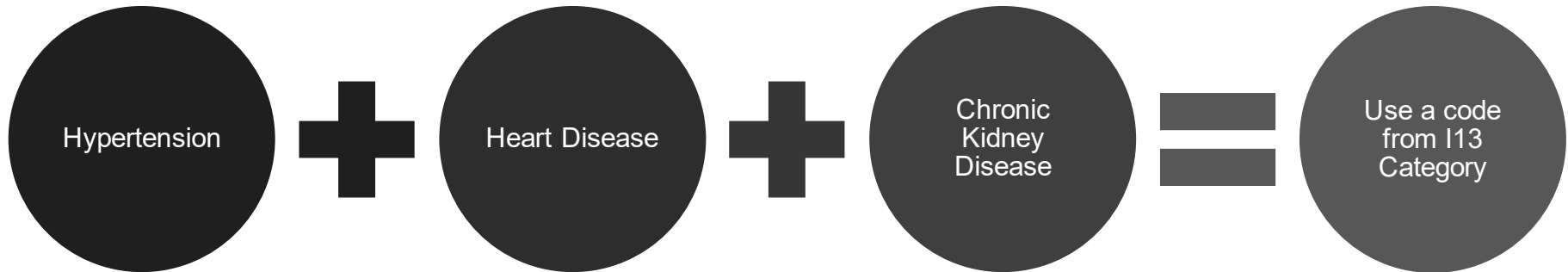- I51.9-Heart disease, unspecified

=

I11, Hypertensive heart disease

♥ Use additional code(s) from category I50, Heart failure, to identify the type(s) of heart failure in those patients

Cardiovascular Coding

Hypertension-Coding Guidelines

Hypertension + Heart Disease + Kidney Disease

Hypertension **+** Heart Disease **+** Chronic Kidney Disease **=** Use a code from I13 Category

♥ Code Also:
If heart failure is present, assign an additional code from category I50
If Chronic kidney disease is present, assign an additional code from N18
♥ For patients with both acute renal failure and chronic kidney disease, the acute renal failure should also be coded. (Sequence according to the circumstances of the admission/encounter.)

Cardiovascular Coding

Hypertension-Coding Guidelines

Hypertension has a causal relationship with Kidney Disease

Hypertension Diagnosis

+

A condition classifiable to:

Category N18, Chronic kidney disease (CKD)

=

Code using Category I12, 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
- ♥ *If a patient has hypertensive chronic kidney disease **and** acute renal failure, the acute renal failure should also be coded.*

Cardiovascular Coding

Hypertension-What would you code?

A patient was admitted with hypertension and chronic kidney disease, stage 3.

Assign codes I12.9, Hypertensive chronic kidney disease with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease, and N18.3, Chronic kidney disease, stage 3 (moderate), as additional diagnoses.

Heart Arrhythmias

Cardiovascular Coding

Heart Arrhythmias-Atrial

Atrial Fibrillation

Electrical impulses are triggered from many areas in and around the atria rather than just one area.
The resulting electrical activity is chaotic rather than organized; thus, the atrial walls quiver rather than contract.
Because the atria do not contract normally, they do not help pump blood into the ventricles.

Atrial Flutter

Unlike atrial fibrillation, electrical activity in the atria is coordinated during atrial flutter.
Thus, the atria do contract, but at a very rapid rate (250 to 350 times per minute).

Some Causes	Complications	Treatment
High Blood Pressure	Blood Clots in the Atria	Slowing the heart rate
Coronary Artery Disease	Rapid heart rate, causing a decrease in heart output	Anticoagulants
Overactive Thyroid Gland		Ablation

Cardiovascular Coding

Heart Arrhythmias

Abnormal heart rhythms (arrhythmias) are sequences of heartbeats that are irregular, too fast, too slow, or conducted via an abnormal electrical pathway through the heart.

♥ The diagnosis is based on electrocardiography (ECG).

♥ Treatment involves restoring the heart to a normal rhythm and preventing further episodes.

Atrial Arrhythmias
Atrial Fibrillation
Electrical impulses are triggered from many areas in and around the atria rather than just one area
The resulting electrical activity is chaotic rather than organized; thus, the atrial walls quiver rather than contract.
Because the atria do not contract normally, they do not help pump blood into the ventricles.
Atrial Flutter
During atrial flutter, unlike in atrial fibrillation, electrical activity in the atria is coordinated. Thus, the atria do contract, but at a very rapid rate (250 to 350 times per minute).

Ventricular Arrhythmias

Cardiac Arrhythmias

Coding for A Fib and A Flutter

- Atrial Fibrillation / Atrial Flutter- I48-I48.91
- Unspecified diagnosis codes like I48.91 are acceptable when clinical information is unknown or not available about a particular condition.
- Although a more specific code is preferable, unspecified codes should be used when such codes most accurately reflect what is known about a patient's condition.
- Specific diagnosis codes should not be used if not supported by the patient's medical record.

Atrial Fibrillation - fibrillatory waves

Atrial Flutter - sawtooth pattern

Cardiovascular Coding
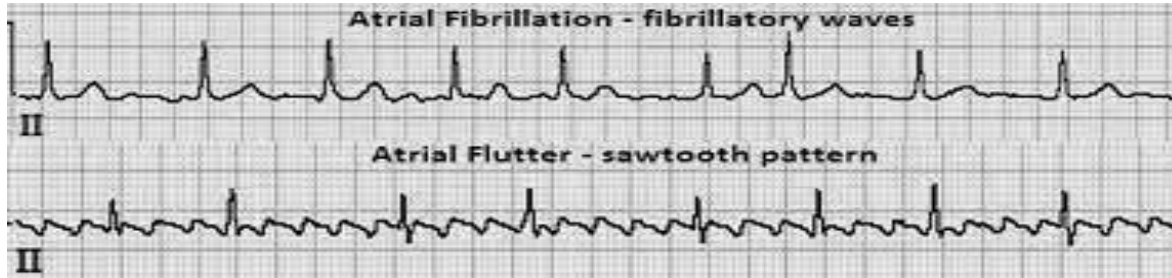
Heart Arrhythmias-Ventricular

Paroxysmal Supraventricular Tachycardia

A regular, fast (160 to 220 beats per minute) heart rate that begins and ends suddenly and originates in heart tissue other than that in the ventricles

Ventricular Tachycardia

Originates in the ventricles (lower chambers of the heart) and produces a heart rate of at least 120 beats per minute.

Some Causes	Complications	Treatment
PSVT-Vigorous Exercise, Triggered by a premature heartbeat	PSVT-Unpleasant Symptoms-weakness, SOB, Chest Pain	Cardioversion
V-Tach-Structural Heart Disorder, Long QT Syndrome, Electrical Shock	V-Tach-Death	Medication
		Implantable Cardioverter-Defibrillator

Cardiac Arrhythmias

Coding for SVT and PSVT

o **Supraventricular tachycardia / Paroxysmal Supraventricular Tachycardia-I47.1**

  o Be sure to look for any interventions that have been used to resolve the SVT (Ablation, Cardioversion)

  o Is this a history of and no longer on medications?

  o Look for supporting documentation to show it is currently under treatment and / or affecting care

Supraventricular Tachycardia (SVT)

Lead II

25mm/sec 10mm/mV   © Jason Winter 2016 - @ ECG Educator

Cardiovascular Coding
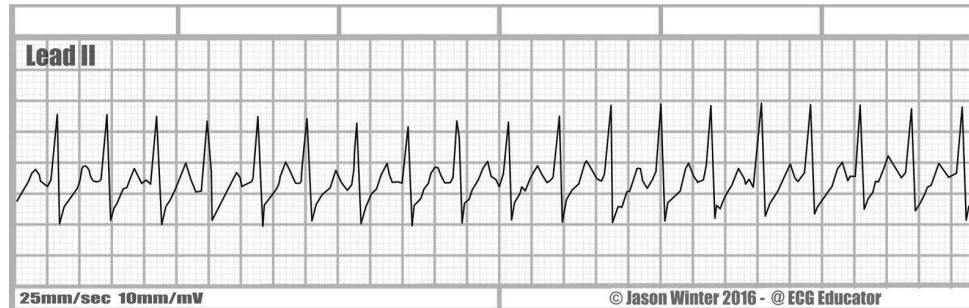
Heart Arrhythmias- What would you code?

A 68-year-old man with a history of hypertension, chronic obstructive pulmonary disease, and coronary artery disease (CAD) was admitted to the hospital for evaluation of atrial fibrillation (AF). While in the hospital, the patient's AF was controlled using antiarrhythmic drugs. The provider's final diagnostic statement listed "Chronic persistent atrial fibrillation." Since there are unique codes for both chronic and persistent atrial fibrillation, which code is more appropriate I48.1, Persistent atrial fibrillation, or I48.2, Chronic atrial fibrillation?

Assign only code I48.1, Persistent atrial fibrillation, as the principal diagnosis. Persistent AF is an abnormal heart rhythm that continues for seven days or longer or that requires repeat electrical or pharmacological cardioversion. Chronic atrial fibrillation is a nonspecific term that could be referring to paroxysmal, persistent, long-standing persistent, or permanent atrial fibrillation. Since code I48.2 is nonspecific, code I48.1 is a more appropriate code assignment.
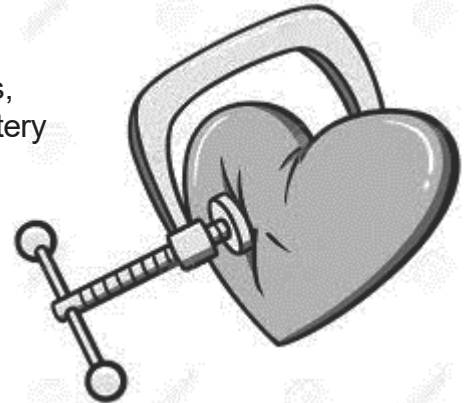
Stable vs Unstable Angina

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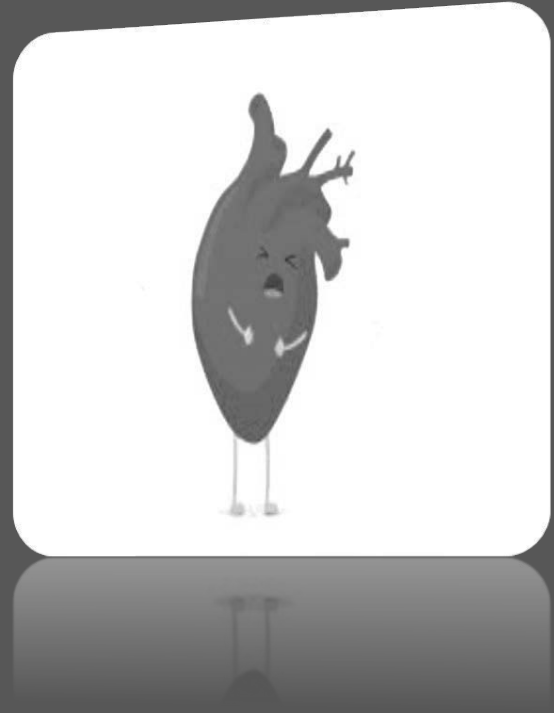
What is Angina Pectoris?

Angina is temporary chest pain or a sensation of pressure that occurs while the heart muscle is not receiving enough oxygen.

Angina pectoris occurs when:

- ♥ Cardiac workload and resultant myocardial oxygen demand exceed the ability of coronary arteries to supply an adequate amount of oxygenated blood

- ♥ It is typically precipitated by exertion or psychologic stress and relieved by rest or sublingual nitroglycerin.

- ♥ Diagnosis is by symptoms, electrocardiography, and myocardial imaging.

- ♥ Treatment may include antiplatelet drugs, nitrates, beta -blockers, calcium channel blockers, angiotensin-converting enzyme inhibitors, statins, and coronary angioplasty or coronary artery bypass graft surgery.

Cardiovascular Coding

Stable Angina Pectoris

- ♥ Chest pain occurs when your heart is working hard enough to need more oxygen, such as during exercise.
- ♥ The pain can go away when you rest.
- ♥ The pattern of pain — how long it lasts, how often it occurs, what triggers it, and how it responds to rest or treatment — remains stable for at least two months.
- ♥ *I20.8-Stable Angina*
- ♥ *All Angina Pectoris codes-I20-I20.9*

Unstable Angina Pectoris

- ♥ This is either new chest pain or a change in your usual pattern of chest pain, whether it's worsening, lasting longer, or not being relieved by rest or medication.
- ♥ Unstable angina is dangerous and a warning sign of a heart attack. If your angina is unstable, seek urgent medical care.
- ♥ *I20.0-Unstable Angina*
- ♥ *All Angina Pectoris codes-I20-I20.9*

TYPES OF **ANGINA**

NORMAL — Normal Coronary Artery

STABLE ANGINA — Atherosclerosis

UNSTABLE ANGINA — Atherosclerosis with Blood Clot

Cardiovascular Coding

Angina Pectoris

Combination codes exist when coding is needed to reflect a patient with Atherosclerotic Heart Disease who is experiencing angina. These codes are further divided to distinguish which artery, and which type (native, bypass graft, or transplant).

When using a code from this category it is unnecessary to also code Angina Pectoris, a causal relationship is assumed.

| I25.11x | Atherosclerotic heart disease of native coronary artery with angina pectoris |

| I25.7xx | Atherosclerosis of coronary artery bypass graft(s) and coronary artery of transplanted heart with angina pectoris |

| Use add 'l code, if applicable, to identify | Coronary atherosclerosis due to calcified coronary lesion (I25.84) | Coronary atherosclerosis due to lipid rich plaque (I25.83) |

Cardiovascular Coding

Angina Pectoris

I20- Angina pectoris Coding Reminders:

Nitroglycerin
- 🖤 Prescribed as a PRN treatment, cannot be used as MEAT to support angina unless there is evidence of current or recent use noted in the documentation.
- 🖤 There must be some other MEAT in the documentation to use as evidence that the condition is current.

🖤 Use additional code to identify:
exposure to environmental tobacco smoke (Z77.22) (Z77.22)
history of tobacco dependence (Z87.891) (Z87.891)
occupational exposure to environmental tobacco smoke (Z57.31) (Z57.31)
tobacco dependence (F17.-) (F17-F17.299)
tobacco use (Z72.0) (Z72.0)

Cardiovascular Coding

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## Angina Pectoris-What would you code?

A patient is seen for a routine physical. You notice they have "Angina Pectoris" as a diagnosis in their problem list.

They have a PRN order for Nitroglycerin, but no date has been given for its last use.

There is no mention of angina within the exam notes, and no other medication is listed or linked.

What would you DO?

      a.   Do not code, no MEAT
      b.   Code I20.9, Unstable Angina (close enough)
      c.   Clock out and go home
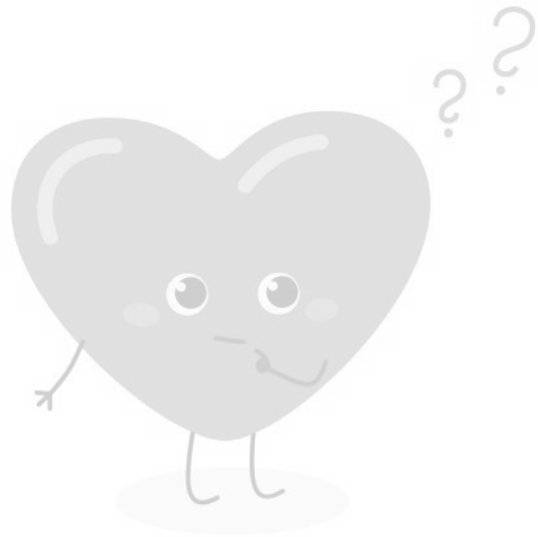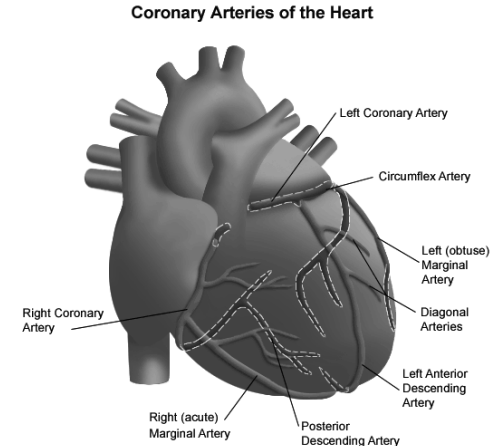
Acute Myocardial Infarction

Acute Myocardial Infarction

Acute myocardial infarction is myocardial necrosis resulting from acute obstruction of a coronary artery.

- ♥ Symptoms: Chest discomfort with or without dyspnea, nausea, and/or diaphoresis.
- ♥ Diagnosis: Electrocardiography (ECG) and the presence or absence of serologic markers.(CK   -MB / Troponin Levels)
- ♥ Treatment: Antiplatelet drugs, anticoagulants, nitrates, beta -blockers, statins, and reperfusion therapy.

Myocardial Infarction → Cell Death → Inability to function going forward

The location of the coronary artery indicates what part of the heart it supplies blood to. If this blood supply is interrupted (like during an MI) the cells in that area die and will no longer function. This can lead to residual effects such as a decrease in how strong the heart can pump.

Coronary Arteries of the Heart

Left Coronary Artery
Circumflex Artery
Left (obtuse) Marginal Artery
Diagonal Arteries
Right Coronary Artery
Left Anterior Descending Artery
Right (acute) Marginal Artery
Posterior Descending Artery

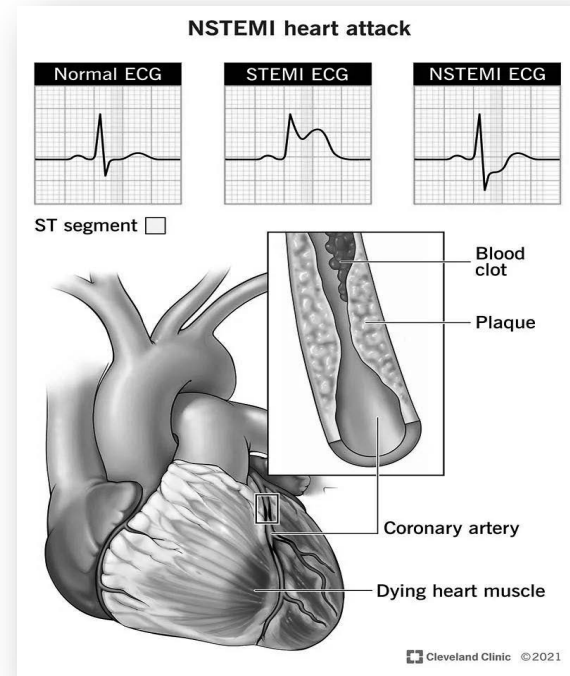# Cardiovascular Coding

Acute Myocardial Infarction

STEMI
ST-segment elevation myocardial infarction

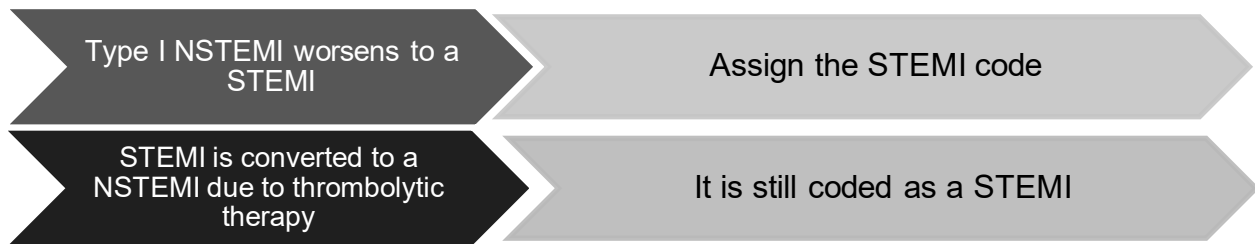A complete and prolonged occlusion of an epicardial coronary blood vessel

NSTEMI
Non–ST-segment elevation myocardial infarction

A severe coronary artery narrowing, transient occlusion, or microembolization of thrombus and/or atheromatous material.

NSTEMI heart attack

Normal ECG   STEMI ECG   NSTEMI ECG

ST segment ☐

Blood clot

Plaque

Coronary artery

Dying heart muscle

Cleveland Clinic ©2021

Cardiovascular Coding

Acute Myocardial Infarction-ICD-10 Coding Guidelines

Type I NSTEMI worsens to a STEMI	Assign the STEMI code
STEMI is converted to a NSTEMI due to thrombolytic therapy	It is still coded as a 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 post-acute setting, and the myocardial infarction meets the definition for "other diagnoses" (see Section III, Reporting Additional Diagnoses), codes from category I21 may continue to be reported.

♥ For encounters after the 4-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 category I21.

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

Cardiovascular Coding

NC

Acute Myocardial Infarction-ICD-10 Coding

I21.0
ST elevation (STEMI) myocardial infarction of anterior wall

I21.1
ST elevation (STEMI) myocardial infarction of inferior wall

I21.2
ST elevation (STEMI) myocardial infarction of other sites

I21.3
ST elevation (STEMI) myocardial infarction of unspecified site

I21.4
Non-ST elevation (NSTEMI) myocardial infarction

I21.9
Acute myocardial infarction, unspecified

When chronic total occlusion and myocardial infarction are documented as being in different vessels, assign code I25.82 Chronic total occlusion of coronary artery, in addition to the myocardial infarction code.

Cardiovascular Coding

Acute Myocardial Infarction-ICD-10 Coding

Use additional code, if applicable, to identify:

exposure to environmental tobacco smoke (Z77.22)	history of tobacco dependence (Z87.891)	occupational exposure to environmental tobacco smoke (Z57.31)	status post administration of tPA (rtPA) in a different facility within the last 24 hours prior to admission to current facility (Z92.82)	tobacco dependence (F17.-)	tobacco use (Z72.0)

Cardiovascular Coding

Acute Myocardial Infarction-ICD-10 Coding

I22.x-**Subsequent** ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction

This category reports a subsequent acute myocardial infarction (AMI) that occurs during the recovery phase following the first AMI. (Less than four weeks (28 days))	There are codes for both STEMI and NSTEMI. *Subsequent STEMI codes identify *only the general region of the infarction as the anterior wall, inferior wall, or other site rather than the specific artery or more specific sites*.

A subsequent AMI during the recovery phase following the previous AMI increases the complexity of medical care and increases the risk of mortality.

Cardiovascular Coding

Acute Myocardial Infarction-ICD-10 Coding

I25.2-Old Myocardial Infarction	
Reported for any myocardial infarction described as older than four weeks (28 days).	It may also be used with evidence of a healed myocardial infarction that is observed via clinical testing such as an ECG. The patient is generally asymptomatic and may require no medical intervention in these cases.

A history of a myocardial infarction typically requires ongoing monitoring of the patient to address any long-term complications or new symptoms that can arise as a result of the damage caused by the previous myocardial infarction.

Cardiovascular Coding

Acute Myocardial Infarction-What would you code?

Mr. Jones was hospitalized on 5/2/21 for an Acute non-ST MI. After discharge he is seen by his PCP for a follow-up visit on 5/20/21, what would you code?

a. I21.21-(ST elevation (STEMI) myocardial infarction involving left circumflex coronary artery
b. I21.4-Non-ST elevation (NSTEMI) myocardial infarction
c. I21.3- ST elevation (STEMI) myocardial infarction of unspecified site

Heart Failure

Heart Failure

Definition: *Heart failure (HF) is a syndrome of ventricular dysfunction. Left ventricular (LV) failure causes shortness of breath and fatigue, and right ventricular (RV) failure causes peripheral and abdominal fluid accumulation; the ventricles can be involved together or separately.*

♥ *Heart failure with reduced ejection fraction (HFrEF)*
Systolic Heart Failure-poor contraction
Can affect the Left or Right Ventricle
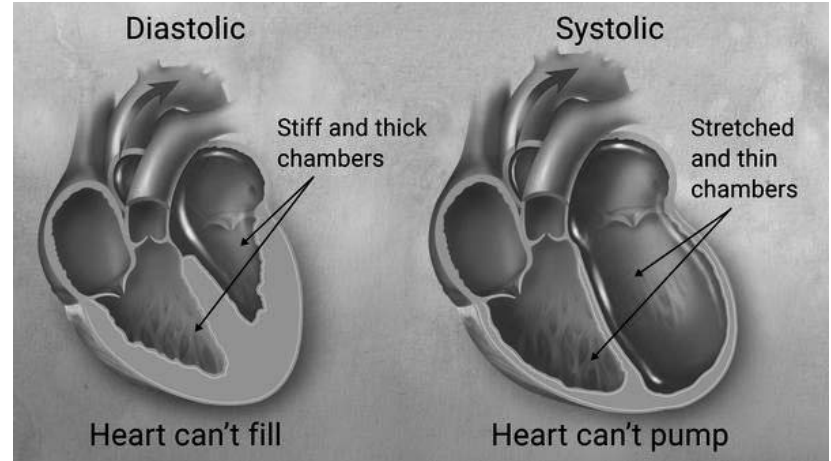*(Left usually leads to Right)*

♥ *Heart failure with preserved ejection fraction (HFpEF)*
Diastolic Heart Failure-inadequate filling
"Stiff Left Ventricle"-cannot relax properly to fill between beats

♥ *Treatment*
• *Diet and Lifestyle changes*
• *Drug Therapy*
• *Device therapy*
• *Transplant*

Cardiovascular Coding

Heart Failure Coding

I50.2
- Systolic Ventricular Heart Failure
- Heart failure with reduced ejection fraction (HFrEF)
- Code also end-stage heart failure, if applicable (I50.84)

I50.3
- Diastolic Ventricular Heart Failure
- Heart failure with preserved ejection fraction (HFpEF)
- Code also end-stage heart failure, if applicable (I50.84)

I50.4
- Combined systolic (congestive) and diastolic (congestive) heart failure
- Heart failure with reduced ejection fraction and diastolic dysfunction
- Code also end-stage heart failure, if applicable (I50.84)

I50.8x
- Other heart failure

I50.9
- Heart failure, unspecified
- Congestive heart disease
- Congestive heart failure NOS

Remember:
Heart Failure can be acute, chronic, or acute on chronic. Be sure to reflect this in your coding.

NC

Heart Failure- What would you code?

Per the American College of Cardiology and the American Heart Association, a patient with "stage A heart failure" is at risk of developing the condition but does not have it yet. Is it appropriate to assign code I50.9, Heart failure, unspecified, when the physician documents stage A heart failure

No, it is not appropriate to assign code I50.9, Heart failure, unspecified, as the patient does not have heart failure. The American Heart Association defines stage A heart failure as the presence of heart failure risk factors but no heart disease or symptoms.

Assign code Z91.89, Other specified personal risk factors, not elsewhere classified, for the increased risk. Although the patient is at risk for heart failure, he currently does not have the disease. If other conditions and/or factors influence the risk, such as hypertension, coronary artery disease, valvular disease, etc., assign additional codes for those conditions.

References

https://www.mayoclinic.org/diseases-conditions/high-blood-pressure/symptoms-causes/syc-20373410
https://pubmed.ncbi.nlm.nih.gov/22624277/
https://www.merckmanuals.com/professional
https://www.encoderprofp.com/epro4payers/index.jsp
https://stacks.cdc.gov/view/cdc/126426