# Cardiovascular Disease Coding Guide

## Statistical Significance

According to the Cleveland Clinic, cardiovascular diseases (CVD) are defined as conditions that affect the heart and blood vessels. Conditions falling into this category of disease can also affect other organs and body systems and can lead to additional comorbidities, due to organ damage caused by decreased or blocked blood flow (1). Almost half of adults in the U.S. have some form of cardiovascular disease. Cardiovascular diseases such as coronary artery disease, cerebrovascular disease, and peripheral arterial disease are some of the leading causes of illness and death in the US. With such a large prevalence of these conditions within the United States' population, the financial and health implications of these diseases take a steep toll:

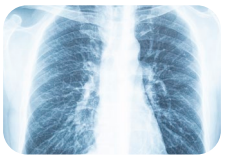
- Cardiovascular disease (CVD) accounted for 874,613 deaths in the United States in 2019.
- Lower extremity peripheral artery disease (PAD) affects >230 million people worldwide.
- Someone in the US has a stroke every 40 seconds and dies every 37 seconds.

In the USA, the cost of cardiovascular diseases in the healthcare industry in 2015 was calculated to be over $500 billion, and this figure is climbing every year. By 2035, it is estimated that the total cost implications of these diseases will cost the nation over $1 trillion (2).

## Common Causes of CVD

**High Cholesterol**

**High Blood Pressure**

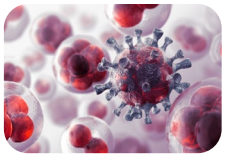


**Smoking/ tobacco use**

**Diabetes**

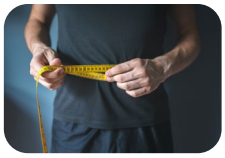
**Genetics**

**Misuse of Medicines**



**Inflammatory/ autoimmune disorders**

**Lack of physical Activity**



**Excess Weight**

## Common Cardiovascular Diseases

There are many types of diseases that fall into the CVD category, including diseases such as myocardial infarction, coronary artery disease, heart arrhythmia, valvular diseases, heart failure, peripheral vascular disease (PVD), cerebrovascular disease, aortic diseases, and deep vein thrombosis (DVT). However, in this guide we will cover the most common conditions that have a large impact on Federally Qualified Health Center (FQHC) Medicare stars and eCQM performance.

## Coronary Artery Disease (CAD)

Coronary artery disease (CAD) is when major blood vessels that supply the heart struggle to send enough blood, oxygen and nutrients to the heart muscle due to plaque buildup (cholesterol deposits in an artery). CAD is the most common type of heart disease in the United States, with risk factors linked to obesity, physical inactivity, unhealthy eating habits and smoking (5). Some people experience angina (chest pain) as a result of plaque buildup, but some individuals may not experience any noticeable symptoms until the plaque triggers a blood clot or heart attack- this is why CAD is known as the "silent killer" (5).

### Common Medications for CAD Management

| Medication Category | Therapeutic Use | Medication Names |
|---|---|---|
| **Cholesterol Medications** | This type of medicine lowers "bad" LDL cholesterol and reduces plaque buildup in the arteries. | Atorvastatin (Lipitor®) \| Fluvastatin (Lescol®) Pitavastatin (Livalo®) \| Lovastatin (Mevacor® Altoprev™) \| Pravastatin (Pravachol®) Rosuvastatin Calcium (Crestor®) \| Simvastatin (Zocor®) |
| **Aspirin** | Aspirin helps thin the blood and prevent blood clots. Primarily used to prevent heart attacks and strokes. | |
| **Beta Blockers** | These medicines slow the heartbeat and lower blood pressure to reduce risk of heart attacks. | Carvedilol \| Metraprolol \| Bisoprolol \| Atenolol |
| **Calcium Channel Blockers** | Calcium channel blockers lower blood pressure and can help reduce chest pain. | Amlodipine (Norvasc) \| Diltiazem (Cardizem, Dilacor, Taztia, Tiazac) \| Nifedipine (Procardia) \|Verapamil (Calan, Isoptin, Verelan) |
| **Angiotensin-converting enzyme (ACE) inhibitors** | ACE's Lower blood pressure and keeps CAD from getting worse. | Benazepril (Lotensin) \| Captopril (Capoten) Enalapril (Vasotec) \| Fosinopril (Monopril) Lisinopril (Prinivil, Zestril) \| Moexipril (Univasc) Perindopril (Aceon) \| Quinapril (Accupril) Ramipril (Altace) \| Trandolapril (Mavik) |
| **Angiotensin 2 receptor blockers (ARB)** | ARB's lower blood pressure and keeps CAD from getting worse. | Azilsartan (Edarbi) \| Candesartan (Atacand) Eprosartan (Teveten) \| Irbesartan (Avapro) Losartan (Cozaar) \| Olmesartan (Benicar) Telmisartan (Micardis) \| Valsartan (Diovan) |
| **Nitroglycerine** | This medicine widens the heart arteries to control or reduce chest pain. These are available as a pill, spray or patch. | Gonitro \| Nitrocot \| Nitrolingual \| NitroMist, Nitroquick \| Nitrostat \| Nitrotab \| Nitro-Time |
| **Ranolazine** | Primarily used as a medication to treat the symptoms of chronic stable angina when other treatments have not brough sufficient relief. Reduces the heart muscle's oxygen demand and improves exercise tolerance. | Ranexa® |

## CAD Coding Tips

There are 40+ codes for atherosclerosis of the coronary artery alone. However, only a select grouping of CAD conditions have an HCC category in the V28 model, meaning they do not have any additional RAF (risk adjustment factor) weight to the patient's overall RAF score. Most codes that are unspecified or do not have unstable angina will not risk adjust. Specificity is more important than ever before! To make the proper code selection you need documentation on:

The cause of CAD (assumed to be atherosclerosis- but notate if other cause).

If the patient experiences angina pectoris, and if so what type:

- **Add 6th character to notate angina**: unstable (0), with spasms (1), refractory angina (2), other specified type (8), unspecified (9).

Which artery/vein is involved (if known).

- Native artery
- Autologous vein (for bypass)
- Non-autologous biological coronary artery (for bypass)

If a bypass graft is present.

Heart Transplant status.

Presence of HTN or smoking.

Most CAD codes no longer risk adjust in the V28 HCC model approved by CMS. The only codes that do risk adjust for CAD are for patients experiencing unstable angina pectoris. This is why it is so important to clearly specify the type of angina the patient is experiencing, if any. Do not describe current angina, or angina that is receiving treatment as "history of", as that means the angina no longer exists.

| Type of Angina | Description | Treatment Options |
|---|---|---|
| **Stable angina** (most common) | Pain lasts a few minutes and occurs in a pattern, such as during exercise or stress. | Rest or medicine relieves the pain. |
| **Unstable angina** | Pain can be stronger or last longer than stable angina and does not follow a pattern. May occur during rest. | **Unstable angina is a medical emergency.** Requires medical attention right away. |
| **Microvascular angina** | Pain can be stronger or last longer than stable angina and can occur both during rest and after exercise. | Medicine may not relieve the pain. |
| **Vasospastic angina** | Pain is strong and happens during rest, usually between midnight and early morning. | Medicine may not relieve the pain. |
| **Refractory angina** | Angina symptoms last for months. | Medicines or other interventions do not relieve the pain. |

### Medication Adherence Exclusions

Some patients that have CAD may experience intolerances to certain statin medications after performing a trial. These intolerances are defined as disagreeable symptoms or laboratory findings that are related to the statin treatment. If a patient experiences any of the following intolerances after taking statins, making them ineligible for statin treatment, the following exclusion criteria should be thoroughly documented in the medical record and coded. Coding for these exclusions will remove the patient from the statin medication adherence measures, commonly measured and maintained by Medicare and Medicare Advantage plans.

| Intolerance Type | Symptoms | Code Description | ICD 10 Code |
|---|---|---|---|
| **Myalgia** | muscle pain or aches | **Myalgia** | **M79.1** |
| **Myositis** | Muscle weakness, pain, fatigue, difficulty breathing or swallowing, tripping or falling, and skin issues (Myositis is a type of myopathy). | **Myositis, unspecified** | **M60.9** |
| **Myopathy** | Muscle pain, weakness, tenderness, cramping, tendon problems, fatigue | **Drug-induced Myopathy** | **G72.0** |
| | | **Myopathy, unspecified** | **G72.9** |
| | | **Myopathy due to other** | **G72.2** |
| **Rhabdomyolysis** | Severe muscle aches or cramps throughout the body, Feeling weak or tired, and Urine that is tea- or cola-colored. | **Rhabdomyolysis** | **M62.82** |

**Note:** If the exclusion criteria are present in the medical record but not documented or coded by the provider, query the provider for clarification.

## Heart Failure

Heart failure is a condition that occurs when the heart can't pump as well as it should, causing blood, oxygen and nutrients to struggle reaching the rest of the body. This can happen when the heart muscle becomes weak or stiff (9). People can and do live with heart failure chronically, but it can become life threatening acute condition.

To select the correct heart failure code for a patient, documentation needs to detail the type of heart failure, the cause of heart failure, if known (using linking terms to show cause and effect- "associated with," "due to," "secondary to," "hypertensive," etc.), and the current status of heart failure (stable, worsening, improved, in remission, compensated, decompensated, etc.) Even if the patient is being seen for other conditions when originally making the appointment, if the heart failure affects that patients care, management, or treatment at the time of service the heart failure should be documented and coded. Do not document "history of" to describe current heart failure. In diagnosis coding, the descriptor "history of" implies the condition occurred in the past and no longer exists. Instead, list the heart failure as stable, if being monitored and maintained.

**Types**

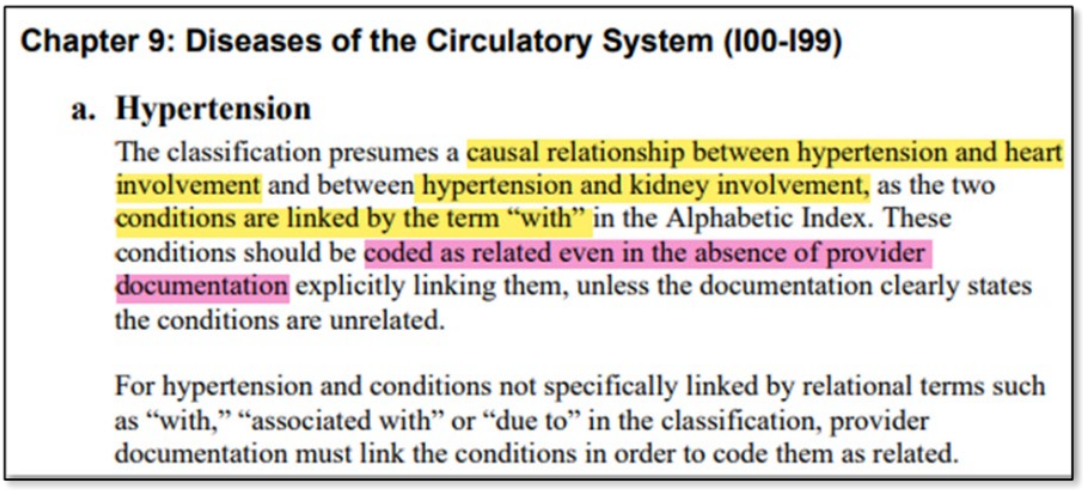
- **Left sided heart failure -** involves the left ventricle (bottom left chamber of the heart). Blood backs up in the blood vessels that carry blood away from the lungs.
- **Systolic** - the left ventricle loses its ability to contract normally; thus, it cannot effectively pump blood out of the heart to the body.
- **Diastolic** - the left ventricle loses its ability to relax normally; thus, it cannot fill with blood during the resting period between beats.
- **Right sided heart failure -** involves the right ventricle (bottom right chamber of the heart). Blood backs up in the blood vessels that carry blood from the rest of the body back to the heart.
- **Biventricular heart failure** - a combination of BOTH left-sided and right-sided heart failure. It involves both sides of the heart and can cause a mix of both types of symptoms.

**Acute vs. Chronic**

- **Acute -** active symptoms of heart failure. Can be a new diagnosis.
- **Chronic -** history of heart failure, but the condition is relatively stable with no symptoms or with manageable symptoms.
- **Acute on Chronic -** an acute exacerbation of long-term (chronic) heart failure.

### Hypertension and Heart Failure

Hypertension coding has an assumed causal correlation with chronic kidney disease (CKD) and congestive heart failure (CHF), as they are common comorbidities that exacerbate each other. This is an important distinction, as coders have the discretion to code to higher specificity even when not directly correlated in providers' documentation. In most instances of coding, the coders are not permitted to select a more specified code on the providers behalf, but hypertension codes are unique in this way. This is extremely important, as the highly specified codes outlining these comorbidities help our stars ratings and eCQM scores for blood pressure control.



**Chapter 9: Diseases of the Circulatory System (I00-I99)**

**a. Hypertension**

The classification presumes a causal relationship between hypertension and heart involvement and between hypertension and kidney involvement, as the two conditions are linked by the term "with" in the Alphabetic Index. These conditions should be coded as related even in the absence of provider documentation explicitly linking them, unless the documentation clearly states the conditions are unrelated.

For hypertension and conditions not specifically linked by relational terms such as "with," "associated with" or "due to" in the classification, provider documentation must link the conditions in order to code them as related.

### Common Medications for HF Management

| Medication Category | Therapeutic Use | Medication Names |
|---|---|---|
| **Angiotensin-converting enzyme (ACE) inhibitors** | ACE's Lower blood pressure and by widening the blood vessels and reducing how hard the heart has to work, keeping the HF from progressing. | Captopril (Capoten) \| Enalapril (Vasotec) Fosinopril (Monopril) \| Lisinopril (Prinivil, Zestril) Perindopril (Aceon) \| Quinapril (Accupril) Ramipril (Altace) \| Trandolapril (Mavik) Benazepril (Lotensin) \| Moexipril (Univasc) |
| **Angiotensin 2 receptor blockers (ARB)** | ARB's lower blood pressure and keeps HF from getting worse. | Candesartan (Atacand) \| Losartan (Cozaar) Valsartan (Diovan) |
| **Angiotensin-receptor neprilysin inhibitor (ARNI)** | ARNI takes the place of an ACE inhibitor or an ARB. It is a combination medication that improves artery opening and blood flow, reduces sodium retention and decreases strain on the heart. | Sacubitril/valsartan (Entresto) |
| **Beta blockers** | Beta Blockers prevent the heart from beating too quickly and forcefully. | Bisoprolol (Zebeta) \| Carvedilol (Coreg) Carvedilol phosphate (Coreg CR) \| Labetalol (Trandate) Metoprolol succinate (Toprol XL and Kapspargo Sprinkle) \| Metoprolol tartrate (Lopressor) \|Nebivolol (Bystolic) \| Propranolol (Inderal, Inderal LA, InnoPran XL) |
| **Diuretics (also known as water pills)** | "Water pills" get rid of extra fluid in the body, help the heart pump, make it easier to breathe, reduce swelling in abdomen, feet and legs, and lower blood pressure. | Furosemide (Lasix) \| Bumetanide (Bumex) Torsemide (Demadex) \| Metolazone (Zaroxolyn) Chlorothiazide (Diuril) \| Amiloride (Midamor) Chlorthalidone (Hygroton) \| Hydrochlorothiazide or HCTZ (Esidrix, Hydrodiuril) \| Indapamide (Lozol) \| Triamterene (Dyrenium) |

***Note:*** *See source 16 for more medication information.*

### Controlling Blood Pressure Gap Exclusions

The codes for hypertension with heart disease and hypertension with chronic kidney disease are considered "advanced Illnesses" due to the complexity and severity of the diseases.

**Example**: If a patient is coded to have **I13.0** Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, I50.32 for Congestive Heart Failure and N18.2 for CKD stage 2, this patient would effectively be removed from the controlling blood pressure denominator for most Medicare Advantage plans.

For Medicare ECQM's, if a code for I13.0 is coded, and a frailty exclusion code (see our Advanced Illness and Frailty guide on our website for a list of frailty codes), then the patient can be excluded from the controlling blood pressure ECQM measure.

| ICD 10 Code | Code Description | V24 Model | V28 Model |
|---|---|---|---|
| **I10** | Essential (primary) hypertension | | |
| **I11.0** | Hypertensive heart disease with heart failure | **85** | **226** |
| **I11.9** | Hypertensive heart disease without heart failure | | |

| | | | |
|---|---|---|---|
| **I12.0** | Hypertensive chronic kidney disease with stage 5 chronic kidney disease or end stage renal disease | **136** | **326** |
| **I12.9** | Hypertensive chronic kidney disease with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease | | |
| **I13.0** | Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease | **85** | **226** |
| **I13.10** | Hypertensive heart and chronic kidney disease without heart failure, with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease | | |
| **I13.11** | Hypertensive heart and chronic kidney disease without heart failure, with stage 5 chronic kidney disease, or end stage renal disease | **136** | **326** |
| **I13.2** | Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease | **85** | **226** |
| **I13.2** | Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease | **136** | **326** |

Coding *I10 Essential Hypertension* for a patient that has a comorbidity not only is incorrect coding, but it also negatively impacts your stars rating and eCQM scores, as it is harder to control the blood pressure of a patient with these comorbidities. Once you code I10 for the patient, they fall into the CBP denominator and will count against you if you cannot keep their BP below 140/90, especially for the last reading of the year which the payers collect to measure compliance. Specificity in documentation and code selection is advantageous for financial success and coding compliance.

**Sources**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4. Peripheral artery disease (PAD) - Symptoms and causes - Mayo Clinic
5. Coronary Artery Disease (CAD): Symptoms & Treatment – Cleveland Clinic
6. Coronary Artery Disease – Mayo Clinic
7. Angina (Chest Pain) - Types
8. Heart Attack: Symptoms, Causes & Treatment – Cleveland Clinic
9. Heart Failure - Johns Hopkins Medicine
10. Cholesterol Medications - American Heart Association
11. Beta blockers for cardiovascular conditions: one size does not fit all.
12. Calcium Channel Blockers
13. Types of Heart Medications - American Heart Association
14. Nitroglycerin (oral route, sublingual route)
15. Ranolazine Extended-Release Tablets - Cleveland Clinic
16. Medications Used to Treat Heart Failure - American Heart Association