



# Cardiovascular Disease Provider Toolkit

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## Cardiovascular Disease Care

### Clinical Practice Guidelines

[ACC/AHA Guidelines on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults](#)

[Guideline for the Management of Heart Failure](#)

[AHA/ACCF Secondary Prevention and Risk Reduction Therapy for Patients with Coronary and Other Atherosclerotic Vascular Disease](#)

[2018 Guideline on the Management of Blood Cholesterol](#)

### Quality Measures

#### Cardiovascular Monitoring for People With Cardiovascular Disease and Schizophrenia

The percentage of members 18–64 years of age with schizophrenia or schizoaffective disorder and cardiovascular disease, who had an LDL-C test during the year.

#### Statin Therapy for Patients With Cardiovascular Disease

The percentage of males 21–75 years of age and females 40–75 years of age, who were identified as having cardiovascular disease and met the following criteria.

- **Received Statin Therapy** Members who were dispensed at least one high-intensity or moderate-intensity statin medication during the year.
- **Statin Adherence 80%** Members who remained on a high-intensity or moderate-intensity statin medication for at least 80% of the treatment period.

## Screening and Assessment Tools

Agent	Rationale
<b>Blood Pressure to screen for hypertension</b>	<p>Adults with normal blood pressure should have reassessment of their blood pressure every year.</p> <p>Adults should be screened at least two times a year if they have risk factors for hypertension (e.g., obesity) or if previously measured systolic blood pressure was 120 to 129.</p>
<b>Fasting Lipoprotein Profile (Cholesterol)</b>	<p>Measure serum cholesterol and triglyceride levels. Includes cholesterol/HDL-C ratio, HDL-C, LDL-C, total cholesterol and triglycerides</p> <p>Recommended every 4–6 years for normal-risk adults, more often if there is an elevated risk for heart disease and stroke</p>
<b>10-year risk ASCVD Risk Calculator</b>	<p>Starting at age 40, screen African-American and non-Hispanic white men and women 40 through 79 years of age.</p> <p><a href="#">ASCVD Risk Calculator</a></p>
<b>Weight/Body Mass Index (BMI)</b>	During regular healthcare visits to determine degree of overweight
<b>Waist circumference</b>	As needed to help evaluate cardiovascular risk if BMI is in the 25 – 35 kg/m <sup>2</sup> range
<b>Discuss smoking physical activity, diet</b>	Each healthcare visit

### Provider Educational Resources

[Heart Failure Go-To Guide for Healthcare Professionals](#)

[Cholesterol for Professionals](#)

### Member Educational Resources

[AFib: Partnering in your Treatment Plan](#)

[Medication Chart](#)

[What are Cholesterol Lowering Medicines?](#)

[Self-Check Plan for HF Management](#)

# Integrated Health Treatment Planning Considerations

## Heart Disease and Mental Health Disorders

[Heart Disease and Mental Health Disorders](#)

[Mental Health and Cardiovascular Disease](#)

[CBT for Heart Disease Treatment](#)

[Depression Associated with Greater Risk of Cardiovascular Disease](#)

## Substance Use Disorders and Cardiovascular Disease

[Illegal Drugs and Heart Disease](#)

## Bipolar Disorder and Cardiovascular Disease

[When Bipolar Disorder Presents, Consider Cardiovascular Comorbidities](#)

[Depression and Bipolar Disorder Increase Heart Disease Risk in Teens](#)

[Relationship Between Coronary Heart Disease and Mental Disorders](#)

## Cardiac Conditions/Diagnoses

### Cardiovascular Disease (CVD)

Cardiovascular disease can refer to a number of conditions involving the heart. Cardiovascular disease generally refers to conditions that involve narrowed or blocked blood vessels that can lead to a heart attack, chest pain (angina) or stroke. Symptoms of cardiovascular disease can include chest pain, chest tightness, chest pressure, and chest discomfort, shortness of breath; pain, numbness, weakness or coldness in the legs or arms if the blood vessels in those parts of the body are narrowed, or pain in the neck, jaw, throat, upper abdomen or back.

### Atrial Fibrillation (A-fib or AF)

Irregular heartbeat, causing the atria to beat irregularly and too fast, disrupting oxygen flow. Symptoms of AF can include palpitations or a racing sensation in the heart, chest pain, discomfort or pressure, shortness of breath, lightheadedness, fatigue, exercise intolerance, or abdominal pain.

### Congestive Heart Failure (CHF)

Inability of the heart to keep up with the demands on it, with failure of the heart to pump blood with normal efficiency. Symptoms of CHF may include shortness of breath, fatigue, swollen legs and rapid heartbeat.

### Heart Attack (Acute Myocardial Infarction)

A heart attack occurs when the blood flow to a part of the heart is blocked by a blood clot. If this clot cuts off the blood flow completely, the part of the heart muscle supplied by that artery begins to die. The symptoms of a heart attack may include: chest pain or discomfort, feeling weak, lightheaded or faint, pain or discomfort in the jaw, neck, back one or both arms or shoulders, or shortness of breath.



**Ischemic Vascular Disease (IVD)**

Plaque builds up inside blood vessels, and restricts the normal flow of blood, resulting in atherosclerosis. Ischemic Vascular Disease (IVD) is a term that includes a group of diseases caused by the build-up of plaque. IVD usually remains non-symptomatic until it severely narrows or totally blocks an artery. Symptoms will depend on which arteries are affected. Many people don't know that they have IVD until they experience a heart attack or stroke.

**Coronary Heart Disease (CHD)**

Atherosclerosis affects the coronary arteries in the heart. If the flow of oxygen-rich blood to your heart muscle is reduced or blocked, angina or a heart attack may occur. Symptoms may include chest pain or discomfort.

**Carotid Artery Disease (CAD)**

Occurs if plaque builds up in the carotid arteries. These arteries supply oxygen-rich blood to the brain. In the early stages carotid artery disease there are often no symptoms.

**Peripheral Arterial Disease (PAD)**

A disease in which plaque builds up in the arteries that carry blood to the head, organs, and limbs. PAD usually affects the arteries in the legs, but it also can affect the arteries that carry blood from the heart to the arms, kidneys, and stomach. Symptoms of PAD may include: Painful cramping in one or both of the hips, calves, or thighs after activity, leg numbness or weakness, coldness in the lower leg or foot, sores on the toes, feet or legs that won't heal, a change in color of the legs, no pulse or a weak pulse in the legs or feet.

**Stroke**

A stroke occurs when a blood vessel that feeds the brain gets blocked, usually from a blood clot. When the blood supply to a part of the brain is cut off, some brain cells will begin to die. This can result in the loss of functions controlled by that part of the brain, such as walking or talking. Symptoms of a stroke may include sudden weakness, paralysis or numbness of the face, arms, or legs, trouble speaking or understanding speech and trouble seeing.

**Common Definitions Associated with Cardiovascular****Atherosclerosis**

A condition that develops when plaque builds up in the walls of the arteries. This buildup narrows the arteries, making it harder for blood to flow through and makes them less flexible. If a blood clot forms, it can block blood flow, resulting in a heart attack or stroke.

Atherosclerosis can affect any artery in the body, including arteries in the heart, brain, arms, legs, pelvis, and kidneys. As a result, different diseases may develop based on which arteries are affected.

**Ablation**

Treatment for cardiac arrhythmias when long-term medications or electrical cardioversion are either not preferred or were not effective. Before ablation surgery, electrical mapping of the heart is performed. An electrically sensitive catheter is used to map the heart muscle and the origins of the "extra" electrical activity throughout the heart. The map tells the physician which areas of the heart are creating problematic electric signals that interfere with the proper rhythm.

A catheter (thin, flexible tube) is inserted into the patient's blood vessels and is gently guided to the heart. The physician carefully destroys malfunctioning tissue using the catheter to deliver energy (such as radiofrequency, laser or cryotherapy) to scar the problematic areas. The scarred areas will no longer send abnormal signals. If successful, the heart will return to a normal rhythm. This minimally invasive procedure usually has a short recovery period. Patients are generally placed on a short course of anti-arrhythmic drugs while the procedure takes full effect.

**Angina**

Chest pain/discomfort caused when the heart does not get enough blood. Angina is a symptom of a heart problem like coronary heart disease.

### Arrhythmia

Abnormal heart rhythm that can affect how well the heart works. With an irregular heartbeat, the heart may not be able to pump enough blood to meet the body's needs. Irregular heart rates can beat too fast, to slow or irregularly. There are multiple types:

- Bradycardia: heart rate that is slower than normal, <60 beats/minute
- Tachycardia: heart rate that is faster than normal, >100 beats/minute
- Conduction Disorders: electrical signaling disorders that can result in an arrhythmia

### Atherectomy

Minimally invasive procedure similar to angioplasty. It is performed to cut away plaque that has built up in the arteries. After the plaque is removed, a stent may be placed to keep the artery open.

### Cardioversion Therapy

Cardioversion is the process of restoring the heart's normal rhythm from an abnormal rhythm. Cardioversion is similar to defibrillation, but uses much lower levels of electricity.

### Cholesterol

A waxy substance that circulates in the blood. Cholesterol can lead to problems when it joins with other substances to form a thick, hard deposit on the inside of the arteries. High cholesterol is one of the major controllable risk factors for coronary heart disease, heart attack and stroke.

Two types of lipoproteins carry cholesterol to and from cells.

- LDL (low-density lipoprotein) cholesterol is considered the "bad" cholesterol, because it contributes to atherosclerosis. This condition narrows the arteries and increases the risk for heart attack, stroke and peripheral artery disease.
- HDL (high-density lipoprotein) cholesterol can be thought of as the "good" cholesterol. (So, in the case of HDL cholesterol, higher levels are actually better.) A healthy HDL

cholesterol level may protect against heart attack and stroke. Studies show that low levels of HDL cholesterol increase the risk of heart disease.

### Coronary Artery Bypass Graft (CABG)

Procedure to improve blood flow to the heart muscle. It is commonly referred to as bypass surgery or Coronary Artery Bypass Graft (CABG) surgery. Bypass surgery is performed to improve blood flow problems to the heart muscle caused by the buildup of plaque (atherosclerosis) in the coronary arteries. The surgery involves using a piece of blood vessel taken from elsewhere in the body to create a detour or bypass around the blocked portion of the coronary artery. A piece of a healthy blood vessel from the leg, arm, or chest will be "harvested" to be used as the bypass. Depending upon the number of blockages, several bypasses may be created.

### Echocardiogram

Diagnostic test to check how heart chambers and valves are pumping in the heart. An ultrasound of the heart.

### Electrocardiography (EKG)

Recording of the electrical signals in the heart. Often used to check heart rhythm and heart rate.

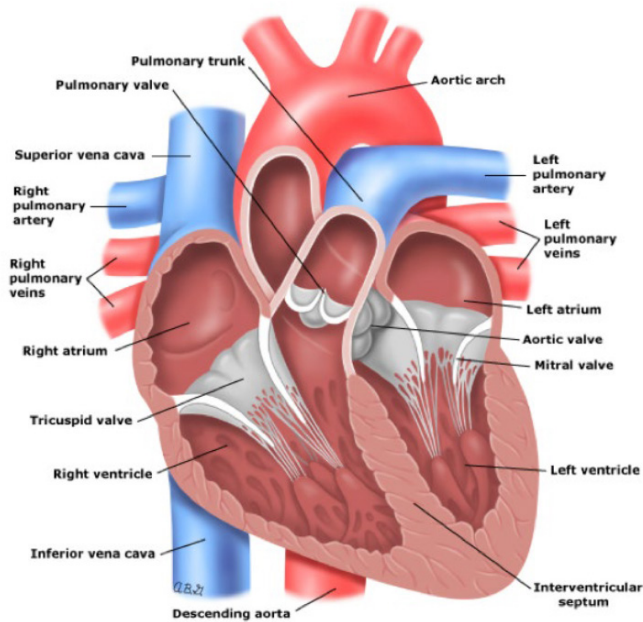


## Heart

Muscle with 4 chambers and 4 valves – split into the right side and left side

**Upper chambers:** artia

**Lower chamber:** ventricles



## Heart Rate

Often called pulse, is the number of times a heart beats per minute and is a helpful tool to gauge heart health. Normal heart rate is between 60-100 beats/ minute at rest. Age, fitness, stress, medication and anxiety can affect an individual heart rate.

## Lipid Panel (Cholesterol Testing)

The American Heart Association recommends that all adults 20 or older have their cholesterol and other traditional risk factors checked every four to six years. After age 40, health care providers should also use an equation to calculate the 10-year risk of experiencing cardiovascular disease or stroke.

Individuals with diabetes and a history of cardiovascular disease should have their LDL-C tested at least once annually.

### Healthy Adults 20 and older

Type of Cholesterol	Recommendation
Total Cholesterol	125-200 mg/dL
LDL-C	<100mg/dl
HDL-C	≥40mg/dL (≥50mg/dL for women)
Non-HDL-C	<130mg/dL

## Pacemaker

Small electrical device implanted in the chest under the skin near the collarbone and sends out an electrical signal to keep a steady contracting rhythm to regulate the heartbeat. It is implanted. Some pacemakers sense when the heartbeat is too fast or too slow and fire impulses that help the heart return to the proper rhythm and speed.

## Percutaneous Coronary Intervention (PCI)

Percutaneous Coronary Intervention (PCI, formerly known as angioplasty with stent) is a non-surgical procedure that uses a catheter (a thin flexible tube) to place a stent to open up blood vessels in the heart that have been narrowed by plaque buildup, a condition known as atherosclerosis. PCI improves blood flow, thus decreasing heart-related chest pain (angina).



### Triglycerides

Often called pulse, is the number of times a heart beats per minute and is a helpful tool to gauge heart health. Normal heart rate is between 60-100 beats/ minute at rest. Age, fitness, stress, medication and anxiety can affect an individual heart rate.

### Valve Regurgitation

Often called leaking heart valves. It can cause the heart to work harder and it may not pump the same amount of blood. Regurgitation occurs when:

- Blood flows back through the valve as they are closing, or Blood leaks through valves that don't close correctly **Valve Replacement**

Surgical treatment options for heart valve disorders. The procedure chosen will depend on the valve that needs replacement, the severity of symptoms and the risk of surgery.

- Mechanical valve: a long-lasting valve made of durable materials. Patients who receive a manufactured valve will usually require a blood-thinning medication for the rest of their lives.
- Tissue valve: Donors may include human or animal donor tissue. Tissue valves can last 10 to 20 years, and usually don't require the long-term use of medication.
- Ross Procedure: Often used for treating damaged aortic valves. The pulmonary valve replaces the damaged aortic valve. The pulmonary valve is replaced with a donor valve. There is generally no need for long-term medication.
- TAVI/TAVR procedure (Transcatheter aortic valve implantation/transcatheter aortic valve replacement): Minimally invasive procedure insert a new valve without removing the old one.

### Valve Stenosis

The term for a valve that is narrowed and doesn't open properly. The flaps of a valve may thicken, stiffen or fuse together. As a result, the valve cannot fully open. The heart then has to work harder to pump blood through the valve, and the body may suffer from a reduced supply of oxygen.

## Medications Used for the Treatment of Cardiovascular Disease:

### ACE Inhibitors (Angiotensin Converting Enzyme Inhibitors)

Used to treat Congestive Heart Failure and Hypertension and to prevent kidney failure in patients with high blood pressure or diabetes, and to reduce the risk of stroke.

### ARB (Angiotensin-Receptor Blockers)

ACE inhibitors are also used to improve survival after heart attacks. ARBs are also used to prevent diabetes and may prevent the recurrence of atrial fibrillation.

A catheter (thin, flexible tube) is inserted into the patient's blood vessels and is gently guided to the heart. The physician carefully destroys malfunctioning tissue using the catheter to deliver energy (such as radiofrequency, laser or cryotherapy) to scar the problematic areas. The scarred areas will no longer send abnormal signals. If successful, the heart will return to a normal rhythm. This minimally invasive procedure usually has a short recovery period. Patients are generally placed on a short course of anti-arrhythmic drugs while the procedure takes full effect.

### Angina

Chest pain/discomfort caused when the heart does not get enough blood. Angina is a symptom of a heart problem like coronary heart disease.

#### **Preferred Agents on the Statewide**

#### **Preferred Drug List (PDL)**

Benazepril	Losartan
Captopril	Olmесartan
Enalapril	Quinapril
Entresto	Ramipril
Fosinopril	Ramipril
Irbesartan	Trandolapril
Lisinopril	Valsartan

### Antiarrhythmics

There are 4 classes of drugs used to treat arrhythmias. See each class for details.

Class I - Sodium-channel blockers

Class II - Beta-blockers

Class III - Potassium-channel blockers

Class IV - Calcium-channel blockers

### Anticoagulants and Antiplatelets

Prescribed to prevent and treat blood clots which can lead to a stroke. Often called blood thinners, they are given to patients to prevent blood clot formation or to treat an existing blood clot.

#### **Preferred Agents on the Statewide**

#### **Preferred Drug List (PDL)**

Eliquis	Warfarin
Enoxaparin	Xarelto
Pradaxa	Warfarin

### Beta Blockers

Medications used to slow heart rate by reducing the demand of the heart for oxygen, Often used to treat tachycardia, atrial fibrillation or hypertension.

#### **Preferred Agents on the Statewide**

#### **Preferred Drug List (PDL)**

Acebutolol	Metoprolol Succinate ER
Atenolol	Metoprolol Tartrate
Bisoprolol	Pindolol
Carvedilol IR Tablet	Propranolol
Hemangeol	Sotalol
Labetalol	





### Calcium Channel Blockers

These medications have multiple effects on the heart. They are used to slow the heart rate in patients with Atrial Fibrillation and to reduce the strength of the muscle cell's contraction.

#### *Preferred Agents on the Statewide*

#### *Preferred Drug List (PDL)*

Amlodipine	Felodipine ER
Cartia XT Capsule	Nifedipine
Diltiazem	Nimodipine
Diltiazem IR TabletQL	Taztia XT Capsule
Dilt-XR Capsule	Verapamil

### Sodium Channel Blockers

Help the heart's rhythm by slowing the heart's ability to conduct electricity.

### Potassium Channel Blockers

Help the heart's rhythm by slowing down the electrical signals that cause Atrial Fibrillation.

### Diuretics

Reduces amount of fluid in the tissues and bloodstream which can lessen the workload on the heart. As a result, there is increased excretion of water via urine. There are 3 types:

- **Loop-acting diuretics:** These cause the kidneys to get rid of more urine, lowering the amount of water in the body and the blood pressure.
- **Potassium-sparing diuretics:** These drugs reduce the amount of water in the body, but while other diuretics cause the body to lose potassium in the process, this type does not. This type of diuretic is often prescribed with another diuretic because, while it spares potassium, it does not control blood pressure as well as thiazide diuretics do.
- **Thiazide diuretics:** This type of diuretic reduces the amount of salt and water in the body. It is also the only type of diuretic that widens the blood vessels to lower blood pressure. Thiazide diuretics are often the first drug given to treat high blood pressure.