

8. Cardiovascular Diseases

Ranked AL's Eighth Health Indicator

CVDs are identified as the eighth most prominent health indicator in AL. It refers to a group of serious health conditions which can result in death and disability.¹ CVD was the leading cause of death in AL for 2019.²

CVDs are caused by plaque buildup in an individual's arteries. This causes the arteries to narrow over time, partially or totally blocking the blood flow. The four most common CVDs are coronary artery disease, heart failure, heart attacks, and stroke.¹ While the other three conditions affect the heart, a stroke affects the brain and occurs when there is a lack of blood flow to an area of the brain. Stroke was the fourth leading cause of death in AL in 2019.²

Another common CVD condition that affects many American adults is hypertension (also called high blood pressure). According to CDC, an individual can be considered to have pre-hypertension based on the following: family history, weight, level of physical activity, diet, smoking, and having other co-existing diseases, such as diabetes.¹ Many people in AL have hypertension or high cholesterol but are not aware of their condition. Unfortunately for many individuals, chest pain is the first reason for visiting the doctor.

Vulnerable Populations

CVDs are considered an aging disease, which means your risk of receiving the diagnosis increases with age. White males have the highest risk of developing CVDs, followed by AA/black males, AA/black females, and Asian males.¹ Individuals that live in food deserts (i.e., places with limited access to healthy and affordable food choices) and low-income neighborhoods with little green space have higher rates of CVD morbidity.³

Geographic Variation

AL is within the CDC designated "Stroke Belt" that includes most of the southeast U.S. (i.e., Arkansas, Georgia, Indiana, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia.) These states had an age-adjusted stroke mortality rate that exceeded the national rate by 34 percent in 2018.¹

Topics Addressed for This Indicator are:

- Adults told they have high blood pressure.
- Hypertension diagnosis in Medicaid recipients.
- Hypertension among Medicare recipients.
- Hyperlipidemia among Medicare recipients.
- Stroke among Medicare recipients.

- BCBS members who had cardiovascular-related claims.
- Heart disease and stroke mortality.

Highlights

Indicator data are collected from Blue Cross Blue Shield of AL (BCBS) Claims, Centers for Medicare and Medicaid Services, AL Medicaid Agency, BRFSS, and the ADPH Center for Health Statistics Mortality Files.

- AL's stroke mortality rate was 64.0 deaths per 100,000 persons in 2019.
- Shelby County, located in the Northeastern Public Health District, had the highest stroke rate with 142.1 deaths per 100,000 persons.
- According to BRFSS data, hypertension diagnosis is higher in populations with low income and low education attainment.

Risk Factors:

- Family history of CVD.
- Overweight/obesity.
- High sodium and high-fat diet.
- Reduced outdoor recreational access.
- Lack of education.
- Poor access to healthy foods.
- Minority racial groups (particularly AA/blacks and Asian males).
- Smoking and second-hand smoke.
- Co-morbid diabetes diagnosis.

Adults Told They Have High Blood Pressure

The statewide prevalence for adults who have been told they have high blood pressure was 10.2 percent higher than the national median:

- The risk of being diagnosed with hypertension increases with age. Two-thirds of individuals over 65 years old have been told they have high blood pressure.
- According to BRFSS data, males have a similar prevalence of high blood pressure compared to females. AA/black individuals have a 5.4 percent higher prevalence of high blood pressure compared to white individuals.

- Individuals with a household income of less than \$15,000 and have less than a high school education have the highest prevalence of hypertension.

- The county with the highest hypertension prevalence is Sumter County (16.9 percent). Sumter County is located in the West Central Public Health District.
- The West Central Public Health District had the highest prevalence of Medicaid recipients diagnosed in 2018 (9.1 percent).
- In the Medicaid population, the number of white and AA/black diagnosed with hypertension is similar in AL in 2018.
- Rural areas have a higher percentage of Medicaid recipients diagnosed with hypertension compared to urban areas (8.3 percent compared to 6.0 percent, respectively).

For the district level, only confirmed county diagnoses were included in the calculation.

	%	95% CI
AL	42.5	(41.0-44.0)
U.S. Median	32.3	-
Public Health Districts		
Northern	42.0	(38.2-45.8)
Northeastern	43.0	(39.3-46.6)
West Central	43.4	(39.3-47.6)
Jefferson	40.0	(36.2-43.8)
East Central	42.4	(38.1-46.7)
Southeastern	47.8	(43.3-52.4)
Southwestern	43.2	(39.2-47.3)
Mobile	40.0	(36.1-43.9)
Geographic Variation		
N/A	-	-
Sex		
Male	44.3	(42.0-46.6)
Female	40.8	(38.9-42.7)
Race		
White	42.4	(40.6-44.1)
AA/black	47.8	(44.7-50.9)
Household Income		
Less than 15,000	54.4	(49.2-59.6)
\$15,000-24,999	49.3	(45.2-53.5)
\$25,000-34,999	43.7	(38.2-49.1)
\$35,000-49,999	38.2	(34.0-42.5)
\$50,000+	35.9	(33.6-38.2)
Age (in years)		
25-34	19.4	(15.8-23.0)
35-44	32.7	(28.9-36.5)
45-54	46.9	(43.3-50.4)
55-64	60.1	(57.1-63.2)
65+	68.8	(66.6-71.0)
Education		
Less than high school	53.2	(48.0-58.4)
High school or GED	43.6	(40.9-46.3)
Some college	39.2	(36.6-41.8)
College graduate or higher	38.3	(35.9-40.8)

	Count	%
AL	89,108	7.4
U.S.	-	-
Public Health Districts		
Northern	17,092	7.2
Northeastern	13,577	7.0
West Central	10,972	9.1
Jefferson	8,666	5.4
East Central	11,950	6.3
Southeastern	10,512	9.0
Southwestern	9,712	8.6
Mobile	6,403	5.4
Geographic Variation		
Rural	49,096	8.3
Urban	40,012	6.0
Sex		
Male	59,346	-
Female	29,762	-
Race		
White	38,686	-
AA/black	40,618	-
Hispanic	595	-
Other/not provided	9,210	-
Household Income		
N/A	-	-
Age (in years)		
Under 21	2,143	-
21 and Over	86,965	-
Education		
N/A	-	-

Hypertension Diagnosis in Medicaid Recipients

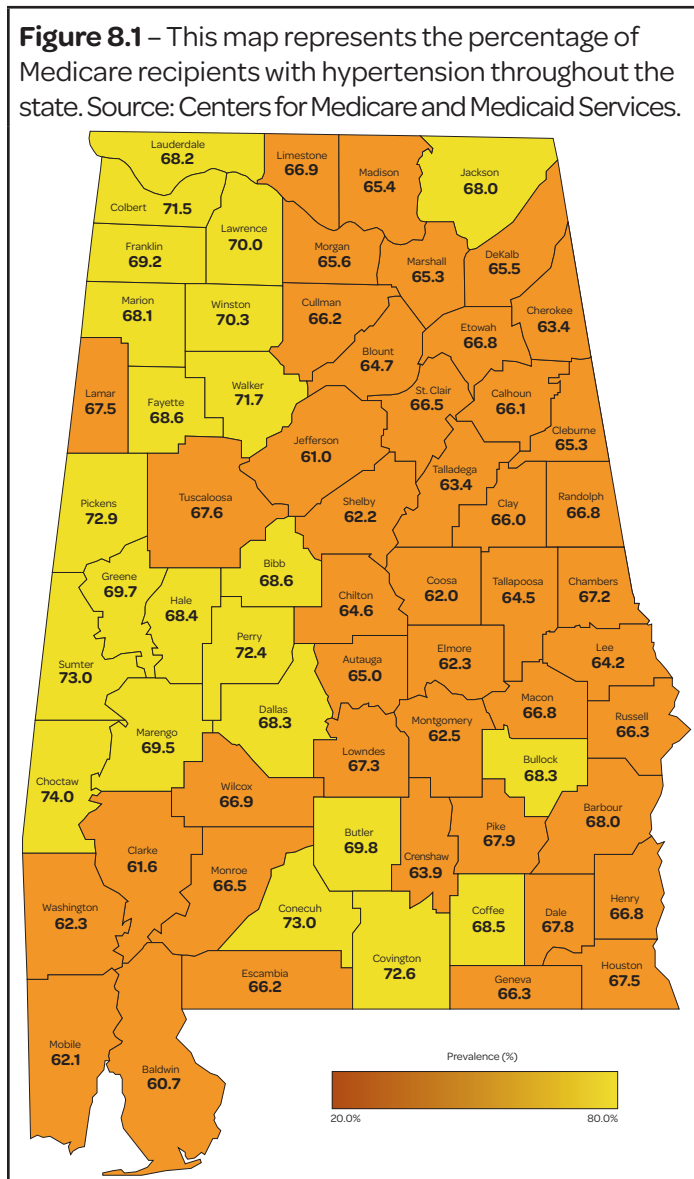
Medicaid covers children and adults under the age of 65 years old. In AL, 7.4 percent of Medicaid recipients were diagnosed with hypertension in 2018:

Hypertension Among Medicare Recipients

Hypertension (high blood pressure) can increase your risk of myocardial infarction, stroke, and other CVDs.¹ Hypertension increases dramatically with age:

- The prevalence of Alabamians on Medicare with hypertension was 65.5 percent in 2018. In the 2015 CHA, the state prevalence was 61.0 percent.
- Rural areas had 66.5 percent of Medicare recipients with hypertension, while urban areas had 63.9 percent of Medicare recipients with hypertension.
- Choctaw County had the highest percentage of individuals on Medicare with a hypertension diagnosis in 2018, 74.0 percent.

Additional demographic information is not available at this time.

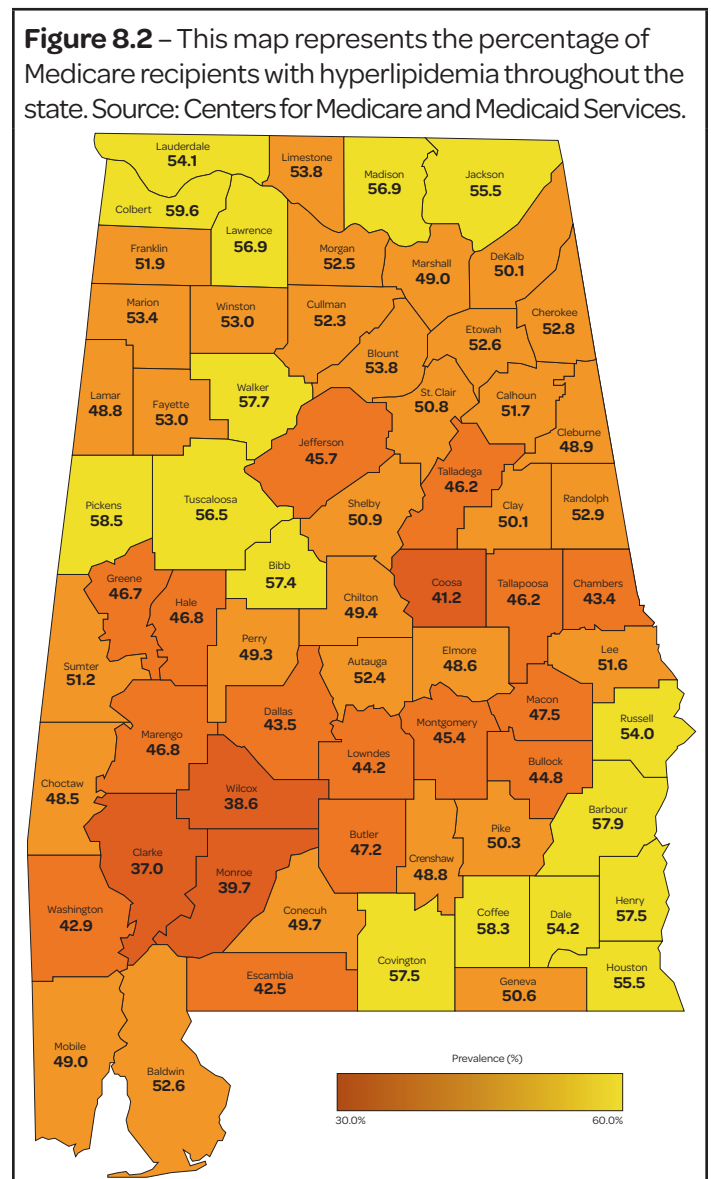


Hyperlipidemia Among Medicare Recipients

Hyperlipidemia is an abnormally high concentration of fats or lipid in the blood. The increase of fat deposits in the veins can lead to arteriosclerosis, which is the hardening of the blood vessels.¹

In 2018, 51.3 percent of AL Medicare recipients had hyperlipidemia, compared to the U.S. prevalence of 47.7 percent. In the 2015 CHA, 45.1 percent of Medicare recipients had hyperlipidemia in AL:

- The Northern Public Health District had the highest prevalence of hyperlipidemia.
- In 2018, Colbert County had the highest prevalence, with 59.6 percent of the Medicare recipients having hyperlipidemia, followed by Pickens County at 58.5 percent, and Coffee County at 58.3 percent.
- In 2018, Clarke County had the lowest prevalence, with 37.0 percent.



Additional demographic information is not available at this time.

- Bullock County had the lowest prevalence at 2.8 percent of Medicare recipients who had a stroke diagnosis.

Stroke Among Medicare Recipients

AL is within the CDC designated “Stroke Belt” that includes most of the states within the southeast, such as Arkansas, Georgia, Indiana, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia. These states had an age-adjusted stroke mortality rate that dramatically exceeds the overall national rate in 2018.¹

- The AL Medicare stroke prevalence was 4.2 percent for 2018. In the 2015 CHA, the state prevalence was 4.1 percent.
- Covington County had the highest stroke prevalence among Medicare recipients with 9.8 percent, followed by Conecuh with 6.5 percent.

Additional demographic information was not available at this time.

Blue Cross and Blue Shield Members with Cardiovascular Disease-related Claims

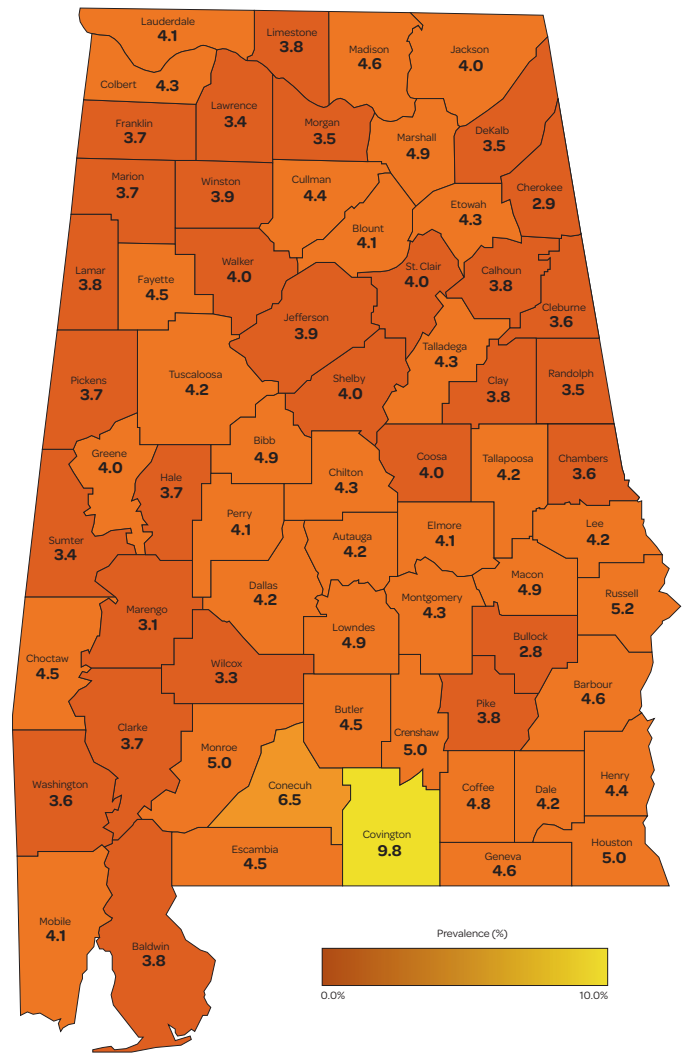
CDC estimates that heart disease costs the U.S. about \$219 billion each year.¹

The data presented in Table 8.3 refers to BCBS CVD-related claims. BCBS is one of the largest private insurance companies in AL.

CVDs include heart failure, high blood pressure, and coronary artery disease. The claims are either based on medication usage or therapy that was administered during a physician visit:

- The percentage of AL BCBS members who had CVD-related claims has increased every year but dramatically increased from 2018-2019.
- In 2019, Bullock County had the highest prevalence of BCBS members with CVD-related claims (44.1 percent). Bullock County is located in the East Central Public Health District.

Figure 8.3 – This map represents the percentage of Medicare recipients with strokes throughout the state. Source: Centers for Medicare and Medicaid Services.



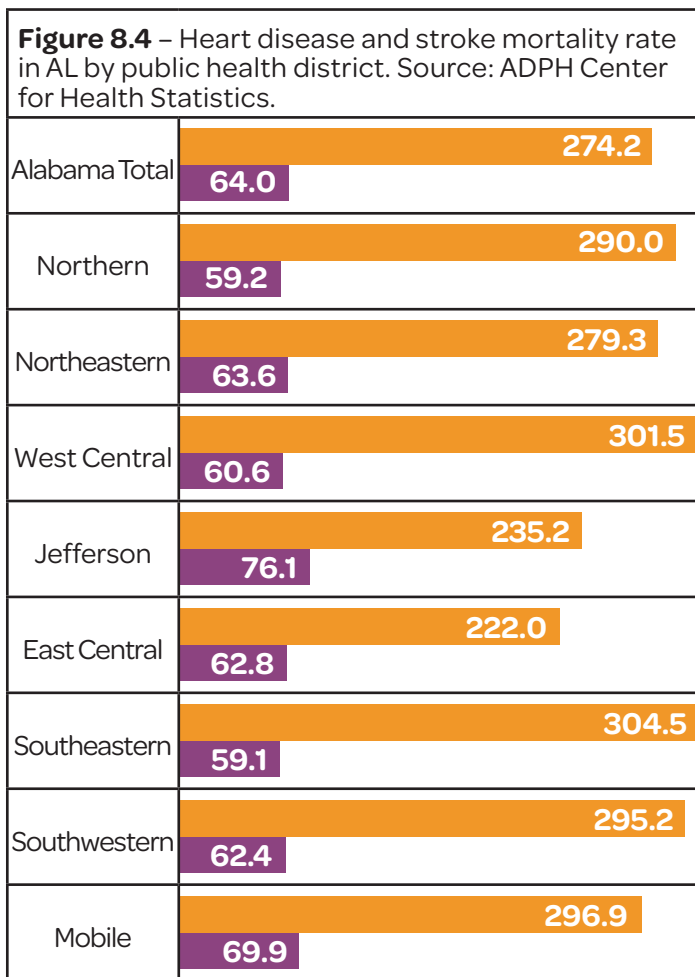
	2016	2017	2018	2019
AL	18.0	20.2	21.4	26.0
U.S.	-	-	-	-
Public Health Districts				
Northern	16.0	17.5	18.9	22.7
Northeastern	17.4	19.4	20.1	24.6
West Central	20.7	23.6	25.7	30.5
Jefferson	18.3	19.9	20.1	24.1
East Central	18.9	22.3	24.1	29.4
Southeastern	19.4	22.0	23.6	28.6
Southwestern	17.6	20.5	21.6	26.9
Mobile	18.4	20.8	22.3	27.4
Geographic Variation				
Rural	18.6	21.2	22.6	27.5
Urban	17.5	19.5	20.6	24.8
Sex				
N/A	-	-	-	-

Race				
N/A	-	-	-	-
Household Income				
N/A	-	-	-	-
Age (in years)				
N/A	-	-	-	-
Education				
N/A	-	-	-	-

Heart Disease and Stroke Mortality

CVD is the number one cause of death in AL and across most of the U.S. AL had a rate of 274.2 heart disease-related deaths per 100,000 persons in 2019.

- The Southeastern Public Health District had the highest heart disease mortality rate (304.5 deaths per 100,000 persons).
- Rural areas had 313.8 heart disease deaths per 100,000 persons, compared to urban areas with 244.4 heart disease deaths per 100,000 persons.
- White individuals had 319.1 heart disease deaths



■ Heart Disease ■ Stroke Per 100,000 residents

per 100,000 persons, compared to AA/black individuals with 239.5 heart disease deaths per 100,000 persons.

- Age increased the risk of heart disease mortality with individuals over age 65 years old experiencing 1,201.8 deaths per 100,000 persons.
- Shelby County, located in the Northeastern Public Health District, had the highest stroke rate with 142.1 deaths per 100,000 persons.
- Rural areas had 73.0 stroke deaths per 100,000 persons, compared to urban areas with 58.4 stroke deaths per 100,000 persons.

Data Sources

Table 8.1 – Percentage of Adult Told They Have High Blood Pressure, 2019. ADPH, BRFSS, 2019. Data requested March 2021.

Figure 1.1 – Hypertension Among Medicare Recipients, 2018. Centers for Medicare and Medicaid Services, 2019. Data requested March 2021.

Table 8.2 – Percentage of Medicaid Recipients Diagnosed with Hypertension in AL, 2018. AL Medicaid Agency, 2019. Data requested July 2020.

Figure 8.2 – Hyperlipidemia Among Medicare Recipients, 2018. Centers for Medicare and Medicaid Services, 2019. Data requested March 2021.

Figure 8.3 – Stroke Among Medicare Recipients, 2018. Centers for Medicare and Medicaid Services, 2019. Data requested March 2021.

Table 8.3 – Percentage of AL BCBS Members with Cardiovascular Disease-Related Claims, 2016-19. BCBS Claims Data, 2019. Data requested October 2020.

Figure 8.4 – Heart Disease and Stroke Mortality Rate in AL, 2019. ADPH, Center for Health Statistics Mortality Files, 2019. Data requested March 2021.

Written Sources

1. CDC, Heart Disease, 2019.
2. Americas Health Rankings, Cardiovascular Diseases, 2018.
3. AHA, Food Deserts and Adverse Cardiovascular Outcomes, 2019.
4. AL Medicaid Agency, Hypertension, 2019.

Community Resources

ADPH Blood Pressure Monitoring Stations Program

Location: Statewide

Type: State Coordinated Program

ADPH Home Health Biomonitoring Program

Location: Marengo County, AL

Type: State Coordinated Program

AHA

Location: Nationwide

Type: Non-profit Organization

American Journal of Cardiovascular Disease

Location: Nationwide

Type: Research Institution

American Lung Association

Location: Nationwide

Type: Non-profit Organization

CDC

Location: Atlanta, GA

Type: Federal Government Organization

USDHHS Office of Minority Health

Location: Washington, DC Metro

Type: Research Institution

Healthy People 2030

Location: Nationwide

Type: Advocacy Organization

Million Hearts

Location: Nationwide

Type: Advocacy Group

Wellness Coalition

Location: Montgomery County, AL

Type: Non-profit Organization