13. Diabetes
Ranked AL's Thirteenth Health Indicator

Diabetes is a serious health condition and was AL's seventh leading cause of death in 2019. Diabetes can be classified into three main types – Type 1, Type 2, and gestational. The majority of individuals with diabetes have Type 2 diabetes (9095 percent).[1] Type 2 diabetes, means an individual's body cannot make enough insulin to control the body's blood sugar levels.

Individuals most at-risk for Type 2 diabetes are those diagnosed with prediabetes.[1] Prediabetes is when an individual's blood sugar is chronically higher than normal, but not severe enough for a diabetes diagnosis.[1] People with prediabetes can still reverse the condition with lifestyle changes. Gestational diabetes develops during pregnancy and could pose a health risk to the infant.[1]

Many people with diabetes can manage their condition with a consistent, healthy diet and regular exercise, if the condition is detected early.[2] Due to low screening rates and access to health services, diabetes is often diagnosed when it begins to have serious health consequences.[1] Diabetes is highly linked to obesity and lack of exercise and has many associated comorbidities, including heart disease and some eye conditions. The disease can result in limb amputation and the need for dialysis.[1]

Vulnerable Populations

According to CDC, "more than 34 million people in the U.S. have diabetes, and 1 in 5 of [those individuals] don't know they have it."[1] Diabetes takes a heavy toll in the AA/black population and in older adults. Almost one-fifth of AA/black individuals and one-fourth of elderly people have diabetes in AL.[3]

Geographic Variation

Diabetes was especially prevalent in rural areas. Most of the central AL counties were considered as part of the U.S. Diabetes Belt, an area with considerably high diabetes occurrence among adults.

Topics Addressed for This Indicator are:

- Alabamians ever told they have diabetes.
- Diabetes among Medicare recipients.
- Diabetes diagnosis in Medicaid recipients.
- BCBS members with diabetes-related claims.
- Diabetes-related mortality.

Highlig hts

Data are retrieved from BCBS Claims, the Centers of Medicaid and Medicare, AL Medicaid Agency, BRFSS, and the ADPH Center for Health Statistics Mortality Files:

- According to BRFSS, 13.9 percent of AL's adult population report they have been told they have diabetes.
- There was an increase in self-reported prevalence among AA/black individuals when compared to white individuals.
- The Southwestern Public Health District had the highest percentage of diabetes diagnoses among their Medicaid recipients at 5.8 percent.
- The rate of diabetes mortality in rural areas was 30.4 deaths per 100,000 persons, compared to urban areas 20.8 deaths per 100,000 persons.

Risk Factors:

- Age.
- Family history.
- Overweight.
- Physical inactivity.
- High blood pressure/low high-density lipoprotein/high triglycerides.
- Minority race/ethnicity.
- Pregnancy.

Adults Ever Told They Have Diabetes

The statewide prevalence of persons who report they have been told they have diabetes was 13.9 percent compared to the U.S. prevalence of 10.8 percent:

- There was a higher prevalence among AA/black individuals (17.3 percent) when compared to white individuals (13.3 percent).
- Geographically, data suggests that areas in the southern part of AL had a higher prevalence of reported diabetes. For example, 12.2 percent of adults in the Northeastern Public Health District reported being diagnosed with diabetes; however, 16.4 percent of Southeastern Public Health District reported being diagnosed with diabetes.
- Individuals within lower income brackets and lower education status are increasingly more at risk for diabetes.
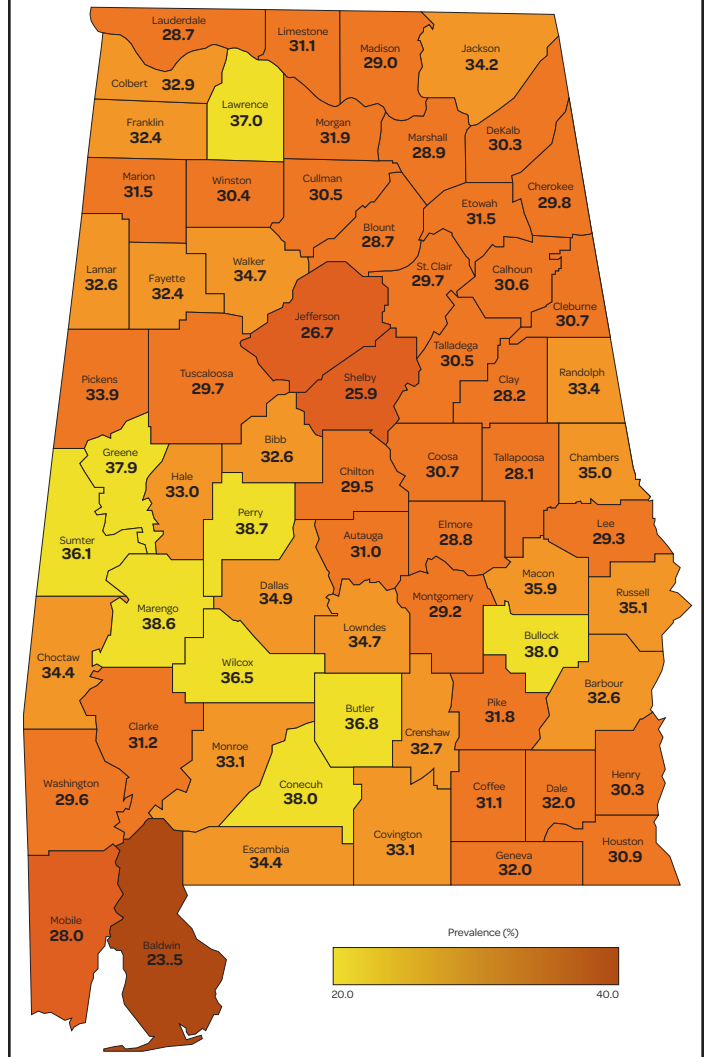- In 2019, 25.9 percent of Alabamians 65 years or older were told they had diabetes.

Adults told they had pre-diabetes and women who had diabetes only during pregnancy were excluded from being classified as diagnosed.

Table 13.1 – Percentage of Adults Ever Told They Have Diabetes, 2019		
	%	95% CI
AL	13.9	(13.0-14.9)
U.S.	10.8	-
Public Health Districts		
Northern	13.5	(11.1-15.9)
Northeastern	12.2	(10.0-14.3)
West Central	13.3	(10.7-16.0)
Jefferson	12.4	(10.1-14.7)
East Central	17.1	(14.2-20.1)
Southeastern	16.4	(13.6-19.3)
Southwestern	14.4	(11.8-17.0)
Mobile	13.5	(11.1-15.9)
Geographic Variation		
N/A	-	-
Sex		
Male	14.1	(12.6-15.6)
Female	13.8	(12.6-15.1)
Race		
White	13.3	(12.2-14.4)
AA/black	17.3	(15.3-19.3)
Household Income		
Less than $15,000	21.2	(17.5-24.9)
$15,000-24,999	17.4	(14.7-20.1)
$25,000-34,999	17.2	(13.4-21.0)
$35,000-49,999	11.5	(9.2-13.9)
$50,000-74,999	10.8	(9.5-12.2)
Age (in years)		
35-44	6.5	(4.5-8.6)
45-54	14.7	(12.1-17.2)
55-64	25.3	(22.5-28.2)
65+	25.9	(23.8-27.9)
Education		
Less than high school	19.3	(15.7-22.8)
High school or GED	15.2	(13.5-17.0)
Some college	12.5	(11.0-14.0)
College graduate or higher	11.0	(9.6-12.4)

Diabetes Among Medicare Recipients

Diabetes is an age-related disease, meaning the risk of being diagnosed increases in elderly populations.[1] The state prevalence for diabetes in AL Medicare recipients was 30.2 percent for 2018. In the 2015 CHA, the prevalence was 29.7 percent:

- Perry County had the highest diabetes prevalence (38.7 percent) in Medicare recipients for 2018, followed by Marengo County (38.6 percent), and Conecuh County (38.0 percent).

- Baldwin County had the lowest diabetes diagnosis prevalence, with 23.5 percent of Medicare recipients having been diagnosed.

Additional demographic information was not available.

Figure 13.1 – This map displays the percent of diabetes recipients by county. Medicare provides insurance to persons over the age of 65 years old. Source: Centers for Medicare and Medicaid Services..

Diabetes Diagnosis in Medicaid Recipients

AL's Medicaid adult and adolescent populations had 4.1 percent of recipients with diabetes-related diagnoses in AL in 2018:

- The Southwestern public health District had the highest percentage of diabetes diagnoses among their Medicaid recipients at 5.8 percent.
- Of those claims, females were twice as likely to have a diabetes diagnosis compared to males.
- The prevalence of white and AA/black individuals with a diabetes diagnosis, although lower, was similar to 2017.

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

Table 13.2 – Percentage of Diabetes Among Medicaid Recipients, 2018		
	Count	**%**
AL	**48,908**	**4.1**
U.S.	-	-
Public Health Districts		
Northern	9,616	4.1
Northeastern	7,184	3.7
West Central	5,862	4.8
Jefferson	4,388	2.7
East Central	6,643	3.5
Southeastern	5,590	4.8
Southwestern	5,508	5.8
Mobile	3,685	3.1
Geographic Variation		
N/A	-	-
Sex		
Female	33,934	-
Male	14,968	-
Race		
White	21,167	-
Asian or Pacific Islander	292	-
AA/black	22,318	-
American Indian/Alaska Native	112	-
Hispanic	497	-
Unknown or other	4,522	-
Household Income		
N/A	-	-
Age (in years)		
Under 21	2,899	-
21 and over	46,009	-
Education		
N/A	-	-

Blue Cross and Blue Shield Members with Diabetes-related Claims

In 2017, the total direct medical expenses for diagnosed diabetes in AL were estimated at 4.2 billion dollars.[4] BCBS is the largest private insurance providers for AL. Roughly, 10 percent of BCBS members had claims related to diabetes management or hospitalizations each year between 2016 and 2019.

The BCBS claim usage has increased steadily since 2016. Diabetes claims include eye exams, statin therapy, lipid test, and A1C testing:

- The West Central Public Health District had the highest percent of BCBS members who had diabetes claims, followed by East Central and Southeastern public health districts in 2019.

Table 13.3 – Percentage of BCBS Members with Diabetes-related Claims, 2016–2019				
	2016	**2017**	**2018**	**2019**
AL	**9.4**	**10.2**	**10.2**	**10.4**
U.S.	-	-	-	-
Public Health Districts				
Northern	8.4	9.1	9.2	9.6
Northeastern	8.7	9.5	9.4	9.6
West Central	10.9	11.2	11.7	11.9
Jefferson	9.0	9.8	9.4	9.4
East Central	10.5	11.4	11.6	11.7
Southeastern	10.4	11.3	11.4	11.7
Southwestern	9.9	10.6	10.7	11.2
Mobile	9.8	10.6	10.7	10.8
Geographic Variation				
Rural	10.0	10.8	11.0	11.3
Urban	9.0	9.7	9.7	9.8
Sex				
N/A	-	-	-	-
Race				
N/A	-	-	-	-
Household Income				
N/A	-	-	-	-
Age (in years)				
N/A	-	-	-	-
Education				
N/A	-	-	-	-

Diabetes-related Mortality

Diabetes mortality was defined as death due to a diabetes-related illness, not necessarily as an underlying disease. In AL, the diabetes mortality rate was 24.9 deaths per 100,000 persons in 2019:

- East Central Public Health District had the highest rate of diabetes mortality with 43.2 deaths per 100,000 persons.

- Wilcox County (Southwestern Public Health District) had the highest rate of diabetes mortality with 86.8 deaths per 100,000 persons.

- The rate of diabetes mortality in rural areas was 30.4 deaths per 100,000 persons, compared to urban areas 20.8 deaths per 100,000 persons.

- After age of 65 years old, the diabetes crude mortality rate almost triples from the previous age bracket to 92.8 deaths per 100,000 persons.

Table 13.4 – Diabetes-related Mortality, 2019		
	Count	**Rate per 100,000**
AL	**1,223**	**24.9**
U.S.	**87,647**	**26.7**
Public Health Districts		
Northern	226	20.7
Northeastern	138	17.0
West Central	74	17.1
Jefferson	140	21.3
East Central	306	43.2
Southeastern	124	32.7
Southwestern	121	29.4
Mobile	94	22.7
Geographic Variation		
Rural	641	30.4
Urban	582	20.8
Sex		
Male	705	29.8
Female	518	20.4
Race		
White	747	23.3
AA/black	458	35.3
Hispanic	8	3.6
Household Income		
N/A	-	-
Age (in years)		
25-35	22	3.4
35-44	45	7.6
45-54	110	17.8
55-64	253	38.5
65+	789	92.8

Education		
Less than high school	296	-
High school or GED	524	-
Some college	225	-
College graduate or higher	162	-

Data Sources

Table 13.1 – Percentage of Adults Ever Told They Have Diabetes, 2019. ADPH, BRFSS, 2019. Data requested March 2021.

Figure 13.1 – Diabetes Among Medicare Recipients, 2018. Centers for Medicare and Medicaid Services, 2019. Data requested December 2020.

Table 13.2 – Percentage of Diabetes Among Medicaid Recipients, 2018. AL Medicaid Agency, 2018. Data requested July 2020.

Table 13.3 – Percentage of BCBS Members with Diabetes–related Claims, 2016-2019. BCBS, Members Diabetes Claims, 2019. Data requested October 2020.

Table 13.4 – Diabetes–related Mortality, 2019. ADPH, Center for Health Statistics Mortality Files, 2019. Data requested March 2021.

Written Sources

1. CDC, Diabetes Prevention, 2020.
2. ADPH, Diabetes General Information, 2021.
3. CDC, BRFSS Diabetes Module, 2019.
4. American Diabetes Association,® Economic Cost of Diabetes in the U.S. in 2017, 2018.

Community Resources

AL Safe at School Diabetic Curriculum
Location: Montgomery County, AL
Type: Educational Resource

American Diabetes Association®
Location: Washington, DC Metro
Type: Non-profit Organization

Association of Diabetes Care and Education Specialists
Location: Chicago, IL
Type: Educational Resource

CDC National Diabetes Prevention Program
Location: Atlanta, GA
Type: Federal Government Program

Diabetes Research Institute Foundation
Location: Miami, FL
Type: Non-profit Organization

Juvenile Diabetes Federation
Location: New York, NY
Type: Non-profit Organization