Diabetes' Impact *in* Colorado

Facts for Action: Chronic Diseases and Related Risk Factors in Colorado

DIABETES IS BECOMING MORE COMMON

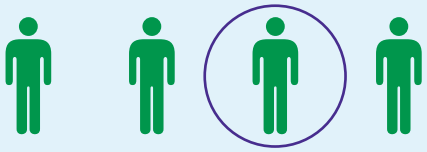
Colorado was one of eight states that saw a significant increase in the prevalence of diabetes between 2013 and 2014.[1]

The adult prevalence of diagnosed diabetes increased 55%, from 4.7% in 2003 to 7.3% in 2014.

The adult prevalence of obesity, a key risk factor for type 2 diabetes also increased significantly, from 16.0% in 2003 to 21.3% in 2014.

More than 1 in 3 U.S. adults are estimated to have prediabetes.

>1 in 3



1 in 4 people with diabetes are undiagnosed.[2]

More than 19,800 adult Coloradans were newly diagnosed with diabetes in 2014.

More than half of people with diabetes were diagnosed when they were 18-54 years of age.

Nearly 300,000 Colorado adults are estimated to have diagnosed diabetes and another 110,000 could be undiagnosed but living with the disease.

Only 7% of adult Coloradans were aware of having prediabetes in 2014.

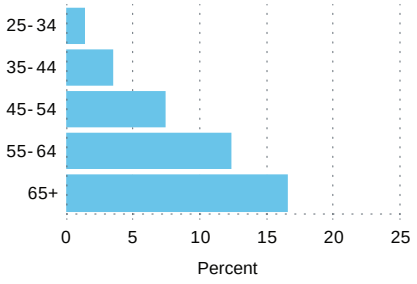
7%

15-30% of people with prediabetes will likely develop diabetes within 5 years.

15-30%

Diabetes disparities exist

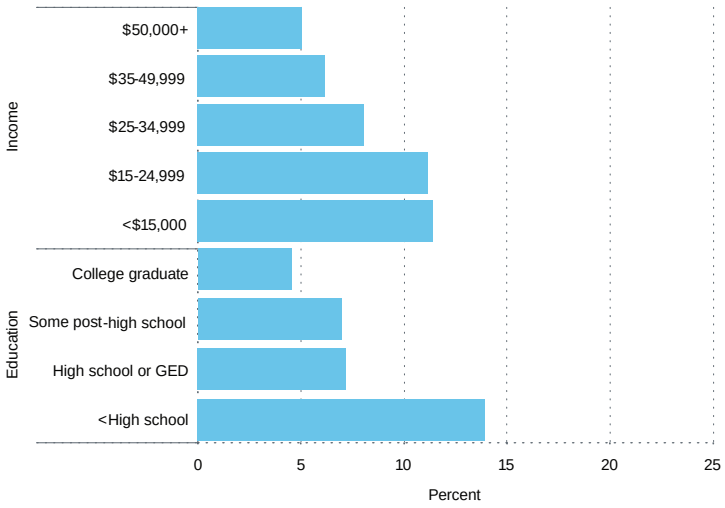
Percent of adult Coloradans with diabetes by age.



In 2014, diabetes was significantly more prevalent among older adults.

In addition, Black and Hispanic adults were about twice as likely to have diabetes compared with White adults in 2014.*

Percent of adult Coloradans with diabetes by income & education.



In 2014, diabetes was significantly more prevalent among **adults with less education and lower income.***

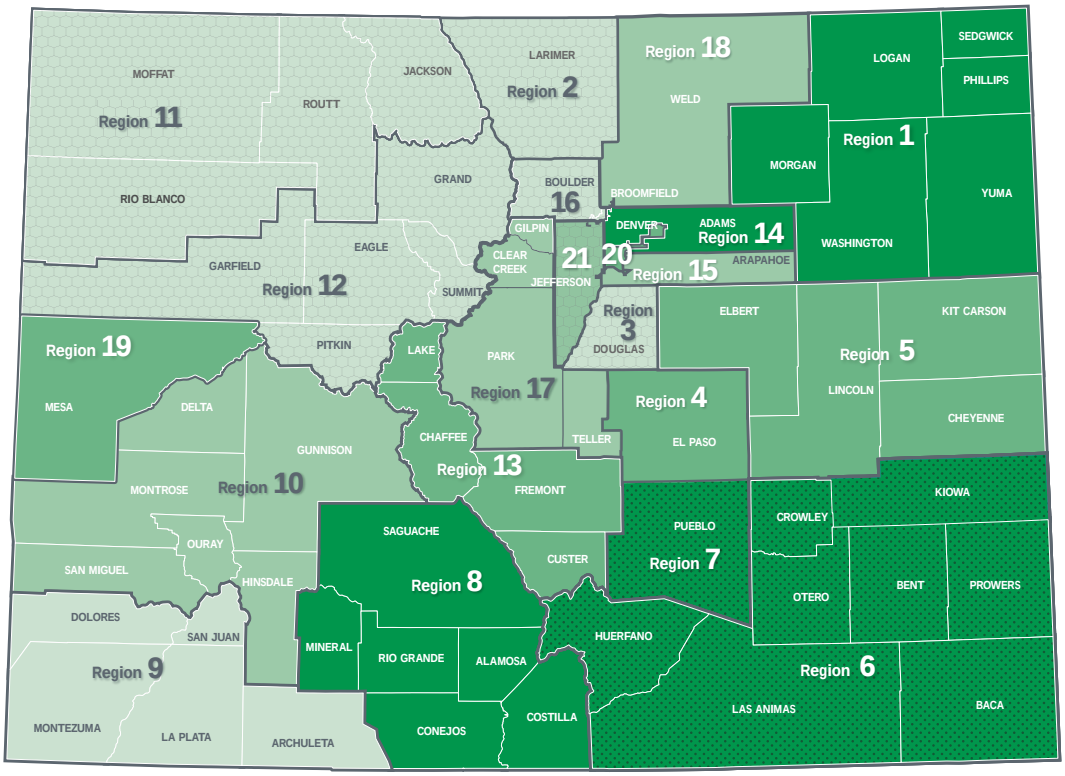
Data source: Behavioral Risk Factor Surveillance System.

*Comparisons were adjusted for age differences between groups.

COLORADO
Department of Public Health & Environment

November 2015

Diabetes prevalence by geographic region, Colorado, 2012-2014.



Southeastern Colorado bears the largest burden of diabetes, with prevalence as high as **13%, almost twice the state average** and similar to the highest nationally-ranked state.

- Lowest quartile (3.9-5.5%)
- Second quartile (5.6-7.4%)
- Third quartile (7.5-8.1%)
- Highest quartile (8.2-13.4%)

State average: 7.1% (95% C.I.; 6.7-7.4)

- Statistically lower than average
- Statistically higher than average

↑41%

Total costs of diagnosed diabetes in the United States in 2012 were $245 billion — a 41% increase since 2007.[3]

2.3x

Medical expenditures for people with diabetes are **2.3 times higher** than for those without diabetes.[3]

The total cost of care per patient with diabetes was over $13,000 in Colorado in 2012.

15%

In Colorado, **15% of hospital discharges** in 2014 were related to diabetes.

The hospital discharge rate among people with diabetes was 22 per 100 population of people with diabetes in 2014.

8th

Diabetes is the **8th leading cause of death** in Colorado.

Every day in Colorado, 2 people die from diabetes.

Diabetes is costly

Diabetes is costly in terms of medical expenditures, hospitalizations and deaths.

Medical expenditures are increasing along with the prevalence of diabetes nationally and in Colorado.

However, in recent years, the hospital discharge rate per population with diabetes and the diabetes death rate have both significantly decreased.

Data sources: Behavioral Risk Factor Surveillance System; Colorado All Payer Claims Database; Hospital Discharge Dataset — Colorado Hospital Association; Colorado Health Information Dataset (death data).

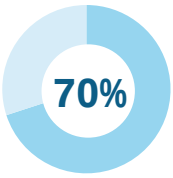
People with diabetes also have other health conditions*

91% of adult Coloradans with diabetes had at least one other chronic health condition in 2013.

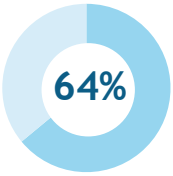
78% of obese people with diabetes have high blood pressure.

50% of people with diabetes are obese.

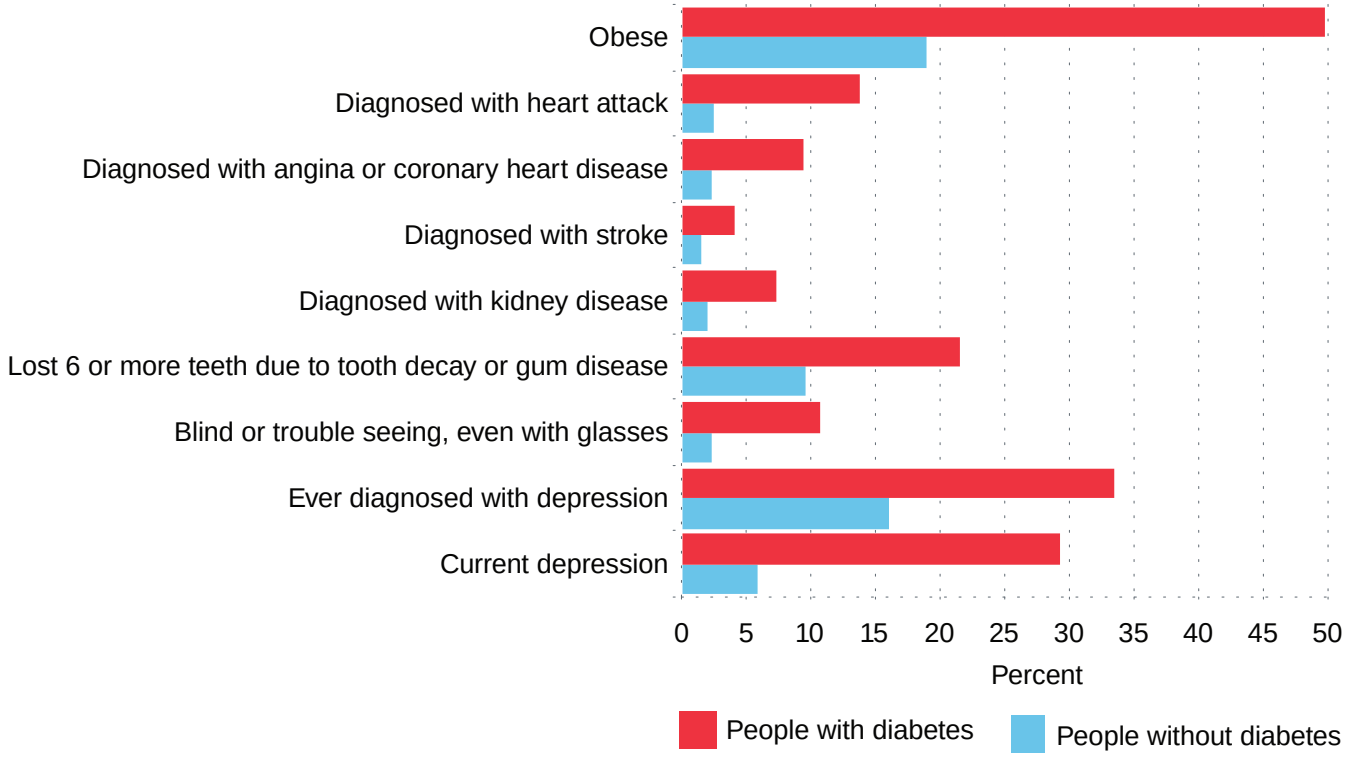
70% of people with diabetes have high blood pressure.



64% of people with diabetes have high cholesterol.



In 2014, after adjusting for age differences between groups, the following conditions were more likely among people with diabetes than people without diabetes.^



As the number of chronic conditions a person has increases, so does the risk of:[4]

- Mortality
- Poor functional status
- Unnecessary hospitalizations
- Adverse drug events
- Duplicative tests
- Conflicting medical advice

***Data source:** Behavioral Risk Factor Surveillance System, 2013.
^Data source: Behavioral Risk Factor Surveillance System, 2014.

People with diabetes have disease management needs

Diabetes increases the risk for many serious health problems, including eye and foot complications. With the correct treatment and lifestyle changes, the onset of complications can be prevented or delayed.

Amputations of legs, feet or toes are a severe consequence of diabetes. The rate of non-traumatic lower extremity amputations (LEA) was 3.7 per 1,000 population of adults with diabetes in Colorado in 2014.

68% of all non-traumatic LEA occurred in those with diagnosed diabetes.

Among adult Coloradans with diabetes:

57% checked their blood glucose daily (2013).

91% had their A1C checked in the past year (2013).

70% had their A1C checked more than once in the past year (2013).

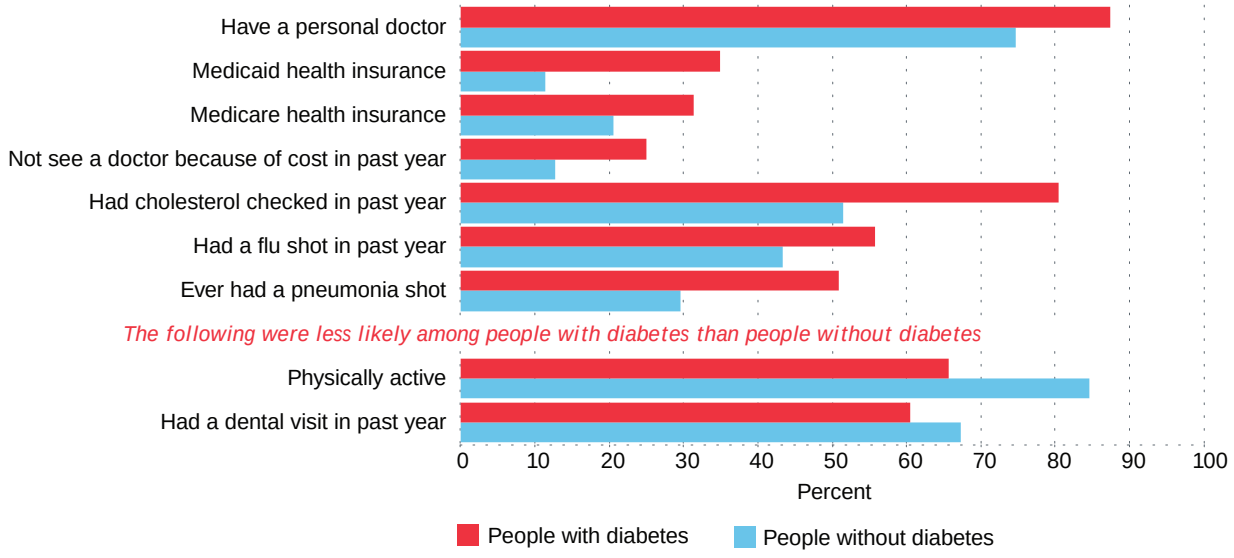
87% had a medical visit for diabetes in the past year (2013).

67% had an eye exam in the past year (2012).

73% had a foot exam by a health professional in the past year (2012).

67% have taken a diabetes self-management class (2014).

In 2014, after adjusting for age differences between groups, the following were more likely among people with diabetes than people without diabetes.



Data sources: Behavioral Risk Factor Surveillance System, Hospital Discharge Dataset - Colorado Hospital Association.

References

1. Trust for America's Health and the Robert Wood Johnson Foundation. The State of Obesity 2015: Better Policies for a Healthier America. September 2015.
2. Centers for Disease Control and Prevention. National Diabetes Statistics Report: Estimates of Diabetes and Its Burden in the United States, 2014. Atlanta, GA: U.S. Department of Health and Human Services; 2014.
3. American Diabetes Association. Economic costs of diabetes in the U.S. in 2012 . Diabetes Care 2013;36:1033-1046.
4. U.S. Department of Health and Human Services. Multiple Chronic Conditions—A Strategic Framework: Optimum Health and Quality of Life for Individuals with Multiple Chronic Conditions. Washington, DC. December 2010.

Appendix: Data Tables

Table 1. Adult prevalence of diabetes and obesity (crude and age-adjusted)§, Colorado, 2003-2014.

	Crude diabetes prevalence		Crude obesity prevalence		Age-adjusted diabetes prevalence		Age-adjusted obesity prevalence	
	%	(95% CI)*	%	(95% CI)*	%	(95% CI)*	%	(95% CI)*
2003	4.7	(4.0-5.4)	16.0	(14.7-17.3)	5.0	(4.3-5.7)	15.9	(14.6-17.2)
2004	4.3	(3.7-4.9)	16.8	(15.5-18.1)	4.6	(4.0-5.3)	16.6	(15.3-18.0)
2005	4.8	(4.2-5.4)	17.8	(16.6-19.0)	5.1	(4.6-5.7)	17.7	(16.5-18.8)
2006	5.3	(4.7-5.9)	18.2	(17.0-19.4)	5.5	(5.0-6.2)	18.2	(17.1-19.4)
2007	5.3	(4.9-5.7)	19.3	(18.3-20.3)	5.6	(5.2-6.1)	19.1	(18.2-20.0)
2008	6.0	(5.5-6.5)	19.1	(18.2-20.1)	6.1	(5.6-6.7)	18.9	(17.9-19.8)
2009	5.8	(5.3-6.3)	19.0	(17.9-20.0)	5.9	(5.4-6.4)	18.6	(17.6-19.7)
2010	6.0	(5.5-6.5)	21.4	(20.2-22.6)	6.1	(5.6-6.6)	21.1	(19.9-22.3)
2011	6.7	(6.1-7.3)	20.7	(19.7-21.8)	6.6	(6.1-7.2)	20.4	(19.4-21.5)
2012	7.4	(6.8-8.0)	20.5	(19.5-21.4)	7.2	(6.7-7.8)	20.1	(19.1-21.1)
2013	6.5	(6.0-7.8)	21.3	(20.4-22.2)	6.3	(5.8-6.8)	21.0	(20.0-22.0)
2014	7.3	(6.8-7.8)	21.3	(20.4-22.2)	6.9	(6.4-7.4)	21.0	(20.0-21.9)

Data source: Behavioral Risk Factor Surveillance System, Colorado Department of Public Health and Environment.

§ Age-adjusted estimates are weighted based on proportions of persons in specific age groups compared with 2000 U.S. Standard Population. Age-adjusted estimates allow for comparison of different populations while accounting for different age distributions among the populations. Crude estimates have not been adjusted/weighted for the age distribution of the population and represent the "true" (estimated) prevalence.

***** 95% confidence interval.

Table 2. Age at diabetes diagnosis, Colorado adults, 2014.

Age at diagnosis (years)	Percent	(95% CI)*
Less than 18	5.3	(3.1-7.4)
18-44	30.1	(26.6-33.7)
45-54	26.4	(23.2-29.6)
55-64	20.9	(18.2-23.6)
65+	12.4	(10.4-14.4)
Don't know	4.9	(3.4-6.3)

Data source: Behavioral Risk Factor Surveillance System, Colorado Department of Public Health and Environment.

* 95% confidence interval.

Table 3. Adult prevalence of diabetes (crude and age-adjusted) § by age, sex, race/ethnicity, annual household income, and education level, Colorado, 2014.

	Crude diabetes prevalence		Age-adjusted diabetes prevalence	
	%	(95% CI)*	%	(95% CI)*
Age (years)				
18-24	1.3	(0.4-2.3)	----------	
25-34	1.4	(0.7-2.1)	----------	
35-44	3.5	(2.4-4.6)	----------	
45-54	7.5	(6.2-8.8)	----------	
55-64	12.4	(10.8-13.9)	----------	
65+	16.6	(15.1-18.0)	----------	
Sex				
Female	7.0	(6.3-7.7)	6.5	(5.9-7.2)
Male	7.5	(6.8-8.3)	7.4	(6.7-8.1)
Race/ethnicity				
White	6.3	(5.8-6.8)	5.5	(6.4-7.4)
Black	10.0	(7.1-13.8)	9.7	(7.0-13.2)
Hispanic	10.2	(8.6-12.0)	13.2	(11.4-15.2)
Other	7.7	(5.5-10.6)	9.6	(7.1-12.9)
Income				
Less than $15,000	11.6	(9.4-14.2)	11.5	(9.5-13.9)
$15,000-24,999	10.5	(8.8-12.4)	11.2	(9.5-13.1)
$25,000-34,999	8.8	(7.1-10.9)	8.1	(6.5-10.0)
$35,000-49,999	7.2	(5.9-8.6)	6.1	(5.0-7.5)
$50,000+	5.3	(4.7-6.0)	5.0	(4.5-5.7)
Education				
Less than high school	12.6	(10.2-15.5)	13.9	(11.5-16.8)
High school or GED	7.8	(6.8-8.8)	7.2	(6.3-8.2)
Some college	7.3	(6.5-8.2)	7.0	(6.2-7.8)
College graduate	5.2	(4.6-5.9)	4.5	(4.0-5.1)

Data source: Behavioral Risk Factor Surveillance System, Colorado Department of Public Health and Environment.

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***** 95% confidence interval.

Table 4. Adult prevalence of diabetes (crude and age-adjusted) § by region, Colorado, 2012-2014 combined.

	Crude diabetes prevalence		Age-adjusted diabetes prevalence	
	%	(95% CI)*	%	(95% CI)*
Colorado	7.1	(6.7-7.4)	6.8	(6.5-7.1)
Region				
1: Logan, Morgan, Phillips, Sedgwick, Washington, Yuma	9.5	(7.3-11.8)	8.6	(6.6-11.1)
2: Larimer	5.5	(4.5-6.6)	5.1	(4.2-6.1)
3: Douglas	4.8	(3.8-5.8)	4.7	(3.9-5.8)
4: El Paso	7.9	(6.8-8.9)	7.6	(6.7-8.7)
5: Cheyenne, Elbert, Kit Carson, Lincoln	7.5	(4.7-10.4)	6.1	(3.9-9.4)
6: Baca, Bent, Crowley, Huerfano, Kiowa, Las Animas, Otero, Prowers	12.8	(10.0-15.7)	9.9	(7.8-12.5)
7: Pueblo	13.4	(11.0-15.8)	11.6	(9.6-14.0)
8: Alamosa, Conejos, Costilla, Mineral, Rio Grande, Saguache	8.3	(6.0-10.6)	7.4	(5.3-10.2)
9: Archuleta, Dolores, La Plata, Montezuma, San Juan	5.3	(3.9-6.8)	4.6	(3.4-6.1)
10: Delta, Gunnison, Hinsdale, Montrose, Ouray, San Miguel	6.4	(4.5-8.3)	6.6	(5.0-8.8)
11: Jackson, Moffat, Rio Blanco, Routt	4.8	(3.3-6.3)	4.0	(3.0-5.3)
12: Eagle, Garfield, Grand, Pitkin, Summit	3.9	(2.5-5.3)	4.1	(2.8-6.0)
13: Chaffee, Custer, Fremont, Lake	7.8	(5.9-9.6)	6.1	(4.5-8.1)
14: Adams	8.5	(7.3-9.7)	9.3	(8.1-10.6)
15: Arapahoe	6.4	(5.5-7.4)	6.4	(5.6-7.4)
16: Boulder, Broomfield	5.1	(4.0-6.2)	4.8	(3.9-6.0)
17: Clear Creek, Gilpin, Park, Teller	7.3	(5.2-9.5)	6.9	(5.0-9.3)
18: Weld	7.1	(5.8-8.4)	7.3	(6.1-8.8)
19: Mesa	7.8	(6.1-9.4)	6.8	(5.5-8.3)
20: Denver	8.1	(7.0-9.1)	8.9	(7.9-10.1)
21: Jefferson	5.8	(5.0-6.6)	5.0	(4.4-5.8)

Data source: Behavioral Risk Factor Surveillance System, Colorado Department of Public Health and Environment.

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* 95% confidence interval.

Table 5. Prevalence of health conditions among people with diabetes and people without diabetes (crude and age-adjusted), § Colorado, 2014.

	People with diabetes Crude Prevalence		**People without diabetes** Crude prevalence		**People with diabetes** Age-adjusted prevalence		**People without diabetes** Age-adjusted prevalence	
	%	(95% CI)*	%	(95% CI)*	%	(95% CI)*	%	(95% CI)*
Obese	48.6	(44.9-52.4)	19.2	(18.3-20.2)	49.8	(42.6-56.9)	19.0	(18.1-19.9)
Diagnosed with heart attack	14.3	(12.0-17.0)	2.2	(2.0-2.5)	13.7	(9.5-19.4)	2.4	(2.1-2.7)
Diagnosed with angina or coronary heart disease	13.7	(11.4-16.3)	2.2	(2.0-2.5)	9.5	(5.9-14.9)	2.4	(2.1-2.7)
Diagnosed with stroke	6.5	(5.1-8.3)	1.4	(1.2-1.7)	4.1	(2.5-6.7)	1.5	(1.3-1.8)
Diagnosed with kidney disease	9.4	(7.5-11.7)	1.9	(1.6-2.2)	7.4	(4.8-11.1)	2.0	(1.7-2.3)
Lost 6 or more teeth due to tooth decay or gum disease	29.4	(26.2-32.9)	9.1	(8.6-9.8)	21.5	(16.9-26.9)	9.7	(9.1-10.2)
Blind or trouble seeing, even with glasses	11.2	(9.0-13.9)	2.3	(2.0-2.7)	10.7	(7.0-16.0)	2.4	(2.1-2.3)
Ever diagnosed with depression	28.1	(24.9-31.5)	16.2	(15.3-17.0)	33.4	(27.0-40.5)	16.1	(15.3-17.0)
Current depression	19.7	(13.8-27.5)	5.8	(4.7-7.2)	29.3	(18.7-42.8)	5.8	(4.7-7.2)

Data source: Behavioral Risk Factor Surveillance System, Colorado Department of Public Health and Environment.

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***** 95% confidence interval.

Table 6. Prevalence of health care access and health behaviors among people with diabetes and people without diabetes (crude and age-adjusted), § Colorado, 2014.

	People with diabetes Crude prevalence		**People without diabetes** Crude prevalence		**People with diabetes** Age-adjusted prevalence		**People without diabetes** Age-adjusted prevalence	
	%	(95% CI)*	%	(95% CI)*	%	(95% CI)*	%	(95% CI)*
Have personal doctor	92.3	(89.7-94.4)	74.9	(73.8-76.0)	87.4	(80.7-92.0)	74.7	(73.7-75.8)
Have Medicaid health insurance	21.0	(15.4-28.1)	10.9	(9.4-12.7)	34.9	(22.3-50.2)	11.3	(9.7-13.2)
Have Medicare health insurance	52.5	(45.4-59.4)	21.3	(19.7-22.9)	31.4	(21.5-43.4)	20.6	(19.6-21.7)
Did not see a doctor because of cost in past year	17.2	(14.4-20.4)	12.8	(12.0-13.7)	25.0	(18.9-32.3)	12.7	(11.9-13.5)
Had cholesterol checked in past year^	88.3	(85.4-91.1)	51.8	(50.6-53.0)	80.5	(73.4-86.0)	51.4	(50.3-52.6)
Had flu shot in past year	62.5	(58.7-66.2)	43.1	(41.9-44.3)	55.7	(48.5-62.7)	43.4	(42.2-44.6)
Ever had pneumonia shot	63.9	(59.9-67.6)	29.7	(28.6-30.9)	50.9	(43.3-58.5)	29.5	(28.4-30.7)
Physically active	67.4	(63.9-70.8)	84.9	(84.0-85.7)	65.7	(58.8-72.1)	84.5	(83.6-85.4)
Had dental visit in past year	60.5	(56.8-64.0)	67.5	(66.4-68.6)	60.5	(53.5-67.0)	67.4	(66.2-68.5)

Data source: Behavioral Risk Factor Surveillance System, Colorado Department of Public Health and Environment.

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^ most recent data available from 2013 Behavioral Risk Factor Surveillance System.