



Oklahoma State Department of Health State of the County's Health Report

#HealthierOK

Cherokee County

Summer 2017

Being healthy means optimizing all aspects of well-being, including physical, mental, and social well-being.¹ Health is influenced by a variety of personal, social, economic, and environmental factors called 'determinants of health',² such as our genetics, behaviors, where we live, and accessibility to health care. The determinants of health are inter-related, whereby changes in one determinant impact other determinants. As such, interventions and policies that target more than one determinant will have greater impact on our health.²

Oklahoma has historically ranked poorly in many key health indicators. The United Health Foundation ranked Oklahoma's overall health in 2016 as 45th in the United States in their annual *America's Health Rankings* report.³ Most of the indicators in the report relate to conditions that Oklahomans live with every day, such as poverty and limited access to primary care. The report cited Oklahoma's high prevalence of smoking, uninsured, and premature death rate as some of the state's biggest challenges. Such conditions, along with risky health behaviors like smoking and physical inactivity, contribute to the poor health status of Oklahomans.

Recently, Oklahoma has experienced improvement in some key areas. Despite still having high prevalence of smoking, the rates have declined significantly over the past few years.⁴ The rate of teen births has declined 39% in 6 years,⁵ and the rate of infant deaths remains lower than it was in 2000.⁶ The Oklahoma Health Improvement Plan (OHIP) encourages Oklahomans to work together across multiple health care systems to strengthen resources and infrastructure, enabling sustainable improvements in health status.⁷ Every small step forward is progress leading to a #HealthierOK!

Inside this Issue

Contact Information	2
County Spotlight	3
Demographics & Socioeconomics	4
Tobacco Use	5
Obesity	6
Children's Health	7
Behavioral Health	10
Binge Drinking	11

Nutrition & Physical Activity	12
Diabetes	13
Death, Injury, & Violence	14
Healthy People 2020	17
County Department Use	17
Access to Care	18
OSDH Regional Directors Map	19
References	20

Follow us on social media!



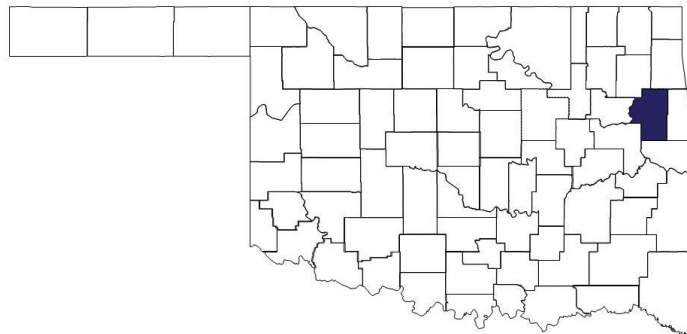
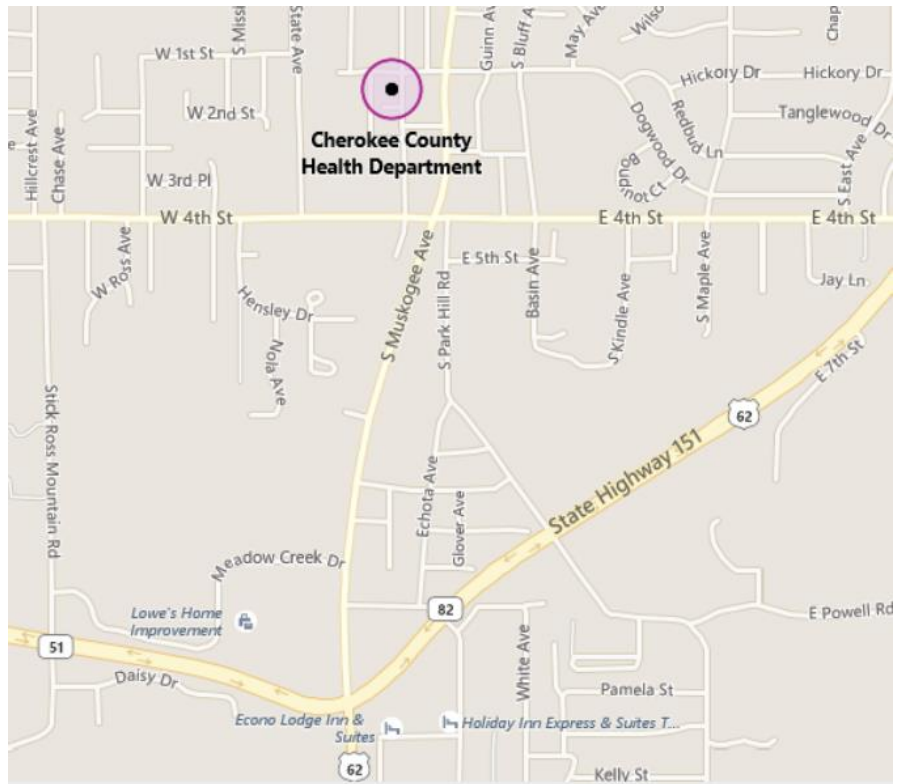
Oklahoma State Department of Health (OSDH)	Shape your Future Oklahoma	Cherokee County Health Department
Facebook.com/Oklahoma-State-Department-of-Health	Facebook.com/shapefutureok	Facebook.com/Cherokee-County-Health-Department
@HealthyOklahoma	@shapefutureok	N/A
Youtube.com/user/HealthyOklahoma	Youtube.com/user/ShapeFutureOK	N/A

Contact Information

Maria Alexander
Regional Director

Cherokee County Health Department
912 South College
Tahlequah, OK 74464

(918) 456-8826
www.ok.gov/health



Scale: 1 (best) - 77 (worst)

Compared to all other Oklahoma counties, Cherokee County ranks:

- 4th for percent of physically inactive population (2015)
- 10th for percent of population with bachelor's degree or higher (2011-2015)
- 13th for percent of obese population (2015)
- 15th for teen birth rate (ages 15-19, 2011-2015)
- 18th for motor vehicle mortality rate (2011-2015)



About Cherokee County⁸:

Many American Indians were forced to settle on Cherokee County land from the Trail of Tears, with prominent Cherokees establishing a community at Park Hill and Tahlequah. However, many buildings and residencies on the land were destroyed during the Civil War. Non-Indians began to settle illegally on the land in the mid-1870s and within 20 years, non-Indians outnumbered Indians. In preparation for statehood, the Cherokees received land allotments in 1902 and their tribal government was dissolved in 1906. The economy thrived on crops of corn, vegetables, and wheat.

Fun Facts:

- Cherokee County is home to various historical sites, such as the original Cherokee Female Seminary, the Murrell Home, the Cherokee National Jail, the Ross Cemetery, and the Cherokee Capitol Building and Supreme Court Building.
- Recreational areas include the Tenkiller Lake, Lake Fort Gibson, Cherokee Landing State Park, Sequoyah State Park, Sparrowhawk Wildlife Management Area, the Grand River, and the Illinois River.
- In 2002, the county was ranked 1st in the state for the value of nursery and greenhouse crops and ranked 7th in the state for sales of poultry and eggs.
- John Ross, the renowned Cherokee Nation chief from 1828 to 1866, lived at Park Hill.
- County resident Wilma Mankiller was the first woman to serve as Cherokee principal chief.
- Cherokee County also housed Joe Thornton, world-champion archer, actor Clu Gulager, politician W. P. "Bill" Willis, Cherokee author and historian Robert J. Conley, and Cherokee actor Wes Studi.
- Mr. Ed, the famous horse actor, is buried on Snodgrass Farm outside of Tahlequah.

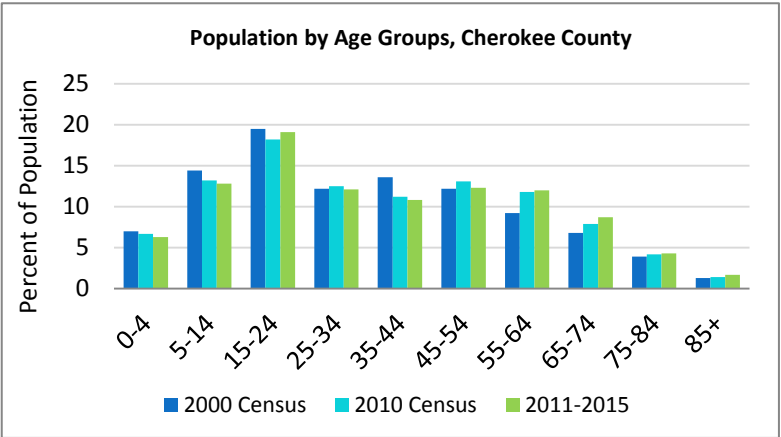
Cherokee County Health Department has 18 employees and has served 7.1% of the population (3,400 clients), with an average of 8 services per client. Additionally, it was the winner of the 2013 Office Olympics!

DATA NOTE:

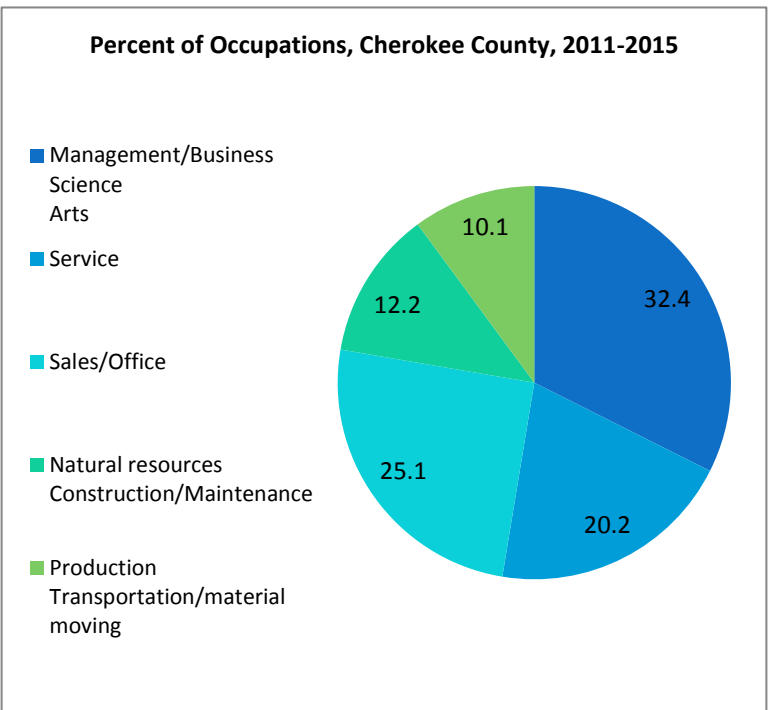
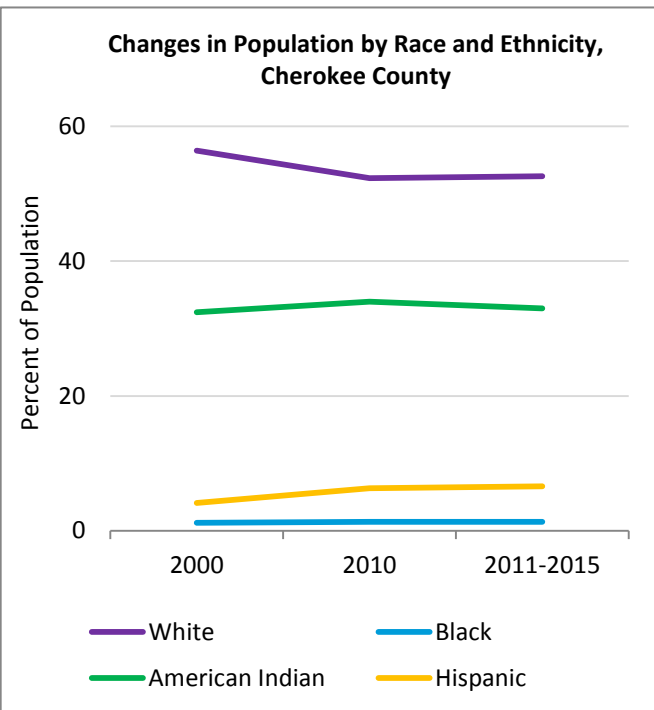
Multiple years of data are utilized in this report to create more stable estimates of health indicators for Oklahoma's small populations. Trends and comparisons across groups are made when possible. Because the Behavior Risk Factor Surveillance System (BRFSS) data are not sampled at the county level, Health Care Information at the Oklahoma State Department of Health has created small area estimates through statistical modelling to enable discussion of county-level data. However, these small area estimates are not comparable to state and national data that are derived via the CDC's standard weighting process. In addition, the CDC instituted new data weighting methodology for BRFSS data, rendering data prior to 2011 incomparable to data for 2011 and later. Also note that some data are not available for every year.

County Demographics and Socioeconomic Profile

Demographics	County
Population, 2011-2015 estimate ⁹	48,097
Population, percent change, 2000 to 2015	13% increase
Rank for growth in state (out of 77)	14 th
Race and Ethnicity, 2011-2015¹⁰	
Whites alone	52.6%
Blacks alone	1.3%
Native Americans alone	33.0%
Hispanic or Latino	6.6%
Age, 2011-2015¹⁰	
Less than 5	6.3%
65 and Over	14.7%
Median age	34.8 years

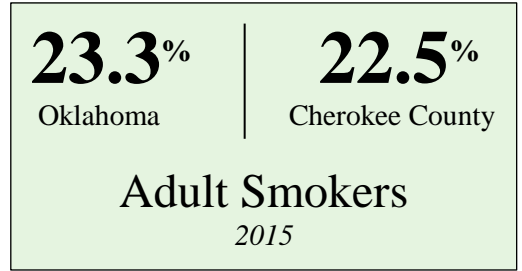


Socioeconomic Profile (2011-2015 estimates ¹⁰)	County	State	National
Disability (ages 18-64)	15.7%	13.9%	10.3%
Of employed, percent disabled	7.6%	7.1%	4.9%
Individuals below poverty	22.6%	16.7%	15.5%
Families below poverty	15.3%	12.4%	11.3%
With children under 18 years	23.3%	19.7%	18.0%
With children under 5 years only	24.7%	22.2%	18.0%
Median household income	\$38,694	\$46,879	\$53,889
Female head of household	12.9%	12.4%	13.0%
Grandparents raising their grandchildren	41.5%	51.8%	37.3%
High school graduates or higher	85.6%	86.9%	86.7%
Bachelor's degree or higher	24.4%	24.1%	29.8%
Occupied housing units	75.4%	86.1%	87.7%
Uninsured (ages 18-64)	23.5%	16.7%	18.1%
Unemployment rate, civilian labor force	7.9%	6.3%	8.3%

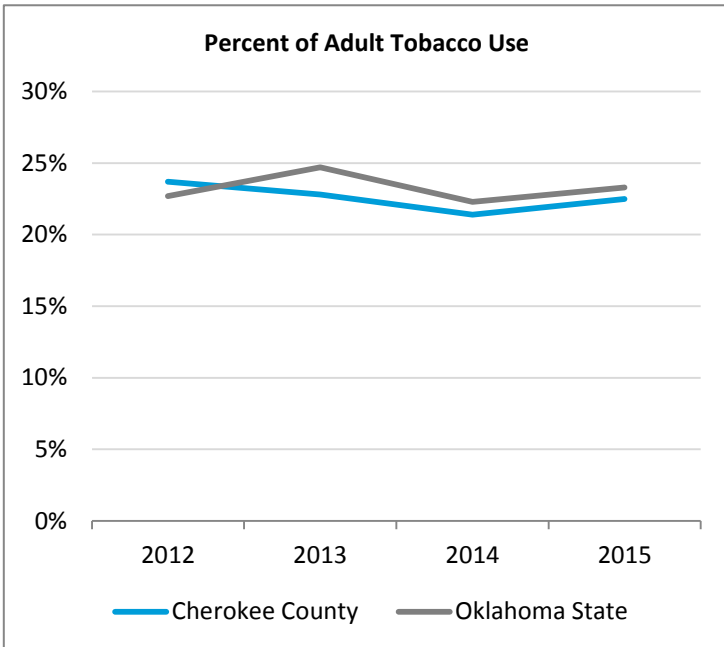
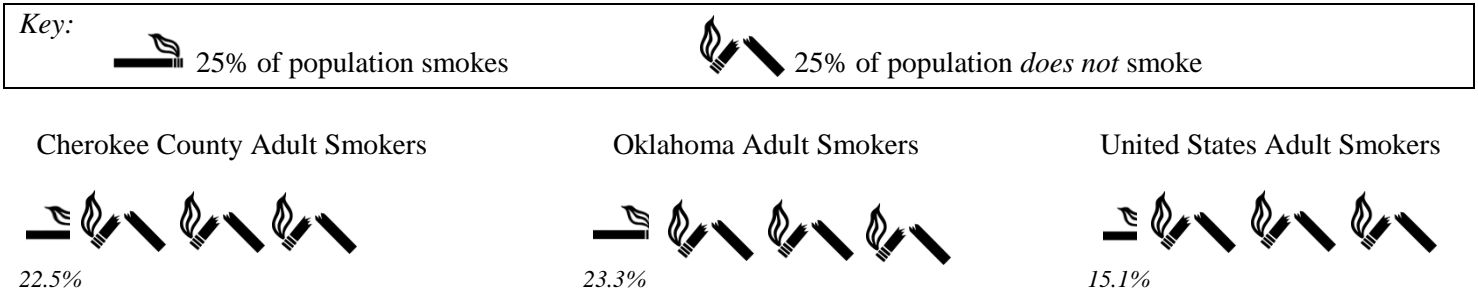


OHIP Flagship Issue #1: Tobacco Use Prevention

While smoking rates continue to decline in the United States, tobacco is still the leading contributor of preventable deaths in the United States; a quarter of coronary heart disease deaths, 82% of lung cancer deaths, and 61% of pulmonary diseases are attributed to tobacco use.¹¹ Oklahoma consistently has one of the highest rates of adult smokers in the country. The 2015 Oklahoma rate is higher than the 2015 national rate (15.1%), as well as the previous 2014 rate (22.3%).^{12,13,14} Fortunately, 52.7% of previous Oklahoma smokers have quit, which is similar to the national average of 58.8%.¹³



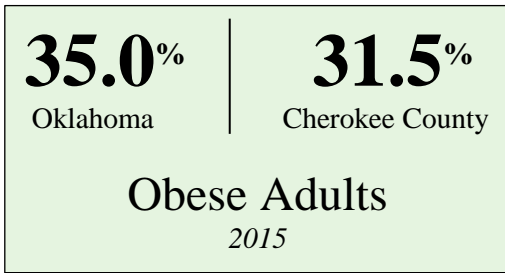
Data from 2015 show that racial disparities do exist in tobacco use, with a higher percentage of Oklahoma American Indian adults smoking (32.5%) compared to Black (25.0%), White (21.4%), and Hispanic (17.1%) adults.¹⁴ Additionally, young adults (aged 25-34 years, 27.6%) comprised the highest percentage of smokers in the Oklahoma population, as well as males (24.0%) compared to females (20.4%).¹⁴



Attributable expenses for smoking in for the state in 2009, the most recent year for data, was \$1.62 billion, including ambulatory, hospital, prescription drug, and nursing home expenses, but excluding dental expenditures.¹⁵ From 2005-2009, 7,490 deaths were attributable to smoking in Oklahoma.

Of concern are other types of tobacco use, such as smokeless tobacco and now e-cigarettes. Almost 7% of Oklahoma adults use smokeless tobacco products, with almost 70% of smokeless tobacco users also being smokers. E-cigarettes usage has also increased among tobacco users of all ages, both nationally and at the state-level.^{16,17} For example, 19% of Oklahoma high school students used e-cigarettes in 2015, dramatically increased from 6.3% in 2013.¹⁹

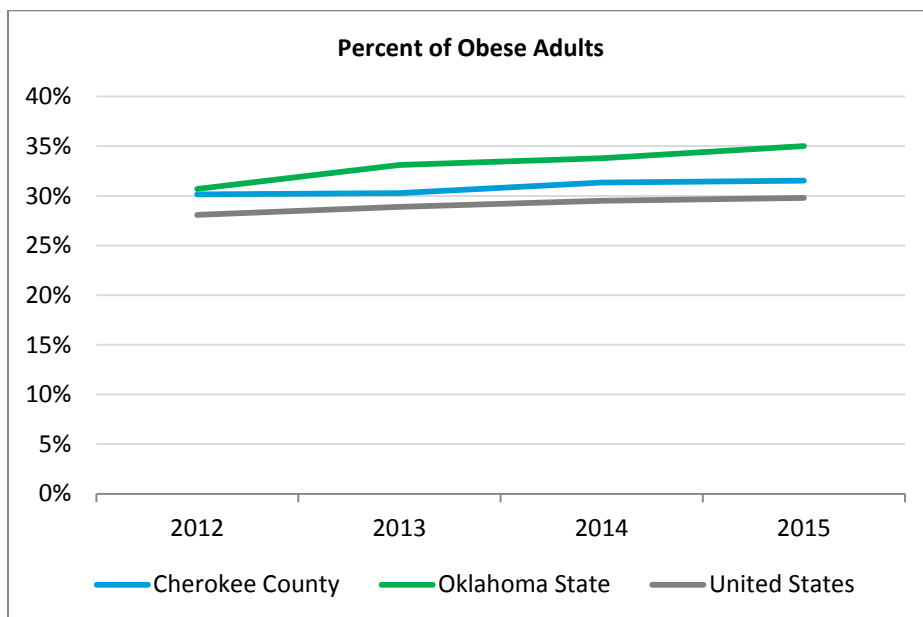
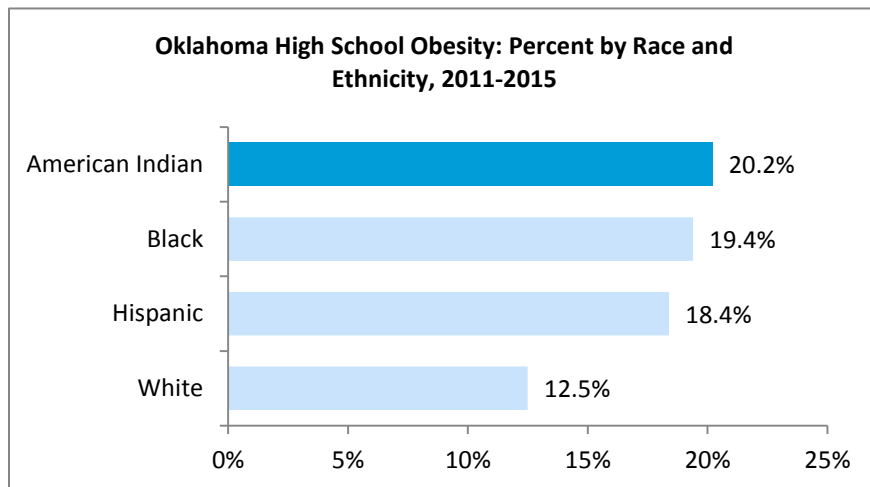
OHIP Flagship Issue #2: Obesity



Obesity is a primary cause of adult deaths and is defined as having a BMI greater than 30.0 kg/m² (BMI = weight in kg/square of height in m).¹⁹ In addition to its association with mortality, obesity increases risk for several chronic diseases such as heart disease and type 2 diabetes.²⁰ Unfortunately, obesity rates have continued to rise in Oklahoma. Thirty-four percent of adult females and 33.7% of adult males in Oklahoma were obese in 2015, and nearly half of American Indian adults were obese, followed by Black (36.9%), White (32.9%), and Hispanic (32%) adults.¹⁴

Additionally, obesity continues to be a problem for youth in Oklahoma. Nearly 14% of 2- to 4-year-old WIC participants were obese from 2000–2014, as well as 17.4% of 10- to 17-year-olds in 2011.^{21, 22} Data from the Youth Risk Behavior Surveillance System (YRBSS) show that 15.4% of high school students self-reported obesity from 2011-2015. More male (18.1%) than female (12.8%) students were obese.²³

Medical costs for obese individuals were estimated to be \$2,741 higher than per capita spending for normal weight individuals in 2005, and this economic burden can be expected to increase as the cost of health care increases.²⁴

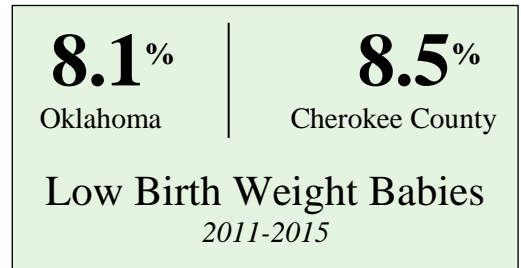


OHIP Flagship Issue #3: Children's Health

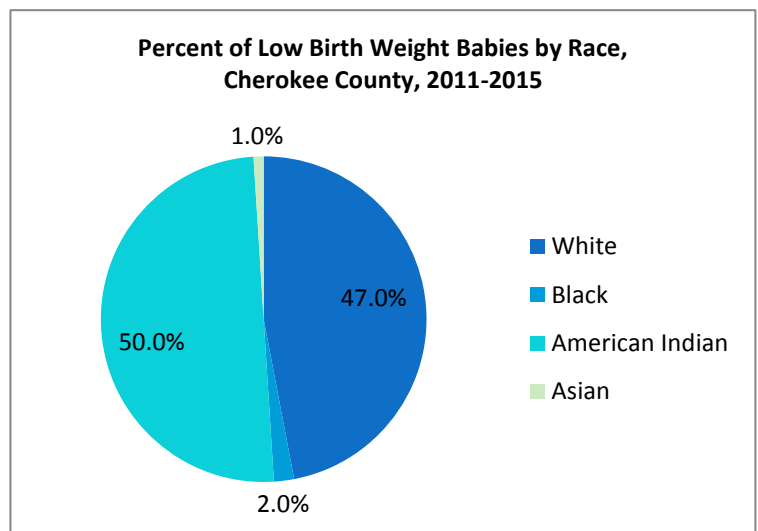
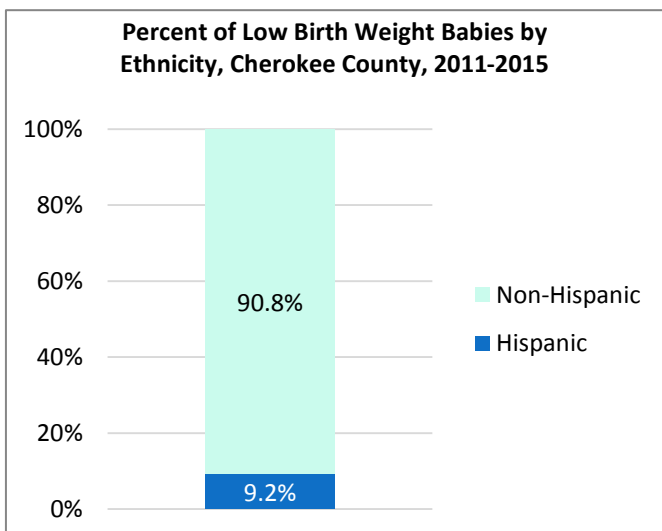
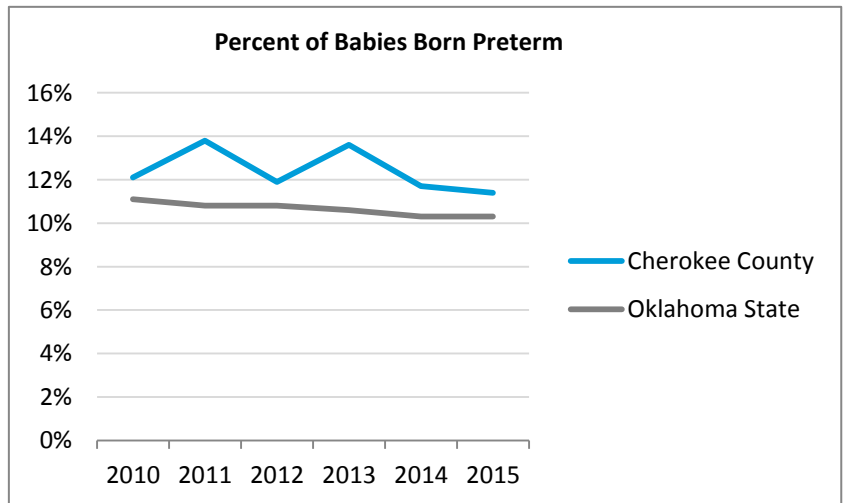
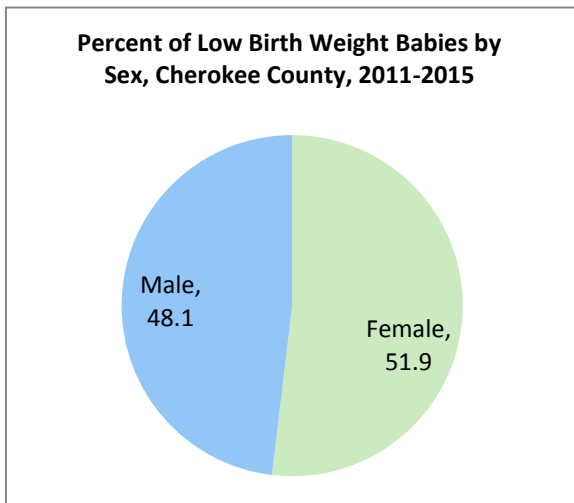
Of Oklahoma mothers giving birth from 2011-2015, 58% were married; in Cherokee County, 53% were married. Almost 4% of mothers giving birth in the county had gestational diabetes, which is similar to the state average of 4.1%. Additionally, 10.6% of live births in the county were to mothers who smoked during pregnancy, which is lower than the state's average of 13.5%.²⁵

Low Birth Weight

Low birth weight (i.e., weighing fewer than 5 pounds and 8 ounces, or 2500 grams) and preterm births (i.e., 37 weeks of gestation or less) together are the second leading cause of death among children less than 1 year of age.²⁶ Low birth weight infants are more at risk of health problems compared to infants born of normal weight, including infection, gastrointestinal problems, delayed motor and social development, and learning disabilities. Low birth weight infants may also be at higher risk of high blood pressure, diabetes, and heart disease later in life.²⁷

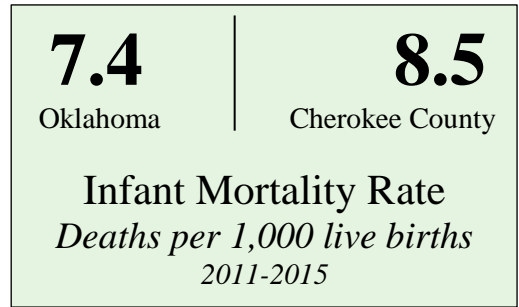


The state rate is the same as the latest national data (8.1% in 2015).²⁷ When considering race from 2011-2015, Oklahoma Black babies were more likely to be of low birth weight (13.4%) compared to White (7.5%), American Indian (7.0%), and Asian (7.8%) babies.²⁵



Infant Mortality Rate

The infant mortality rate (IMR) is an important indicator of the health of a nation, and is also a reflection of maternal health, accessibility and quality of primary health care, and the availability of supportive services in the community.²⁸ The leading causes of infant death include congenital malformations (i.e., medical conditions present at birth), disorders related to short gestation (fewer than 37 weeks of pregnancy completed) and low birth weight (less than 5 lbs., 8 oz.), and Sudden Infant Death Syndrome (SIDS).²⁶



Oklahoma’s 2011-2015 IMR, although slightly lower than its previous 2006-2010 rate of 7.6 deaths per 1,000 live births, has resulted in 147,075 years of potential life lost from 2011-2015, based on an average age of death in Oklahoma of 75 years.²⁹ The rate is also still significantly higher than the national rate of 6.0 infant deaths per 1,000 live births in 2013.³⁰ Further, racial disparities exist in IMR, with Oklahoma’s Black infant rate being more than double the rates of White and Asian infants. The IMR for Black infants declined between 2006-2010 estimates and 2011-2015 estimates (15.6 to 14.5, respectively),²⁹ but is still extremely high.

1,950

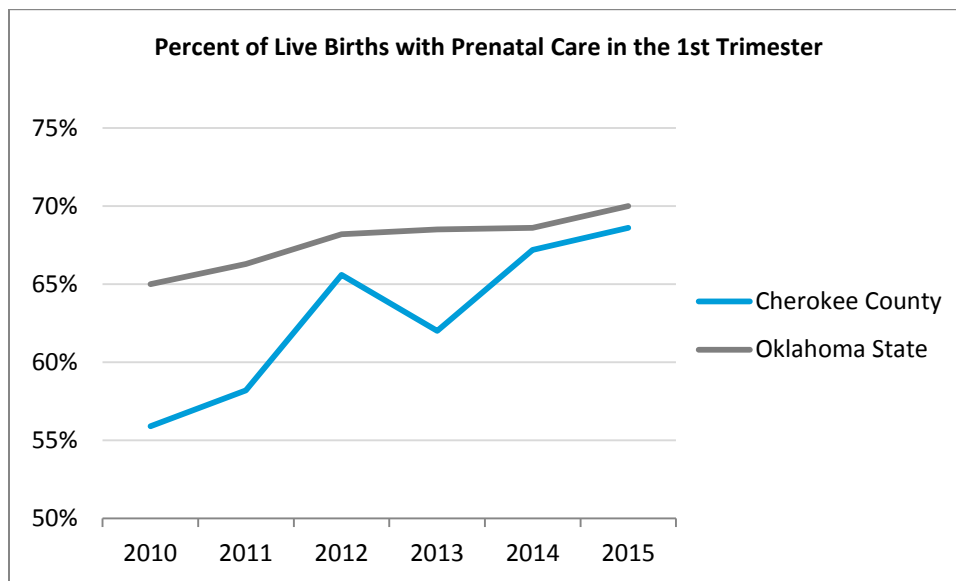
Years of Potential Life Lost

Cherokee County, 2011-2015

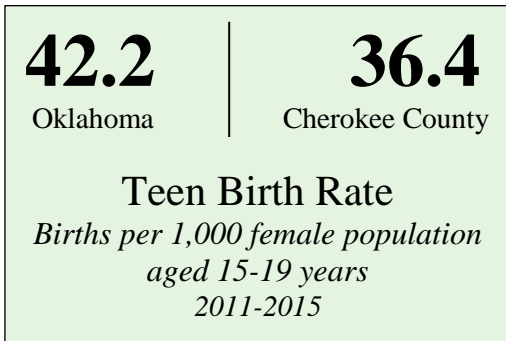
Based on an average death in Oklahoma of 75 years

Cherokee County’s IMR is 14.9% higher than the state rate and 41.7% higher than the county rate from 2006-2010 (6 deaths per 1,000 live births). Additionally, the IMR rate was highest for White infants (9.2 deaths per 1,000 live births), followed by American Indian (8.3); while White infant mortality rate has increased since 2006-2010 data were recorded, American Indian infant rates have increased.²⁹ Other race and ethnic rates could not be computed.

While organizations across Oklahoma have been working together to reduce infant mortality as part of the Preparing for a Lifetime, It’s Everyone’s Responsibility initiative,³¹ there is still much work to do. One way to reduce infant mortality is through receiving prenatal care in the first trimester, which is believed to reduce the risk of maternal and infant sickness and death as well as preterm delivery and low birth weight. From 2011-2015, 64.2% of women who had a live birth in Cherokee County accessed prenatal care during the first trimester of their pregnancy.²⁵



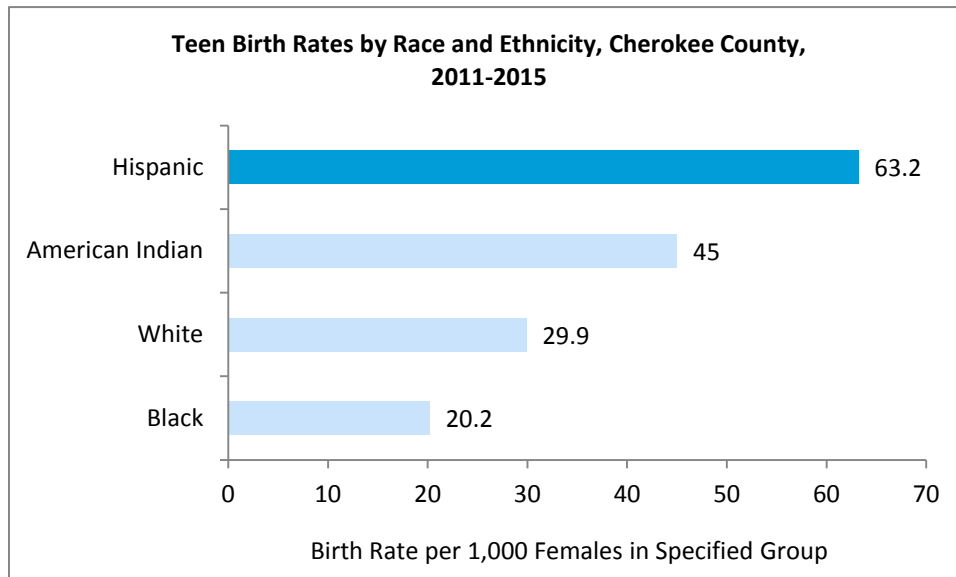
Teenage Pregnancy



Although births to teen mothers have been declining in recent years,³² Oklahoma still has one of the highest teen birth rates in the country (ranked at 48th in the nation),³³ including a high rate of repeat births.³⁴ Pregnant teens are more likely than older pregnant females to experience medical complications, have low educational attainment, and engage in unhealthy behaviors that put their unborn child at risk.³⁵ Children of teen mothers are more likely than children of older mothers to display poor health and social outcomes, such as premature birth, low birth weight, behavioral problems, and abuse and neglect.³⁶ Additionally, infant mortality rates are highest for babies of teen mothers.²⁶

Cherokee County's teen birth rate is 13.7% lower than the state rate and 63.2% higher than the 2015 national rate of 22.3.^{25,37} The current county rate is 27.9% lower than the 2005-2009 rate. The majority of births in Cherokee County to teen mothers are first births (81.7%), while 16.3% are second births, and 2% are the third or more births.²⁵

Recent estimates place the cost of teen childbearing in Oklahoma at \$169 million in 2010, and this includes only health care and other costs associated with the children, not the mothers.³⁸



OHIP Flagship Issue #4: Behavioral Health

From 2013-2014, nearly 20% of adult Oklahomans had a mental illness and 4.4% had a serious mental illness. This is similar to the national rates for the same time period of 18% and 4.2%, respectively. Further, it is estimated that 3.9% of Oklahoman adults had thoughts of suicide from 2013-2014; this rate is the same as the national rate. What is even more troubling is that only 42% of Oklahoman adults with a mental illness had received treatment or counseling from 2010-2014.³⁹

18.5 Oklahoma	24.2 Cherokee County
Suicide deaths <i>per 100,000 population</i> 2011-2015	

Adolescents are not spared from mental illness either. From 2013-2014, one in ten Oklahoman adolescents (compared to the 11% national average) experienced a major depressive episode and of those, over half did not receive any treatment for depression.³⁹ Unfortunately, 2015 data show that 15.1% of high school youth seriously considered attempting suicide and 7.4% attempted one or more times.²³

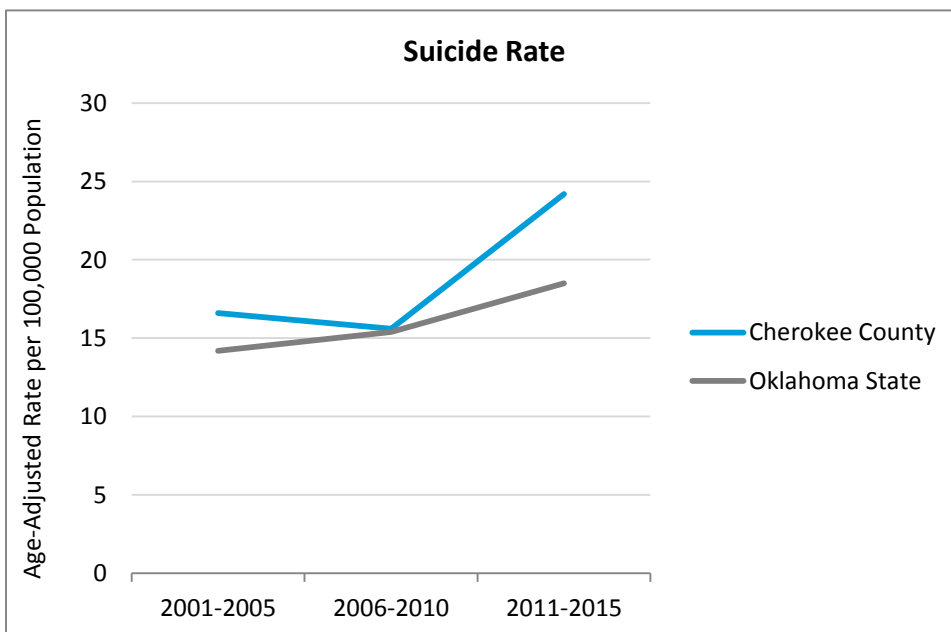
Substance use and abuse is also a problem among both adolescents and adults. From 2013-2014, 8.1% of adolescents in Oklahoma had used illicit substances in the past 30 days (national average: 9.1%), and 5.3% of Oklahoman adolescents used pain relievers for nonmedical use (national average: 4.7%). Two percent of Oklahomans 12 years and older were dependent on or abused illicit drugs (national average: 2.6%), and of those with a dependence/abuse problem, 85% did not get any addiction treatment (2010-2014). Further, from 2013-2014, 6.4% of Oklahomans over 12 years of age had alcohol dependence or abuse (national average: 6.5%). Of those, 92.8% did not receive treatment (2010-2014).³⁹


\$382,485,734

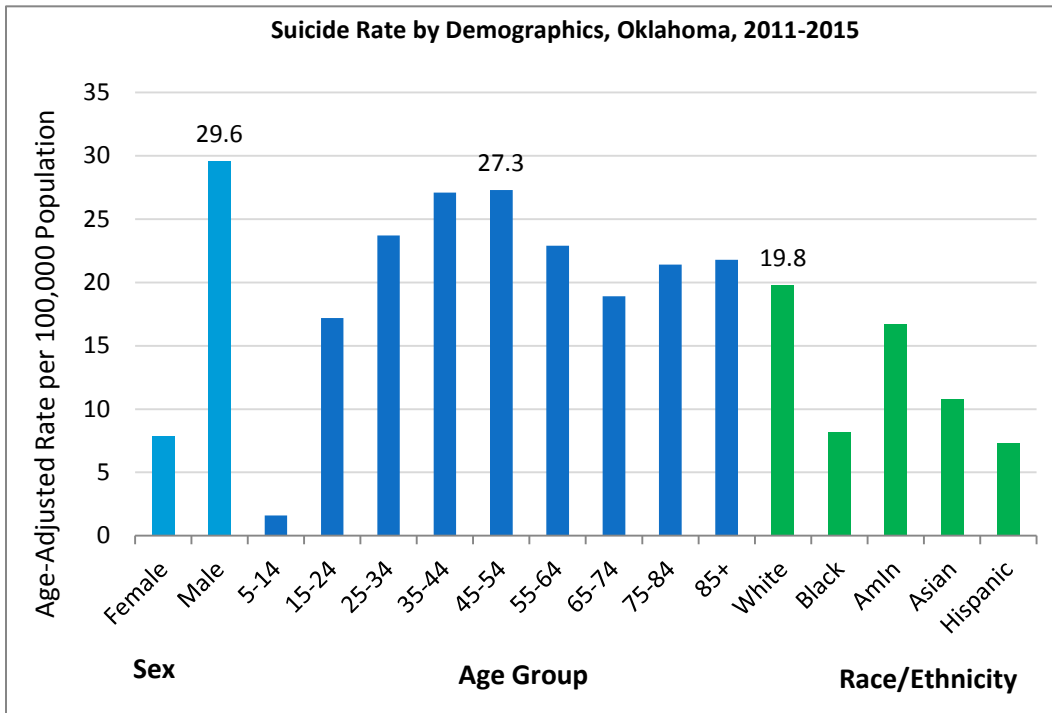
*Mental illness
hospital inpatient cost
Oklahoma, 2014*

Oklahoma hospital inpatient discharge data for 2014 show 19,352 discharges related to mental illness, with an average stay of 10.8 days. In Cherokee County, 351 discharges were for mental illness, costing \$3,829,555 total. The average length of stay was 6.9 days. Both sexes had similar discharge rates and average lengths of stay.⁴⁰

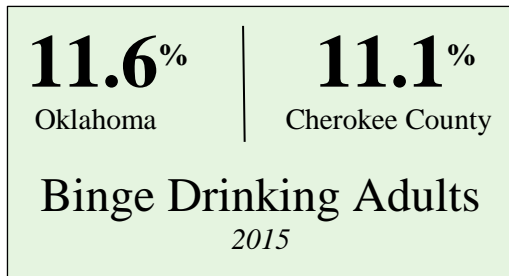
The Oklahoma suicide rates are highest for men, 45-54 year-olds, and White individuals. The highest rates for Cherokee County were for males, 35-44 year-olds (45.4 deaths per 100,000 population), and American Indian individuals (27.7). Additionally, ages 25-34 (34.3) and 65-74 (28.5), and White (21) individuals had high rates.²⁹ Other race and ethnic rates could not be computed.



 38.7	 10.3
Suicide Rate per 100,000 Population <i>Cherokee County</i> 2011-2015	

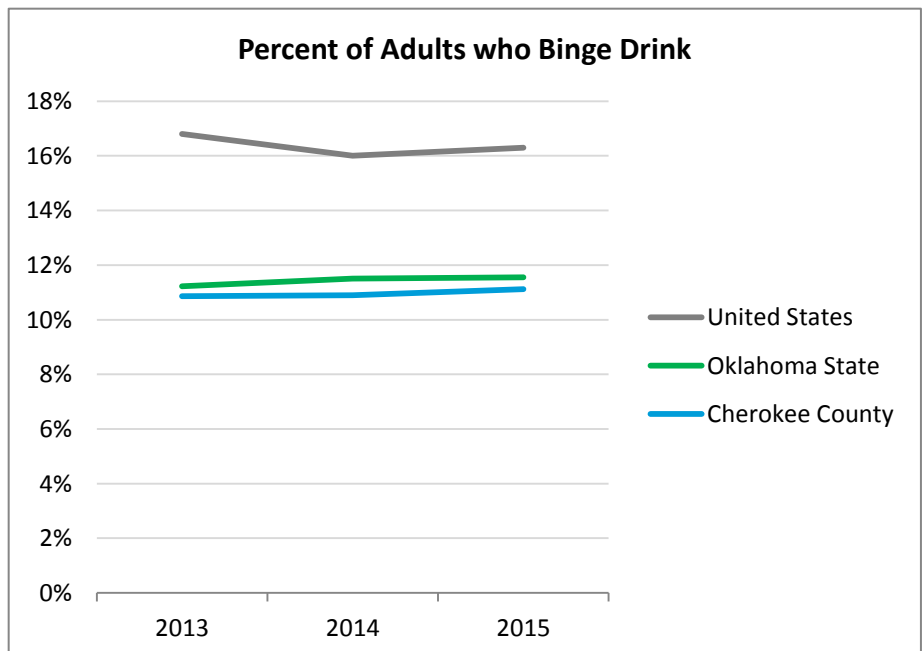


Binge Drinking



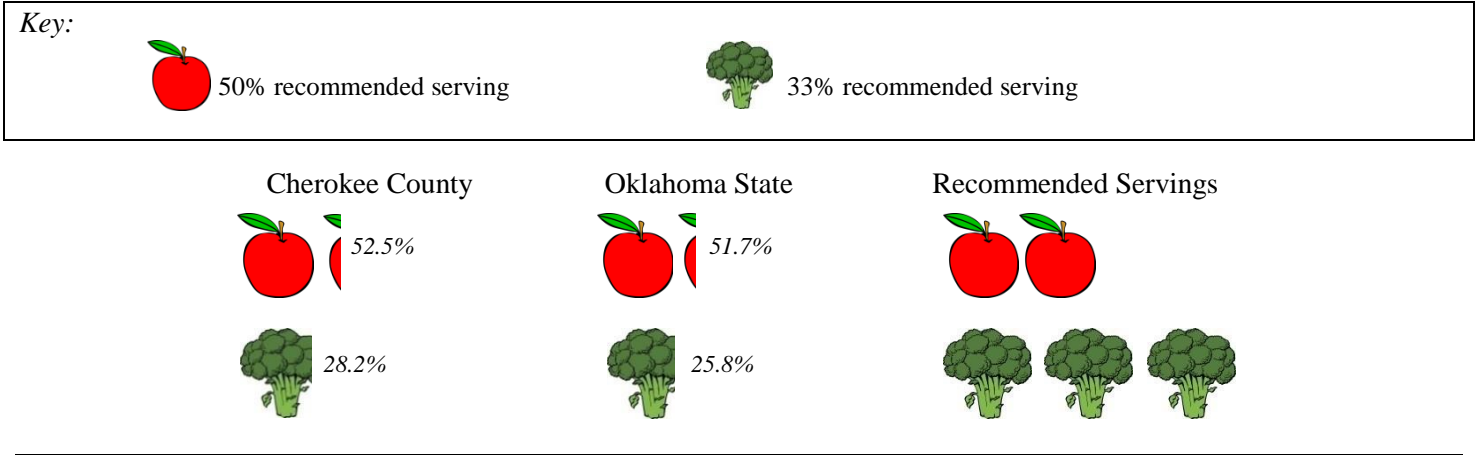
In 2015, 41.9% of Oklahoman adults had at least one drink of alcohol in the past month, lower than the national average of 53.6%. This percentage has slowly decreased since 2011, both at the state and national level. Binge drinking (five or more alcoholic beverages on one occasion for men, four or more for women), however, continues to be an occurrence for many adult Oklahomans. Engagement in binge drinking has remained steady at the county, state, and national levels.¹²

Oklahoma high school youth also admit to alcohol use. Fifteen percent drank alcohol before the age of 13 (highest for American Indian and Hispanic males), 27.3% consumed one or more drinks in the past month (highest for Hispanic and White males), and 5.8% had 10 or more alcoholic drinks in a row (highest for males). Further, nearly half had alcohol given to them (highest for White and Hispanic females).²³



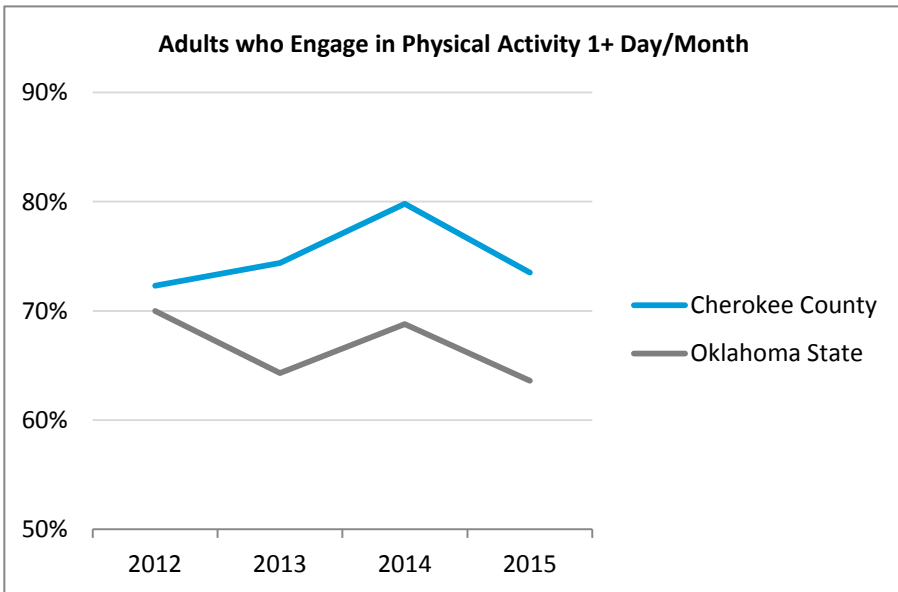
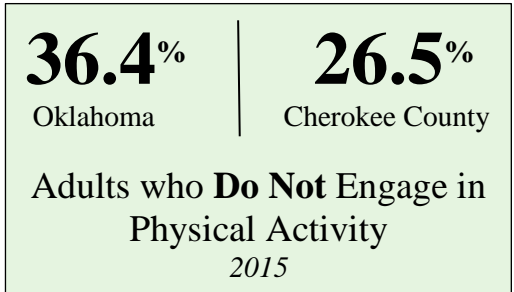
Nutrition and Physical Activity

Poor diet is a primary cause of adult deaths in the U.S.^{41,19} While poor diet can be characterized in many different ways, a common proxy measure is assessing fruit and vegetable consumption. A recent study determined that fruit and vegetable consumption is associated with reduced risk of death.⁴² Oklahoma has typically ranked as one of the worst states for fruit and vegetable consumption among adults. In 2013, the last year data were available for every state, Oklahoma ranked second to last in consuming three daily servings of vegetables and third to last in consuming two or more daily servings of fruits.⁴³



Physical Activity

Physical inactivity was reported to be a leading contributor to almost 1 in 10 adult deaths in the U.S.²⁰ In 2014, close to 24% of U.S. adults did not engage in any physical activity.⁴⁴ Adults who engage each week in 150 minutes of moderate to vigorous intensity aerobic activity in bouts of at least 10 minutes experience improved health and fitness and reduced risk of several chronic diseases.⁴⁵



Youth who are regularly active have a better chance of having a healthy adulthood. Children and adolescents should get at least 60 minutes of moderate intensity physical activity most days of the week, preferably every day, and three of those days should include vigorous intensity aerobic activity.⁴⁶ Statewide from 2013-2015, 53.8% of high school students were physically active for one hour at least five days of the week.²³

Diabetes

13.0%

Oklahoma

14.9%

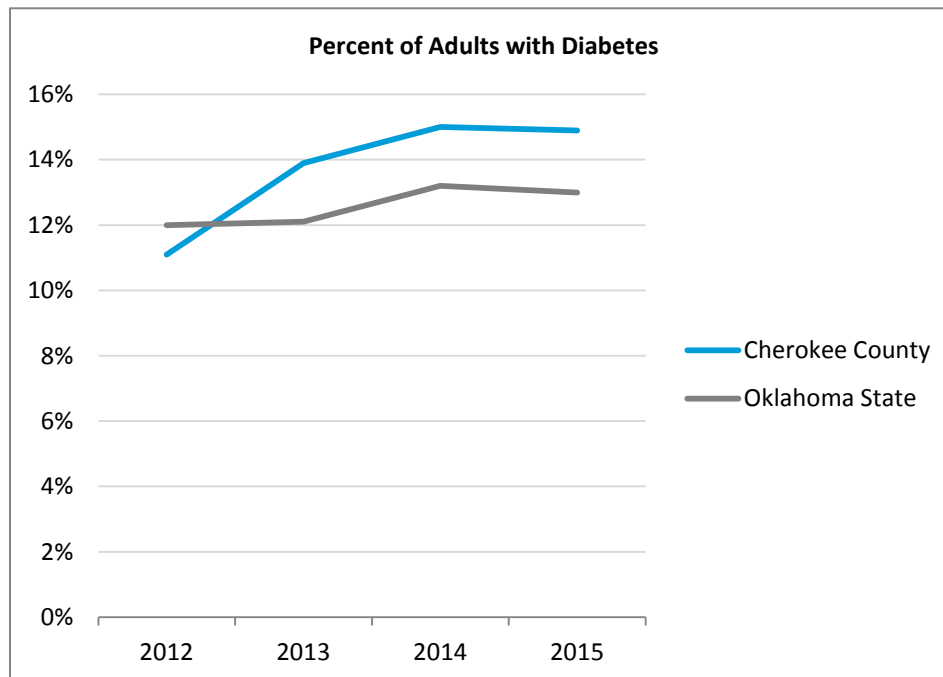
Cherokee County

Adults Diagnosed with
Diabetes
2015

Type II Diabetes Mellitus is a chronic disease characterized by high levels of sugar (i.e., glucose) in the bloodstream due to the body's resistance to insulin. If left untreated, serious complications can arise, including heart disease, renal failure, retinopathy, and neuropathies. Several risk factors may increase the likelihood of developing diabetes. Some of these risk factors cannot be changed (eg., aged 45 years and older, family history). Other risk factors relate to behaviors, such as prediabetes, overweight/obesity, being physically inactive, and having high blood pressure.⁴⁷

The American Diabetes Association released a report estimating the total cost of diagnosed diabetes to be \$245 billion in the U.S. in 2012.⁴⁹ This amount includes both direct medical costs and reduced productivity. They estimated the largest component of direct medical costs to be hospital inpatient care.

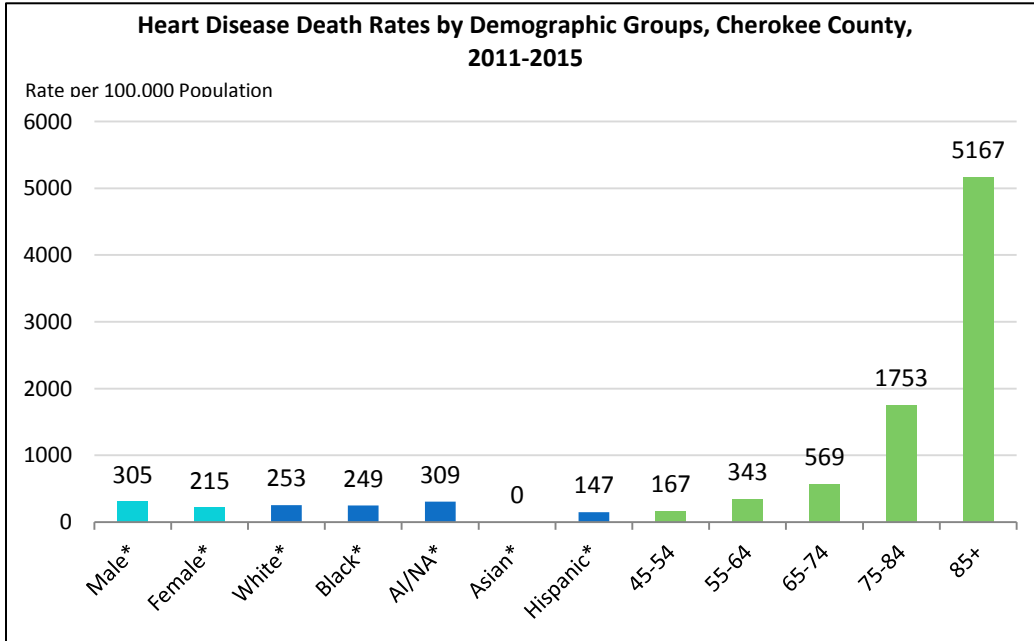
Cherokee Diabetes Inpatient Data (2014)			
78	\$1,691,512	4.3 days	\$21,686.05
<i>Hospital Discharges</i>	<i>Total Charges</i>	<i>Average Hospital Stay</i>	<i>Average Charges per Stay</i>



Death, Injury, and Violence

Leading Cause of Death

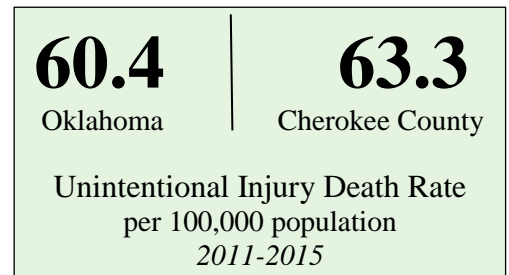
In Cherokee County, heart disease is the leading cause of death for all ages combined at 258.9 deaths per 100,000 population (2011-2015).²⁹ The rate increased 5.8% from the previous 2008-2012 data (244.6 deaths per 100,000 population).²⁹ In 2014, the most recent year for which hospital discharge data are publicly available, the total charges attributable to heart disease in the county were \$24,518,898, or \$48,745.3 per discharge.⁴⁰



*Age-Adjusted Death Rate per 100,000 Population

Injury and Violence

Unintentional injury is the 5th leading cause of death in Oklahoma, and the leading cause of death among individuals aged 5-44 years.²⁹ In 2014, the most recent year that data are publicly available, injuries and poisoning accounted for 36,984 total discharges, costing \$2.1 billion of Oklahoma’s hospital inpatient charges, or \$58,543 per discharge.⁴⁰ This equates to 12.7% of total inpatient charges in 2010,⁴⁰ and does not consider other related medical expenses or lost productivity.

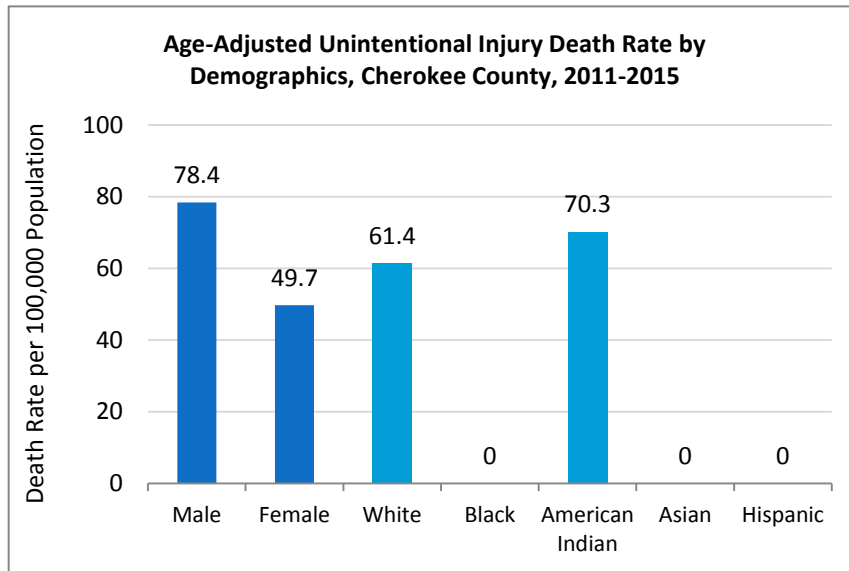


From 2011-2015, unintentional injury was the 4th leading cause of death for Cherokee County and is lower than the 2006-2010 rate (70.6).²⁹

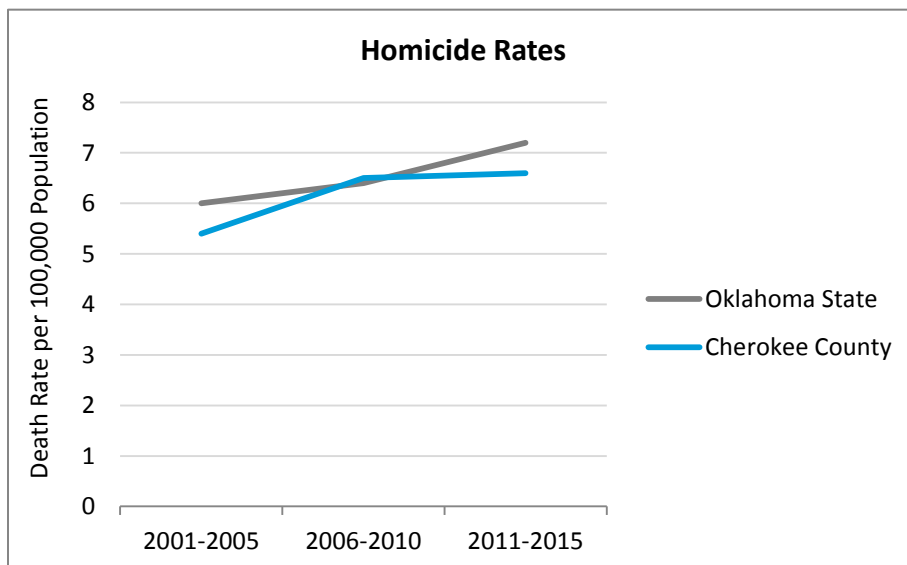
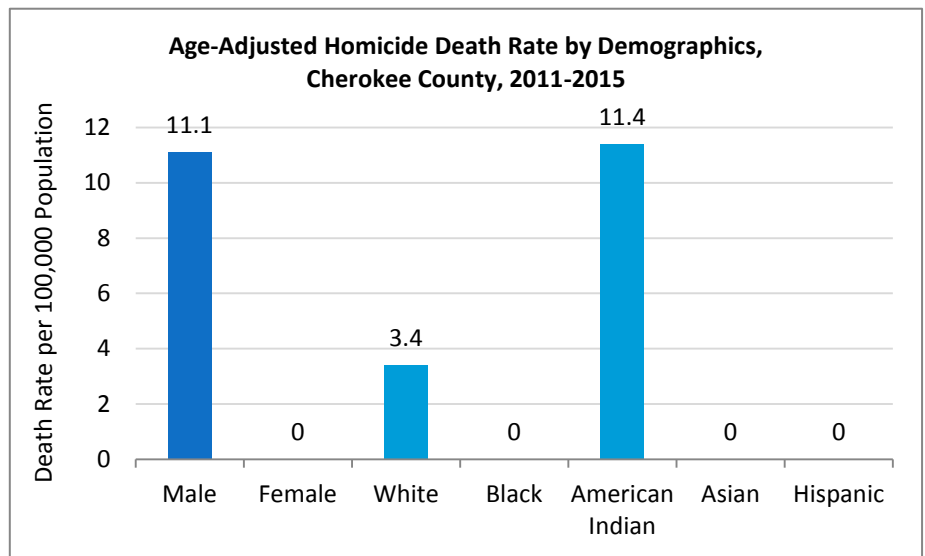
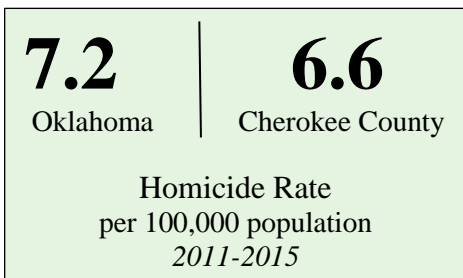
21.0

Motor-vehicle Death Rate
per 100,000 population
Cherokee County, 2011-2015

Motor-vehicle accidents account for 32.9% of Cherokee County’s total unintentional injury deaths.²⁹ In 2013, motor vehicle crashes cost Oklahoma an estimated \$8 million in medical costs and \$894 million in work loss costs, resulting in a total cost of \$902 million.⁴⁹ This cost includes wage and productivity losses, medical expenses, administrative expenses, motor vehicle damage, and employers’ uninsured costs.



Violence-related deaths, like suicide and homicide, are also leading causes of death in Oklahoma.²⁹ Cherokee County's homicide rate is 8.3% higher than the state rate.



The top 10 leading causes of death table displays a broad picture of the causes of death in Cherokee County.²⁹ Since many health-related issues are unique to specific ages, this table provides causes of death by age group at a glance. The causes of death that are present across almost every age group have been highlighted. This table shows the actual number of deaths by cause.

Top 10 Causes of Death by Age Group
Cherokee County 2011-2015

RANK	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65+	ALL AGES
1	PERINATAL PERIOD 10		UNINTENT. INJURY 15	UNINTENT. INJURY 27	UNINTENT. INJURY 16	CANCER 53	CANCER 104	HEART DISEASE 492	HEART DISEASE 656
2	CONGENITAL MALFORMATIONS 7		SUICIDE 9	SUICIDE 10	CANCER 15	HEART DISEASE 48	HEART DISEASE 98	CANCER 347	CANCER 522
3					HEART DISEASE 14	UNINTENT. INJURY 21	UNINTENT. INJURY 28	BRONCHITIS/ EMPHYSEMA/ ASTHMA 135	BRONCHITIS/ EMPHYSEMA/ ASTHMA 162
4					SUICIDE 12	DIABETES 10	BRONCHITIS/ EMPHYSEMA/ ASTHMA 19	STROKE 86	UNINTENT. INJURY 152
5						SUICIDE 8	DIABETES 18	DIABETES 57	STROKE 102
6						BRONCHITIS/ EMPHYSEMA/ ASTHMA 6	LIVER DISEASE 15	ALZHEIMER'S DISEASE 51	DIABETES 90
7						LIVER DISEASE 6	STROKE 12	INFLUENZA/ PNEUMONIA 43	INFLUENZA/ PNEUMONIA 56
8							NEPHRITIS 8	UNINTENT. INJURY 40	SUICIDE 55
9							VIRAL HEPATITIS 6	HYPER-TENSION 24	ALZHEIMER'S DISEASE 53
10								NEPHRITIS 22	LIVER DISEASE 38

*Total deaths per age group were determined and cause of death was ordered (by frequency) when 5 or more deaths occurred for a specific cause; the number of deaths that occurred in frequencies fewer than 5 per cause were not included because the data are suppressed on OK2SHARE (the source of this data) when there are fewer than 5 deaths per search category.

Data source: Vital Statistics, Health Care Information Division, Oklahoma State Department of Health
Produced by: Community Epidemiology and Evaluation, Oklahoma State Department of Health

Healthy People 2020 Table

Healthy People 2020 Indicators ⁵⁰	Comparison Data: Year(s)						2020 target ⁵⁰
	Cherokee County ⁵¹		Oklahoma ⁵¹		United States ⁵⁰		
Infant mortality (per 1,000 births)	2011-2015	8.5	2011-2015	7.4	2013	6.0	6.0
Low birth weight infants (% of live births)	2011-2015	8.5%	2011-2015	8.1%	2014	8.0%	7.8%
Very low birth weight infants (% of live births)	2011-2015	1.2%	2011-2015	1.4%	2014	1.4%	1.4%
First trimester prenatal care (% of live births)	2011-2015	64.2%	2011-2015	62.0%	2007 [§]	70.8%	77.9%
Coronary heart disease deaths (per 100,000 population)*	2011-2015	258.9	2011-2015	227.9	2014	98.8	103.4
Cancer deaths (per 100,000 population)*	2011-2015	195.9	2011-2015	185.8	2014	161.2	161.4
Unintentional injury deaths (per 100,000 population)*	2011-2015	63.3	2011-2015	60.4	2014	40.5	36.4
Transportation-related deaths (per 100,000 population)*	2011-2015	21.0	2011-2015	19.5	2014	10.3	12.4

Notes:

Red = Have not yet met 2020 Target

Green = Exceeded 2020 Target

Black = Same as 2020 Target

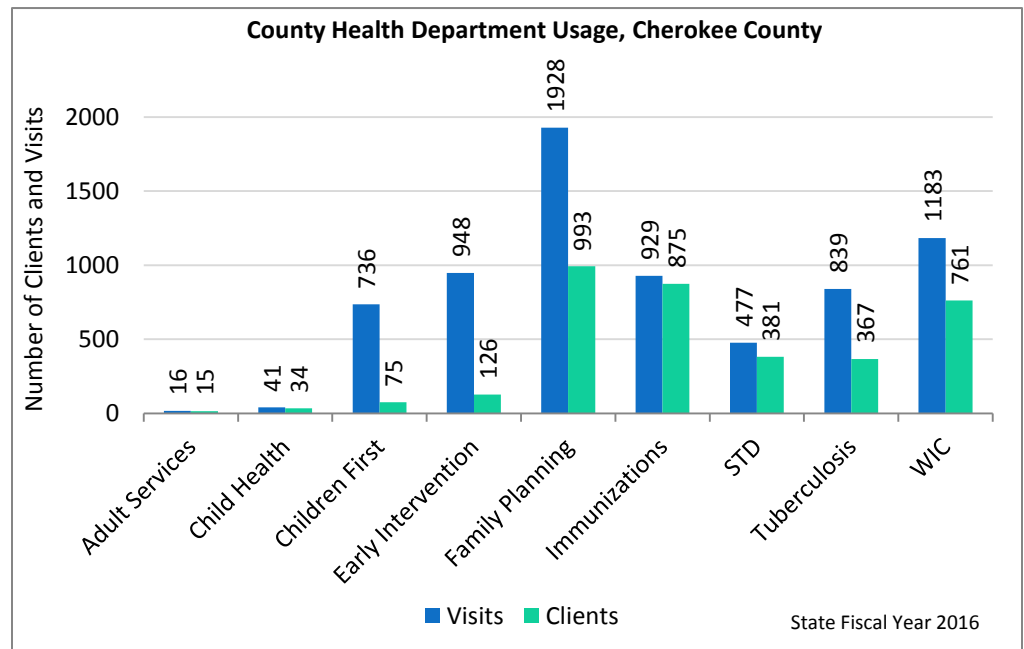
*Death rate is age-adjusted to the 2000 U.S. standard population;

§The most recent data available from CDC WONDER Natality Data shows that 65.4%⁵² of women having live births in from 2011-2015 received prenatal care within the first three months of pregnancy. Not all states collect prenatal care information on the birth certificate.

County Health Department Usage

There are 82 county health department sites in 68 counties across Oklahoma which are part of the state system, and 2 independent health departments (Oklahoma City-County and Tulsa City-County Health Departments). In the 7 counties without a physical site, staff from neighboring counties provides specific services to those regions, and residents can visit health departments in neighboring counties for additional services. Each department offers a variety of services, such as immunizations, family planning, maternity education, well-baby clinics, adolescent health clinics, hearing and speech services, child developmental services, environmental health, health education, community development programs, and the SoonerStart program. However, not every service is available in all counties.

The data on this page reflects services provided in the county health department. Many other activities are implemented across the county and in the community to promote the public's health.



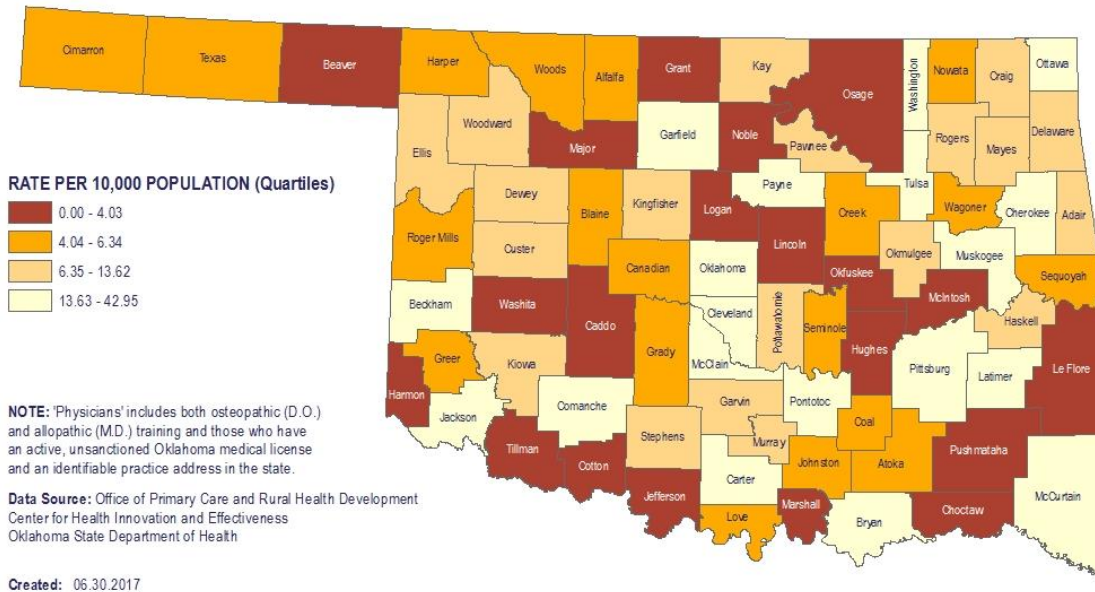
TOTAL VISITS: 7,097

TOTAL CLIENTS: 3,191

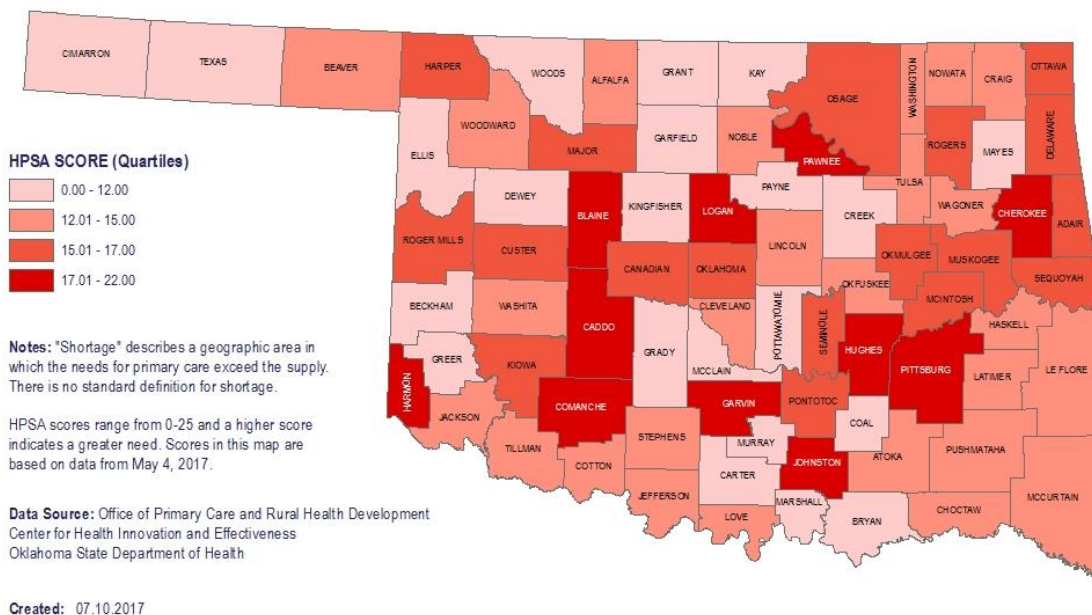
Access to Care

In 2014, Oklahoma ranked 48th in the nation for the number of primary care physicians per 100,000 population (84.8) and nearly 25% of Oklahoma adults do not have a personal doctor or health care provider.^{7,14} Further, 70 out of the 77 counties are considered to be medically underserved areas (MUA).⁵³ Although 86.4% of adults over 18 had health care coverage in 2015, 15.2% reported that within the past year, they could not visit a doctor due to cost.

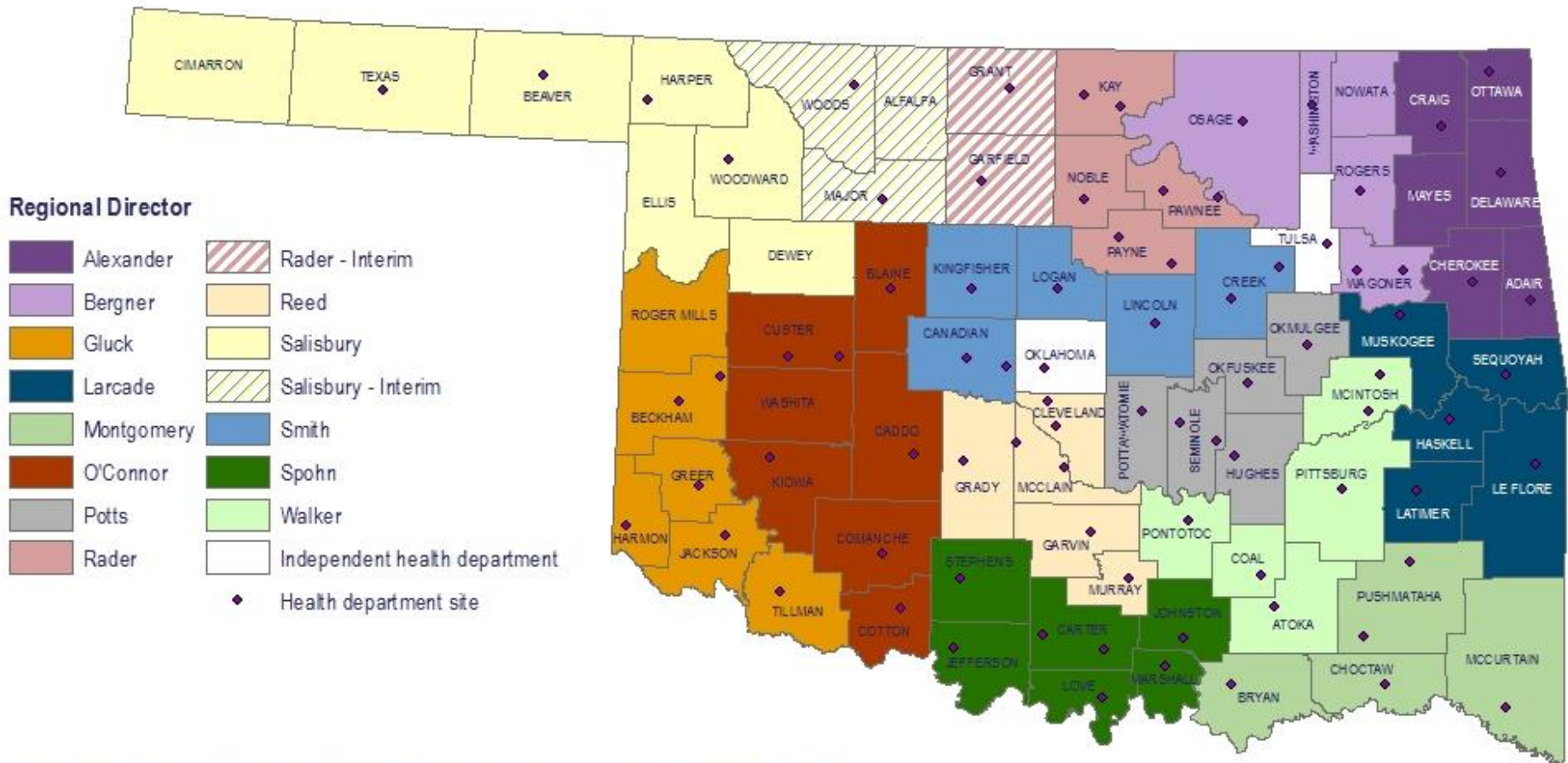
Number of Actively Licensed Physicians by County July - Dec 2016



Health Professional Shortage Area (HPSA) Scores for Primary Care, by County



Regional Directors and County Health Department Locations



Data Source: Community and Family Health Services, Oklahoma State Department of Health



Effective: 07.31.2017

References

1. World Health Organization (WHO). (1946). *Preamble to the Constitution of the World Health Organization*
2. Office of Disease Prevention and Health Promotion. (n.d.). *Determinants of Health*. Healthy people 2020. Retrieved from <http://www.healthypeople.gov/2020/about/DOHAbout.aspx>
3. United Health Foundation. (n.d.). America's Health Rankings. Retrieved from <http://www.americashealthrankings.org/explore/2016-annual-report/state/OK>
4. Oklahoma State Department of Health. (n.d.). *Behavioral Risk Factor Surveillance System (BRFSS), 2011-2015*. Health Surveys Statistics on OK2SHARE.
5. Oklahoma State Department of Health. (n.d.). *Detailed Birth Statistic, 2010-2015*. Vital Statistics on OK2SHARE
6. Oklahoma State Department of Health. (n.d.). *Detailed Mortality Statistics, 2000-2015*. Vital Statistics on OK2SHARE
7. Oklahoma State Department of Health. (n.d.). *Oklahoma Health Improvement Plan*. Retrieved from <http://ohip2020.com/>
8. Burnett, A. (n.d.). *Cherokee County*. Oklahoma Historical Society. Retrieved from <http://www.okhistory.org/>
9. U.S. Census Bureau. (n.d.). *Population and Housing Unit Estimates*
10. U.S. Census Bureau. (n.d.). *American Community Survey (ACS), 2011-2015*
11. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, & Office on Smoking and Health. (2014). *50 Years of Progress: A Report of the Surgeon General*
12. Pate, D. (n.d.). *Small area estimates*. Health Care Information. Center for Health Statistics.
13. Centers for Disease Control and Prevention (CDC). (2016). *Current Cigarette Smoking Among Adults in the United States*. Smoking and Tobacco Use. Retrieved from https://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm
14. Centers of Disease Control and Prevention (CDC). (2016). Behavioral Risk Factor Surveillance System (BRFSS)
15. Centers for Disease Control and Prevention (CDC). (n.d.). *State Highlights*. State Tobacco Activities Tracking and Evaluation (STATE) System
16. King, B. A., Alam, S., Promoff, G., Arrazola, R. & Dube, S. R. (2013). Awareness and ever-use of electronic cigarettes among U.S. adults, 2010-2011. *Nicotine & Tobacco Research*, 15(9), 1623-1627.
17. Corey, C., Wang, B., Johnson, S., E., Apelberg, B., Husten, C., King, B. A., McAfee, T. A., Bunnell, R., &... Dube, S. R. (2013). Notes from the field: Electronic cigarette use among middle and high school students — United States, 2011–2012. *Morbidity and Mortality Weekly Report*, 62(35), 729-730
18. Oklahoma State Department of Health. (2015). Oklahoma youth tobacco survey trends report. Center for the Advancement of Wellness
19. Mokdad, A. H., Marks, J. S., Stroup, D. F., & Gerberding, J. L. (2004). Actual Causes of Death in the United States, 2000. *JAMA*, 291(10), 1238-1245
20. Danaei, G., Ding, E. L., Mozaffarian, D., Taylor, B., Rehm, J., Murray, C. J., & Ezzati, M. (2009). The preventable causes of death in the United States: comparative risk assessment of dietary, lifestyle, and metabolic risk factors. *PLoS Medicine* 8(1)
21. State of Obesity. (n.d.). *Obesity Among WIC Participants Ages 2-4, 200-2014*. Retrieved from <http://stateofobesity.org/wic/>
22. State of Obesity. (n.d.). *Study of Children Ages 10 to 17 (2011)*. Retrieved from <http://stateofobesity.org/children1017/>
23. Oklahoma State Department of Health. (n.d.). *Youth Risk Behavior Surveillance System (YRBSS)*. Health Surveys Statistics on OK2SHARE.
24. Cawley, J., & Meyerhoefer, C. (2012). The medical care costs of obesity: An instrumental variables approach. *Journal of Health Economics*, 31(1), 219
25. Oklahoma State Department of Health. (n.d.). *Detailed Birth Statistics*. Vital Statistics on OK2SHARE
26. Mathews, T. J. & MacDorman, M. F. (2011). Infant mortality statistics from the 2007 period linked birth/infant death data set. *National Vital Statistics Reports*, 59(6)
27. Centers for Disease Control and Prevention (CDC). (2015). *Natality, 2007-2015*
28. Centers for Disease Control and Prevention (CDC). (2016). *Infant Mortality. Reproductive Health*. Retrieved from <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm>
29. Oklahoma State Department of Health. (n.d.). *Detailed Mortality Statistics*. Vital Statistics on OK2SHARE
30. Matthews, T. J., MacDorman, M. F., & Thoma, M. E. (2015). Infant mortality statistics from the 2013 period linked birth/infant death data set. *National Vital Statistics Report*, 64(9)
31. Oklahoma State Department of Health. (n.d.). *Preparing for a Lifetime, It's Everyone's Responsibility*. Community and Family Health. Retrieved from https://www.ok.gov/health/Community_&_Family_Health/Improving_Infant_Outcomes/index.html
32. U.S. Department of Health & Human Services. (2016). *Trends in Teen Pregnancy and Childbearing*. Office of Adolescent Health. Retrieved from <https://www.hhs.gov/ash/oah/adolescent-health-topics/reproductive-health/teen-pregnancy/trends.html>

33. The National Campaign to Prevent Teen and Unplanned Pregnancy. (n.d.). *National and State Data: Oklahoma*. Retrieved from <http://thenationalcampaign.org/data/state/oklahoma>
34. Gavin, L., Warner, L., O'Neil, E., Duong, L. M., Marshall, C., Hastings, P. A., Harrison, & A. T., Barfield, W. (2013). Vital signs: Repeat births among teens – United States, 2007-2010. *Morbidity and Mortality Weekly Report*, 62(13), 249-255
35. Centers for Disease Control and Prevention (CDC). (2016). *About Teen Pregnancy*. Reproductive Health: Teen Pregnancy. Retrieved from <https://www.cdc.gov/teenpregnancy/about/index.htm>
36. Ventura, S. J., Hamilton, B. E., & Mathews, T. J. (2013). Pregnancy and childbirth among females aged 10-19 years – United States, 2007-2010. *Morbidity and Mortality Weekly Report*, 62(3), 71-76
37. The National Campaign to Prevent Teen and Unplanned Pregnancy. (n.d.). *Teen Birth Rate Comparison, 2015*. National and State Data. Retrieved from <https://thenationalcampaign.org/data/compare/1701>
38. The National Campaign to Prevent Teen and Unplanned Pregnancy. (n.d.). *Counting It Up: The Public Costs of Teen Childbearing in Oklahoma in 2010*. Retrieved from <http://thenationalcampaign.org/why-it-matters/public-cost>
39. Substance Abuse and Mental Health Services Administration. (2015). *Behavioral Health Barometer: Oklahoma, 2015*.
40. Oklahoma State Department of Health. (n.d.). *Inpatient Discharge Statistics*. Hospital and ASC Statistics on OK2SHARE
41. Mather, M. & Scommenga, P. (2015). *Up to Half of the U.S. Premature Deaths are Preventable; Behavioral Factors Key*. Population Reference Bureau. Retrieved from <http://www.prb.org/Publications/Articles/2015/us-premature-deaths.aspx>
42. Leenders, M., Sluijs, I., Ros, M. M., Boshuizen, H. C., Siersema, P. D., Ferrari, P. Weikert, C., Tjonneland, A., & ... Bueno-de-Mesquita, H. B. (2013). Fruit and vegetable consumption and mortality: European prospective investigation into cancer and nutrition. *American Journal of Epidemiology*, 178(4), 590-602. doi: 10.1093/aje/kwt006
43. Moore, L.V., & Thompson, F. E. (2015). Adults meeting fruit and vegetable intake recommendations: United States, 2013. *Morbidity and Mortality Weekly Report*, Centers for Disease Control and Prevention (CDC). Retrieved from <https://www.cdc.gov/mmwr/preview/mmwrhtml/mmm6426a1.htm>
44. Centers for Disease Control and Prevention (CDC). (n.d.). *Nutrition, Physical Activity and Obesity: Data, Trends and Maps*. Division of Nutrition, Physical Activity and Obesity. Retrieved from https://nccd.cdc.gov/NPAO_DTM/LocationSummary.aspx?statecode=94
45. Centers for Disease Control and Prevention (CDC). (n.d.). *Physical Activity. Physical Activity for Everyone. How Much Physical Activity do Adults Need?* Division of Nutrition, Physical Activity, and Obesity, National Center for Chronic Disease Prevention and Health Promotion. Retrieved from <http://www.cdc.gov/physicalactivity/everyone/guidelines/adults.html>
46. U.S. Department of Health and Health Services. (n.d.). *2008 Physical Activity Guidelines for Americans*. Active Children and Adolescents. Office of Disease Prevention and Health Promotion
47. American Diabetes Association. (n.d.). *Diabetes Basics*. Retrieved from <http://www.diabetes.org/diabetes-basics/>
48. American Diabetes Association. (2013). *Economic costs of diabetes in the U.S. in 2012*. *Diabetes Care*. Retrieved from <http://care.diabetesjournals.org/content/early/2013/03/05/dc12-2625.full.pdf+html>
49. Centers for Disease Control and Prevention (CDC). (2015). *State-Specific Costs of Motor Vehicle Crash Deaths*. Injury Prevention and Control: Motor Vehicle Safety
50. U.S. Department of Health and Human Services. *Healthy people 2020 – Topics and Objectives*. Washington, D.C.
51. Oklahoma State Department of Health. (n.d.). *Vital Statistics*. Vital Statistics from OK2SHARE
52. Centers for Disease Control and Prevention. (n.d.). *About natality, 2007-2015*. CDC Wonder Online Database.
53. Office of Primary Care and Rural Health Development. (2017). *Health Professional Shortage Areas (HPSAs) as of March 2017*. 2015 Oklahoma Health Workforce Data Book.

<p>Oklahoma State Department of Health Community and Family Health Services Community Epidemiology & Evaluation 1000 NE 10th St. Room 508</p> <p>Phone: (405) 271-5279 Fax: (405) 271-1225</p>	<p>Report compiled by:</p> <p style="text-align: center;">Alora Korb, M.A. <i>Program Assessment & Evaluation Specialist</i></p> <p style="text-align: center;">Jennifer Han, Ph.D., CHES <i>Director of Community Epidemiology & Evaluation</i></p>
---	--

	<p>The Oklahoma State Department of Health (OSDH) is an equal opportunity employer and provider. This publication, issued by the OSDH, was authorized by Terry L. Cline, PhD, Commissioner of Health, Secretary of Health and Human Services. A digital file has been deposited with the Publications Clearinghouse of the Oklahoma Department of Libraries. Copies have not been printed but are available for download at www.health.ok.gov. May 2017</p>	
---	--	---