Oklahoma State Department of Health

State of the County's Health Report

#HealthierOK

Noble 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!

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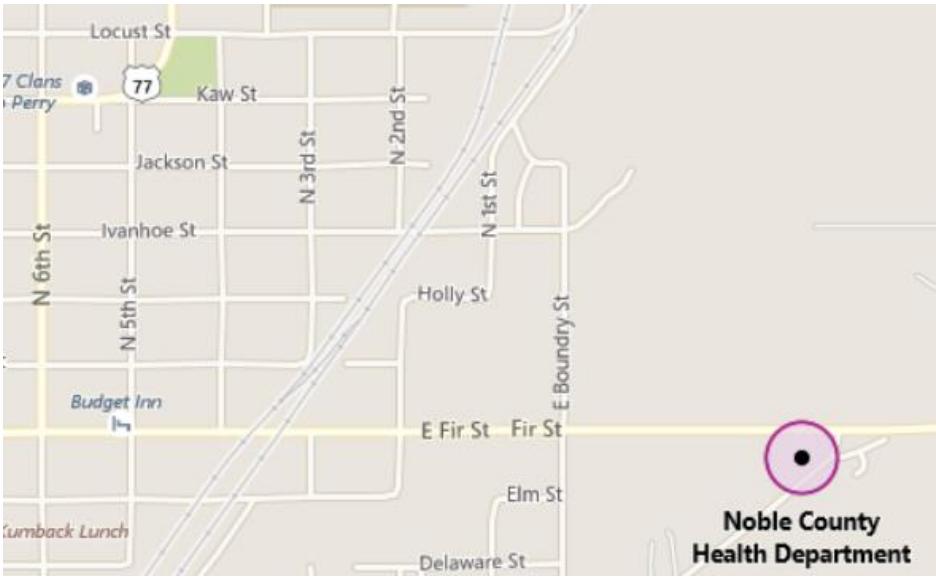
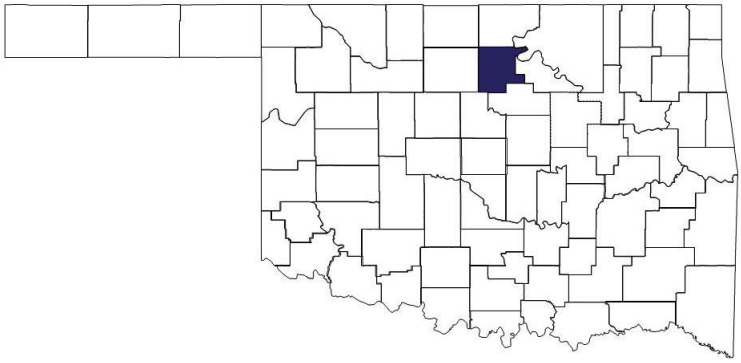




Scale: 1 (best) – 77 (worst)

Compared to all other Oklahoma counties, Noble County ranks:

- **2nd** for percent of uninsured population (2011-2015)
- **7th** for suicide mortality rate (2011-2015)
- **8th** for percent of population engaging in binge drinking (2015)
- **11th** for heart disease mortality rate (2011-2015)
- **12th** for cancer mortality rate (2011-2015)

About Noble County[8]:

County land was originally used as hunting grounds by the Osage in the 1700s and early 1800s, but became part of the Cherokee Nation through an 1835 treaty. The Cherokee leased the land for grazing; both ranching and raising cattle were important well into the 20th century. Once called County P, the land became named after John W. Noble, interior secretary in 1893, when the land was opened to non-Indian settlers. Many of the settlers were of Czech, German, and German-Russian descent. The development of railways and other forms of transportation through the land stimulated economic growth, especially for shipment of crop and cattle.

Fun Facts:

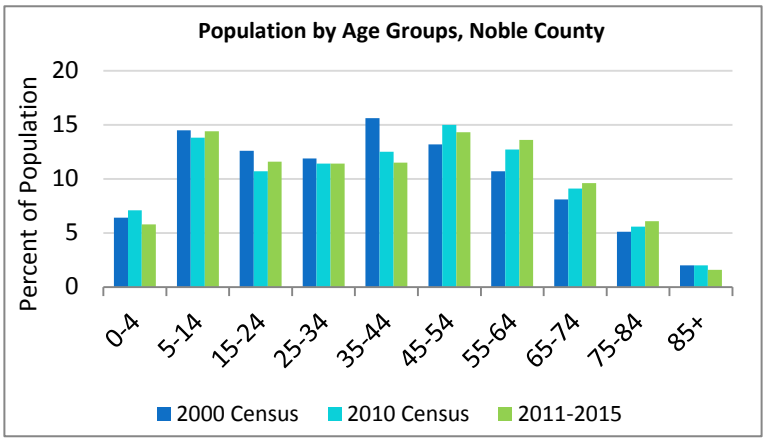
- The Ponca Reservation and Otoe-Missouria Reservation inhabited the northeastern corner of the land until 1904.
- Liberty was a short-lived all-Black town, established by Edward P. McCabe.
- The National Register of Historic Places for the county lists the county courthouse, the Sumner School, and the Rein School.
- Local attractions include the Cherokee Strip Museum and Lake McMurtry.
- Noble County is home to the longest-running festival in Oklahoma – every September since 1893, Perry hosts the annual Cherokee Strip Celebration, consisting of a carnival, arts and crafts festival, parade, and rodeo.

DATA NOTE:

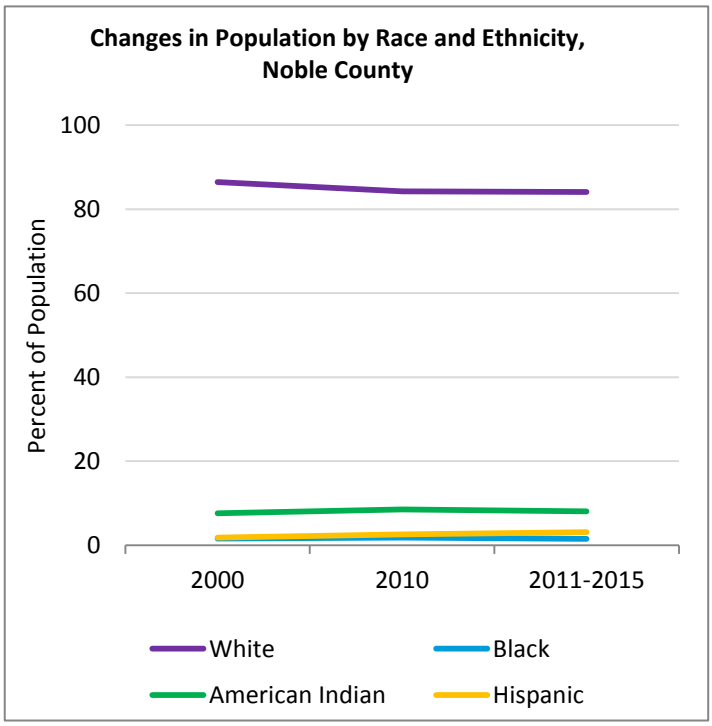
Multiple years of data are utilized in this report to create more stable estimates of health indicators for Oklahoma's small populations. Trends and comparisons across groups are made when possible. Because the Behavior Risk Factor Surveillance System (BRFSS) data are not sampled at the county level, 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.

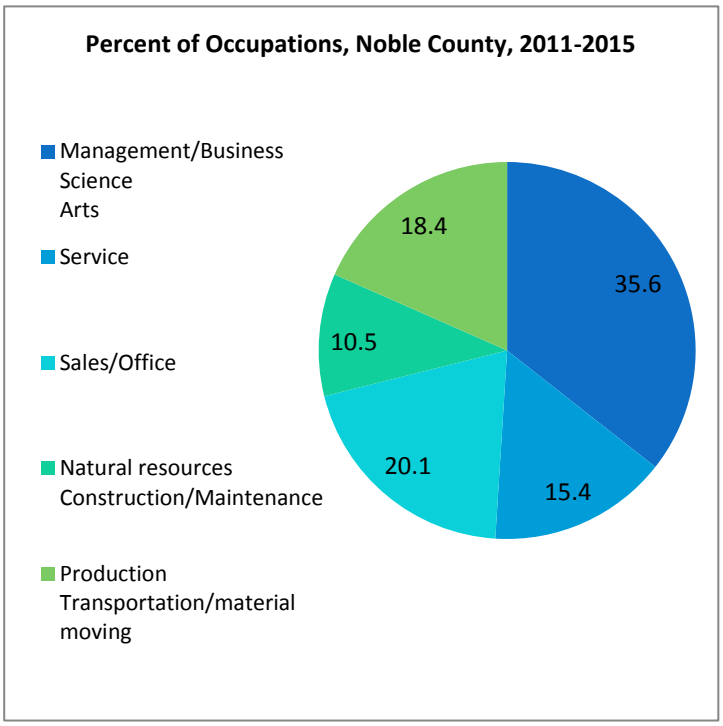
County Demographics and Socioeconomic Profile

Demographics	County
Population, 2011-2015 estimate[9]	11,506
Population, percent change, 2000 to 2015	0.8% increase
Rank for growth in state (out of 77)	51st
Race and Ethnicity, 2011-2015[10]	
Whites alone	84.1%
Blacks alone	1.5%
Native Americans alone	8.1%
Hispanic or Latino	3.1%
Age, 2011-2015[10]	
Less than 5	5.8%
65 and Over	17.3%
Median age	40.7 years



Socioeconomic Profile (2011-2015 estimates[10])	County	State	National
Disability (ages 18-64)	16.5%	13.9%	10.3%
Of employed, percent disabled	8.9%	7.1%	4.9%
Individuals below poverty	13.3%	16.7%	15.5%
Families below poverty	9.6%	12.4%	11.3%
With children under 18 years	13.9%	19.7%	18.0%
With children under 5 years only	17.5%	22.2%	18.0%
Median household income	$48,285	$46,879	$53,889
Female head of household	9.7%	12.4%	13.0%
Grandparents raising their grandchildren	49.8%	51.8%	37.3%
High school graduates or higher	88.7%	86.9%	86.7%
Bachelor's degree or higher	22.7%	24.1%	29.8%
Occupied housing units	87.6%	86.1%	87.7%
Uninsured (ages 18-64)	9.9%	16.7%	18.1%
Unemployment rate, civilian labor force	5.9%	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]

23.3% Oklahoma | **20.2%** Noble County

Adult Smokers
2015

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]

Key: 25% of population smokes; 25% of population *does not* smoke

Noble County Adult Smokers

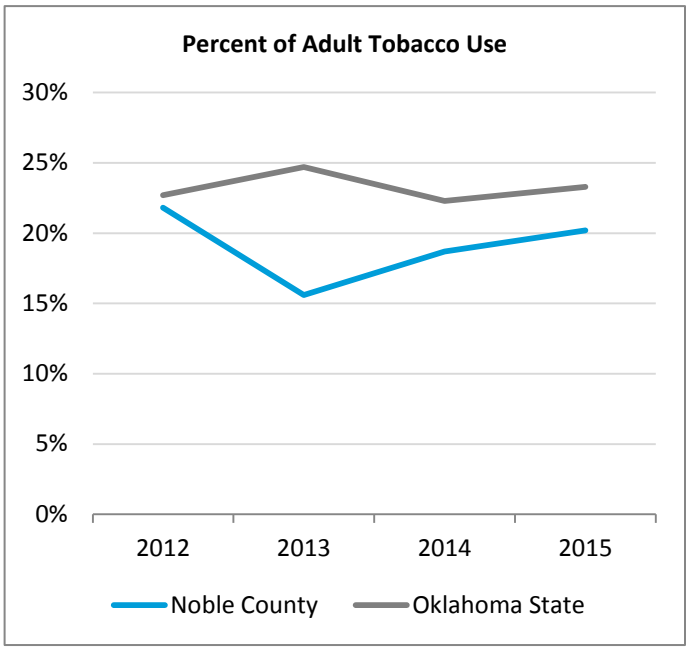
20.2%

Oklahoma Adult Smokers

23.3%

United States Adult Smokers

15.1%



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.[18]

OHIP Flagship Issue #2: Obesity

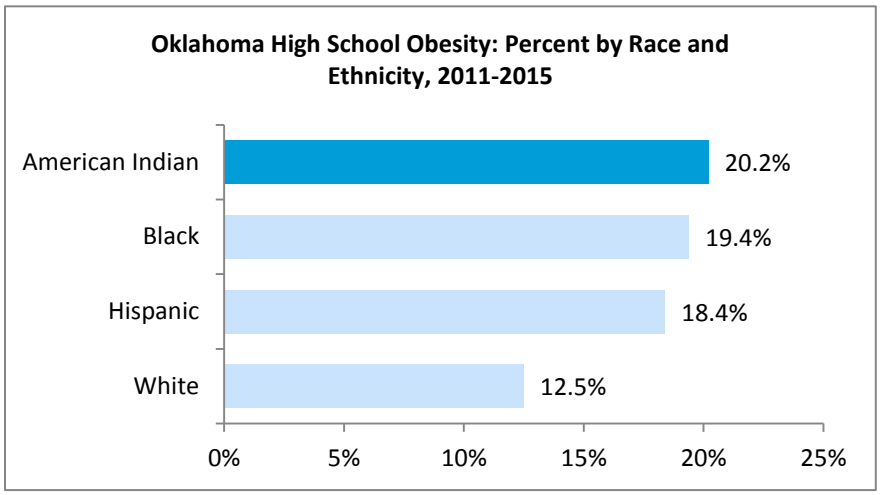
35.0%	34.3%
Oklahoma	Noble County

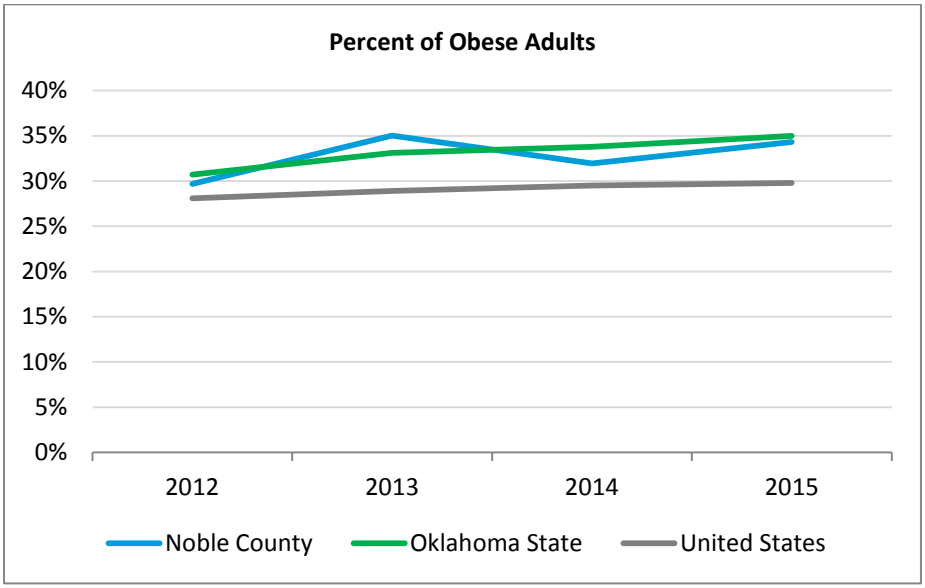
Obese Adults
2015

Obesity is a primary cause of adult deaths and is defined as having a BMI greater than 30.0 kg/m^2 (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 (32.0%) 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]





Of Oklahoma mothers giving birth from 2011-2015, 58% were married; in Noble County, 63.7% were married. Two and percent of mothers giving birth in the county had gestational diabetes, which is lower than the state average of 4.1%. Additionally, 19.8% of live births in the county were to mothers who smoked during pregnancy, which is higher than the state's average of 13.5%.[25]

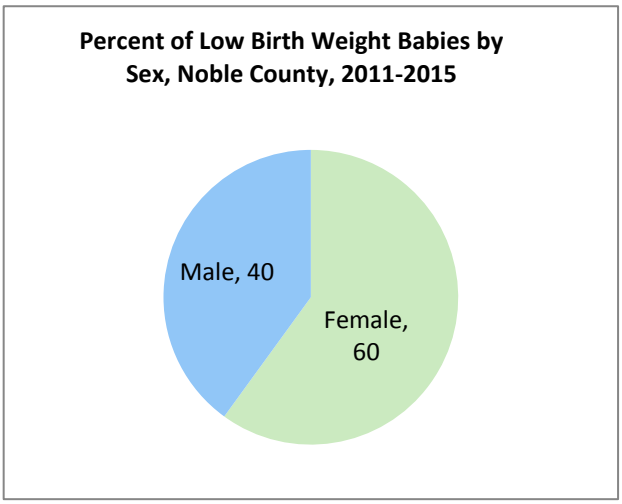
Low Birth Weight

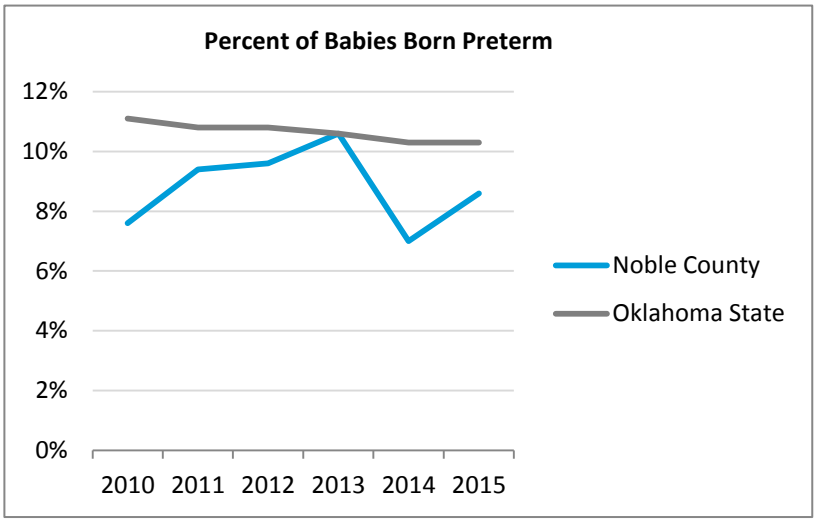
Low birth weight (i.e., weighing fewer than 5 pounds and 8 ounces, or 2500 grams) and preterm births (i.e., 37 weeks of gestation or less) together are the second leading cause of death among children less than 1 year of age.[26] Low birth weight infants are more at risk of health problems compared to 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]

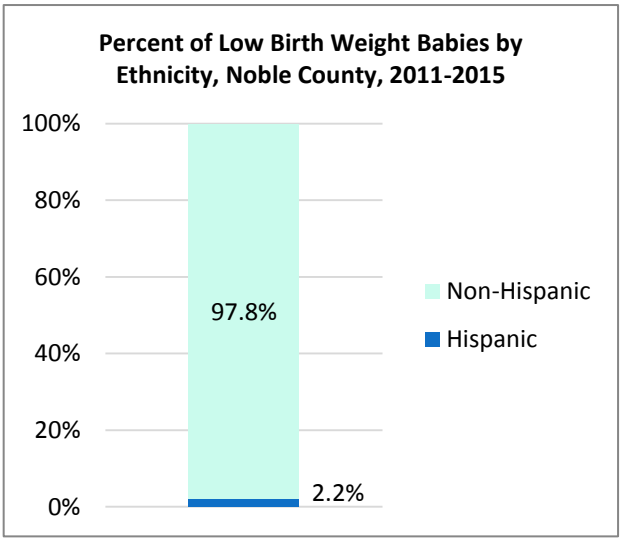
8.1% Oklahoma | **6.9%** Noble County

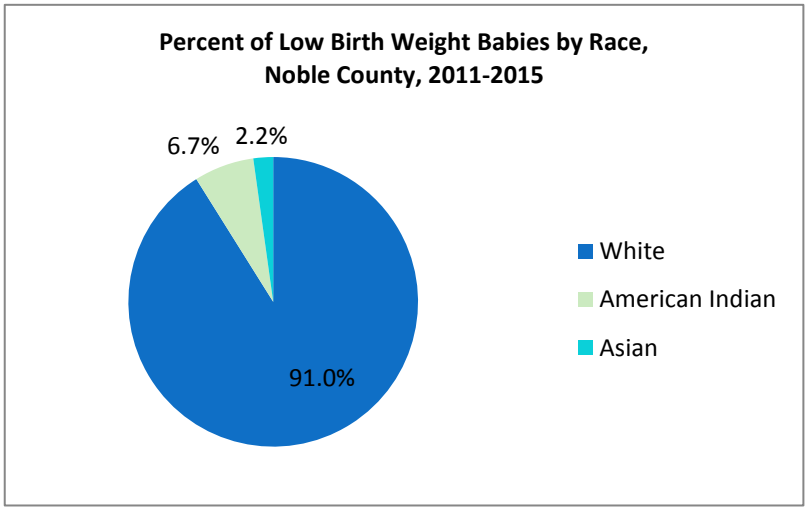
Low Birth Weight Babies
2011-2015

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]

7.4	**7.7**
Oklahoma	Noble County

Infant Mortality Rate
Deaths per 1,000 live births
2011-2015

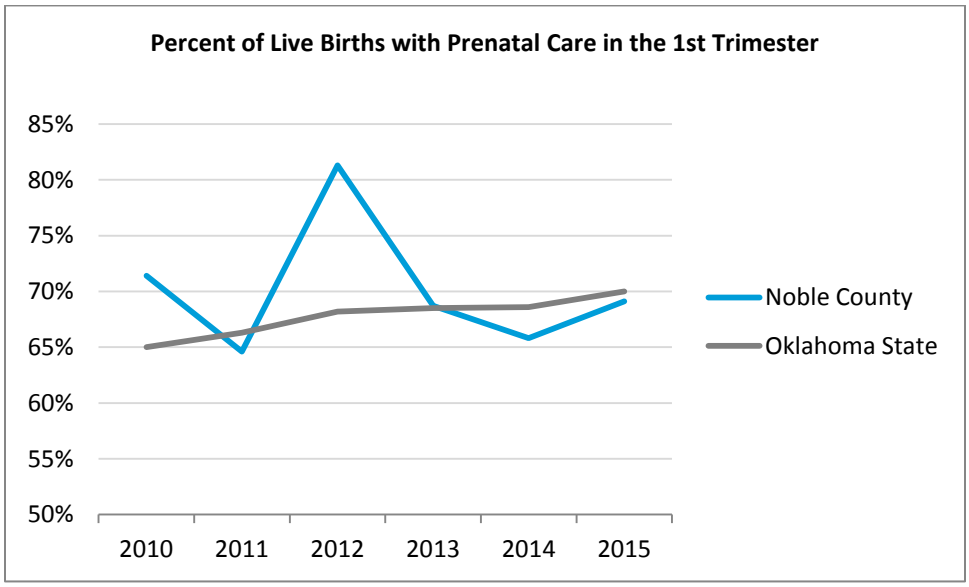
Oklahoma's 2011-2015 IMR, although slightly lower than its previous 2006-2010 rate of 7.6 deaths per 1,000 live births, has resulted in 147,075 years of potential life lost from 2011-2015, based on an average age of death in Oklahoma of 75 years.[29] The rate is also still significantly higher than the 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.

375

Years of Potential Life Lost
Noble County, 2011-2015
Based on an average death in Oklahoma of 75 years

Noble County's IMR is slightly higher than the state rate and 53.3% lower than the county rate from 2006-2010 (16.5 deaths per 1,000 live births). Additionally, the IMR rate was highest for White infants (9.6 deaths per 1,000 live births), which has decreased from 16.2 deaths per 1,000 live births from 2006-2010.[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, 69.9% of women who had a live birth in Noble County accessed prenatal care during the first trimester of their pregnancy.[25]



Teenage Pregnancy

42.2	36.5
Oklahoma	Noble County

Teen Birth Rate

Births per 1,000 female population aged 15 – 19 years

2011-2015

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]

Noble County's IMR is 13.5% lower than the state rate and 63.7% higher than the 2015 national rate of 22.3.[25,37] The current county rate is 21.8% lower than the 2005-2009 rate. American Indian (73.5 births per 1,000 population) and White (59.5 births) individuals have the highest birth rates. The majority of births in Noble County to teen mothers are first births (76.9%), while 20% are second births, and 3.1% 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]

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 | **13.5** Noble County

Suicide deaths
per 100,000 population
2011-2015

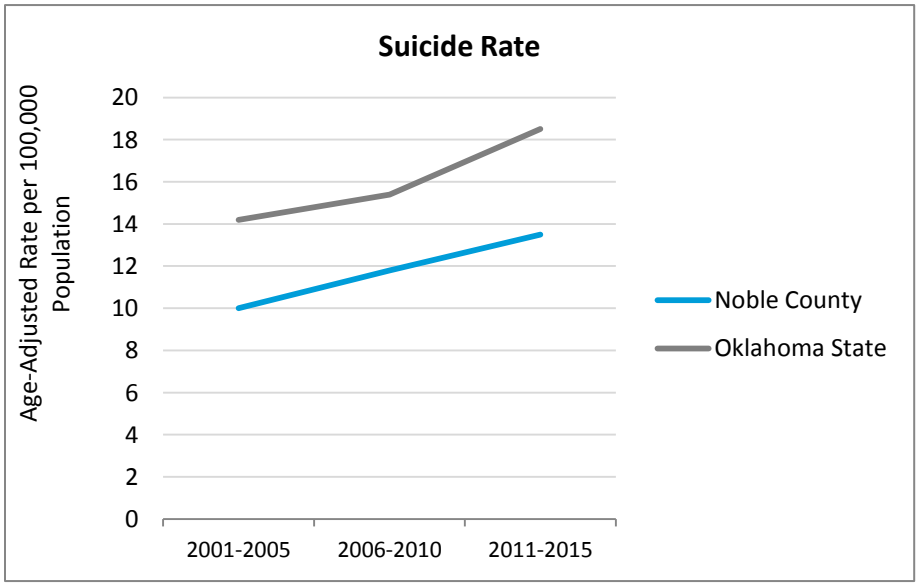
Adolescents are not spared from mental illness either. From 2013-2014, one in ten Oklahoman adolescents (compared to the 11% national average) experienced a major depressive episode and of those, over half did not receive any treatment for depression.[39] Unfortunately, 2015 data show that 15.1% of high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

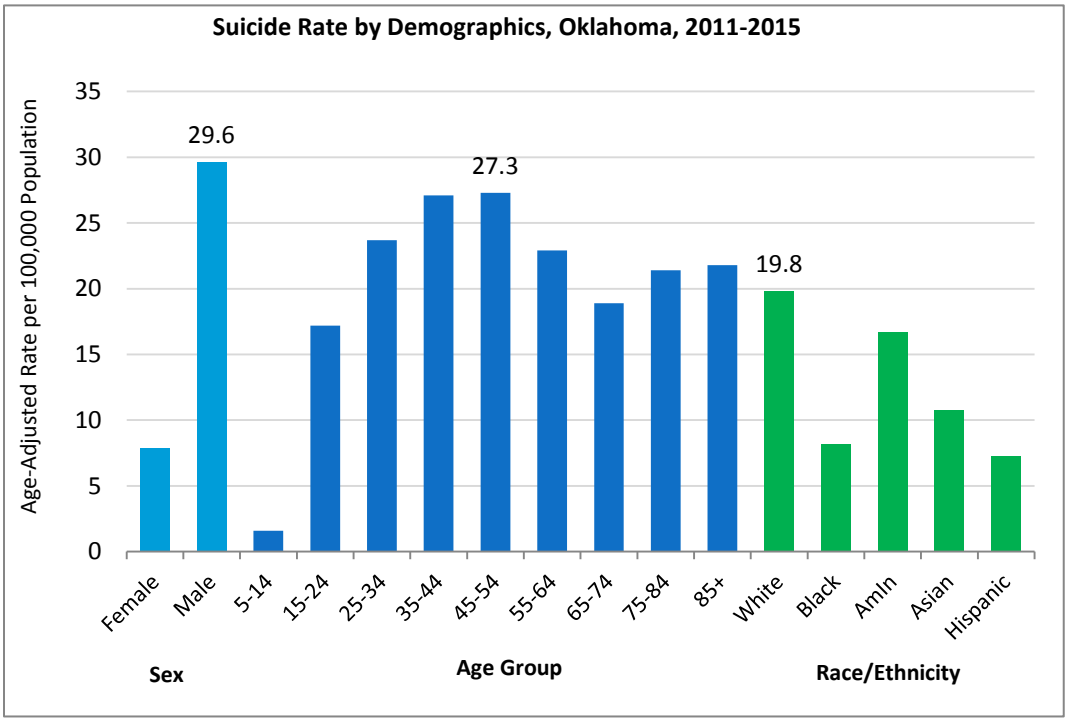
Substance use and abuse is also a problem among both adolescents and adults. From 2013-2014, 8.1% of adolescents in Oklahoma had used illicit substances in the past 30 days (national average: 9.1%), and 5.3% of Oklahoman adolescents used pain relievers for nonmedical use (national average: 4.7%). Two 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 Noble County, 40 discharges were for mental illness, costing $1,009,128 total. The average length of stay was 16.6 days. More males (25) than females (15) were discharged and males stayed longer on average (22.4 days) compared to females (6.7 days).[40]

The Oklahoma suicide rates are highest for men, 45-54 year-olds, and White individuals. The highest rates for Noble County are for males (19.7 deaths per 100,000 population) and White individuals (11.2 deaths).[29] Female, age, other race, and ethnic rates could not be computed.





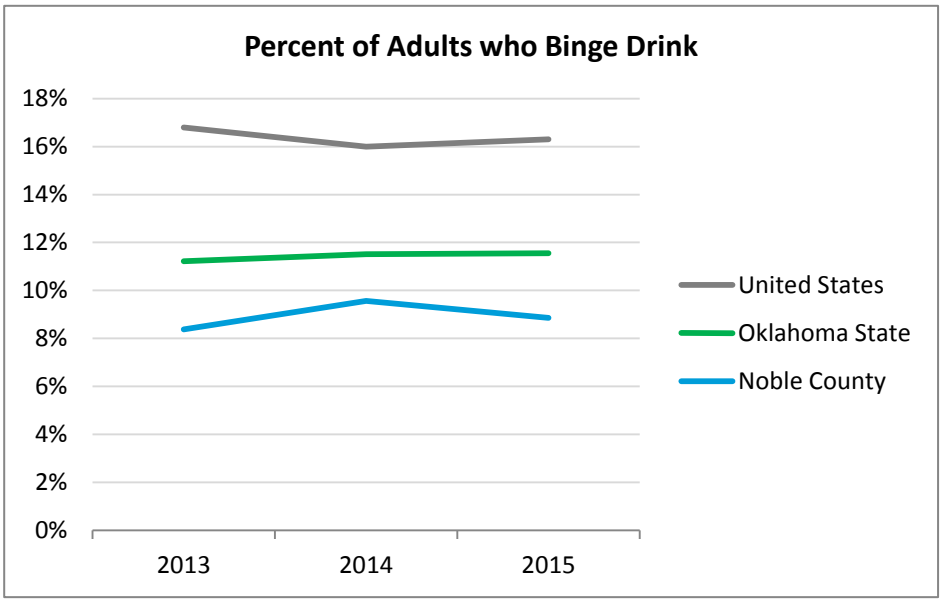
Binge Drinking

11.6% Oklahoma | **8.9%** Noble County

Binge Drinking Adults
2015

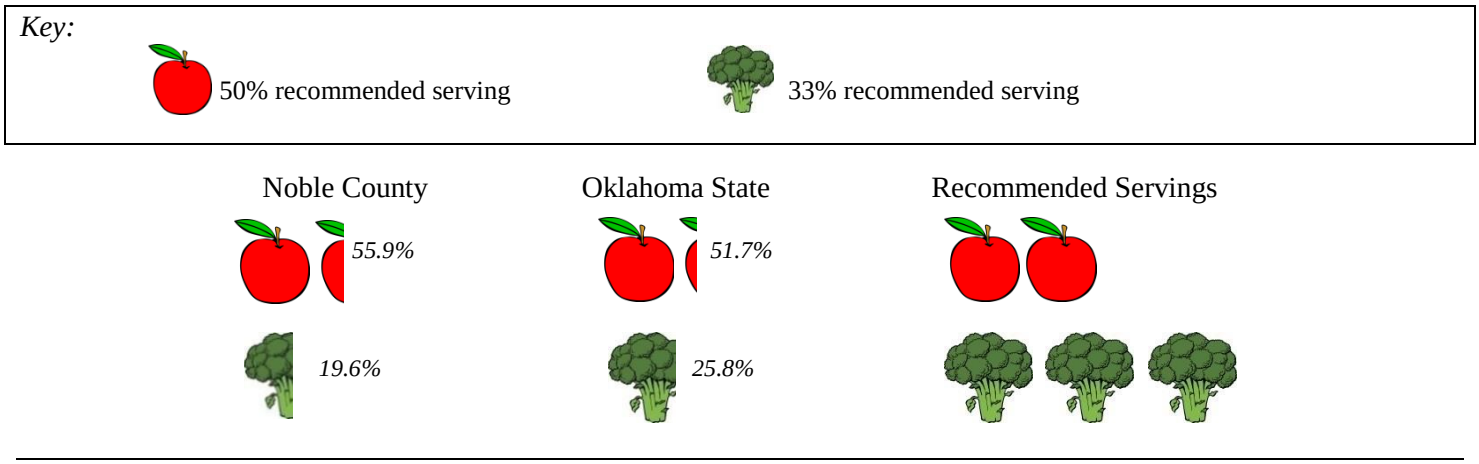
In 2015, 41.9% of Oklahoman adults had at least one drink of alcohol in the past month, lower than the national average of 53.6%. This percentage has slowly decreased since 2011, both at the state and national level. Binge drinking (five or more alcoholic beverages on one occasion for men, four or more for women), however, continues to be an occurrence for many adult Oklahomans. Unlike the decreases in monthly use of alcohol, engagement in binge drinking has remained steady since 2013 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]

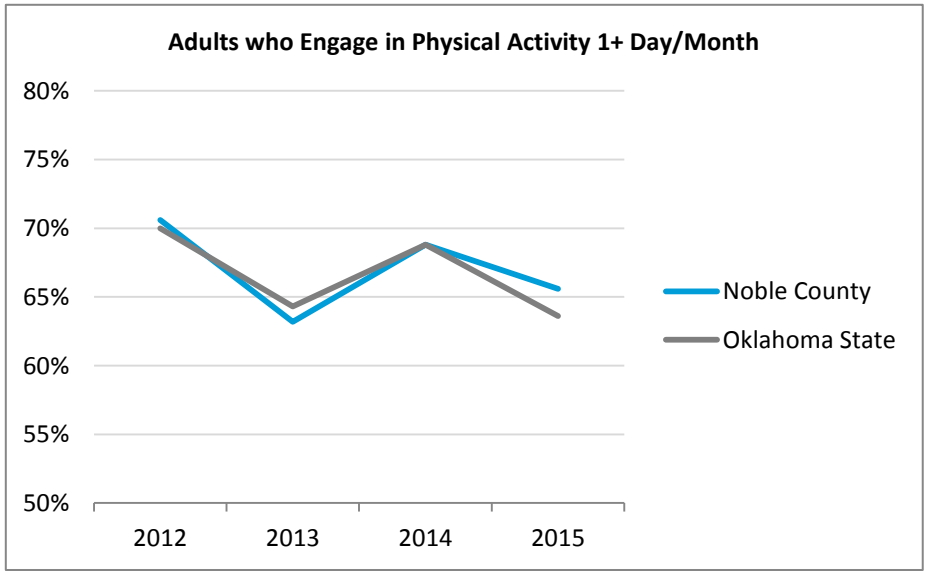


Physical Activity

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]

36.4% Oklahoma | **34.4%** Noble County

Adults who **Do Not** Engage in Physical Activity
2015



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

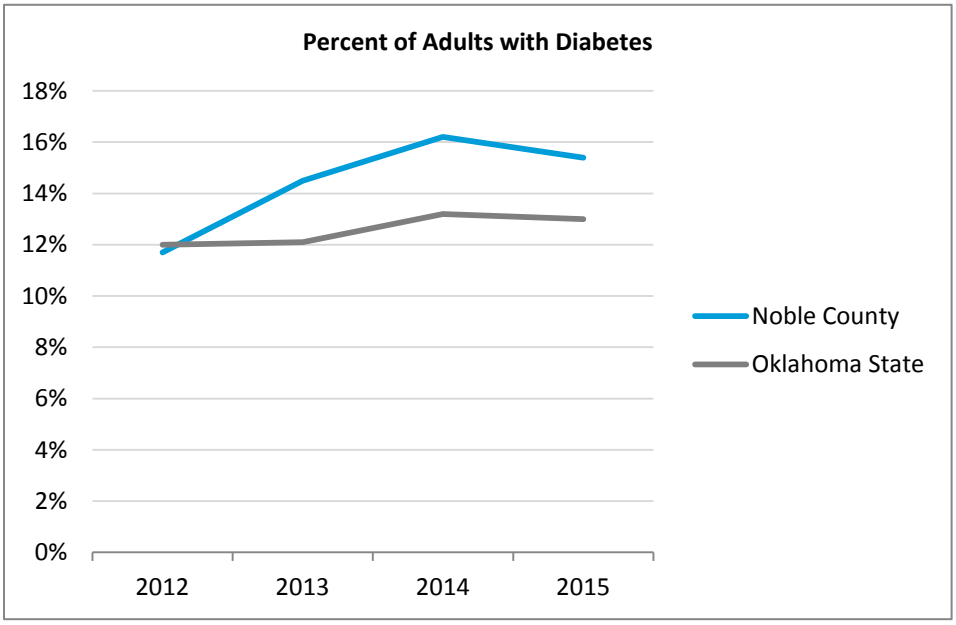
13.0%	15.4%
Oklahoma	Noble County

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.[48] This amount includes both direct medical costs and reduced productivity. They estimated the largest component of direct medical costs to be hospital inpatient care.

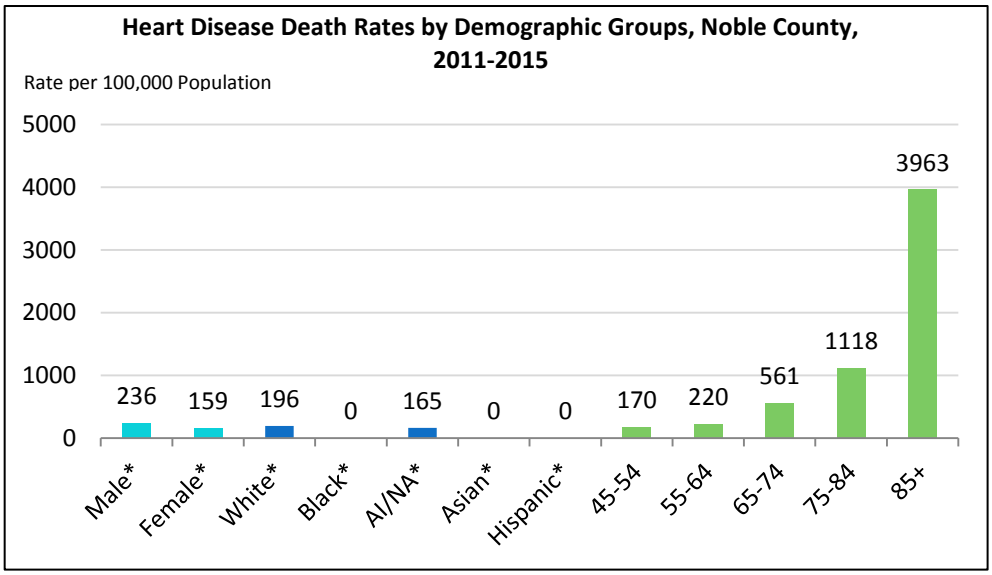
Noble Diabetes Inpatient Data (2014)			
18	$499,714	5.4 days	$27,761.89
Hospital Discharges	*Total Charges*	*Average Hospital Stay*	*Average Charges per Stay*



Death, Injury, and Violence

Leading Cause of Death

In Noble County, heart disease is still the leading cause of death for all ages combined at 193.1 deaths per 100,000 population (2011-2015).[29] The rate decreased 8.5% from the previous 2008-2012 data (211 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 Noble County were $5,933,726, or $50,258.8 per discharge.[40]



*Age-Adjusted Death Rate per 100,000 Population

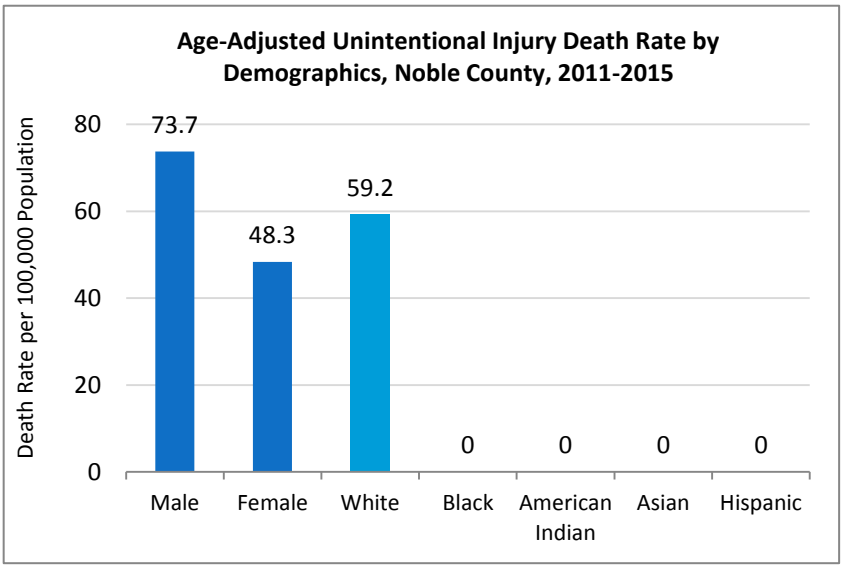
Injury and Violence

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.

60.4	**61.2**
Oklahoma	Noble County

Unintentional Injury Death Rate
per 100,000 population
2011-2015

From 2011-2015, unintentional injury was the 5th leading cause of death for Noble County and is higher than the 2006-2010 rate (46.8).[30]



Motor-vehicle accidents account for 31.6% of Noble County's total unintentional injury deaths, with a death rate of 20.9 deaths per 100,000 population.[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.

The top 10 leading causes of death table displays a broad picture of the causes of death in Noble 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
Noble County 2011-2015

RANK	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65+	ALL AGES
1					**UNINTENT. INJURY 5**	**HEART DISEASE 14**	**CANCER 26**	**HEART DISEASE 115**	**HEART DISEASE 147**
2						**UNINTENT. INJURY 11**	**HEART DISEASE 17**	**CANCER 90**	**CANCER 128**
3						**CANCER 8**	BRONCHITIS/ EMPHYSEMA/ ASTHMA 9	BRONCHITIS/ EMPHYSEMA/ ASTHMA 38	BRONCHITIS/ EMPHYSEMA/ ASTHMA 52
4						DIABETES 5	DIABETES 7	ALZHEIMER'S DISEASE 36	DIABETES 42
5							LIVER DISEASE 6	DIABETES 28	**UNINTENT. INJURY 38**
6								STROKE 22	ALZHEIMER'S DISEASE 37
7								INFLUENZA/ PNEUMONIA 16	STROKE 26
8								**UNINTENT. INJURY 14**	INFLUENZA/ PNEUMONIA 19
9								SEPTICEMIA 8	SEPTICEMIA 11
10								HYPER-TENSION 6	LIVER DISEASE 9

*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]
	Noble County[51]		Oklahoma[51]		United States[50]		
Infant mortality (per 1,000 births)	2011-2015	7.7	2011-2015	7.4	2013	6.0	6.0
Low birth weight infants (% of live births)	2011-2015	6.9%	2011-2015	8.1%	2014	8.0%	7.8%
Very low birth weight infants (% of live births)	2011-2015	1.4%	2011-2015	1.4%	2014	1.4%	1.4%
First trimester prenatal care (% of live births)	2011-2015	69.9%	2011-2015	62.0%	2007§	70.8%	77.9%
Coronary heart disease deaths (per 100,000 population)*	2011-2015	193.1	2011-2015	227.9	2014	98.8	103.4
Cancer deaths (per 100,000 population)*	2011-2015	166.9	2011-2015	185.8	2014	161.2	161.4
Unintentional injury deaths (per 100,000 population)*	2011-2015	61.2	2011-2015	60.4	2014	40.5	36.4
Transportation-related deaths (per 100,000 population)*	2011-2015	20.9	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

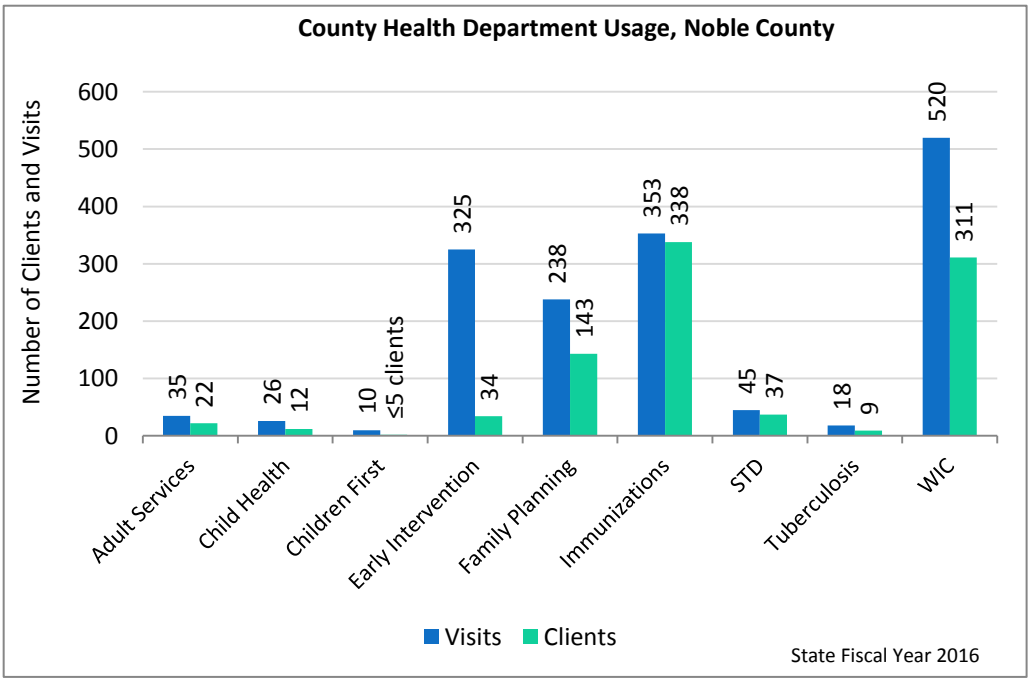
*Death rate is age-adjusted to the 2000 U.S. standard population;
§The most recent data available from CDC WONDER Natality Data shows that 65.4%[52] of women having live births in from 2011-2015 received prenatal care within the first three months of pregnancy. Not all states collect prenatal care information 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. Not every service is available in all counties.

The data on this page reflect services provided in the county health department. Other activities are implemented across the county to promote the public's health.

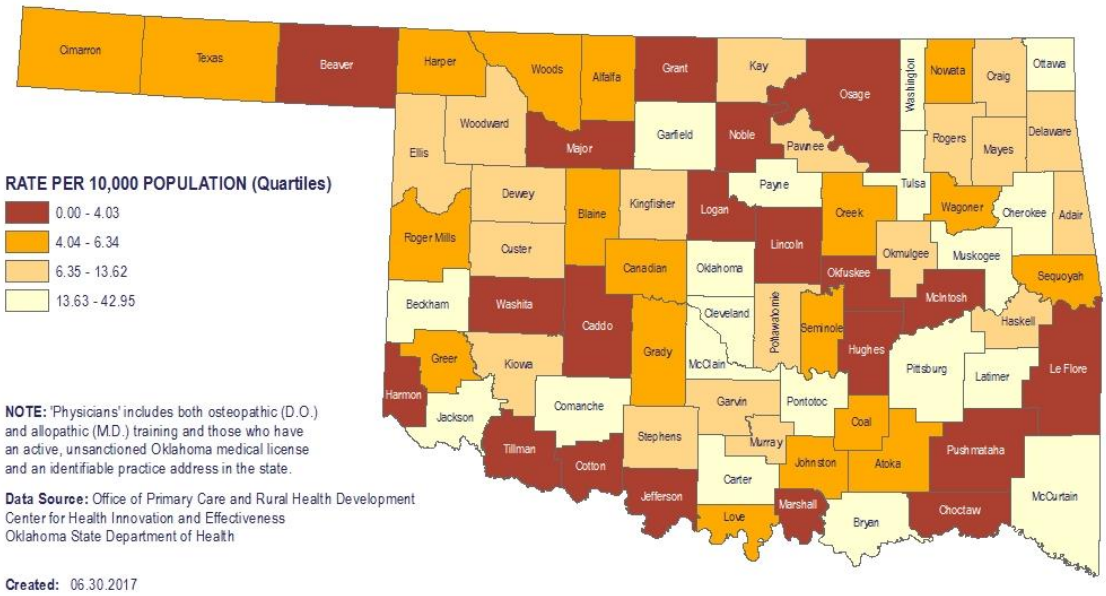
TOTAL VISITS: 1,570
TOTAL CLIENTS: 784



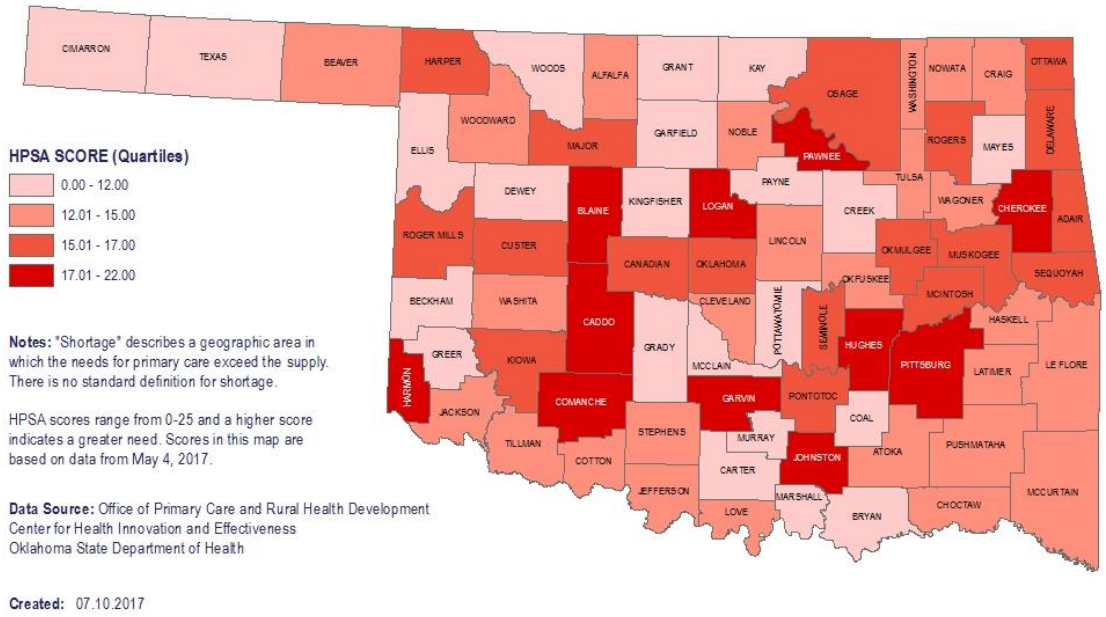
Access to Care

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.

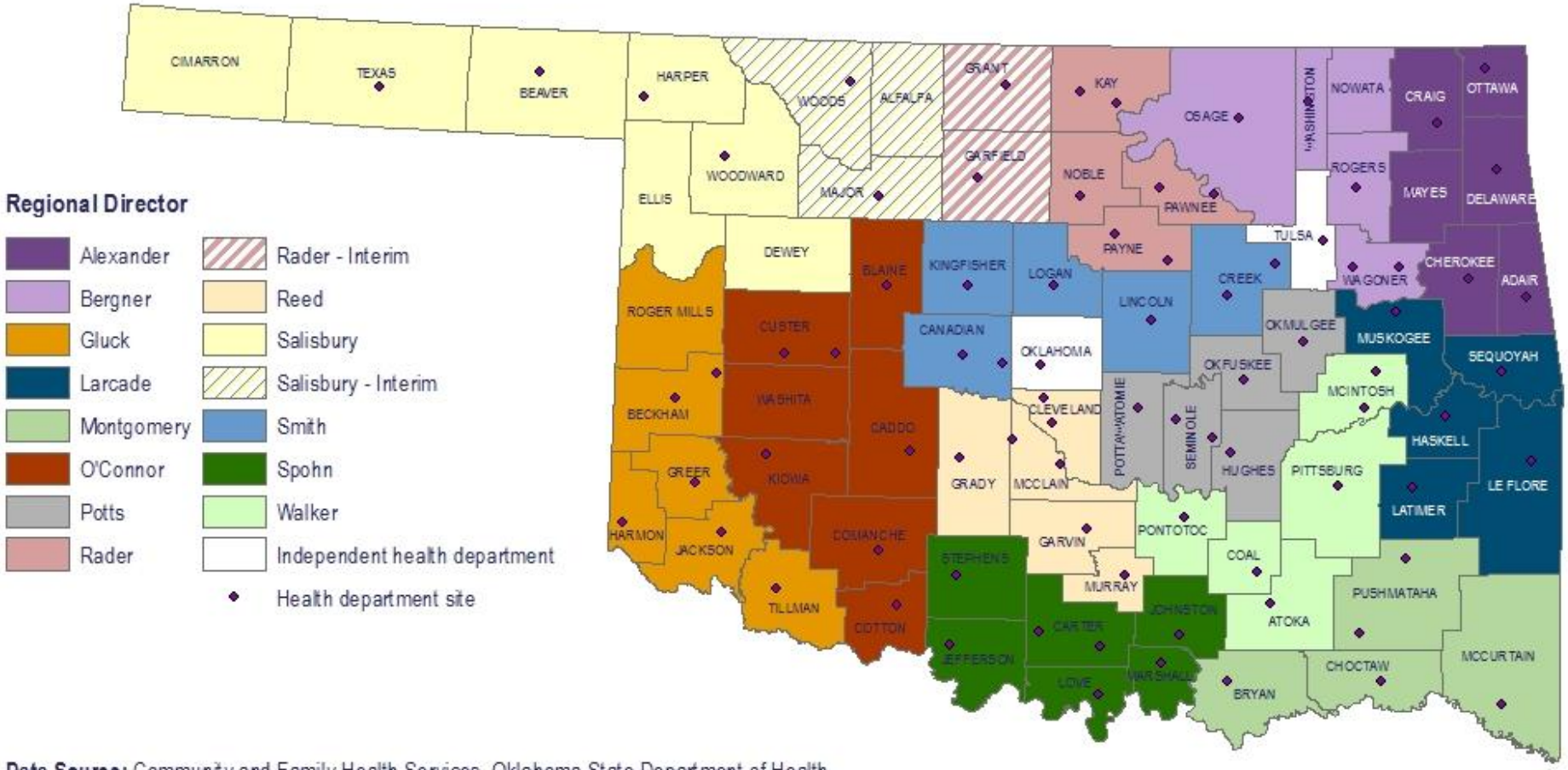
Number of Actively Licensed Physicians by County
July - Dec 2016



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

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