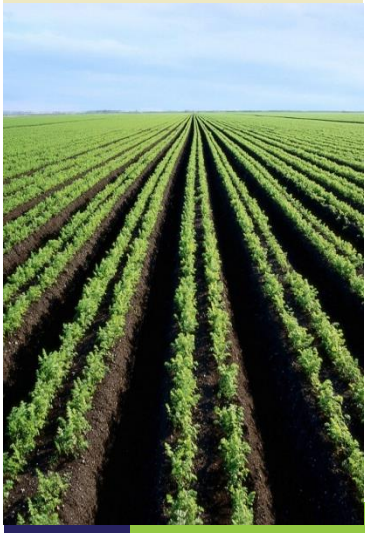
Cleveland County

Spring 2014



OKLAHOMA STATE DEPARTMENT OF HEALTH

State of the County's Health Report

Health on the Horizon

Cleveland County

Health is not simply the absence of disease. Health is comprised of our physical, mental, and social well-being,[1] and is influenced by a variety of factors called 'determinants of health'.[2] These determinants include a range of personal, social, economic, and environmental factors, such as our genetics, behaviors, and access to health care. The determinants of health are inter-related; change in one area results in changes in other areas. 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. Most of these indicators relate to conditions that Oklahomans live with every day, such as poverty and limited access to primary care. 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, such as infant health (lower rates of pre-term births and infant deaths) and smoking (lower prevalence of adult smokers). 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.[3] Health is on the horizon, and together we will Create a State of Health.

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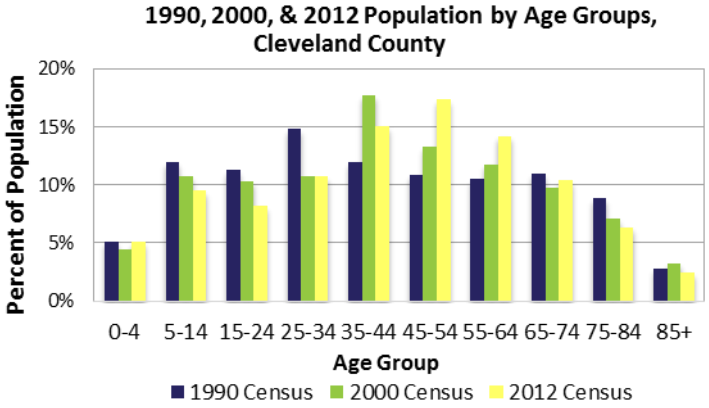
County Demographics and Socioeconomic Profile

Demographics	County
Population, 2012 estimate[4]	265,638
Population, percent change, 2000 to 2012	27.5% increase
Rank for growth in State	5th
Race and Ethnicity, 2008-2012[5]	
Whites alone	79.9%
Blacks alone	4.1%
Native Americans alone	4.1%
Hispanic or Latino	7.0%
Age, 2008-2012[5]	
Less than 5	6.4%
65 and Over	10.4%
Median age	32.7 years

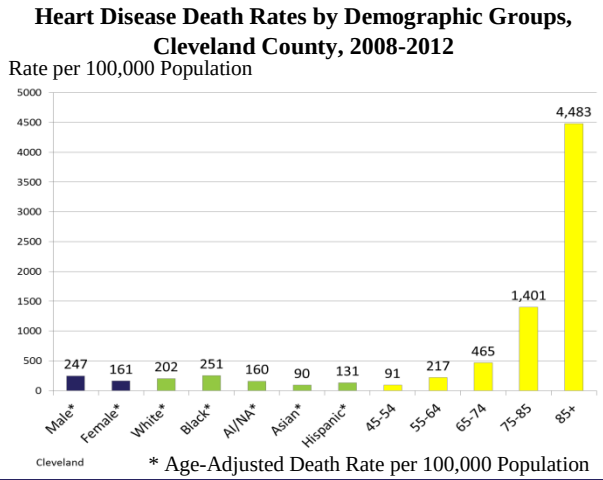


Socioeconomic Profile	County	State	National
Disability (ages 18 to 64), 2008-2012[5]	10.6%	14.3%	10.0%
of disabled (ages 18 to 64) percent employed, 2008-2012[5]	44.1%	38.0%	34.7%
Individuals below poverty, 2008-2012[5]	12.9%	16.6%	14.9%
Families below poverty, 2008-2012[5]	7.9%	12.3%	10.9%
Median household income, 2008-2012[5]	$54,883	$44,891	$53,046
Female head of household, 2008-2012[5]	10.6%	12.2%	12.9%
Grandparents raising their grandchildren, 2008-2012[5]	49.9%	53.4%	39.8%
High school graduates or higher, ages 25+, 2008-2012[5]	90.9%	86.2%	85.7%
Bachelor's degree or higher, ages 25+, 2008-2012[5]	31.4%	23.2%	28.5%
Housing units, 2008-2012[5]			
Occupied	90.9%	86.5%	87.5%
Vacant	9.1%	13.5%	12.5%
Uninsured (ages 18-64), 2005-2010[6]	16.1%	23.9%	18.2%
Unemployment rate, 2012 annual averages[7]	4.4%	5.2%	8.1%

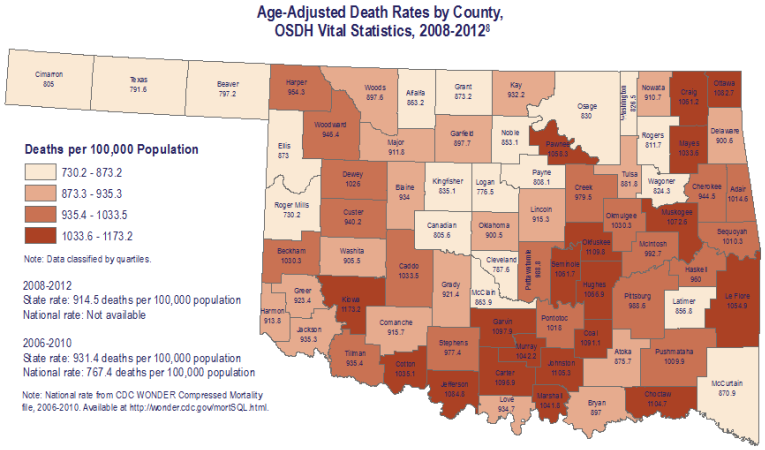
Top 10 Leading Causes of Death

The top 10 leading causes of death table on the next page displays a broad picture of the causes of death in Cleveland County.[8] 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.

In Cleveland County, heart disease is still the leading cause of death for all ages combined. The rate declined 20.3% since the previous 5-year period, from 250.3 deaths per 100,000 population (2003-2007)[9] to 199.4 deaths per 100,000 population (2008-2012).[8] In 2010, the most recent year for which hospital discharge data are publicly available, the total charges attributable to heart disease in Cleveland County were $137.42 million, or $58,927.56 per discharge.[10]



* Age-Adjusted Death Rate per 100,000 Population



Top 10 Causes of Death by Age Group
Cleveland County 2008-2012

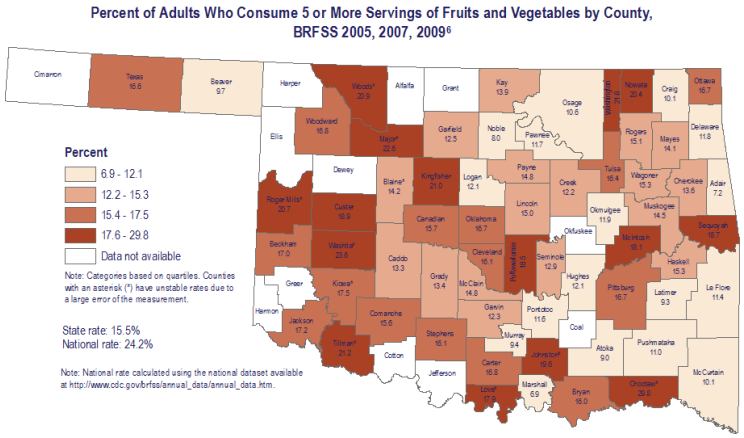
RANK	0-4	05-14	15-24	25-34	35-44	45-54	55-64	65+	ALL AGES
1	CONGENITAL ANOMALIES 29	OTHER CAUSES* 14	UNINTENT. INJURY 50	UNINTENT. INJURY 78	UNINTENT. INJURY 64	CANCER 202	CANCER 393	HEART DISEASE 1580	HEART DISEASE 2091
2	PERINATAL PERIOD 27		SUICIDE 14	SUICIDE 29	CANCER 44	HEART DISEASE 154	HEART DISEASE 300	CANCER 1198	CANCER 1863
3	UNINTENT. INJURY 11		CANCER 5	CANCER 17	HEART DISEASE 40	UNINTENT. INJURY 81	BRONCHITIS/ EMPHYSEMA/ ASTHMA 90	BRONCHITIS/ EMPHYSEMA/ ASTHMA 538	BRONCHITIS/ EMPHYSEMA/ ASTHMA 659
4	OTHER CAUSES* 30		HOMICIDE 5	HEART DISEASE 12	SUICIDE 25	SUICIDE 42	UNINTENT. INJURY 64	STROKE 374	UNINTENT. INJURY 523
5			OTHER CAUSES* 34	HOMICIDE 8	LIVER DISEASE 9	LIVER DISEASE 37	DIABETES MELLITUS 41	ALZHEIMER'S DISEASE 181	STROKE 438
6				PREGNANCY, CHILDBIRTH AND THE PUERPERIUM 5	HOMICIDE 9	BRONCHITIS/ EMPHYSEMA/ ASTHMA 23	STROKE 37	UNINTENT. INJURY 172	DIABETES MELLITUS 210
7				OTHER CAUSES* 56	HIV 6	STROKE 21	LIVER DISEASE 35	INFLUENZA/ PNEUMONIA 162	INFLUENZA/ PNEUMONIA 199
8					SEPTICEMIA 5	DIABETES MELLITUS 17	SUICIDE 28	DIABETES MELLITUS 143	ALZHEIMER'S DISEASE 184
9					OTHER CAUSES* 50	SEPTICEMIA 11	VIRAL HEPATITIS 20	NEPHRITIS 96	SUICIDE 168
10						VIRAL HEPATITIS 11	INFLUENZA/ PNEUMONIA 20	TWO CAUSES TIED 67	LIVER DISEASE 112

*Total deaths per age group were determined; cause of death was ordered (by frequency) when 5 or more deaths occurred for a specific cause; and the number of deaths that occurred in frequencies fewer than 5 per cause were groups together as "OTHER CAUSES." Specific causes could not be determined for those deaths in "OTHER CAUSES" because the data are suppressed on OK2SHARE (the source of this data) when there are fewer than 5 deaths per search category.

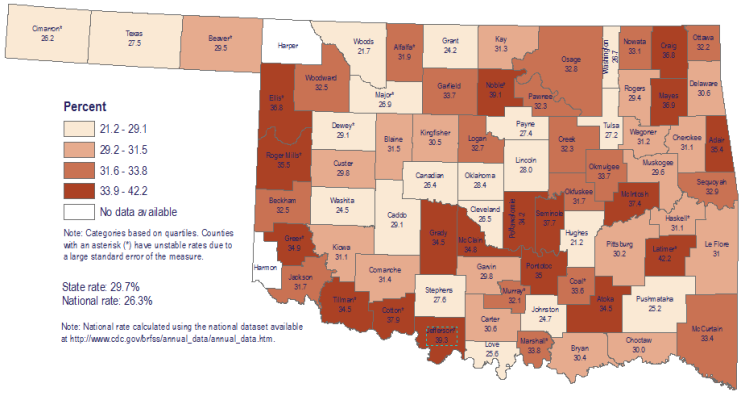
Data source: Vital Statistics, Health Care Information Division, Oklahoma State Department of Health
Produced by: Community Epidemiology and Evaluation, Oklahoma State Department of Health

Nutrition and Obesity

Poor diet is a primary cause of adult deaths in the U.S.[11] Poor diet can be characterized in many different ways, but a common proxy measure of poor diet is assessing fruit and vegetable consumption. A recent study determined that fruit and vegetable consumption is associated with reduced risk of death.[12] Oklahoma has typically ranked as one of the worst states for fruit and vegetable consumption among adults. In 2009, the last year data were available for every state, Oklahoma ranked last in consuming 5 or more daily servings of fruits and vegetables.[13] In Cleveland County, 16.1% of adults consumed the recommended servings of fruits and vegetables daily.[6]

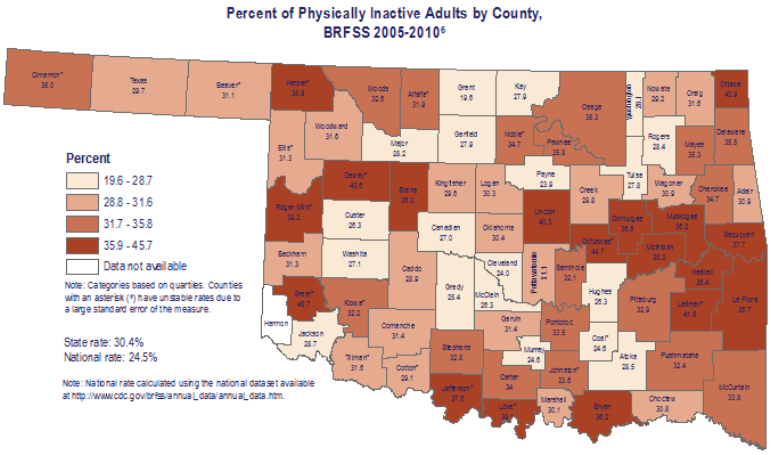


Obesity is also a primary cause of adult deaths.[11] Obesity is defined as having a BMI greater than 30.0 kg/m^2 (BMI = weight in kg/square of height in m). In addition to its association with mortality, obesity increases our risk of several chronic diseases such as heart disease and type 2 diabetes.[14] Obesity rates have skyrocketed in Oklahoma, with self-reported adult obesity prevalence at 32.2% in 2012[6] and self-reported obesity prevalence at 11.8% among high school students in 2013.[15] Data from 2005-2010 estimate the rate of adult obesity to be 26.5% in Cleveland County (6.1% higher than the rate reported in the previous County Health Report[9]). Medical costs for obese individuals were estimated to be $2741 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.[16]



Physical Activity and Fitness

Physical inactivity was reported to be a leading contributor to almost 1 in 10 adult deaths in the U.S.[14] Close to 23 % of U.S. adults do not engage in any physical activity.[13] 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.[17] While 30.4% of all Oklahoma adults from 2005-2010 were not engaging in any physical activity, the rate was lower in Cleveland County, at 24.0%.[6] This rate is similar to the county rate reported in the previous County Health Report.[9]



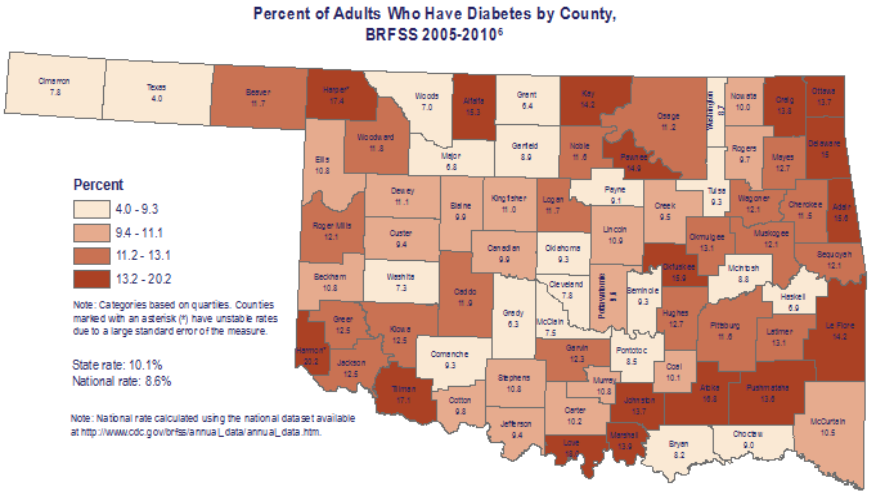
Youth who are regularly active have a better chance of having a healthy adulthood. Children and adolescents should get at least 60 minutes of moderate intensity physical activity most days of the week, preferably every day, and three of those days should include vigorous intensity aerobic activity.[18] Statewide, 56.6% of high school students were physically active most days of the week in 2013.[15]

Diabetes

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 our behaviors, such as prediabetes, overweight/obesity, being physically inactive, and having high blood pressure.[19]

The prevalence of diabetes has been on the rise in Oklahoma. Slightly more than 10% of Oklahoma adults from 2005-2010 had been told by a health professional that they had diabetes.[6] During this same time frame in Cleveland County, 7.8% of adults had diabetes,[6] which is slightly more than the 7.2% of adults cited in the previous County Health Report.[9]

The American Diabetes Association released a report estimating the total cost of diagnosed diabetes to be $245 billion in the U.S. in 2012.[20] This amount includes both direct medical costs and reduced productivity. They estimated the largest component of direct medical costs to be hospital inpatient care. In Cleveland County, there were 275 hospital discharges attributable to diabetes in 2010, the most recent year that hospital data is available.[10] This amounted to $9,490,406.00 in total charges in 2010 alone, or 1.0% of total hospitalization charges in the county.[10]

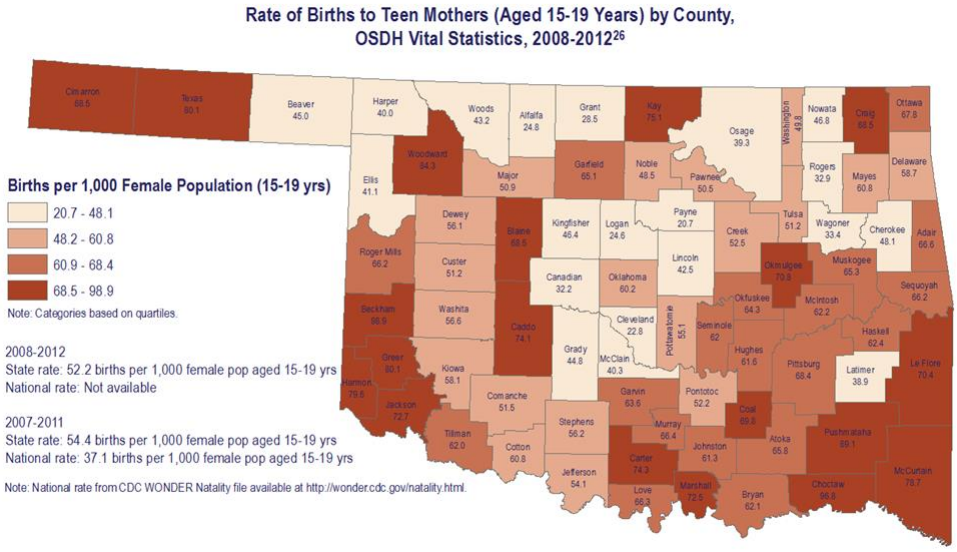


Teen Births

Although births to teen mothers have been declining in recent years,[21] Oklahoma still has one of the highest teen birth rates in the country,[22] including a high rate of repeat births.[23] 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.[24] 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.[22] Additionally, infant mortality rates are highest for babies of teen mothers.[25]

From 2008-2012, Cleveland County had a teen birth rate of 22.8 births per 1,000 female population aged 15-19 years, which is 56.3% lower than the state rate of 52.2 births per 1,000 female population aged 15-19 years.[26] The county rate is 4.2% lower than the rate reported in the previous County Health Report.[9]

Recent estimates place the cost of teen childbearing in Oklahoma at $190 million in 2008, and this includes only health care and other costs associated with the children, not the mothers.[27]

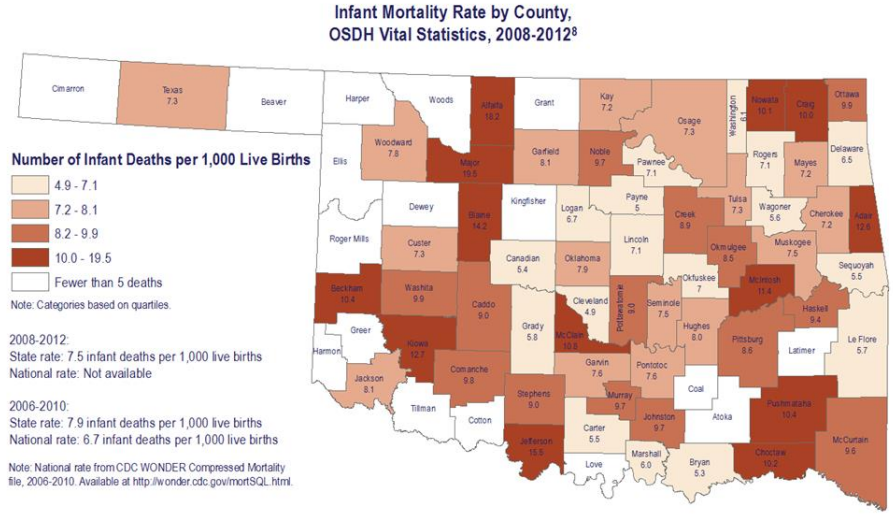


Infant Mortality

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).[25] Oklahoma's IMR has declined 12.8% from its recent high of 8.6 deaths per 1,000 live births in 2006 to 7.5 deaths per 1,000 live births in 2012.[8] However, the rate is still significantly higher than the national (preliminary) rate of 6.05 infant deaths per 1,000 live births in 2011.[29] 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,[30] there is still much work to do.

Racial disparities exist in IMR, with rates among Oklahoma's Black/African American infants being more than double the rates of White and Asian/Pacific Island infants. The IMR for Black/African American infants declined between 2003-2007 and 2008-2012 (16.4 to 14.6, respectively),[8] but is still extremely high.

From 2008-2012, the overall IMR for Cleveland County was 4.9 deaths per 1,000 live births.[8] This rate is 35% lower than the state rate of 7.5 deaths per 1,000 live births[8] and 22% lower than the county rate from 2002-2006.[9] The IMR in Cleveland County accounted for 5,475 years of potential life lost based on an average age of death in Oklahoma of 75 years.[8]



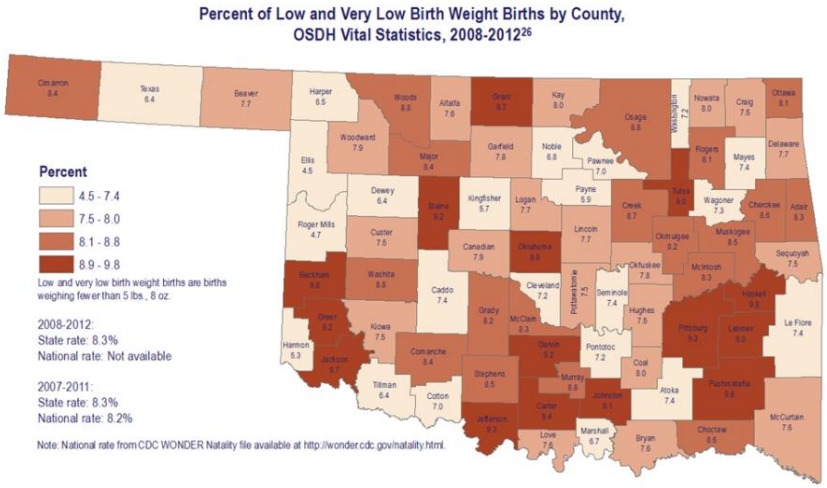
Receiving timely prenatal care is believed to reduce the risk of maternal and infant sickness and death as well as preterm delivery and low birth weight. From 2008-2012, 77.2% of women who had a live birth in Cleveland County accessed prenatal care during the first trimester of their pregnancy.[26]

Low Birth Weight

Low birth weight and preterm births together are the second leading cause of death among children less than 1 year of age.[25] 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.[31]

The percentage of Oklahoma babies born at low birth weight (i.e., weighing fewer than 5 pounds and 8 ounces, or 2500 grams) was 8.3% across 2008-2012.[26] This rate is similar to the latest national data (8.2% from 2007-2011).[32]
In Cleveland County, the rate of low birth weight births was 7.2% from 2008-2012,[26] which is similar to the rate from 2003-2007.[26]

As is seen with infant mortality, the percentage of low birth weight births is higher for Black/African American babies (14.1%) than babies of other races (White: 7.8%; American Indian: 7.3%; Asian/Pacific Island: 7.4%).[26]

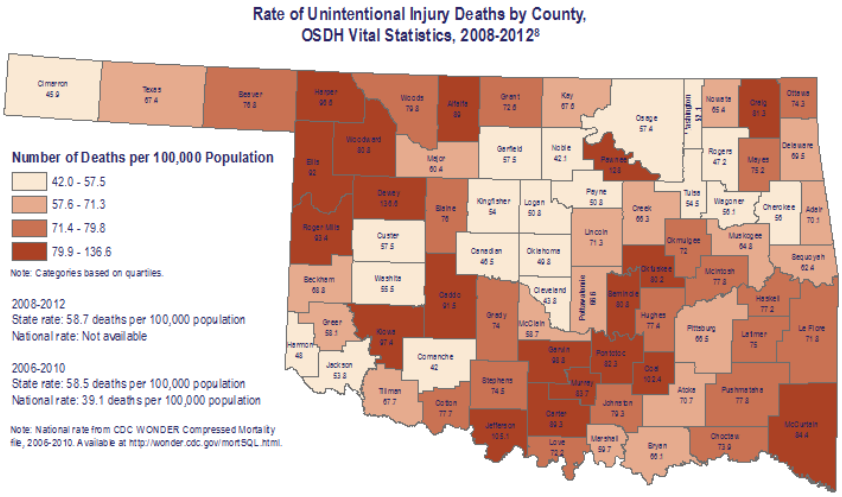


Injury and Violence

Unintentional injury is the 4th leading cause of death in Oklahoma, and the leading cause of death among individuals aged 5-44 years.[8] In 2010, the most recent year that data are publicly available, injuries accounted for almost $1.4 billion of Oklahoma's hospital inpatient charges, or almost $34,000 per discharge.[10] This equates to more than 10% of total inpatient charges in 2010,[10] and does not consider other related medical expenses or lost productivity.

In Cleveland County, unintentional injury is the 4th leading cause of death at 43.8 deaths per 100,000 population.[8] The county rate is higher than the rate of 33.1 which was reported in the previous County Health Report.[9] The current rate is lower than the state rate of 58.7 deaths per 100,000 population.[8]

Motor-vehicle accidents account for 23% of Cleveland County's unintentional injury deaths per 100,000 population, resulting in an estimated cost of $173.2 million in 2011. This cost includes wage and productivity losses, medical expenses, administrative expenses, motor vehicle damage, and employers' uninsured costs ($1.42 million per death).[33]

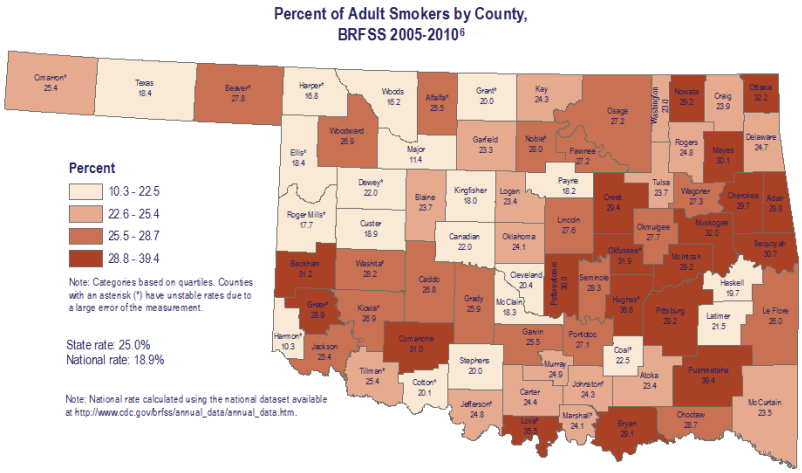


Violence-related deaths (suicide and homicide) are also leading causes of death in Oklahoma.[8] Cleveland County's homicide rate of 2.9 deaths per 100,000 population is 56% lower than the state rate of 6.6 deaths per 100,000 population, and the suicide rate of 13.3 deaths per 100,000 population is 20% lower than the state rate of 16.6 deaths per 100,000 population.[8]

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, resulting in 80-90% of lung cancer deaths, 90% of deaths from chronic lower respiratory disease, and increasing risk of coronary heart disease and stroke deaths.[34] Oklahoma has consistently had one of the highest rates of adult smoking in the country, with an estimated 23.3% of Oklahoma adults being smokers in 2012.[6] While this rate is higher than the national rate of 19.6%,[13] it represents a significant decline from Oklahoma's 2011 rate of 26.1%.[6] Total cigarette sales have remained stable the last three years (at about 71 packs per capita, each year from 2010 through 2012),[35] but have declined from 86.7 packs per capita in 2008 that was reported in the previous County Health Report.[9]

Across 2005-2010 in Cleveland County, 20.4% of adults were smokers.[6] This is similar to the percentage of adult smokers reported in the previous County Health Report[9] but is 18% less than the state rate of 25.0% across the same time period. Health care costs associated with smoking were approximately $719.3 million in Cleveland County.[36]



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 (6.9% in 2011 and 6.7% in 2012), with almost 70% of smokeless tobacco users also being smokers. Data are still being gathered about e-cigarettes, but their usage has increased among adults as well as middle and high school students nationally.[37,38]

Healthy People 2020 Table

Healthy People 2020 Indicators[1]	Comparison Data: Year(s)						2020 target[1]
	Cleveland County[2]		Oklahoma[2]		United States[1]		
Prevalence of obesity (Aged 20+)		N/A†		N/A†	2009-2010	35.7%	30.5%
No leisure-time physical activity (Aged 18+)		N/A†		N/A†	2011	31.6%	32.6%
Prevalence of smoking (Aged 18+)		N/A†		N/A†	2011	19.0%	12.0%
Infant mortality (Per 1,000 of births)	2008-2012	4.9	2009	7.9	2009	6.4	6.0
Low birth weight infants (Percent of live births)	2008-2012	7.2%	2010	8.4%	2010	8.1%	7.8%
Very low birth weight infants (Percent of live births)	2008-2012	1.2%	2010	1.4%	2010	1.4%	1.4%
First trimester prenatal care (Percent of births)	2008-2012	77.2%	2007	76.3%	2007§	70.8%	77.9%
Prevalence of diabetes (Aged 18–84 years)		N/A†		N/A†	2009-2011	8.1%	7.2%
Lack of health insurance (Aged <65 years)		N/A†		N/A†	2011	17.0%	0%
Prevalence of binge drinking (Aged 18+)		N/A†		N/A†	2011	26.7%	24.4%
Coronary heart disease deaths (per 100,000 population)*	2008-2012	199.4	2010	234.1	2010	113.6	100.8
Cancer deaths (per 100,000 population)*	2008-2012	166	2010	190.4	2010	172.8	160.6
Unintentional injury deaths (per 100,000 population)*	2008-2012	43.8	2010	58.8	2010	38.0	36.0
Transportation-related deaths (per 100,000 population)*	2008-2012	9.7	2010	19.8	2010	10.7	12.4

Notes:

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

†Data are not available in the state or county because data are collected using a different methodology and thus are not comparable to the national rates and targets established by Healthy People 2020.

§The most recent data available from CDC WONDER Natality Data[3] shows that 73.7% of women having live births in 2011 received prenatal care within the first three months of pregnancy. Not all states collect prenatal care information on the birth certificate.

References:

[1] U.S. Department of Health and Human Services. Healthy people 2020 – Topics and Objectives. Washington, DC. Available at http://www.healthypeople.gov/2020/topicsobjectives2020/default.aspx: Data for United States and 2020 Target

[2] OSDH, OK2SHARE, Vital Statistics: Data for Oklahoma and Oklahoma Counties.

[3] United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics, Natality public-use data 2007-2011, on CDC WONDER Online Database, November 2013. Accessed at http://wonder.cdc.gov/natality-current.html on Jan 30, 2014 2:58:16 PM

Health Care Cost Summary

Cardiovascular Disease (Heart Disease)

- Average hospital discharges in 2010 = 2332
- Average charges = $58,927.56 per discharge
- Total—$137,419,075 in 2010

Obesity

- 26.5% of adult population (52,494) from 2005-2010
- $2,741.00 in additional medical costs per person aged 18 and over
- Total—$193,301,707 in 2010

Diabetes

- Average hospital discharges in 2010 = 275
- Average charges = $34,510.57 per discharge
- Total—$9,490,406 in 2010

Teen Pregnancy

- 1,108 births to females aged 15-19 from 2008-2012
- $3,807 in costs per year
- Total—$4,218,156 in 2010

Motor Vehicle-Related Injury Death

- 122 deaths from 2008-2012
- $1,420,000.00 in economic costs per death
- Total—$34,648,000 in 2010

Tobacco Use

- 20.4% of adult population (217,984) from 2005-2010
- $3,300 in health care costs per person
- Total—$179,153,330 in 2010

Total Annual Cost* for Cleveland County:

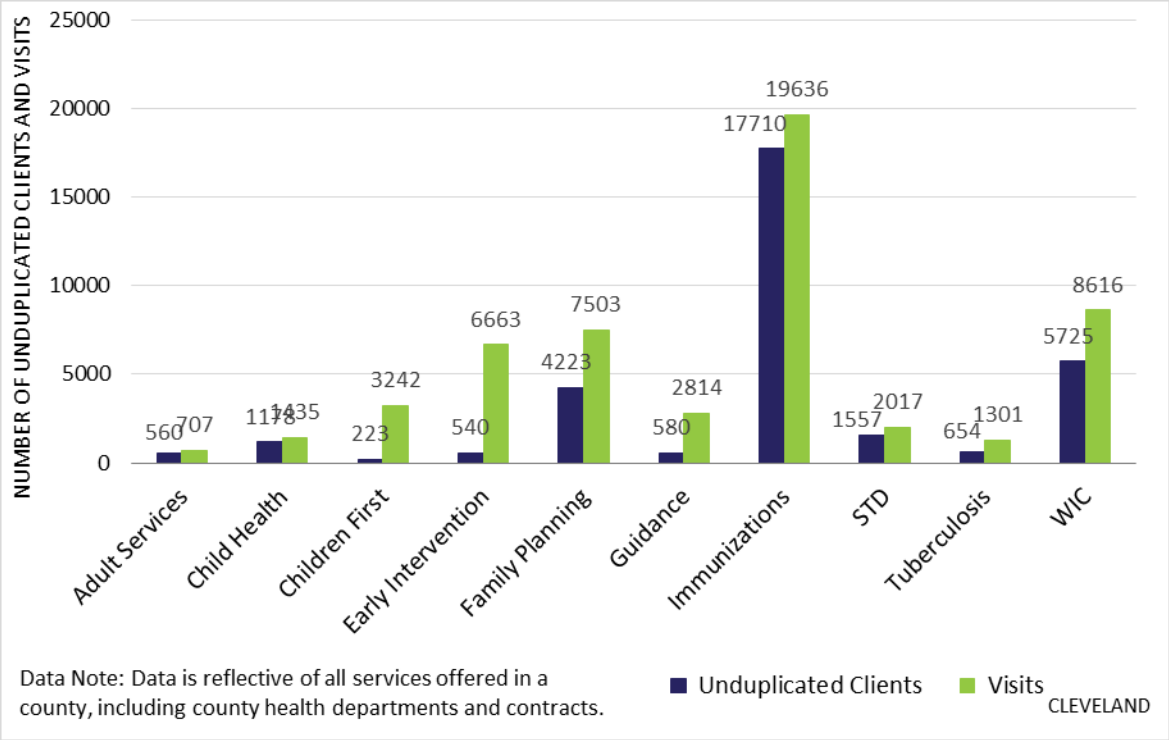
$558,230,674

*Total cost is the minimum cost to the county for health care related spending for the causes listed above in 2010. Other health maladies, and costs unaccounted for in this report may increase the total annual cost per county.

County Health Department Usage

Oklahoma currently has 68 county health departments and two independent city-county health departments serving 77 counties. Each department offers a variety of services, such as immunizations, family planning, maternity education, well-baby clinics, adolescent health clinics, hearing & speech services, child developmental services, environmental health, and the SoonerStart program. Additionally, many county health departments participate in health education and community development services throughout their county. All county health departments in Oklahoma utilize the Public Health Oklahoma Client Information System (PHOCIS) to track an overview of the services provided to each citizen. In addition, PHOCIS contains a population-based module (POPS) that houses information about community-based events in which health department employees are involved. The information on this page is an accounting of services provided within the county health department and throughout the county.

County Health Department Unduplicated Clients, and Visits by Program, Cleveland County, State Fiscal Year



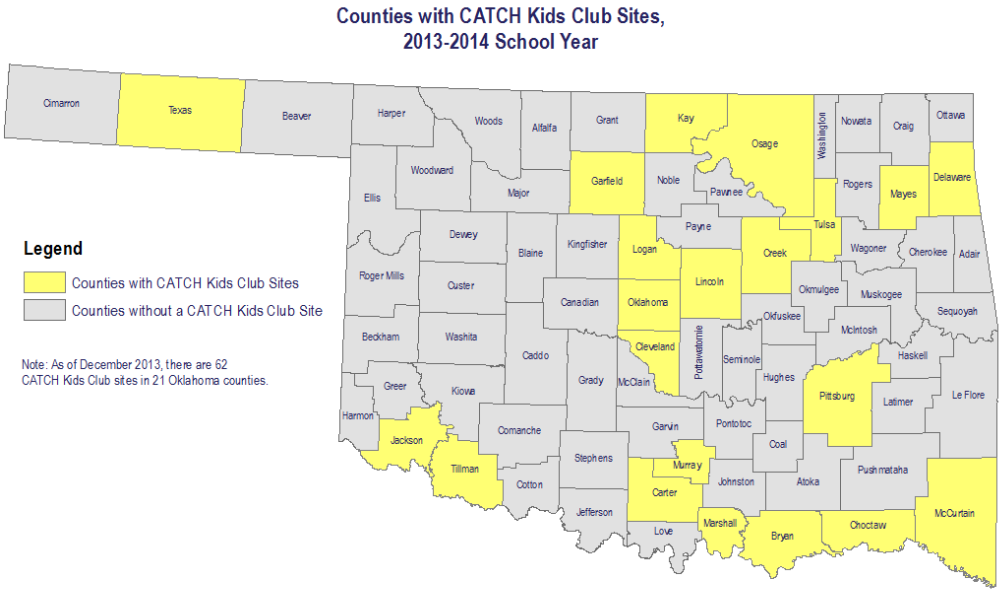
Population-Based Services by Event Type, Cleveland County, SFY13

Event Type	Number of Events	Total Attendees
Consultation	1	40
Health Fair	1	390
Meeting/Taskforce/ Coalition	4	105
Presentation/Class	25	1743
Grand Total	**31**	**2278**

Population-Based Services by Main Topic, Cleveland County, SFY13

Topic	Number of Events	Total Attendees
Discipline/Behavior Management	1	10
Infant & Early Childhood Consultation	1	40
Oral Health	32	2769
Grand Total	**34**	**2819**

Health Education

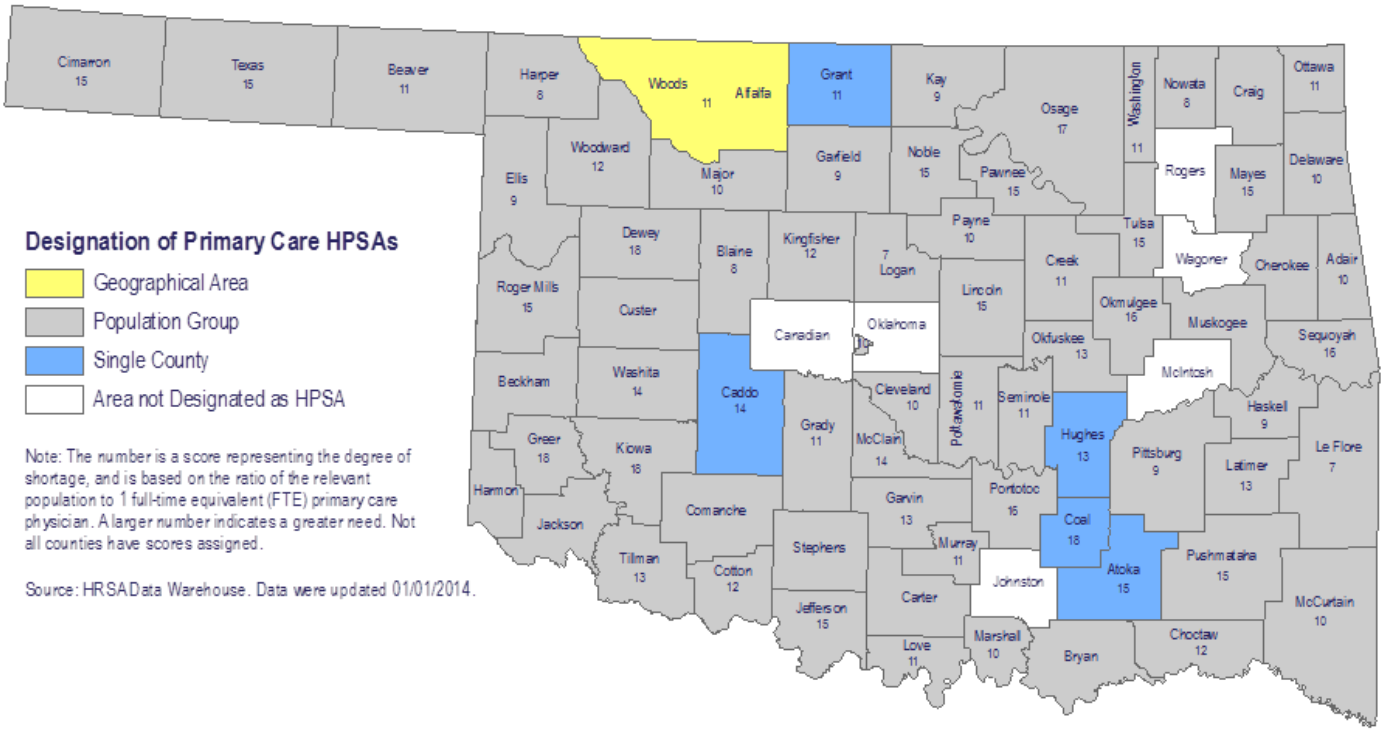


OSDH Health Education

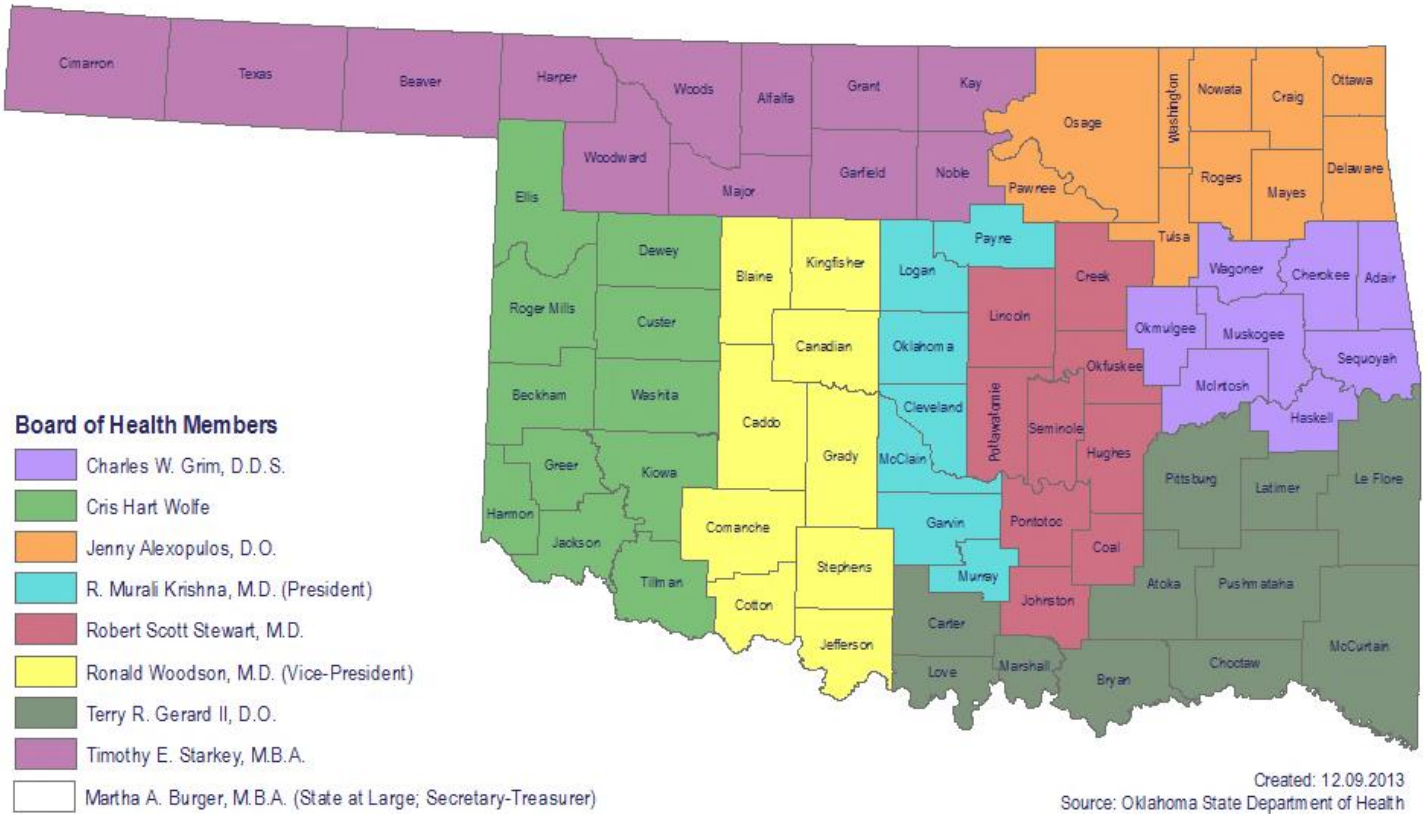
Ericka Johnson,
CATCH Coordinator
1000 NE 10th St, room 508
Oklahoma City, OK 73117
(405) 271-9444 ext. 56550
erickaw@health.ok.gov

For more information about the CATCH Kids Club or to become an after-school partner, please contact Ericka Johnson. For more information about health education, please contact your local health department (see p. 14 for the phone number).

Primary Care – Health Professional Shortage Areas (HPSAs)



OSDH Board of Health Map



Oklahoma Health Improvement Plan

For the complete OHIP, including a full list of partners, visit <www.ok.gov/health> and click the "Oklahoma Health Improvement Plan" link.

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Oklahoma Turning POINT

Oklahoma Community Partners in ***Public Health Innovation***

OKLAHOMA STATE DEPARTMENT OF HEALTH

Community and Family Health Services
Community Development Service
1000 NE 10th St, Room 508
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Report compiled by:

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Program Assessment and Evaluation Specialist

Health on the Horizon

Cleveland County Health Department
250 12th Ave N.E.
Norman, OK 73071
405-321-4048

The Oklahoma Turning Point Initiative is public health improvement in action. The success of the Turning Point process involves a partnership between the state and county departments of health, local communities, and policy-makers. The Oklahoma Turning Point engine is fueled by a community-based decision making process whereby local communities tap into the capacities, strengths, and vision of their citizens to create and promote positive, sustainable changes in the public health system, and the public's health.

We are at a cross roads in our state and in Cleveland County. Please come and be part of the solutions that will lead Oklahoma and Cleveland County to becoming a healthy place to live, work and learn.

If you are interested in learning more about Turning Point or becoming involved in local activities, please contact:

Beverly Williams, MPH
Oklahoma County
(405) 271-9444 x56424
Email: BeverlyW@health.ok.gov
Website: www.okturningpoint.org

Cleveland County Turning Point Coalitions

Partnership Priorities

1. Obesity Reduction
2. Tobacco Use Prevention
3. Children's Health
4. Certified Healthy Community Program

2013 Outcomes/Impacts

- Ongoing implementation of Cleveland County Health Improvement Plan Strategies
- OYTS conducted in Moore Public Schools
- MC2 hosted *Make It Your Business Train*ing
- Noble passed resolution to support *Restoring Local Rights* - 1st in Cleveland Co., for 2013
- Healthy School/ Business Academy – Cleveland County Nutrition/ Fitness Coalition
- Moore-Norman Tech Center - Tobacco-Free Campus, effective July 1, 2013
- Certified Healthy Businesses, Campuses, Communities, and Schools
- 5A's Training (Tobacco Use Prevention)

Supplement Table 1: Total Mortality Rate and Adult Prevalence of Sufficient Fruit and Vegetable Consumption (5 or More Daily Servings), Obesity, Physical Inactivity, and Diabetes by County.

County	Total Mortality[1] (deaths/100,000)	Fruit & Vegetable Consumption[2] (percent)	Obesity[3] (percent)	Physical Inactivity[3] (percent)	Diabetes[3] (percent)
Adair	1,014.6	7.2	35.4	30.9	15.6
Alfalfa	863.2	-	31.9*	31.9*	15.3
Atoka	875.7	9.0	34.5	28.5	16.8
Beaver	797.2	9.7	29.5*	31.1*	11.7
Beckham	1,030.3	17.0	32.5	31.3	10.8
Blaine	934.0	14.2*	31.5	36.3	9.9
Bryan	897.0	16.0	30.4	36.2	8.2
Caddo	1,033.5	13.3	29.1	28.9	11.9
Canadian	805.6	15.7	26.4	27.0	9.9
Carter	1,096.9	16.8	30.6	34.0	10.2
Cherokee	944.5	13.6	31.1	34.7	11.5
Choctaw	1,104.7	29.8*	30.0	30.8	9.0
Cimarron	805.0	-	26.2*	35.0*	7.8
Cleveland	787.6	16.1	26.5	24.0	7.8
Coal	1,091.1	-	33.6*	24.6*	10.1
Comanche	915.7	15.6	31.4	31.4	9.3
Cotton	1,035.1	-	37.9*	29.1*	9.8
Craig	1,061.2	10.1	36.8	31.6	13.8
Creek	979.5	12.2	32.3	29.8	9.5
Custer	940.2	18.9	29.8	26.3	9.4
Delaware	900.6	11.8	30.6	35.5	15.0
Dewey	1,026.0	-	29.1*	40.6*	11.1
Ellis	873.0	-	36.8*	31.3*	10.8
Garfield	897.7	12.5	33.7	27.9	8.9
Garvin	1,097.9	12.3	29.8	31.4	12.3
Grady	921.4	13.4	34.5	25.4	6.3
Grant	873.2	-	24.2	19.6	6.4
Greer	923.4	-	34.9*	45.7*	12.5

Supplement Table 1 continued: Total Mortality Rate and Adult Prevalence of Sufficient Fruit and Vegetable Consumption (5 or

More Daily Servings), Obesity, Physical Inactivity, and Diabetes by County.

County	Total Mortality[1] (deaths/100,000)	Fruit & Vegetable Consumption[2] (percent)	Obesity[3] (percent)	Physical Inactivity[3] (percent)	Diabetes[3] (percent)
Harmon	913.8	-	-	-	20.2*
Harper	954.3	-	-	38.9*	17.4*
Haskell	960.0	15.3	31.1*	36.4	6.9
Hughes	1,066.9	12.1	21.2	26.3	12.7
Jackson	935.3	17.2	31.7	28.7	12.5
Jefferson	1,084.8	-	39.3*	37.6*	9.4
Johnston	1,105.3	19.6*	24.7	33.6*	13.7
Kay	932.2	13.9	31.3	27.9	14.2
Kingfisher	835.1	21.0	30.5	29.6	11.0
Kiowa	1,173.2	17.5*	31.1	32.2*	12.5
Latimer	856.8	9.3	42.2*	41.6*	13.1
Le Flore	1,054.9	11.4	31.0	36.7	14.2
Lincoln	915.3	15.0	28.0	40.3	10.9
Logan	776.5	12.1	32.7	30.3	11.7
Love	934.7	17.9*	25.6	39.1*	18.0
Major	911.8	14.8	26.9*	28.2	6.8
Marshall	1,041.8	10.1	33.8*	30.1	13.9
Mayes	1,033.6	18.1	36.9	35.3	12.7
McClain	863.9	22.6*	34.8	26.3	7.5
McCurtain	870.9	6.9	33.4	33.8	10.5
McIntosh	992.7	14.1	37.4	38.3	8.8
Murray	1,042.2	9.4	32.1*	24.6	10.8
Muskogee	1,072.6	14.5	29.6	36.2	12.1
Noble	853.1	8.0	39.1*	34.7*	11.6
Nowata	910.7	20.4	33.1	29.2	10.0
Okfuskee	1,109.8	-	31.7	44.7*	15.9
Oklahoma	900.5	16.7	28.4	30.4	9.3
Okmulgee	1,030.3	11.9	33.7	36.6	13.1

Supplement Table 1 continued: Total Mortality Rate and Adult Prevalence of Sufficient Fruit and Vegetable Consumption (5 or More Daily Servings), Obesity, Physical Inactivity, and Diabetes by County.

County	Total Mortality[1] (deaths/100,000)	Fruit & Vegetable Consumption[2] (percent)	Obesity[3] (percent)	Physical Inactivity[3] (percent)	Diabetes[3] (percent)
Osage	830.0	10.6	32.8	35.3	11.2
Ottawa	1,082.7	16.7	32.2	40.9	13.7
Pawnee	1,058.3	11.7	32.3	35.8	14.9
Payne	808.1	14.8	27.4	23.9	9.1
Pittsburg	988.6	16.7	30.2	32.9	11.6
Pontotoc	1,018.0	11.6	35.0	33.5	8.5
Pottawatomie	988.8	18.5	34.2	31.1	9.6
Pushmataha	1,009.9	11.0	25.2	32.4	13.6
Roger Mills	730.2	20.7*	35.5*	39.2*	12.1
Rogers	811.7	15.1	29.4	28.4	9.7
Seminole	1,061.7	12.9	37.7	32.1	9.3
Sequoyah	1,010.3	18.7	32.9	37.7	12.1
Stephens	977.4	16.1	27.6	32.8	10.8
Texas	791.6	16.6	27.5	29.7	4.0
Tillman	935.4	21.2*	34.5*	31.6*	17.1
Tulsa	881.8	16.4	27.2	27.8	9.3
Wagoner	824.3	15.3	31.2	30.9	12.1
Washington	826.5	21.6	26.7	28.1	8.7
Washita	905.5	23.6*	24.5	27.1	7.3
Woods	897.6	20.9*	21.7	32.6	7.0
Woodward	946.4	16.8	32.5	31.6	11.8
Oklahoma State	914.5	15.5	29.7	30.4	10.1

*Rate is unstable due to the large measurement error associated with the estimate.

Data Sources:

1. Oklahoma State Department of Health, Health Care Information, OK2SHARE, Death Statistics – Final: 2008-2012. www.health.ok.gov/ok2share.
2. Oklahoma State Department of Health, Health Care Information, Behavioral Risk Factor Surveillance System (BRFSS): 2005, 2007, 2009.
3. Oklahoma State Department of Health, Health Care Information, Behavioral Risk Factor Surveillance System (BRFSS): 2005-2010.

Supplement Table 2: Teen Birth Rate, Infant Mortality Rate, Prevalence of Low Birth Weight (Births Weighing < 5 lb., 8 oz.), Unintentional Injury Mortality, and Prevalence of Adult Smokers by County.

County	Teen Births[1] (births/1,000 females 15-19 yrs)	Infant Mortality[2] (deaths/1,000 live births)	Low Birth Weight[1] (percent)	Unintentional Injury Mortality[2] (deaths/100,000)	Adult Smokers[3] (percent)
Adair	66.6	12.6	8.3	70.1	29.8
Alfalfa	24.8	18.2	7.6	89.0	25.5*
Atoka	65.8	-	7.4	70.7	23.4
Beaver	45.0	-	7.7	76.8	27.8*
Beckham	98.9	10.4	9.8	68.8	31.2
Blaine	68.5	14.2	9.2	76.0	23.7
Bryan	62.1	5.3	7.6	66.1	29.1
Caddo	74.1	9.0	7.4	91.5	26.8
Canadian	32.2	5.4	7.9	46.5	22.0
Carter	74.3	5.5	9.4	89.3	24.4
Cherokee	48.1	7.2	8.6	56.0	29.7
Choctaw	96.8	10.2	8.6	73.9	28.7
Cimarron	68.5	-	8.4	45.9	25.4*
Cleveland	22.8	4.9	7.2	43.8	20.4
Coal	69.8	-	8.0	102.4	22.5*
Comanche	51.5	9.8	8.4	42.0	31.0
Cotton	60.8	-	7.0	77.7	20.1*
Craig	68.5	10.0	7.5	81.3	23.9
Creek	52.5	8.9	8.7	66.3	29.4
Custer	51.2	7.3	7.5	57.5	18.9
Delaware	58.7	6.5	7.7	69.5	24.7
Dewey	56.1	-	6.4	136.6	22.0*
Ellis	41.1	-	4.5	92.0	18.4*
Garfield	65.1	8.1	7.8	57.5	23.3
Garvin	63.6	7.6	9.2	98.8	25.5
Grady	44.8	5.8	8.2	74.0	25.9
Grant	28.5	-	9.7	72.6	20.0*
Greer	80.1	-	9.2	58.1	28.9*

Supplement Table 2 continued: Teen Birth Rate, Infant Mortality Rate, Prevalence of Low Birth Weight (Births Weighing < 5 lb., 8 oz.), Unintentional Injury Mortality, and Prevalence of Adult Smokers by County.

County	Teen Births[1] (births/1,000 females 15-19 yrs)	Infant Mortality[2] (deaths/1,000 live births)	Low Birth Weight[1] (percent)	Unintentional Injury Mortality[2] (deaths/100,000)	Adult Smokers[3] (percent)
Harmon	79.6	-	5.3	48.0	10.3*
Harper	40.0	-	6.5	96.6	16.8*
Haskell	62.4	9.4	9.8	77.2	19.7
Hughes	61.6	8.0	7.5	77.4	36.6*
Jackson	72.7	8.1	9.7	53.8	25.4
Jefferson	54.1	15.5	9.3	105.1	24.8*
Johnston	61.3	9.7	9.1	79.3	24.3*
Kay	75.1	7.2	8.0	67.6	24.3
Kingfisher	46.4	-	5.7	54.0	18.0
Kiowa	58.1	12.7	7.5	97.4	26.9*
Latimer	38.9	-	9.0	75.0	21.5
Le Flore	70.4	5.7	7.4	71.8	26.0
Lincoln	42.5	7.1	7.7	71.3	27.6
Logan	24.6	6.7	7.7	50.8	23.4
Love	66.3	-	7.6	72.2	35.5*
Major	50.9	19.5	8.4	60.4	11.4
Marshall	72.5	6.0	6.7	59.7	24.1*
Mayes	60.8	7.2	7.4	75.2	30.1
McClain	40.3	10.8	8.3	58.7	18.3
McCurtain	78.7	9.6	7.6	84.4	23.5
McIntosh	62.2	11.4	8.3	77.8	29.2
Murray	66.4	9.7	8.8	83.7	24.9
Muskogee	65.3	7.5	8.5	64.8	32.0
Noble	48.5	9.7	6.8	42.1	28.0*
Nowata	46.8	10.1	8.0	65.4	29.2
Okfuskee	64.3	7.0	7.8	80.2	31.9*
Oklahoma	60.2	7.9	8.9	49.8	24.1
Okmulgee	70.8	8.5	8.2	72.0	27.7

Supplement Table 2 continued: Teen Birth Rate, Infant Mortality Rate, Prevalence of Low Birth Weight (Births Weighing < 5 lb., 8 oz.), Unintentional Injury Mortality, and Prevalence of Adult Smokers by County.

County	Teen Births[1] (births/1,000 females 15-19 yrs)	Infant Mortality[2] (deaths/1,000 live births)	Low Birth Weight[1] (percent)	Unintentional Injury Mortality[2] (deaths/100,000)	Adult Smokers[3] (percent)
Osage	39.3	7.3	8.8	57.4	27.2
Ottawa	67.8	9.9	8.1	74.3	32.2
Pawnee	50.5	7.1	7.0	128.0	27.2
Payne	20.7	5.0	5.9	50.8	18.2
Pittsburg	68.4	8.6	9.3	66.5	29.2
Pontotoc	52.2	7.6	7.2	82.3	27.1
Pottawatomie	55.1	9.0	7.5	66.6	30.0
Pushmataha	69.1	10.4	9.6	77.8	39.4
Roger Mills	66.2	-	4.7	93.4	17.7*
Rogers	32.9	7.1	8.1	47.2	24.8
Seminole	62.0	7.5	7.4	80.8	28.3
Sequoyah	66.2	5.5	7.5	62.4	30.7
Stephens	56.2	9.0	8.5	74.5	20.0
Texas	80.1	7.3	6.4	67.4	18.4
Tillman	62.0	-	6.4	67.7	25.4*
Tulsa	51.2	7.3	9.0	54.5	23.7
Wagoner	33.4	5.6	7.3	56.1	27.3
Washington	49.8	6.1	7.2	52.1	23.0
Washita	56.6	9.9	8.8	55.5	28.2*
Woods	43.2	-	8.8	79.8	16.2
Woodward	84.3	7.8	7.9	80.8	26.9
Oklahoma State	52.2	7.5	8.3	58.7	25.0

*Rate is unstable due to the large measurement error associated with the estimate.

Data Sources:

1. Oklahoma State Department of Health, Health Care Information, OK2SHARE, Birth Statistics,—Final: 2008-2012. www.health.ok.gov/ok2share.
2. Oklahoma State Department of Health, Health Care Information, OK2SHARE, Death Statistics – Final: 2008-2012. www.health.ok.gov/ok2share.
3. Oklahoma State Department of Health, Health Care Information, Behavioral Risk Factor Surveillance System (BRFSS): 2005-2010.