

Community Health Needs Assessment

of Cole, Miller, Moniteau
and Osage Counties

Executive Report

August 1, 2015



Central Missouri
Community
Health
Assessment
Partnership



Central Missouri Community Health Assessment Partnership

Message to the Community

We are pleased to present the 2015 Community Health Assessment of Central Missouri. This report includes data reflecting the health status of Cole, Osage, Miller and Moniteau Counties.

This study was conducted from January through June 2015, to identify health issues of primary concern and to provide critical information to those in a position to make an impact on the health of our region including entities such as local governments, social service agencies, businesses, healthcare providers and consumers. The results enable all of us to more strategically establish priorities, develop interventions and commit resources to improve the health of our communities and the region.

Health is — and must be — an issue of concern and action for all of us. We hope the information in this study will encourage collaboration involving all agencies across county lines, between usual competitors and among funders to address the complex health needs of our communities.

This 2015 report identifies the following priorities for improving the health of residents in the four-county region of Central Missouri and asks communities to work together to address them:

- Heart Disease
- Mental Health
- Health Literacy
- Substance Abuse
- Adult Oral Health

The Community Health Needs Assessment is intended to be a tool in identifying and reaching collaborative goals.



Public Health
Prevent. Promote. Protect.

Cole County
Health Department
Miller County
Health Department
Moniteau County
Health Department
Osage County
Health Department

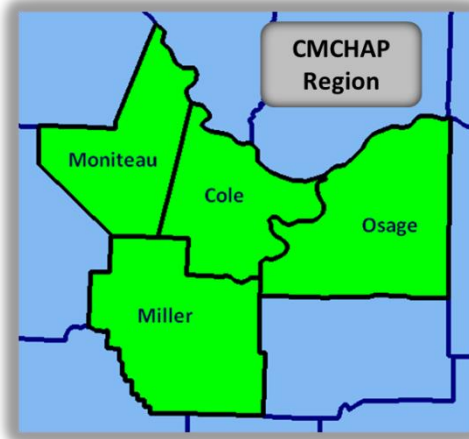
Table of Contents

Introduction	3
Acknowledgments	4
Methods	5
Secondary Data Summary	7
Community Input & Survey Data	25
Prioritized Issues/Needs	32
Resource Listing	36
Appendix A, Secondary Data Analysis	37
Appendix B, Sources	85

Introduction

The Central Missouri Community Health Assessment Partnership (CMCHAP) pulled together once again on a mission to improve the health of residents in the four counties of Cole, Miller, Moniteau and Osage. The partnership worked collaboratively to collect and analyze health data and gather input from community members to aid in assessing and prioritizing needs.

Figure 1. MAP OF THE FOUR COUNTIES



This unique partnership of health care and social services providers is sponsored by Capital Region Medical Center and SSM Health – St. Mary’s Hospital Jefferson City, and it includes six additional partners: the Community Health Center of Central Missouri; the Health Departments of Cole County, Miller County, Moniteau County and Osage County; Jefferson City Medical Group; Missouri Primary Care Association and United Way of Central Missouri.

This region surrounding Missouri’s capital city is rich in health care resources that match its abundance of natural resources, educational opportunity and employment diversity - all of which work together to create a livable community. It is common for individuals and organizations to step up to help others in the community. That is why this partnership reflects the culture of a community that responds to needs.

The CMCHAP conducted a comprehensive community health assessment using both secondary and primary analysis, which allowed us to measure perception, health risks, health factors, health outcomes and characteristics specific to the communities in these four central counties.

Data collected by various organizations, such as the U.S. Census, Centers for Disease Control and Prevention and the Robert Wood Johnson Foundation, were vital to this assessment. Valuable input from community members added depth and quality to the data.

This is the second comprehensive regional health assessment completed in this collaborative fashion by the CMCHAP. The objectives were to identify factors influencing health status, determine and prioritize issues of greatest concern, identify unmet health needs and produce a source of reliable information that will support the development of solutions.

A special caution: The data included in this report should not be cited or used out of the context of this report. It is not always valid to draw conclusions by linking data to show cause and effect. For example, the tendency to smoke is not caused by one’s income status, even though low-income and tobacco use is frequently correlated. Instead, the only appropriate use for this information is as evidence of how resources might be most effectively used to improve the health and well-being of our community.

Acknowledgments

The Central Missouri Community Health Needs Assessment Partnership consisted of the following organizations and their representatives, who formed the Steering Team and contributed much time and effort to this project:

- ❖ Capital Region Medical Center, www.crmc.org
 - ❖ Paula Burnett
 - ❖ Lindsay Huhman
 - ❖ Tiffany Rutledge
 - ❖ Janet Weckenborg

- ❖ Cole County Health Department, www.colehealth.org
 - ❖ Kristi Campbell
 - ❖ Mike Sapp
 - ❖ Mary Telthorst

- ❖ Community Health Center of Central Missouri, www.chccmo.org
 - ❖ Lorna Cockrum
 - ❖ Jeff Davis

- ❖ Jefferson City Medical Group, www.jcmg.org
 - ❖ Emily Mantle

- ❖ Miller County Health Department, www.millercountyhealth.com/
 - ❖ Bruce Jenkins

- ❖ Moniteau County Health Department, www.moniteaucountyhealth.org
 - ❖ Andrea Kincaid

- ❖ Osage County Health Department, www.osagecountyhd.org
 - ❖ Susan Long

- ❖ Missouri Primary Care Association, www.mo-pca.org
 - ❖ Michael Felix

- ❖ SSM St. Mary's Hospital- Jefferson City www.ssmhealthmidmo.com
 - ❖ Tracy O'Rourke
 - ❖ Beverly Stafford
 - ❖ Janet Wear-Enloe
 - ❖ Susan Treloar

- ❖ United Way of Central Missouri www.unitedwaycemo.org
 - ❖ Ann Bax

In addition, special thanks is owed to individuals, organizations and community leaders who helped organize discussion groups, hosted meetings and provided their candid opinions.

Methods of Analysis

This needs assessment was conducted using three methods: secondary data analysis, discussions with community groups and provider clients and surveys completed by community members, community leaders and local physicians.

SECONDARY DATA ANALYSIS

Existing data previously collected for other purposes, called secondary data, was compiled from a variety of credible local, state and federal sources to provide a context for analysis and interpretation. The secondary sources are listed on pages 87-88 of Appendix A. The Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute's County Health Ranking tool (www.countyhealthrankings.org) enabled side-by-side comparison of county health status based on the following:

- Health Factors that influence the health of a county's population, including health behaviors, clinical care, physical environment and socio and economic factors.
- Health Outcomes that represent the overall health of a county, including mortality and morbidity.

Additionally, data was collected and analyzed utilizing the Priority MICA, which provided a structured process to determine the priority health needs of a community. The Priority MICA allows a user to prioritize from a list of diseases or risk factors available in the application. The diseases/risk factors were selected for inclusion in the application based upon the Department of Health and Senior Services (DHSS) strategic plan, Healthy People 2010 and available data. Funding agencies can use the Priority MICA to determine priority areas for funding in an area, or a community can use the Priority MICA as part of a community assessment process.

COMMUNITY DISCUSSION GROUPS

Community discussion groups, much like town hall meetings, were organized by the Steering Team and facilitated by Michael Felix, a community health development specialist. Throughout this process, more than 150 individuals participated in nine discussion groups and consumer interview sessions with:

- ❖ Capital Region Medical Center Medical Staff
- ❖ Community Leaders & Elected Officials – Cole County
- ❖ Community Leaders & Elected Officials & Concerned Citizens – Miller County
- ❖ Cole County Health Department Associates
- ❖ United Way Agency Leaders/Jefferson City Unmet Needs Committee
- ❖ Community Health Center of Central Missouri Staff
- ❖ United Way Advisory Group of Osage County
- ❖ United Way Advisory Group of Moniteau County

These discussions provided perspective on the health status of the community and enlightened the analysis of the secondary data relative to the most important health issues and challenges, key resources and advice on how to address the issues identified.

To stimulate discussion, the community discussion group agenda included the following questions:

- Describe your community.
- What issues and challenges face your community?
- What local resources exist for addressing these issues and challenges?
- What advice do you have?

INDIVIDUAL SURVEYS

An addition to the data collection for 2015 was the inclusion of a survey to assess the perception of health care and health status across the four-county region in the analysis. These surveys were made available in physician offices, online and in community health departments.

Secondary Data Summary

Secondary Data Summary

The health assessment findings for the CMCHAP region are often shown here as combined data for the four counties and are presented as “central Missouri.” For data specific to counties, please refer to the Figures & Tables section of this report.

DEMOGRAPHICS, SOCIO & ECONOMIC FACTORS

Current population demographics and changes in demographic composition over time play a determining role in the types of health and social services needed by communities.

Total Population

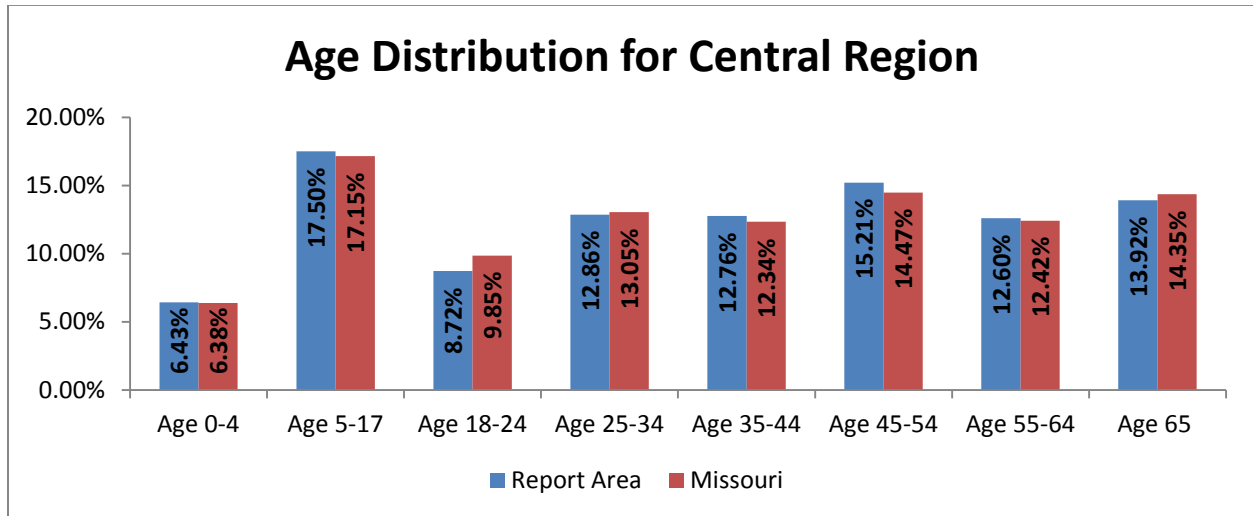
A total of 130,590 people live in the 2,005.19 square mile report area defined for this assessment, according to the U.S. Census Bureau American Community Survey 2009-2013 five-year estimates. The population density for this area, estimated at 65.13 persons per square mile, is less than the national average population density of 88.23 persons per square mile.

Population Projections

Population projections were obtained from Missouri Department of Health and Senior Services (MODHSS) Bureau of Health Care Analysis and Data Dissemination "2020 Missouri County Population Projections"—Summer 2014. Projection Figures are from the State of MO Demographers office and were adjusted by MODHSS based on more recent population trends. 2000 and 2010 populations were obtained from US Census Data. Population projections from MODHSS show continued growth across the region, although slowed growth in Moniteau and Osage counties. Osage County is projected to only have 1.76% growth in 2020 from the 2010 population. This is down from 5.88% actual growth in population between the 2000-2010 censuses. Moniteau County similarly shows slower projected growth of 4.13% in 2010-2020. Their growth is down from 5.00% actual growth between the 2000-2010 censuses. Miller County is projected to have population growth of 6.50% in 2010-2020, up from the 4.78% actual growth in population between the 2000-2010 censuses. Cole County shows a projected growth in population of 6.11%, which is a slight increase over the actual growth experienced of 6.04% growth between the 2000-2010 censuses. The four-county region is projected to grow at a higher rate than the state, which has a projected rate of growth of 0.04% compared to our region's projected growth of 5.51% from 2010-2020.

Understanding that older populations generally have more chronic disease and face more barriers in accessing care, we noted that the concentration of the aging population in the rural counties where there are fewer services is of growing concern. As seen on Figure 2, our report area has greater than 26% of its population above the age of 55.

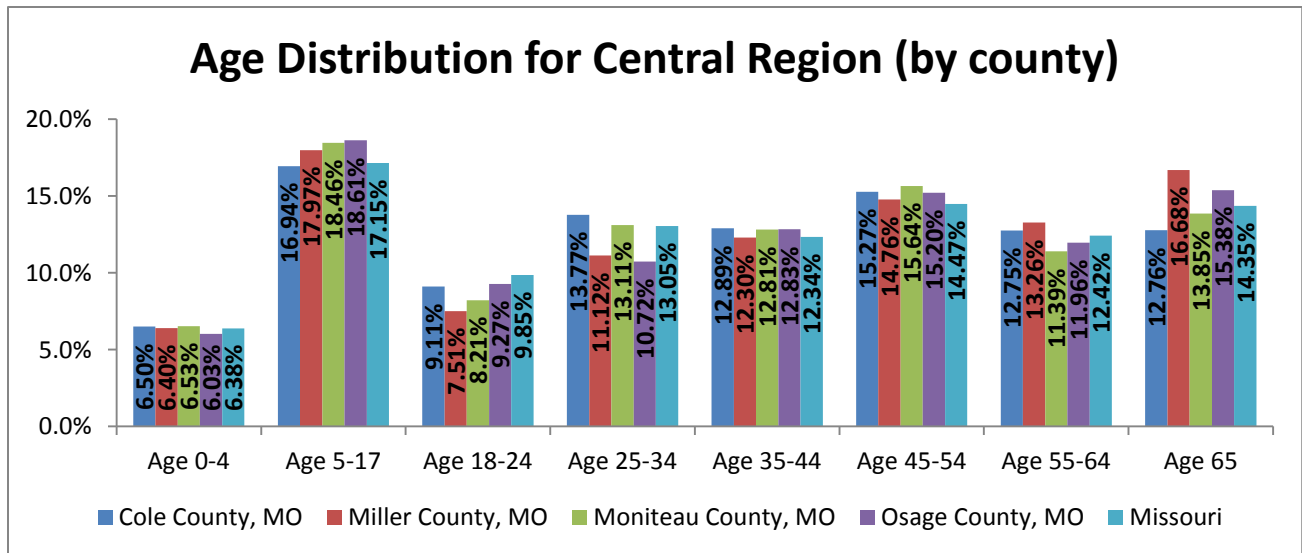
Figure 2. AGE DISTRIBUTION OF CMCHAP REGION, MISSOURI



Report prepared by [Community Commons](#), July 09, 2015.

Figure 3 breaks down the age distribution by county. Miller County is shown as having the highest amount of people greater than 65, which is well over the Missouri average, and 30% of their population is over the age of 55.

Figure 3. AGE DISTRIBUTION OF THE CMCHAP REGION BY COUNTY

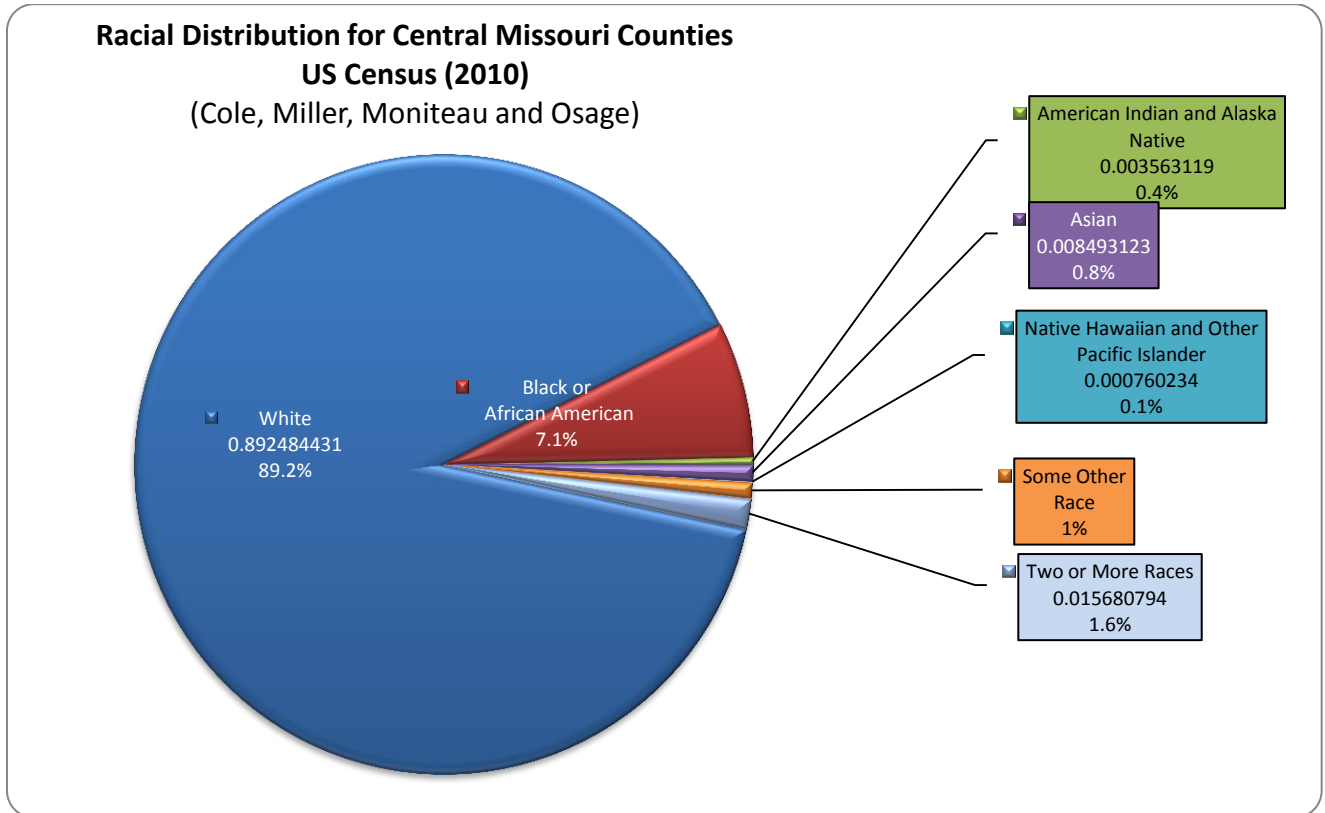


Report prepared by [Community Commons](#), July 09, 2015

Race & Ethnicity

The race/ethnicity distribution based on the 2010 Census data shows a population that is predominately White/Caucasian (89.2%), with 7.1% Black/African American. The percent of other races was very small; thus, these categories have been combined as “All Other Races” for the purpose of this analysis. It was noted throughout the community discussion groups that minority groups are growing, specifically the Hispanic population in Moniteau County.

Figure 4. RACIAL/ETHNIC DISTRIBUTION OF RESIDENTS



Marital Status

Based on the U.S. Census American Community Survey five-year estimates, the majority of the population from the four counties in the central region reported being married (54.2%), while 25.5% indicated that they are single (never married), 13.6% are separated or divorced and 6.7% are widowed.

Household Composition

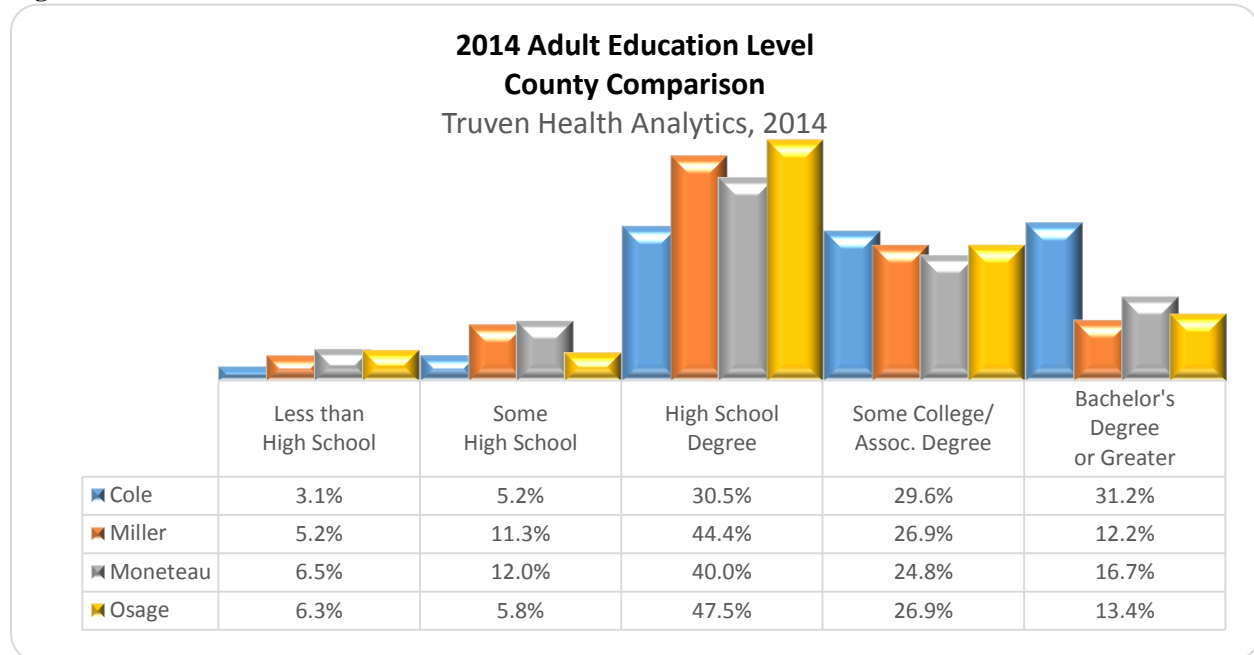
The mean household size in these four counties is 2.49 persons, ranging from 2.39 in Cole County to 2.58 in Moniteau County. Regionally, 33.1% of households are without children, compared to 31.8% in Missouri.

Education

Since education is a social factor that influences health, it is important to note the education distribution of the four counties as compared to the U.S. Figure 5 below compares the four counties in the highest level of adult education attainment in 2014 and reflects that all four

counties are at par with one another with only slight variations among them. When comparing the data to the Missouri totals, the four-county totals outperform the statewide mark of 31.6% with only a high school degree with a rate of 35.4%. However, the four-county totals are falling behind the Missouri benchmarks of 29.9% and 25.5% for “some college/associates degree” and “bachelor’s degree or greater,” respectively. For the four counties in our study rates, “some college/associate degree” was 28.4% and “bachelor’s degree or greater” was 24.8%.

Figure 5. EDUCATIONAL ATTAINMENT/GRADUATION RATES BY COUNTY



Employment

The four counties’ individual unemployment rates were lower than Missouri’s rate of 6.5% with the exception of Miller county, which has an unemployment rate of 7.9% based on 2013 data from the bureau of labor statistics. The top four employment sectors in the central region consist of health and social services, public administration, education and retail trade. It is estimated that one in four jobs in Cole County is in the public administration sector, due primarily to Jefferson City’s status as the state capital. Missouri state employees represent such a large share of the local economy that state government expansions, cutbacks, salary stagnation or salary raises can significantly impact the local economy.

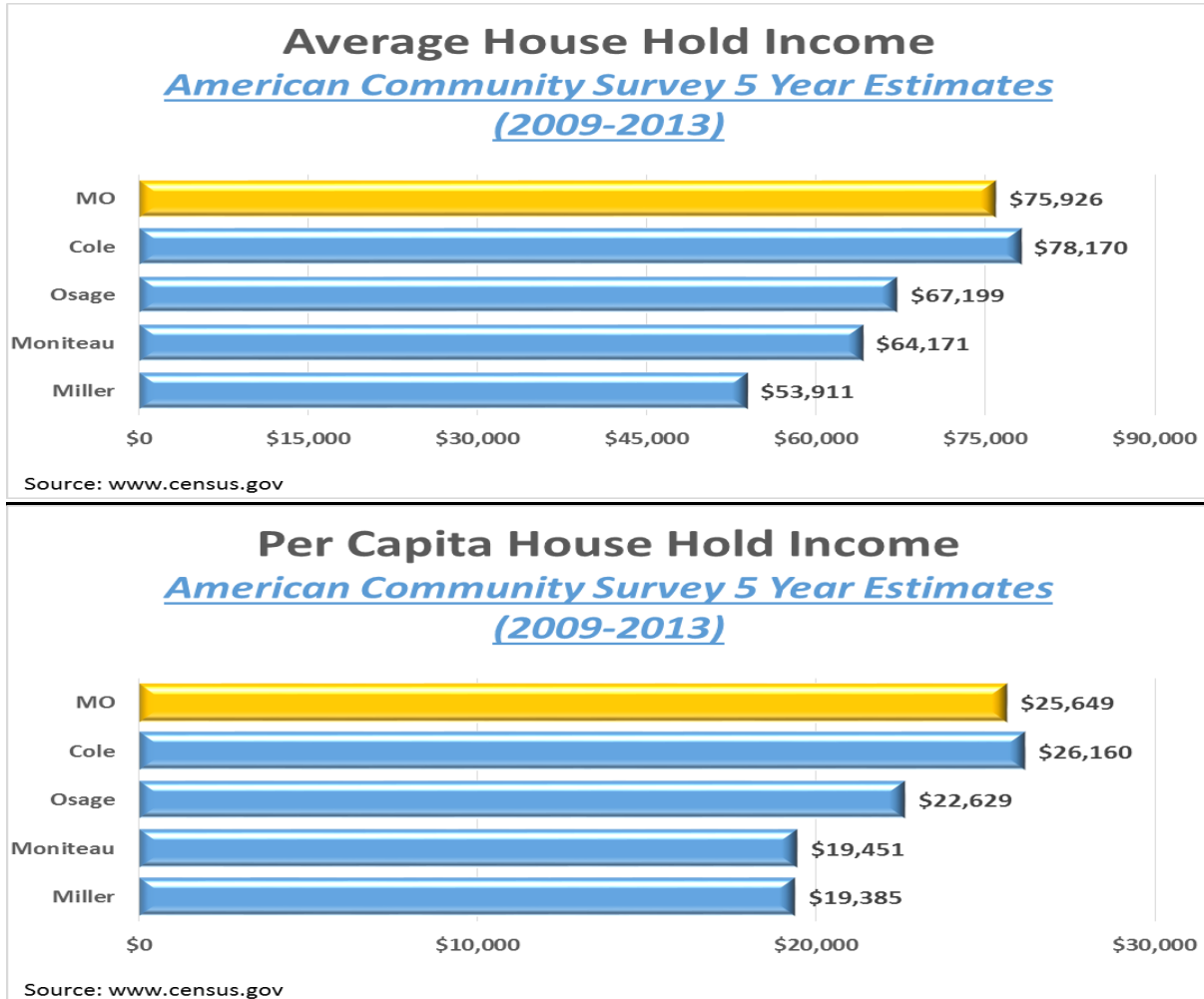
Poverty

Lower than average poverty rates provide evidence of a higher level of economic well-being in three of the four counties - Cole (11%), Moniteau (10.7%) and Osage (9.2%) when compared to Missouri (13.5%). Of the four, Miller County has the highest percentage of residents below the poverty level (17.6%). Miller County also reports a higher percentage of children in poverty (31%) when compared to 23% in Missouri. The number of students receiving free or reduced lunches continues to rise and ranges from 36% in Osage County to 56% in Miller County, as compared to 49.4% in Missouri.

Household Income

Per capita income ranged from a low \$19,385 in Miller County to a high of \$26,160 in Cole County. The average per capita income for the four counties is \$21,906, which is lower than the per capita income in Missouri (\$25,649). Average household incomes range from \$53,911 in Miller County to \$78,170 in Cole County.

Figure 6 & 7. PER CAPITA HOUSEHOLD INCOME AND AVERAGE HOUSEHOLD INCOME



HEALTH FACTORS

The Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute created a County Health Ranking tool to determine a county's overall health based on numerous health factors, including health behaviors, clinical care access and quality, physical environment and socio-economic factors, as well as health outcomes, such as mortality and morbidity rates. Applying the tool to the four counties in a side-by-side comparison shows a wide range in health across these counties. A lower ranking is better. A higher ranking is worse.

The county health rankings reflected in this analysis are based on 2015 county health ranking data. Where possible, they employed seven years of data and their estimates represent an average over the seven years. The BRFSS measures in the 2014 County Health Rankings are based on data from 2006 – 2012, except 2011 and 2012 the public use final weight variable was used to produce estimates. Some counties were too small to have reliable measurements for health outcomes data, and as a result those counties were not ranked. For some counties that were found to have enough measures to be ranked but were missing data for any individual measure, county health rankings applied the same values as the state mean for that measure.

In the 2015 rankings, three of the counties - Cole, Osage and Moniteau - rank in the top quartile of all 114 Missouri counties in health factors and outcomes. While Miller County ranks much lower in the second quartile for health outcomes and in the fourth quartile for health factors. See the secondary analysis appendix for more details on the County Health Rankings.

HEALTH STATUS

Another tool used by the CMCHAP Steering Team was the Community Health Improvement Resources (CHIR) interactive planning system designed for use by public health practitioners and community stakeholders to improve the health of a community. This tool provides an objective method to set priorities, guide decision-making and assist with collaborative intervention planning. One of the CHIR tools is "Priority MICA," a web-based tool of the Missouri Department Health & Senior Services (DHSS) that provides a structured process to help determine the priority health needs of a community in conjunction with other information available, including secondary data and community feedback sessions.

The process acknowledges that communities have different needs and may be in different places in addressing health issues. Some communities may need to start with creating or strengthening partnerships, while others may be ready to plan an intervention to address a priority health issue. Communities can use this tool to conduct a thorough needs assessment to identify priority health issues to address. The Priority MICA allows a user to prioritize from a list of diseases or risk factors available in the application. The diseases and risk factors were selected for inclusion in the assessment were based upon the DHSS strategic plan, Healthy People 2010 and available data.

Based on the use of this data-driven, evidenced-based tool, the following health issues were ranked by prevalence in each of the four counties and compared with the state of Missouri. We then aggregated the four-county region and populated a top five.

The Priority MICA provides an objective method for establishing priorities. While an objective methodology provides a rational basis for priority setting, one should not assume that a purely objective process is always the preferred approach. There can be situations in which other non-objective criteria are important to the priority setting process. A community should not ignore other criteria of community importance not included in the Priority MICA.

The Priority MICA is meant to be used only as a tool. It should be used along with other information that is available in a community. There may be other diseases/risk factors that are important to a community that are not part of the Priority MICA. The fact that a disease/risk factor is not in the Priority MICA does not mean a community should ignore the disease/factor.

Following is an aggregate of the Top five of our four-county region. More detailed information and comparative state data can be found on page 82 in the Secondary Data Analysis.

Top 5 Risk Factors (based on MICA Priority Tool, ranked July 2015)

1. Obesity
2. Smoking
3. Mom Overweight
4. No Exercise
5. No Mammography

Top 5 Risk Diseases or Conditions (based on MICA Priority Tool, ranked July 2015)

1. Chronic Obstructive Pulmonary Disease (COPD)
2. Heart Disease
3. Diabetes
4. Motor Vehicle Accidents
5. Lung Cancer

Top 5 Causes for IP Hospitalizations (based on MICA DX 2012)

1. Heart & Circulation
2. Pregnancy, Childbirth or Reproduction
3. Mental Disorders
4. Digestive System
5. Respiratory (Throat & Lung)

Top 5 Preventable Hospitalizations (based on MICA 2010)

1. Dehydration
2. Bacterial Pneumonia
3. Cellulitis
4. COPD
5. Congestive Heart Failure

Top 5 Causes of Death (based on MICA 2013)

1. Heart Disease
2. Cancer
3. Chronic Lower Respiratory
4. Essential Hypertension
5. Diabetes, Stroke, Alzheimer's Disease

Top 5 Chronic Diseases – IP Hospitalization (based on MICA 2012)

1. Heart Disease
2. Arthritis/other joint
3. Cancer
4. COPD
5. Stroke/Other Cerebral-Vascular Disease

Top 5 Chronic Diseases Utilizing ER (based on MICA 20012)

1. Heart Disease
2. Arthritis Joint Disorders
3. COPD
4. Epilepsy
5. Asthma

Top 5 Chronic Disease-Deaths (based on MICA 2012)

1. Heart Disease
2. Cancer
3. COPD
4. Diabetes/Hypertension/Alzheimer's
5. Stroke/Chronic Liver-Cirrhosis

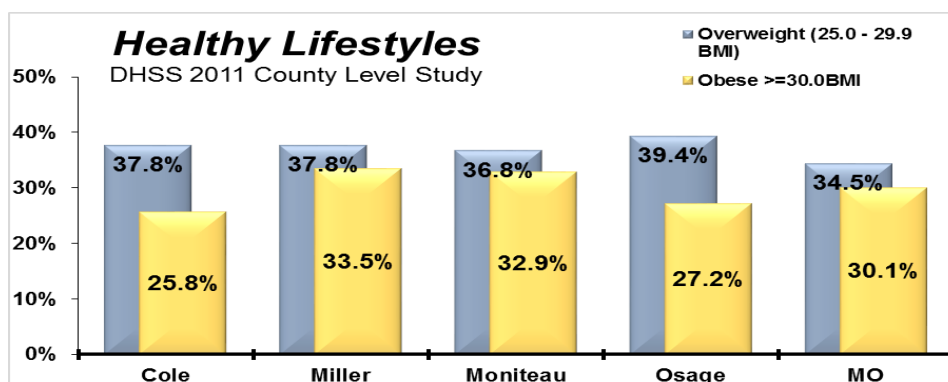
This data shows that COPD and Heart Disease are our counties most significant disease. In addition, heart disease is shown to be the top disease utilizing the ER, inpatient hospitalizations and is the leading cause of chronic disease deaths. Behaviors and risk factors that individuals can potentially control or manage in order to prevent or minimize health problems were studied.

RISK FACTORS & HEALTH BEHAVIORS

Obesity: Being overweight or obese increases an individual’s risk for developing many chronic diseases, such as heart disease and cancer, and can lead to other conditions, such as depression and chronic pain.

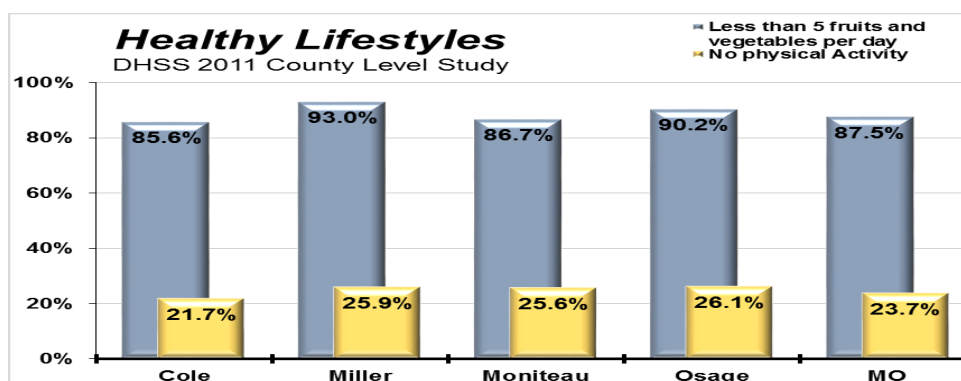
The graph below, Figure 8, reveals that all four counties have a larger number of populations that are overweight as compared to the state total. Conversely, only two counties have more obese population (Miller & Moniteau) than the state. Our study shows that Cole County has about 5.7% less obese population than the state.

Figure 8. HEALTHY LIFESTYLES-OBESITY/OVERWEIGHT



Proper nutrition and physical activity are important to achieve and maintain a healthy weight for good overall health. More than 80% of Missourians lack a proper diet, and about one in four reports no physical activity. These rates are generally mirrored in the four-county area.

Figure 9. HEALTHY LIFESTYLES-FRUIT & VEGETABLES



High Blood Pressure: High blood pressure is the top risk factor for heart disease, and county data noted in Figure 10 shows the rates for high blood pressure topping Missouri at 19.6% in the three of the four counties. Miller County comes in over 25%.

Diabetes: Diabetes is the second risk factor for heart disease and can lead to other serious health complications if not managed. It ranks as the third most prevalent disease in the four-county region. All counties in the region are reporting less incidence of diabetes than Missouri with the exception of Miller County, see Figure 10. The chart below illustrates the prevalence of health problems in the four counties examined in this study. The highlighted cells shows where the county exceeds the prevalence of health problems reported at the state levels.

Figure 10. DHSS-PREVALENCE OF HEALTH PROBLEMS

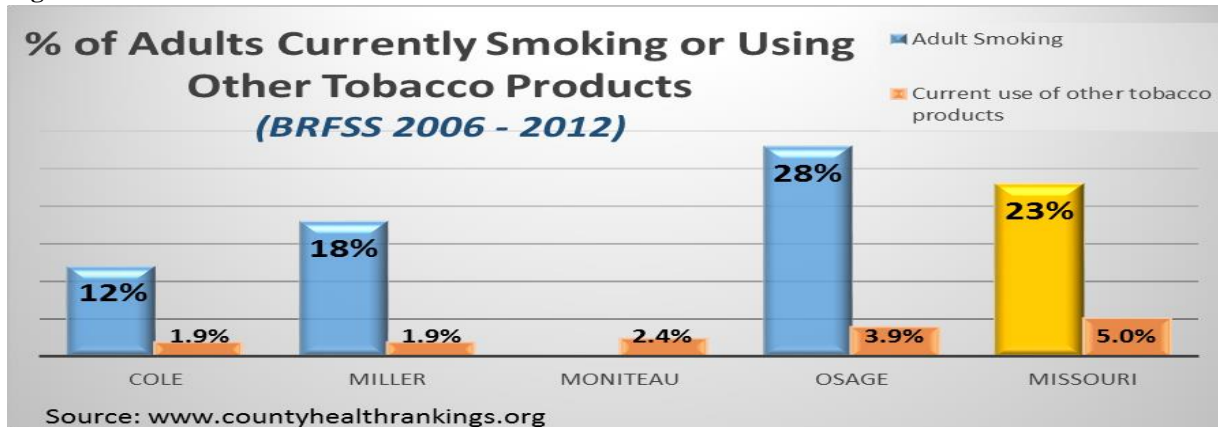
2011	Cole	Miller	Moniteau	Osage	Missouri
Prevalence of Health Problems					
Ever been told had high blood pressure	16.5%	25.3%	21.2%	19.8%	19.6%
Ever been told had high cholesterol (age 35+)	38.1%	50.8%	39.6%	41.6%	44.8%
Has Asthma	6.1%	6.7%	13.4%	9.3%	10.2%
Ever been told had diabetes	8.2%	13.2%	9.1%	7.5%	10.7%
Ever been told had COPD, emphysema or chronic bronchitis	3.8%	10.0%	7.4%	6.6%	8.0%
Ever been told had Arthritis	22.6%	39.0%	31.2%	35.4%	29.4%
Ever been told had a depressive disorder	12.6%	20.0%	18.1%	12.1%	20.7%
Ever been told had kidney disease	1.5%	3.1%	1.6%	2.1%	2.5%
Ever been told had Cancer	8.6%	10.1%	8.7%	12.5%	9.4%

Source: 2011 DHSS Missouri County level Study on prevalence of Behavioral Risk Factors

<http://www.dhss.mo.gov/CLS/index.html>

Tobacco use: Tobacco use has been shown to contribute to many health problems, most notably heart disease and cancer. The graph on the next page, Figure 11, demonstrates the percentage of adults currently smoking or using other forms of tobacco products in four Mid-Missouri counties studied. As presented, Osage County exceeds the state average and among the counties surveyed in this analysis. Cole County is indicating a population with the lowest percentage of adults currently smoking. Not enough data was available at the time of the study to show the percentage of adult smokers in the county of Moniteau. Use of other tobacco products reveals that all counties studied are below the state average of 5%.

Figure 11. COUNTY HEALTH RANKINGS-ADULT SMOKING



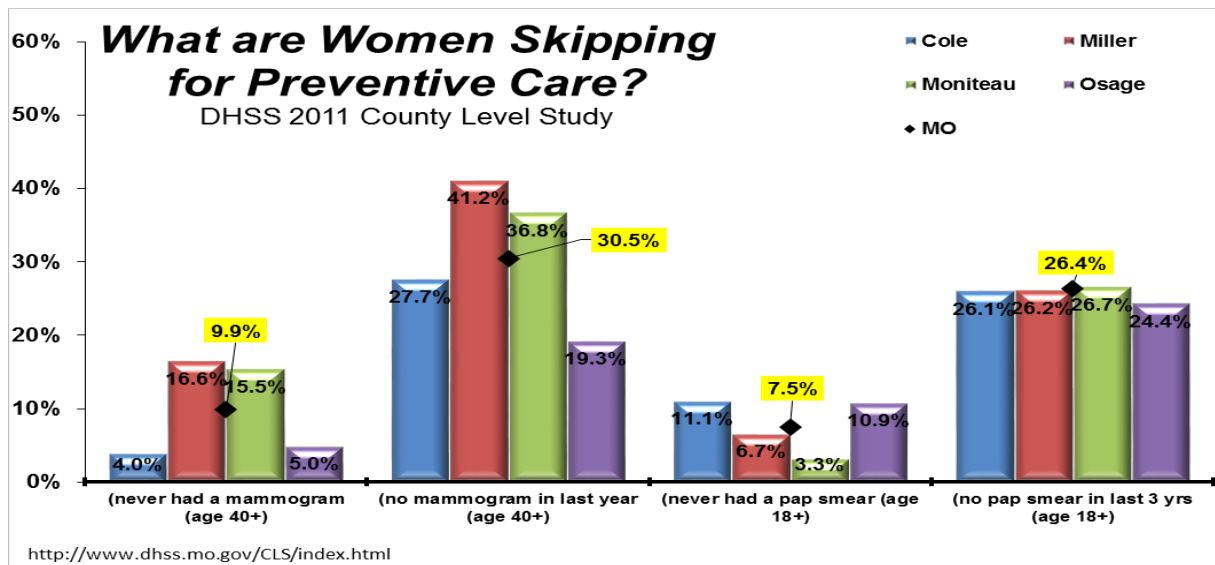
AGE-APPROPRIATE PREVENTIVE CARE

The assessment also included data on use of preventive screenings to detect and prevent onset of certain diseases or conditions, such as heart disease, cancer and diabetes. Screenings can catch conditions early and limit long-term impact. Screening for cancer among women is a significant opportunity to reduce morbidity and mortality. Clinical guidelines suggest that detecting cancer early and increasing survival rates is due to women obtaining mammograms every one to two years. The Missouri DHSS 2011 County Level Study polled residents on receiving age-appropriate preventive care, such as:

1. Mammograms (women age 40+)
2. Pap Smears (women age 18+)
3. Blood Stool Tests (age 50+)
4. Sigmoid/Colonoscopy (age 50+)
5. Cholesterol checks (age 35+)

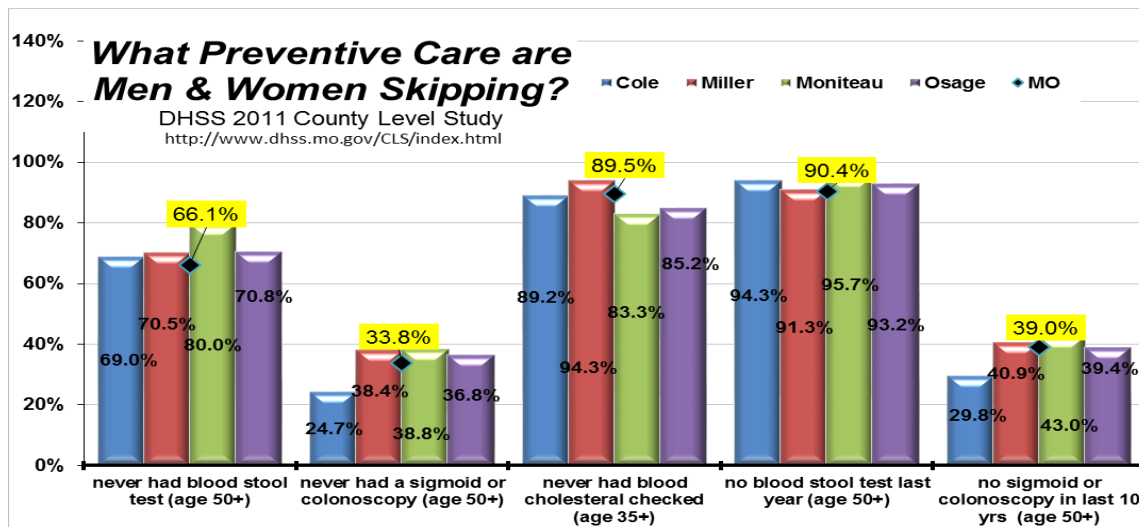
In a survey conducted by the Department of Health and Senior Services in 2011 show that Miller county had more women aged 40+ that never had a mammogram than Missouri's total of 9.9% and far below that of other comparative counties in this study. Likewise, more women who reported not having a mammogram during the past year resided in Miller and Moniteau counties, exceeding the state percentages by 10.7% and 6.3% respectively. Alternatively, more women ages 18+ in counties of Cole and Osage reported never having a pap smear than the state, while Moniteau reported the lowest percentages among the comparative counties and nearly half that the state totals. In regards to not having a pap smear in the last three years, data shows that all four counties are at par with the state with Osage County performing slightly better than the state and rest of the counties.

Figure 12. DHSS-WOMEN PREVENTATIVE CARE



The next analysis will show what types of preventive care both men and women are skipping based on the same county level study conducted by the Department of Health and Senior Services in 2011. This analysis shows that more men and women ages 50+ reported never having blood stool tests in all four counties and Moniteau County as having the largest population among the peer counties. Similarly, data shows that all except Cole county reported higher percentage of population never had a sigmoid or colonoscopy than the state totals. Conversely, all counties except Miller shows a larger population that never had blood cholesterol checked for populations 35+. In another study, all four counties data show that higher percentages of population in comparison to the state had no blood stool test performed in the past year exceeding by a margin of nearly 4%. In a similar analysis, data shows that all except Cole County reported slightly better percentage of population that did not have sigmoid or colonoscopy in the last ten years.

Figure 13. DHSS- MEN & WOMEN PREVENTATIVE CARE



Our secondary data review revealed that the cancer incidence data cited in our 2012 report could not be substantiated; therefore, the charts below compare the validated data for the three-year reporting period (2006-2008) for 2012 CHNA to our most recent three-year reporting period (2010-2012) according to the Missouri Cancer Registry. The most recent reporting period reports the number of incidence of seven types of cancer as 1,159, which is a decrease from the 2006-2008 report. While there were decreases in several types of cancers noted, breast cancer showed a significant increase (14%).

Figure 14. MCR-CANCER INCIDENCE BY TYPE & COUNTY

2006-2008	SEER Site Recode (ICD-O-3/WHO 2008)	Cole	Miller	Moniteau	Osage	Four County Region	Statewide
	Breast (among females only)	159	45	24	24	252	12,654
	Cervix	^	0	^	^	0	738
	Colon, rectum, and rectosigmoid	120	44	26	23	213	9,726
	Lung and bronchus	170	75	31	32	308	15,438
	Prostate	202	56	20	43	321	12,343
	Urinary bladder	44	28	9	7	88	3,860
	Corpus and Uterus, NOS	30	11	6	^	47	2,590
2006-2008	Total Cancer Incidence of seven types	725	259	116	129	1,229	57,349

2010-2012	SEER Site Recode (ICD-O-3/WHO 2008)	Cole	Miller	Moniteau	Osage	Four County Region	Statewide
	Breast (among females only)	183	50	32	34	299	13,543
	Cervix	^	^	^	0	0	810
	Colon, rectum, and rectosigmoid	94	43	20	17	174	8,885
	Lung and bronchus	164	89	26	35	314	15,722
	Prostate	145	29	22	30	226	10,724

	Urinary bladder	45	15	9	8	77	3,935
	Corpus and Uterus, NOS	40	15	6	8	69	2,935
2010-2012	Total Cancer Incidence of seven types	671	241	115	132	1,159	56,554

Malignant (in both ICD-O-2 & ICD-O-3) tumors diagnosed among Missouri residents, males and females only, known age.

^: count suppressed due to a small number of cases.

Data from the MCR 2015DB (complete 1996-2012 cases).

Figure 15. MCR- CANCER INCIDENCE BY COUNTY

**Top 5 Cancer Incidence by Site
(Missouri Cancer Registry Incidence
2010-2012)**

	Cole	Miller	Moniteau	Osage	Missouri
1	Breast	Lung & Bronchus	Breast	Lung and Bronchus	Lung & Bronchus
2	Lung & Bronchus	Breast	Lung and Bronchus	Breast	Breast
3	Prostate	Colon, rectum, recto sigmoid	Prostate	Prostate	Prostate
4	Colon, rectum, recto sigmoid	Prostate	Colon, rectum, recto sigmoid	Colon, rectum, recto sigmoid	Colon, rectum, recto sigmoid
5	Urinary Bladder	Corpus and Uterus NOS /Urinary Bladder	Urinary Bladder	Corpus and Uterus NOS /Urinary Bladder	Urinary Bladder

2010-2012 MCR 2015 DB

ACCESS TO CARE

The availability of health resources is a critical factor influencing health status. The next two charts break down the uninsured population between adults and children. Figure 16 shows the percentage of adults between ages 18-64 without health insurance. This analysis shows that Moniteau has the largest uninsured adult population among the four Mid-Missouri counties analyzed and also exceeds the state total by 12.4%. Miller County also exceeds the state total slightly by a margin of about 1%. Osage County has the lowest uninsured adult population in the four counties surveyed, even outperforming the state total.

Figure 16. DHSS-NO HEALTH INSURANCE-ADULT

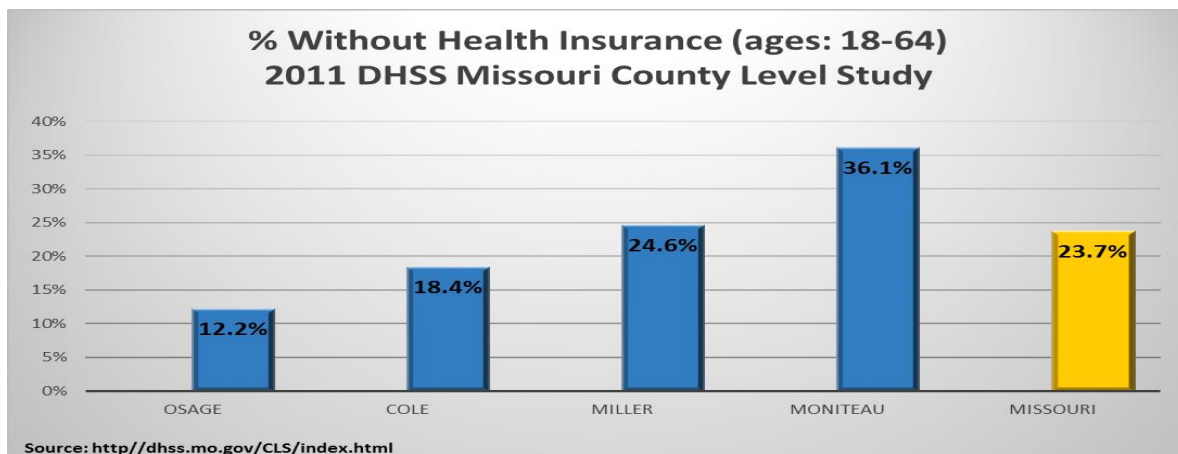
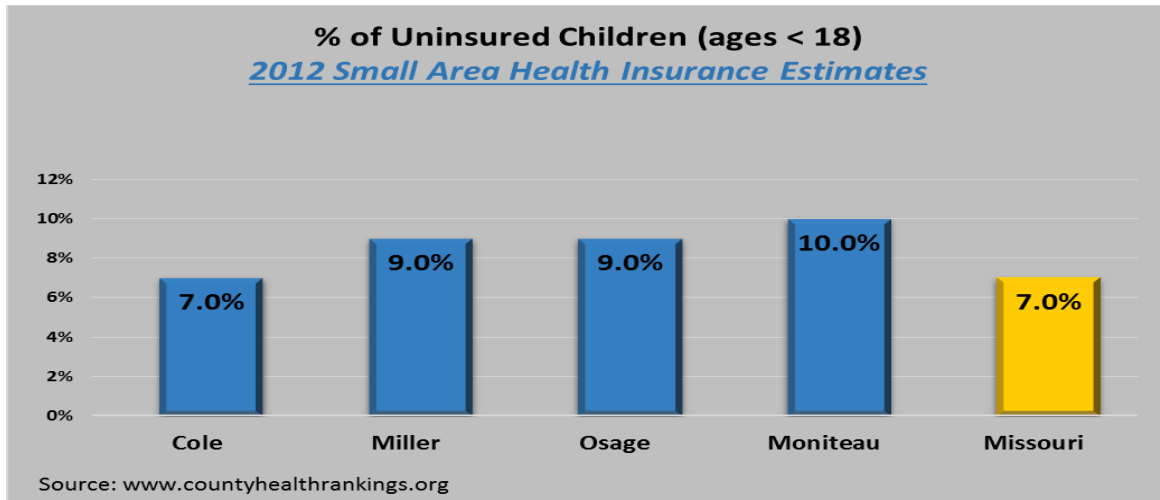


Figure 17 illustrates the percentage of uninsured children and shows that counties of Miller, Moniteau and Osage have a higher percentage of children without health insurance as compared to the state.

Figure 17. COUNTY HEALTH RANKINGS- NO HEALTH INSURANCE-CHILD



The overall health of the four-county region is closely tied to resources available in Jefferson City, which is a 30-60 minute drive for some residents in rural counties. In the past several years, more local health resources have been developed throughout the region including primary care, dental care, prenatal care and mental health by growing physician practices and expanding the federally qualified health center.

Access to specialty care continues to be an issue for rural residents, particularly the low-income, uninsured and underinsured populations. Market research indicates that 38% of local residents are hospitalized outside the region in Columbia, Lake Regional or elsewhere. In accordance, 35% outpatient services are provided outside of our 4-county region.

With the exception of Cole County for primary care, each county is designated by the Federal Health Resources and Services Administration (HRSA) as a Health Professional Shortage Area (HPSA) for primary care, dental care and mental health care.

Figure 18. HPSA DESIGNATION FOR THE FOUR CENTRAL COUNTIES

Area Health Resource File/American Medical Association (2012)	Cole	Miller	Moniteau	Osage	MO
Primary Care Physician Ratio	1193:1	4963:1	3125:1	13858:1	1439:1
Mental Health Provider Ratio	639:1	8364:1	3937:1	13688:1	632:1
Dentists Ratio	1871:1	4182:1	3937:1	4563:1	1920:1

Source: www.countyhealthrankings.com

The availability of primary care is indicated by the ratio of physician to population. The ratio varies widely among the four counties from 1,193 individuals for every primary care physician

in Cole County to 13,858 individuals for every primary care physician in Osage County - all exceeding the Missouri ratio (1,439:1). The disparity is much greater for mental health providers, with a high in Osage County of 13,688:1.

Community Input Sessions & Surveys

Community Discussion Groups

From the discussions held with community groups and interviews with providers and consumers, several common themes emerged. Following is a summary of community input sessions, along with comments from some participants.

Unmet Needs, United Way Advisory Group, 45 attendees

Top Challenges/Issues:

- Substance Abuse
 - Underage Drinking, Retailers Selling to Minors
 - No access to substance abuse treatment, detox or recovery
- Childhood Obesity - siloed efforts, no collective group
- Mental Health Needs for child and adults, limited access
- No effort to look at root causes of poor health; income, inequality, transportation
- Need Resource System that is not just consumer based but also for provider
- Need for Dental Care, especially adults. Specific needs are those on Medicaid & dentures

Advice:

- Boone County put in tax to help fund unmet needs like “Putting Kids First”
- Dept of Justice has grants for Cohesive Community Collaboration
- United Way (Unmet Needs Group) needs to spearhead a strategic plan to work together. Specifically care coordination, homeless, medical homes, health literacy

Comment:

“We are all doing great things but we silo ourselves and tend not to work with others. This creates barriers for the very people we are trying to serve.”

Miller County Community, 22 attendees

Top Challenges/Issues:

- Childhood Obesity
- Lack of Dental Care
- Substance Abuse
 - Younger Kids are being exposed
 - Rock Meth
 - E-Cigarettes & Smoking
- Mental Health Needs for child and adult, limited access
- Need licensed clinical social workers/counselors in schools
- Care Coordination- Need for someone to spearhead how we utilize resources
- No effort to look at root cause; poverty, transportation, gradual erosions of benefits

Advice:

- Continue efforts in childhood obesity
- Continue to offer screenings, services and education
- Program that will help people if their screenings come back abnormal. They don't attend screenings because if there is a problem, they can't afford to follow up
- Incentivize people to participate in programs and screenings
- Focus on adult fitness; trails and improvements to sidewalks and parks

Comment:

“A family here in our community has a child with a drug problem, and there are no resources to get him the care he needs. This is a family that works hard, cares for their child and has insurance yet their hands are tied. They are left to try and sort this out on their own.”

Moniteau County Community, 23 attendees**Top Challenges/Issues:**

- Substance Abuse
 - K2, marijuana, triple C
 - Skittles parties (sharing of prescription meds)
 - Smoking & E-cigarettes are seen as healthy alternative
 - Ministerial Alliance report families using money for drugs vs. food
- Mental Health Needs- Adults and Child; also need law enforcement training
- Schools have limited resources for shoes, head lice treatment, eye glasses
- Diabetes is prevalent and Education is limited in county
- Teen pregnancy, sexting, risky behaviors of our youth
- Health Literacy
- Need licensed clinical social workers/counselors in schools

Advice:

- Health and Resource Fair for community members
- Mentoring program for adults – self-sufficiency skills
- Improve communication of existing programs/resources available
- Hold classes at Cargill and Burgers
- Incentivize people to participate in programs

Comment:

“DFS resources have been taken away like counselors going into the home. There are less case workers now. The kids are drowning in the chaotic environment.”

Osage County Community, 16 attendees**Top Challenges/Issues:**

- Limited Primary Care Providers or no Urgent Care
- Underinsured or No insurance, Medicaid Gap
- Mental Health Needs of Adults and Children
- Aging Population
- Need licensed clinical social workers/counselors in schools
- Basic poverty issues; lack of food, can't afford prescriptions, no transportation

Advice:

- Find ways to access mental health services in schools
- Improve communication of existing resources
- Improve access to services
- Need preventative underage drinking strategies

Comment:

“We don’t even have primary care offices that have provider five days per week. The Community Health Center only wants Medicaid patients, and you can’t go there if you owe more than \$20.”

Cole County Community Leaders (session 1), 10 attendees**Top Challenges/Issues:**

- Metal Health Needs of Adults & Children; law enforcement burdened
 - Youth Needs-Anorexia and Cutting
- Diabetes and Obesity
- Oral health for adults (Medicaid doesn’t cover)
- Urgent Care Hours are not long enough to cover working parents or shift workers
- Substance abuse
- Asthma
- Health Literacy
- Transportation- hours are not long enough; too many restrictions with Medicaid like other children can’t ride

Advice:

- Increased communication about available resources
- Creation of a clearing house for care coordination
- Community collaborative to dental screenings for adults
- Collaborate with local service clubs to make them aware of needs
- Provide Mental Health First Aid to more groups within the community

Comment:

“A lot of people are struggling with mental health issues that end up committing crimes, and then the police are left to handle the situation.”

Cole County Community Leaders (session 2), 19 attendees**Top Challenges/Issues:**

- Access to dental care-Adult
- Mental Health Needs, adult and child
 - Youth in particular, having issues with where to take child under 12
 - Local hospitals can’t evaluate children
 - No safe room at juvenile center
 - Violent Behavior in children
- Childhood Obesity
- Substance Abuse- No detox
- Access to Care- Patients can’t afford sliding scale
- No one trained for sexual assault exams
- Foster children are “aging out”
- Transportation to/from services
- Hours of operation for urgent care and primary care do not meet needs of consumers

Advice:

- Community forums for community health need, particularly mental health, like we did for Heroin
- Respite Care for family caregivers

- Collaboration on mental health, law enforcement, Juvenile Justice for what we can do for mentally challenged and violent children under 12

Comment:

“We have children in dire need of help and nowhere to turn.”

Cole County Health Department Focus Group, 15 attendees

Top Challenges/Issues:

- Access to Dental Care- Adult
- Access to Mental Health- Adult and Children
- Aging Population- Dementia/Alzheimer’s/Elder care
- Health Literacy
- Public Health Facility inadequate and overcrowded
- Lack of Care Coordination
- Substance Abuse- Adults and Youth, Drug of Choice ever changing
- Childhood Obesity

Advice:

- Improve Communication of resources
- Healthy Literacy Programs
- Install sidewalks and leash laws to provide safer environment to exercise
- Anticipate the future needs for care and facilities needed to care for aging population
- Prioritize Health Advocacy by building systematic navigation/care coordination

COMMUNITY INPUT SUMMARY

Some local health services lack capacity to meet demands, most notably mental/behavioral health and substance abuse, detox and treatment. Other services, including primary care and dental care, have access issues that stem from lack of capacity for uninsured and Medicaid patients due to practice limitations. Some patients are required to travel to other communities to access care, but lack of transportation is a barrier for low-income and elderly residents. They say they feel disconnected from the health care system.

Additional repeating themes in all community input sessions included need for Health Literacy Programs, Childhood Obesity, Lack of Care Coordination and Aging Population.

SURVEY DATA-Community

Physical surveys and collection receptacles were placed in primary care physician offices and in community health departments. In addition, a link to complete the survey was sent to local employers and the community leaders who participated in the discussion groups for them to distribute to their clients.

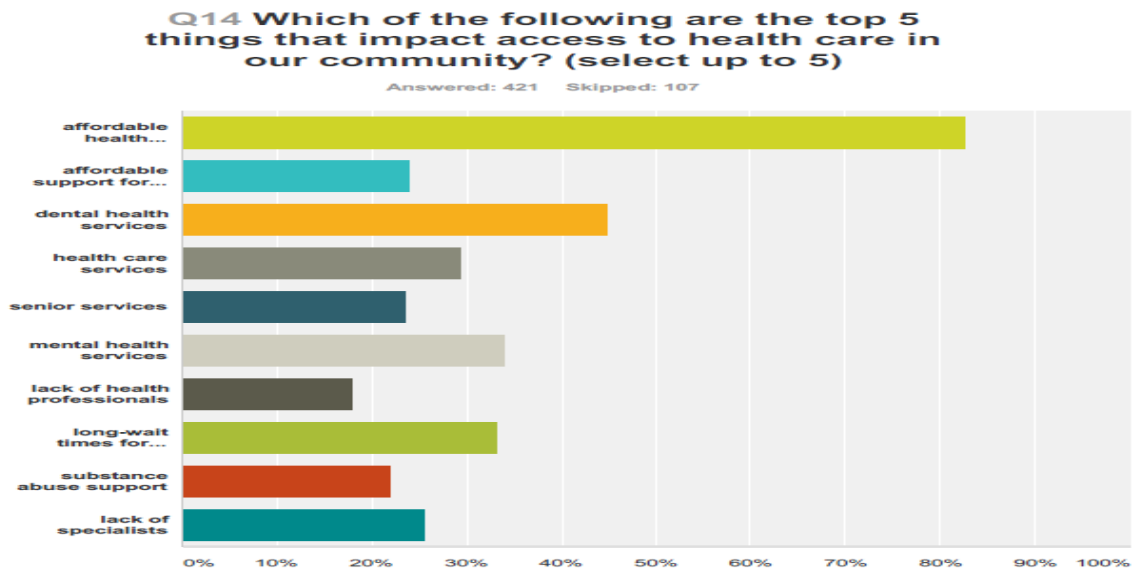
A total of 527 surveys were completed, and nearly 50% obtained the survey from the doctor's office. 9% obtained it from social media, and 42% received it by email. 70% of the respondents were female and 97% were white. 44% live in Cole County and 45% of those completing the survey were over the age of 55.

The majority (81%) of those completing the survey rated themselves as being in good, very good or excellent health. 47% state that they exercise 30 minutes per day, five days a week, and 46% stated they eat at least five servings of fruits and vegetables per day.

82% of the respondents have seen a doctor in the past 12 months with 62% reporting seeing a specialist in the past 12 months.

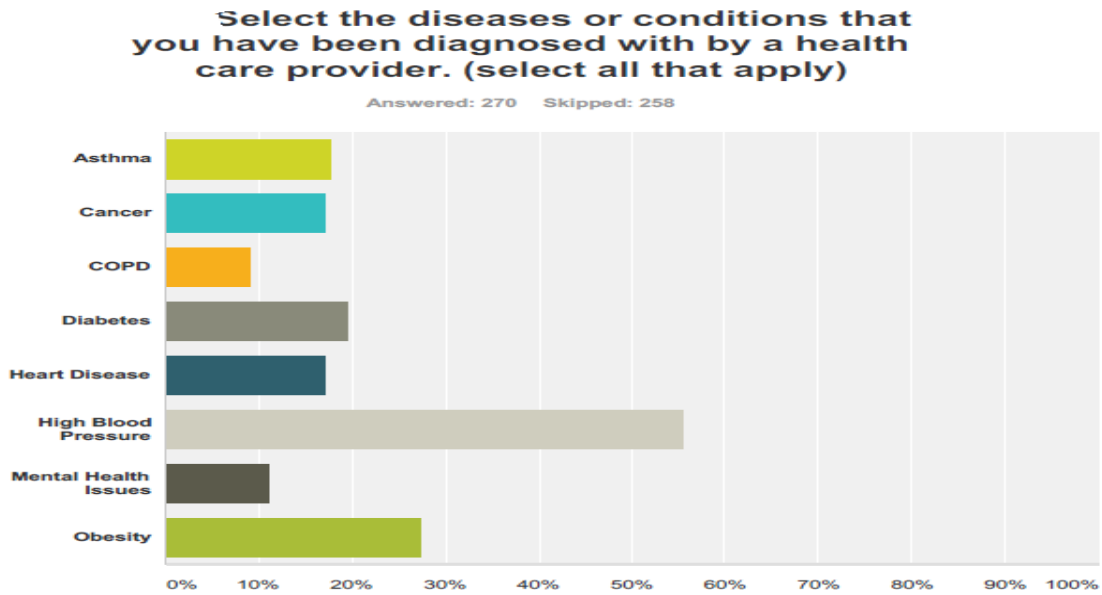
The survey revealed there were some barriers to health care. 39% said they were too busy, and 32% couldn't afford to go to doctor. It should be noted that the majority (44%) of respondents have employer provided health insurance benefits, 25% had private insurance, Medicare 17%, Medicaid 9%, Self-Pay 3% and Uninsured 3%. The graph below shows what barriers to access were expressed by the respondents.

Figure 19. COMMUNITY SURVEY-BARRIERS TO ACCESS



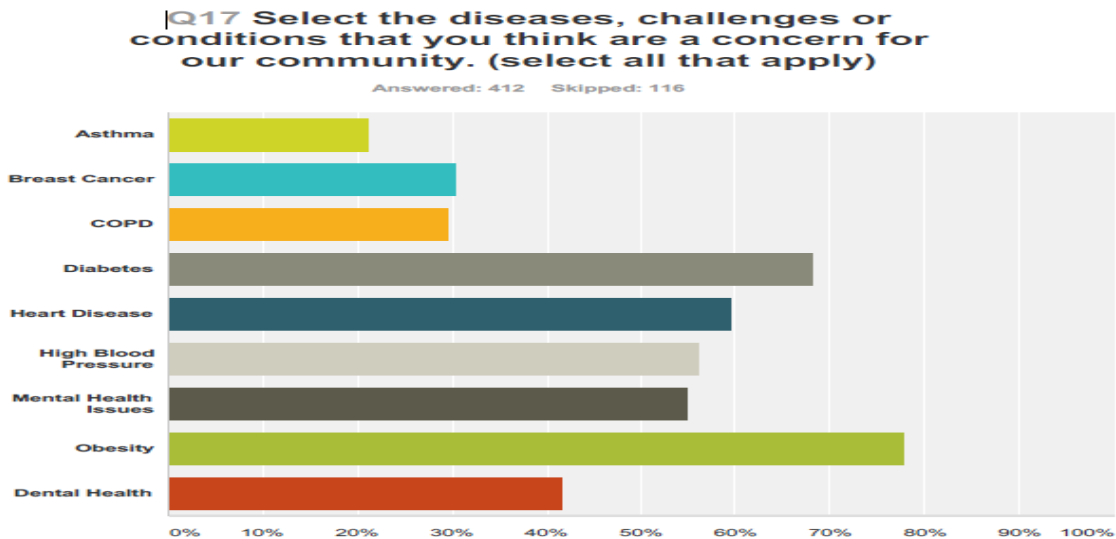
As noted in the graph below, 55% of respondents had a diagnosis of high blood pressure and nearly 30% were obese.

Figure 20. COMMUNITY SURVEY-DIAGNOSIS



When asked what diseases, challenges or conditions do you think is a concern for our community, obesity overwhelmingly topped the list. Diabetes, Heart Disease, Mental and Dental Health edged out the top five of community health needs as seen by the survey respondents.

Figure 21. COMMUNITY SURVEY- TOP HEALTH CONCERNS



SURVEY DATA-Physicians

Both CRMC and SSM-St. Mary's Health collected data from their physician groups. CRMC held a roundtable discussion and SSM-St. Mary's Health chose a survey tool method. Review of the data showed alignment in both groups as to the top health needs in our community. Overwhelmingly, Obesity was of top concern. Rounding out the top five were Mental Health, Heart Disease, Alcohol/Substance Abuse and Dental Health.

Our CHNA Findings, Prioritized Issues/Needs

Our CHNA Findings, Prioritized Issues/Needs

Upon reviewing the findings resulting from the secondary data analysis, community discussion groups and the surveys, the CMCHAP Steering Team identified the most serious health issues and then ranked them using the Hanlon Methodology Prioritization matrix. Each issue was ranked on a scale of 1 (strongly disagree) to 5 (strongly agree) according to:

A=Size

Usually defined by prevalence of a condition, characteristic or disease in entire population (but can be among sub-groups of the population as well).

Percent of population

<u>With health problem</u>	<u>Score</u>
25%+	9-10
10-24%	7-8
1-9%	5-6
.1-.9%	3-4
.01-.09%	1-2

B=Seriousness

Usually defined by urgency to intervene, severity leads to death, disproportionate impact among vulnerable populations and/or economic impact on community of unresolved problem.

Seriousness includes the urgency, severity, impact on costs to community and indicated trend of the problem as a serious factor.

<u>How serious?</u>	<u>Score</u>
Very serious	9-10
Serious	6-8
Moderately serious	3-5
Not serious	0-2

C=Effectiveness of solutions (solvability of problem)

Usually defined by best real world expectations and based on outcome evaluations of successful interventions in similar communities. When considering solutions, the effectiveness is for “how well does this intervention solve the problem?” and the percentages indicated below would then indicate the effectiveness of specific programs or ideas. When considering problems, the score is for “how solvable is this problem at all?”

<u>Effectiveness</u>	<u>Score</u>
Very effective (80 %+)	10
Relatively effective (60-79%)	8-9
Effective (40-59%)	6-7
Moderately effective (20-39%)	4-5
Relatively ineffective (<20%)	0-3

The Steering Team then assigned a total score for (A+B+C) for each identified need determine the priority index.

PRIORITY HEALTH NEEDS

Based on the prioritization exercise, the top five community health needs were determined:

1. Heart Disease/Obesity Prevention

The rate of obesity is continuing to climb, contributing to many health problems, most notably heart disease, which is the most prevalent disease/condition and the leading cause of death in Missouri including three of the four counties in our region. A prominent health need is increased public education regarding healthy weight and risk factors for heart disease, along with greater access to screenings and follow-up care.

2. Mental Health

Mental Health Disorders were prominent discussions at each of our county input sessions. Although our latest MICA data (2012) is only beginning to point to Mental Disorders as a priority, our community social service providers, law enforcement, clergy and school systems all agreed that there is a need for additional treatment services especially for children, community education on types of mental health disorders, evaluation, treatment and the impact of social stigma for those who need services. Mental Disorders were #3 for Inpatient Hospitalizations for Cole and Miller Counties and #5 for Osage. This data is reflective of the state of Missouri, which ranks Mental Disorders as #3 for IP Hospitalizations according to 2012 MICA data.

3. Health Literacy

Our input sessions revealed that there is not so much an issue with obtaining health information as there is a need in helping people process and understand basic health information and services needed to make appropriate health and wellness decisions. Nearly nine out of 10 adults have difficulty using the everyday health information that is routinely available in health care facilities, retail outlets, media and community. Limited health literacy is associated with poorer health outcomes and higher health care costs.

4. Substance Abuse

Missouri ranks Alcohol/Substance Abuse as the #2 Disease or Condition behind only Diabetes. Although our MICA data for our four-county region points to Alcohol/Substance Abuse as a top priority only in Miller County, our community input sessions told a different story.

Overwhelmingly, our community leaders pointed to drug and alcohol use as a top priority and expressed youth as a leading concern. Topping the list of challenges in the substance abuse area is that our region does not have a facility that will provide detox or treatment. In addition to the increase of youth users, we have also seen an increase in the amount of mothers using during pregnancy. The increasing use of e-cigarettes and the misinformation that they are a healthy alternative to regular cigarette smoking is of concern as well.

5. Dental Care

The need for Dental Care, particularly for adults, was brought up at all of our county input sessions, yet it did not hit our top five utilizing the MICA Priorities. Many people do not have dental insurance, and the fact that Medicaid does not cover dental treatment has also created a shortfall of services offered. It should also be noted that there is a

connection to dental health and overall wellness. Research suggests that 40% of people with gum disease have some other type of chronic disease. There is strong evidence linking dental health to poorly controlled diabetes and heart disease.

This community health needs assessment is the second endeavor of the Central Missouri Community Health Assessment Partnership (CMCHAP). With reliable information as a foundation, CMCHAP can continue to work collaboratively to develop plans and resources to meet the community's needs.

Local Health Resources Listing

Hospitals

Capital Region Medical Center
SSM Health St. Mary's Hospital - Jefferson City

Primary Care/Urgent Care

Capital Region Physicians
Community Health Center of Central Missouri
JCMG
SSM Health Medical Group

Specialty Care

Capital Region Physicians
Community Health Center of Central Missouri
Goldschmidt Cancer Center
JCMG
MU Health Care
SSM Health Medical Group
SSM Health Cancer Center at JCMG

Behavioral Health

Capital Region Center for Mental Wellness
Community Health Center of Central Missouri
Family Counseling Center of Missouri
Pathways Community Behavioral Health Care
SSM Health St. Mary's Hospital - Jefferson City
SSM Health Behavioral Health

County Health Departments

Cole County Health Department
Miller County Health Department
Moniteau County Health Department
Osage County Health Department

Federally Qualified Health Center

Community Health Center of Central Missouri
Central Ozark Medical Center

Free/Sliding Scale Community Clinics & Health Services

Capital Region Physicians Resident Clinic
Community Health Center
County Health Departments of Cole, Miller, Moniteau, Osage
Samaritan Center
Dental, Eye and Shoe Program

Social Services Agencies

American Red Cross, Heart of Missouri Chapter
Central Missouri Agency on Aging
RACS (Rape and Abuse Crisis Center)
United Way of Central Missouri

2-1-1 is a free and confidential service that connects people to local resources. www.211.org

CMCHAP Community Health Needs Assessment

APPENDIX A
2015 SECONDARY
MARKET DATA
ANALYSIS OF
CENTRAL MISSOURI

CMCHAP
Community
Health Needs
Assessment

Demographic Profile for Mid-MO Counties

Cole, Miller, Moniteau, Osage

Demographics

Central Missouri Community Health Assessment Partnership (CMCHAP) region includes four primary counties: Cole, Miller, Moniteau and Osage. Current population demographics and changes in demographic composition over time play a determining role in the types of health and social services needed by communities.

TOTAL POPULATION

A total of 130,590 people live in the 2,005.19 square mile report area defined for this assessment, according to the U.S. Census Bureau American Community Survey 2009-2013 five-year estimates. The population density for this area, estimated at 65.13 persons per square mile, is less than the national average population density of 88.23 persons per square mile.

Figure 22, US CENSUS-POPULATION DENSITY BY COUNTY

Report Area	Total Population	Total Land Area (Square Miles)	Population Density (Per Square Mile)
Report Area	130,590	2,005.19	65.13
Cole County, MO	76,228	391.42	194.75
Miller County, MO	24,863	592.44	41.97
Moniteau County, MO	15,657	414.92	37.74
Osage County, MO	13,842	606.41	22.83
Missouri	6,007,182	68,723.35	87.41
United States	311,536,591	3,530,997.6	88.23

Data Source: US Census Bureau, American Community Survey. 2009-13. Source geography: Tract

POPULATION PROJECTIONS

Data for population projections are noted in Figure 23 and were obtained from Missouri Department of Health and Senior Services (MODHSS) Bureau of Health Care Analysis and Data Dissemination "2020 Missouri County Population Projections"—Summer 2014. Projection Figures are from the State of MO Demographers office and were adjusted by MODHSS based on more recent population trends. 2000 and 2010 populations were obtained from US Census Data. Population projections from MODHSS show continued growth across the region although slowed growth in Moniteau and Osage counties. Osage County is projected to only have 1.76% growth in 2020 from the 2010 population. This is down from 5.88% actual growth in population between the 2000-2010 censuses. Moniteau County similarly shows slower projected growth of 4.13% from 2010-2020. Their growth is down from 5.00% actual growth between the 2000-2010 censuses. Miller County is projected to have population growth of 6.50% from 2010-2020, up from the 4.78% actual growth in population between the 2000-2010 censuses. Cole County shows a projected growth in population of 6.11%, which is a slight increase over the actual growth experienced of 6.04% growth between the 2000-2010 censuses. The four-county region is projected to grow at a higher rate than the state, which has a projected rate of growth of 0.04% compared to our regions projected growth of 5.51% from 2010-2020.

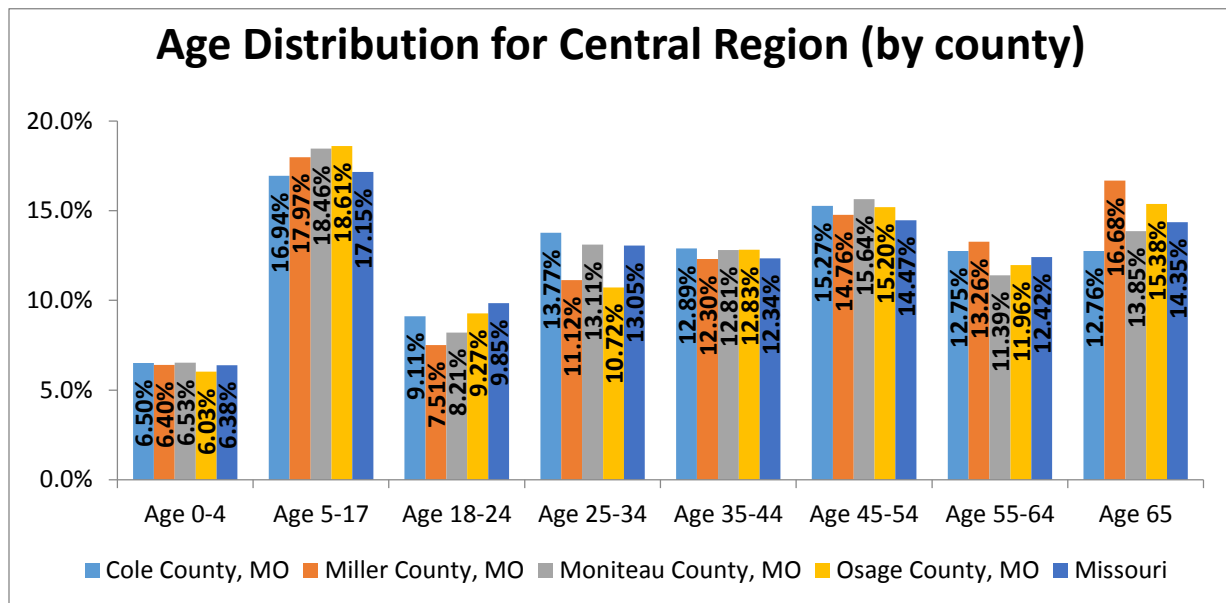
Figure 23. MODHSS-2020 MISSOURI COUNTY POPULATIONS PROJECTIONS

County	2000 Census Population	2010 Census Population	2000-2010 Census Population Change		2020 Proj Adj. Total	Change 2010-2020	
			Change	%		Change Total Population	Change %
Cole	71,397	75,990	4,593	6.04%	80,936	4,946	6.11%
Miller	23,564	24,748	1,184	4.78%	26,469	1,721	6.50%
Moniteau	14,827	15,607	780	5.00%	16,279	672	4.13%
Osage	13,062	13,878	816	5.88%	14,126	248	1.76%
Region Total	122,850	130,223	7,373	5.66%	137,810	7,587	5.51%
Missouri Total	5,595,211	5,988,927	2,780	0.05%	6,407,934	2,641	0.04%

Population Projections By Age

Figure 24 on the next page shows the age distribution of the counties in 2010. The data in this table prepared by Community Commons shows that population ages 5-17 is the largest cohort in our report area. It should also be noted that nearly 27% of our report area population is greater than 55 years of age.

Figure 24. COMMUNITY COMMONS-AGE DISTRIBUTION BY COUNTY



Population Projections by Gender

No change has been projected between the 2010 and 2019 US Census population segmented by gender. The graph below illustrates the gender divide for the four surveyed counties.

Figure 25 A. 2010 POPULATION-GENDER

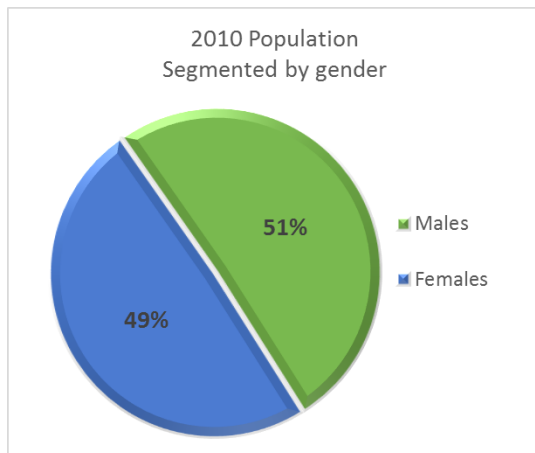
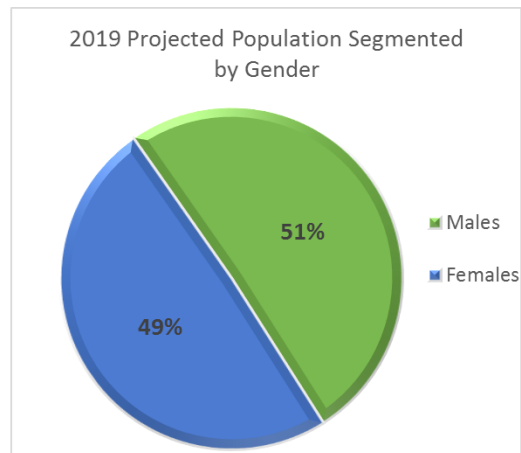


Figure 25 B. 2019 POPULATION PROJECTION



Source: 2010 US Census & Truven Health

Population Projection for Pediatrics

According to our analysis of the pediatric population (ages 0-17), data shows that by 2019 this segment of the population is expected to decline by -2.5%. The largest decline is expected in Miller county (-5%) and Moniteau county (-4.2%). Osage county will see a slight increase in pediatric population by 1%. The chart below shows the distribution of pediatric population by counties.

Figure 26. PEDIATRIC POPULATION & PROJECTIONS

Pediatric Population Projections (age 0-17)

Counties	Age 0-17				2010's % of Total Pop	2010's USA % of Total Pop
	2010	2019	Change %			
Cole	17,937	17,583	-354	-2.0%	23.6%	25.0%
Miller	6,144	5,834	-310	-5.0%	24.8%	25.0%
Moniteau	3,926	3,760	-166	-4.2%	25.2%	25.0%
Osage	3,433	3,466	33	1.0%	24.7%	25.0%
Total P SA	31,440	30,643	-797	-2.5%	24.1%	25.0%

Source: 2010 US Census & Truven Health

Population Projections for Females of Childbearing Age

Moreover, our analysis indicates that females of childbearing age are also expected to decline by 2019. It is estimated that the population will decline by approximately -4.8% or 1,140 residents.

Figure 27. **CHILDBEARING FEMALE POPULATION & PROJECTIONS**

Females Childbearing Age (age 15-44) Population Projections

Counties	2010	2019	Change	%Change
Cole	14,426	14,526	100	0.7%
Miller	4,368	3,688	-680	-15.6%
Moniteau	2,631	2,426	-205	-7.8%
Osage	2,362	2,007	-355	-15.0%
Total PSA	23,787	22,647	-1,140	-4.8%

Source: 2010 US Census & Truven Health

Population Projection for Senior 65+

Senior population defined as 65+ are expected to increase in the four primary service counties by 24.8% through 2019, slightly under the estimated increase of 25.3% in the state of Missouri.

Figure 28, **SENIORS 65+ POPULATION & PROJECTIONS**

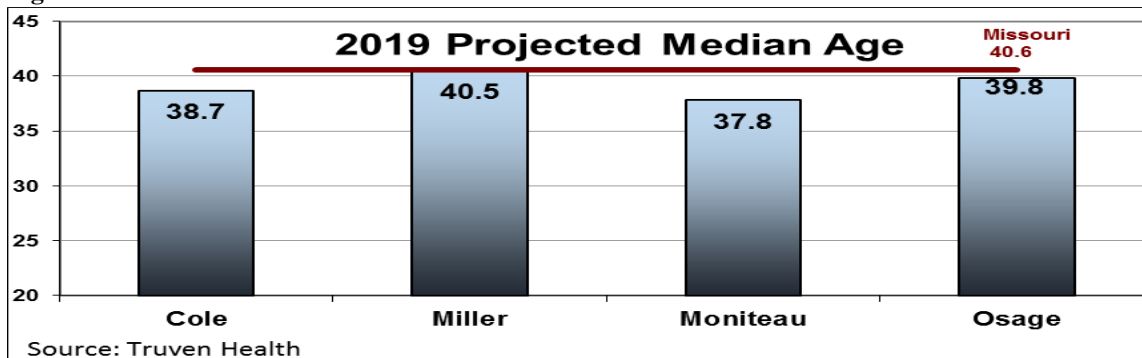
Counties	Seniors 65+			
	2010	2019	Change	%
Cole	9,325	12,311	2,986	32.0%
Miller	3,897	4,745	848	21.8%
Moniteau	2,153	2,528	375	17.4%
Osage	2,077	2,281	204	9.8%
Total MO	838,294	1,046,409	208,115	24.8%
Total PSA	17,452	21,865	4,413	25.3%

Source: 2010 US Census & Truven Health

PROJECTED MEDIAN AGE OF POPULATION

The projected median age of the population in all four counties is below the state median of 40.6. The youngest county in our service area is Moniteau (37.8) or about 2.9 years younger than state median age, followed by Cole County (38.8).

Figure 29. **MEDIAN AGE POPULATION & PROJECTIONS**



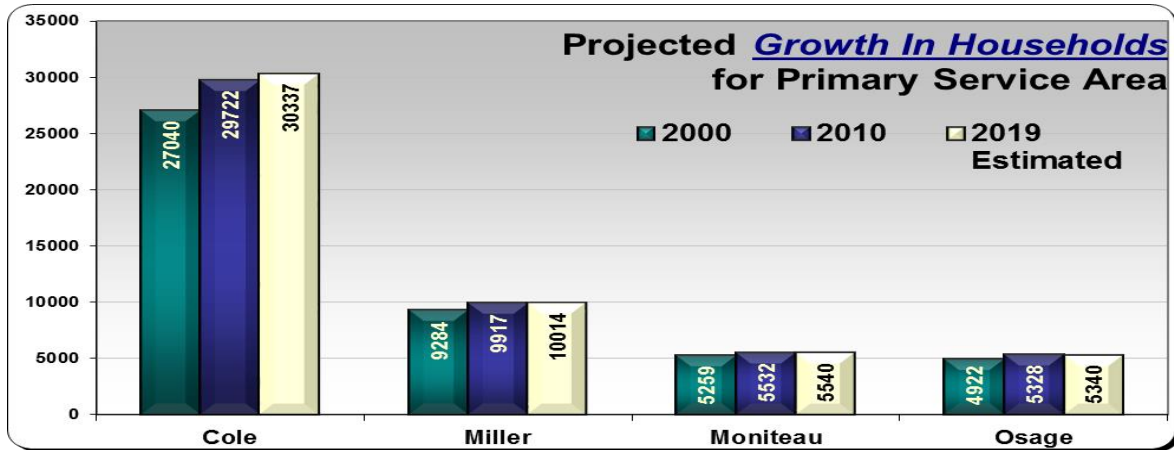
Source: Truven Health

PROJECTED HOUSEHOLDS GROWTH

It is projected that the growth in households is likely to increase through 2019 by 1%, which is 1% below the state average as shown in the chart below.

Figure 30 A&B. HOUSEHOLDS & PROJECTIONS

Households	2019			% Variance
	2000	2010	Estimated	
Cole	27,040	29,722	30,337	2%
Miller	9,284	9,917	10,014	1%
Moniteau	5,259	5,532	5,540	0%
Osage	4,922	5,328	5,340	0%
4 Counties Total	46,505	50,499	51,231	1%
MO Total	-	2,375,611	2,435,795	2%



ETHNICITY

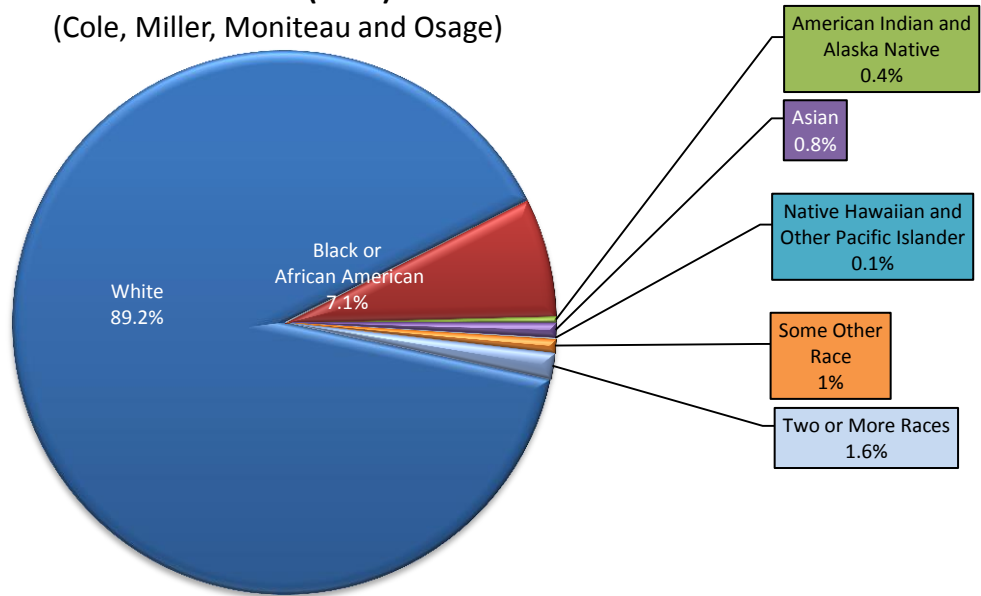
The distribution of race/ethnicity shows a population that is predominately white. This segment represents 89.2% of the total population, significantly higher than Missouri's 82.8% and the US average of 72.4%.

Figure 31 A & B. ETHNICITY BY COUNTY & REGION

2010 Census Data

Ethnicity	Cole	Miller	Moniteau	Osage	Total PSA	MO	US
White	84.4%	96.7%	92.4%	98.8%	89.2%	82.8%	72.4%
Black	11.2%	0.4%	3.7%	0.2%	7.1%	11.6%	12.6%
American Indian/Alaska Native	0.3%	0.5%	0.3%	0.2%	0.3%	0.5%	0.9%
Asian	1.3%	0.3%	0.4%	0.1%	0.9%	1.6%	4.8%
Hawaiian/Other Pacific Islander	0.0%	0.1%	0.1%	0.1%	0.0%	0.1%	0.2%
Other	0.9%	0.5%	1.9%	0.1%	0.9%	1.3%	6.2%
2 or more races	1.9%	1.5%	1.2%	0.5%	1.6%	2.1%	2.9%

Racial Distribution for Central Missouri Counties
US Census (2010)
(Cole, Miller, Moniteau and Osage)



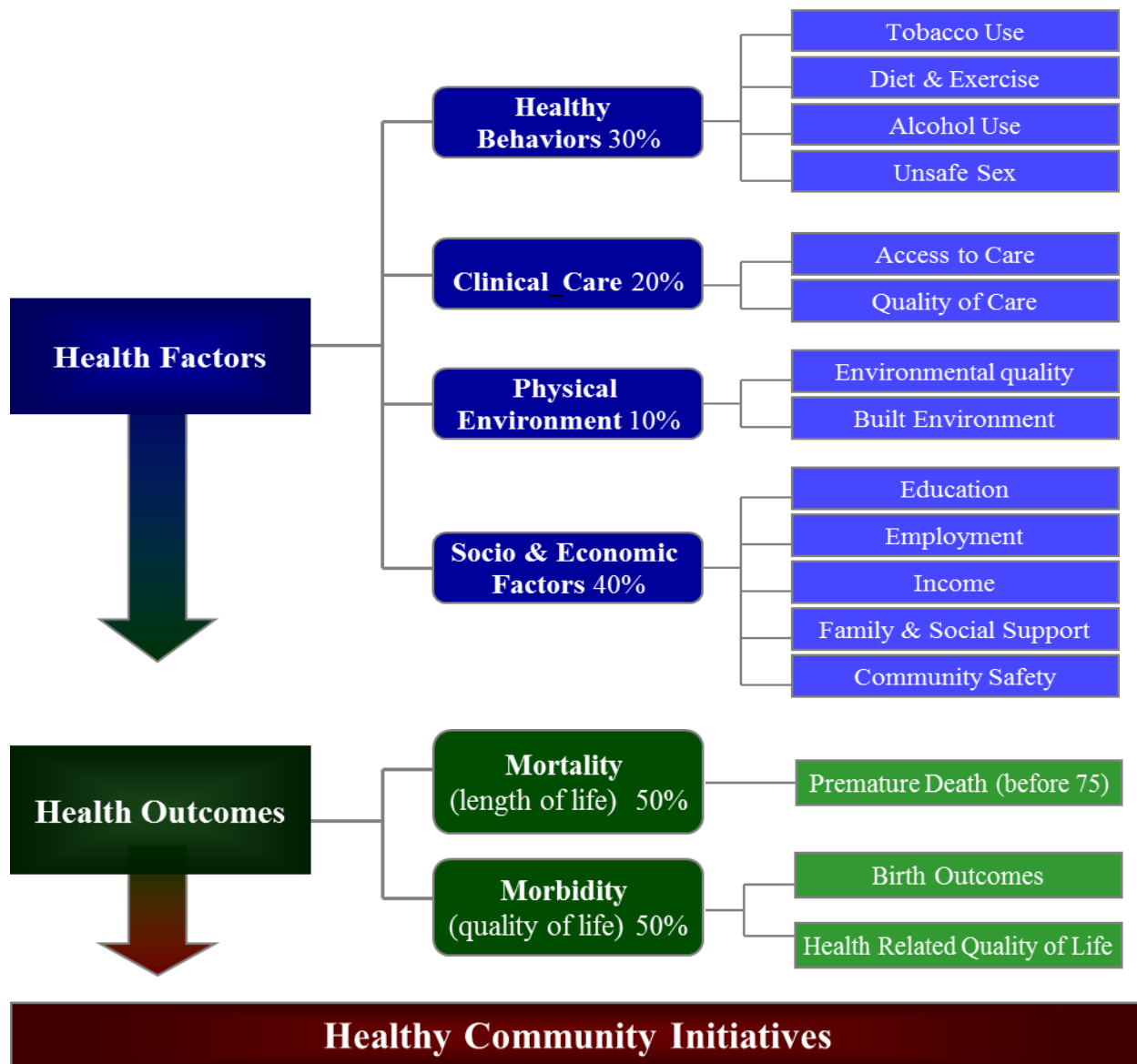
2015 County Health Rankings

County Health Rankings

The health of a community depends on many different factors, including quality of health care, individual behavior, social and economic factors (i.e., education and jobs) and physical environment.

The Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute created a County Health Ranking tool, which enables a side-by-side comparison of each county's health status based on the following:

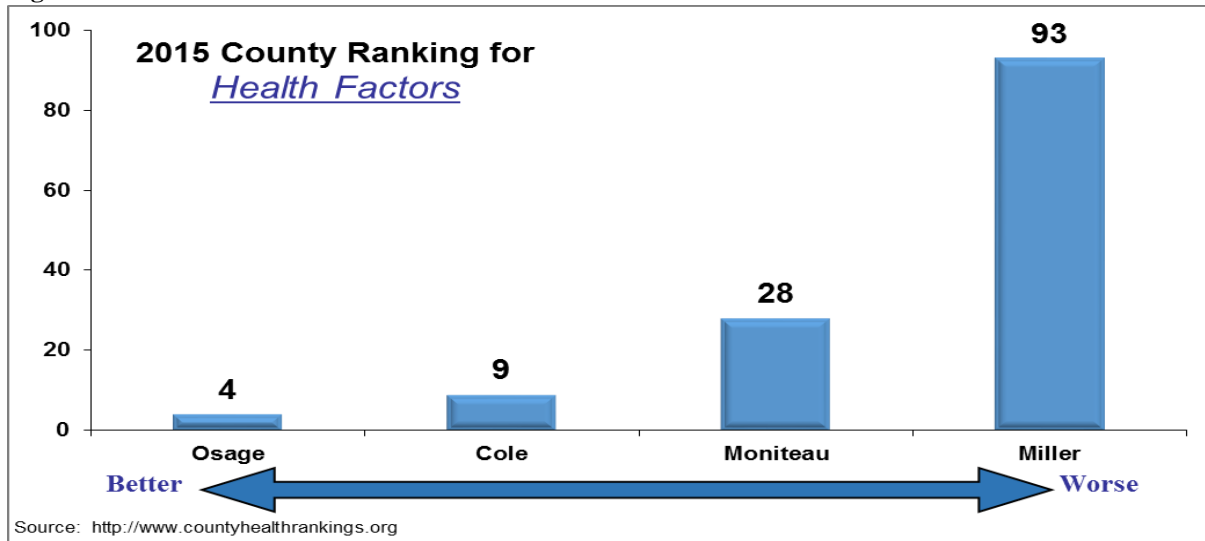
- Health Factors: Health factors in the County Health Rankings represent what influences the health of a county.
- Health Outcomes: Health outcomes in the County Health Rankings represent the health level of the county.



HEALTH FACTORS AND HEALTH OUTCOMES

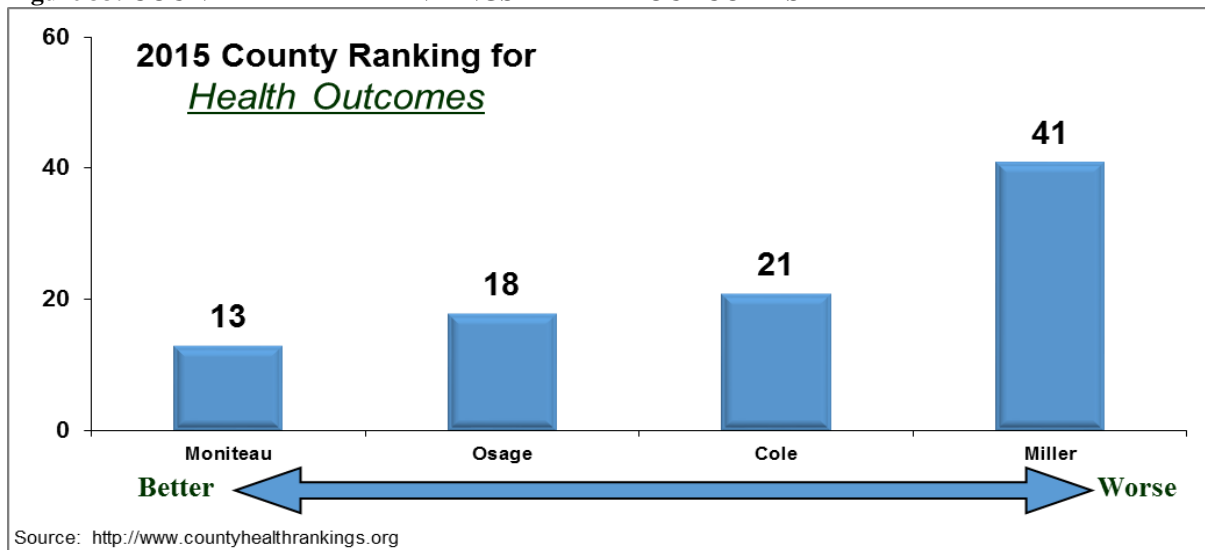
The health factors rankings shown in Figure 32 illustrates the ranked scores for the counties of Cole, Miller, Moniteau and Osage. These rankings are assigned from all 115 Missouri counties and shows that Miller is the least healthy county among the group. *It should be noted that smoking and drinking alcohol are used in the health factor ranking, and Moniteau County did not have data for those health factors.*

Figure 32. COUNTY HEALTH RANKINGS-HEALTH FACTORS



The health outcomes ranking shows Miller County as the least favorable county among the four surveyed counties.

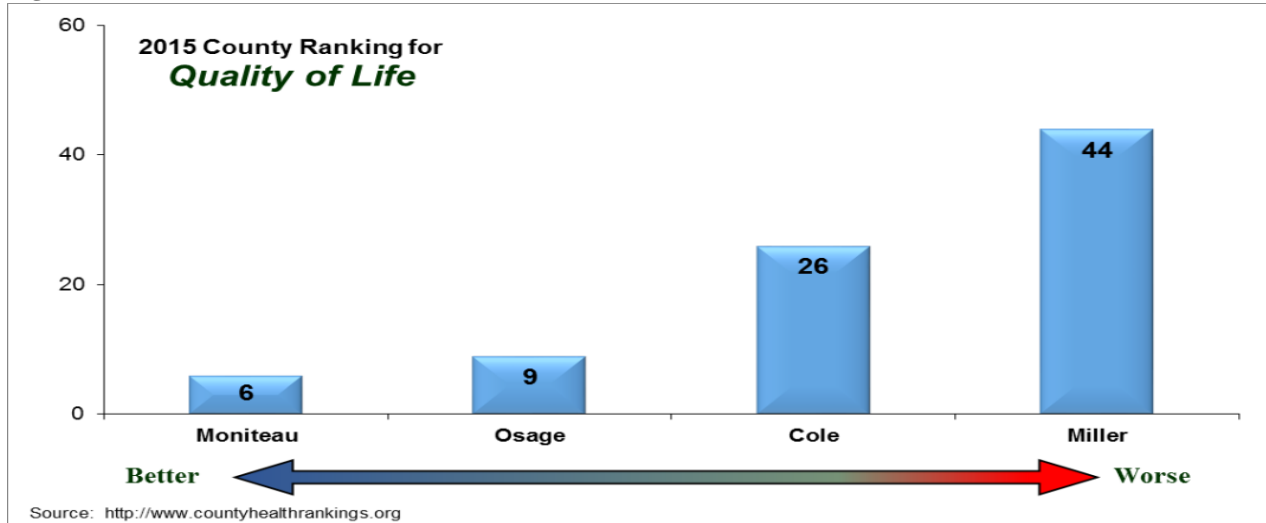
Figure 33. COUNTY HEALTH RANKINGS-HEALTH OUTCOMES



Quality Of Life

Figure 34 provides a highlight of the quality of life in four Mid-Missouri counties out of 115 Missouri counties ranked by County Health Rankings. As shown below, counties of Moniteau and Osage are among the top ranking counties in the state of Missouri. These rankings were derived from measuring the following indicators shown below.

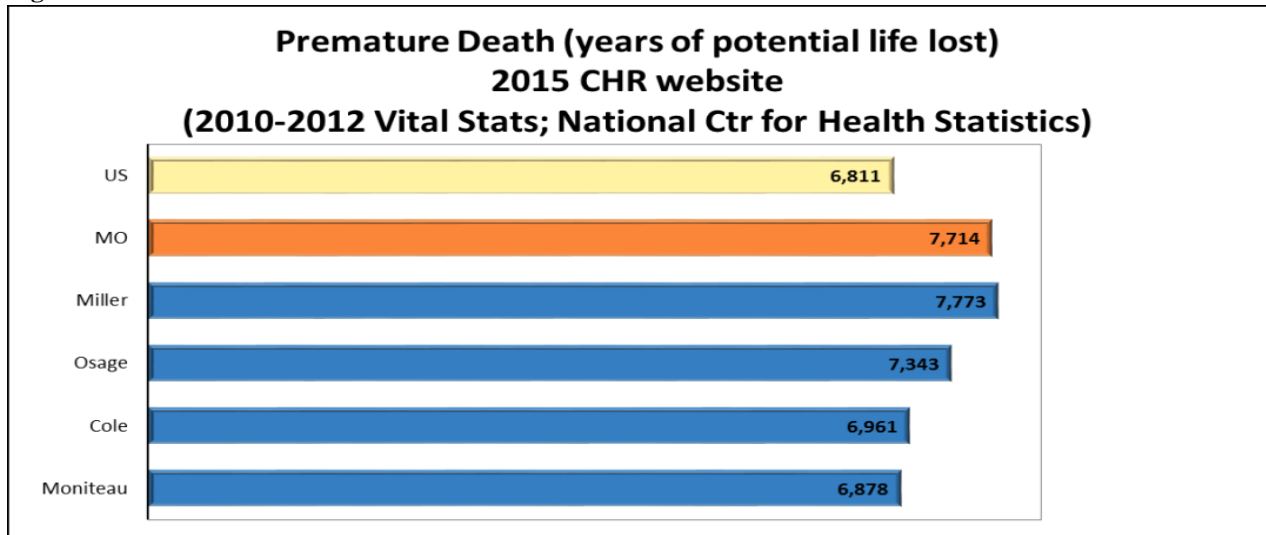
Figure 34. COUNTY HEALTH RANKINGS-QUALITY OF LIFE



Premature Death

Figure 35 shows the health outcome by measuring premature death. This data reveals the years of potential life lost before age 75, per 100,000 age adjusted population during periods 2010-2012. Based on this data, Miller County significantly exceeds all counties and the state of Missouri in premature deaths. The remaining counties report lower years of potential life lost, but they are significantly higher than US average.

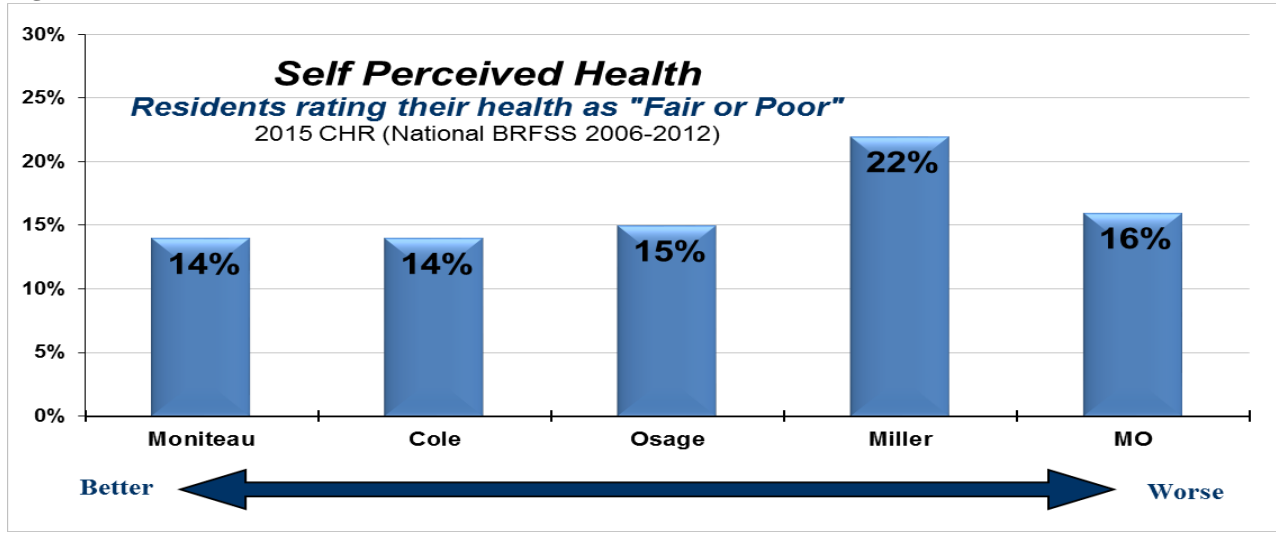
Figure 35. CHR 2015- PREMATURE DEATHS



Self-Perceived Health

The data shown in Figure 36 is an indicator of the percentage of adults reporting fair or poor health (age-adjusted) in four counties examined in this analysis. Miller County stated higher percentage of adults reporting fair or poor health. Counties of Moniteau, Cole and Osage reported percentages lower than Missouri's 16%.

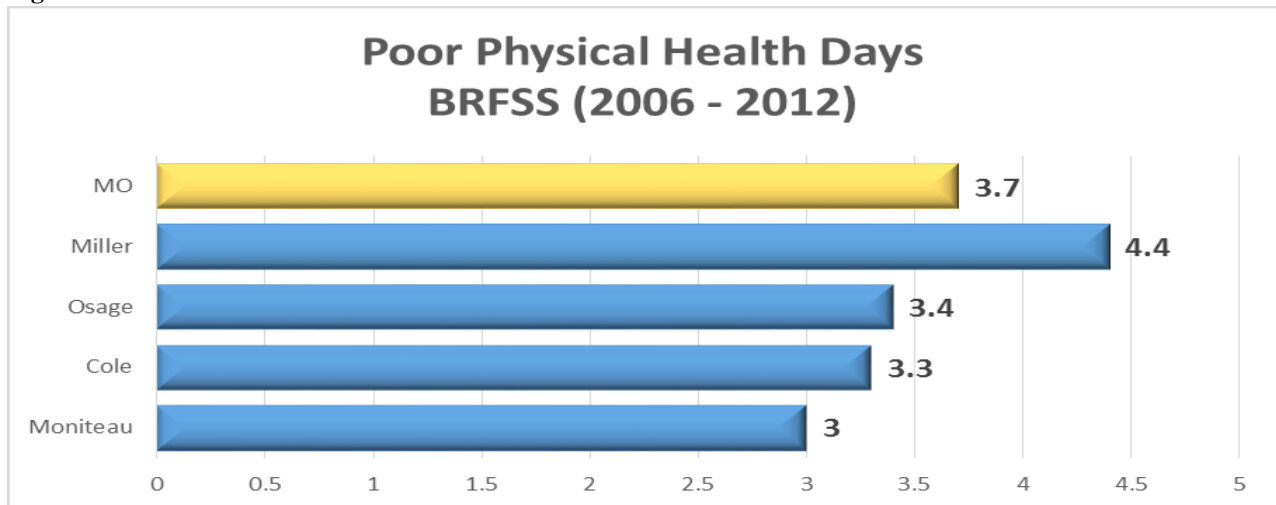
Figure 36. CHR 2015- SELF PERCEIVED HEALTH



Physical Health Days

Figure 37 shows number of poor physical health days of Mid-Missouri counties in contrast to Missouri State. Based on this figure, Miller County reports the highest number of poor physical health days in comparison to the other three counties and exceeds overall days reported in state of Missouri

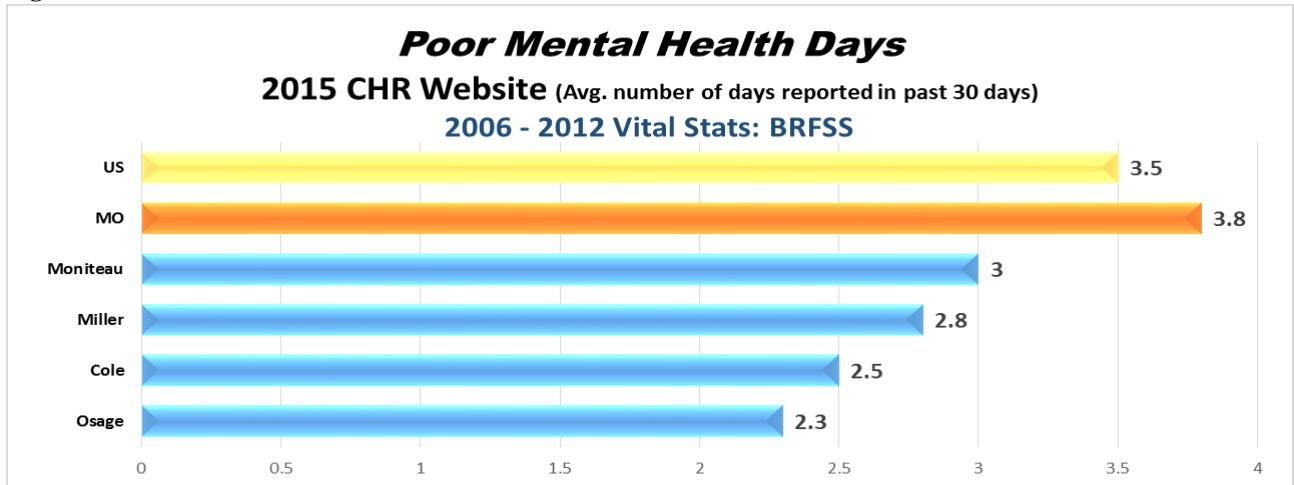
Figure 37. CHR 2015- POOR PHYSICAL HEALTH DAYS



Mental Health Days

Figure 38 below shows that all counties fall below the overall US reported poor mental health days and Missouri state reported days. Osage county is among the lowest counties that we studied in this survey, reporting well below the Missouri average for poor mental health days.

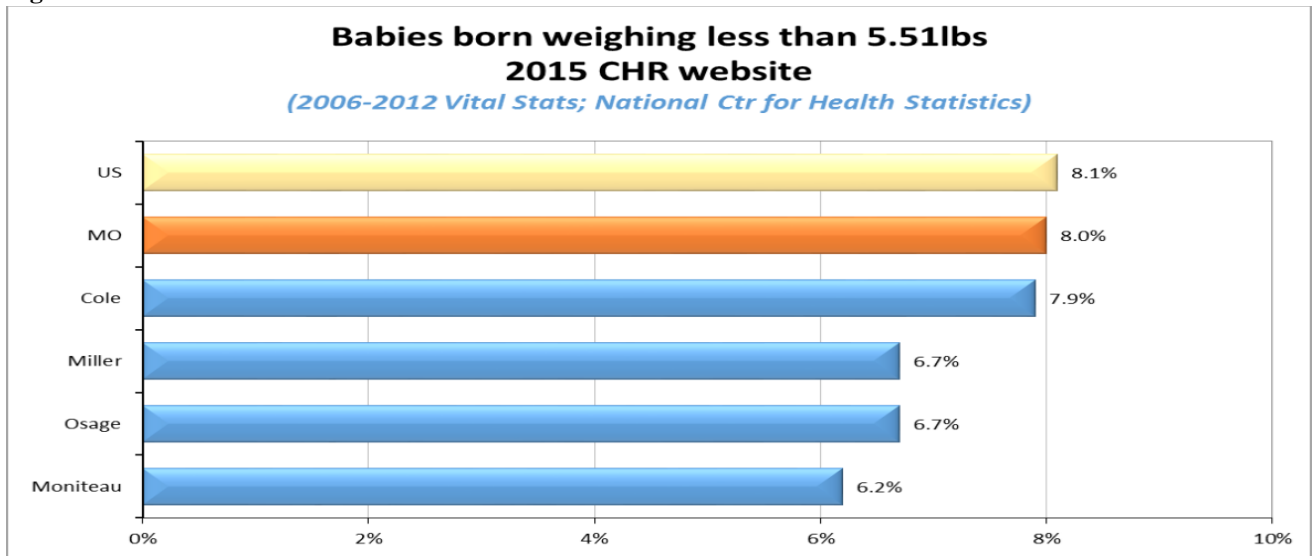
Figure 38. CHR 2015- POOR MENTAL HEALTH DAYS



Weight of Newborn Babies

The graph below shows that all four counties are below the state percentages for babies born weighing less than 5.51 lbs. What's more, counties of Miller, Osage and Moniteau are significantly below the Missouri and US percentages.

Figure 39. CHR 2015- BABIES UNDER 5.51 lbs



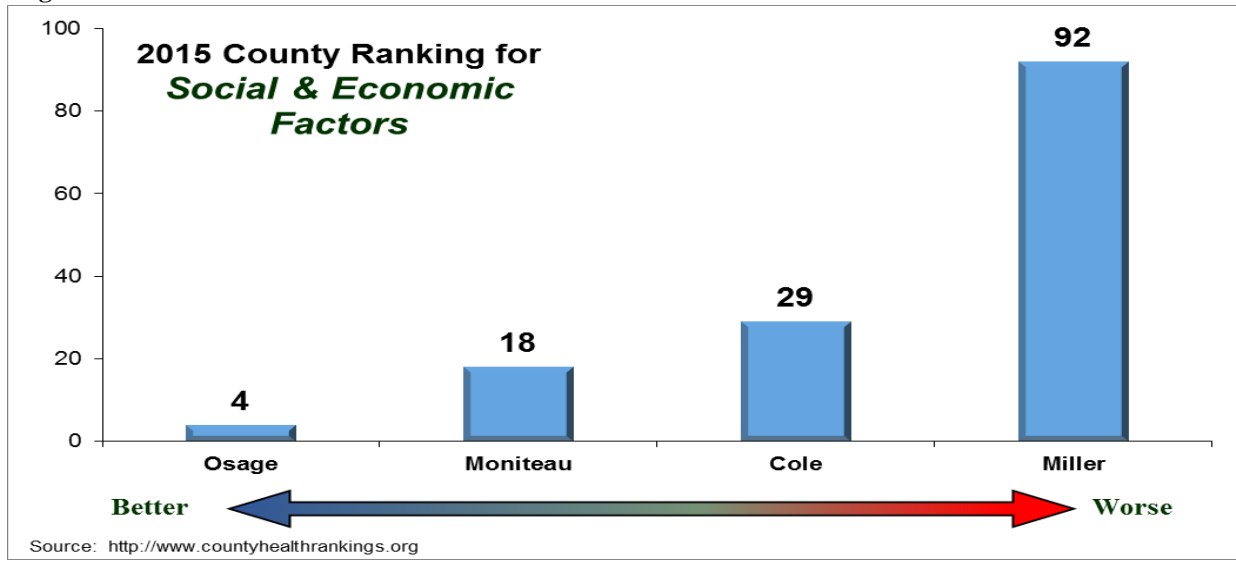
Health Factors

Social & Economic Factors

Social & Economic Factors

In 2015, the overall county rankings for social and economic factors show that the best performing counties among 115 Missouri counties are Osage, Moniteau and Cole and the least performing county is Miller with a ranking of 92.

Figure 40. COUNTY HEALTH RANKING-SOCIAL & ECONOMIC FACTORS



The following indicators signify the factors that were taken into account to determine the ranking of the counties.

EDUCATION

Figure 41 shows that all four counties rate higher than the state in high school graduations, and Osage County surpassed the state average by 7%. In regards to college education, Cole County is the only county that exceeded the state average by almost 1%, and all other counties averaged below the state of Missouri by an average of 14%.

Figure 41. COUNTY HEALTH RANKINGS-EDUCATION ATTAINMENT

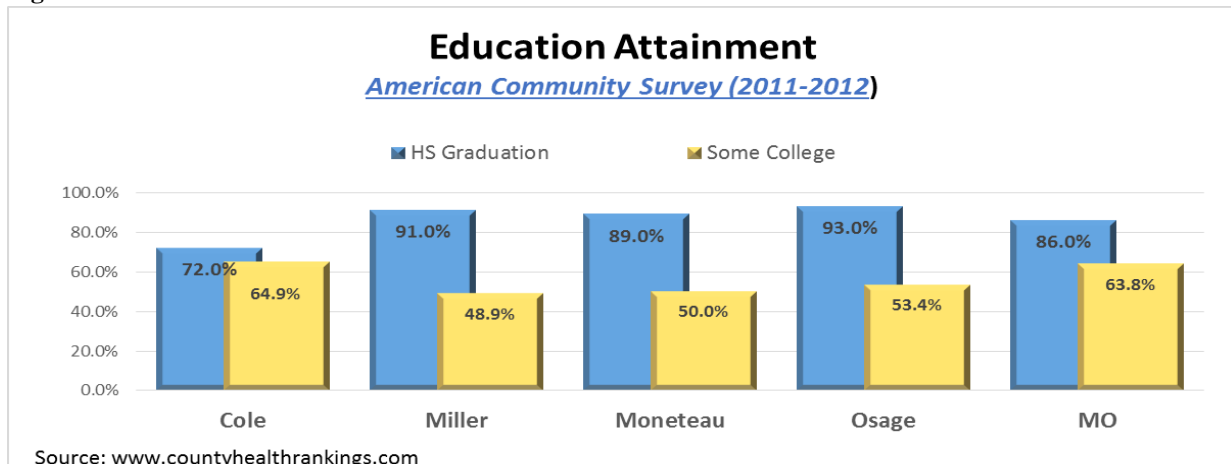


Figure 42-A shows the adult education level in 2014 for all four counties combined and were compared to the Missouri state average and US average on five measurements. Based on this data, all four counties exceeded the state and US average in high school graduation but underperformed in attaining some college education and earning a bachelor’s degree or higher.

Figure 42-A. EDUCATION LEVEL BY REGION, STATE, U.S.

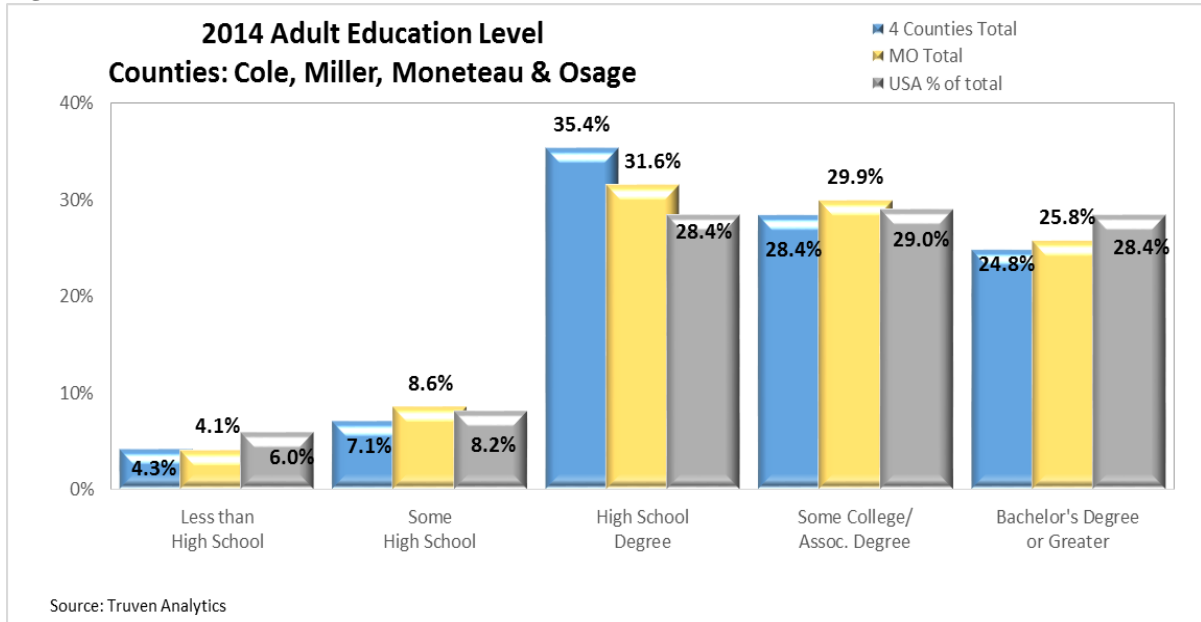
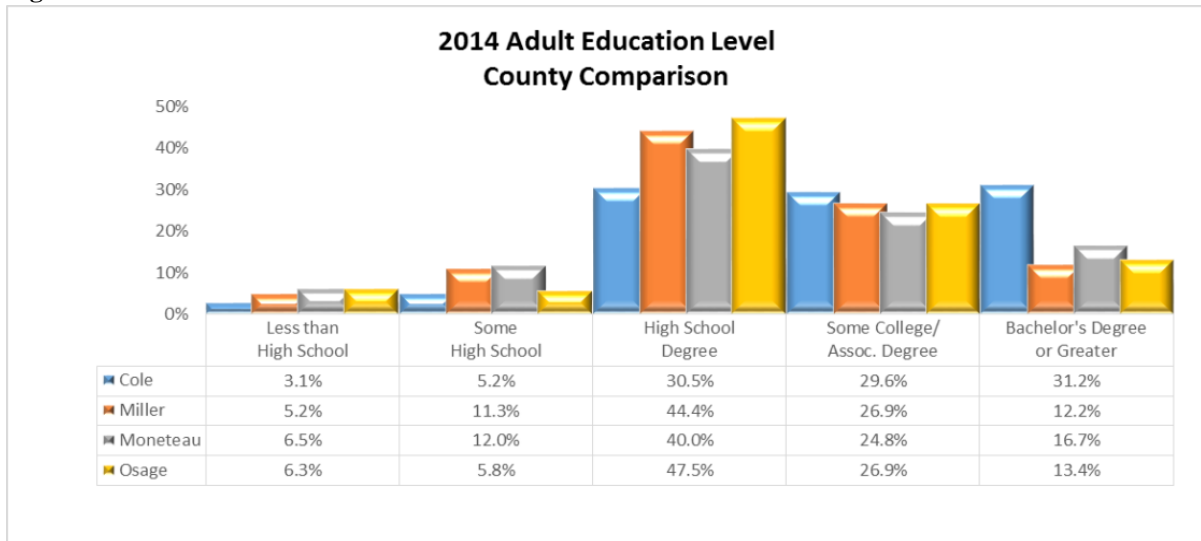


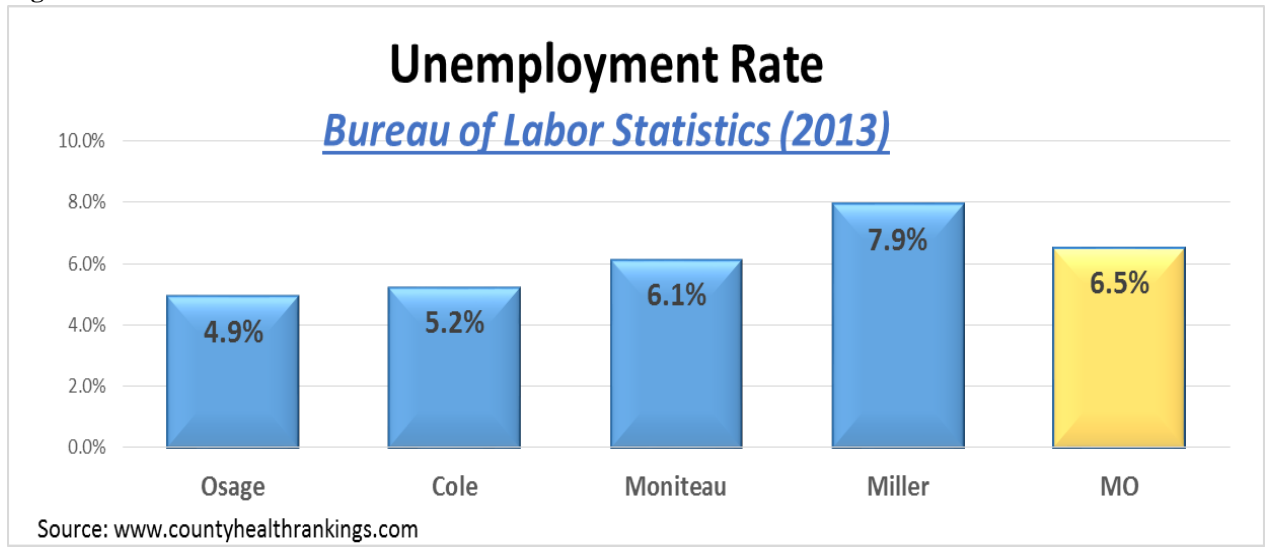
Figure 42-B. EDUCATION LEVEL BY COUNTY



The graph above, Figure 42-B, compares the four counties in adult education attainment in 2014 and shows that all counties are at par with one another with only slight variations among them. The largest difference is completion of Bachelor’s Degree or higher where Cole County exceeds the other three counties by nearly 14%.

UNEMPLOYMENT RATE

Figure 43. UNEMPLOYMENT RATE

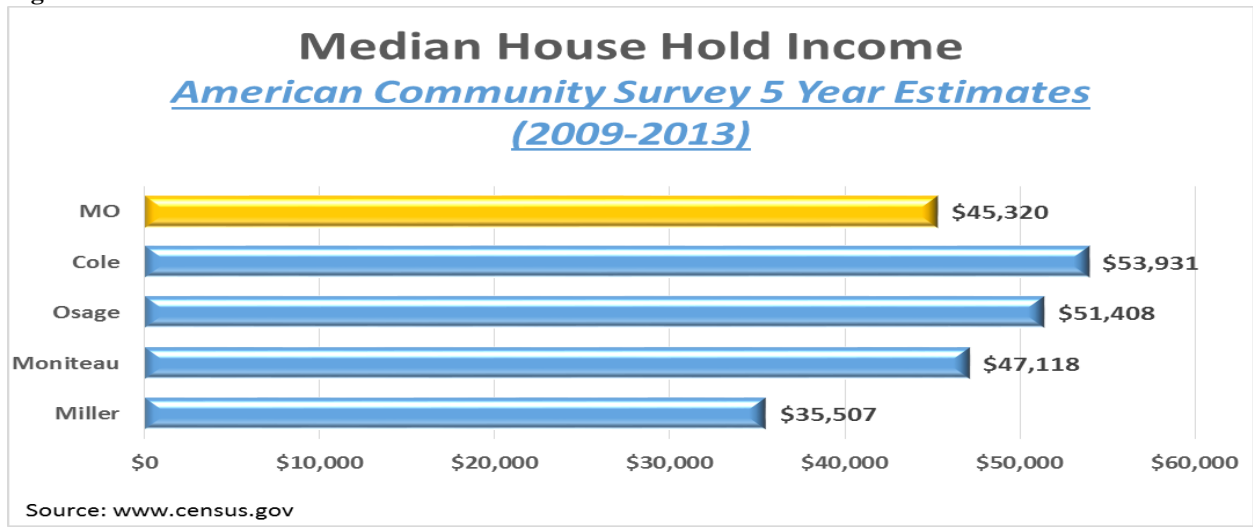


The unemployment rate, as compared to state of Missouri, is lower in all counties except Miller, where the unemployment rate is about 1.4% higher than the state.

HOUSEHOLD INCOME

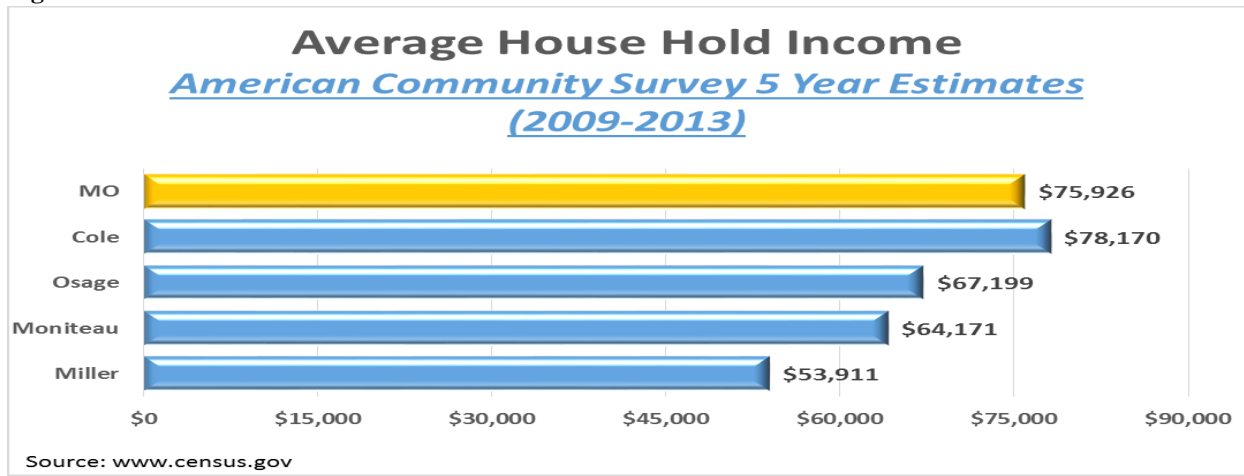
The median household income during period 2009 – 2013 shows that Miller County is significantly below the state median by about \$9,313, while the other three counties exceed the median household income as compared to the state.

Figure 44. MEDIAN HOUSEHOLD INCOME



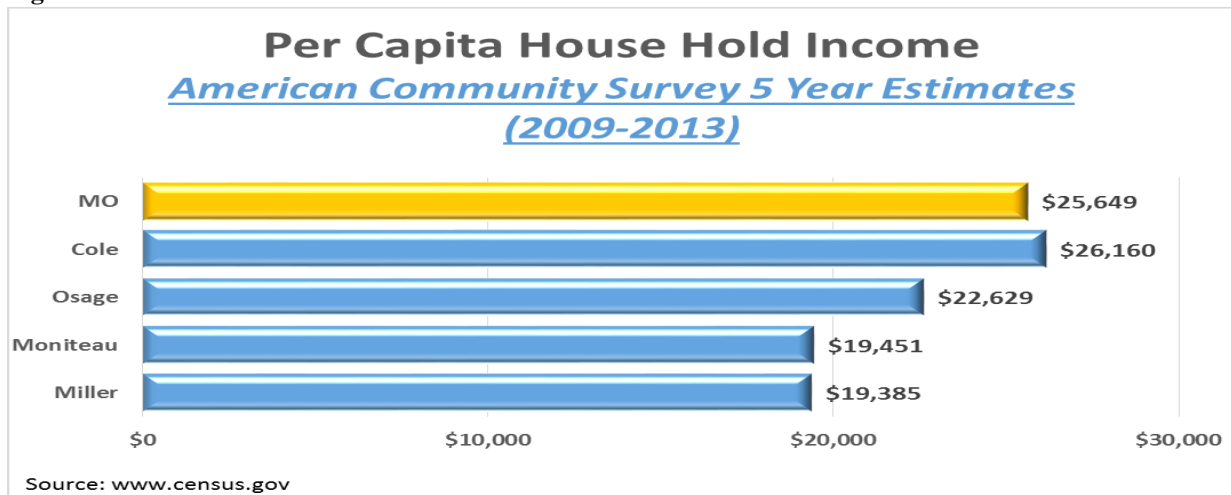
The next graph, Figure 45, shows the average household income for the counties and compares it with the average household income of the state. Based on these findings, Miller County's average household income is considerably below the state average by \$22,015. The only county that exceeds the state average is Cole County by about \$2,244.

Figure 45. AVERAGE HOUSE HOLD INCOME



The per capita household income in all counties except Cole is below the state level. The counties with the lowest per capita income are Moniteau and Miller County with about \$6,200 below the state level.

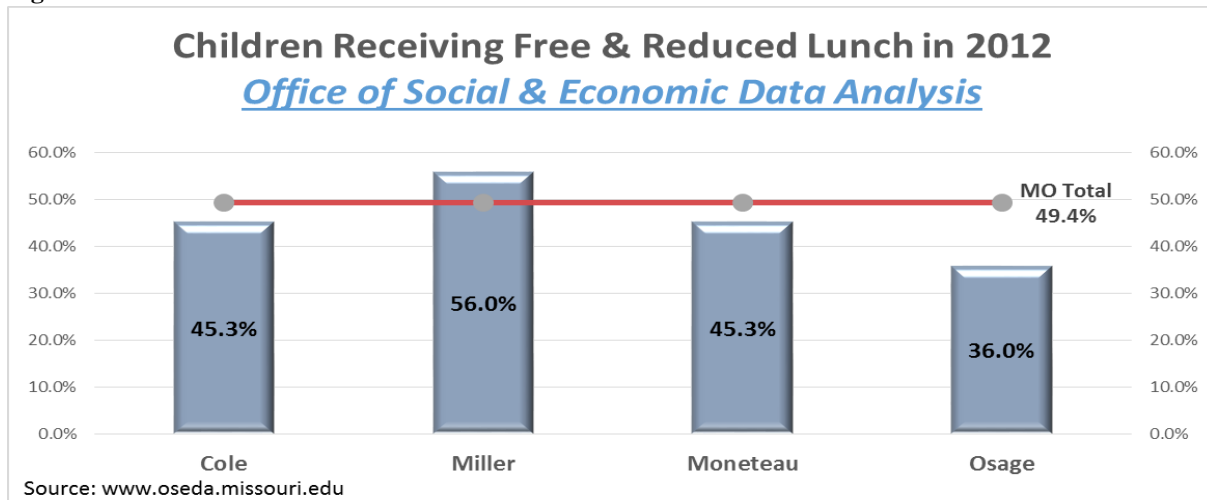
Figure 46. PER CAPITA HOUSE HOLD INCOME



FOOD

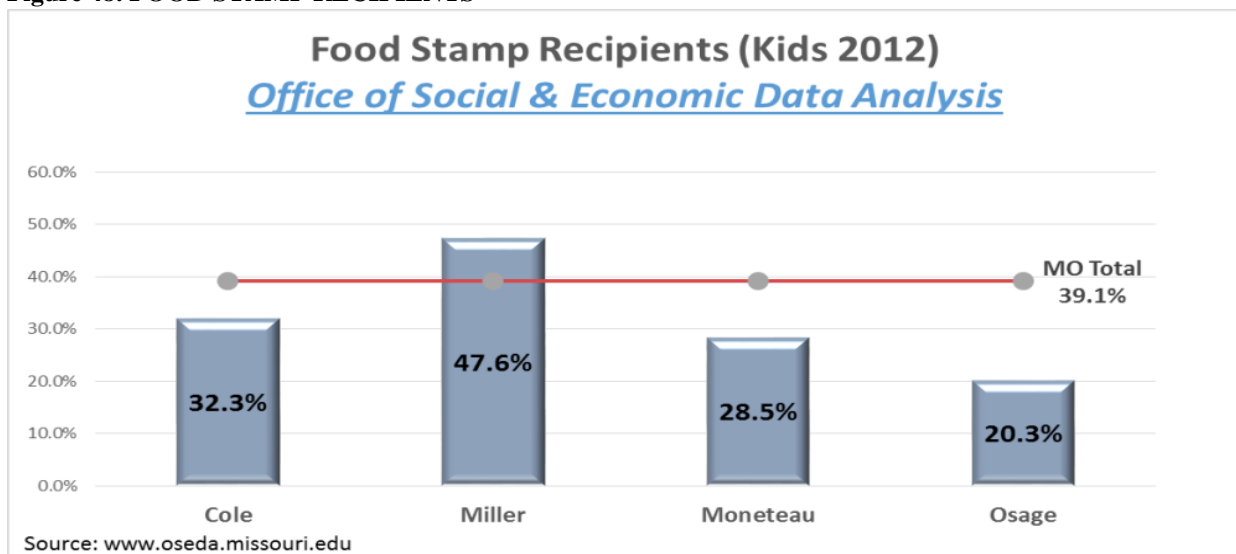
Figure 47 shows that Miller County surpasses the state's Figures for children receiving free and reduced lunch in 2012, and Osage County has the lowest amount of children receiving free and reduced lunch as compared to other three counties.

Figure 47. FREE & REDUCED LUNCH 2012



Among food stamp recipients, Miller County tops the other surveyed counties in our analysis and also exceeds the state total of 39.1%.

Figure 48. FOOD STAMP RECIPIENTS



POVERTY

Based on our next findings of percentage of children living in poverty, we find that Miller County exceeds the state totals and surpasses its peer counties. Cole County has the lowest percentage of children in poverty by nearly 11% below the state total.

Figure 49. CHILDREN IN POVERTY

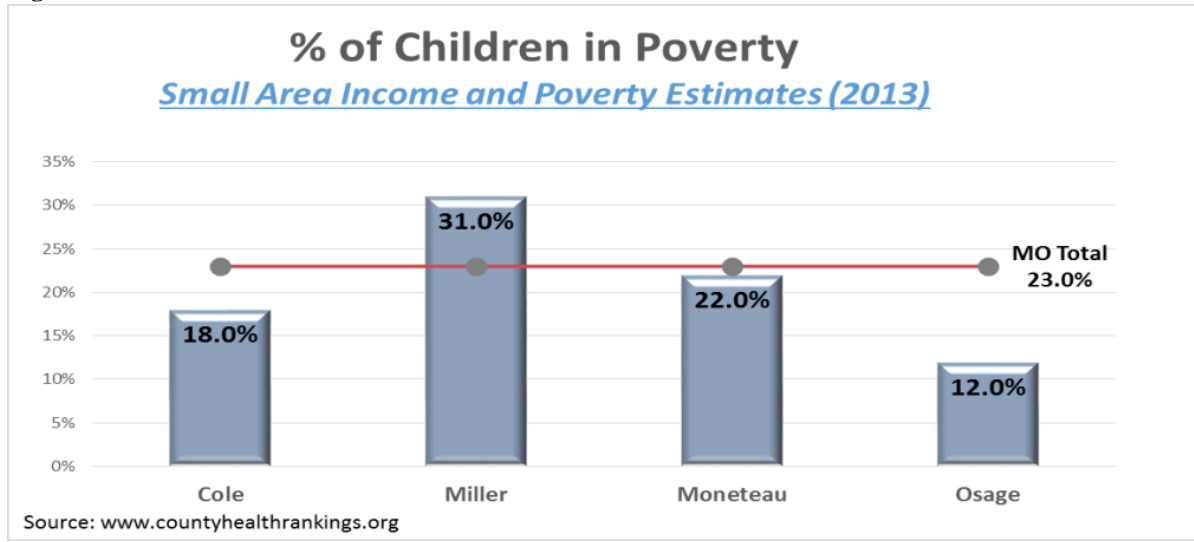
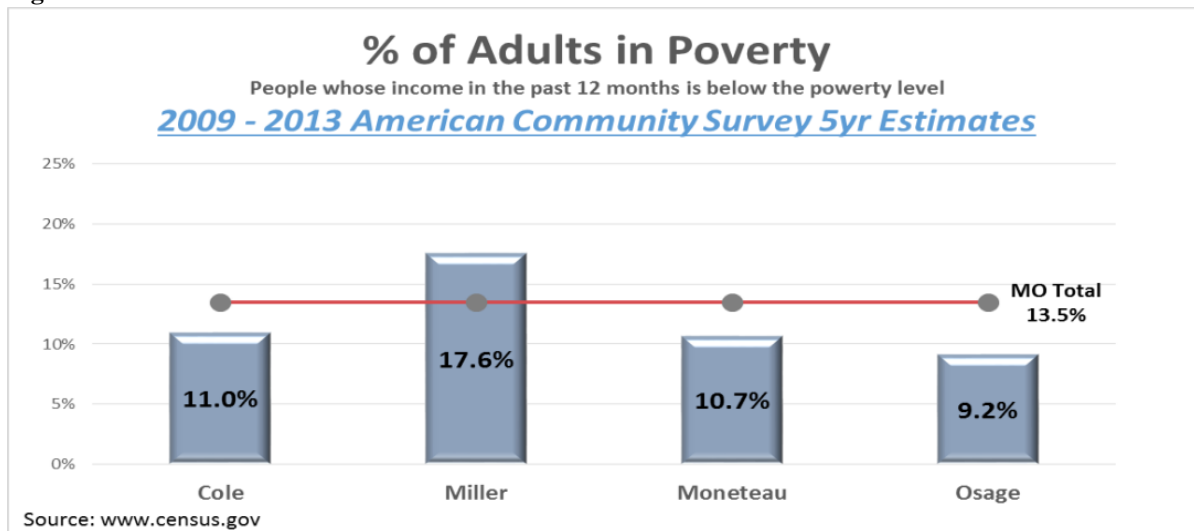


Figure 50 shows that all surveyed counties except Miller has a higher percentage of adults in poverty than the Missouri total of 13.5%. Osage county has the lowest percentage of adults in poverty than its peer counties.

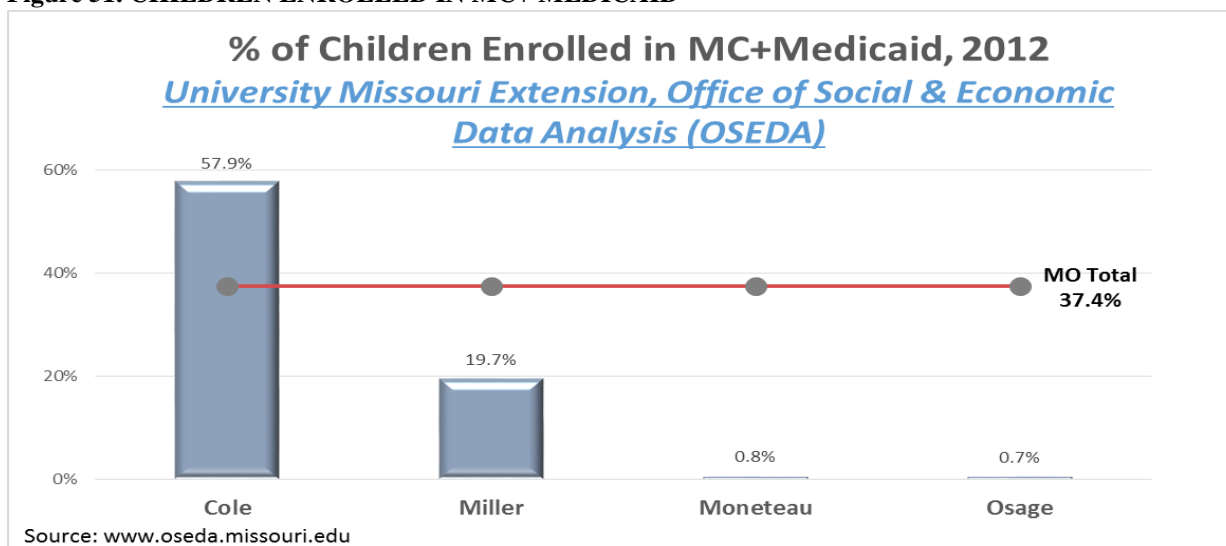
Figure 50. ADULTS IN POVERTY



CHILDREN ENROLLED IN MC+MEDICAID

Next, we show that Cole County exceeds its peer counties and the Missouri total of 37.4% among children enrolled in Medicare plus Medicaid in 2012. Osage County has the lowest number of children enrolled.

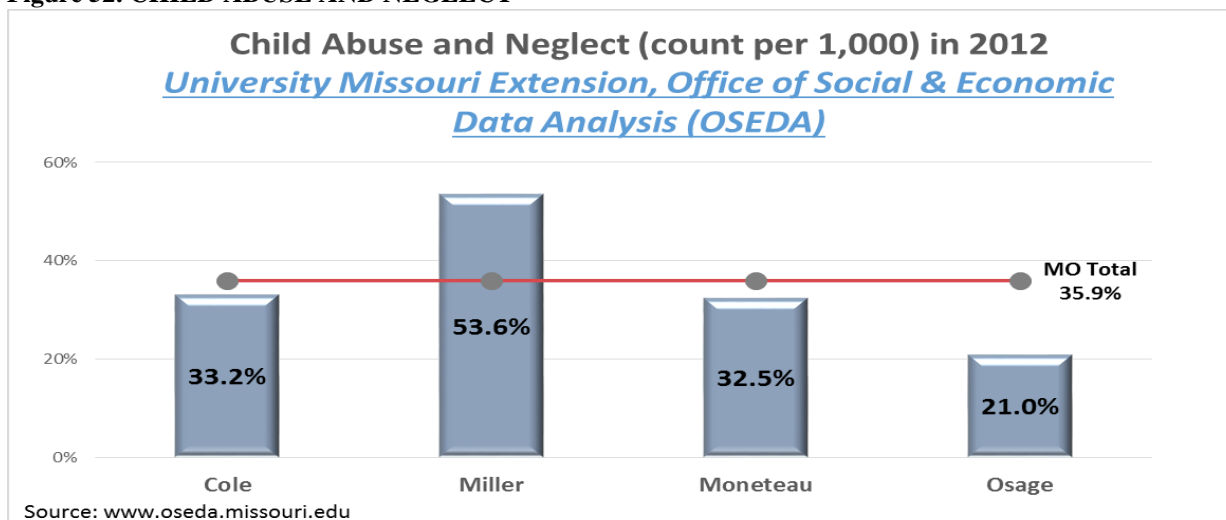
Figure 51. CHILDREN ENROLLED IN MC+ MEDICAID



CHILD ABUSE AND NEGLECT

The graph below illustrates data on child abuse and neglect per 1,000 population and shows that in 2012 Miller County had the highest percentage of child abuse and neglected children among its peer counties and state total. The other three counties totaled below the state level, and Osage County had the lowest levels of cases reported.

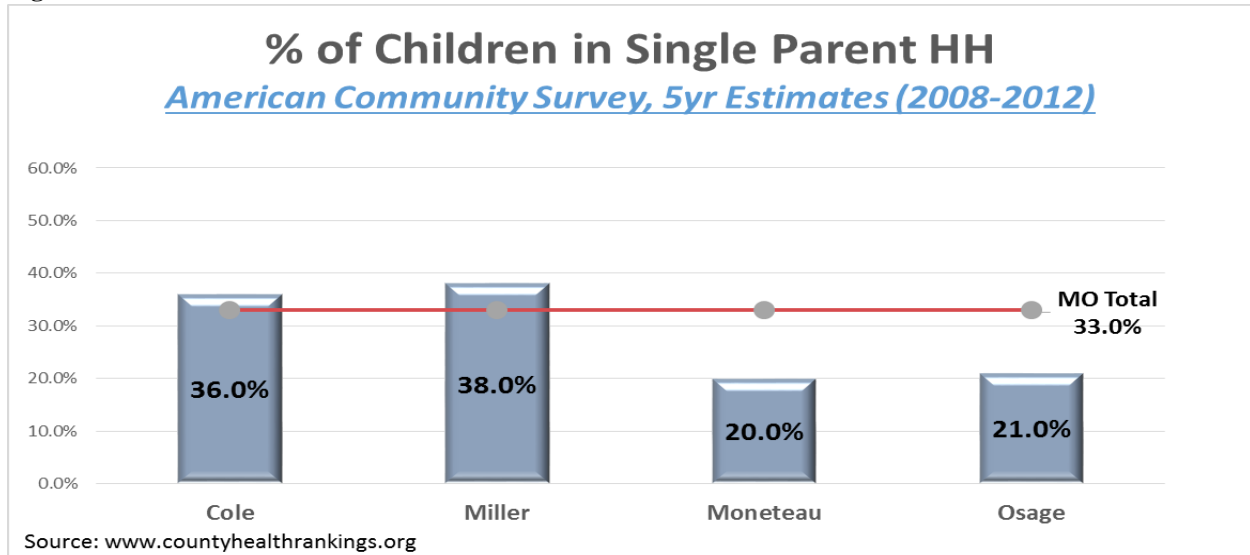
Figure 52. CHILD ABUSE AND NEGLECT



SINGLE PARENT HOUSEHOLD

Based on data spanning from 2008 – 2012, the percentage of children living in a single parent household is higher in Miller County, exceeding the state total by 5%. The counties with the lowest percentages are Moniteau and Osage.

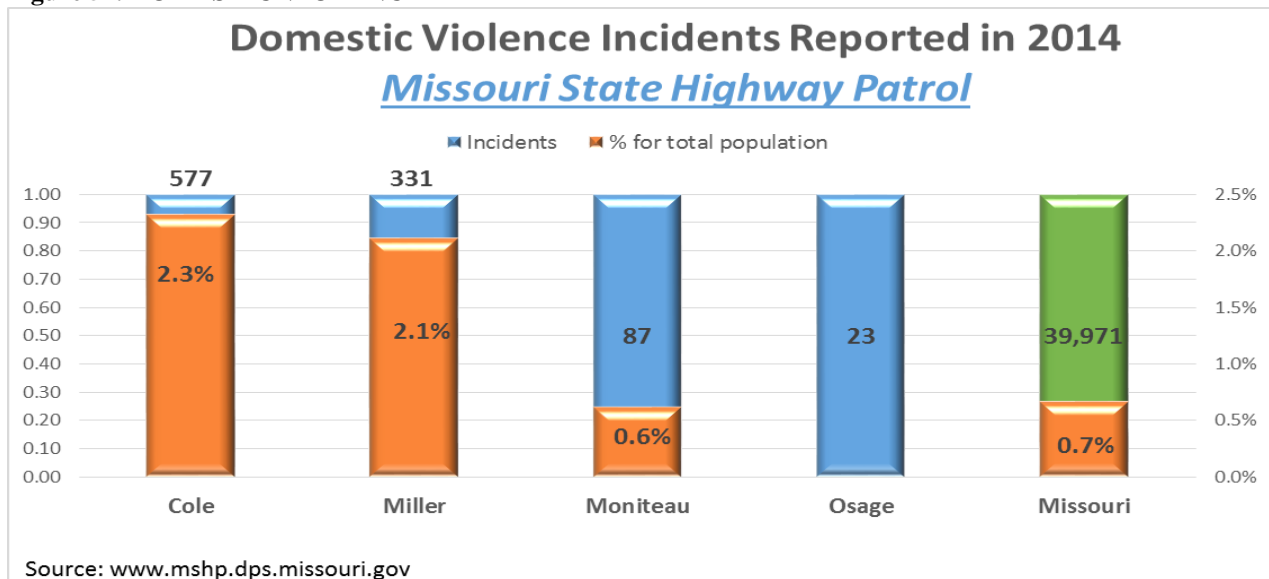
Figure 53. SINGLE PARENT HOUSEHOLD



VIOLENCE

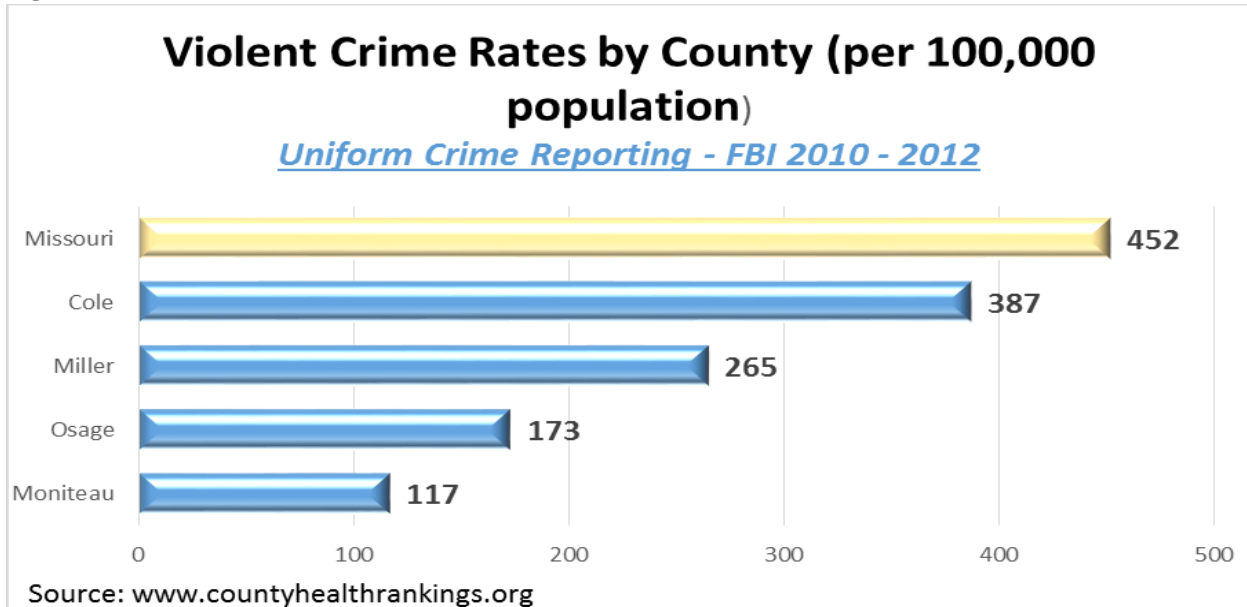
In 2014, the total domestic violence cases reported by the Missouri State Highway Patrol show that Cole County had the highest incidents reported among the peer counties, indicating a 2.3% of the total population. Counties of Osage and Moniteau had the lowest incidents reported among the Missouri total.

Figure 54. DOMESTIC VIOLENCE



Violent crime rates by county show that all counties reported lower rates per 100,000 population than the state rate, and Moniteau County shows the lowest among peer counties.

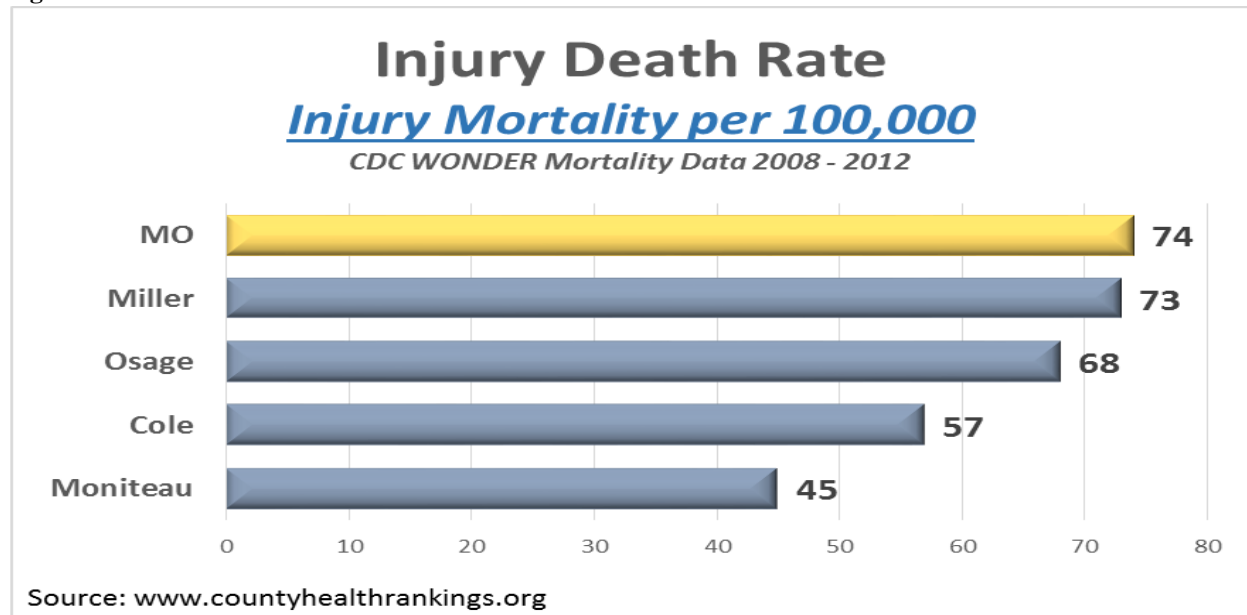
Figure 55. COUNTY HEALTH RANKING- VIOLENT CRIME RATES



INJURY DEATH RATE

Injury death rate data show that Miller County is slightly below the state rate of 74 but exceeding its peer counties, while Moniteau has the lowest death rates among the counties.

Figure 56. COUNTY HEALTH RANKINGS-INJURY DEATH RATE



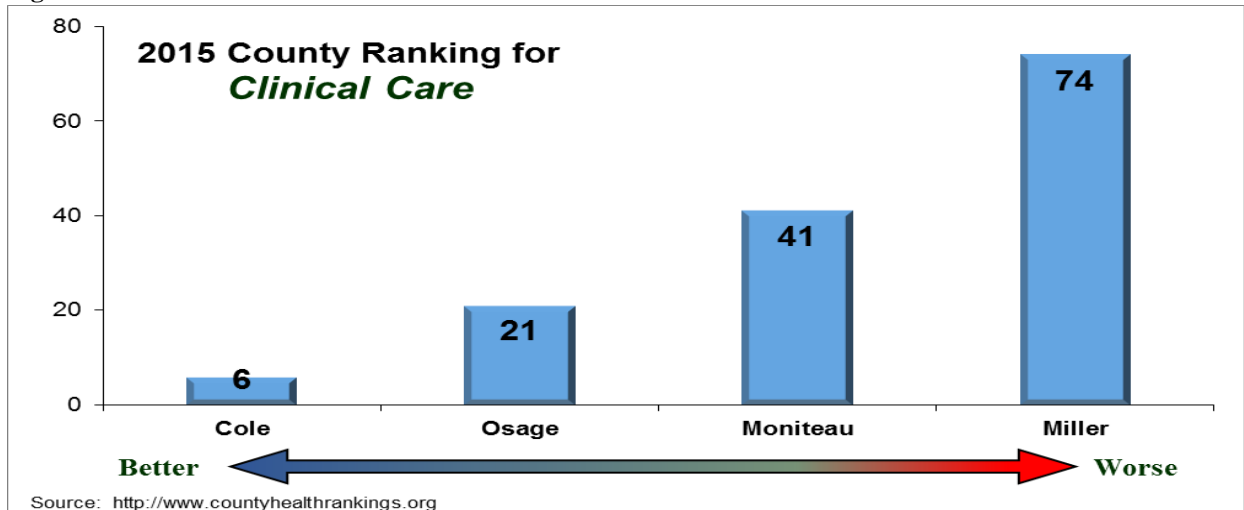
Health Factors

Clinical Care

Health Factors – Clinical Care

The overall county rankings for clinical care out of 115 Missouri counties show that Cole County is among the top performing counties in Missouri. At the same time, Miller County is ranked among the lower performing counties in Missouri as reflected in Figure 57.

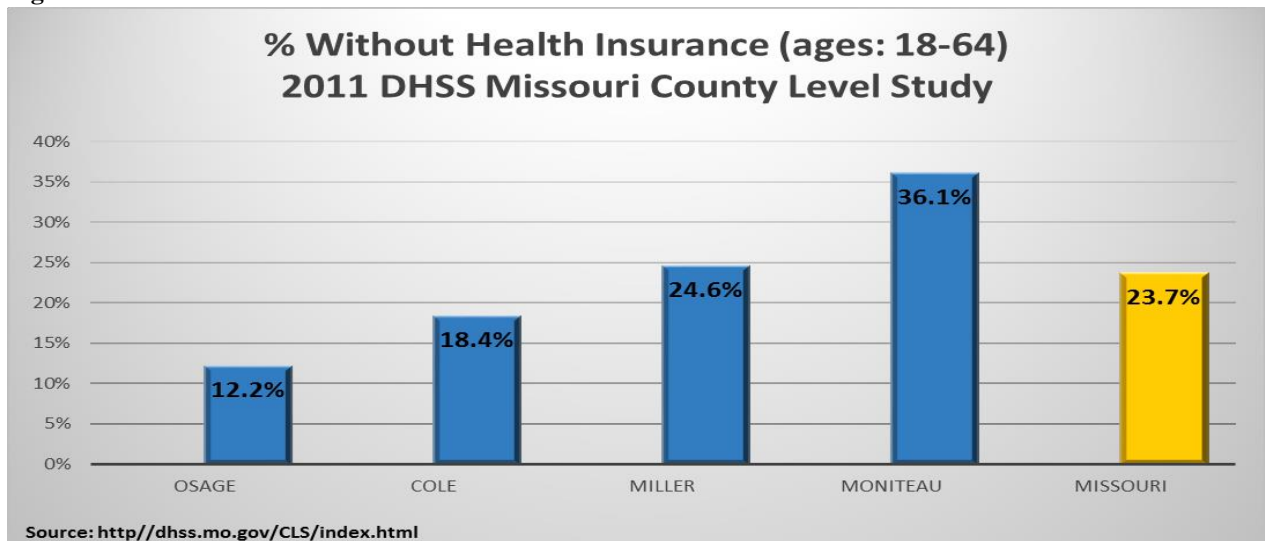
Figure 57. COUNTY HEALTH RANKING-CLINICAL CARE



UNINSURED POPULATION

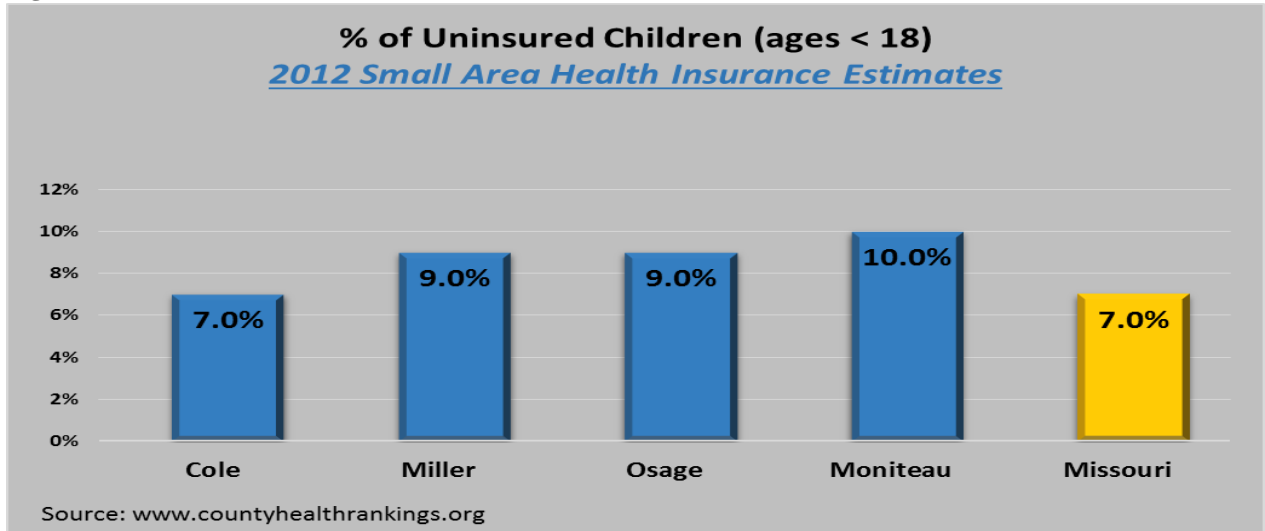
The next two charts breaks down the uninsured population between adults and children. Figure 58 shows the percentage of adults between ages 18-64 without health insurance. This analysis shows that Moniteau County has the largest uninsured adult population among the four Mid-Missouri counties analyzed and also exceeds the state total by 12.4%. Miller County also exceeds the state total slightly by a margin of about 1%. Osage County has the lowest uninsured adult population in the four counties surveyed even outperforming the state total.

Figure 58. COUNTY HEALTH RANKING-UNINSURED ADULT



The graph below illustrates the percentage of uninsured children and shows that counties of Miller, Moniteau and Osage have a higher percentage of children without health insurance as compared to the state.

Figure 59, COUNTY HEALTH RANKING-UNINSURED CHILD



PROVIDER RATIO

The chart below provides information on ratio of providers to population and compares it with the Missouri state ratio. As shown, the ratio of primary care physicians to population in the four counties studied, Cole County is the only county that has a higher number of physicians to population, even outperforming the state ratio. The county that has the lowest number of providers is Osage where the ratio of providers to population is 13,858:1. Similarly, the ratio of mental health providers show that Cole County is nearly equal to the state ratio, and Osage is far below the state ratio of mental health providers to population. Likewise, the ratio of number of dentists to population show that Cole County is doing significantly better than all counties and is even outperforming the Missouri state ratio. Comparably, counties of Miller, Moniteau and Osage have a similar ratio of dentists and is greatly underperforming to Cole county and the state of Missouri.

Figure 60. COUNTY HEALTH RANKINGS- PROVIDER RATIO

Area Health Resource File/American Medical Association (2012)	Cole	Miller	Moniteau	Osage	MO
Primary Care Physician Ratio	1193:1	4963:1	3125:1	13858:1	1439:1
Mental Health Provider Ratio	639:1	8364:1	3937:1	13688:1	632:1
Dentists Ratio	1871:1	4182:1	3937:1	4563:1	1920:1

Source: www.countyhealthrankings.com

HEALTHCARE COSTS

In terms of healthcare costs, all four counties show a lower cost of care than the state average with Miller and Moniteau having the lowest cost of care in Central Missouri.

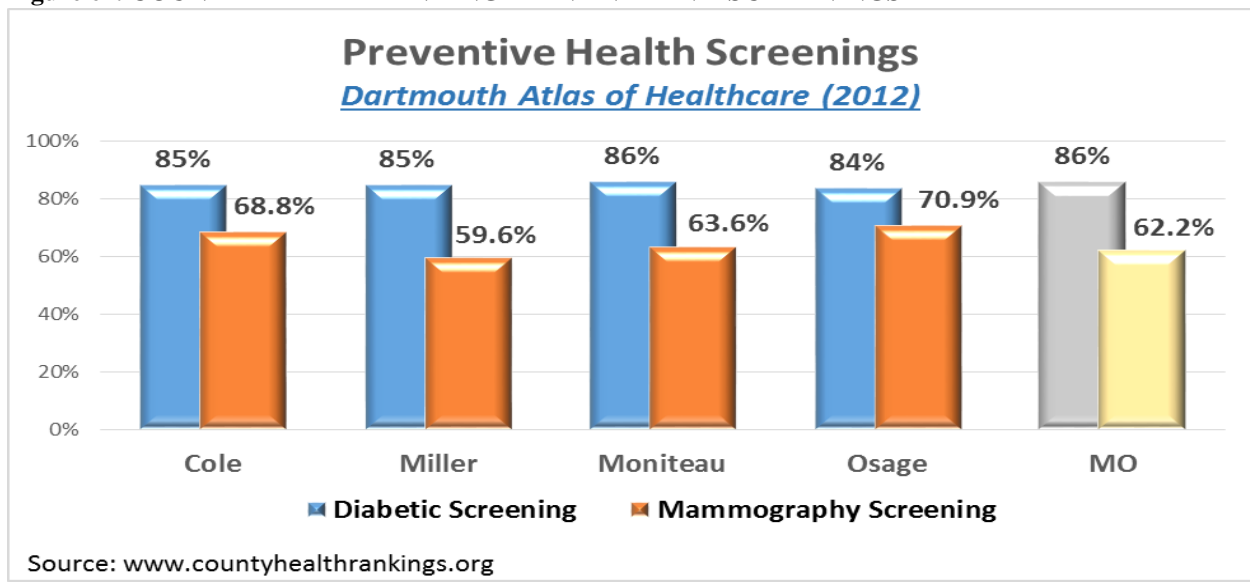
Figure 61. HEALTHCARE COSTS



PREVENTATIVE SCREENINGS

Figure 62 illustrates the percentage of population getting preventative health screenings in 2012. Based on this illustration, it shows that nearly all four counties are at par with the state percentage of 86% for diabetic screening but only Miller County is surpassing the state and other counties for percentage of women receiving mammography screenings. The two counties that are greatly underperforming in this area are counties of Cole and Osage.

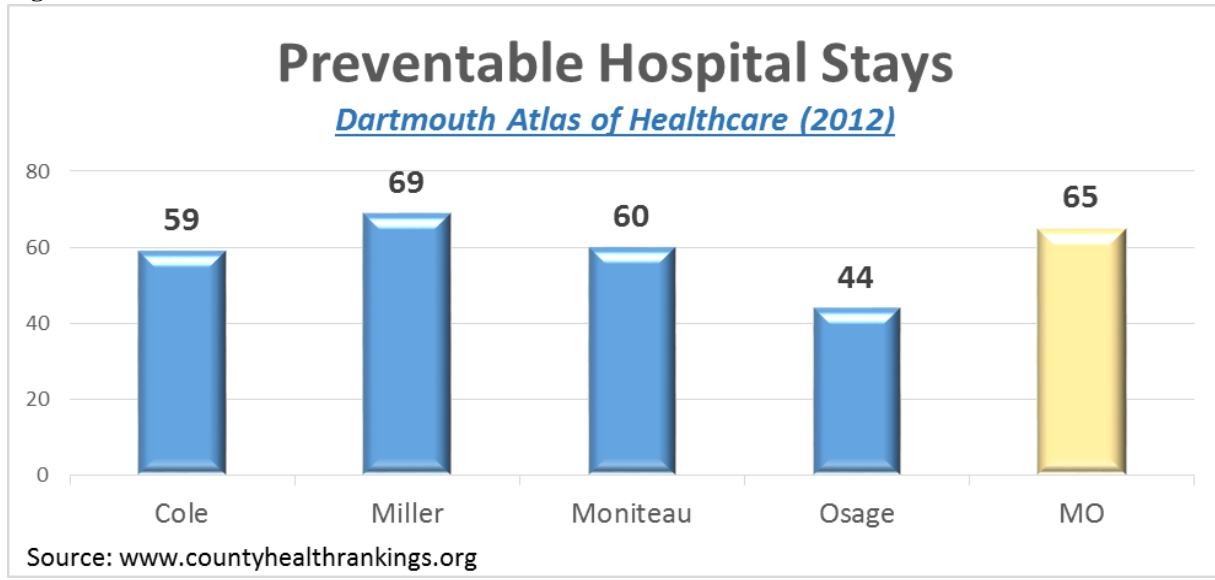
Figure 62. COUNTY HEALTH RANKING-PREVENTATIVE SCREENINGS



PREVENTABLE HOSPITAL STAYS

Figure 63 shows that, with the exception of Miller County, all other counties are outstripping the state average, and Osage county is among the best county in the study group that has the lowest preventable hospital stays.

Figure 63. COUNTY HEALTH RANKING-PREVENTATIVE HOSPITAL STAYS



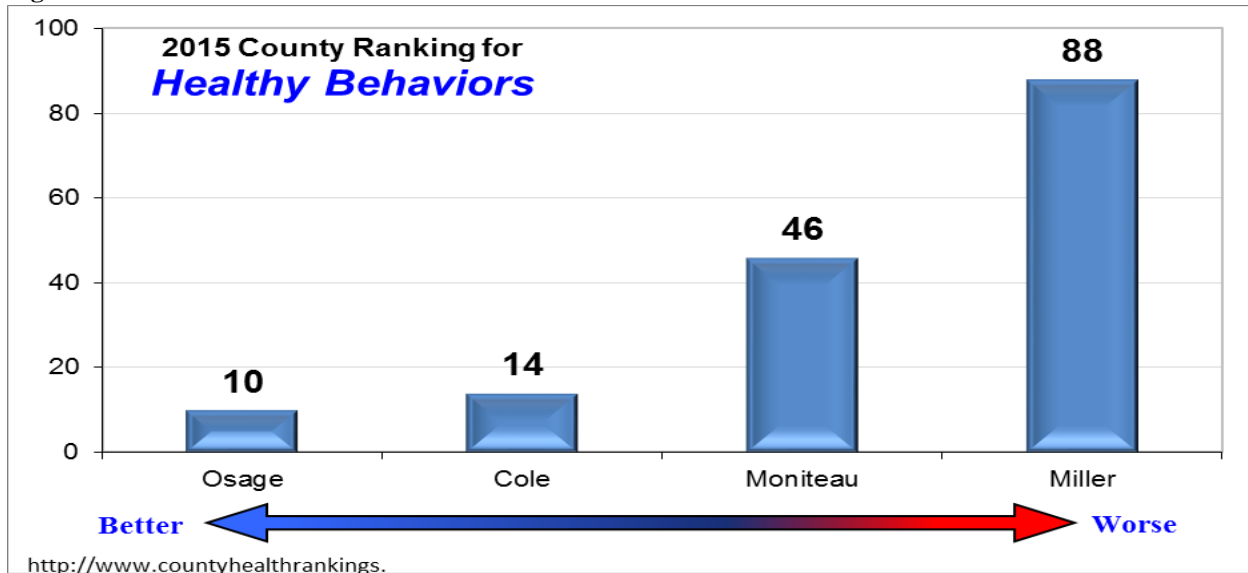
Health Factors

Healthy Behaviors

Health Factors – Healthy Behaviors

Healthy behaviors signify the actions of the population to maintain good health. As shown below, Miller County is drastically failing in pushing healthy behaviors. Osage and Cole counties, on the other hand, are excelling in promoting healthy behaviors in their counties. *It should be noted that rates for smoking and alcohol use were not reported for Moniteau County so their Healthy Behaviors is not accurate.*

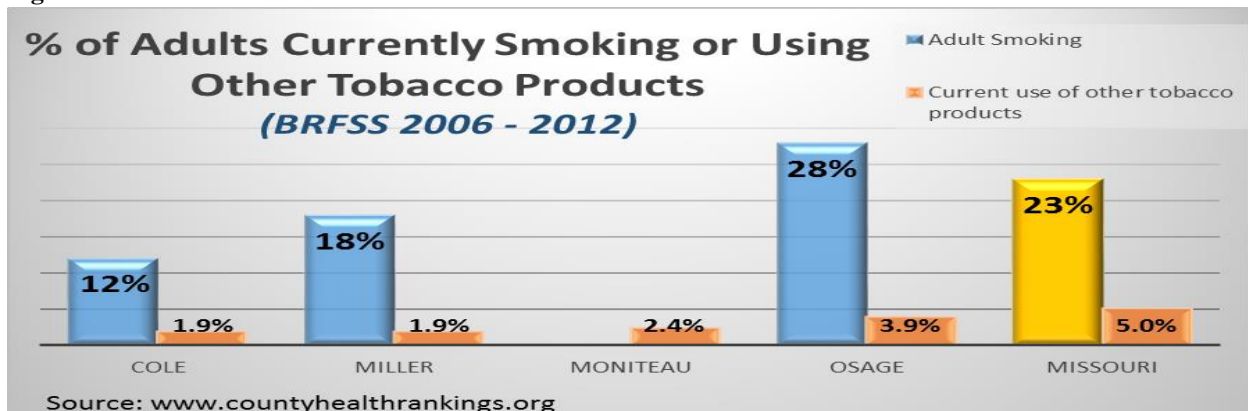
Figure 64. COUNTY HEALTH RANKING-HEALTHY BEHAVIORS



TOBACCO USE

Figure 65 demonstrates the percentage of adults currently smoking or using other forms of tobacco products in four Mid-Missouri counties studied. As presented, Osage County exceeds the state average and among the counties surveyed in this analysis. Cole County is indicating a population with the lowest percentage of adults currently smoking. Not enough data was available at the time of the study to show the percentage of adult smokers in Moniteau County. Use of other tobacco products reveals that all counties studied are below the state average of 5%.

Figure 65. COUNTY HEALTH RANKING-TOBACCO



The next chart reveals the percentage of population's knowledge about the harmful effects on health caused by cigarette smoking. As shown, more awareness is required in educating the population about risk to colon cancer in all four counties.

Figure 66. DHSS-TOBACCO USE, ADULT

2011 DHSS Missouri County Level Study - Tobacco Use for MO Adults

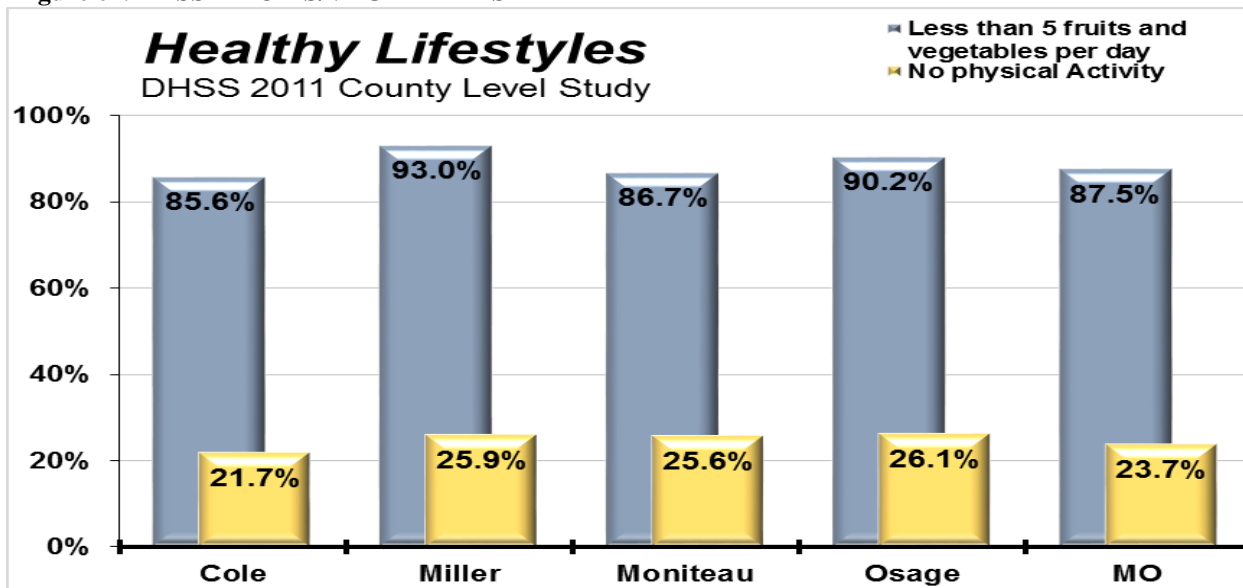
<i>Weighted %</i>	Cole	Miller	Moniteau	Osage	Missouri
Believe smoking cigarettes causes:					
Heart attack	76.8%	79.3%	77.8%	78.3%	77.9%
Colon cancer	21.8%	34.8%	36.7%	36.6%	37.2%
Stroke	75.1%	72.2%	71.0%	75.8%	73.9%
Low -birth weight	86.5%	87.7%	83.6%	85.9%	86.6%
Impotence	60.3%	62.4%	51.0%	54.1%	52.3%

<http://www.dhss.mo.gov>

HEALTHY LIFESTYLE

In this survey conducted by the Department of Health and Social Services in 2011, it shows that Miller and Osage counties are consuming less than five servings of fruits and vegetable a day in contrast to Missouri, while counties of Cole and Moniteau are doing slightly better than the state. In regards to physical activity, the only county that is doing better than the state and other counties in this analysis is Cole County. All other comparative counties are performing below the state level.

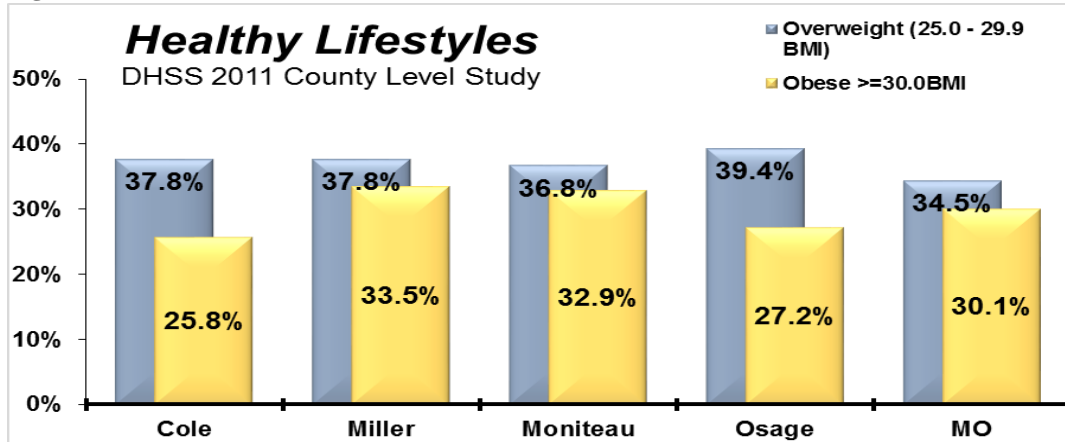
Figure 67. DHSS- FRUITS/VEGETABLES



OVERWEIGHT

The graph below reveals that all four counties have a larger number of populations that are overweight as compared to the state total. Conversely, only two counties have more obese population (Miller & Moniteau) than the state. Our study shows that Cole County has about 5.7% less obese population than the state.

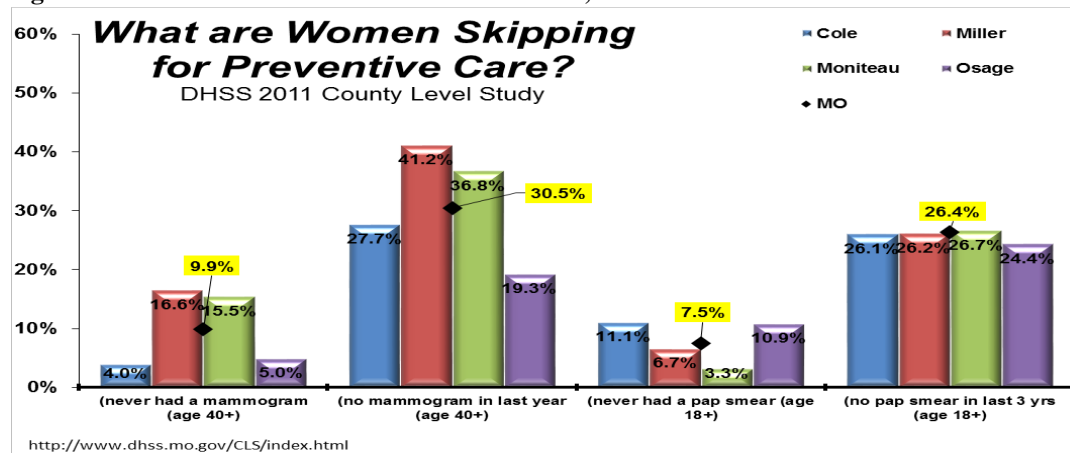
Figure 68. DHSS-OVERWEIGHT & OBESES



PREVENTATIVE SCREENING

In a survey conducted by the Department of Health and Senior Services in 2011, it shows that Miller county had more women aged 40+ that never had a mammogram than the Missouri total of 9.9% and far below that of other comparative counties in this study. Likewise, more women reported not having a mammogram during the past year resided in Miller and Moniteau counties, exceeding the state percentages by 10.7% and 6.3% respectively. Alternatively, more women ages 18+ in counties of Cole and Osage reported never having pap smear than the state, while Moniteau reported the lowest percentages among the comparative counties and nearly half than the state totals. In regards to not having pap smear in the last three years, data shows that all four counties are at par with the state with Osage County performing slightly better than the state and rest of the counties.

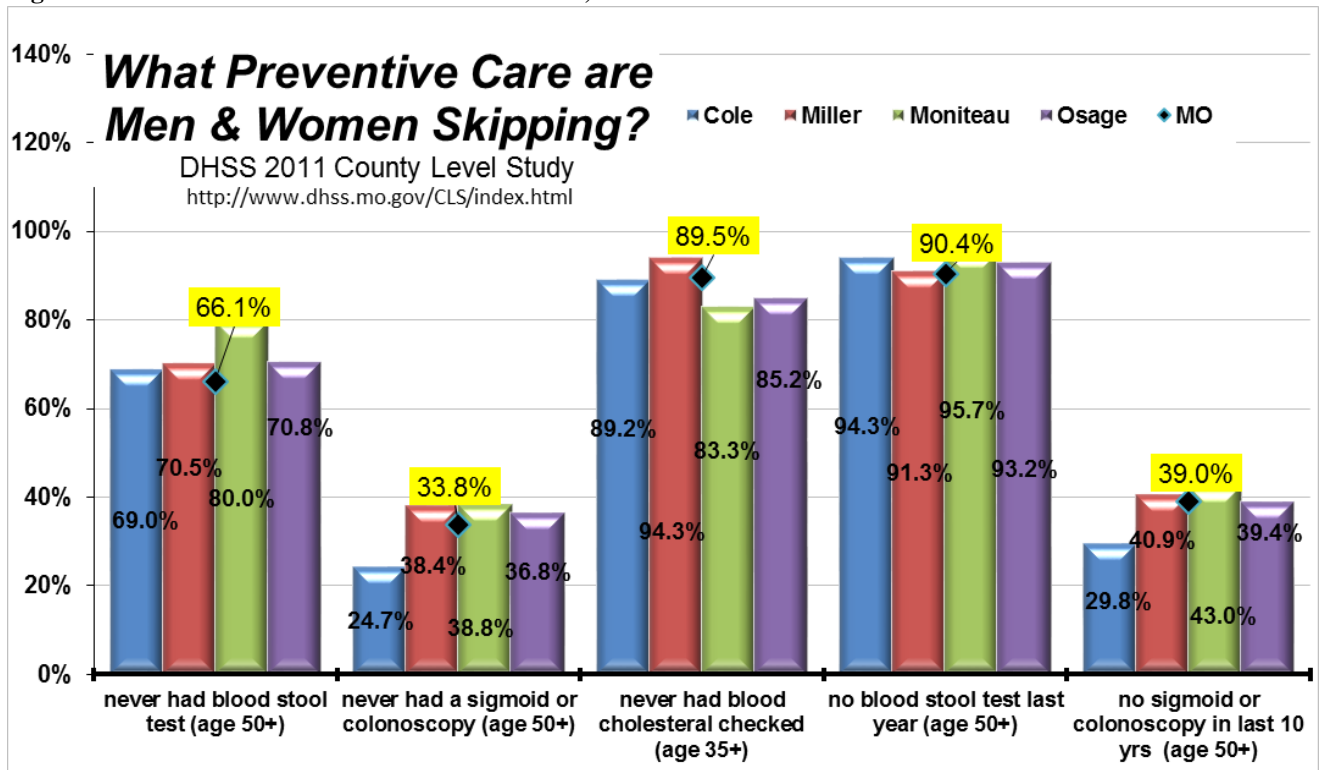
Figure 69. DHSS-PREVENTATIVE SCREENING, WOMEN



The next analysis will show what types of preventive care both men and women are skipping based on the same county level study conducted by the Department of Health and Senior Services in 2011. This analysis shows that more men and women ages 50+ reported never having blood stool test in all four counties and Moniteau County as having the largest population among the peer counties. Similarly, data shows that all except Cole County reported higher percentage of population never had a sigmoid or colonoscopy than the state totals. Conversely, all counties except Miller shows a larger population that never had blood cholesterol checked for populations 35+. In another study, all four county’s data show that higher percentages of population in comparison to the state had no blood stool test performed in the past year exceeding by a margin

of nearly 4%. In a similar analysis, data shows that all except Cole County reported slightly better percentage of population that did not have sigmoid or colonoscopy in the last ten years.

Figure 70. DHSS-PREVENTATIVE SCREENING, WOMEN & MEN



PREVELANCE OF HEALTH PROBLEMS

Figure 71, found below, illustrates the prevalence of health problems in the four counties examined in this study. The highlighted cells shows where the county exceeds the prevalence of health problems reported at the state levels. Clearly, Miller County shows higher propensity of people exceeding state totals except asthma and depressive disorders. On the other hand, Cole County performed better in all categories reported above than the state totals.

Figure 71. DHSS-HEALTH PROBLEMS

2011	Cole	Miller	Moniteau	Osage	Missouri
Prevalence of Health Problems					
Ever been told had high blood pressure	16.5%	25.3%	21.2%	19.8%	19.6%
Ever been told had high cholesterol (age 35+)	38.1%	50.8%	39.6%	41.6%	44.8%
Has Asthma	6.1%	6.7%	13.4%	9.3%	10.2%
Ever been told had diabetes	8.2%	13.2%	9.1%	7.5%	10.7%
Ever been told had COPD, emphysema or chronic bronchitis	3.8%	10.0%	7.4%	6.6%	8.0%
Ever been told had Arthritis	22.6%	39.0%	31.2%	35.4%	29.4%
Ever been told had a depressive disorder	12.6%	20.0%	18.1%	12.1%	20.7%
Ever been told had kidney disease	1.5%	3.1%	1.6%	2.1%	2.5%
Ever been told had Cancer	8.6%	10.1%	8.7%	12.5%	9.4%

Source: 2011 DHSS Missouri County level Study on prevalence of Behavioral Risk Factors

<http://www.dhss.mo.gov/CLS/index.html>

ALCOHOL

Figure 72 shows that twice as many adults in Osage County report heavy drinking in contrast to the state total. Conversely, Miller County has the lowest number of population reporting heavy or binge drinking. Moniteau did not report any data.

Figure 72. CHR, BINGE DRINKING

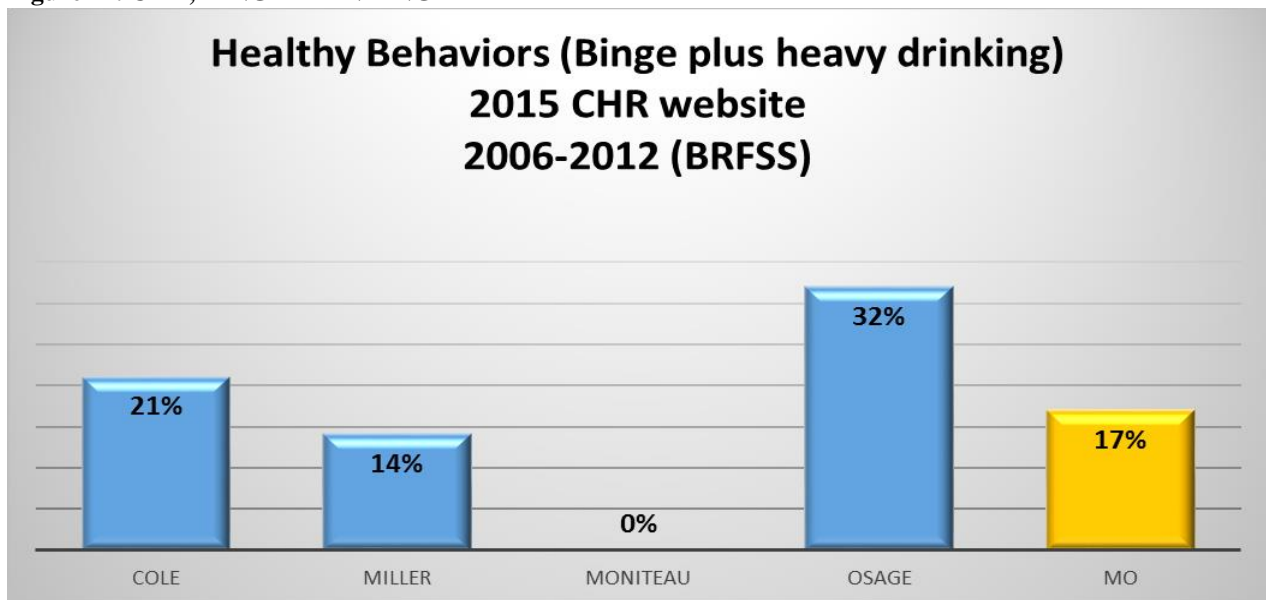
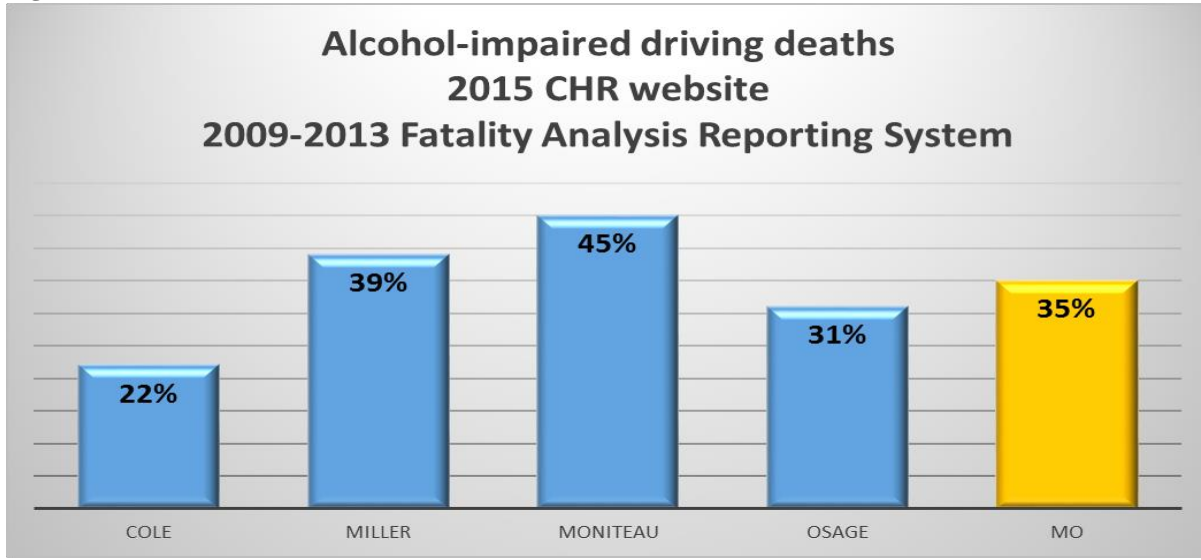


Figure 73 shows Moniteau and Miller County have the highest number of alcohol impaired driving deaths in contrast to the other two counties in this study and surpassing the state percentages by 10% and 4% respectively.

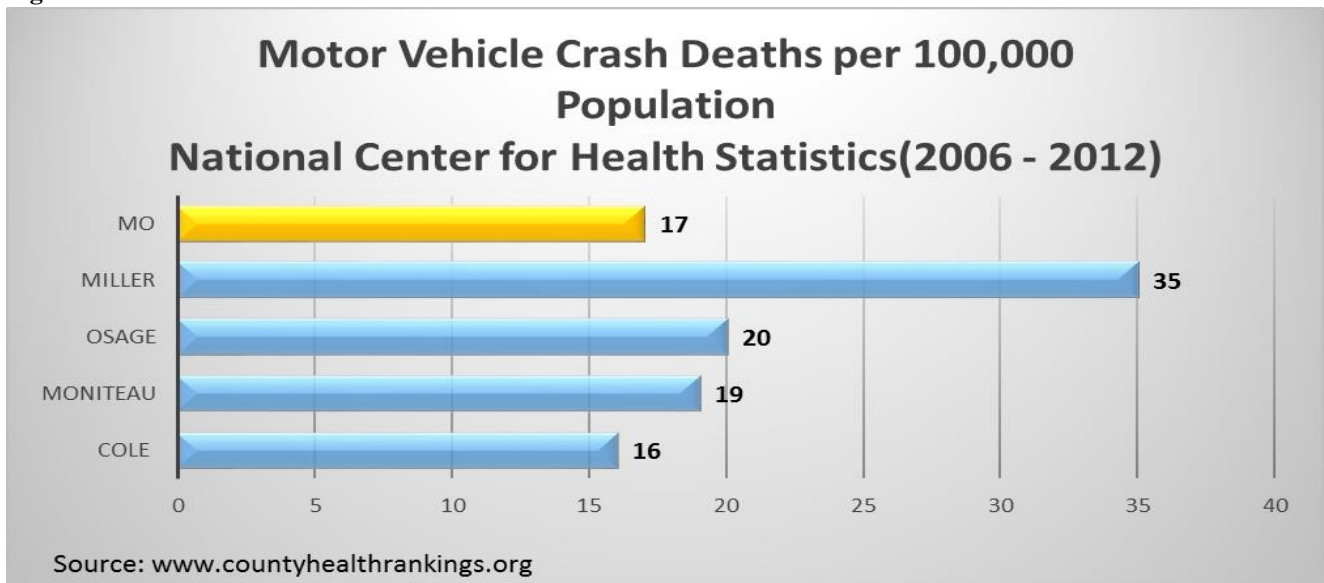
Figure 73. CHR, ALCOHOL IMPAIRED DEATHS



MOTOR VEHICLE INCIDENTS

The graph below shows rate of motor vehicle crash deaths per 100,000 population and reveals that rate of deaths caused by vehicle accidents are twice as much in Miller County than compared to the rate reported in Missouri. The only county that reported slightly lower rate is Cole County.

Figure 74. COUNTY HEALTH RANKINGS-MVA



STDs

Figure 75 shows the rate of sexually transmitted infections and reveals that Cole County reported the highest rate of infections as compared to other counties and even exceeding the rates reported in Missouri.

Figure 75. COUNTY HEALTH RANKINGS,STD

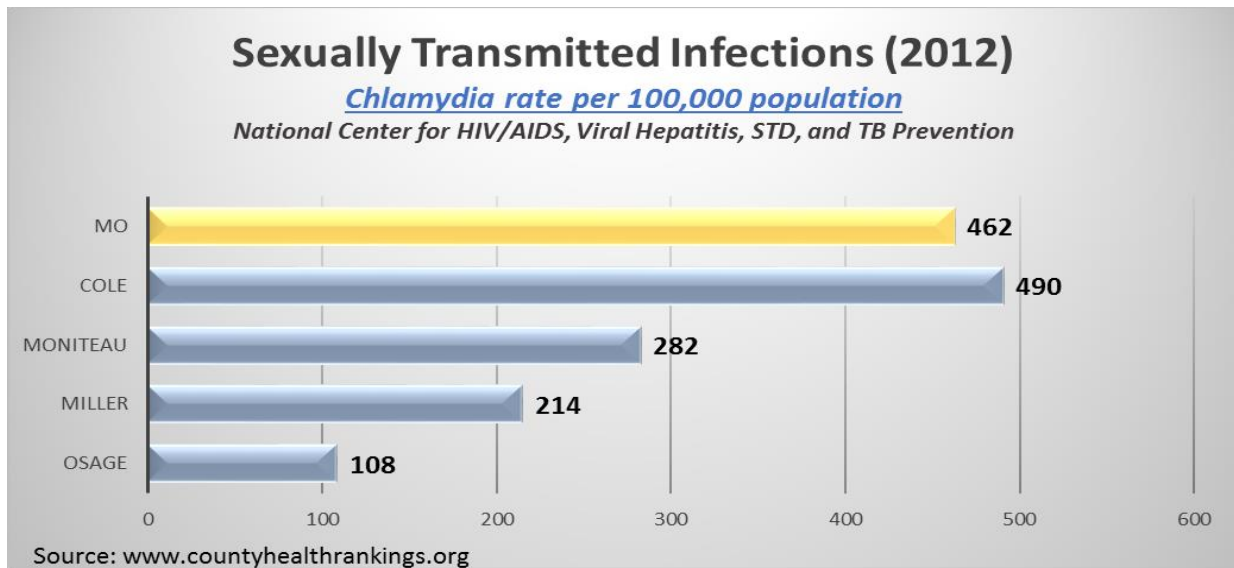
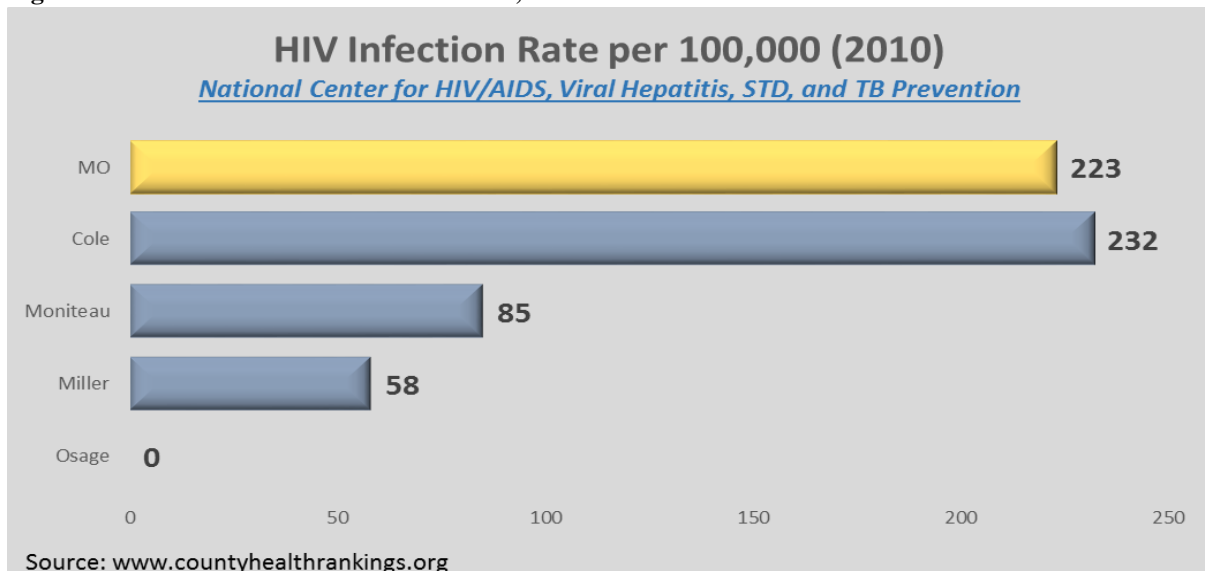


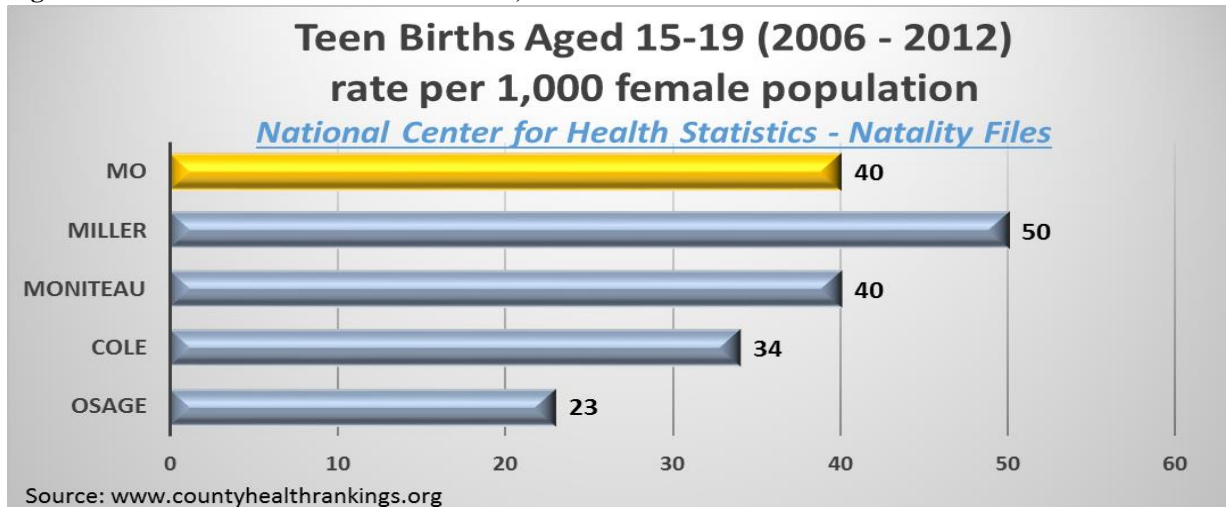
Figure 76 shows the rate of HIV infections per 100,000 population in 2010 and reveals that Cole County significantly exceeds the rate in contrast to other counties and even surpassing the state rate.

Figure 76. COUNTY HEALTH RANKINGS, HIV



TEEN BIRTHS

Figure 77. COUNTY HEALTH RANKINGS, TEEN BIRTHS



The graph above shows that Miller County had a higher rate of teen births during the survey period (2006 – 2012) than counties in this study and rate reported by Missouri. The county with the lowest rate reported is Osage followed by Cole County.

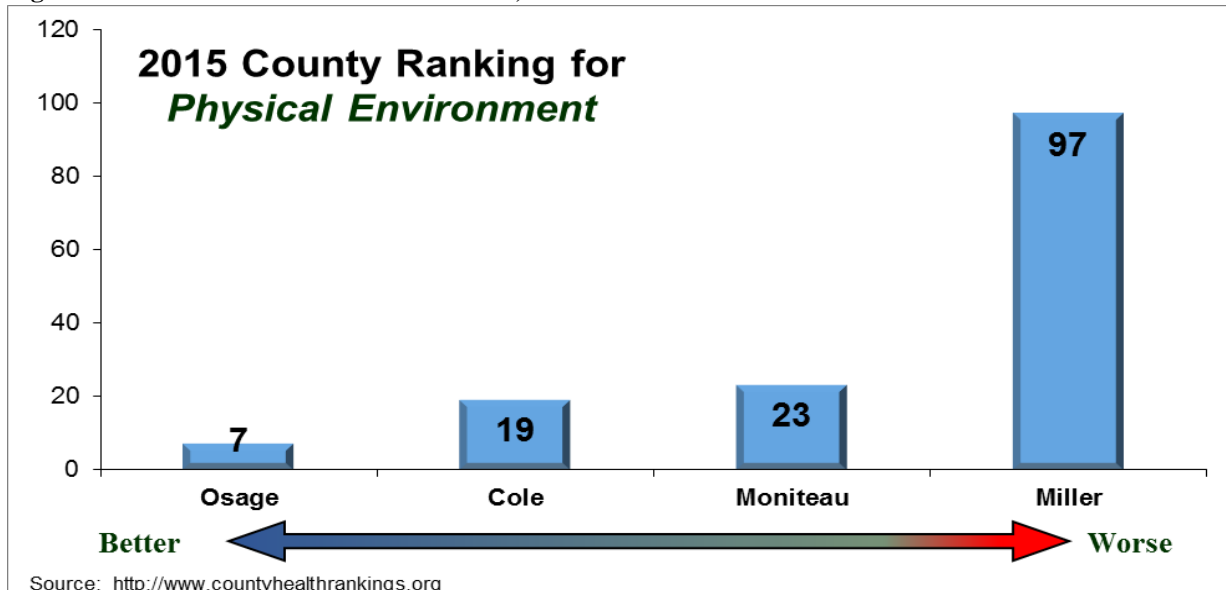
Health Factors

Physical Environment

Health Factors – Physical Environment

Figure 78 shows the rankings of the overall physical environment of the counties studied in this analysis, and it is compared to 115 Missouri counties. As observed, Miller County is ranked among the poorest performing counties in state of Missouri and Mid-Missouri. In opposition, Osage County is ranked among the best counties in the state of Missouri. The following data will show the indicators that accounted these rankings.

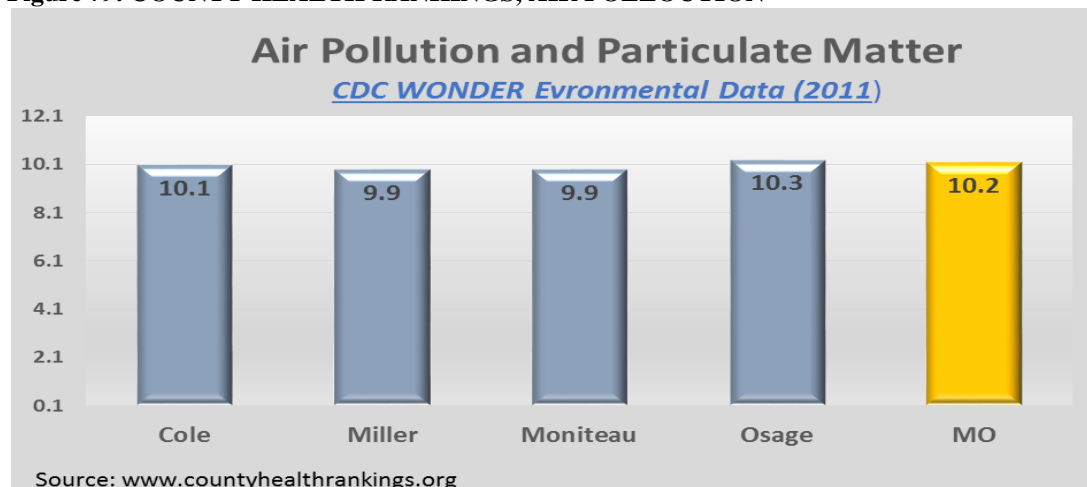
Figure 78. COUNTY HEALTH RANKINGS, PHYSICAL ENVIRONMENT



AIR POLLUTION

Figure 79 shown below highlights the air pollution particulate matter in a 2011 study. As shown all counties are at near par with the state pollution level except Osage county showing slightly higher pollution and particulate matter than Missouri and compared counties.

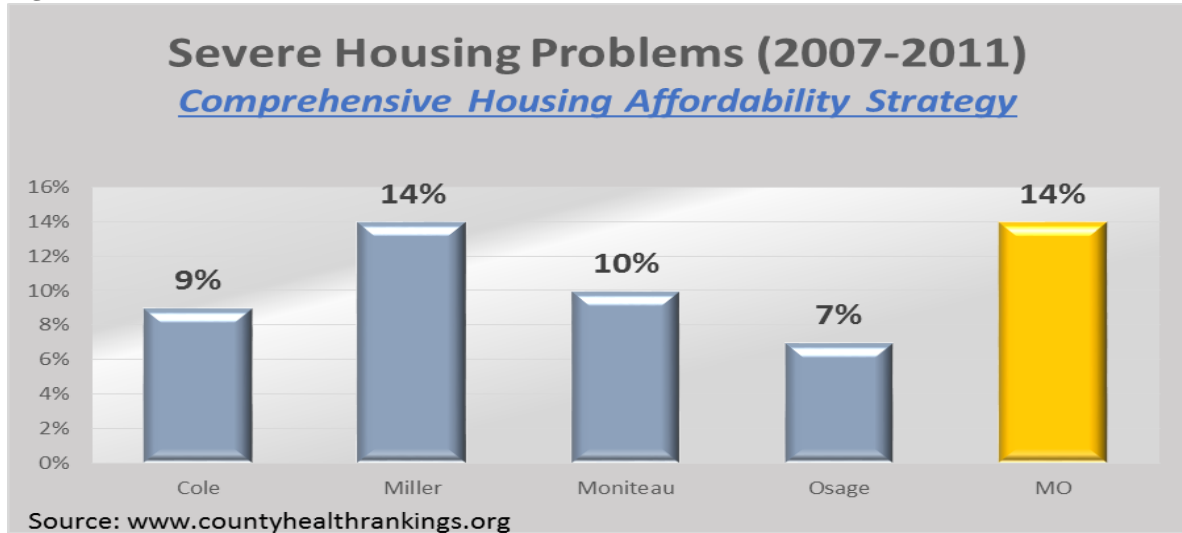
Figure 79. COUNTY HEALTH RANKINGS, AIR POLLUTION



HOUSING PROBLEMS

Based on the data illustrated below, it is indicated that Miller County is among the Mid-Missouri service county with a higher degree of housing problems but in parity with Missouri stats. Osage county has the lowest percentage of people reporting housing problems as compared to other counties and overall Missouri state.

Figure 80. COUNTY HEALTH RANKINGS, HOUSING PROBLEMS



COMMUTING

According to American Community Survey data, all counties except Cole show a slightly lower percentage of people driving alone to work in contrast to Missouri state estimates. Conversely, the remaining counties report a lower percentage of people driving alone to work.

Figure 81. COUNTY HEALTH RANKINGS, COMMUTING

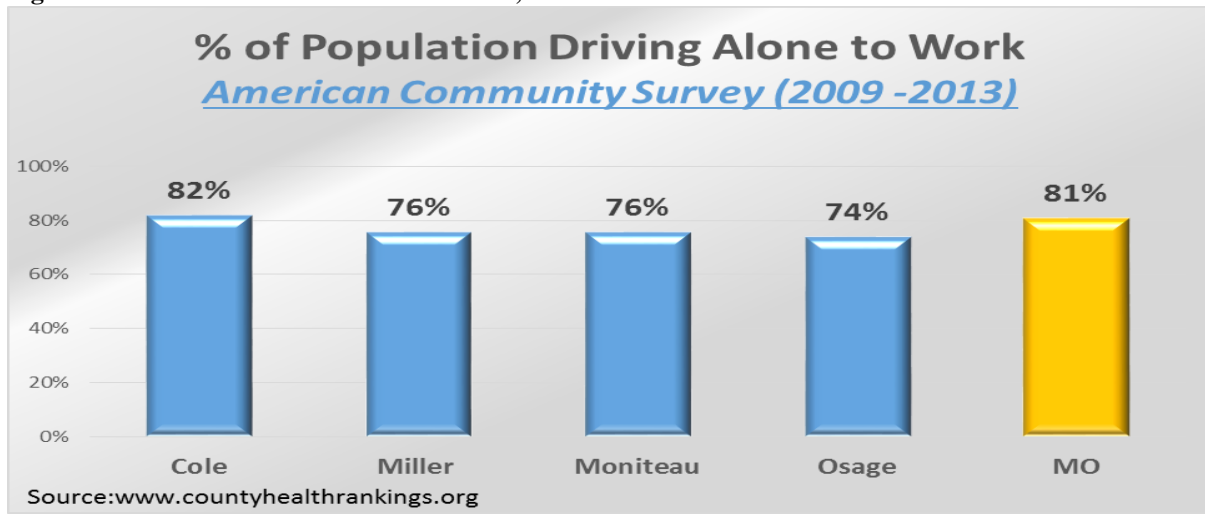
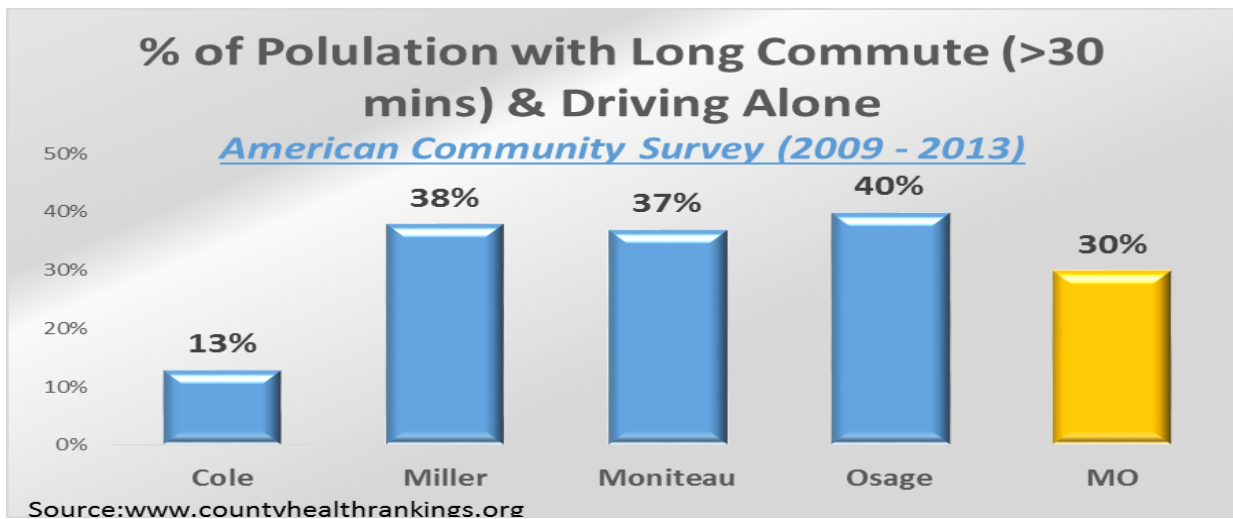


Figure 81. COMMUTING ALONE & DRIVE TIME



METHODOLOGY

The county health rankings reflected in this analysis are based on 2015 county health ranking data. Where possible they employed seven years of data and their estimates represent an average over the seven years. The BRFSS measures in the 2014 County Health Rankings are based on data from 2006 – 2012, except 2011 and 2012 the public use final weight variable was used to produce estimates. Some counties were too small to have reliable measurements for health outcomes data and as a result those counties were not ranked. For some counties that were found to have enough measures to be ranked but were missing data for any individual measure, county health rankings applied the same values as the state mean for that measure.

Health Status of Communities

Priorities for this Region

Community Health Improvement Resources (CHIR) is an interactive system that allows the user to create and download tables, based on selected variables. This interactive planning system is hosted by Missouri Department of Health and Senior Services. It is designed for use by public health practitioners and community stakeholders to improve the health of a community.

Missouri Information for Community Assessment (MICA) is one of many resources found within the CHIR, which uses a data driven, evidence-based public health process to guide decision-making, priority setting and intervention planning. The process acknowledges that communities have different needs and may be in different places in addressing health issues. Some communities may need to start with creating or strengthening partnerships, while others may be ready to plan an intervention to address a priority health issue. Communities can use this tool to conduct a thorough needs assessment to identify priority health issues to address.

One of the web based tools CHIR utilizes is “Priority MICA.” The purpose of the Priority MICA is to provide a structured process to determine the priority health needs of a community. The Priority MICA allows a user to prioritize from a list of diseases or risk factors available in the application. The diseases/risk factors were selected for inclusion in the application was based upon the Department of Health and Senior Services (DHSS) strategic plan, Healthy People 2010 and available data.

The Priority MICA provides an objective method for establishing priorities. While an objective methodology provides a rational basis for priority setting, one should not assume that a purely objective process is always the preferred approach. There can be situations in which other non-objective criteria are important to the priority setting process. A community should not ignore other criteria of community importance not included in the Priority MICA.

The Priority MICA is meant to be used only as a tool. It should be used along with other information that is available in a community. There may be other diseases/risk factors that are important to a community that are not part of the Priority MICA. The fact that a disease/risk factor is not in the Priority MICA does not mean a community should ignore the disease/factor.

Complete List of Risk Factors	
Abortions Child Abuse/Neglect High Blood Pressure High Cholesterol Low Birth Weight Mother Overweight Mother Underweight No Cervical Cancer Screening No Exercise No Health Insurance for ER Visits	No Mammography Obesity Out-of-Wedlock Births Prenatal Care Inadequate Repeated Births Under Age 18 Smoking Smoking During Pregnancy Teenage Pregnancy Under Age 18 Very Low Birth Weight VLBW Infants Not Delivered in Level III Center

Complete List of Disease Condition		
Abuse and Neglect Affective Disorders Alcohol- and Substance-Related Alzheimer's/Dementia/Senility Anemia (excluding Sickle Cell) Anxiety-Related Mental Disorders Arthritis/Lupus Assaults/Homicides Asthma Breast Cancer Burns (Fire and Flames) Burns (Scalds/Hot Objects) Campylobacter Cervical Cancer HIV/AIDS Infant Health Problems	Childhood-Related Mental Disorders Chlamydia Chronic Obstructive Pulmonary Disease (COPD) Colorectal Cancer Dental Health Problems Diabetes Elevated Lead Falls Gonorrhea Heart Disease Hepatitis A Syphilis Tuberculosis Vaccine-Preventable Diseases	Lung Cancer Medical/Surgical Complications Motor Vehicle Accidents Pneumonia and Influenza Poisoning Pregnancy Complications Prostate Cancer Salmonella Schizophrenia and Psychosis Sickle Cell Anemia Stroke/Other Cerebrovascular Diseases Suicide and Self-Inflicted Injury

The following charts indicate the top five factors affecting counties of Cole, Miller, Moniteau and Osage as compared to the state of Missouri.

**Top 5 Risk Factors
(2015 MICA Priorities)**

	Cole	Miller	Moniteau	Osage	Missouri
1	Obese (>30 BMI)	Obese (>30 BMI)	Obese (>30 BMI)	Smoking	Mother Overweight
2	No Exercise	No Exercise	No Exercise	No Mammography Age 40+	Obese (>30 BMI)
3	Smoking	No Mammography Age 40+	Smoking	High Cholesterol Age 35+	No Exercise
4	No Cervical Cancer Screening Age 18+	Mother Overweight	No Mammography Age 40+	Mother Overweight	Smoking
5	Mother Overweight	Smoking	Mother Overweight	High Blood Pressure	No Cervical Cancer Screening Age 18+

**Top 5 Diseases/Conditions
(2015 MICA Priorities)**

	Cole	Miller	Moniteau	Osage	Missouri
1	COPD	COPD		Heart Disease	Diabetes
2	Diabetes	Heart Disease	Heart Disease	Motor Vehicle Accidents	Heart Disease
3	Heart Disease	Motor Vehicle Accidents	Motor Vehicle Accidents	COPD	Alcohol & Substance Related
4	Infant Health Problems	Diabetes	Diabetes	Diabetes	Arthritis/Lupus
5	Alcohol & Substance Related	Lung Cancer	Lung Cancer	Lung Cancer	COPD

**Top 5 Chronic Diseases – DEATHS
(2012 MICA Chronic Diseases)**

	Cole	Miller	Moniteau	Osage	Missouri
1	Heart Disease	Cancer	Heart Disease	Heart Disease	Heart Disease
2	Cancer	Heart Disease	Cancer	Cancer	Cancer
3	COPD	COPD	Essential Hypertension	COPD	COPD
4	Stroke	Essential Hypertension	Diabetes	Diabetes	Stroke
5	Alzheimer's Disease	Alzheimer's Disease	COPD	Chronic Liver Disease/Cirrhosis	Alzheimer's Disease

**Top 5 Causes for IP Hospitalization
(2012 MICA IP Hospitalization)**

	Cole	Miller	Moniteau	Osage	Missouri
1	Heart and circulation	Heart and circulation	Heart and circulation	Pregnancy - childbirth - reproduction	Heart and circulation
2	Pregnancy - childbirth - reproduction	Pregnancy - childbirth - reproduction	Pregnancy - childbirth - reproduction	Heart and circulation	Pregnancy - childbirth - reproduction
3	Mental disorders	Mental disorders	Digestive system	Injury and poisoning	Mental disorders
4	Digestive system	Respiratory (throat and lung)	Injury and poisoning	Digestive system	Digestive system
5	Respiratory (throat and lung)	Injury and poisoning	Respiratory (throat and lung)	Mental disorders	Respiratory (throat and lung)

Top 5 Causes of Death (2013 MICA Deaths)

	Cole	Miller	Moniteau	Osage	Missouri
1	Heart Disease	Heart Disease	Cancer	Heart Disease	Heart Disease
2	Cancer	Cancer	Heart Disease	Cancer	Cancer
3	Other diseases (residual)	Chronic lower Respiratory Disease	Diabetes	Other diseases (residual)	Other diseases (residual)
4	Chronic lower Resp. Disease	Other diseases (residual)	Essential Hypertension	Pneumonia and influenza	Chronic lower respiratory diseases
5	Stroke	Essential Hypertension	Chronic lower Resp. Disease	Alzheimer's Disease	Stroke

Top 5 Chronic Diseases - IP Hospitalizations
(2012 MICA Chronic Diseases)

	Cole	Miller	Moniteau	Osage	Missouri
1	Heart Disease	Heart Disease	Heart Disease	Heart Disease	Heart Disease
2	Arthritis	Arthritis	Arthritis	Cancer	Arthritis/Other Joint
3	Cancer	COPD	Cancer	Arthritis/Other Joint	Cancer
4	Stroke	Cancer	COPD	Stroke	Stroke
5	COPD	Stroke	Stroke	COPD	COPD

Top 5 Chronic Diseases - Utilizing ER
(2012 MICA Chronic Diseases)

	Cole	Miller	Moniteau	Osage	Missouri
1	Heart Disease	Heart Disease	Heart Disease	Heart Disease	Heart Disease
2	Arthritis	Arthritis	Arthritis	Arthritis	Arthritis
3	COPD	COPD	COPD	COPD	COPD
4	Asthma	Epilepsy	Epilepsy	Other cardiovascular/circulatory conditions	Asthma
5	Epilepsy	Asthma	Asthma	Hypertension	Alcohol/Substance

Top 5 Preventable Hospitalizations
(2010 Preventable Hospitalizations)

	Cole	Miller	Moniteau	Osage	Missouri
1	Dehydration	Dehydration	Dehydration	Dehydration	Dehydration
2	Bacterial PN	COPD	Bacterial PN	Bacterial PN	Bacterial PN
3	Congestive Heart Failure	Bacterial PN	Cellulitis	Cellulitis	Cellulitis
4	Cellulitis	Congestive Heart Failure	COPD	COPD	COPD
5	COPD	Cellulitis	Kidney/Urinary Infection	Diabetes	Asthma

Top 5 Cancer Incidence Sites
(Missouri Cancer Registry 2010-2012)

	Cole	Miller	Moniteau	Osage	Missouri
1	Breast	Lung & Bronchus	Breast	Lung and bronchus	Lung & Bronchus
2	Lung & Bronchus	Breast	Lung and bronchus	Breast	Breast
3	Prostate	Colon, rectum, recto sigmoid	Prostate	Prostate	Prostate
4	Colon, rectum, recto sigmoid	Prostate	Colon, rectum, recto sigmoid	Colon, rectum, recto sigmoid	Colon, rectum, recto sigmoid
5	Urinary Bladder	Corpus and Uterus NOS /Urinary Bladder	Urinary Bladder	Corpus and Uterus NOS /Urinary Bladder	Urinary Bladder

2010-2012 MCR 2015 DB

Cancer Registry Incidence Rates by Site

(Missouri Cancer Registry 2010-2012)

2006-2008	SEER Site Recode (ICD-O-3/WHO 2008)	Cole	Miller	Moniteau	Osage	Statewide
	Breast (among females only)	159	45	24	24	12,654
	Cervix	^	0	^	^	738
	Colon, rectum, and rectosigmoid	120	44	26	23	9,726
	Lung and bronchus	170	75	31	32	15,438
	Prostate	202	56	20	43	12,343
	Urinary bladder	44	28	9	7	3,860
	Corpus and Uterus, NOS	30	11	6	^	2,590
2006-2008	Total Cancer Incidence of 7 types	725	259	116	129	57,349
2010-2012	SEER Site Recode (ICD-O-3/WHO 2008)	Cole	Miller	Moniteau	Osage	Statewide
	Breast (among females only)	183	50	32	34	13,543
	Cervix	^	^	^	0	810
	Colon, rectum, and rectosigmoid	94	43	20	17	8,885
	Lung and bronchus	164	89	26	35	15,722
	Prostate	145	29	22	30	10,724
	Urinary bladder	45	15	9	8	3,935
	Corpus and Uterus, NOS	40	15	6	8	2,935
2010-2012	Total Cancer Incidence of 7 types	671	241	115	132	56,554

Malignant (in both ICD-O-2 & ICD-O-3) tumors diagnosed among Missouri residents, males and females only, known age.

^: count suppressed due to a small number of cases.

Data from the MCR 2015DB (complete 1996-2012 cases).

APPENDIX B
“Sources”

Sources:

Measure	Source	Year
Premature death	National Center for Health Statistics	2010-2012
Poor or fair health	Behavioral Risk Factor Surveillance System	2006-2012
Poor physical health days	Behavioral Risk Factor Surveillance System	2006-2012
Poor mental health days	Behavioral Risk Factor Surveillance System	2006-2012
Low birthweight	National Center for Health Statistics	2005-2011
Adult-smoking and use of other tobacco products	Behavioral Risk Factor Surveillance System	2006-2012
	MO DHHS County Level Study	2011
Adult obesity	MO DHHS County Level Study	2011
Adult overweight	MO DHHS County Level Study	2011
Daily fruit consumption	MO DHHS County Level Study	2011
Physical inactivity	National Center for Chronic Disease Prevention and Health Promotion (w/BRFSS)	2011
Excessive drinking	Behavioral Risk Factor Surveillance System	2006-2012
Alcohol impaired driving deaths	Fatality Analysis Reporting System	2008-2012
Fatal motor vehicle accidents	National Center for Health Statistics	2004-2010
Sexually transmitted infections	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention	2011
HIV prevalence rate	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention	2010
Teen births	National Center for Health Statistics - Natality files	2006-2012
Unhealthy lifestyle	MO DHHS County Level Study	2011
Prevalence of health problems	MO DHHS County Level Study	2011
Adult ages 18-64 uninsured	DHSS Missouri County Level Study	2011
Children < 18 uninsured	Small Area Health Insurance Estimates	2012
% of uninsured aged < 65	Small Area Health Insurance Estimates	2012
Ratio of population to PCP	Area Health Resource File/American Medical Association	2012
Ratio of population to dentists	Area Health Resource File/American Medical Association	2012
Ratio of population to mental health providers	CMS, National Provider Identification	2014
Healthcare costs	Dartmouth Atlas of Health Care	2012
Preventable hospital stays	Dartmouth Atlas of Health Care	2012
Diabetic screening	Dartmouth Atlas of Health Care	2012
Mammography screening	Dartmouth Atlas of Health Care	2012
% diabetic	CDC Diabetes Interactive Atlas	2011
High school graduation	data.gov, supplemented w/ National Center for Education Statistics	2011-2012
Some college	American Community Survey, 5-year estimates	2008-2012
< H.S., Some H.S., H.S. Degree, Some college/Assoc. degree, Bachelor's Degree or higher	Truven Health Analytics	2014
Unemployment rate	Bureau of Labor Statistics	2013
Children in poverty	Small Area Income and Poverty Estimates	2013
Median income	US Census Bureau (American Community Survey, 5-year estimates)	2009-2013
Average income	US Census Bureau (American Community Survey, 5-year estimates)	2009-2013
Per capita income	US Census Bureau (American Community Survey, 5-year estimates)	2009-2013
Recipients of Free and reduced lunch	Office of Social and Economic Data Analysis	2012
Food Stamp Recipients	Office of Social and Economic Data Analysis	2012
Federal poverty line children < 18	Small Area Income and Poverty Estimates	2013
Federal poverty line	US Census Bureau (American Community Survey, 5-year estimates)	2009-2013

Children on MC + Medicaid	Office of Social and Economic Data Analysis	2012
Child Abuse & Neglect	Office of Social and Economic Data Analysis (Missouri Kids Count)	2012
Children in single-parent households	American Community Survey, 5-year estimates	2009-2013
Violent crime	Uniform Crime Reporting – FBI	2010-2012
Injury deaths	CDC WONDER mortality data	2008-2012
Domestic Violence	MO State Hwy Patrol - Uniformed Crime Report	2014
Air pollution - particulate matter	CDC WONDER Environmental data	2011
Severe housing problems	Comprehensive Housing Affordability Strategy (CHAS) data	2007-2011
Driving alone to work	American Community Survey, 5-year estimates	2009-2013
Long commute - driving alone	American Community Survey, 5-year estimates	2009-2013
Top 5 risk factors	Priorities MICA	July, 2015
Top 5 diseased factors	Priorities MICA	July, 2015
Top 5 Causes for IP Hospitalization	MICA IP Hospitalizations	2012
Top 5 Preventable Hospitalizations	MICA Preventable Hospitalizations	2010
Top 5 Causes of Death	MICA Deaths	2013
Top 5 Chronic Diseases IP Hospitalization	MICA Chronic Diseases IP Hospitalizations	2012
Top 5 Chronic Diseases Utilizing ER	MICA Chronic Diseases - Utilizing ER	2012
Top 5 Chronic Diseases Death	MICA Chronic Diseases – Deaths	2012
Cancer Registry Incidence	MCR	2015
Population Demographics	U.S. Census	2000, 2010
Population Projections	MODHSS	2014