

COLUMBIA/BOONE COUNTY



REVISED FEBRUARY 2009

HEALTH ASSESSMENT



Public Health
Protect. Promote. Prevent.

TABLE OF CONTENTS

County Description	1
Households and Families	1
Age	1
Families and Children	2
Racial Diversity	2
Population change from 1990-2000 and 2000-2007	3
Types of Employment	4
Education Segment	5
Environmental Health	7
Housing	7
Children and Lead	7
Water	7
Wastewater/Storm water	8
Indoor air quality	8
Animal Control	8
Food and Food Safety	8
Nuisance Ordinances	9
Maternal and Child Health indicators	9
Indicators Related to Prenatal Risks:	10
Children and Lead	16
Limited Literacy	17
Dental Care for Children	17
WIC Utilization	18
Leading Causes of Mortality in Children for Boone County	18
Adolescent Health	19
Mental Health	19
Chronic Disease Behavioral Risk of Youth	20
Priority Diseases or Conditions in Adolescents	20
Leading Cause of Mortality in Adolescents for Boone County	20
Conclusions	20
Adult Health Factors	21
Health Insurance	21
Dental Health	23
Hospitalization	23
Preventable Hospitalization	23
Alcohol and Drug Related Hospital/Emergency Room Data	24
Family Violence and Crime	24
Source: Missouri State Highway Patrol Statistical Analysis Center	25
Priority Diseases or Conditions in Adults	26
Leading Causes of Mortality in Adults	26
Conclusions	26
Disparities	26
Diabetes	26
Mental Health	27
Indicators of Concern to Seniors	28
Hospitalizations	28
Health and Wellness Measures for Boone County Seniors	28

Priority Risk Factors for Seniors.....	28
Priority Diseases/Conditions in Seniors.....	29
Leading Causes of Mortality in Seniors.....	29
Longterm Care Facilities.....	29
Conclusions.....	30
Analysis of Communicable Disease Rates	31
Boone County’s rate is not changing while the state’s rate is decreasing.	32
Health Department Priorities and Planning	33
Community Issues Management (CIM).....	33
Community Capacity for Health Care	34
Hospitals in Columbia.....	34
Source: DHSS County Data Profiles Hospitals	34
Columbia/Boone County Department of Public Health & Human Services	34
Additional Health Information.....	34
Additional Health/Treatment Facilities.....	34
Coalitions	37
Quick Reference to Indicator Rates	39
Primary Data Sources for This Report.....	42
List of Acronyms	43

County Description

Boone County, a census designated Metropolitan Statistical Area (MSA) with a land area of 685 Square miles and the 2007 population estimate of 152,435. The population percentage increased nearly 13% from 2000. Columbia is the fourth largest city in Missouri and the anchor city of the Columbia, Missouri Metropolitan Area.

The table below portrays key demographic information about Boone County and how it compares to Missouri. Boone County, with its MSA designation and its relatively dense population, is an urban area

Selected Demographic Statistics, 2007 estimate					
Boone County	152,435	%	Missouri	5,878,415	%
White	130,540	85.6%	White	5,002,531	85.1%
Black	13,166	8.6%	Black	676,018	11.5%
Hispanic	3,735	2.5%	Hispanic	176,352	3.0%
Female	78,153	51.3%	Female	3,009,748	51.2%
Male	74,236	48.7%	Male	2,868,667	48.8%
Persons below poverty	24,390	16.0%	Persons below poverty	989,702	13.3%
Median Household Income	\$44,936		Median Household Income	\$45,012	
Per Capita Income (1999)	\$19,844		Per Capita Income	\$19,936	

Source: OSEDA.missouri.edu

In Boone County, almost 32% of the population lives outside city limits and nearly 68% lives inside of incorporated places. Profiles of the incorporated places in Boone County are shown below.

	Ashland	Centralia	Columbia	Hallsville	Sturgeon	Boone County
Total population	3,000	3,676	99,174	960	917	152,435
Median household income, 2000	\$34,750	\$34,475	\$40,178	\$35,536	\$33,173	\$44,936
Total housing units	820	1,648	42,936	439	407	\$69,229

Source: FactFinder.census.gov

Households and Families

There were about 53,106 households in the county according to the 2000 decennial census. Families comprised 59.6 percent of households (31,665). About 22.3 percent of households were married couples with children under 18, which was less than for the state overall (23.3%). Single parent families accounted for 8.7 percent of all Boone County households, compared to 9.1 percent in Missouri.

Age

In 2007, an estimated 9.1 percent of Boone County residents were 65 and older compared to 13.4 percent statewide. At the same time, the Census Bureau estimated that young people (under 18) made up 22.4 percent of the county's population, compared to 24.2 percent for the state.

The comparison of population age data shows no statistically significant differences between Boone County and Missouri. The highest percentage of the population falls between 24-54 years of age with the highest percent in the 25-34 year range.

Families and Children

Median family income for Boone County was \$51,210 in 1999, compared to \$46,044 for Missouri.

- The 2005 poverty rate in Boone County was 18.3 percent which was higher than that of the state (13.6%). The poverty rate among children (18.2%) was lower than that of the state (19.5%).
- In 2006, 30.3 percent of children in Boone County were enrolled in the free and reduced lunch program, compared to 40.7 percent statewide.
- The 2007 annual Kids Count reports Boone County indicators on children ranked 11 out of 114 counties and St. Louis City. Kids Count indicators show that 7.9 percent of the infants born over the period from 2002 to 2006 were low birth weight infants, while births to teenage mothers were 24.7 per 1,000 girls, compared to 45.6 statewide.

Racial Diversity

The 2007 vintage estimates from the Census Bureau indicate that 85.6 percent of the population in the county was White (130,540 persons), while the estimated African-American population was 13,166 (8.6%). The same set of estimates indicated there were 5,122 Asians (3.4%) and 684 American Indians (0.4%). (These are all "race alone" figures.) Hispanic is not considered to be a race by the Census Bureau/OMB, but rather a separate ethnic category. In 2006, an estimated 3,735 Hispanic persons (2.5%) were living in the county.

Source for above descriptions: [OSEDNA Narrative](#)

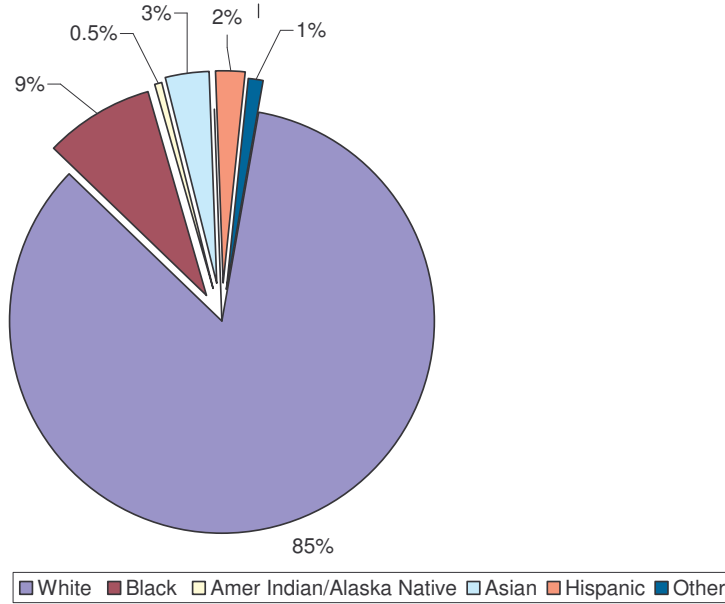
Health disparities for minorities is a large problem in Boone County particularly impacting the African American Community. In every category of emergency room visits, inpatient hospitalizations, and preventable hospitalizations the rate for African-Americans is at least double the rate for Whites.

Population change from 1990-2000 and 2000-2007

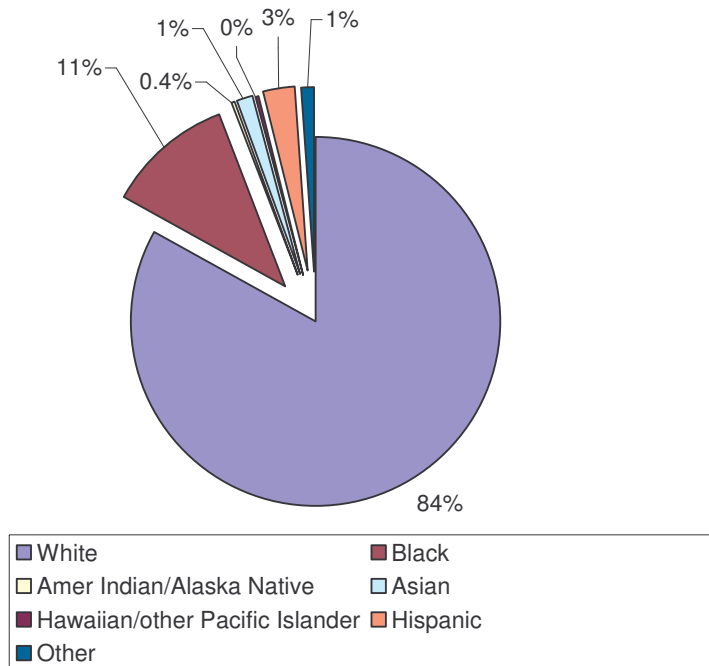
	Population change 1990-2000	Number	Percent	
Missouri		5,595,211	478,138	9.3
Boone		135,454	23,075	20.5
	Population change 2000-2007		Number	Percent
Missouri		5,878,415	283,204	9.3
Boone		152,435	16,981	5.1

Source: OSEDAMissouri.edu

Boone County Ethnic Composition
2005-2007



Missouri Ethnic Composition
2005-2007

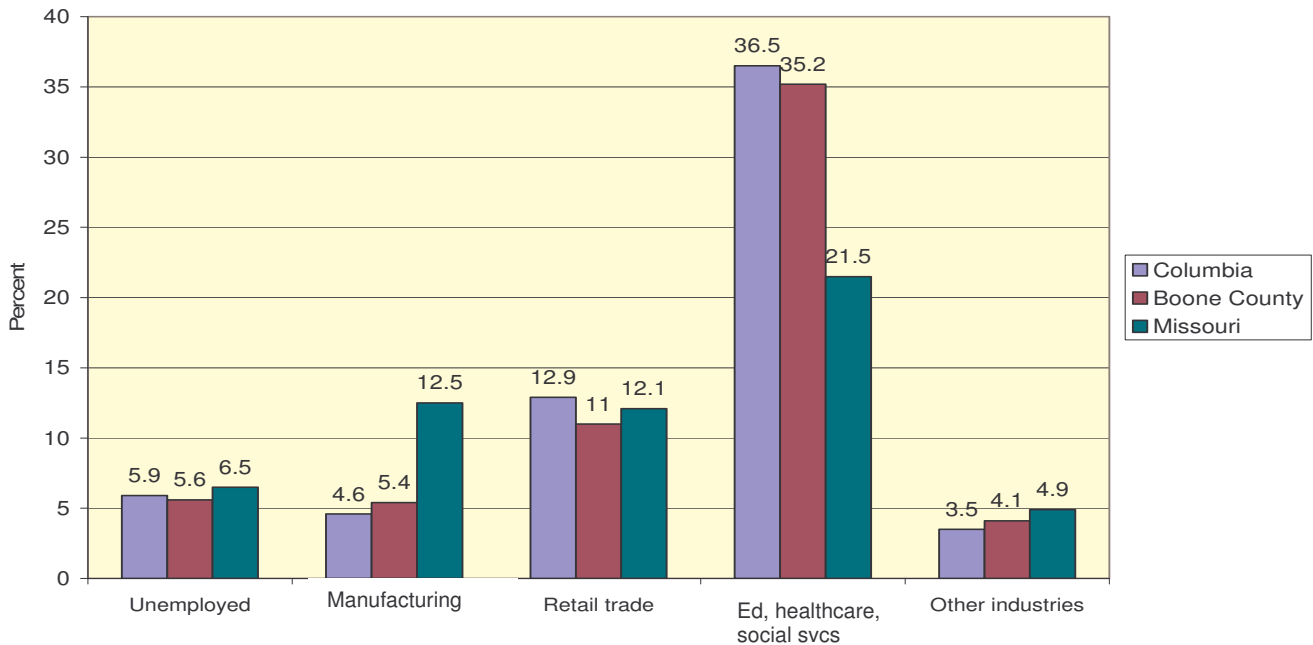


Types of Employment

A higher percentage of government, university, and medical jobs are available in Boone County due to the number of hospitals, colleges, and the University of Missouri System headquarters. These types of jobs may contribute to the higher income levels seen in Boone County. The location of the University of Missouri, hospitals, and state and federal offices provide regional stability.

Source: MCDC Demographic Profile 3

**Percent Employment by Type
2005-2007 Averages**



Source: Missouri Department of Economic Development

Education Segment

Boone County has more than 21,300 elementary and secondary students and approximately 49,000 higher education students.

Boone County Public School Districts		
School District	# Students	# Teachers
Centralia	1,372	110
Columbia	16,369	1,579
Hallsville	1,200	115
Harrisburg	588	53
Southern Boone	1,299	130
Sturgeon	504	49
TOTAL	21,332	2,036

Source: DESE

Private Schools		
Private School	# Students	# Teachers
Columbia Catholic	571	38
Columbia Independent	216	29
TOTAL	87	67

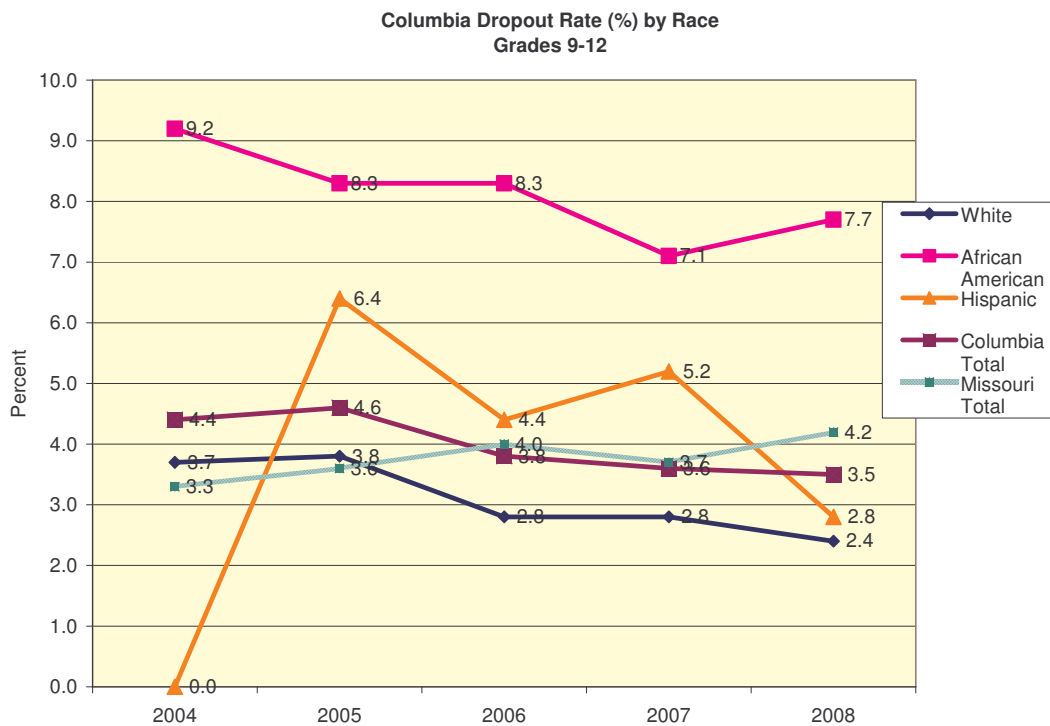
Source: Personal communication

The following table describes Boone County's higher education community.

Higher Education	
School	# Students
Moberly Area Community College (Columbia campus)	800
Stephens College	1,147
Columbia College	7,948
University of Missouri-Columbia	28,253
Columbia Area Vocational/Technical	111
William Woods (Columbia campus)	400
Total	48,959

Source: <http://collegesearch.collegeboard.com>

High school dropout rate is an indicator for economic and health risks. At the state level the African American and Hispanic dropout rates are considerably higher than for Whites. The dropout rate for Missouri has changed from 3.3% in 2004 to 4.2% in 2008. The dropout rate for the Columbia Public School district was 4.4% in 2004 and 3.5% in 2008. The dropout rates and trends for the African American, Hispanic, and White populations are compared in the charts below. For the Columbia Public School District the African American dropout rate is consistently higher than both the Hispanic and the White groups. These data indicate the need for continued attention to the African American dropout rate in Columbia.



Environmental Health

The Health Department tests for the presence of lead in older homes. Approximately 10% of the homes in Boone County were built prior to 1950. Most elevated lead exposures in children are linked to the environmental presence of lead based paints in housing.

Housing

Boone County offers a diverse range of housing. Various characteristics are included below:

Boone County Housing Characteristics 2005-2007 Averages		
Housing type	Number	Percent
Occupied housing units	62,559	93%
Single Family	42,180	62.7%
Multi-Family	20,003	31%
Mobile Homes	4,127	6.1%
Units built prior to 1950	6,633	10%

Source: www.finder.census.gov

Children and Lead

Approximately 10,000 children under five years old reside in Boone County. Data indicate a steady increase in testing children from 9% in 1997 to 20% in 2006. During the same period the percentage of children with elevated blood lead levels decreased from 2% to 0.4%. This compares to the state data showing that out of 19% of children tested 2.2% exhibit an elevated lead level (> 10ug/dl).

www.dhss.mo.gov

Lead abatement projects are ongoing through the City of Columbia. Approximately 15-30 home rehabilitation projects, many involving lead abatement, are completed annually with greater emphasis on older homes in the central city. Boone County has no point sources of lead exposure such as lead mines or smelters.

Water

Columbia/Boone County is well within the normal and safe range of standards for water. Columbia's drinking water supply is naturally fluoridated and meets the state standards. The other public water supplies in Boone County have added fluoridation. Most of the citizens of Boone County have access to public water supply systems. The water supply is tested for lead and is generally not an issue in public water available in Boone County.

For more than 30 years the McBaine facility has provided water that met all EPA standards. In 2007, the water exceeded the Maximum Contaminant Level for Total Trihalomethanes (TTHM). Our reported concentration for 2007 is 82.3 micrograms per liter. The Maximum Contaminant Level for total Trihalomethanes is 80 micrograms per liter.

Trihalomethanes are a by-product of the disinfection process. They are formed when chlorine breaks down organic material in the water. There is not an immediate danger in consuming Columbia's water. Trihalomethanes present problems over a long period of time. The City of Columbia is working with The Missouri Department of Natural Resources and the University of Missouri to find a solution to the problem and lower the levels of Trihalomethanes.

Wastewater/Storm water

The Columbia metropolitan area is served by a regional sewage treatment plant operated by the Columbia Public Works Department. Wastewater from the plant is discharged to constructed wetlands for tertiary treatment prior to draining into the Missouri River.

Boone County has an onsite sewage ordinance that regulates the construction of new and repaired onsite sewage systems. The ordinance has been in place since 1992. Approximately 5000 onsite sewage systems have been constructed under the supervision of the Health Department to reduce contamination of the environment and reduce any possible exposure to improperly treated wastewater in Boone County.

The Health Department has conducted testing of natural bathing locations throughout Boone County for many years. The monthly water sampling tests for the presence of *E. coli* and fecal coliform bacteria.

Indoor air quality

Columbia is fortunate to be one of the few communities in the state with a smoke-free worksite ordinance that includes restaurants and bars. It also prohibits smoking within 20 feet of the entrance to a public building. Boone County ordinance prohibits smoking in buildings owned by the County.

In addition to the state excise tax levied on cigarettes, the city of Columbia imposes a cigarette tax of 10 cents per package collected by the wholesaler totaling approximately \$634,000 per year. The city has noted a decline in the amount of cigarette tax revenues since 2001.

Radon gas levels in Boone County fall in the moderate range with a predicted average indoor screening level between 2 and 4 picocuries per liter. Four percent (4%) of homes tested had levels above 10 picocuries per liter. The EPA recommends that radon be no higher than 4 picocuries per liter.

Source: www.epa.gov/radon

Animal Control

Columbia and Boone County have ordinances that mandate rabies vaccination of dogs and cats. Animal Control efforts focus on investigation of animal bites. 306 bite cases were investigated in 2008. 295 specimens were submitted to the state lab for rabies testing. Of those 10 were positive for rabies. All of the positives were bats. No cases of rabies in a dog or cat have occurred in Boone County in more than 25 years. Occasional cases of rabies in bats have been confirmed thru routine surveillance. In 2008 the county was placed under a rabies alert by the Missouri Department of Health & Senior Services.

Investigations into reports of dangerous or vicious dogs are mandated thru the animal control policies. Columbia and Boone County both have strong ordinances on dangerous, vicious dogs that reduce injuries from aggressive dog attacks.

Food and Food Safety

Columbia and Boone County have 793 food facilities. 2413 inspections on the establishments were conducted during 2008. In Columbia and Boone County restaurants, grocery stores, and convenience stores are inspected 2 to 3 times a year by Health Department staff. Food facilities that offer the most risk to the public are inspected more often. Each food facility is evaluated based on

the number of meals served, the complexity of the preparation process, and the number of high risk individuals served to determine the frequency of inspections.

In addition to inspections the Health Department does food handler education for all food workers and requires additional training of managers of food facilities. On average more than 4,000 persons attend food handler classes each year. In addition, in 2007 the capability for online food handler certification was implemented. This service is available only at the health department.

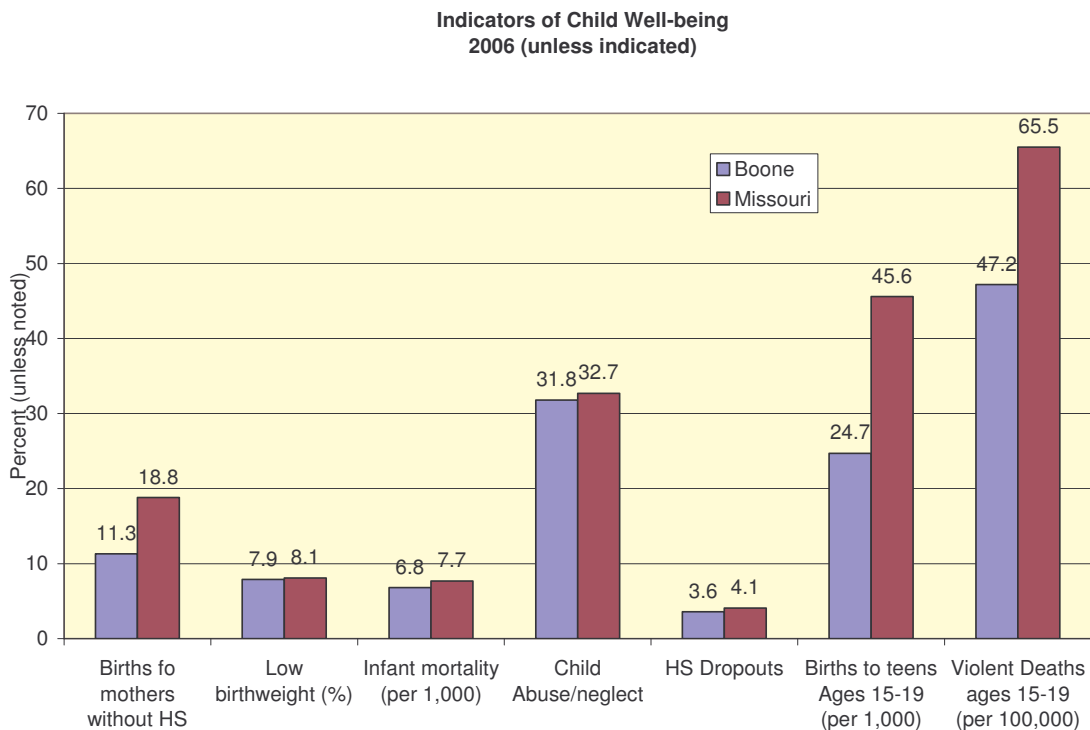
Information on any food operation may be obtained thru the Columbia Health Department web site: www.gocolumbiamo.com or by requesting information directly from the health department.

Nuisance Ordinances

Environmental Health enforces both the City and the County Public Health Nuisance ordinances. Violations of the respective ordinances include high weeds, defective sewers, unlicensed and junk vehicles, and accumulations of debris. Environmental Health responds to citizen complaints by phone or thru the internet, via www.gocolumbiamo.com. Staff also acts proactively by patrolling for violations of the ordinances. With a goal of making the problems go away quickly, violations not abated in a timely manner by the owner or responsible party are abated thru an established abatement process. During 2008 Environmental Health conducted 3904 inspections while enforcing the nuisance ordinance.

Maternal and Child Health indicators

Indicators of child well being include educational level of parents, perinatal care, abuse, death and hospitalization rates, and family economic status. Boone County data is compared with Missouri data for 2006 unless otherwise noted.

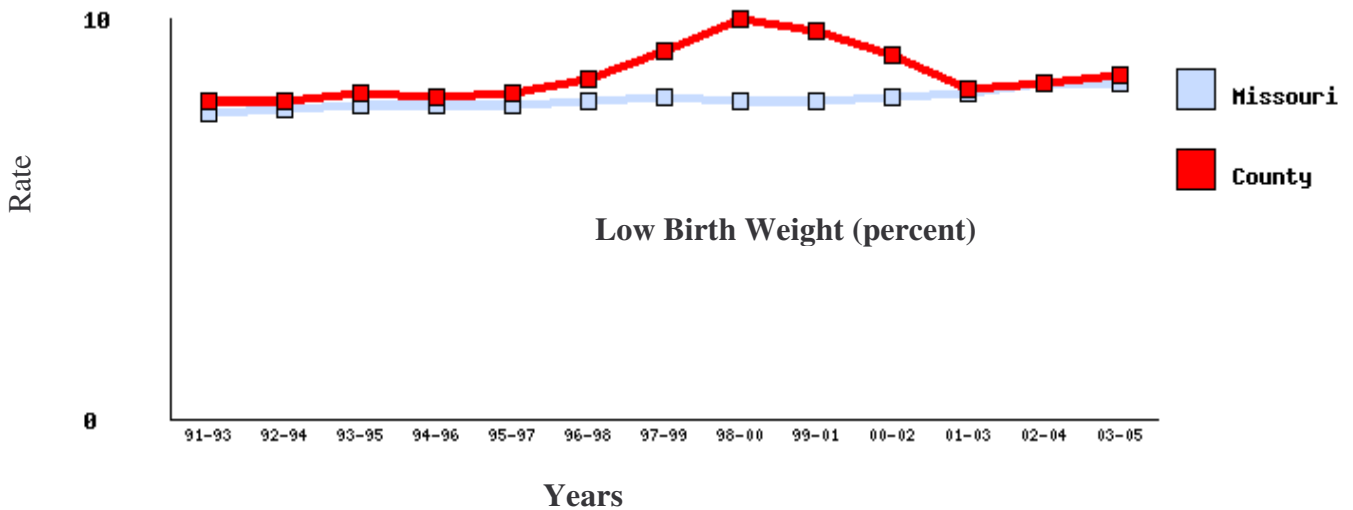
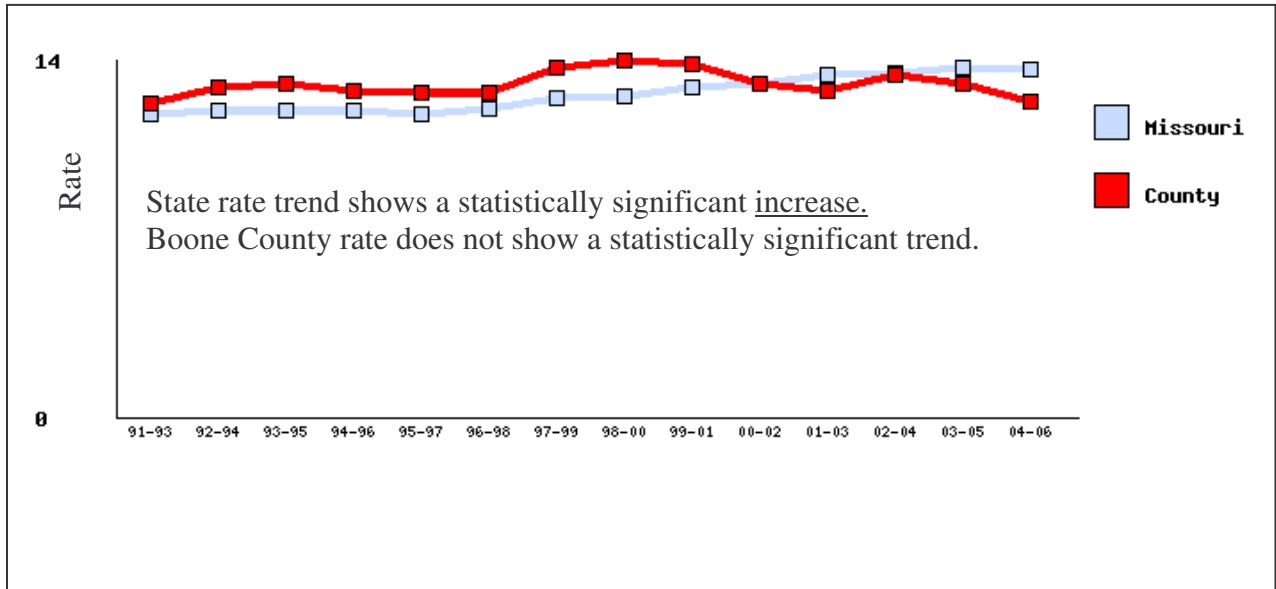


Source: http://mcdc2.missouri.edu/pub/webrepts/kidsent/outcomes_facts/29019.html#1

Indicators Related to Prenatal Risks:

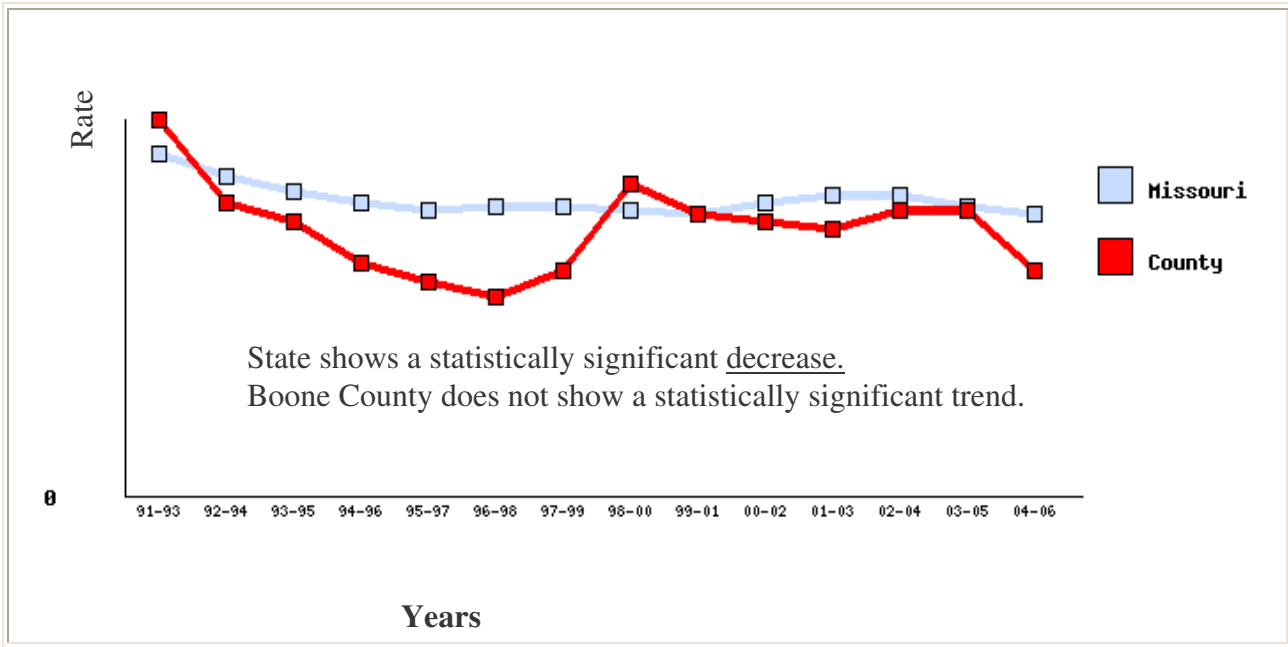
A number of factors contribute to birth outcome and child health. Among those are lack of education, late care received in pregnancy, births to teens. Within those risks is noted a higher incidence of occurrences in the African American population in Boone county.

Preterm Birth Rate (percent)



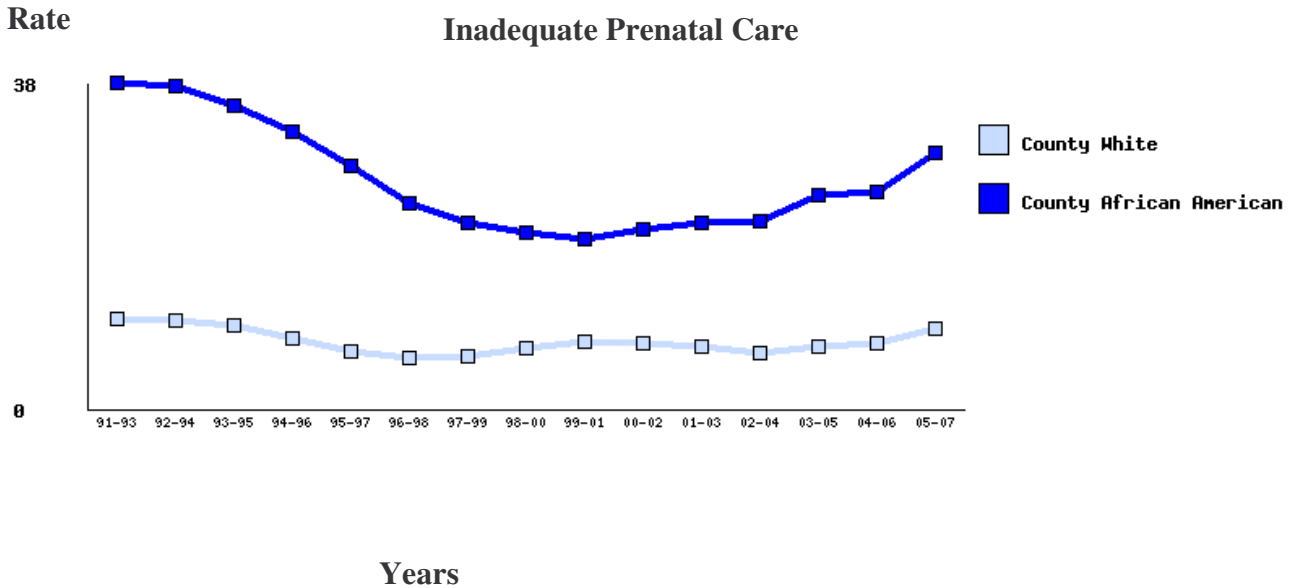
The Boone County infant death rate (per 1,000) does not show a statistically significant trend. State rate trend shows a statistically significant decrease.

Infant Death Rate (per 1,000)

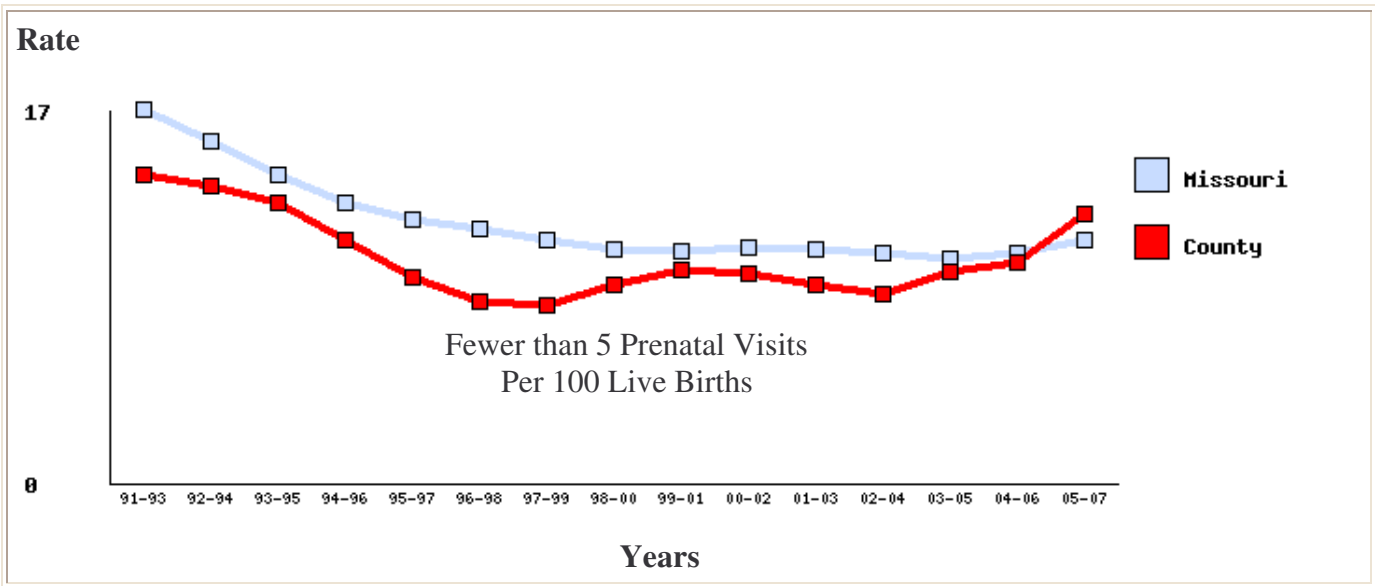


Inadequate care is defined as fewer than 5 prenatal visits. The rate is 12 (per 100) for White and 31.8 for African American.

The following graph depicts Boone County White and African American trends for inadequate prenatal care defined as fewer than 5 prenatal visits.



Boone County White rate does not show a statistically significant trend.
Boone County African American rate shows a statistically significant increase.

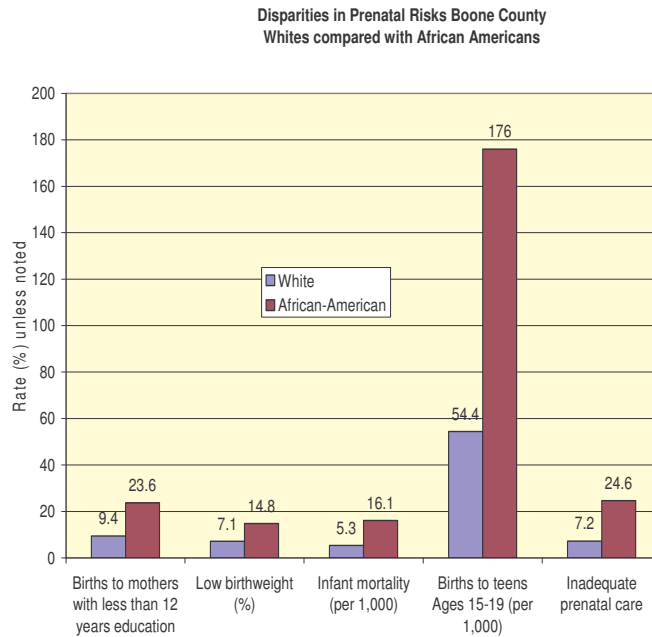


Boone County rate does not show a statistically significant trend.
 State rate trend shows a statistically significant decrease.

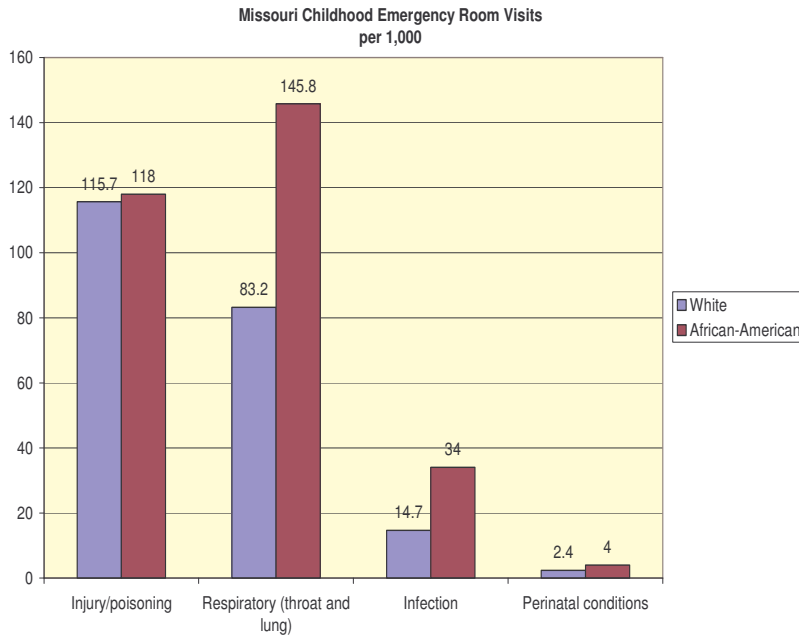
Source: DHSS Community Health Data Profiles

The following charts depict disparities in prenatal risk indicators and in rates for childhood emergency room visits. Particularly noteworthy is the high rate of respiratory conditions. Several childhood hospitalization categories show significant disparity between African American and White populations. Boone County data are compared with Missouri data in the two charts below.

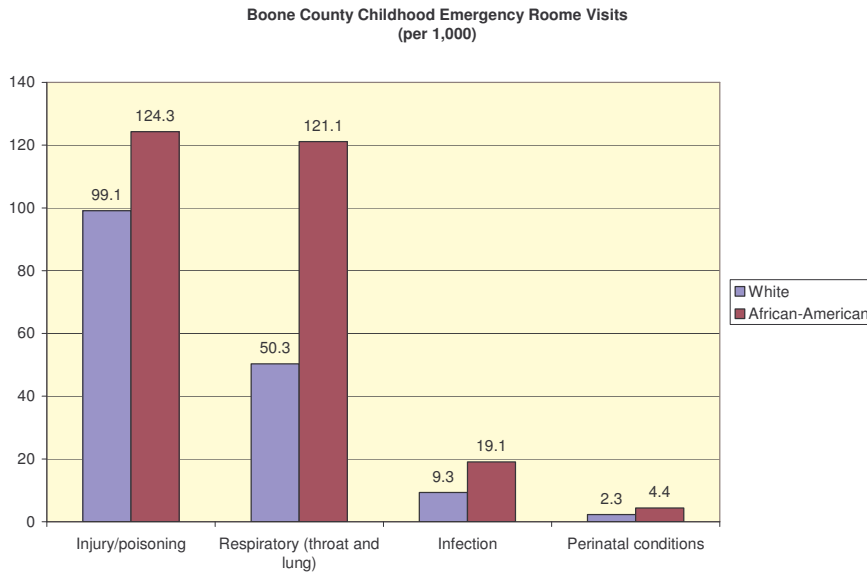
Source for both charts: [DHSS Child Health Community Profile](#)



Missouri Childhood Emergency Room Visits



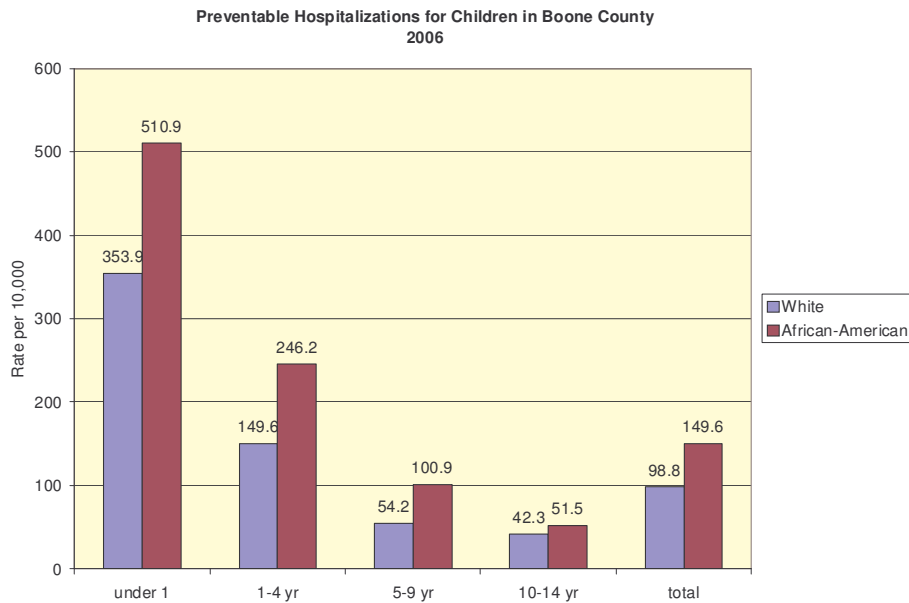
Boone County Childhood Emergency Room Visits



Source: [DHSS Emergency Room MICA](#)

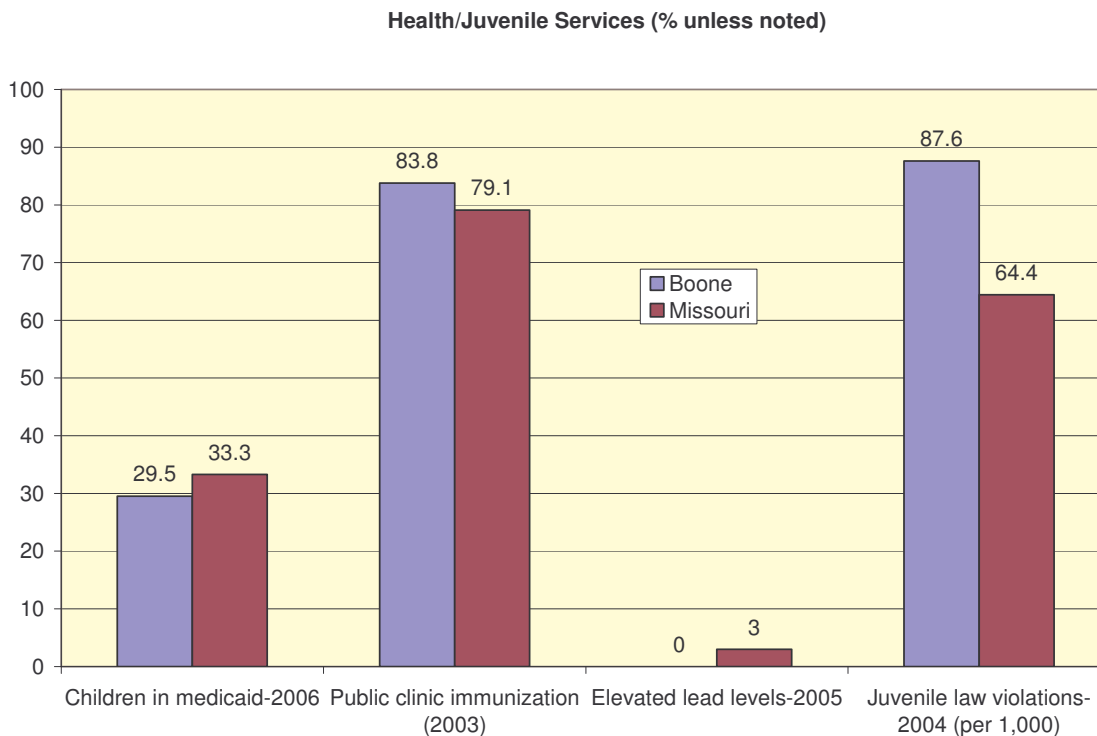
Preventable hospitalizations are those diagnoses for which timely and effective outpatient care can help to reduce the risks of hospitalization by either preventing the onset of an illness or condition, controlling an acute episodic illness or condition, or managing a chronic disease or condition. The table below shows the preventable hospitalization rates for children ages 1-5 in Boone County.

Preventable Hospitalizations for Children in Boone County



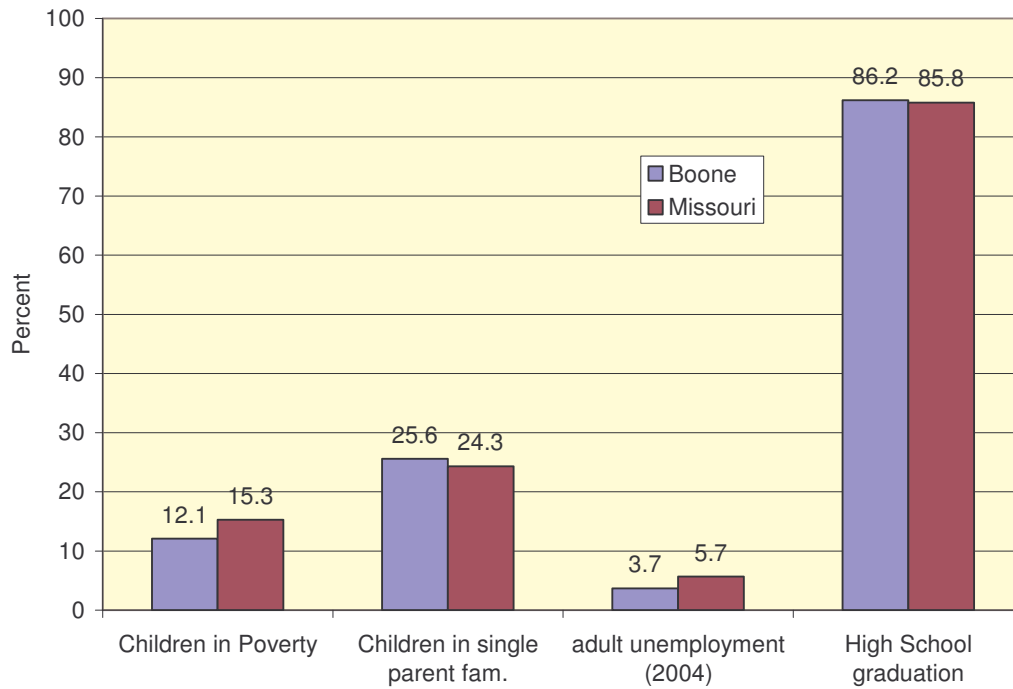
Source: [DHSS Preventable Hospitalization MICA](#)

The economic condition of families affects the well-being of children. The following compare key indicators for Boone County and Missouri Families. The following table compares several health and juvenile services in Boone county and Missouri.

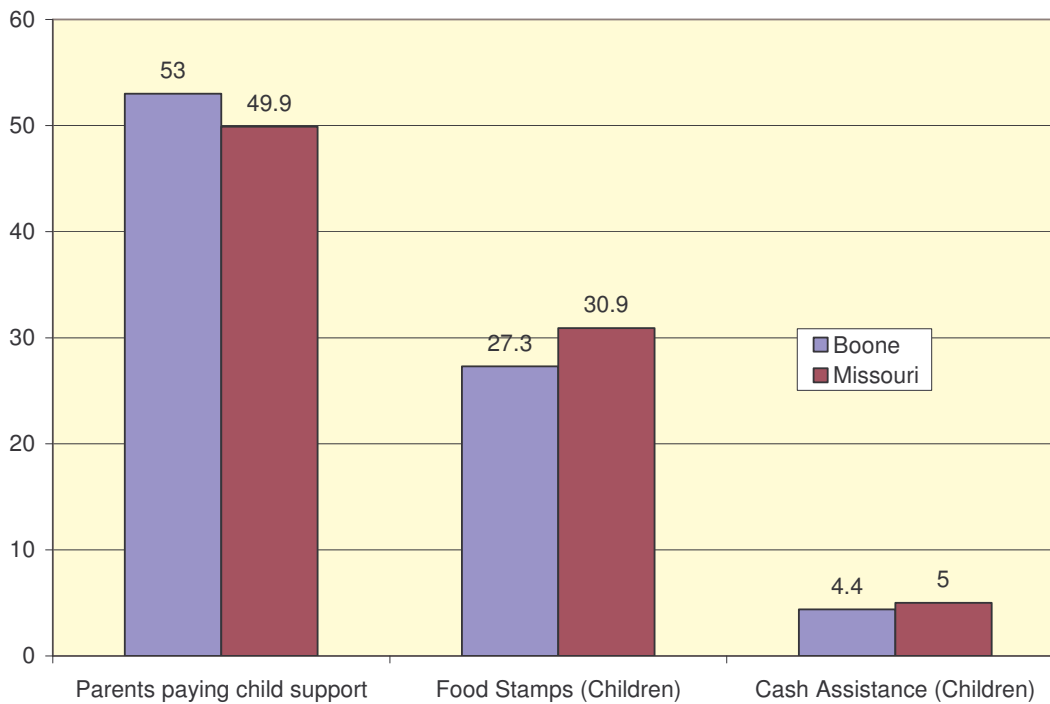


The following tables compare Boone County with Missouri in economic conditions and support mechanisms that affect families. Source for both charts: Kids Count

**Economic Condition of Families
2005**



**Family Supports (%)
2005**



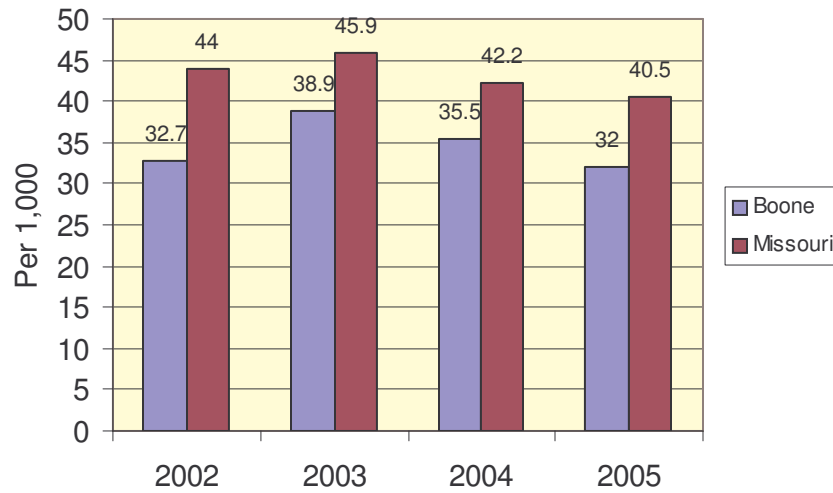
Children and Lead

This is described on page 7 in the [Environmental Health](#) section.

The charts below describe additional measures of child well being including lack of health insurance, rates of hospitalization, racial disparities, and child abuse/neglect.

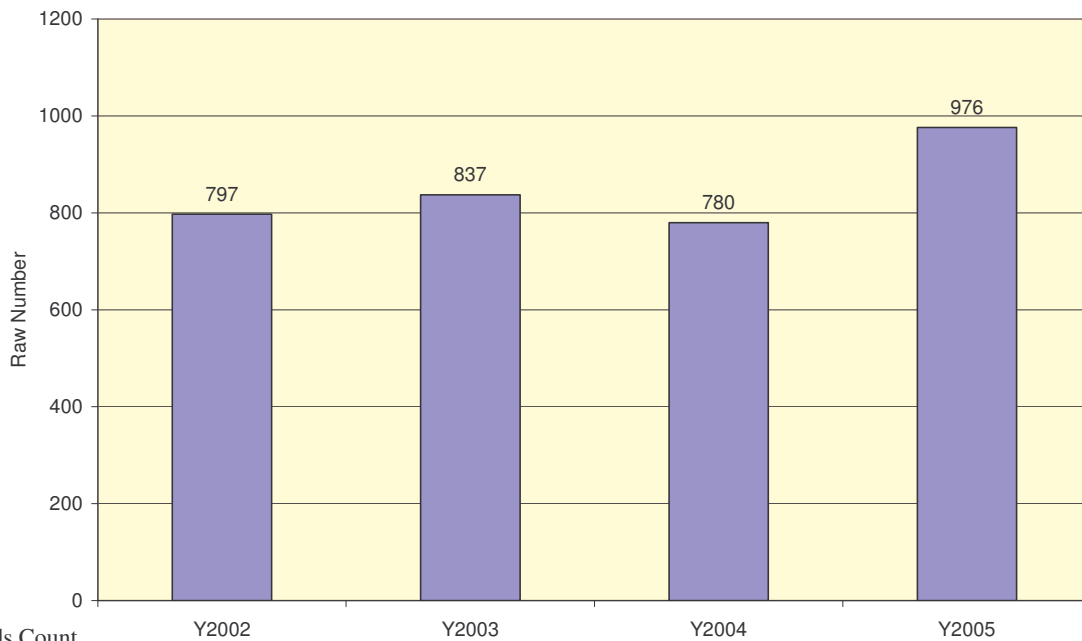
Boone County child abuse rates are steady and below the Missouri level as depicted in the chart below.

Child Abuse/Family Assessment per 1,000



Source: Kids Count 2004 profile

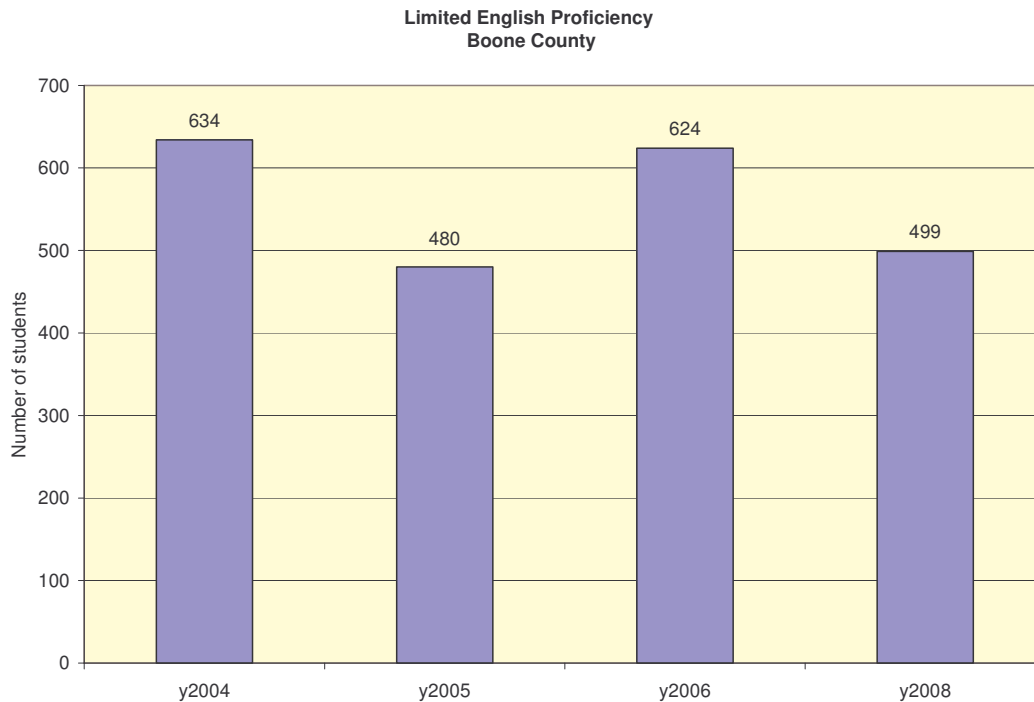
Children Receiving Services for Serious Emotional Disorders
Boone County



Source: Kids Count

Limited Literacy

While the percent of children age less than 18 years has remained relatively stable between 2004 and 2008, the number of students with limited English proficiency, on average, has increased.



Source: [Department of Elementary and Secondary Education](#)

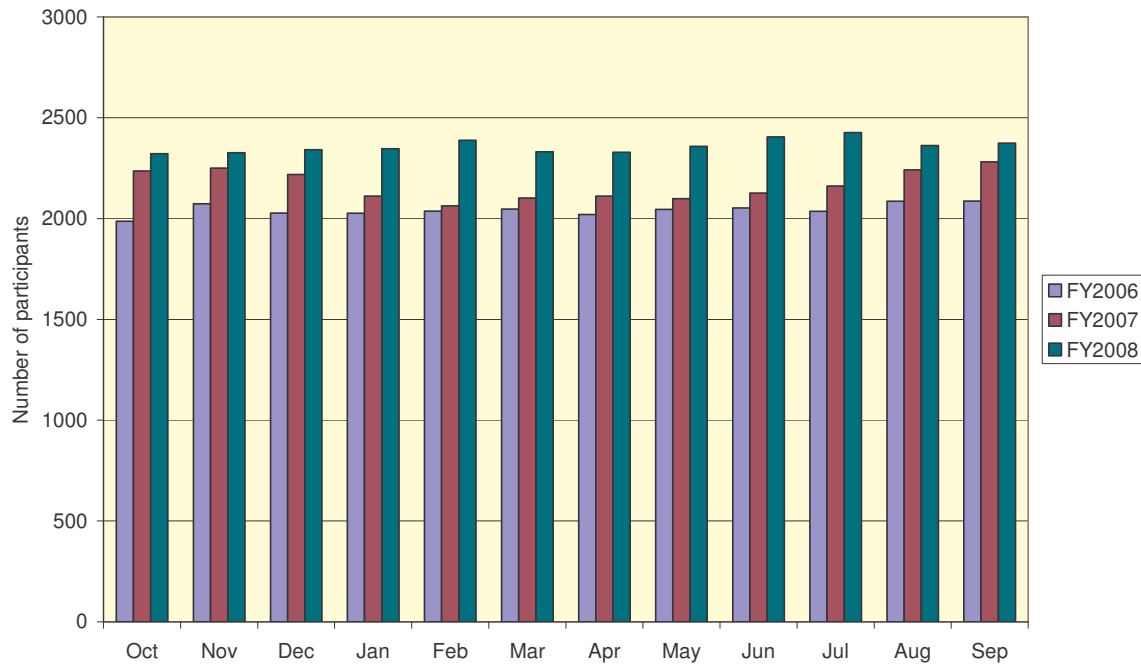
Dental Care for Children:

Low-income children - considerations

- **Low use of Medicaid.** Only 1 in 5 children covered by the Medicaid program receive the oral care for which they are eligible.
- **Limited legislative help.** Initiatives such as State Child Health Insurance Program (SCHIP) and Early Periodic Screening, Diagnostic, and Treatment (EPSDT) are designed to help low-income children; however, problems with limited outreach to families, interruptions in coverage, and administrative complexities decrease access and use of the services.
- **Few dentists accept Medicaid or SCHIP.** Of the relatively few dentists (nationally, 10 percent) who accept Medicaid recipients, few specialize in children's care. An additional problem rests in the perceived negative attitudes of dentists who often cite billing, low reimbursement, and busy schedules as cause for failing to accept Medicaid children.
- **Poor oral health outcomes.** Low-income children have more cavities and are more likely to have decayed teeth to go untreated at all ages.
- **Infrequent use of dental services.** Children from low-income households have fewer and less regular dental visits.
- **Location of dentists.** Most dentists practice in suburbia, rather than inner-city or rural areas where low-income children are more likely to need services.
- **Higher prevalence of cavities.** Early childhood cavities are more frequent among children of low socioeconomic status and certain racial or ethnic groups, such as Hispanics and African Americans. Source: [DHSS Oral Health Prevention MICA](#)

WIC Utilization

WIC Utilization 2006-2008
by Month



Utilization of the Women, Infants, and Children (WIC) program shows a steady increase each year.

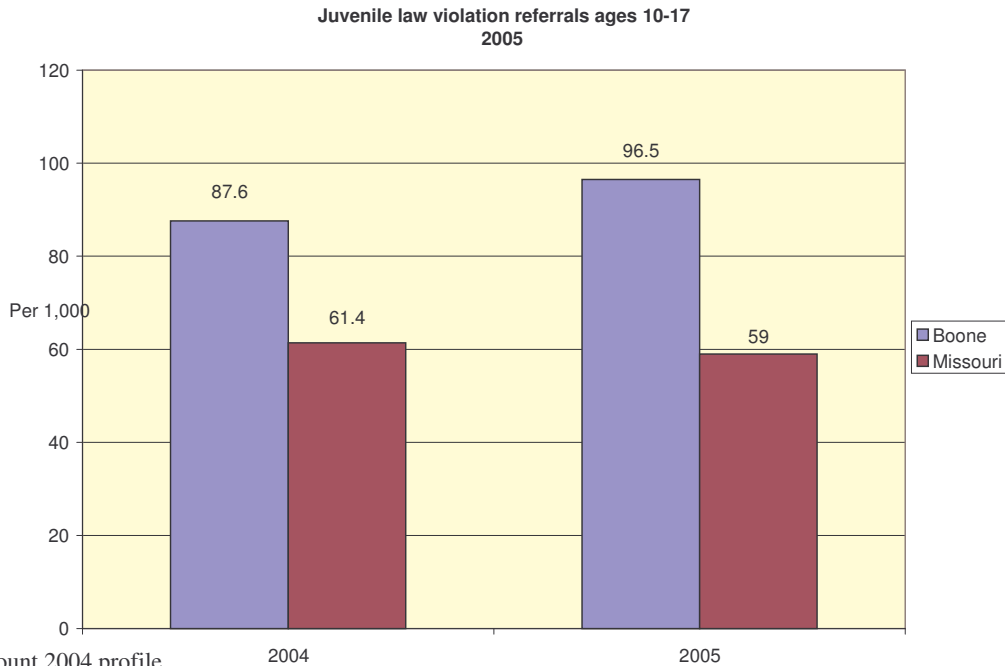
Leading Causes of Mortality in Children for Boone County

(Source: DHSS MICA)

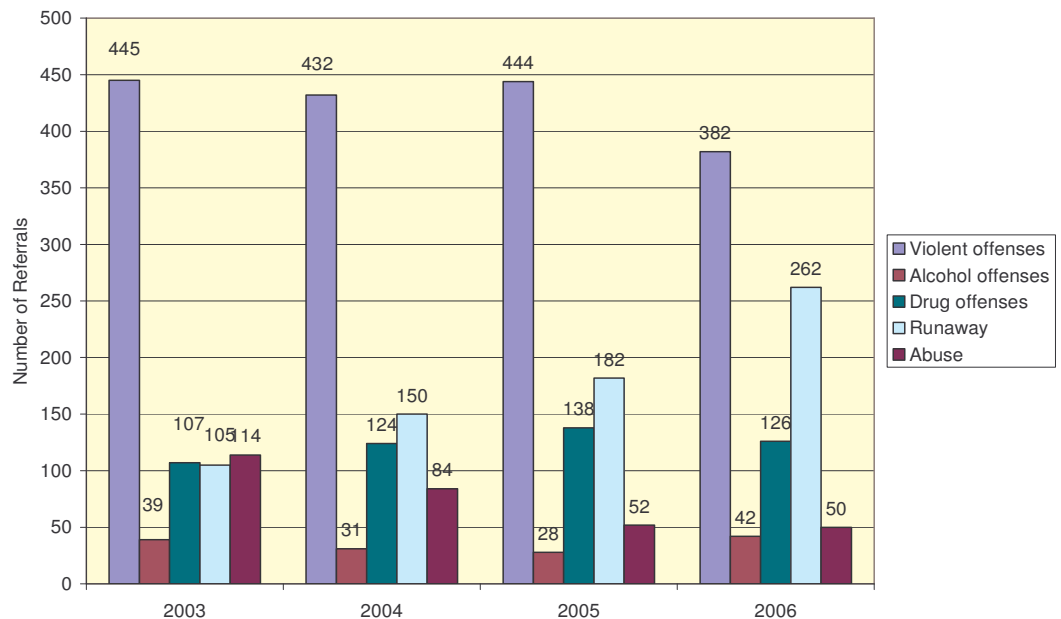
- Perinatal conditions and conditions of early infancy
- Birth defects

Adolescent Health

The Boone County rate was significantly above the state level. This may be in part due to better reporting.



Juvenile Court Referrals - Boone County



Source: [Department of Mental Health Status Report on Missouri's Alcohol and Drug Abuse Problems 2007](#)

Mental Health

Boone County was ranked by the Missouri Department of Mental Health, Division of Alcohol and Drug Abuse as 107 out of the 115 counties (a higher number represents more risk factors) in community risk factors for youth alcohol and substance use. Only one agency in Boone County

provides outpatient treatment and rehabilitation for youth. Residential rehabilitation services for youth are available to Boone County residents but are outside the county.

Chronic Disease Behavioral Risk of Youth

From the Missouri Youth Behavioral Risk Factor Surveillance System data:

- 44.7% of youth surveyed had had at least one alcoholic drink during the past 30 days.
- 51% of youth had ever tried cigarettes. 14% had at least once smoked 1 per day for 30 days. 11.5% smoked 20 cigarettes during the past month.
- 53.7% of the youth who smoke 10 cigarettes a day had tried to quit during the past 12 months
- 18% of high school youth ate fruits/vegetables 5 or more times per day.
- 43.5% of high school youth meet recommended levels of physical activity
- 21.5% of high school youth play 3 or more hours of video games per day; 29.6% watch 3 or more hours of TV per day.
- 30.3% of high school students attended PE classes 5 days a week.

Source: http://www.cdc.gov/healthyyouth/yrbss/pdf/yrbss07_mmwr.pdf

Priority Diseases or Conditions in Adolescents

- Motor Vehicle Accidents
- Assaults/Homicides
- Pregnancy Related Complications
- Anxiety-Related Mental Disorders
- Asthma

Leading Cause of Mortality in Adolescents for Boone County

According to the DHSS Missouri Information for Community Assessment (MICA) the following is the leading cause of mortality in adolescents.

- Motor vehicle accidents

Conclusions

Predictably, the physical and emotional risks characteristic of adolescents lead to morbidity involving accidents. These lifestyle choices are also the leading causes of mortality in this age group.

Adult Health Factors

Health Insurance

Boone County reflects Missouri in the rising numbers of uninsured. The following observations are described in the **2004 Missouri Health Care insurance and Access Survey: Selected Results:**

- The uninsured are almost entirely under the age of 65, with the largest **number** of uninsured in the 30-49 age group.
- No significant differences in uninsurance rates were found across racial groups. This parity in coverage across racial and ethnic groups is not typical.
- Uninsured people are disproportionately 19-24 year olds, low income families below 150% of the Federal Poverty Level.
- Education is positively associated with health insurance coverage. 15% of people who did not complete high school are uninsured compared to 3% of those with post graduate degrees.
- Those reporting poor health status (13.3%) are uninsured at a rate of twice that of those reporting excellent health status (6.3%)
- The highest **rate** of uninsurance is for age group 19-24.
- Missouri uninsurance rate for those insured all or part of the year is 10.9%
- Boone County prevalence for no health coverage is 12.2%.
- State prevalence for no health coverage is 12.3 %.

Source: 2003 Health and Preventive Practices Status Report, DHSS

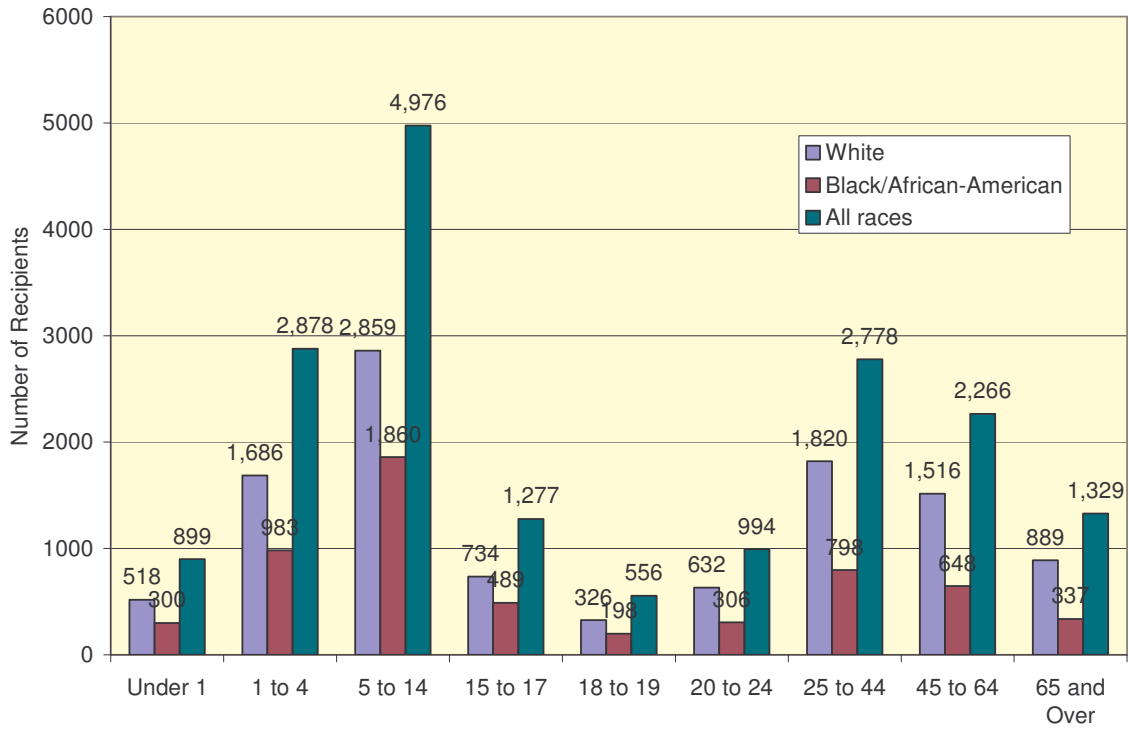
Uninsurance Comparison in Missouri, Using Typical Current Population Survey (CPS) Definition of Insurance Coverage

	2004 MHCIA Survey	2003* CPS
Percent uninsured, total population	9.4%	11.0%
Percent uninsured, children, age <18	3.9%	7.3%
Percent uninsured, adults age 18+	11.2%	12.3%
Percent uninsured, adults age 18-64	13.4%	15.0%

*Based on March 2004 CPS, referring to 2003 annual insurance coverage.
Sources: MHCIA: 2004 Survey and CPS: March 2004

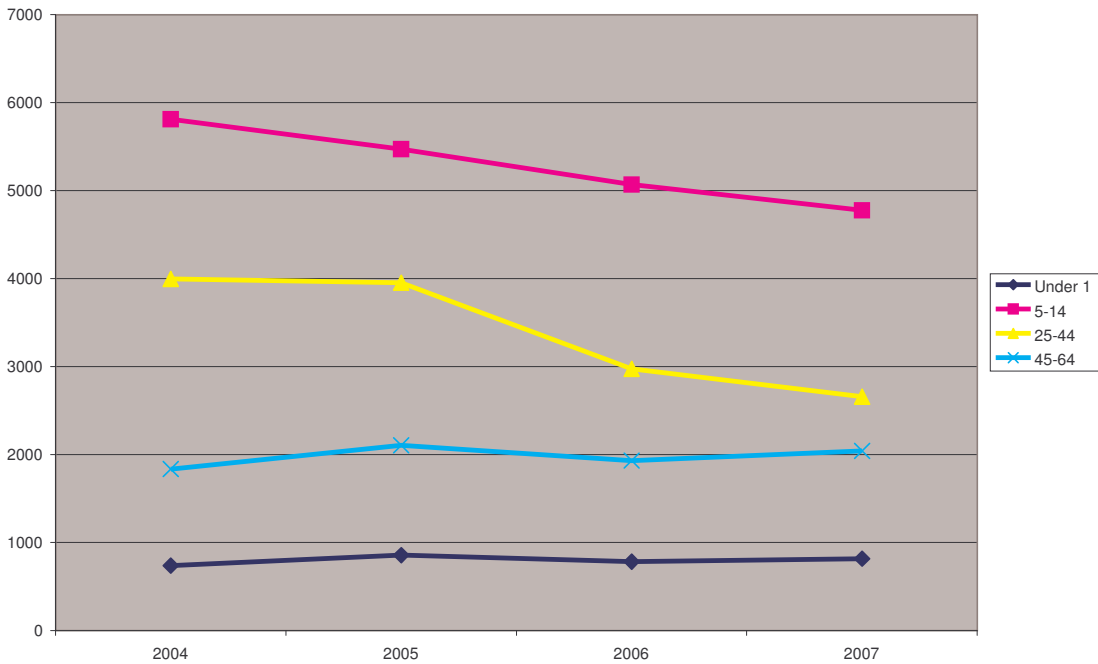
The 2000 poverty threshold was \$17,463 for a family of four. Source: USDC, Bureau of the Census
Medicaid statistics illustrate socioeconomic condition and access to care, as not all underinsured people can qualify for Medicaid assistance.

**Boone County Medicaid Recipients by Age
2008**



Source: [DHSS Medicaid MICA](#)

Medicaid participation Trends for Specific Age Groups



Source: DHSS

Dental Health

Low Income Adults

- **Limited education.** Level of education is a strong predictor for oral health. Individuals with less education are less knowledgeable regarding the benefits of oral health and regular dental visits.
- **High costs.** For low-income families without oral health insurance or Medicaid coverage, the out-of-pocket costs of tooth dental care may be too high. Other expenses such as medical costs take higher priority than oral health.
- **Transportation.** Lack of transportation to and from dental appointments and the need for repeated appointments may cause problems for some low-income families who require the use of public transportation.
- **Few dentists accept Medicaid.** A low proportion of dentists accept Medicaid as a payment source, creating an access barrier for low-income families to receive oral health care.
- **Dental provider shortage.** The geographical misdistribution of dentists perpetuates access problems often faced by low-income populations.
- **Location of dentists.** Most dentists practice in suburbia, rather than inner-city or rural areas where low-income populations are more likely to need services.
- **Perceived discrimination.** Research shows that low-income families sometimes experience discrimination as a result of using Medicaid and perceive their quality of care as lower than non-Medicaid families. Source: [DHSS Oral Health Prevention MICA](#)

Hospitalization

Causes of adult hospitalization:

Age 25-44:

- Pregnancy/childbirth (females)
- Digestive system
- Injury and poisoning

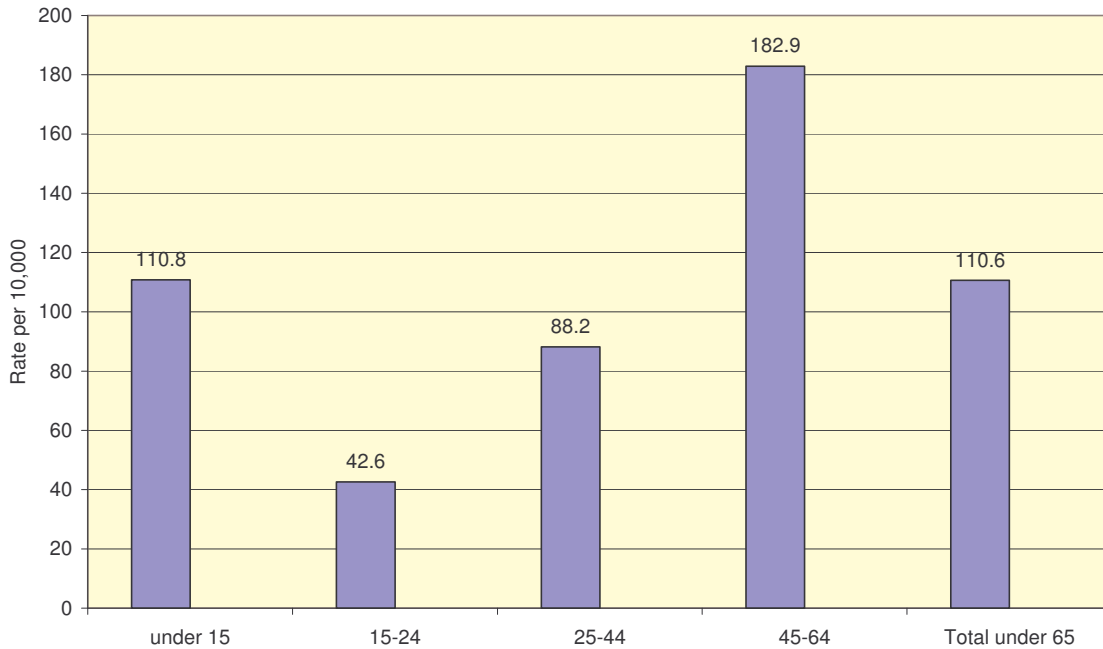
Age 45-64

- Diseases of the heart and circulation
- Injury (fractures and complications of implants)
- Digestive system

Preventable Hospitalization

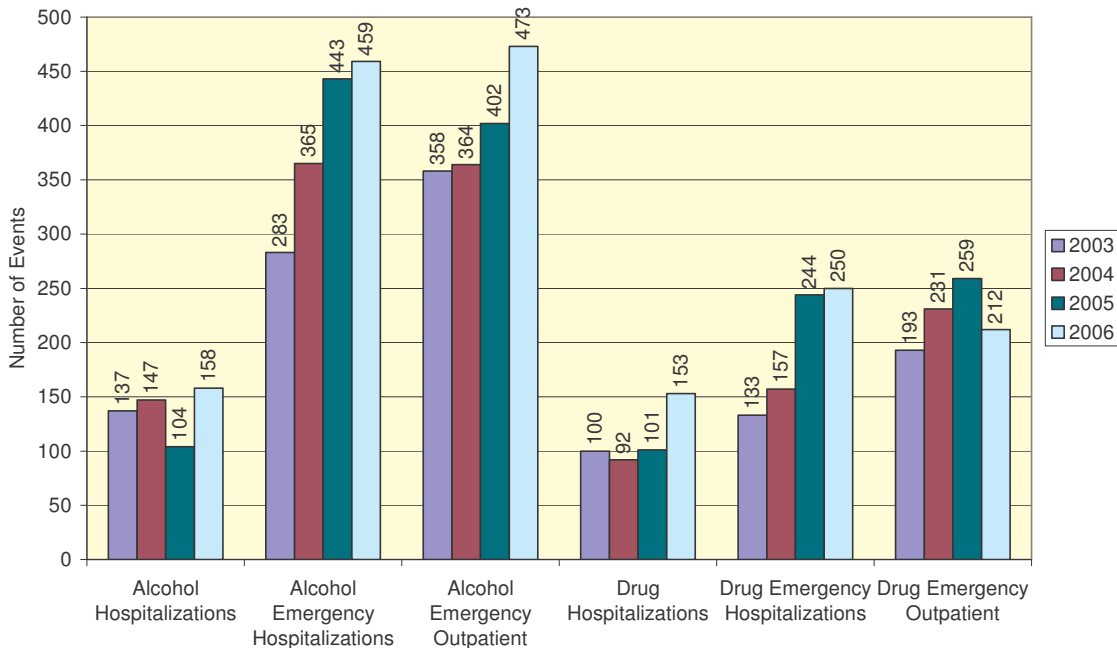
The following chart shows the rates of preventable hospitalizations for adults in Boone County in the context of all preventable hospitalizations.

**Preventable Hospitalizations for Boone County
2006**



Alcohol and Drug Related Hospital/Emergency Room Data

Alcohol and Drug Related Hospital/Emergency Room Data
Boone County



Source: [Department of Mental Health Status Report on Missouri's Alcohol and Drug Abuse Problems 2007](#)

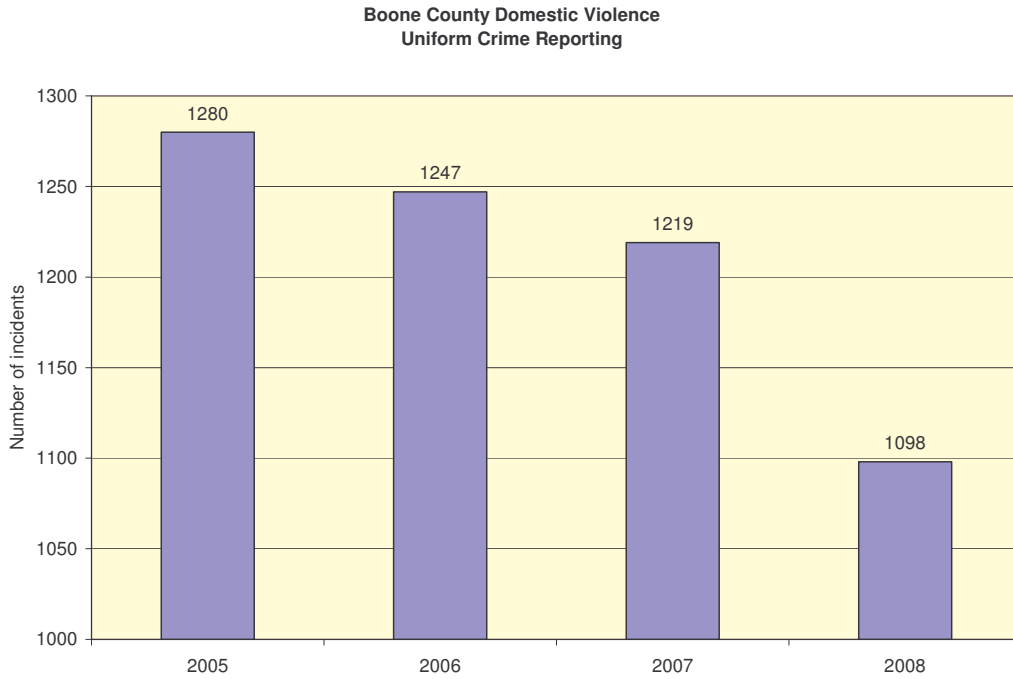
Family Violence and Crime

Violence against women can take many forms, from intimidation and control to stalking, battering, rape and even murder. Indeed, nearly one third of the women in this country who are murdered are

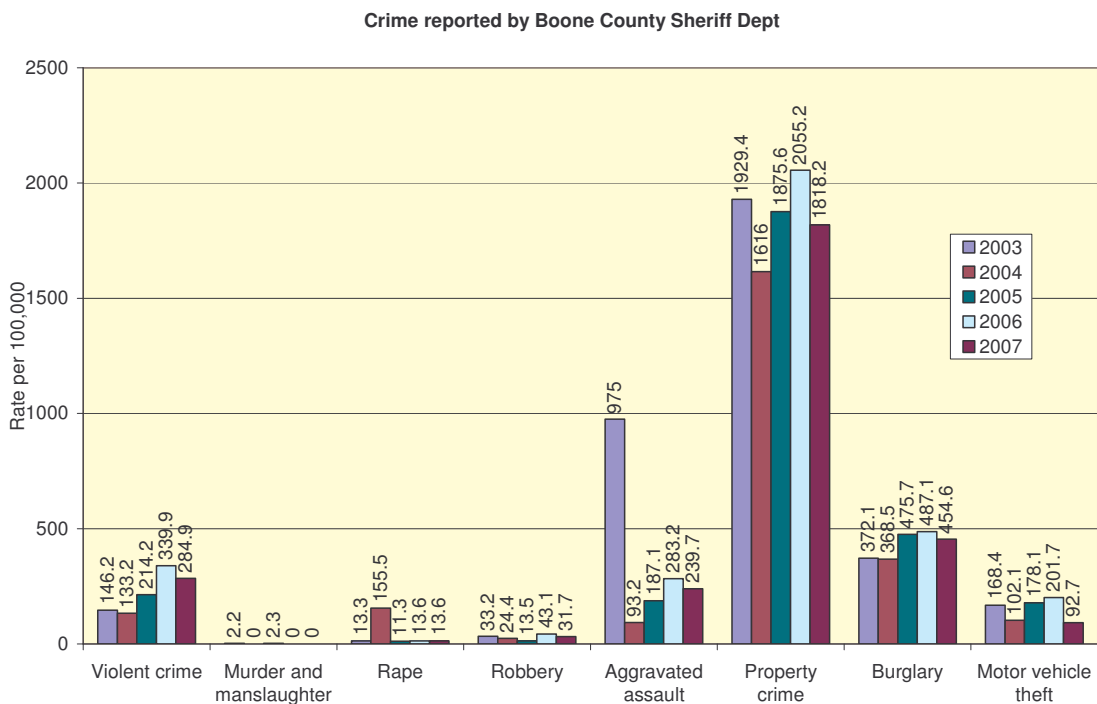
killed by a former or current intimate partner. As the leading cause of injury for American women between the ages of 15 and 54 years, violence is an ominous public health problem in this country.

The following definitions are from Intimate Partner Surveillance: Uniform Definitions and Recommendations Data Elements, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 1999.

Nationally, the U.S. Department of Justice estimates that about half of the incidents of intimate partner violence experienced by women are reported to police.



Source: [Missouri State Highway Patrol Statistical Analysis Center](#)



Priority Diseases or Conditions in Adults

- Heart Disease
- Diabetes
- Motor Vehicle Accidents
- Stroke/Other Cerebrovascular Disease
- Assaults/Homicides (excluding Abuse and Neglect)

Leading Causes of Mortality in Adults

Based on DHSS MICA death statistics

25-44 years of age:

- Cancer
- Suicide
- Motor vehicle accidents

45-65 years of age:

- Cancer
- Heart disease
- Diabetes
- Stroke

Conclusions

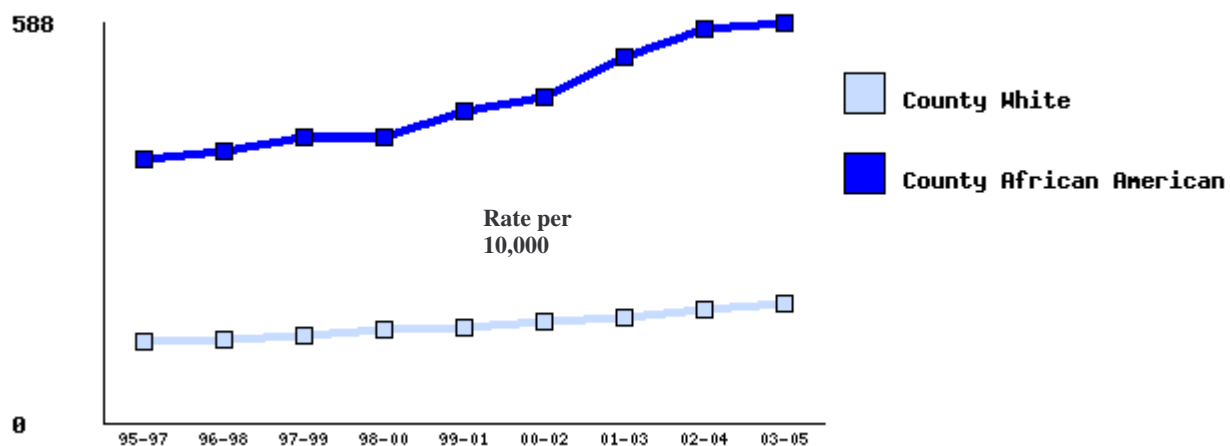
Obesity, lack of exercise, and smoking are contributing factors to cancer, heart disease, diabetes, and stroke. The higher rates of risk-taking behavior by males and younger adults may skew the overall adult rates for violent deaths by motor vehicle incidents and suicide.

Disparities

Diabetes

The greatest disparities for deaths in minorities of both sexes for diseases and conditions in the adult age groups were HIV/AIDS, pneumonia & influenza, assaults/homicides, colorectal cancer, chronic obstructive pulmonary disease (COPD) and Diabetes. The following chart shows the race disparity for diabetes in Boone County.

Diabetes: ER visits with diabetes as primary or secondary diagnosis for



Boone County Residents

Mental Health

Approximately 5,712 adults with serious mental illness in Boone County are not receiving appropriate treatment. Those who are least likely to receive appropriate treatment are in the 15-24 year age range, and of Hispanic ethnicity or African American race.

There are approximately 1,851 adults in Boone County who need, but do not receive treatment for an illicit drug problem.

The following groups are most likely to have unmet treatment needs:

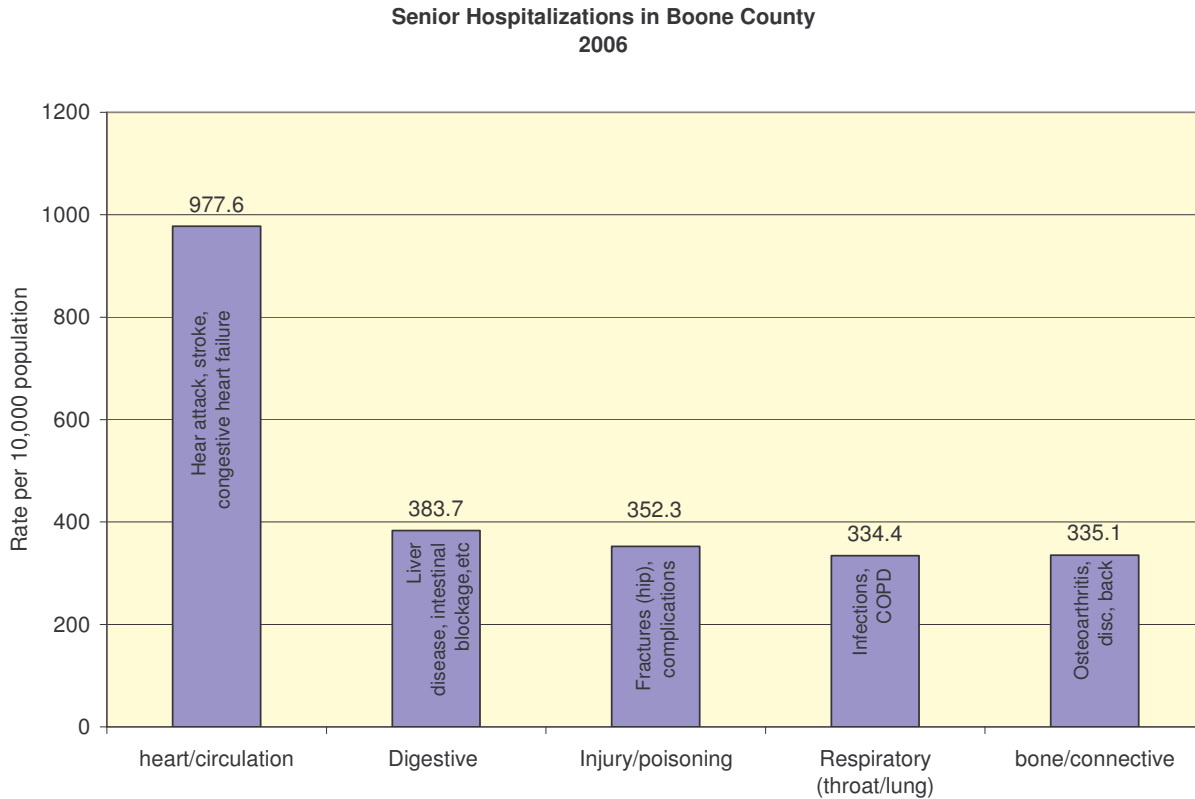
- The homeless
- Persons with physical disabilities or cognitive impairments
- Rural residents
- African Americans
- Hispanics
- Persons with co-occurring disorders
- Persons transitioning into the community from correctional systems

Source: Boone County Mental Health Needs Assessment 2004, Boone County Mental Health Board of Trustees

Indicators of Concern to Seniors

Hospitalizations

The following chart shows the hospitalization rates for senior citizens greater than 65 years of age.



Health and Wellness Measures for Boone County Seniors

No Exercise, 2007	30.9%
No Sigmoidoscopy or Colonoscopy, 2007	17.6%
High Blood Pressure, 2007	32.6%
Obesity, 2007	22%
Smoking, 2007	10.9%
No Mammography, 2007	33.6%
High Cholesterol, 2007	22.8%

Source: [MCDC2 Missouri Senior Report](#)

Priority Risk Factors for Seniors

Priorities are computed by DHSS based on a number of criteria including number of hospitalizations and emergency department visits, number of deaths, deaths under age 65, disability burden and racial disparity.

- Obesity
- Smoking
- No exercise
- No mammography

Priority Diseases/Conditions in Seniors

- Diabetes
- Heart disease
- Lung cancer
- Arthritis/lupus
- Falls
- Chronic Obstructive Pulmonary Disease (COPD)
- Pneumonia & influenza

Leading Causes of Mortality in Seniors

- Heart Disease
- Cerebrovascular disease (Stroke)
- Diabetes
- Chronic lower respiratory diseases
- Pneumonia and influenza
- All other accidents and adverse effects (defined by the Department of Health and Human Services: falls, transportation accidents, accidental drowning, accidental exposure to smoke and poisoning, accidental discharge of firearms.)

Longterm Care Facilities

The following table is the most current list of long term care facilities in Boone County.

FACILITY NAME	LEVEL OF LICENSURE	CITY
<u>ASHLAND HEALTHCARE</u>	<u>SKILLED NURSING FACILITY</u>	ASHLAND
<u>ASHLAND VILLA-ASSISTED LIVING BY AMERICARE</u>	<u>ASSISTED LIVING FACILITY OPTION 2</u>	ASHLAND
<u>BLUEGRASS TERRACE</u>	<u>RESIDENTIAL CARE FACILITY I</u>	ASHLAND
<u>BLUFF CREEK TERRACE-ASSISTED LIVING BY AMERICARE</u>	<u>ASSISTED LIVING FACILITY OPTION 2</u>	COLUMBIA
<u>BLUFFS, THE</u>	<u>SKILLED NURSING FACILITY</u>	COLUMBIA
<u>BRISTOL MANOR OF CENTRALIA</u>	<u>RESIDENTIAL CARE FACILITY I</u>	CENTRALIA
<u>CANDLELIGHT LODGE RETIREMENT CENTER</u>	<u>RESIDENTIAL CARE FACILITY II</u>	COLUMBIA
<u>COLUMBIA HEALTHCARE CENTER</u>	<u>SKILLED NURSING FACILITY</u>	COLUMBIA
<u>COLUMBIA MANOR CARE CENTER</u>	<u>SKILLED NURSING FACILITY</u>	COLUMBIA
<u>DAYBREAK RESIDENTIAL TREATMENT CENTER</u>	<u>RESIDENTIAL CARE FACILITY I</u>	COLUMBIA
<u>HARAMBEE HOUSE, INC</u>	<u>RESIDENTIAL CARE FACILITY II</u>	COLUMBIA
<u>HERITAGE HALL NURSING CENTER</u>	<u>SKILLED NURSING FACILITY</u>	CENTRALIA
<u>HILLCREST RESIDENTIAL CARE</u>	<u>ASSISTED LIVING FACILITY OPTION 1</u>	COLUMBIA

<u>LENOIR GARDENS</u>	<u>RESIDENTIAL CARE FACILITY II</u>	COLUMBIA
<u>LENOIR HEALTH CARE CENTER</u>	<u>SKILLED NURSING FACILITY</u>	COLUMBIA
<u>LENOIR MANOR</u>	<u>RESIDENTIAL CARE FACILITY I</u>	COLUMBIA
<u>PARKSIDE MANOR</u>	<u>SKILLED NURSING FACILITY</u>	COLUMBIA
<u>SOUTH HAMPTON PLACE</u>	<u>SKILLED NURSING FACILITY</u>	COLUMBIA
<u>STUART HOUSE, THE</u>	<u>INTERMEDIATE CARE FACILITY</u>	CENTRALIA
<u>STURGEON REST HOME</u>	<u>RESIDENTIAL CARE FACILITY I</u>	STURGEON
<u>TIGER PLACE</u>	<u>INTERMEDIATE CARE FACILITY</u>	COLUMBIA

Source: [DHSS](#)

Other Resources for seniors:

The Division of Senior and Disability Services Region 5 office is located in Columbia:
 1500 Vandiver Drive, Suite 102
 Columbia, MO 65202

Assisted living – Senior Apartments and Retirement Centers:

- Boone Retirement Center: 1623 Anthony St. Columbia, MO
- Lenoir Health Care Center: 3300 New Haven Ave, Columbia, MO
- Lenoir Retirement Community: 3612 S. Lenoir St. Columbia, MO

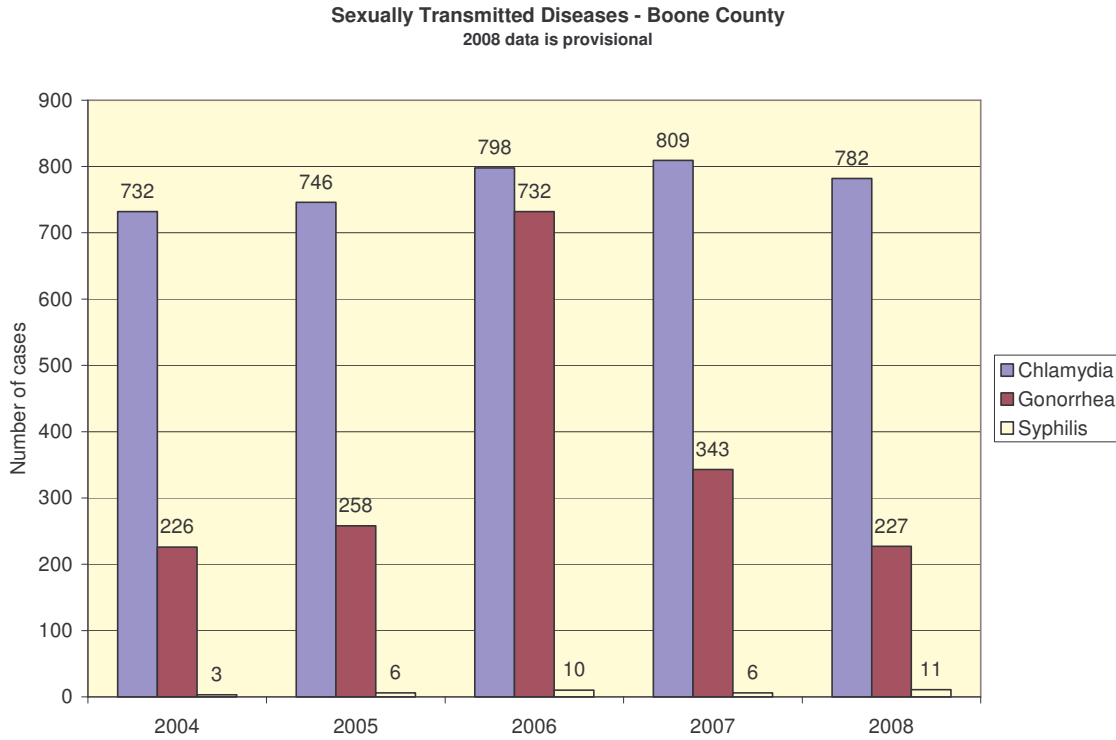
Central Missouri Regional Arthritis Center: Stephen’s College, Hillcrest Hall, 1507 E. Broadway, Columbia, MO

Conclusions

Many of the illnesses and deaths experienced by seniors over the age of 65 are in part a culmination of lifestyle choices such as smoking, lack of activity and diet, lack of regular prevention and screening services. In addition seniors experience a higher rate of falls and injuries probably related to loss of mobility (arthritis), lack of stability, poor vision, weakness, and disorientation.

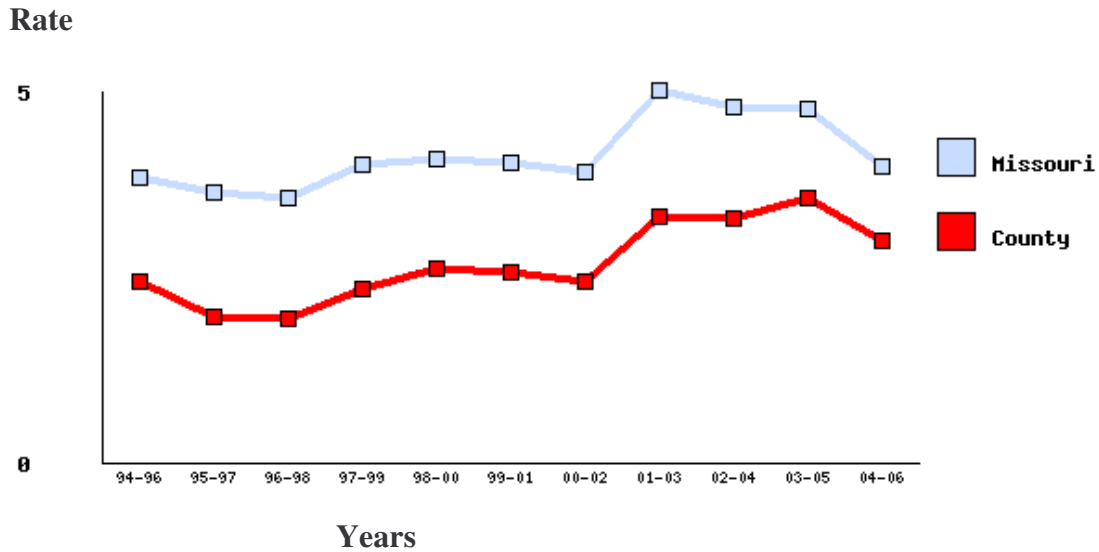
Analysis of Communicable Disease Rates

Boone County's sexually transmitted diseases are depicted in the chart below.



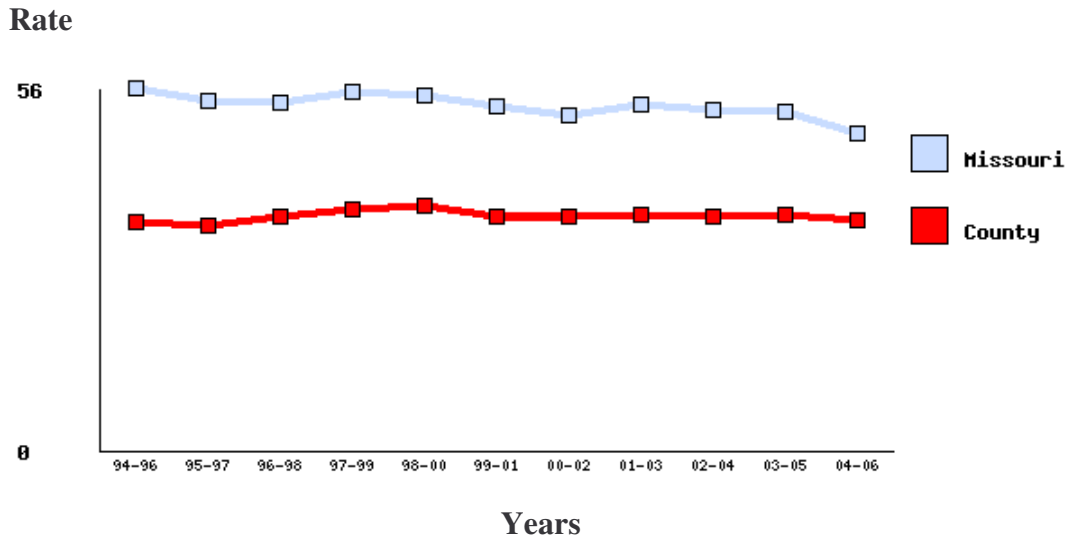
Pneumonia & Influenza Rates

Emergency Room Profile 3-Year Average Rates for Pneumonia and Influenza for Boone County Residents



Source: DHSS Community Data Profiles for emergency room visits

Hospitalization Profile 3-Year Average Rates for Pneumonia and Influenza for Boone County Residents



Source: DHSS Community Data Profiles for Hospitalizations

Boone County’s rate is not changing while the state’s rate is decreasing.

Analysis of Chronic Disease Rates

Physical inactivity is a risk that contributes to obesity and ultimately affects chronic disease rates including heart disease, diabetes, and certain cancers. Inactivity appears to emerge as a lifestyle in middle school children. Missouri Assessment Program no longer tracks health and physical education scores for Columbia and Missouri school children. In the last available report in 2002 only 1/3 of Columbia 9th graders were proficient, defined as meeting the state standard scores.

The County Level Study 2007 shows the following chronic disease indicators for Boone County

Indicator	Percent
No health care coverage	14
Smoking	18
No leisure-time physical activity	18.2
Less than 5 fruits/vegetables per day	71.7
Overweight	35.5
Obese	25.9
High Blood pressure	14.2
High cholesterol	17.8
Diabetes	5.7
No mammogram or breast exam in past year	18.1
No sig or colonoscopy in past 10 years	26.2
No pap smear in last 3 years	14.4

Source: [DHSS County Data Profiles 2007 Health and Preventive Practices](#)

Health Department Priorities and Planning

The Columbia/Boone County Department of Health and Human Services periodically analyzes the health issues in the community and adjusts its strategies accordingly. The following categories represent our current strategy to address health issues in Boone County:

- Injury Prevention
 - Falls
 - Animal bites
 - Bike safety/helmet use
 - Crashes
 - Child abuse/neglect
 - Suicide

- Disease prevention
 - Chronic disease:
 - Improved nutrition and access to healthy foods
 - Increased physical activity
 - Tobacco use reduction/smoking cessation
 - Preventive screening and self management of chronic diseases
 - Mental health

 - Communicable disease:
 - STD/Hepatitis C, HIV
 - Vaccines
 - TB
 - Food-borne illness

- Environmental protection and preparing for public health emergencies:
 - Lead
 - Radon
 - Mold
 - Food Safety
 - Neighborhood environments

- Improving the health of low income and minority populations

Community Issues Management (CIM)

The Public Health & Human Services Department is engaged in the implementation of a web-based system designed to help local and regional organizations frame, manage, and take action on complex community issues. The system combines data (agency, local, state, national) with GIS mapping and reporting tools to enable visualization and understanding of how issues impact people and place. This undertaking is new and no results are available at this time. The national CIM website offers examples of how the technology can be used: www.CIM-network.org

The Public Health Department has entered into an agreement to collaborate with the Center for Applied Research and Environmental Systems (CARES) at the University of Missouri and the Office of Social and Economic Data Analysis (OSED) – both located at the University of Missouri – on this project. In addition, the Public Health Department serves on the CIM Advisory Board.

Community Capacity for Health Care

Hospitals in Columbia

	Staffed Beds	Occupancy rate
Boone Hospital Center	350	70
Columbia Regional Hospital	190	31.3
University Hospitals and Clinics	318	54.1
Harry S Truman Memorial Veteran's Hospital	112	78.9
Mid Missouri Mental Health Center	69	99.7
Rusk Rehabilitation Center	60	84.1

Source: [DHSS County Data Profiles Hospitals](#)

Columbia/Boone County Department of Public Health & Human Services

The Columbia/Boone County Department of Public Health and Human Services provides core public health functions, expanded health services, and human services relating to its vision: Optimal health, welfare, and safety for all. Activities include: communicable disease prevention, chronic disease prevention, maternal/child health services, environmental health services, animal control, social services, human rights education and enforcement, vital records management, and emergency and disaster preparedness. The department monitors the health and social well-being of the community and assists in the development of policies and plans that support its vision. In order to ensure broad and sustainable support for its vision, the department provides a high level of leadership in the community through collaboration and education. Its annual operating budget is approximately \$5,000,000. Website: www.gocolumbiamo.com

Additional Health Information

Number of Licensed Child Care Facilities: 200; Capacity: 6,073
Family Health Center, Federally Qualified Health Center: 1

Ratios of care providers to population in Boone County:

Licensed physicians: 1:178
FTE (full time equivalents) primary care physicians to population: 1:969
Primary care physician FTE to poverty population (below 200 Poverty Level): 1:3,136
Licensed dentists to population: 1:1,472
Ratio of RNs Per Population: 1:56

Source: DHSS

Additional Health/Treatment Facilities

Family Counseling Center of Missouri Inc Daybreak Treatment Center
University Physicians Clinics: Behavioral Health Services Adult
Dialysis Clinics, Inc - Columbia - Columbia, - Dialysis Centers
Cancer Research Center
Missouri Cancer Associates

Boone Convenience Clinic
Broadway Physical Therapy
Reality House Programs, Inc
DRD Columbia Medical Clinic
Phoenix Programs
Mid-Missouri Dental Center- MC+ only
Kings Daughters- referral made by school nurse for dental and eye care for underserved children
UMKC Dental School
Lion's Club- for children; referred by school nurse for eye care
Birthright
Lutheran Family and Children's Services
Open Arms
Planned Parenthood
Health Connection
Pathways

Child Care/Camps/At-Risk Youth

Nora Stewart Nursery School
University YMCA
Harrisburg Preschool and Day Care
Boy Scouts, Great Rivers Council
Boys and Girls Club of the Columbia Area
Central Missouri Diabetic Children's Camp
Community Nursery Schools
Easter seals Child Development Center
Front Door, Boys & Girls Town of Missouri
Girl Scouts, Heart of Missouri Council
Head Start programs

Hotlines

2-1-1 for social services assistance	dial 2-1-1
Mid-Mo Crisis Line	449-2273 or 888-761-4357
Child Abuse Hotline	800-392-3738
Senior Services Hotline	800-392-0210
24 Hour Rape & Abuse Hotline (The Women's Shelter)	800-548-2480

Disabilities Services

Boone County Group Homes and Family Support
Bureau of Special Health Care Needs, State of Missouri
Central Missouri Regional Center, State of Missouri
Services for Independent Living

Services for the Elderly

Boone County Council on Aging
Central Missouri Area Agency on Aging (CMAAA)
Division of Aging, State of Missouri
Eldercare Center

Employment Services

Division of Workforce Development, State of MO
Job Center
Vocational Rehabilitation, State of MO

Food Assistance

Community Harvest Food Pantry
Salvation Army
New Life Evangelistic Center
Loaves and Fishes
Meals on Wheels
Central Missouri Food Bank & Pantry

Home Repair

Boone County Council on Aging- elderly (age 55+)
City of Columbia, Planning Department
Human Development Corporation
USDA Rural Development

Housing

Columbia Housing Authority- public housing/Section 8
Habitat for Humanity
Columbia Square- Private Section 8
Hanover Village- age 60+
Lakewood Apartments-
private Section 8

Legal Assistance

Mid-Missouri Legal Services Corp. (Legal Aid)

Parenting

Family Counseling Center
Parent Link
Parents as Teachers
Resource Parents

Rent Assistance

Salvation Army- limited assistance available
Human Development Corp

Shelters

Salvation Army Harbor House
St. Francis House
Lois Bryant for Women and families
New Life Evangelistic Center
Red Cross- for disaster relief
Rainbow House- for children
Women's Shelter- domestic violence

Transportation

OATS-must be age 60+ and/ or permanently disabled
 City of Columbia Para Transit- must be elderly and/or disabled
 Medicaid/MC+- contact plan; for medical appointments only

Utility Assistance

Health Department
 Central Missouri Community Action
 Salvation Army
 New Life Evangelistic Center

Coalitions

The Columbia/Boone County Department of Public Health & Human Services partners with several groups and coalitions that focus on a wide range of health, social, and physical needs of the community.

Active Living by Design	To Promote activity in routine life
Boone Indicators	Health and other community indicators
Boone County Basic Needs	Basic needs/housing issues
Boone County Health and Dental Access coalition	Health and dental access planning
Boone County Lactation Coalition	Breast feeding issues
Central Region Cancer Control Coalition	Cancer education
Central Region Ryan White Consortium	Allocation of federal funding provided by the Ryan White Care Act
Centro Latino	Latino/Hispanic issues
Columbia Public Schools Wellness Advisory Committee	Health & wellness for students, faculty, and staff
Columbia School Nurses	Partners in Education
Columbia Youth Prevention Policy Board	At risk youth
Columbia/Boone County Health and Medical Planning Committee	Health Planning
Columbia/Boone County Medical Reserve Corps	Organize health and medical volunteers during emergencies
Early Childhood Education coalition	Early childhood education
Emergency Department Law Enforcement and Public Health	To facilitate emergency services communication
Family Health Center Board of Directors	Guidance to FHC
Get About Columbia	Community effort to increase non-motorized forms of transportation
Health School Summit	School health professionals
Integration and Advocacy	Mental health needs

Interfaith Council	Faith-based health/human services
Loaves and Fishes	Homeless
Local Emergency Planning Committee	Chemical emergencies HazMat
Mayor's Council on Physical Fitness and Health	focus on school-age children
Missouri Cancer Consortium	Education and policy development
Missouri Coordinated School Health Coalition	Statewide non-profits, to promote school health programs
Missouri Heart Disease and Stroke Prevention	Education and Prevention
North Central Community Advisory Group for HIV Prevention	Strategic planning HIV prevention, North Central Missouri
Parent Education Committee	Parent involvement in teen health issues
Pednet Coalition	Promote bicycle use and pedways
Region F Health and Medical Planning	Hospitals and public health
Region F Public Health Bioterrorism Group	Bioterrorism
Safe Kids Coalition	To prevent unintentional childhood injuries
Senior Leadership	Senior citizens
Senior Network	Senior citizens
Smoke Free Air for Everyone	Cessation, education, and policy regarding tobacco use
Statewide Community Planning Group for HIV/STD Prevention	Strategic planning for HIV prevention throughout Missouri
Teen Pregnancy Prevention Coalition	Teen education to prevent pregnancy
Youth Community Coalition	Youth issues

Quick Reference to Indicator Rates

Preconception

Term	Definition
Births to females by age of mother	Percent of total live births
STDS (Chlamydia, Gonorrhea, Syphilis)	per 100,000 females 15-44
Births to females with less than 12 years of education	Percent of total live births
Mother ≥ 20 percent overweight for height	Percent of total live births with known pre-pregnancy weight and height
Mother > 15 percent underweight for height	Percent of total live births with known pre-pregnancy weight and height
Total live births and fertility rate	Rate per 1,000 females ages 15-44
Live Births – 5 year change	Percent change
Fertility rate – 5 year change	Percent change in rate
Teen Fertility Rate Under Age 18	Per 1,000 females 15-17
Teen Pregnancy Rate Under Age 18	Per 1,000 females 15-17
Repeat Births Under Age 20	Percent of total live births
Out-of-wedlock births	Percent of total live births
Spacing less than 18 months	Percent of second and higher order births with known spacing
Parity 4 +	Percent of total live births
Induced Abortions	Ratio per 1,000 live births
Repeat Abortions	Percent of total abortions
Induced Abortions to females < 18	Percent of pregnancies to females under 18
Unintended deliveries	Percent of total live births plus fetal deaths

Prenatal

Care Began First Trimester	Percent of total live births with known month prenatal care began
Late care (2nd/3rd Trimester)	Percent of total live births with known month prenatal care began
No care	Percent of total live births with known month prenatal care began
Inadequate prenatal care	Percent of total live births with known adequacy of care
Prenatal Medicaid participation	Percent of total live births with known Medicaid status
Prenatal WIC participants	Percent of total live births with known WIC status
Prenatal Food Stamps participation	Percent of total live births with known Food Stamps status
Weight gain <15 pounds full-term singletons	Percent of full-term singleton live births with known weight gain/loss
Weight gain >=45 pounds full-term singletons	Percent of full-term singleton live births with known weight gain/loss
Mother smoking	Percent of total live births

Delivery

Non-Hospital Deliveries	Rate per 1,000 live births
High risk not delivered in obstetric level II/III	Percent high risk deliveries born in Missouri
Cesarean deliveries	Percent of total live births
VBAC	Percent of (repeat Cesarean+VBAC)
Fetal deaths	Rate per 1,000 (live births plus fetal deaths)
Known Pregnancies	Total number of known deliveries+induced abortions

Healthy Live Births/(Known Pregnancies)	Percent of total known pregnancies
Healthy Live Births/(Live Births+Fetal Deaths)	Percent of total known deliveries(live births+fetal deaths)
Abortions/Known Pregnancies	Percent of total known pregnancies

Morbidity

Premature <37 weeks gestation	Percent of total live births with known gestational age
Low birth weight <2500 grams	Percent of total live births
Low Birth Weight & Term	Percent of total term live births
Very low birth weight <1500 grams	Percent of total live births
Small for gestational age	Percent of total singleton live births with known gestational age
Birth Defects	Rate per 10,000 live births
Neural Tube Defects	Rate per 10,000 live births

Utilization

Very Low Birth Weight Care for in Level III Centers	Percent of very low birth weight born in Missouri
Infants Participating in WIC	Percent of total live births
Infants on Medicaid	Percent of total live births

Mortality

Neonatal Deaths	Rate per 1,000 live births
Perinatal Deaths	Rate per 1,000 (live births plus fetal deaths)
Postneonatal deaths	Rate per 1,000 live births
Infant deaths	Rate per 1,000 live births
Sudden Infant Death Syndrome(SIDS)	Rate per 1,000 live births

Primary Data Sources for This Report

1. Department of Health and Senior Services Missouri Information for Community Assessment. <http://www.dhss.mo.gov/DataAndStatisticalReports/index.html>
2. MICA <http://www.dhss.mo.gov/MICA/> is a web-based access to the information collected by DHSS including birth and death statistics, US Census Data as it applies to Missouri and its counties, hospitalizations, diseases. The information is available at the user's choice by a number of demographic parameters including age, sex, and race. Reports can be copied directly into Excel spread sheets for preparation of graphs and charts. The Priority MICA provides a structured process to assist in determining the priority health needs of a community. The disease/risk factors were selected for inclusion into the application based on DHSS strategic plan, Health People 2010, and available data.

The Priority MICA separates diseases from risk factors because the same criteria for prioritizing diseases cannot be used to prioritize risk factors. For example, there are no death data for the risk factors "high cholesterol" or "mother underweight," and there are no incidence or prevalence data for most diseases.

3. U.S. Census: <http://censtats.census.gov/>
4. Missouri Center for Census Data: http://mcdc2.missouri.edu/websas/dp3_2ktmenus/mo/
5. Missouri Kids Count: http://mcdc2.missouri.edu/data/indctrs/kidsent/reports_graphs/reports.html uses Census Data to prepare reports related to child wellness issues.
6. American Community Survey: <http://www.census.gov/acs/www/Products/Profiles/Chg/2003/ACS/MO.htm>
7. Office of Social and Economic Data Analysis at University of Missouri-Columbia: <http://www.oseda.missouri.edu>
8. Missouri Department of Public Safety: <http://dps.mo.gov/home/dpshome.htm>
9. Missouri Department of Economic Development: <http://www.ecodev.state.mo.us/>
10. Missouri State Highway Patrol Universal Crime Report: <http://www.mshp.dps.missouri.gov/MSHPWeb/Root/index.html>
11. FBI Universal Crime Report: <http://www.fbi.gov/ucr/03cius.htm>

List of Acronyms

MCDC	Missouri Census Data Center
DHSS	Department of Health and Senior Services
MICA	Missouri Information for Community Assessment
DESE	Department of Elementary and Secondary Education
STD	Sexually transmitted disease
WIC	Women Infants and Children Program