Missouri Primary Care Needs Assessment

2015

Prepared by
The Missouri Department of Health and Senior Services
Office of Primary Care and Rural Health

Assisted by
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Bureau of Health Care Analysis and Data Dissemination

Office of Primary Care & Rural Health

Oral Health
Rural Health
Primary Care

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A Report by the Missouri Department of Health and Senior Services

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Executive Summary

The Missouri Department of Health and Senior Services, Office of Primary Care and Rural Health, Primary Care Office (PCO) conducted a Needs Assessment to identify Missouri communities with the greatest unmet health care needs, disparities, and health workforce shortages and to identify the key barriers to accessing primary health care.   The Missouri PCO Needs Assessment examines 32 primary care health indicators, which are subdivided into two groups: health status and health care access.

The health status category examines the current state of health in Missouri by incorporating indicators of:

- general population health, such as life expectancy and years of potential life lost;
- health-promoting practices such as breastfeeding;
- the prevalence of several notable diseases/health conditions; and
- mortality rates for the total population, infants, and several leading causes of death.

The health care access category examines Missouri residents' access to various health care services by considering:

- socioeconomic factors such as poverty and lack of health insurance;
- measures that may indicate a lack of access to preventive health services, such as dental-related emergency room (ER) visits and low birth weight;
- the usage of various types of health screenings; and
- the availability of several types of health care providers.

The health status and health care access indicators provide information about the relative health of each county and are used to determine where additional health resources may be necessary to meet the needs of high risk populations. Racial disparities are not included since data by race were not available for all indicators.

In order to better assess the need for additional health care resources in each county, the health status and health care access indicators were used to compare jurisdictions, ranking them on all the indicators. For each indicator, counties and the City of St. Louis were assigned a ranking from 1-115 based on their rates. For some indicators, such as life expectancy, the highest rate is the best rate. For others, such as infant mortality, the lowest rate is the best rate. This report is structured so that a rank of 1 always indicates the best rate, regardless of whether the best rate is the highest or lowest value, while 115 always indicates the worst rate. Tied counties were all assigned the better rank.

After the basic ranks were determined, quintile points were assigned to each indicator. Quintile points were summed across indicators to create the category rankings for health status and health care access. Please note that quintile points were assigned based on rank order of the counties and do not necessarily indicate any significant difference between counties.

Finally, the ranks from the health status and health care access categories were summed for each county, and these summed ranks were used to create overall primary care needs rankings.

Findings

The areas of highest overall need are primarily clustered in the southern part of the state, particularly in the southeast and south central areas. In fact, 22 of the 23 counties in the highest needs quintile are located south of the Missouri River; only one county (Sullivan) is located north of the Missouri River.

The following counties demonstrated the greatest need for improvement in their health status indicators:

- Pemiscot
- Butler, Ripley
- New Madrid
- Dunklin
- Mississippi
- Washington
- Iron, Wayne
- St. Francois
- Reynolds
- Carter

The following counties demonstrated the greatest challenges with health care access:

- Ripley
- Iron
- Morgan
- Oregon
- Shannon
- Wayne
- Carter
- Texas
- Washington
- Dunklin
- St. Clair
- McDonald
- Pemiscot
- Barton
- Benton
- Dent
- Bates
- Crawford
- Hickory
- Ozark
- Wright
- Barry
- Dallas
- Reynolds

While many of the high-need counties listed above have a health professional shortage area designation, medically underserved area or population, and/or federally qualified health center, most of the shortage designations either do not encompass the whole county or are established only for specific populations (e.g., Medicaid or low-income populations).

The counties with the highest primary care needs, based on the overall rankings are:

County	Health Status Rank	Health Care Access Rank	Combined Rank Scores	Overall Primary Care Needs Rank	BRFSS Region (See Appendix B for Map)
Ripley	113	115	228	115	Southeast
Iron	107	114	221	114	Southeast
Pemiscot	115	103	218	113	Southeast
Wayne	107	110	217	112	Southeast
Dunklin	111	105	216	110	Southeast
Washington	109	107	216	110	St. Louis Metro
Carter	104	107	211	109	Southeast
Dent	99	100	199	107	Central
New Madrid	112	87	199	107	Southeast
Mississippi	110	87	197	105	Southeast
Reynolds	105	92	197	105	Southeast

Most of these counties are located in or near the Bootheel[†] area. All of these counties are predominantly rural, although Washington County is part of a Census-designated Metropolitan Statistical Area (MSA) due primarily to its residents' commuting patterns.

In the Rural Policy Research Institute's (RUPRI) 2014 paper, *Access to Rural Health Care – A Literature Review and New Synthesis,* it was made clear that to design and develop a high performance rural health system, policy makers, providers, and the public need to understand clearly the concept of access to care. A synthesis of frameworks that includes the four dimensions of access (people, place, provider, and payment) serves as a basis for health care policy assessment. When designing or evaluating health care policy, policy makers should specifically consider each of the four access dimensions. How does the policy affect each of these dimensions, and how does the policy change the dynamic between the dimensions?

As the current health care delivery system begins to respond to increasing demands for quality improvement and cost control, access to health care services may be at risk for many Missourians. Health services researchers and policy makers should refocus on understanding health care access and designing access measures and systems that improve policies related to rural health care.

[†]Various definitions of the Bootheel exist. This report defines the Bootheel as five counties (Dunklin, Mississippi, New Madrid, Pemiscot, and Scott) located in the extreme southeast corner of Missouri.

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Introduction

Missouri Primary Care Office

The Missouri Primary Care Office (PCO), located within the Missouri Department of Health and Senior Services, Office of Primary Care and Rural Health, works with federal programs, state programs, communities, private entities, health care facilities, and providers to assess, develop, and expand comprehensive, community-based primary health care services. The PCO administers programs that serve and support communities, health care providers, critical access hospitals, federally qualified health centers, rural health clinics, and small rural hospitals.

As a critical part of its work, the PCO submits applications for the designation of Health Professional Shortage Areas (HPSAs). HPSAs are areas designated by the U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA) as having shortages of primary medical, dental, or mental health care providers. HPSAs can occur in urban or rural settings and are classified as:

- geographic (a county or service area),

- demographic (specific population group), or

- institutional (federally qualified health centers or other defined facilities).

Each health professional discipline (medical, dental, and mental) and each HPSA type (geographic, demographic, or institutional) has its own unique eligibility criteria and specific requirements.

Missouri currently has 210 Health Professional Shortage Areas designated by HRSA for Primary Medical Care. Of these 210 HPSAs, 28 are Comprehensive Health Centers (CHC), 1 is a Correctional Facility, 2 are Federally Qualified Health Center (FQHC) Look-a-Likes, 28 are Geographic, 2 are Geographic High Needs, 79 are Population HPSAs, 1 is a Native American Tribal Population, 67 are Rural Health Clinics (RHC), and 2 are Other Facilities.

There are 104 Mental Health HPSA designations in Missouri. Twenty (20) of these are Correctional Facilities, 28 are CHCs, 2 are FQHC Look-a-Likes, 8 are Geographic, 2 are Geographic High Needs, 8 are Population HPSAs, 1 is a Native American Tribal Population, 32 are Rural Health Clinics (RHC), and 3 are Other Facilities.

One hundred four (104) Dental Health HPSAs are currently designated in Missouri. Of these 104 HPSAs, 25 are Geographic, 2 are Geographic High Needs, and 74 are Population HPSAs.

The PCO recognizes that assessing access to healthcare services is complex and influenced by more than just the number of people and the number of providers in a particular area. Healthcare needs and service requirements can vary considerably depending on population characteristics, such as age, income, environmental factors, and behaviors. At the same time, physician availability is not uniform in rural or urban areas due to financial, racial, and cultural barriers. As such, a more thorough and nuanced analysis is warranted for communities/areas in Missouri.

Purpose of the Primary Care Needs Assessment

The purpose of the PCO Needs Assessment is to identify communities with the greatest unmet health care needs, disparities, and health workforce shortages within the state of Missouri and to identify the key barriers to accessing primary healthcare.

Primary healthcare resources are key elements in the maintenance of health and the prevention and treatment of disease. Basic access to primary care physicians, dentists, and mental health practitioners improves overall health and contributes significantly to an area's economic vitality. Unfortunately, in Missouri these resources are limited, even for those who have health insurance and have no financial difficulty.

In preparing this Primary Care Needs Assessment report, the Missouri PCO utilized the 2010 Maryland Primary Care Needs Assessment published by the Maryland Mental Health and Hygiene's Primary Care Office as a source of inspiration.

Health Indicators

Indicator Selection

Multiple data sources and health indicators were considered for inclusion in this assessment. Those that were selected were assigned to one of two overarching primary care categories, health status and health care access, that were used to structure these rankings.

The health status category attempts to measure the current state of health in Missouri by incorporating indicators of:

- general population health, such as life expectancy and years of potential life lost;
- health-promoting practices such as breastfeeding;
- the prevalence of several notable diseases/health conditions; and
- mortality rates for the total population, infants, and several leading causes of death.

The health care access category examines Missouri residents' access to various health care services by considering:

- socioeconomic factors such as poverty and lack of health insurance;
- measures that may indicate a lack of access to preventive health services, such as dental-related emergency room (ER) visits and low birth weight;
- the usage of various types of health screenings; and
- the availability of several types of health care providers.

Health Status Indicators	*Health Care Access Indicators*
Life Expectancy	Population Living in Poverty
Years of Potential Life Lost	Uninsured
Ever Breastfed	Medicaid Enrollment
Self-Reported Health Status	Medicare Enrollment
Obesity	Inadequate Prenatal Care
Hypertension	Low Birth Weight
High Cholesterol	Mammogram Screenings
Smoking	Pap Smear Screenings
Diabetes	Sigmoidoscopy and Colonoscopy Screenings
Asthma	Preventable Hospitalizations
Depressive Disorders	Dental Visit in the Past Year
HIV/AIDS	Dental ER Visits
Total Mortality	Population to Primary Care Provider Ratio
Infant Mortality	Population to Mental Health Care Provider Ratio
Heart Disease Mortality	Population to Dentist Ratio
Cancer Mortality	
Chronic Lower Respiratory Disease (CLRD) Mortality	
Stroke Mortality	

County-level rates for each indicator included in these rankings are provided in Appendix A, along with a brief discussion of the importance of each indicator. Data sources and data years are also provided in Appendix A. Data years vary by indicator because the most recent data available from each source were utilized in these rankings, and the frequency of updates varies by source. When appropriate, multiple years of data were combined for indicators with unstable rates for a large number of counties. An unstable rate is defined as a rate based on fewer than 20 cases. Age-adjusted rates were used rather than crude rates for indicators that are heavily influenced by the age structure of a population. These include deaths, hospitalizations, and ER visits, among others. For additional information on the statistical terms and concepts utilized in this report, please refer to the Glossary in Appendix B.

Ranking Methodology

The State of Missouri is composed of 114 counties and the City of St. Louis, which is an independent city that functions as its own county. (Throughout this report, the City of St. Louis will be specified as "St. Louis City." St. Louis County will be noted as simply "St. Louis.") For each indicator included in this assessment, the counties and the City of St. Louis were assigned a ranking from 1-115 based on their rates. For some indicators, such as life expectancy, the highest rate is the best rate. For others, such as infant mortality, the lowest rate is the best rate. This report is structured so that a rank of 1 always indicates the best rate, regardless of whether the best rate is the highest or lowest value, while 115 always indicates the worst rate. Tied counties were all assigned the better rank. After the basic ranks were determined, quintile points were assigned to each indicator based on the table in Figure 1.

Figure 1: Initial Ranks and Corresponding Quintile Points

Initial Ranks	Quintile Points
1-23	1
24-46	2
47-69	3
70-92	4
93-115	5

Quintile points were summed across indicators to create the category rankings for health status and health care access. Quintile points by county and indicator are shown in Tables 1 and 2. Please note that quintile points were assigned based on the rank order of the counties and do not necessarily indicate any significant difference between counties.

Finally, the ranks from the health status and health care access categories were summed for each county, and these summed ranks were used to create overall primary care needs rankings, as shown in Table 3.

Health Status Rankings

Table 1: Health Status Quintile Points and Rankings by County

County	Life Expectancy	Years of Potential Life Lost	Ever Breastfed	Self-Reported Health Status	Obesity	Hypertension	High Cholesterol	Smoking	Diabetes	Asthma	Depressive Disorders	HIV/AIDS	Total Mortality	Infant Mortality	Heart Disease Mortality	Cancer Mortality	CLRD Mortality†	Stroke Mortality	TOTAL QUINTILE POINTS	HEALTH STATUS RANK
Adair	2	1	3	2	3	1	3	2	4	3	4	3	2	4	2	2	3	4	48	40
Andrew	2	2	1	1	5	1	3	4	1	5	1	1	1	4	2	1	3	3	41	23
Atchison	1	3	1	1	2	2	2	2	3	2	2	1	2	1	1	2	5	5	38	17
Audrain	2	3	4	4	5	5	3	3	2	1	4	3	3	1	1	4	5	3	56	64
Barry	4	4	2	2	2	2	4	4	5	3	5	3	4	3	5	3	2	5	62	84
Barton	2	3	3	2	2	4	5	1	5	2	2	1	2	3	1	1	1	4	44	33
Bates	3	5	4	4	2	4	1	1	3	2	3	5	3	1	3	4	3	4	55	62
Benton	4	5	3	4	2	1	1	3	3	2	1	4	4	3	3	5	5	4	57	68
Bollinger	4	4	3	5	5	3	4	3	5	4	3	1	4	4	5	4	3	2	66	94
Boone	1	1	2	1	2	2	4	2	3	3	4	5	1	2	1	1	1	2	38	17
Buchanan	4	3	4	3	3	4	2	4	4	2	5	5	4	4	3	4	5	5	68	96
Butler	5	4	4	5	4	5	5	5	5	5	5	5	5	5	4	5	5	5	86	113
Caldwell	4	5	4	2	1	2	3	4	3	2	4	4	3	5	2	3	2	1	54	59
Callaway	3	3	2	3	3	1	4	3	4	2	2	3	2	5	2	2	4	2	50	45
Camden	1	2	1	2	1	4	2	5	2	1	4	1	1	1	3	1	2	2	37	16
Cape Girardeau	1	1	4	1	1	4	3	2	3	2	3	4	2	3	2	1	1	3	41	23
Carroll	4	5	3	4	5	3	2	1	3	4	1	1	4	3	5	1	2	2	53	55
Carter	5	5	5	5	5	3	4	3	5	3	4	1	5	5	3	5	5	4	75	104
Cass	2	1	2	1	3	2	3	2	4	5	4	4	2	1	1	2	3	3	45	34
Cedar	4	4	4	5	4	3	2	2	1	5	4	2	4	5	3	4	4	4	64	92
Chariton	2	1	2	2	5	5	5	3	2	2	5	3	1	1	4	2	3	1	1	48	40
Christian	1	1	1	2	1	1	2	1	1	2	3	4	1	1	1	1	1	3	28	3
Clark	3	2	5	4	3	1	1	3	5	1	2	2	3	2	4	5	5	5	56	64
Clay	1	1	2	2	2	2	3	1	3	4	3	5	1	1	1	2	4	1	39	20
Clinton	4	4	2	1	1	1	3	2	2	1	1	2	5	3	2	4	5	5	48	40
Cole	1	2	3	1	1	1	1	1	2	1	1	5	1	3	1	2	3	1	31	4
Cooper	2	3	1	3	1	2	2	3	3	5	2	3	2	3	4	1	2	3	45	34
Crawford	4	3	3	4	3	5	5	5	5	4	3	3	4	1	5	4	2	3	66	94

†CLRD refers to Chronic Lower Respiratory Disease.

County	Life Expectancy	Years of Potential Life Lost	Ever Breastfed	Self-Reported Health Status	Obesity	Hypertension	High Cholesterol	Smoking	Diabetes	Asthma	Depressive Disorders	HIV/AIDS	Total Mortality	Infant Mortality	Heart Disease Mortality	Cancer Mortality	CLRD Mortality	Stroke Mortality	TOTAL QUINTILE POINTS	HEALTH STATUS RANK
Dade	4	3	3	1	4	3	1	5	1	3	1	4	5	2	2	5	3	3	53	55
Dallas	3	2	5	4	5	5	2	3	4	3	1	3	3	3	1	3	3	1	54	59
Daviess	2	1	1	4	5	3	5	2	1	4	3	2	2	3	3	3	2	5	51	51
DeKalb	2	4	1	3	2	4	1	1	1	2	1	2	2	2	4	1	4	4	41	23
Dent	5	4	4	5	3	4	4	5	4	4	5	1	4	3	3	3	4	5	70	99
Douglas	2	3	2	2	4	1	5	1	3	4	4	4	2	1	1	3	5	2	49	44
Dunklin	5	5	5	5	3	5	5	4	5	4	4	4	5	5	5	5	5	5	84	111
Franklin	3	3	4	2	2	4	2	3	1	3	3	3	4	2	3	3	2	3	50	45
Gasconade	3	4	3	1	4	1	1	1	1	1	1	3	3	4	3	3	1	4	42	29
Gentry	1	1	4	1	1	3	4	2	2	5	1	1	1	4	1	1	4		43	31
Greene	2	2	1	2	1	2	3	2	2	2	4	5	2	2	2	2	2	2	40	21
Grundy	2	3	4	1	1	3	2	5	1	4	5	2	2	2	2	4	3	4	50	45
Harrison	2	5	2	2	4	4	1	4	5	4	5	2	2	4	4	1	2	1	54	59
Henry	5	5	3	4	5	2	4	3	3	2	4	3	5	4	4	5	3	5	69	98
Hickory	3	5	5	3	3	3	1	5	2	3	2	3	2	4	1	3	2	3	53	55
Holt	1	1	4	1	4	2	2	5	1	1	4	1	1	2	1	1	4	2	38	17
Howard	1	1	5	1	4	1	1	1	1	1	1	3	2	3	2	2	1	4	36	13
Howell	5	4	2	3	1	2	1	4	3	1	5	4	5	3	3	4	5	5	60	77
Iron	5	5	5	5	3	4	4	5	5	1	5	4	5	4	5	5	5	5	80	107
Jackson	3	3	2	2	2	3	2	3	3	5	3	5	3	3	1	3	2	3	51	51
Jasper	4	3	3	2	4	5	2	2	4	2	3	5	4	1	5	2	5	2	58	70
Jefferson	4	3	4	1	3	3	3	2	2	4	2	4	5	2	4	5	4	4	59	74
Johnson	2	1	1	3	3	4	4	3	5	3	2	4	2	2	2	3	2	4	50	45
Knox	3	3	1	3	2	2	2	1	1	2	3	2	3	1	2	5	4	1	41	23
Laclede	4	3	2	3	1	3	4	2	4	3	4	4	4	5	5	3	3	5	62	84
Lafayette	2	2	2	3	5	5	3	1	2	2	4	4	3	2	4	3	3	2	52	53
Lawrence	3	2	1	1	3	2	1	3	1	1	2	2	3	4	1	2	4	5	41	23
Lewis	2	2	2	1	4	3	1	2	1	3	1	3	2	2	4	3	1	5	42	29
Lincoln	3	1	4	2	3	2	4	2	1	3	4	2	4	2	4	4	1	4	50	45

Table 1: Health Status Quintile Points and Rankings by County (continued)

County	Life Expectancy	Years of Potential Life Lost	Ever Breastfed	Self-Reported Health Status	Obesity	Hypertension	High Cholesterol	Smoking	Diabetes	Asthma	Depressive Disorders	HIV/AIDS	Total Mortality	Infant Mortality	Heart Disease Mortality	Cancer Mortality	CLRD Mortality	Stroke Mortality	TOTAL QUINTILE POINTS	HEALTH STATUS RANK
Linn	3	4	4	2	5	2	5	3	3	1	2	5	3	2	5	2	4	3	58	70
Livingston	3	2	3	3	4	1	4	2	4	2	2	1	2	2	4	3	3	2	47	37
McDonald	5	5	3	3	2	1	4	4	2	2	3	4	5	4	3	4	3	2	59	74
Macon	3	4	3	3	2	3	4	3	2	4	2	4	3	1	3	2	1	3	50	45
Madison	5	5	5	5	1	4	3	4	5	4	4	3	5	4	5	5	5	1	73	102
Maries	2	2	3	3	5	2	4	3	2	1	4	1	3	1	5	3	1	2	47	37
Marion	3	1	3	3	5	2	2	4	4	3	3	3	4	3	3	4	5	3	58	70
Mercer	2	2	5	3	5	2	5	5	2	5	3	1	1	5	1	2	2	1	52	53
Miller	4	3	3	4	3	4	4	2	3	1	2	3	4	2	5	4	3	2	56	64
Mississippi	5	5	5	4	3	5	5	5	3	4	5	5	5	4	5	5	4	5	82	110
Moniteau	2	1	4	3	3	1	1	1	1	5	2	1	2	1	2	1	3	1	35	9
Monroe	1	1	1	3	2	1	2	3	4	4	2	2	1	1	3	1	2	1	35	9
Montgomery	4	2	3	2	5	4	5	5	2	1	3	4	4	4	4	5	4	1	62	84
Morgan	4	4	2	4	2	4	3	2	1	4	2	2	5	4	3	4	3	3	56	64
New Madrid	5	5	5	5	5	5	5	2	5	5	5	5	5	5	5	5	5	3	85	112
Newton	3	2	1	3	4	2	1	1	4	3	5	3	3	3	3	2	2	3	48	40
Nodaway	1	1	1	1	1	4	1	1	1	1	1	2	1	2	2	1	1	2	25	1
Oregon	4	4	5	4	3	3	4	4	2	2	5	3	3	2	5	2	1	1	57	68
Osage	1	4	3	2	1	1	3	1	1	3	1	1	1	3	4	1	1	1	33	7
Ozark	5	5	1	5	3	2	4	5	4	5	2	5	4	1	2	4	2	4	63	91
Pemiscot	5	5	5	5	4	5	5	5	5	5	5	5	5	5	5	5	5	4	88	115
Perry	1	1	5	1	1	3	1	3	1	1	1	2	1	1	3	2	1	2	31	4
Pettis	2	2	2	3	2	3	1	2	3	3	4	4	2	2	2	4	2	4	47	37
Phelps	3	4	2	4	5	5	1	4	4	4	4	2	3	3	2	1	4	5	60	77
Pike	3	2	5	4	3	5	3	2	4	4	3	2	3	5	5	3	4	2	62	84
Platte	1	1	1	1	2	1	4	3	2	1	2	5	1	1	1	1	2	1	31	4
Polk	4	2	1	3	4	4	5	4	5	4	5	2	4	1	1	2	4	5	60	77
Pulaski	4	2	2	1	2	5	3	1	3	4	1	5	5	4	4	4	4	5	59	74
Putnam	3	5	3	5	3	3	5	4	2	5	5	1	3	5	4	4	4	1	65	93

Table 1: Health Status Quintile Points and Rankings by County (continued)

County	Life Expectancy	Years of Potential Life Lost	Ever Breastfed	Self-Reported Health Status	Obesity	Hypertension	High Cholesterol	Smoking	Diabetes	Asthma	Depressive Disorders	HIV/AIDS	Total Mortality	Infant Mortality	Heart Disease Mortality	Cancer Mortality	CLRD Mortality	Stroke Mortality	TOTAL QUINTILE POINTS	HEALTH STATUS RANK
Ralls	1	2	4	2	4	4	2	1	3	2	3	1	1	5	1	2	2	1	41	23
Randolph	3	3	3	4	3	3	4	3	4	2	5	3	4	2	2	5	3	2	58	70
Ray	4	4	5	3	4	4	4	3	2	5	1	3	4	2	4	4	4	1	61	83
Reynolds	5	5	4	5	5	5	5	5	4	5	3	1	5	5	4	4	5	2	77	105
Ripley	5	4	5	5	5	5	5	5	5	5	5	2	5	5	5	5	5	5	86	113
St. Charles	1	1	2	1	1	1	3	1	1	2	2	4	1	2	1	1	1	1	27	2
St. Clair	4	5	4	5	1	2	2	5	4	5	5	2	3	1	4	3	3	4	62	84
St. Francois	5	5	4	5	4	5	3	4	5	4	4	5	5	3	5	5	5	3	79	106
St. Louis	1	1	4	1	2	3	1	1	2	3	2	5	1	3	2	1	1	2	36	13
St. Louis City	5	5	5	3	2	4	2	4	4	4	3	5	5	5	5	5	1	4	71	100
Ste. Genevieve	1	3	3	2	1	2	3	2	3	2	1	4	1	1	3	1	1	1	35	9
Saline	3	2	1	2	5	3	3	5	3	3	3	4	3	5	4	5	2	4	60	77
Schuyler	3	3	2	4	4	1	1	1	3	4	1	2	2	5	1	2	4	3	46	36
Scotland	1	2	5	1	1	1	2	1	1	1	1	1	2	4	1	3	3	2	33	7
Scott	5	5	5	5	1	4	2	5	5	5	1	5	4	5	4	4	5	4	74	103
Shannon	5	4	2	5	1	4	3	4	2	1	2	3	4	5	4	4	4	5	62	84
Shelby	2	4	1	4	5	5	5	1	2	5	2	1	2	3	3	3	3	4	55	62
Stoddard	4	5	5	5	2	5	5	4	5	2	3	2	4	4	2	5	5	5	72	101
Stone	1	3	1	4	1	5	1	4	1	1	1	3	1	4	1	1	1	1	35	9
Sullivan	3	3	4	4	4	5	5	4	5	5	4	5	3	3	3	2	4	2	68	96
Taney	2	2	1	4	2	1	1	5	4	1	5	5	1	2	2	3	1	1	43	31
Texas	4	4	2	5	4	4	2	5	4	3	4	2	3	5	3	2	3	3	62	84
Vernon	5	3	5	4	3	3	2	3	4	2	2	4	4	4	5	3	2	2	60	77
Warren	1	1	2	1	4	3	3	2	4	3	2	2	1	1	2	2	1	1	36	13
Washington	5	4	5	5	5	5	5	5	5	5	5	5	5	3	5	5	2	2	81	109
Wayne	5	4	3	5	4	5	5	5	5	5	5	1	5	5	3	5	5	5	80	107
Webster	2	2	1	5	1	1	5	2	2	3	5	4	3	4	4	1	4	4	53	55
Worth	1	1	1	2	5	3	1	4	1	1	1	3	1	5	1	2	4	3	40	21
Wright	5	4	3	3	1	1	4	4	4	5	1	1	5	4	5	4	3	3	60	77

Health Care Access Rankings

Table 2: Health Care Access Quintile Points and Rankings by County

County	Poverty	Uninsured	Medicaid Enrollment	Medicare Enrollment	Inadequate Prenatal Care	Low Birth Weight	Mammogram Screenings	Pap Smear Screenings	Sigmoidoscopy and Colonoscopy Screenings	Preventable Hospitalizations	Dental Visit in the Past Year	Dental ER Visits	Population to PC Provider Ratio†	Population to Mental Health Care Provider Ratio	Population to Dentist Ratio	TOTAL QUINTILE POINTS	HEALTH CARE ACCESS RANK
Adair	5	3	2	1	1	5	3	3	2	4	2	2	1	1	1	36	25
Andrew	1	1	1	1	1	1	1	1	3	1	2	1	5	4	4	28	11
Atchison	1	2	1	5	1	1	3	2	2	2	2	1	5	3	1	32	18
Audrain	3	3	2	2	5	3	1	1	1	2	4	4	1	1	3	36	25
Barry	4	5	4	3	4	3	4	4	5	2	4	5	2	4	3	56	92
Barton	3	3	4	4	5	3	3	4	5	5	3	5	3	3	5	58	100
Bates	4	4	3	3	2	4	5	4	2	5	2	5	5	4	5	57	95
Benton	5	4	4	5	3	3	2	5	4	3	5	4	3	4	4	58	100
Bollinger	3	3	5	3	1	2	3	3	2	2	3	2	5	3	5	45	52
Boone	4	1	1	1	2	3	1	1	1	2	1	2	1	1	1	23	3
Buchanan	3	2	3	2	2	3	3	3	4	5	3	3	1	1	1	39	34
Butler	4	2	5	4	4	5	1	2	3	5	3	4	1	1	1	45	52
Caldwell	2	2	2	3	1	5	1	4	3	4	2	2	5	5	5	46	60
Callaway	1	1	2	1	3	5	2	2	1	3	2	5	3	1	4	36	25
Camden	3	4	2	5	1	2	4	1	3	1	3	4	1	2	1	37	30
Cape Girardeau	2	1	2	1	2	4	2	2	1	2	1	4	1	1	1	27	7
Carroll	3	2	3	4	3	3	5	4	4	5	1	3	4	5	2	51	76
Carter	5	5	5	5	5	5	1	3	4	5	4	2	5	2	5	61	107
Cass	1	1	1	1	2	2	3	1	1	1	1	3	4	3	3	28	11
Cedar	5	4	5	5	3	1	4	4	2	4	5	4	3	2	3	54	85
Chariton	2	2	2	4	1	1	5	1	3	2	4	3	3	5	2	40	35
Christian	1	1	1	1	1	2	3	2	1	1	2	2	3	3	3	27	7
Clark	2	4	3	3	2	1	2	5	3	4	2	1	3	4	3	42	44
Clay	1	1	1	1	2	2	1	2	1	3	1	2	2	2	1	23	3
Clinton	1	1	1	1	1	2	3	5	1	4	1	2	2	5	1	31	16
Cole	1	1	2	1	3	4	1	2	1	2	1	4	1	1	1	26	6
Cooper	2	2	2	2	5	5	5	4	2	2	2	4	3	2	3	45	52
Crawford	4	3	4	3	2	4	4	4	3	3	5	4	5	4	5	57	95

†PC Provider refers to primary care providers.

County	Poverty	Uninsured	Medicaid Enrollment	Medicare Enrollment	Inadequate Prenatal Care	Low Birth Weight	Mammogram Screenings	Pap Smear Screenings	Sigmoidoscopy and Colonoscopy Screenings	Preventable Hospitalizations	Dental Visit in the Past Year	Dental ER Visits	Population to PC Provider Ratio	Population to Mental Health Care Provider Ratio	Population to Dentist Ratio	TOTAL QUINTILE POINTS	HEALTH CARE ACCESS RANK
Dade	3	4	3	5	2	1	1	5	3	2	5	3	2	2	5	46	60
Dallas	4	4	4	4	3	2	4	5	5	1	4	3	5	4	4	56	92
Daviess	3	5	2	3	5	2	3	5	5	2	4	1	5	5	4	54	85
DeKalb	2	2	1	1	1	3	4	4	4	2	4	1	4	4	5	42	44
Dent	5	4	5	4	3	4	4	5	5	3	5	5	3	2	1	58	100
Douglas	5	5	5	4	2	5	5	4	4	1	5	1	4	3	2	55	87
Dunklin	5	3	5	4	4	5	5	2	4	5	5	5	2	3	3	60	105
Franklin	1	1	1	2	1	3	1	1	1	4	2	5	1	3	2	29	14
Gasconade	2	3	2	4	2	4	2	2	2	3	3	3	3	3	4	41	39
Gentry	2	4	2	5	3	1	4	2	5	4	3	2	3	4	2	46	60
Greene	4	3	3	2	2	2	1	3	1	2	1	5	1	1	1	32	18
Grundy	4	3	3	4	5	2	3	5	5	4	3	2	2	2	2	49	69
Harrison	3	4	4	4	4	1	5	4	3	4	5	2	2	1	2	48	66
Henry	3	2	4	5	4	3	4	5	3	5	3	4	2	1	2	50	72
Hickory	5	5	3	5	4	1	4	5	4	1	4	3	5	3	5	57	95
Holt	1	3	1	4	1	5	4	4	2	1	3	1	3	3	4	40	35
Howard	2	2	3	2	2	4	3	5	3	1	3	3	4	4	2	43	47
Howell	5	3	5	4	2	4	5	4	5	3	3	4	1	2	2	52	79
Iron	4	3	5	5	4	4	5	4	4	4	5	5	5	2	5	64	114
Jackson	2	3	3	1	5	4	1	1	1	4	1	4	1	1	1	33	21
Jasper	3	4	4	2	5	2	2	2	5	4	4	5	1	1	1	45	52
Jefferson	1	1	1	1	1	3	2	1	1	3	1	1	4	3	3	27	7
Johnson	3	1	1	1	4	2	4	3	2	3	1	2	3	2	2	34	22
Knox	4	5	2	4	5	4	2	5	3	2	4	1	1	4	4	50	72
Laclede	4	4	4	3	3	2	5	4	3	2	4	5	2	2	3	50	72
Lafayette	1	1	3	3	3	2	1	1	2	4	2	4	4	3	3	37	30
Lawrence	3	4	3	3	3	3	4	5	4	2	3	5	2	1	2	47	64
Lewis	2	2	1	2	5	1	2	3	3	1	2	1	4	2	5	36	25
Lincoln	1	1	2	1	1	2	4	3	2	3	2	5	5	4	5	41	39

County	Poverty	Uninsured	Medicaid Enrollment	Medicare Enrollment	Inadequate Prenatal Care	Low Birth Weight	Mammogram Screenings	Pap Smear Screenings	Sigmoidoscopy and Colonoscopy Screenings	Preventable Hospitalizations	Dental Visit in the Past Year	Dental ER Visits	Population to PC Provider Ratio	Population to Mental Health Care Provider Ratio	Population to Dentist Ratio	TOTAL QUINTILE POINTS	HEALTH CARE ACCESS RANK
Linn	3	2	3	5	3	2	4	4	4	4	2	2	2	4	5	49	69
Livingston	2	2	2	3	2	2	3	3	3	2	1	3	1	4	1	34	22
McDonald	4	5	4	1	5	4	5	5	5	3	3	2	5	5	3	59	103
Macon	3	3	3	4	4	3	2	4	1	3	5	2	4	3	2	46	60
Madison	4	3	5	4	3	3	1	2	2	4	4	5	4	2	2	48	66
Maries	2	3	2	3	2	1	3	1	2	1	4	1	5	4	2	36	25
Marion	2	2	4	3	4	3	2	3	4	4	4	3	1	1	1	41	39
Mercer	3	4	2	4	5	5	3	4	4	4	5	1	4	4	3	55	87
Miller	4	4	4	2	2	2	4	2	3	2	4	4	4	5	4	50	72
Mississippi	5	3	5	3	5	5	3	2	2	5	2	1	4	5	5	55	87
Moniteau	1	3	1	1	3	1	4	2	3	1	3	2	4	5	3	37	30
Monroe	2	4	3	4	4	5	3	1	2	1	1	3	3	4	4	44	50
Montgomery	2	3	4	3	2	3	1	1	1	3	3	4	4	3	4	41	39
Morgan	4	5	4	5	4	1	5	5	3	3	5	4	5	5	5	63	112
New Madrid	5	2	5	3	4	5	2	3	2	5	4	1	5	5	4	55	87
Newton	2	5	3	2	5	2	1	2	4	3	4	5	4	5	4	51	76
Nodaway	3	1	1	1	1	1	2	2	4	1	1	1	2	2	4	27	7
Oregon	5	5	5	5	3	5	4	3	5	3	4	2	5	5	4	63	112
Osage	1	1	1	1	1	3	1	2	1	1	1	2	5	5	4	30	15
Ozark	5	5	4	5	4	1	4	5	5	2	5	1	4	3	4	57	95
Pemiscot	5	1	5	3	5	5	2	1	4	5	5	4	4	5	5	59	103
Perry	1	1	2	2	1	4	2	1	4	1	1	4	3	3	2	32	18
Pettis	4	4	4	2	4	3	3	2	3	3	2	4	3	2	2	45	52
Phelps	2	3	3	2	2	3	2	3	2	3	2	4	1	1	2	35	24
Pike	4	4	3	2	5	4	5	2	3	3	3	3	4	5	3	53	82
Platte	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1	18	1
Polk	4	3	4	2	1	2	2	5	5	2	3	3	2	1	3	42	44
Pulaski	2	2	1	1	3	4	2	3	1	1	1	1	4	1	1	28	11
Putnam	3	5	2	5	3	1	4	1	5	5	4	1	2	4	2	47	64

County	Poverty	Uninsured	Medicaid Enrollment	Medicare Enrollment	Inadequate Prenatal Care	Low Birth Weight	Mammogram Screenings	Pap Smear Screenings	Sigmoidoscopy and Colonoscopy Screenings	Preventable Hospitalizations	Dental Visit in the Past Year	Dental ER Visits	Population to PC Provider Ratio	Population to Mental Health Care Provider Ratio	Population to Dentist Ratio	TOTAL QUINTILE POINTS	HEALTH CARE ACCESS RANK
Ralls	1	2	1	3	4	4	1	1	1	1	2	1	5	5	5	37	30
Randolph	4	2	4	2	3	2	2	3	2	5	4	5	2	3	2	45	52
Ray	1	1	2	2	3	4	5	5	3	4	3	3	3	5	5	49	69
Reynolds	5	4	5	5	5	1	4	3	5	5	5	5	2	1	1	56	92
Ripley	5	5	5	5	5	5	5	5	3	5	5	5	5	5	5	73	115
St. Charles	1	1	1	1	1	3	1	1	1	1	1	1	2	2	1	19	2
St. Clair	5	4	4	5	4	3	2	5	5	5	4	3	2	5	4	60	105
St. Francois	4	2	4	3	3	4	2	4	2	5	3	5	1	1	2	45	52
St. Louis	1	1	1	2	1	5	1	1	1	3	1	2	1	1	1	23	3
St. Louis City	5	4	5	1	5	5	1	1	2	5	2	3	1	1	2	43	47
Ste. Genevieve	1	1	1	3	1	3	2	1	2	2	2	3	3	3	3	31	16
Saline	3	2	4	2	1	4	1	1	2	5	5	3	2	2	3	40	35
Schuyler	4	5	3	4	5	1	3	3	5	4	2	1	3	4	4	51	76
Scotland	3	5	2	2	5	1	5	5	5	4	3	2	1	5	4	52	79
Scott	3	2	5	4	3	5	2	3	3	5	1	3	2	2	1	44	50
Shannon	5	5	5	4	2	2	5	4	5	2	5	5	5	4	4	62	110
Shelby	2	3	3	4	4	5	3	3	3	1	4	1	3	3	3	45	52
Stoddard	2	2	5	5	4	5	4	3	4	5	3	3	2	4	4	55	87
Stone	2	5	2	5	4	4	2	2	1	1	3	4	4	4	5	48	66
Sullivan	2	5	3	4	2	4	5	4	5	5	2	2	2	3	5	53	82
Taney	3	5	3	3	4	4	5	4	4	4	1	5	1	3	3	52	79
Texas	5	5	4	3	2	3	4	4	5	3	5	5	3	5	5	61	107
Vernon	4	4	4	3	5	1	5	3	5	4	4	4	3	1	3	53	82
Warren	1	2	2	2	1	1	3	5	1	3	1	4	5	5	4	40	35
Washington	5	3	5	2	4	5	3	4	4	5	5	5	5	3	3	61	107
Wayne	5	4	5	5	4	5	4	2	4	4	5	3	3	4	5	62	110
Webster	3	4	3	2	5	1	3	2	2	1	3	3	4	2	3	41	39
Worth	2	4	1	5	3	1	5	3	5	2	5	2	2	2	1	43	47
Wright	5	5	5	5	3	4	5	3	4	3	5	2	4	2	2	57	95

Overall Primary Care Needs Rankings

Table 3: Overall Primary Care Needs Rankings by County

County	Health Status Rank	Health Care Access Rank	Combined Rank Score	Overall Primary Care Needs Rank
Adair	40	25	65	29
Andrew	23	11	34	13
Atchison	17	18	35	14
Audrain	64	25	89	45
Barry	84	92	176	93
Barton	33	100	133	70
Bates	62	95	157	83
Benton	68	100	168	89
Bollinger	94	52	146	75
Boone	17	3	20	7
Buchanan	96	34	130	67
Butler	113	52	165	87
Caldwell	59	60	119	61
Callaway	45	25	70	34
Camden	16	30	46	18
Cape Girardeau	23	7	30	12
Carroll	55	76	131	68
Carter	104	107	211	109
Cass	34	11	45	17
Cedar	92	85	177	95
Chariton	40	35	75	36
Christian	3	7	10	4
Clark	64	44	108	52
Clay	20	3	23	10
Clinton	40	16	56	23
Cole	4	6	10	4
Cooper	34	52	86	42
Crawford	94	95	189	101
Dade	55	60	115	59
Dallas	59	92	151	78
Daviess	51	85	136	71
DeKalb	23	44	67	30
Dent	99	100	199	107
Douglas	44	87	131	68
Dunklin	111	105	216	110

County	Health Status Rank	Health Care Access Rank	Combined Rank Score	Overall Primary Care Needs Rank
Franklin	45	14	59	24
Gasconade	29	39	68	32
Gentry	31	60	91	47
Greene	21	18	39	15
Grundy	45	69	114	57
Harrison	59	66	125	66
Henry	98	72	170	91
Hickory	55	95	150	77
Holt	17	35	52	20
Howard	13	47	60	27
Howell	77	79	156	81
Iron	107	114	221	114
Jackson	51	21	72	35
Jasper	70	52	122	63
Jefferson	74	7	81	38
Johnson	45	22	67	30
Knox	23	72	95	49
Laclede	84	72	156	81
Lafayette	53	30	83	39
Lawrence	23	64	87	44
Lewis	29	25	54	22
Lincoln	45	39	84	40
Linn	70	69	139	73
Livingston	37	22	59	24
McDonald	74	103	177	95
Macon	45	60	105	51
Madison	102	66	168	89
Maries	37	25	62	28
Marion	70	39	109	53
Mercer	53	87	140	74
Miller	64	72	136	71
Mississippi	110	87	197	105
Moniteau	9	30	39	15
Monroe	9	50	59	24
Montgomery	84	39	123	65
Morgan	64	112	176	93
New Madrid	112	87	199	107

Table 3: Overall Primary Care Needs Rankings by County (continued)

County	Health Status Rank	Health Care Access Rank	Combined Rank Score	Overall Primary Care Needs Rank
Newton	40	76	116	60
Nodaway	1	7	8	3
Oregon	68	112	180	98
Osage	7	15	22	8
Ozark	91	95	186	99
Pemiscot	115	103	218	113
Perry	4	18	22	8
Pettis	37	52	89	45
Phelps	77	24	101	50
Pike	84	82	166	88
Platte	4	1	5	2
Polk	77	44	121	62
Pulaski	74	11	85	41
Putnam	93	64	157	83
Ralls	23	30	53	21
Randolph	70	52	122	63
Ray	83	69	152	79
Reynolds	105	92	197	105
Ripley	113	115	228	115
St. Charles	2	2	4	1
St. Clair	84	105	189	101
St. Francois	106	52	158	85
St. Louis	13	3	16	6
St. Louis City	100	47	147	76
Ste. Genevieve	9	16	25	11
Saline	77	35	112	55
Schuyler	36	76	112	55
Scotland	7	79	86	42
Scott	103	50	153	80
Shannon	84	110	194	104
Shelby	62	52	114	57
Stoddard	101	87	188	100
Stone	9	66	75	36
Sullivan	96	82	178	97
Taney	31	79	110	54
Texas	84	107	191	103
Vernon	77	82	159	86

County	Health Status Rank	Health Care Access Rank	Combined Rank Score	Overall Primary Care Needs Rank
Warren	13	35	48	19
Washington	109	107	216	110
Wayne	107	110	217	112
Webster	55	39	94	48
Worth	21	47	68	32
Wright	77	95	172	92

Findings

The areas of highest overall need are primarily clustered in the southern part of the state, particularly in the southeast and south central areas. In fact, 22 of the 23 counties in the highest need quintile are located south of the Missouri River; only one county (Sullivan) is located north of the Missouri River.

Map 1: Missouri Primary Care Needs Assessment – Overall Primary Care Needs Rankings

The counties with the highest primary care needs, based on the overall rankings, are listed in Figure 2. Nine of the counties are located in the Southeast Behavioral Risk Factor Surveillance System (BRFSS) Region. Most of these counties are located in or near the Bootheel[†] area. Washington County, in the St. Louis Metro BRFSS Region, and Dent County, in the Central Region, are adjacent to the Southeast BRFSS Region. All of these counties are predominantly rural, although Washington County is part of a Census-designated Metropolitan Statistical Area (MSA) due primarily to its residents' commuting patterns.

Figure 2: Counties with the Highest Primary Care Needs Ranks

| County	Health Status Rank	Health Care Access Rank	Combined Rank Scores	**Overall Primary Care Needs Rank**	BRFSS Region (See Appendix B for Map)
Ripley	113	115	228	**115**	Southeast
Iron	107	114	221	**114**	Southeast
Pemiscot	115	103	218	**113**	Southeast
Wayne	107	110	217	**112**	Southeast
Dunklin	111	105	216	**110**	Southeast
Washington	109	107	216	**110**	St. Louis Metro
Carter	104	107	211	**109**	Southeast
Dent	99	100	199	**107**	Central
New Madrid	112	87	199	**107**	Southeast
Mississippi	110	87	197	**105**	Southeast
Reynolds	105	92	197	**105**	Southeast

The counties that received the overall highest need ranks, shown in Figure 2 above, varied somewhat from the highest need counties in each of the primary care categories, listed in Figure 3 below. For example, Butler County tied for the second highest need rank in the health status category but was not one of the highest need counties overall or in the health care access category. Conversely, Morgan and Oregon Counties appeared on the health care access list but not the health status or overall lists.

Figure 3: Counties with the Highest Need Ranks in Each Primary Care Category

Health Status Rank	County
115	Pemiscot
113	Butler, Ripley
112	New Madrid
111	Dunklin
110	Mississippi
109	Washington
107	Iron, Wayne
106	St. Francois
105	Reynolds
104	Carter

Health Care Access Rank	County
115	Ripley
114	Iron
112	Morgan, Oregon
110	Shannon, Wayne
107	Carter, Texas, Washington
105	Dunklin, St. Clair
103	McDonald, Pemiscot
100	Barton, Benton, Dent
95	Bates, Crawford, Hickory, Ozark, Wright
92	Barry, Dallas, Reynolds

[†]Various definitions of the Bootheel exist. This report defines the Bootheel as five counties (Dunklin, Mississippi, New Madrid, Pemiscot, and Scott) located in the extreme southeast corner of Missouri.

In contrast, the counties with the lowest primary care needs, based on the overall rankings, are scattered throughout the state. As shown in Figure 4, only the Northeast BRFSS Region is not represented. In general, these are fairly large counties, with 4 having a population greater than 170,000 and 7 having a population over 75,000. All but two (Nodaway and Perry Counties) fall within an MSA.

Figure 4: Counties with the Lowest Primary Care Needs Ranks

County	Health Status Rank	Health Care Access Rank	Combined Rank Scores	**Overall Primary Care Needs Rank**	BRFSS Region (See Appendix B for Map)
St. Charles	2	2	4	**1**	St. Louis Metro
Platte	4	1	5	**2**	Kansas City Metro
Nodaway	1	7	8	**3**	Northwest
Christian	3	7	10	**4**	Southwest
Cole	4	6	10	**4**	Central
St. Louis	13	3	16	**6**	St. Louis Metro
Boone	17	3	20	**7**	Central
Osage	7	15	22	**8**	Central
Perry	4	18	22	**8**	Southeast
Clay	20	3	23	**10**	Northwest

The counties that received the overall lowest need ranks, shown in Figure 4 above, differed slightly from the lowest need counties in each of the primary care categories, listed in Figure 5 below. For example, Ste. Genevieve and Atchison received two of the lowest need ranks for both health status and health care access but were not among the ten lowest need ranks on the overall need list. Several counties (Scotland, Moniteau, Monroe, Stone, Howard, Warren, Camden, and Holt) received low need ranks for health status but not for health care access, while Cape Girardeau, Jefferson, Andrew, Cass, Pulaski, Franklin, Clinton, and Greene received low need ranks for health care access but not health status.

Figure 5: Counties with the Lowest Need Ranks in Each Primary Care Category

Health Status Rank	County
1	Nodaway
2	St. Charles
3	Christian
4	Cole, Perry, Platte
7	Osage, Scotland
9	Moniteau, Monroe, Ste. Genevieve, Stone
13	Howard, St. Louis, Warren
16	Camden
17	Atchison, Boone, Holt
20	Clay

Health Care Access Rank	County
1	Platte
2	St. Charles
3	Boone, Clay, St. Louis
6	Cole
7	Cape Girardeau, Christian, Jefferson, Nodaway
11	Andrew, Cass, Pulaski
14	Franklin
15	Osage
16	Clinton, Ste. Genevieve
18	Atchison, Greene, Perry

The differences between the overall and the category rankings are further illustrated by maps of the health status and health care access rankings. While both of these maps generally resemble the map for the overall primary care needs rankings, they also reveal some important differences. For example, while there is a distinct grouping of counties with low health status ranks in the southeast corner of the state, a few other individual counties (Buchanan, Henry, Putnam, St. Louis City, and Sullivan) that also fell into the highest need quintile are scattered throughout the state.

Map 2: Missouri Primary Care Needs Assessment – Health Status Rankings
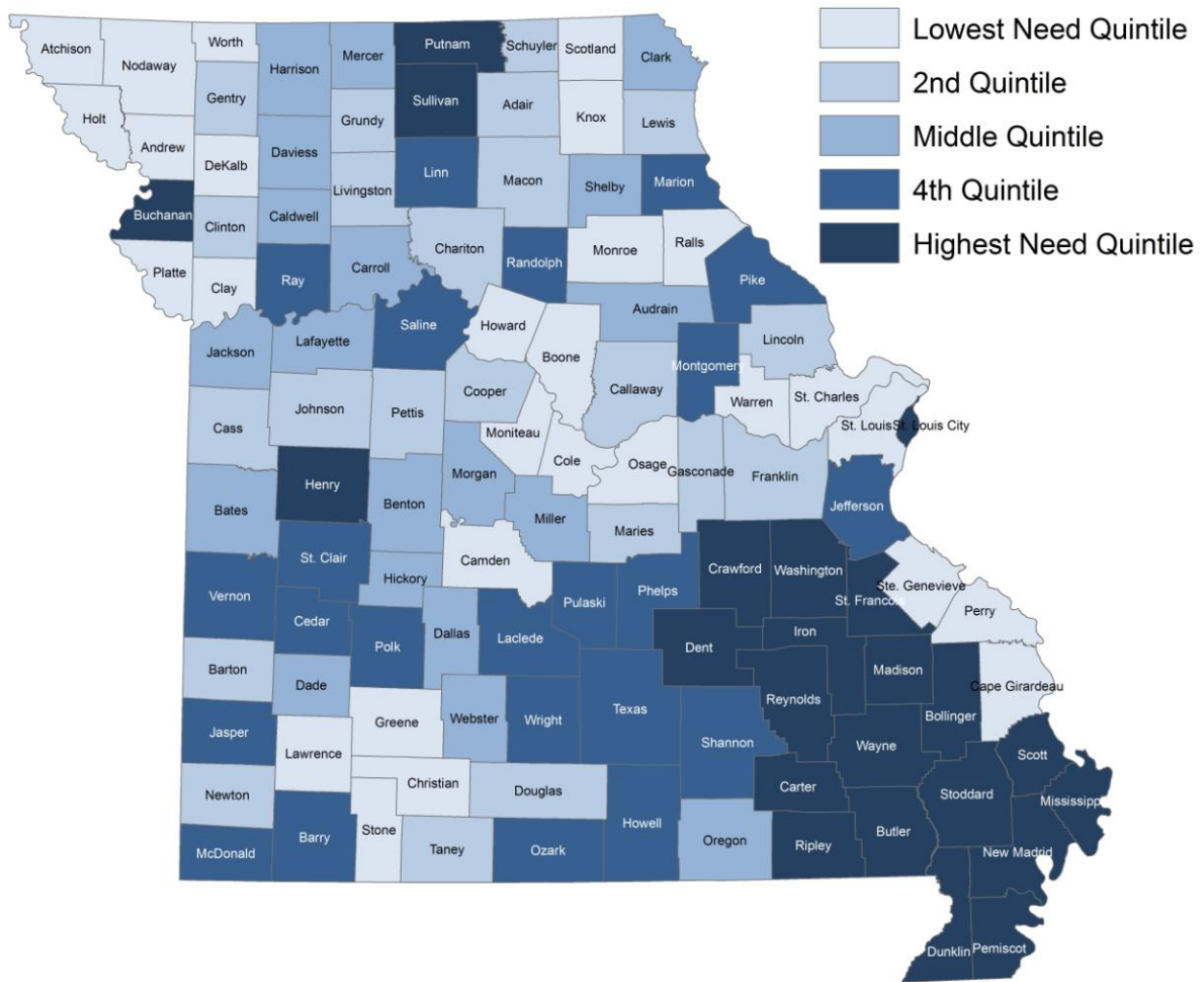
The health care access rankings map resembles the overall map in that the areas with the highest need for health care access are overwhelmingly found in the southern half of the state. However, the largest cluster of high need is not located solidly around the Bootheel, as might be expected from the overall rankings map. While there are counties with poor health care access in the Bootheel, the largest grouping of counties with low health care access ranks is found just west of the Bootheel in south central Missouri. Smaller clusters of low health care access can be found throughout the southern half of the state, from the eastern border to the western border.

Map 3: Missouri Primary Care Needs Assessment – Health Care Access Rankings
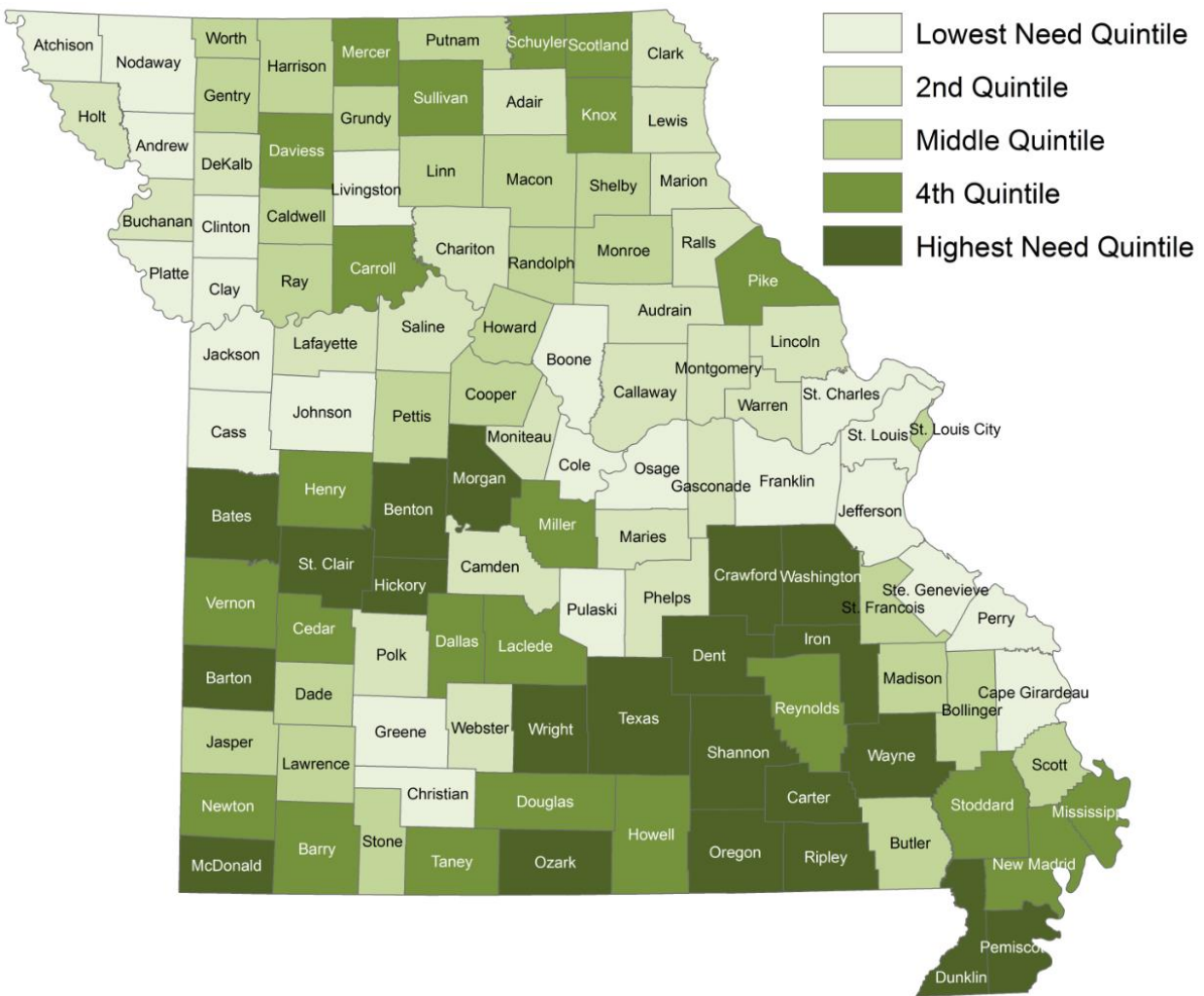
APPENDIX A

Health Status and Health Care Access Indicators

Health Status Indicators

Table 4: Health Status Indicators – Life Expectancy, Years of Potential Life Lost, and Ever Breastfed

Table 5: Health Status Indicators – Fair or Poor Self-Reported Health Status, Obesity, and Hypertension

Table 6: Health Status Indicators – High Cholesterol, Smoking, and Diabetes

Table 7: Health Status Indicators – Asthma, Depressive Disorders, and HIV/AIDS

Table 8: Health Status Indicators – Total Mortality, Infant Mortality, and Heart Disease Mortality

Table 9: Health Status Indicators – Cancer Mortality, Chronic Lower Respiratory Disease (CLRD) Mortality, and Stroke Mortality

Health Care Access Indicators

Table 10: Health Care Access Indicators – Poverty, Uninsured, and Medicaid Enrollment

Table 11: Health Care Access Indicators – Medicare Enrollment, Inadequate Prenatal Care, and Low Birth Weight

Table 12: Health Care Access Indicators – Preventable Hospitalizations, Dental Visit in Past Year, and Dental-Related Emergency Room Visits

Table 13: Health Care Access Indicators – Lack of Mammogram, Pap Test, and Sigmoidoscopy/ Colonoscopy Screenings

Table 14: Health Care Access Indicators – Population-to-Provider Ratios for Primary Care Providers, Mental Health Providers, and Dentists

Table 4: Health Status Indicators – Life Expectancy, Years of Potential Life Lost, and Ever Breastfed

Life Expectancy Data Sources and Notes:

- Life expectancy at birth provides an estimate of the number of years a person born during the given time period is expected to live if current mortality trends continue. It is a good measure of the overall health of an area.
- The life expectancy rates included in this report are based on birth and death data from 2004 through 2012 and population data from 2008.
- Life expectancy rates for Missouri, its 115 counties (114 counties plus the City of St. Louis, which is an independent city), and Missouri's seven Behavioral Risk Factor Surveillance System (BRFSS) Regions are available at http://www.health.mo.gov/data/lifeexpectancy/. Data are also available for Independence, Joplin, Kansas City, and Eastern Jackson County in the 2004-2012 file.

Years of Potential Life Lost Data Sources and Notes:

- The years of potential life lost (YPLL) calculation estimates the number of life years lost to premature deaths. Thus, it emphasizes deaths of younger residents. Age 75 is used as the benchmark for YPLL calculations. Similar to life expectancy, YPLL is a good measure of the overall health of an area.
- The YPLL rates included in this report reflect the years of potential life lost per 100,000 residents and are calculated using death and population data from 2012 for residents under the age of 75.
- YPLL totals and rates for Missouri and its 115 counties (114 counties plus the City of St. Louis, which is an independent city) are available at http://www.health.mo.gov/data/ypll/. Data are also available for Independence, Joplin, Kansas City, and Eastern Jackson County.

Ever Breastfed Data Sources and Notes:

- "Breast milk is widely acknowledged to be the most complete form of nutrition for most infants, with a range of benefits for their health, growth, immunity, and development."[1] "The nutritional, immunologic, allergenic, economic and psychological advantages of breastfeeding are well recognized. Breastfeeding is nutritionally superior to any alternative infant feeding method and provides immunity to many viral and bacterial diseases; enhances infants' immunologic defenses; prevents or reduces risk of respiratory and diarrhea diseases; promotes correct development of jaws, teeth and speech patterns; decreases tendency toward childhood obesity and facilitates maternal infant attachment."[2]
- Ever Breastfed rates reflect the number of 2012-2013 WIC Infant participants who had ever been breastfed prior to or on their WIC certification date divided by the number of 2012-2013 WIC Infant participants with known ever breastfed status as of their WIC certification date.
- Ever Breastfed rates were calculated using data provided by the Missouri WIC Program for use in the WIC Infant MICA. Rates for years prior to 2009 are available through the WIC MICA. Rates for years 2009 and later are available by request from the Missouri Department of Health and Senior Services – Bureau of Health Care Analysis and Data Dissemination.

Table 4: Health Status Indicators – Life Expectancy, Years of Potential Life Lost, and Ever Breastfed (continued)

Geography	Life Expectancy at Birth, 2004-2012			Years of Potential Life Lost, 2012			Ever Breastfed, 2012-2013		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Missouri	77.2			8,106			67.0		
Adair	77.7	33	2	6,148	9	1	68.6	51	3
Andrew	77.8	29	2	8,274	46	2	74.3	23	1
Atchison	78.3	14	1	8,641	52	3	81.2	2	1
Audrain	77.2	46	2	8,729	57	3	60.6	87	4
Barry	75.7	89	4	10,813	91	4	70.0	43	2
Barton	77.5	36	2	8,670	54	3	65.3	66	3
Bates	76.7	55	3	10,903	93	5	63.4	73	4
Benton	76.1	79	4	11,640	104	5	67.0	58	3
Bollinger	75.8	87	4	9,492	75	4	68.5	53	3
Boone	79.6	3	1	4,903	3	1	72.6	30	2
Buchanan	76.2	70	4	8,960	64	3	61.0	82	4
Butler	74.0	106	5	10,864	92	4	58.2	91	4
Caldwell	75.9	85	4	13,127	110	5	63.3	75	4
Callaway	77.0	48	3	8,689	55	3	70.3	40	2
Camden	78.2	19	1	7,649	32	2	75.8	16	1
Cape Girardeau	78.1	22	1	6,950	19	1	61.4	81	4
Carroll	75.9	83	4	11,012	96	5	64.7	69	3
Carter	72.3	113	5	12,383	109	5	53.5	104	5
Cass	78.1	26	2	6,671	13	1	71.5	35	2
Cedar	75.7	91	4	10,019	80	4	63.4	74	4
Chariton	78.1	25	2	6,735	15	1	73.3	26	2
Christian	79.0	5	1	6,169	10	1	77.8	11	1
Clark	76.2	69	3	8,184	45	2	50.0	110	5
Clay	78.7	9	1	6,352	11	1	72.9	29	2
Clinton	76.0	81	4	10,403	85	4	70.9	37	2
Cole	78.3	15	1	7,276	28	2	67.4	57	3
Cooper	77.3	42	2	8,723	56	3	74.6	21	1
Crawford	75.9	84	4	8,305	47	3	64.7	69	3
Dade	76.1	77	4	8,628	51	3	66.3	61	3
Dallas	76.4	66	3	6,998	25	2	57.3	94	5
Daviess	77.2	44	2	6,970	21	1	78.3	8	1

Table 4: Health Status Indicators – Life Expectancy, Years of Potential Life Lost, and Ever Breastfed (continued)

Geography	Life Expectancy at Birth, 2004-2012			Years of Potential Life Lost, 2012			Ever Breastfed, 2012-2013		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
DeKalb	77.6	35	2	10,145	83	4	75.0	18	1
Dent	75.3	98	5	9,217	72	4	60.9	84	4
Douglas	77.3	41	2	8,576	49	3	70.3	41	2
Dunklin	72.0	114	5	14,598	114	5	48.4	112	5
Franklin	76.7	57	3	9,196	69	3	60.0	88	4
Gasconade	76.6	58	3	10,452	88	4	66.2	64	3
Gentry	78.1	23	1	6,696	14	1	61.0	83	4
Greene	77.8	31	2	7,742	37	2	78.5	6	1
Grundy	77.5	37	2	8,480	48	3	57.7	92	4
Harrison	77.3	43	2	11,013	97	5	70.3	38	2
Henry	75.3	97	5	11,038	98	5	68.6	49	3
Hickory	76.9	50	3	12,161	107	5	55.8	96	5
Holt	78.4	13	1	6,442	12	1	62.3	79	4
Howard	78.3	18	1	5,332	5	1	52.1	108	5
Howell	75.1	100	5	10,070	81	4	73.3	25	2
Iron	73.7	107	5	14,205	112	5	53.7	103	5
Jackson	76.4	67	3	8,922	62	3	73.1	28	2
Jasper	76.1	75	4	8,932	63	3	66.7	59	3
Jefferson	76.1	74	4	8,734	58	3	61.8	80	4
Johnson	78.0	27	2	6,014	8	1	80.3	3	1
Knox	77.1	47	3	8,655	53	3	78.4	7	1
Laclede	76.1	76	4	8,895	61	3	72.5	31	2
Lafayette	77.5	38	2	7,277	29	2	70.0	45	2
Lawrence	76.8	54	3	7,917	40	2	78.5	5	1
Lewis	77.7	32	2	7,705	35	2	70.0	44	2
Lincoln	76.9	49	3	6,972	22	1	63.8	72	4
Linn	76.7	56	3	9,253	73	4	62.6	77	4
Livingston	76.8	53	3	8,129	44	2	68.6	50	3
Macon	76.6	61	3	9,199	70	4	66.5	60	3
Madison	74.4	103	5	11,010	95	5	57.5	93	5
Maries	77.6	34	2	7,931	41	2	65.5	65	3
Marion	76.6	59	3	6,976	23	1	65.3	67	3
McDonald	74.7	101	5	11,269	100	5	67.9	56	3

Table 4: Health Status Indicators – Life Expectancy, Years of Potential Life Lost, and Ever Breastfed (continued)

Geography	Life Expectancy at Birth, 2004-2012			Years of Potential Life Lost, 2012			Ever Breastfed, 2012-2013		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Mercer	78.1	24	2	7,671	34	2	54.9	99	5
Miller	76.2	72	4	9,073	66	3	66.3	62	3
Mississippi	73.2	110	5	14,258	113	5	32.1	115	5
Moniteau	77.8	30	2	6,818	17	1	64.2	71	4
Monroe	78.3	17	1	5,703	6	1	76.1	14	1
Montgomery	76.2	73	4	7,486	30	2	69.1	47	3
Morgan	75.8	88	4	9,774	79	4	70.3	39	2
New Madrid	72.9	111	5	13,744	111	5	34.6	114	5
Newton	76.8	51	3	8,056	43	2	78.6	4	1
Nodaway	79.4	4	1	4,520	2	1	74.9	20	1
Oregon	75.9	86	4	10,446	87	4	49.1	111	5
Osage	78.8	7	1	9,277	74	4	68.2	55	3
Ozark	75.2	99	5	11,046	99	5	74.6	22	1
Pemiscot	71.7	115	5	15,634	115	5	36.2	113	5
Perry	78.5	12	1	6,775	16	1	53.4	105	5
Pettis	77.4	39	2	7,727	36	2	73.5	24	2
Phelps	76.3	68	3	9,590	77	4	69.1	46	2
Pike	76.5	62	3	7,933	42	2	54.9	100	5
Platte	80.2	1	1	5,729	7	1	78.3	10	1
Polk	76.2	71	4	7,816	39	2	76.0	15	1
Pulaski	76.0	80	4	7,065	26	2	72.0	33	2
Putnam	76.4	64	3	11,862	105	5	68.4	54	3
Ralls	79.0	6	1	7,490	31	2	60.8	85	4
Randolph	76.5	63	3	9,078	67	3	68.6	52	3
Ray	76.0	82	4	10,136	82	4	52.5	107	5
Reynolds	74.2	105	5	11,447	103	5	62.5	78	4
Ripley	72.7	112	5	10,518	89	4	55.6	97	5
Saline	76.6	60	3	7,181	27	2	77.2	12	1
Schuyler	76.8	52	3	8,773	59	3	71.0	36	2
Scotland	78.1	21	1	6,990	24	2	55.6	97	5
Scott	75.4	96	5	11,303	101	5	54.0	102	5
Shannon	75.4	95	5	10,433	86	4	72.0	32	2
Shelby	77.3	40	2	9,205	71	4	75.0	18	1

Table 4: Health Status Indicators – Life Expectancy, Years of Potential Life Lost, and Ever Breastfed (continued)

Geography	Life Expectancy at Birth, 2004-2012			Years of Potential Life Lost, 2012			Ever Breastfed, 2012-2013		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
St. Charles	80.1	2	1	5,006	4	1	73.2	27	2
St. Clair	75.7	90	4	10,989	94	5	60.7	86	4
St. Francois	74.6	102	5	12,271	108	5	58.8	90	4
St. Louis	78.7	10	1	6,947	18	1	63.0	76	4
St. Louis City	73.2	109	5	11,421	102	5	56.4	95	5
Ste. Genevieve	78.5	11	1	9,007	65	3	66.3	63	3
Stoddard	75.7	92	4	11,886	106	5	54.6	101	5
Stone	78.2	20	1	8,889	60	3	75.3	17	1
Sullivan	76.4	65	3	9,119	68	3	59.1	89	4
Taney	77.8	28	2	7,656	33	2	76.8	13	1
Texas	76.1	78	4	9,590	78	4	70.1	42	2
Vernon	75.5	93	5	8,602	50	3	53.1	106	5
Warren	78.3	16	1	6,954	20	1	71.6	34	2
Washington	73.7	108	5	10,283	84	4	50.2	109	5
Wayne	74.3	104	5	9,557	76	4	65.0	68	3
Webster	77.2	45	2	7,791	38	2	78.3	8	1
Worth	78.7	8	1	3,755	1	1	82.1	1	1
Wright	75.5	94	5	10,578	90	4	68.8	48	3

Fair or Poor Self-Reported Health Status Data Sources and Notes:

- "Self-reported current health status is a good predictor of future disability, hospitalization and mortality."[3]
- Fair or Poor Self-Reported Health Status rates are age-adjusted percentages from the 2011 County-Level Study survey of non-institutionalized Missouri resident adults ages 18 and older.
- Fair or Poor Self-Reported Health Status is derived from "fair" or "poor" responses to the following question: "Would you say that in general your health is excellent, very good, good, fair, or poor?"

Obesity Data Sources and Notes:

- Obesity has been identified as a risk factor for many serious diseases and conditions, including coronary heart disease, high blood pressure (hypertension), stroke, type 2 diabetes, metabolic syndrome, cancer, osteoarthritis, and sleep apnea.[4]
- Obesity rates are age-adjusted percentages from the 2011 County-Level Study survey of non-institutionalized Missouri resident adults ages 18 and older.
- Obesity is based on a body mass index (BMI) of 30 or greater and is derived from responses to the following questions: "About how much do you weigh without shoes?" AND "About how tall are you without shoes?"

Hypertension Data Sources and Notes:

- Hypertension, or high blood pressure, "is a serious condition that can lead to coronary heart disease, heart failure, stroke, kidney failure, and other health problems."[5]
- Hypertension rates are age-adjusted percentages from the 2011 County-Level Study survey of non-institutionalized Missouri resident adults ages 18 and older.
- Hypertension is derived from a response of any length of time to the question, "About how long has it been since you last had your blood pressure checked?" AND a "yes" response to the following question: "Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure? (Females who responded "yes" to having been told had HBP only when pregnant are not included as having HBP.)" The denominator for the rate includes only those respondents who had ever had their blood pressure checked.

Table 5: Health Status Indicators – Fair or Poor Self-Reported Health Status, Obesity, and Hypertension (continued)

Geography	Fair or Poor Self-Reported Health Status, 2011			Obesity, 2011			Hypertension, 2011		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Missouri	19.3			30.0			32.6		
Adair	17.5	24	2	33.0	59	3	25.4	4	1
Andrew	17.4	23	1	37.2	94	5	27.9	17	1
Atchison	14.8	13	1	30.6	40	2	29.9	29	2
Audrain	23.9	73	4	38.8	103	5	41.1	105	5
Barry	18.4	28	2	30.6	40	2	30.0	30	2
Barton	20.9	45	2	31.4	46	2	37.4	92	4
Bates	26.7	90	4	28.7	32	2	36.3	88	4
Benton	24.4	78	4	29.8	37	2	25.9	5	1
Bollinger	28.3	96	5	37.1	93	5	33.2	56	3
Boone	15.4	15	1	28.0	25	2	30.3	32	2
Buchanan	21.2	47	3	31.9	52	3	34.8	74	4
Butler	41.5	113	5	34.2	70	4	39.3	99	5
Caldwell	20.8	44	2	26.3	12	1	29.1	24	2
Callaway	23.1	61	3	32.5	56	3	26.3	7	1
Camden	18.2	26	2	26.7	13	1	35.9	83	4
Cape Girardeau	16.2	18	1	24.9	5	1	35.0	75	4
Carroll	24.3	76	4	42.1	109	5	34.1	69	3
Carter	28.7	97	5	45.8	113	5	32.4	51	3
Cass	16.6	20	1	31.6	48	3	30.4	33	2
Cedar	36.4	110	5	34.6	76	4	33.0	54	3
Chariton	20.5	40	2	39.3	105	5	42.1	108	5
Christian	18.9	30	2	26.9	14	1	28.1	20	1
Clark	24.6	81	4	33.9	69	3	26.5	8	1
Clay	19.4	33	2	31.2	45	2	30.6	39	2
Clinton	14.2	9	1	27.2	18	1	24.4	1	1
Cole	10.8	1	1	25.7	8	1	28.2	21	1
Cooper	23.3	64	3	24.4	4	1	30.4	33	2
Crawford	25.1	82	4	33.4	63	3	39.9	103	5
Dade	13.3	6	1	34.7	78	4	31.9	47	3
Dallas	26.4	86	4	37.6	97	5	41.5	106	5
Daviess	24.2	75	4	37.3	96	5	33.9	65	3

Table 5: Health Status Indicators – Fair or Poor Self-Reported Health Status, Obesity, and Hypertension (continued)

Geography	Fair or Poor Self-Reported Health Status, 2011			Obesity, 2011			Hypertension, 2011		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
DeKalb	22.9	59	3	28.0	25	2	36.7	89	4
Dent	30.7	103	5	33.5	64	3	35.6	78	4
Douglas	20.9	45	2	34.2	70	4	26.2	6	1
Dunklin	37.1	111	5	33.3	62	3	45.5	114	5
Franklin	18.4	28	2	30.0	38	2	35.9	83	4
Gasconade	12.8	5	1	35.6	83	4	27.2	11	1
Gentry	18.2	26	2	35.7	85	4	27.2	11	1
Greene	19.3	32	2	25.7	8	1	29.7	28	2
Grundy	16.0	16	1	27.8	23	1	33.5	58	3
Harrison	20.2	37	2	34.7	78	4	36.1	86	4
Henry	23.7	71	4	41.6	108	5	30.4	33	2
Hickory	23.6	69	3	32.9	58	3	34.0	66	3
Holt	14.0	7	1	36.7	90	4	31.3	44	2
Howard	16.5	19	1	36.1	88	4	30.7	40	2
Howell	21.2	47	3	24.2	3	1	31.1	43	2
Iron	32.7	106	5	32.0	53	3	35.5	77	4
Jackson	19.9	35	2	28.3	28	2	32.4	51	3
Jasper	20.5	40	2	35.8	86	4	39.5	100	5
Jefferson	14.7	12	1	33.0	59	3	33.6	60	3
Johnson	23.5	68	3	33.5	64	3	35.6	78	4
Knox	23.2	63	3	31.1	42	2	30.5	38	2
Laclede	23.1	61	3	27.7	22	1	32.2	50	3
Lafayette	22.0	54	3	40.3	106	5	38.5	96	5
Lawrence	14.4	11	1	33.2	61	3	29.2	25	2
Lewis	16.1	17	1	34.2	70	4	32.1	49	3
Lincoln	20.6	43	2	31.8	49	3	31.8	46	2
Linn	18.1	25	2	38.4	101	5	29.2	25	2
Livingston	21.4	51	3	35.1	81	4	27.9	17	1
Macon	23.4	67	3	29.0	33	2	34.0	66	3
Madison	30.7	103	5	27.2	18	1	34.3	70	4
Maries	21.3	50	3	37.8	98	5	30.4	33	2
Marion	22.8	58	3	40.7	107	5	30.1	31	2
McDonald	21.4	51	3	28.6	30	2	29.0	23	1

Table 5: Health Status Indicators – Fair or Poor Self-Reported Health Status, Obesity, and Hypertension (continued)

Geography	Fair or Poor Self-Reported Health Status, 2011			Obesity, 2011			Hypertension, 2011		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Mercer	21.2	47	3	38.7	102	5	29.4	27	2
Miller	27.5	92	4	31.8	49	3	35.8	82	4
Mississippi	27.2	91	4	33.7	67	3	38.0	94	5
Moniteau	22.3	56	3	32.1	54	3	26.6	9	1
Monroe	23.3	64	3	31.1	42	2	27.1	10	1
Montgomery	20.5	40	2	37.9	99	5	34.7	73	4
Morgan	25.2	83	4	29.7	36	2	36.7	89	4
New Madrid	35.7	109	5	52.6	115	5	42.3	109	5
Newton	22.6	57	3	35.6	83	4	30.4	33	2
Nodaway	11.4	3	1	23.6	2	1	34.5	72	4
Oregon	26.4	86	4	32.3	55	3	33.6	60	3
Osage	20.3	39	2	27.1	17	1	25.2	2	1
Ozark	31.5	105	5	33.5	64	3	30.8	41	2
Pemiscot	37.8	112	5	36.6	89	4	51.8	115	5
Perry	14.1	8	1	27.3	20	1	33.6	60	3
Pettis	21.5	53	3	29.6	35	2	33.0	54	3
Phelps	26.6	88	4	37.2	94	5	37.5	93	5
Pike	26.6	88	4	31.8	49	3	38.3	95	5
Platte	11.3	2	1	28.6	30	2	27.6	13	1
Polk	23.6	69	3	34.3	74	4	37.2	91	4
Pulaski	17.2	22	1	30.2	39	2	38.6	97	5
Putnam	28.7	97	5	33.7	67	3	33.5	58	3
Ralls	19.1	31	2	34.6	76	4	35.6	78	4
Randolph	24.3	76	4	31.5	47	3	32.9	53	3
Ray	22.2	55	3	35.9	87	4	36.2	87	4
Reynolds	30.4	101	5	38.0	100	5	41.8	107	5
Ripley	35.2	108	5	42.6	110	5	44.6	113	5
Saline	20.1	36	2	38.9	104	5	34.0	66	3
Schuyler	24.5	79	4	36.7	90	4	27.8	16	1
Scotland	14.3	10	1	22.2	1	1	25.2	2	1
Scott	28.2	94	5	26.1	11	1	35.9	83	4
Shannon	28.1	93	5	26.9	14	1	34.4	71	4
Shelby	24.5	79	4	42.7	111	5	42.7	111	5

Geography	Fair or Poor Self-Reported Health Status, 2011			Obesity, 2011			Hypertension, 2011		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
St. Charles	12.5	4	1	25.2	6	1	27.6	13	1
St. Clair	34.4	107	5	25.6	7	1	30.8	41	2
St. Francois	29.2	99	5	34.9	80	4	43.6	112	5
St. Louis	14.8	13	1	28.2	27	2	31.9	47	3
St. Louis City	22.9	59	3	31.1	42	2	35.7	81	4
Ste. Genevieve	20.2	37	2	25.9	10	1	31.5	45	2
Stoddard	28.2	94	5	28.4	29	2	39.5	100	5
Stone	24.1	74	4	27.6	21	1	39.7	102	5
Sullivan	25.7	84	4	35.4	82	4	38.8	98	5
Taney	25.7	84	4	29.3	34	2	27.6	13	1
Texas	29.5	100	5	34.2	70	4	35.0	75	4
Vernon	23.7	71	4	32.5	56	3	33.3	57	3
Warren	16.7	21	1	34.5	75	4	33.6	60	3
Washington	44.1	115	5	43.9	112	5	42.5	110	5
Wayne	41.8	114	5	36.9	92	4	40.8	104	5
Webster	30.4	101	5	27.8	23	1	28.0	19	1
Worth	19.5	34	2	51.4	114	5	33.8	64	3
Wright	23.3	64	3	26.9	14	1	28.7	22	1

Table 6: Health Status Indicators – High Cholesterol, Smoking, and Diabetes

High Cholesterol Data Sources and Notes:

- High cholesterol increases a person's risk of developing heart disease and having a stroke.[6] Heart disease is the leading cause of death for Missouri residents, while stroke is the fourth leading cause of death.[7]
- High cholesterol rates are age-adjusted percentages from the 2011 County-Level Study survey of non-institutionalized Missouri resident adults ages 18 and older.
- High cholesterol rates are derived from "yes" responses from respondents ages 35 and older to the following questions: "Blood cholesterol is a fatty substance found in the blood. Have you ever had your blood cholesterol checked?" AND "Have you ever been told by a doctor, nurse, or other health professional that your blood cholesterol is high? "

Smoking Data Sources and Notes:

- "Smoking is the leading cause of preventable death in the United States… Smokers are more likely than nonsmokers to develop heart disease, stroke, and lung cancer."[8] An estimated 105,913 Missouri resident deaths during the 2002-2012 time period are considered to be smoking attributable.[9] Based on 2013 data, Missouri ranked 43rd in the nation for percentage of adults who are current smokers.[10]
- Smoking rates are age-adjusted percentages from the 2011 County-Level Study survey of non-institutionalized Missouri resident adults ages 18 and older.
- Smoking rates are derived from "yes" responses to the question: "Have you smoked at least 100 cigarettes in your entire life?" AND "every day" or "some days" responses to the question: "Do you now smoke cigarettes every day, some days, or not at all?"

Diabetes Data Sources and Notes:

- "Diabetes is the leading cause of kidney failure, nontraumatic lower-limb amputations, and new cases of blindness among adults in the United States. [It is also] a major cause of heart disease and stroke."[11] Diabetes is the seventh leading cause of death in Missouri.[12]
- Diabetes rates are age-adjusted percentages from the 2011 County-Level Study survey of non-institutionalized Missouri resident adults ages 18 and older.
- Diabetes rates are derived from "yes" responses to the following question: "Have you ever been told by a doctor that you have diabetes?" (Females who responded "yes" to having been told they had diabetes only when pregnant and those that were told they had pre-diabetes or borderline diabetes are not included as having diabetes.)

Table 6: Health Status Indicators – High Cholesterol, Smoking, and Diabetes (continued)

Geography	High Cholesterol, 2011			Smoking, 2011			Diabetes, 2011		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Missouri	42.9			23.6			9.9		
Adair	45.1	66	3	22.3	31	2	11.3	78	4
Andrew	44.9	64	3	27.8	86	4	5.8	2	1
Atchison	40.0	25	2	23.5	43	2	10.8	66	3
Audrain	44.7	62	3	24.9	54	3	9.6	45	2
Barry	46.2	78	4	28.9	90	4	13.0	96	5
Barton	54.0	109	5	18.1	12	1	14.1	104	5
Bates	39.1	15	1	17.3	9	1	9.9	51	3
Benton	39.6	19	1	25.6	60	3	10.4	63	3
Bollinger	46.8	83	4	26.4	67	3	14.9	106	5
Boone	45.6	73	4	21.3	30	2	10.3	60	3
Buchanan	40.5	27	2	27.6	84	4	11.9	85	4
Butler	52.8	106	5	33.2	101	5	17.3	114	5
Caldwell	44.6	59	3	27.3	79	4	10.9	68	3
Callaway	46.4	79	4	26.0	63	3	11.1	72	4
Camden	45.4	68	3	30.2	94	5	8.6	32	2
Cape Girardeau	43.8	52	3	21.1	28	2	9.8	49	3
Carroll	42.3	43	2	17.4	11	1	10.2	57	3
Carter	46.9	85	4	26.0	63	3	16.9	112	5
Cass	44.8	63	3	22.3	31	2	11.2	75	4
Cedar	41.7	37	2	23.6	45	2	8.0	23	1
Chariton	49.8	99	5	25.4	59	3	8.8	33	2
Christian	42.2	41	2	20.1	20	1	6.3	4	1
Clark	37.4	11	1	25.9	62	3	13.0	96	5
Clay	42.9	49	3	18.7	14	1	10.0	53	3
Clinton	44.3	57	3	21.0	27	2	9.4	41	2
Cole	36.6	8	1	12.3	2	1	8.4	28	2
Cooper	40.8	28	2	24.4	49	3	10.2	57	3
Crawford	51.3	102	5	39.5	112	5	14.0	103	5
Dade	36.9	9	1	45.4	114	5	6.6	10	1
Dallas	41.8	38	2	26.3	66	3	12.2	88	4
Daviess	50.9	101	5	20.8	24	2	6.3	4	1

Table 6: Health Status Indicators – High Cholesterol, Smoking, and Diabetes (continued)

Geography	High Cholesterol, 2011			Smoking, 2011			Diabetes, 2011		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
DeKalb	38.0	14	1	20.7	23	1	7.5	16	1
Dent	46.8	83	4	30.6	95	5	11.6	80	4
Douglas	48.7	93	5	20.0	19	1	10.6	64	3
Dunklin	59.2	115	5	27.6	84	4	15.8	109	5
Franklin	41.6	35	2	23.7	47	3	6.8	11	1
Gasconade	39.1	15	1	18.1	12	1	6.8	11	1
Gentry	44.0	53	3	26.8	73	4	9.1	37	2
Greene	45.4	68	3	23.3	40	2	9.0	35	2
Grundy	42.3	43	2	34.4	104	5	6.9	13	1
Harrison	39.6	19	1	28.3	89	4	12.9	95	5
Henry	47.8	88	4	25.6	60	3	10.0	53	3
Hickory	35.8	6	1	35.1	107	5	8.1	25	2
Holt	40.2	26	2	33.6	103	5	6.4	6	1
Howard	33.7	4	1	20.5	22	1	5.7	1	1
Howell	37.5	13	1	27.5	82	4	10.8	66	3
Iron	47.9	89	4	38.0	111	5	13.5	99	5
Jackson	42.1	40	2	24.9	54	3	9.9	51	3
Jasper	41.5	32	2	23.5	43	2	11.0	70	4
Jefferson	42.8	48	3	21.1	28	2	9.5	43	2
Johnson	45.9	74	4	24.4	49	3	15.8	109	5
Knox	41.6	35	2	15.4	5	1	7.4	14	1
Laclede	48.0	91	4	23.3	40	2	11.7	83	4
Lafayette	44.0	53	3	19.2	15	1	9.0	35	2
Lawrence	39.8	21	1	25.1	56	3	7.4	14	1
Lewis	39.3	18	1	20.8	24	2	8.0	23	1
Lincoln	45.9	74	4	23.0	39	2	7.9	21	1
Linn	52.7	104	5	24.3	48	3	10.0	53	3
Livingston	46.6	82	4	22.3	31	2	12.2	88	4
Macon	45.5	71	4	24.7	52	3	8.1	25	2
Madison	45.2	67	3	29.4	92	4	15.6	108	5
Maries	45.9	74	4	24.8	53	3	8.5	30	2
Marion	41.5	32	2	27.4	81	4	12.1	86	4
McDonald	45.5	71	4	26.8	73	4	9.4	41	2

Table 6: Health Status Indicators – High Cholesterol, Smoking, and Diabetes (continued)

Geography	High Cholesterol, 2011			Smoking, 2011			Diabetes, 2011		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Mercer	49.3	95	5	32.3	100	5	8.3	27	2
Miller	47.9	89	4	22.7	36	2	10.9	68	3
Mississippi	49.5	97	5	32.2	99	5	9.8	49	3
Moniteau	39.1	15	1	17.3	9	1	7.6	17	1
Monroe	41.2	29	2	25.3	57	3	11.6	80	4
Montgomery	59.1	114	5	29.5	93	5	9.2	38	2
Morgan	44.0	53	3	20.8	24	2	7.7	18	1
New Madrid	49.5	97	5	22.7	36	2	13.8	102	5
Newton	39.9	22	1	19.7	17	1	11.0	70	4
Nodaway	35.3	5	1	13.7	4	1	7.8	19	1
Oregon	48.6	92	4	26.5	70	4	9.3	39	2
Osage	42.7	47	3	15.8	7	1	6.4	6	1
Ozark	47.2	86	4	36.7	110	5	11.1	72	4
Pemiscot	55.6	113	5	48.3	115	5	16.3	111	5
Perry	36.3	7	1	26.4	67	3	7.9	21	1
Pettis	32.3	1	1	23.6	45	2	10.2	57	3
Phelps	37.2	10	1	27.2	77	4	11.2	75	4
Pike	44.6	59	3	22.4	34	2	12.2	88	4
Platte	47.4	87	4	24.6	51	3	8.5	30	2
Polk	55.0	112	5	27.3	79	4	14.9	106	5
Pulaski	42.9	49	3	15.7	6	1	10.7	65	3
Putnam	49.9	100	5	27.5	82	4	9.6	45	2
Ralls	41.8	38	2	16.1	8	1	10.3	60	3
Randolph	46.4	79	4	26.2	65	3	11.1	72	4
Ray	46.4	79	4	25.3	57	3	8.9	34	2
Reynolds	54.0	109	5	34.5	105	5	11.3	78	4
Ripley	52.3	103	5	39.8	113	5	13.3	98	5
Saline	44.5	58	3	35.4	108	5	10.3	60	3
Schuyler	33.4	3	1	19.5	16	1	9.7	48	3
Scotland	42.4	46	2	8.2	1	1	6.5	9	1
Scott	42.3	43	2	31.2	96	5	13.6	101	5
Shannon	43.5	51	3	26.9	75	4	9.5	43	2
Shelby	52.7	104	5	13.5	3	1	8.4	28	2

Table 6: Health Status Indicators – High Cholesterol, Smoking, and Diabetes (continued)

Geography	High Cholesterol, 2011			Smoking, 2011			Diabetes, 2011		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
St. Charles	44.1	56	3	20.2	21	1	6.2	3	1
St. Clair	41.5	32	2	31.7	98	5	11.6	80	4
St. Francois	45.0	65	3	27.2	77	4	13.5	99	5
St. Louis	39.9	22	1	19.8	18	1	9.6	45	2
St. Louis City	41.2	29	2	26.6	71	4	12.1	86	4
Ste. Genevieve	44.6	59	3	22.7	36	2	10.1	56	3
Stoddard	49.4	96	5	27.8	86	4	12.7	94	5
Stone	37.4	11	1	28.1	88	4	6.4	6	1
Sullivan	48.7	93	5	27.0	76	4	17.0	113	5
Taney	33.1	2	1	31.5	97	5	12.5	92	4
Texas	41.3	31	2	34.6	106	5	12.2	88	4
Vernon	42.2	41	2	26.4	67	3	12.5	92	4
Warren	45.4	68	3	23.3	40	2	11.2	75	4
Washington	53.0	108	5	36.6	109	5	23.4	115	5
Wayne	54.0	109	5	33.5	102	5	14.4	105	5
Webster	52.9	107	5	22.4	34	2	9.3	39	2
Worth	39.9	22	1	26.7	72	4	7.8	19	1
Wright	46.1	77	4	29.1	91	4	11.8	84	4

Table 7: Health Status Indicators – Asthma, Depressive Disorders, and HIV/AIDS

Asthma Data Sources and Notes:

- Asthma affects approximately 10 percent of adult Missouri residents.[13] Although asthma can usually be controlled with medication, the disease can impact and limit daily activities.[14] In 2012 alone, 74 Missouri residents died from this disease, which also caused 7,228 Missouri resident hospitalizations for a total initial cost of $104,672,271.[15,16] This was equivalent to $14,481 per hospitalization.
- Asthma rates are age-adjusted percentages from the 2011 County-Level Study survey of non-institutionalized Missouri resident adults ages 18 and older.
- Asthma rates are derived from "yes" responses to the following questions: "Have you ever been told by a doctor, nurse, or other health professional that you had asthma?" AND "Do you still have asthma?"

Depressive Disorders Data Sources and Notes:

- "Depressive disorders are characterized by sadness severe enough or persistent enough to interfere with function and often by decreased interest or pleasure in activities."[17] "Left untreated, depression can lead to serious impairment in daily functioning and even suicide, which is the 10th leading cause of death in the U.S."[18] It is also the 10th leading cause of death for Missouri residents.[19]
- Depressive disorder rates are age-adjusted percentages from the 2011 County-Level Study survey of non-institutionalized Missouri resident adults ages 18 and older.
- Depressive disorder rates are derived from "yes" responses to the following question: "Has a doctor, nurse, or other health professional ever said that you have a depressive disorder (including depression, major depression, dysthymia, or minor depression)?"

HIV/AIDS Data Sources and Notes:

- AIDS, or Acquired Immunodeficiency Syndrome, is the last stage of infection from the Human Immunodeficiency Virus, or HIV. Although the disease can be treated with antiretroviral therapy, there is no cure.[20] These new treatments have increased the number of Missouri residents living with HIV/AIDS. HIV is spread through exposure to bodily fluids.[21]
- The HIV/AIDS rates utilized in this assessment are living HIV/AIDS case rates per 100,000 residents and were calculated using the numerators and denominators described below.
- Numerators were provided by the Bureau of Reportable Disease Informatics and represent the number of known living residents with HIV/AIDS as of December 31, 2013. Data for persons diagnosed in Missouri correctional facilities are included in the statewide rate, since most of these individuals were likely Missouri residents prior to incarceration. However, these data are not included in the county rates. This is based on the fact that these individuals, especially those in the state prison system, are often incarcerated in a different location than where they were residing (and were likely infected) prior to imprisonment. If included among the cases from the area where imprisoned at the time of diagnosis, it would distort the picture of the epidemic in that area. Individuals diagnosed at federal correctional facilities in Missouri are not included in any data presented.
- The denominator for the HIV/AIDS rate calculation is the 2013 population estimate from the U.S. Census Bureau.

Table 7: Health Status Indicators – Asthma, Depressive Disorders, and HIV/AIDS (continued)

Geography	Asthma, 2011			Depressive Disorders, 2011			HIV/AIDS, December 31, 2013		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate*	Basic Rank	Quintile Points
Missouri	10.1			20.6			193.6		
Adair	8.9	50	3	24.0	83	4	*46.9	64	3
Andrew	19.3	113	5	13.9	8	1	*17.2	13	1
Atchison	7.8	34	2	18.9	35	2	*18.4	14	1
Audrain	5.5	15	1	23.2	77	4	*46.8	63	3
Barry	8.9	50	3	25.2	95	5	*39.4	56	3
Barton	6.8	29	2	19.0	37	2	*8.1	4	1
Bates	8.5	40	2	20.5	57	3	*72.5	97	5
Benton	7.2	32	2	14.5	9	1	*58.1	80	4
Bollinger	12.1	89	4	21.8	67	3	*8.0	3	1
Boone	9.3	55	3	23.6	80	4	129.4	110	5
Buchanan	8.3	38	2	27.5	104	5	89.3	103	5
Butler	13.2	102	5	35.7	114	5	81.2	102	5
Caldwell	6.2	24	2	23.1	76	4	*55.0	73	4
Callaway	8.7	45	2	17.6	25	2	*38.3	53	3
Camden	5.0	9	1	24.9	90	4	*20.5	20	1
Cape Girardeau	8.6	44	2	20.0	52	3	67.3	92	4
Carroll	10.8	74	4	16.7	22	1	*11.0	5	1
Carter	10.1	64	3	22.5	72	4	*15.9	11	1
Cass	16.5	110	5	24.1	85	4	61.6	84	4
Cedar	15.9	109	5	23.7	82	4	*28.8	36	2
Chariton	13.1	101	5	21.4	63	3	*13.1	7	1
Christian	8.2	37	2	19.8	48	3	53.2	72	4
Clark	4.5	3	1	19.0	37	2	*28.9	37	2
Clay	10.9	76	4	20.5	57	3	118.0	108	5
Clinton	5.1	10	1	11.4	2	1	*29.2	39	2
Cole	5.9	21	1	12.6	6	1	74.3	98	5
Cooper	12.9	96	5	19.2	39	2	*39.7	58	3
Crawford	11.0	77	4	21.5	65	3	*36.7	51	3
Dade	8.8	48	3	16.5	19	1	*66.0	88	4
Dallas	9.3	55	3	15.9	16	1	*36.3	49	3
Daviess	11.4	84	4	19.9	50	3	*24.1	30	2

Table 7: Health Status Indicators – Asthma, Depressive Disorders, and HIV/AIDS (continued)

Geography	Asthma, 2011			Depressive Disorders, 2011			HIV/AIDS, December 31, 2013		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
DeKalb	8.3	38	2	16.3	18	1	*23.4	28	2
Dent	11.3	83	4	37.8	115	5	12.7	6	1
Douglas	10.6	72	4	24.9	90	4	*66.6	90	4
Dunklin	12.4	92	4	24.0	83	4	66.2	89	4
Franklin	10.1	64	3	21.7	66	3	49.1	69	3
Gasconade	6.0	22	1	15.3	10	1	*40.3	60	3
Gentry	10.1	64	3	25.1	94	5	*14.8	9	1
Greene	8.5	40	2	24.9	90	4	138.4	111	5
Grundy	12.3	91	4	29.4	106	5	*29.0	38	2
Harrison	10.6	72	4	28.3	105	5	*22.9	26	2
Henry	8.0	36	2	24.1	85	4	*40.8	61	3
Hickory	9.0	52	3	19.7	45	2	*43.0	62	3
Holt	5.3	12	1	22.2	70	4	*0.0	1	1
Howard	4.9	6	1	9.9	1	1	*48.7	68	3
Howell	5.6	17	1	31.2	110	5	56.9	76	4
Iron	5.4	13	1	25.0	93	5	*58.0	79	4
Jackson	12.6	93	5	20.3	56	3	442.4	114	5
Jasper	8.5	40	2	21.4	63	3	110.8	106	5
Jefferson	10.5	71	4	18.9	35	2	57.4	77	4
Johnson	9.3	55	3	17.7	26	2	62.3	86	4
Knox	7.1	31	2	20.5	57	3	*24.6	31	2
Laclede	9.6	58	3	23.6	80	4	56.1	75	4
Lafayette	7.9	35	2	24.6	89	4	60.7	83	4
Lawrence	5.5	15	1	19.4	43	2	*31.4	43	2
Lewis	9.6	58	3	16.8	23	1	*39.4	57	3
Lincoln	9.8	60	3	22.5	72	4	*33.4	45	2
Linn	5.7	19	1	17.9	27	2	*80.9	101	5
Livingston	8.7	45	2	18.5	33	2	*20.2	17	1
Macon	11.0	77	4	18.1	30	2	*57.9	78	4
Madison	10.8	74	4	23.4	78	4	*40.2	59	3
Maries	4.3	2	1	24.3	87	4	*22.2	22	1
Marion	9.9	62	3	19.8	48	3	*48.4	67	3
McDonald	8.7	45	2	20.5	57	3	*62.1	85	4

Table 7: Health Status Indicators – Asthma, Depressive Disorders, and HIV/AIDS (continued)

Geography	Asthma, 2011			Depressive Disorders, 2011			HIV/AIDS, December 31, 2013		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Mercer	14.4	105	5	20.0	52	3	*0.0	1	1
Miller	5.8	20	1	19.2	39	2	*35.9	47	3
Mississippi	11.6	86	4	31.2	110	5	189.0	112	5
Moniteau	13.7	104	5	17.9	27	2	*19.1	15	1
Monroe	11.2	81	4	19.7	45	2	*22.8	25	2
Montgomery	3.9	1	1	20.6	61	3	*58.5	81	4
Morgan	11.7	87	4	19.7	45	2	*29.6	40	2
New Madrid	14.4	105	5	27.3	103	5	*76.2	99	5
Newton	9.0	52	3	25.6	97	5	37.4	52	3
Nodaway	4.8	5	1	15.3	10	1	*30.1	41	2
Oregon	8.5	40	2	26.9	102	5	*36.4	50	3
Osage	10.0	63	3	11.4	2	1	*14.6	8	1
Ozark	13.0	99	5	19.2	39	2	*94.1	105	5
Pemiscot	14.7	108	5	26.8	101	5	112.2	107	5
Perry	6.0	22	1	15.8	15	1	*26.2	32	2
Pettis	9.8	60	3	22.5	72	4	52.1	71	4
Phelps	11.0	77	4	22.5	72	4	*33.5	46	2
Pike	11.5	85	4	21.0	62	3	*26.8	33	2
Platte	5.6	17	1	18.5	33	2	124.3	109	5
Polk	12.1	89	4	25.3	96	5	*22.6	24	2
Pulaski	10.2	70	4	15.7	13	1	70.7	94	5
Putnam	12.6	93	5	25.9	98	5	*20.5	19	1
Ralls	6.4	26	2	21.9	69	3	*19.6	16	1
Randolph	6.9	30	2	26.6	100	5	*36.1	48	3
Ray	18.0	112	5	16.0	17	1	*39.1	55	3
Reynolds	13.0	99	5	19.9	50	3	*15.2	10	1
Ripley	12.9	96	5	32.4	113	5	*28.5	35	2
Saline	8.8	48	3	21.8	67	3	*55.9	74	4
Schuyler	11.2	81	4	16.6	21	1	*22.9	27	2
Scotland	4.9	6	1	11.9	4	1	*20.3	18	1
Scott	12.9	96	5	16.5	19	1	68.7	93	5
Shannon	4.7	4	1	19.2	39	2	*48.2	66	3
Shelby	14.5	107	5	18.3	31	2	*16.2	12	1

Table 7: Health Status Indicators – Asthma, Depressive Disorders, and HIV/AIDS (continued)

Geography	Asthma, 2011			Depressive Disorders, 2011			HIV/AIDS, December 31, 2013		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
St. Charles	6.2	24	2	17.5	24	2	58.9	82	4
St. Clair	21.2	115	5	30.1	107	5	*31.6	44	2
St. Francois	11.0	77	4	24.3	87	4	72.5	96	5
St. Louis	10.1	64	3	18.3	31	2	196.1	113	5
St. Louis City	11.7	87	4	20.1	54	3	1020.4	115	5
Ste. Genevieve	6.5	28	2	13.1	7	1	*50.6	70	4
Stoddard	6.4	26	2	20.1	54	3	*23.5	29	2
Stone	4.9	6	1	12.2	5	1	*38.3	54	3
Sullivan	16.6	111	5	23.4	78	4	*77.5	100	5
Taney	5.4	13	1	31.1	108	5	91.5	104	5
Texas	10.1	64	3	22.3	71	4	*27.3	34	2
Vernon	7.4	33	2	18.0	29	2	*66.8	91	4
Warren	9.1	54	3	19.4	43	2	*30.3	42	2
Washington	13.5	103	5	31.6	112	5	*71.5	95	5
Wayne	19.8	114	5	31.1	108	5	*22.4	23	1
Webster	10.1	64	3	26.0	99	5	65.8	87	4
Worth	5.1	10	1	15.7	13	1	*47.8	65	3
Wright	12.8	95	5	15.6	12	1	*21.7	21	1

*This rate is based on fewer than 20 cases and is considered to be unstable.

Table 8: Health Status Indicators – Total Mortality, Infant Mortality, and Heart Disease Mortality

Total Mortality Data Sources and Notes:

- "Reductions in deaths and death rates are often used as an indicator of the success of public health initiatives to improve the health and well-being of the U.S. population…"[22]
- Total mortality rates are reported per 100,000 residents and were obtained from the Death MICA, which contains data from Missouri resident death certificates.
- Total mortality rates are age-adjusted to the 2000 U.S. Standard Population and represent the 2002-2012 time period.

Infant Mortality Data Sources and Notes:
- "Infant mortality is an important indicator of health for any nation. Infant mortality rates are used worldwide to gauge the health and well-being of populations, and growing evidence suggests that higher infant mortality within a population is linked to that population's overall health and development across the life course."[23] Infant mortality has been selected as a Leading Health Indicator by Healthy People 2020.[24]
- Infant mortality rates are reported per 100,000 resident live births and were obtained from the Death MICA, which contains data from Missouri resident death certificates.
- Infant mortality rates are age-specific for residents under one year of age and represent the 2002-2012 time period.

Heart Disease Mortality Data Sources and Notes:
- Heart disease is the leading cause of death in both Missouri and the United States overall.[25,26]
- Heart disease mortality rates are reported per 100,000 residents and were obtained from the Death MICA, which contains data from Missouri resident death certificates.
- Heart disease mortality rates are age-adjusted to the 2000 U.S. Standard Population and represent the 2002-2012 time period.
- Mortality by cause is determined using the underlying cause of death on the death certificate. The heart disease mortality indicator utilizes International Classification of Diseases, Tenth Revision (ICD-10) codes I00-I09, I11, I13, and I20-I51. This category of "heart disease" is one of the National Center for Health Statistics' standard categories for ranking the leading causes of death. In addition to "ischemic heart disease," some of the causes included are: rheumatic heart disease, hypertensive heart disease, pulmonary embolism, various valve disorders, cardiomyopathy, atrial fibrillation, and congestive heart failure.

Table 8: Health Status Indicators – Total Mortality, Infant Mortality, and Heart Disease Mortality (continued)

Geography	Total Mortality, 2002-2012			Infant Mortality, 2002-2012			Heart Disease Mortality, 2002-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Missouri	847.4			727.0			223.6		
Adair	838.0	40	2	798.7	79	4	207.5	27	2
Andrew	790.5	21	1	*832.9	85	4	224.9	46	2
Atchison	817.4	34	2	*151.5	2	1	198.4	19	1
Audrain	867.6	58	3	527.1	17	1	190.8	13	1
Barry	920.4	85	4	702.4	54	3	271.3	98	5
Barton	800.7	25	2	*688.9	51	3	186.4	10	1
Bates	880.1	64	3	*434.6	9	1	234.2	62	3
Benton	911.0	78	4	*722.2	59	3	228.2	57	3
Bollinger	900.6	75	4	*809.5	82	4	272.4	99	5
Boone	733.3	5	1	576.8	27	2	165.0	4	1
Buchanan	912.0	80	4	779.0	72	4	225.5	48	3
Butler	1,030.9	105	5	1,011.7	103	5	240.5	72	4
Caldwell	859.6	54	3	*972.4	99	5	216.6	34	2
Callaway	838.1	41	2	928.7	95	5	207.9	29	2
Camden	778.3	14	1	524.1	16	1	226.4	53	3
Cape Girardeau	814.3	32	2	712.2	58	3	221.0	39	2
Carroll	897.1	72	4	*735.9	61	3	336.6	111	5
Carter	1,098.0	112	5	*1,150.7	108	5	237.0	66	3
Cass	810.7	30	2	547.2	22	1	185.4	9	1
Cedar	911.9	79	4	*946.5	96	5	226.1	49	3
Chariton	766.0	10	1	*842.1	87	4	222.8	41	2
Christian	787.0	19	1	520.2	14	1	201.8	22	1
Clark	856.1	51	3	*636.3	43	2	244.8	73	4
Clay	782.5	17	1	545.6	21	1	169.8	5	1
Clinton	956.5	100	5	761.1	63	3	206.2	25	2
Cole	781.7	15	1	766.8	65	3	193.6	15	1
Cooper	840.4	42	2	*681.5	50	3	247.4	76	4
Crawford	927.2	88	4	*472.5	10	1	290.6	106	5
Dade	944.4	97	5	*570.1	26	2	209.1	31	2
Dallas	854.7	49	3	*756.0	62	3	192.9	14	1
Daviess	831.5	37	2	*673.1	48	3	229.4	58	3

Table 8: Health Status Indicators – Total Mortality, Infant Mortality, and Heart Disease Mortality (continued)

Geography	Total Mortality, 2002-2012			Infant Mortality, 2002-2012			Heart Disease Mortality, 2002-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
DeKalb	806.5	27	2	*570.0	25	2	239.7	70	4
Dent	917.1	83	4	*765.3	64	3	226.1	49	3
Douglas	820.0	35	2	*545.5	20	1	186.5	11	1
Dunklin	1,136.7	115	5	1,056.3	105	5	324.4	109	5
Franklin	893.3	70	4	626.2	40	2	237.5	68	3
Gasconade	871.0	60	3	*840.3	86	4	226.2	51	3
Gentry	794.0	22	1	*217.4	4	1	245.4	75	4
Greene	815.1	33	2	630.5	41	2	206.1	24	2
Grundy	836.4	39	2	*612.2	36	2	221.8	40	2
Harrison	812.5	31	2	*806.5	81	4	251.5	84	4
Henry	952.9	98	5	896.7	91	4	248.5	80	4
Hickory	840.9	43	2	*832.3	84	4	197.1	17	1
Holt	760.8	9	1	*639.0	44	2	205.4	23	1
Howard	808.2	29	2	*707.0	55	3	222.9	42	2
Howell	960.1	102	5	661.7	47	3	226.5	54	3
Iron	1,135.6	114	5	*797.1	78	4	297.2	107	5
Jackson	869.9	59	3	772.5	69	3	199.0	20	1
Jasper	927.7	89	4	497.8	13	1	281.4	102	5
Jefferson	958.7	101	5	591.7	32	2	260.0	92	4
Johnson	847.7	46	2	579.0	28	2	218.8	37	2
Knox	864.6	56	3	*382.4	8	1	207.7	28	2
Laclede	924.6	87	4	920.7	94	5	290.2	105	5
Lafayette	851.7	47	3	623.9	39	2	253.0	85	4
Lawrence	885.5	67	3	803.1	80	4	200.4	21	1
Lewis	796.6	24	2	*564.1	24	2	239.8	71	4
Lincoln	916.6	82	4	606.2	35	2	255.0	90	4
Linn	871.1	61	3	*583.8	30	2	265.7	95	5
Livingston	846.2	45	2	*590.8	31	2	244.8	73	4
Macon	876.7	63	3	*341.5	6	1	236.1	63	3
Madison	995.6	103	5	*785.0	75	4	265.3	94	5
Maries	856.6	52	3	*95.5	1	1	281.3	101	5
Marion	894.8	71	4	729.2	60	3	226.2	51	3
McDonald	956.3	99	5	868.0	89	4	236.6	65	3

Table 8: Health Status Indicators – Total Mortality, Infant Mortality, and Heart Disease Mortality (continued)

Geography	Total Mortality, 2002-2012			Infant Mortality, 2002-2012			Heart Disease Mortality, 2002-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Mercer	722.9	4	1	*1,229.5	111	5	190.1	12	1
Miller	900.3	74	4	658.8	46	2	270.0	97	5
Mississippi	1,101.6	113	5	*774.8	70	4	386.7	114	5
Moniteau	820.5	36	2	*554.6	23	1	206.3	26	2
Monroe	789.8	20	1	*180.7	3	1	232.8	60	3
Montgomery	897.5	73	4	*824.5	83	4	250.8	83	4
Morgan	940.7	95	5	875.7	90	4	228.1	56	3
New Madrid	1,050.9	108	5	978.2	100	5	358.9	113	5
Newton	857.5	53	3	711.4	57	3	239.5	69	3
Nodaway	742.3	6	1	*580.3	29	2	208.1	30	2
Oregon	890.1	68	3	*605.1	34	2	331.3	110	5
Osage	768.1	12	1	*677.1	49	3	254.9	89	4
Ozark	919.6	84	4	*544.5	19	1	218.0	36	2
Pemiscot	1,082.4	111	5	1,157.3	109	5	355.2	112	5
Perry	782.1	16	1	*378.5	7	1	232.9	61	3
Pettis	835.0	38	2	613.4	37	2	219.1	38	2
Phelps	892.7	69	3	697.3	52	3	223.1	43	2
Pike	875.6	62	3	998.0	102	5	260.7	93	5
Platte	694.4	1	1	540.6	18	1	154.5	2	1
Polk	907.6	77	4	496.1	12	1	195.4	16	1
Pulaski	933.9	93	5	779.8	73	4	254.1	88	4
Putnam	861.1	55	3	*960.0	98	5	253.2	86	4
Ralls	722.4	3	1	*1,367.5	114	5	174.1	6	1
Randolph	913.9	81	4	642.8	45	2	217.3	35	2
Ray	927.8	90	4	*617.3	38	2	250.4	82	4
Reynolds	939.6	94	5	*1,685.4	115	5	247.4	76	4
Ripley	1,064.2	109	5	1,316.5	113	5	314.2	108	5
Saline	866.1	57	3	1,031.2	104	5	253.2	86	4
Schuyler	807.2	28	2	*1,117.3	107	5	143.8	1	1
Scotland	801.2	26	2	*788.4	77	4	174.9	7	1
Scott	932.4	92	4	911.5	93	5	247.4	76	4
Shannon	905.0	76	4	*995.5	101	5	249.9	81	4
Shelby	843.1	44	2	*771.8	68	3	225.3	47	3

Geography	Total Mortality, 2002-2012			Infant Mortality, 2002-2012			Heart Disease Mortality, 2002-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
St. Charles	710.5	2	1	597.4	33	2	179.2	8	1
St. Clair	884.6	66	3	*494.1	11	1	247.9	79	4
St. Francois	1,007.7	104	5	710.6	56	3	287.6	103	5
St. Louis	768.0	11	1	769.0	67	3	213.4	32	2
St. Louis City	1,040.2	107	5	1,116.2	106	5	287.9	104	5
Ste. Genevieve	774.3	13	1	*244.3	5	1	236.1	63	3
Stoddard	922.1	86	4	783.6	74	4	216.0	33	2
Stone	753.1	8	1	788.1	76	4	198.0	18	1
Sullivan	883.4	65	3	*768.5	66	3	232.2	59	3
Taney	796.5	23	1	631.4	42	2	224.8	45	2
Texas	855.8	50	3	1,169.6	110	5	227.6	55	3
Vernon	928.2	91	4	905.1	92	4	268.3	96	5
Warren	786.8	18	1	523.7	15	1	224.7	44	2
Washington	1,073.2	110	5	698.7	53	3	404.1	115	5
Wayne	1,032.4	106	5	*956.6	97	5	237.1	67	3
Webster	854.1	48	3	775.3	71	4	259.6	91	4
Worth	745.1	7	1	*1,260.5	112	5	161.6	3	1
Wright	943.3	96	5	846.9	88	4	280.1	100	5

*This rate is based on fewer than 20 cases and is considered to be unstable.

Cancer Mortality Data Sources and Notes:

- Cancer is the second leading cause of death in both Missouri and the United States overall.[27,28]
- Cancer mortality rates are reported per 100,000 residents and were obtained from the Death MICA, which contains data from Missouri resident death certificates.
- Cancer mortality rates are age-adjusted to the 2000 U.S. Standard Population and represent the 2002-2012 time period.
- Mortality by cause is determined using the underlying cause of death on the death certificate. The cancer mortality indicator utilizes ICD-10 codes C00-C97 and may also be referred to as mortality from malignant neoplasms. This indicator includes leukemia and cancers of various organs but excludes benign neoplasms, carcinoma in situ, and neoplasms of uncertain behavior.

Chronic Lower Respiratory Disease (CLRD) Mortality Data Sources and Notes:

- CLRD is the third leading cause of death in Missouri and the U.S.[29,30]
- CLRD mortality rates are reported per 100,000 residents and were obtained from the Death MICA, which contains data from Missouri resident death certificates.
- CLRD mortality rates are age-adjusted to the 2000 U.S. Standard Population and represent the 2002-2012 time period.
- Mortality by cause is determined using the underlying cause of death on the death certificate. The CLRD mortality indicator utilizes ICD-10 codes J40-J47 and includes deaths from chronic obstructive pulmonary disease (COPD) and allied conditions. This category is called "chronic lower respiratory diseases" in the National Center for Health Statistics' current listing of leading causes of death. Also included are bronchitis (unless it is specified as acute bronchitis), emphysema, asthma, bronchiectasis, and chronic airway obstruction not elsewhere classified. The vast majority of the deaths in this category are attributed to "chronic airway obstruction not elsewhere classified."

Stroke Mortality Data Sources and Notes:

- Stroke is the fourth leading cause of death in Missouri and the U.S.[31,32]
- Stroke mortality rates are reported per 100,000 residents and were obtained from the Death MICA, which contains data from Missouri resident death certificates.
- Stroke mortality rates are age-adjusted to the 2000 U.S. Standard Population and represent the 2002-2012 time period.
- Mortality by cause is determined using the underlying cause of death on the death certificate. The stroke mortality indicator utilizes ICD-10 codes I60-I69 and includes deaths from cerebrovascular disease (stroke), whether due to bleeding or to blockage of arteries in the brain. This indicator also includes deaths due to late effects of strokes.

Table 9: Health Status Indicators – Cancer Mortality, Chronic Lower Respiratory Disease (CLRD) Mortality, and Stroke Mortality (continued)

Geography	Cancer Mortality, 2002-2012			CLRD Mortality, 2002-2012			Stroke Mortality, 2002-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Missouri	191.1			49.7			49.8		
Adair	182.2	33	2	53.5	51	3	55.4	80	4
Andrew	178.8	22	1	57.3	64	3	50.1	57	3
Atchison	183.3	35	2	67.0	102	5	65.0	102	5
Audrain	201.5	72	4	75.1	107	5	49.2	54	3
Barry	191.3	51	3	49.3	36	2	64.3	99	5
Barton	168.7	8	1	35.3	3	1	54.7	77	4
Bates	204.7	80	4	57.6	68	3	57.8	88	4
Benton	218.1	101	5	63.0	94	5	58.7	90	4
Bollinger	204.5	79	4	56.4	63	3	43.2	25	2
Boone	173.0	14	1	40.1	8	1	47.8	44	2
Buchanan	202.8	74	4	78.1	108	5	66.0	106	5
Butler	222.3	104	5	64.3	96	5	67.2	107	5
Caldwell	197.3	63	3	50.9	43	2	38.3	11	1
Callaway	185.6	38	2	60.8	83	4	47.4	41	2
Camden	165.0	5	1	47.1	27	2	46.3	34	2
Cape Girardeau	177.9	20	1	43.7	17	1	50.2	59	3
Carroll	171.3	10	1	47.2	28	2	44.5	30	2
Carter	258.8	115	5	96.2	115	5	58.5	89	4
Cass	188.1	43	2	54.5	57	3	51.7	64	3
Cedar	208.9	90	4	62.1	90	4	57.3	85	4
Chariton	195.1	60	3	32.3	1	1	41.5	19	1
Christian	171.7	13	1	45.5	21	1	52.4	66	3
Clark	212.6	96	5	78.1	108	5	65.8	105	5
Clay	189.1	46	2	62.2	92	4	42.1	20	1
Clinton	200.5	70	4	79.3	110	5	59.9	93	5
Cole	180.6	31	2	52.3	49	3	42.8	23	1
Cooper	176.4	19	1	47.6	31	2	48.7	52	3
Crawford	209.5	91	4	46.9	25	2	51.9	65	3
Dade	214.0	99	5	54.6	58	3	49.8	55	3
Dallas	190.2	48	3	52.7	50	3	40.1	16	1
Daviess	199.5	68	3	48.4	32	2	65.4	104	5

Table 9: Health Status Indicators – Cancer Mortality, Chronic Lower Respiratory Disease (CLRD) Mortality, and Stroke Mortality (continued)

Geography	Cancer Mortality, 2002-2012			CLRD Mortality, 2002-2012			Stroke Mortality, 2002-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
DeKalb	154.2	1	1	61.5	87	4	53.4	71	4
Dent	199.2	66	3	60.1	78	4	68.7	109	5
Douglas	190.2	48	3	67.8	104	5	45.9	31	2
Dunklin	234.5	111	5	82.1	112	5	81.2	114	5
Franklin	194.3	55	3	51.7	45	2	51.3	61	3
Gasconade	191.7	52	3	45.7	22	1	59.7	92	4
Gentry	173.9	17	1	42.7	14	1	53.9	73	4
Greene	180.5	30	2	50.4	42	2	47.8	44	2
Grundy	204.8	81	4	51.9	47	3	54.2	75	4
Harrison	171.3	10	1	51.8	46	2	34.2	3	1
Henry	220.4	103	5	57.5	67	3	72.3	112	5
Hickory	194.7	58	3	49.8	39	2	48.6	51	3
Holt	164.8	4	1	59.3	74	4	43.9	27	2
Howard	186.9	40	2	40.0	7	1	57.6	87	4
Howell	205.7	82	4	67.1	103	5	64.3	99	5
Iron	238.6	112	5	89.5	113	5	65.1	103	5
Jackson	194.3	55	3	51.5	44	2	48.3	49	3
Jasper	188.9	45	2	63.8	95	5	47.9	46	2
Jefferson	211.4	94	5	60.3	79	4	58.8	91	4
Johnson	194.8	59	3	49.8	39	2	53.2	70	4
Knox	220.3	102	5	61.4	86	4	42.4	21	1
Laclede	195.6	61	3	55.9	62	3	62.0	97	5
Lafayette	191.7	52	3	54.0	52	3	46.1	32	2
Lawrence	184.9	37	2	59.8	76	4	67.9	108	5
Lewis	198.2	64	3	42.7	14	1	81.8	115	5
Lincoln	203.6	75	4	44.9	19	1	53.9	73	4
Linn	187.7	42	2	61.5	87	4	48.5	50	3
Livingston	192.5	54	3	51.9	47	3	46.6	36	2
Macon	179.3	24	2	44.1	18	1	52.4	66	3
Madison	224.4	106	5	68.0	105	5	40.6	18	1
Maries	199.3	67	3	40.4	10	1	43.1	24	2
Marion	204.3	77	4	66.5	101	5	50.6	60	3
McDonald	206.5	83	4	55.5	61	3	47.6	43	2

Table 9: Health Status Indicators – Cancer Mortality, Chronic Lower Respiratory Disease (CLRD) Mortality, and Stroke Mortality (continued)

Geography	Cancer Mortality, 2002-2012			CLRD Mortality, 2002-2012			Stroke Mortality, 2002-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Mercer	187.1	41	2	47.3	29	2	32.5	2	1
Miller	201.5	72	4	54.1	55	3	47.4	41	2
Mississippi	250.6	114	5	61.0	84	4	72.7	113	5
Moniteau	170.9	9	1	57.6	68	3	36.9	8	1
Monroe	163.8	3	1	48.6	33	2	36.9	8	1
Montgomery	213.3	98	5	57.7	70	4	40.5	17	1
Morgan	208.0	86	4	57.3	64	3	52.8	68	3
New Madrid	228.1	108	5	64.5	97	5	51.4	62	3
Newton	185.6	38	2	49.7	38	2	51.5	63	3
Nodaway	165.1	6	1	46.0	23	1	46.3	34	2
Oregon	182.0	32	2	36.8	4	1	42.4	21	1
Osage	159.4	2	1	42.2	13	1	36.2	6	1
Ozark	204.2	76	4	49.2	35	2	56.7	81	4
Pemiscot	223.9	105	5	65.8	100	5	54.2	75	4
Perry	180.0	27	2	39.0	5	1	43.9	27	2
Pettis	208.1	89	4	50.3	41	2	54.9	78	4
Phelps	178.6	21	1	58.0	72	4	64.8	101	5
Pike	190.2	48	3	57.9	71	4	47.9	46	2
Platte	165.5	7	1	47.3	29	2	35.8	4	1
Polk	183.0	34	2	62.1	90	4	62.7	98	5
Pulaski	207.0	84	4	59.5	75	4	61.5	96	5
Putnam	200.9	71	4	60.4	80	4	26.4	1	1
Ralls	179.7	25	2	47.0	26	2	36.1	5	1
Randolph	212.1	95	5	54.4	56	3	47.2	40	2
Ray	204.3	77	4	61.3	85	4	39.8	15	1
Reynolds	208.0	86	4	65.5	98	5	47.1	39	2
Ripley	224.4	106	5	71.7	106	5	70.2	110	5
Saline	211.3	93	5	46.3	24	2	57.0	82	4
Schuyler	188.2	44	2	61.5	87	4	52.8	68	3
Scotland	199.9	69	3	54.0	52	3	44.1	29	2
Scott	208.0	86	4	62.5	93	5	57.2	84	4
Shannon	211.0	92	4	58.3	73	4	60.0	94	5
Shelby	195.6	61	3	55.1	60	3	57.5	86	4

Table 9: Health Status Indicators – Cancer Mortality, Chronic Lower Respiratory Disease (CLRD) Mortality, and Stroke Mortality (continued)

Geography	Cancer Mortality, 2002-2012			CLRD Mortality, 2002-2012			Stroke Mortality, 2002-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
St. Charles	173.1	15	1	41.2	12	1	36.6	7	1
St. Clair	194.4	57	3	54.9	59	3	55.1	79	4
St. Francois	213.2	97	5	65.6	99	5	50.1	57	3
St. Louis	178.8	22	1	33.5	2	1	46.1	32	2
St. Louis City	232.0	109	5	43.6	16	1	57.0	82	4
Ste. Genevieve	175.0	18	1	39.2	6	1	39.6	14	1
Stoddard	216.3	100	5	81.5	111	5	61.1	95	5
Stone	173.3	16	1	40.3	9	1	39.1	13	1
Sullivan	184.3	36	2	60.6	81	4	47.0	38	2
Taney	189.7	47	3	45.0	20	1	38.5	12	1
Texas	179.7	25	2	54.0	52	3	48.9	53	3
Vernon	198.6	65	3	48.8	34	2	43.4	26	2
Warren	180.1	28	2	40.9	11	1	37.6	10	1
Washington	232.9	110	5	49.6	37	2	46.6	36	2
Wayne	239.1	113	5	89.5	113	5	71.8	111	5
Webster	171.4	12	1	60.6	81	4	53.6	72	4
Worth	180.4	29	2	59.8	76	4	49.8	55	3
Wright	207.9	85	4	57.3	64	3	48.2	48	3

Table 10: Health Care Access Indicators –Poverty, Uninsured, and Medicaid Enrollment

Poverty Data Sources and Notes:

- Socioeconomic characteristics such as poverty directly influence the health status of a community or region.[33,34,35] Low income and poverty may limit a person's ability to pay for a variety of goods and services related to health, such as fees related to medical visits, healthy foods, and medications.
- Poverty rates represent the estimated percentage of residents living in poverty.
- Poverty rates were obtained from the U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) program and reflect 2013 estimates. "School district estimates sum to county estimates, county estimates sum to state estimates, and state estimates sum to the national estimate."[36]

Uninsured Data Sources and Notes:

- Health insurance status is tied to several other socioeconomic indicators. Research indicates that persons without health insurance are less likely to receive screenings for chronic medical conditions and have high death rates for diseases such as diabetes, hypertension, and coronary heart disease.[37]
- Uninsured rates represent the estimated percentage of residents under age 65 without health insurance.
- Uninsured rates were obtained from the U.S. Census Bureau, Small Area Health Insurance Estimates (SAHIE) program and represent 2012 estimates. "Each year's estimates are adjusted so that before rounding the county estimates sum to their respective state totals and for key demographics the state estimates sum to the national ACS† numbers insured and uninsured."[38]

Medicaid Enrollment Data Sources and Notes:

- "Medicaid is a joint federal and state program that helps with medical costs for some people with limited income and resources. Medicaid also offers benefits not normally covered by Medicare, like nursing home care and personal care services."[39] "It covers children, the aged, blind, and/or disabled and other people who are eligible to receive federally assisted income maintenance payments."[40]
- Medicaid enrollment rates represent the percentage of residents actively enrolled in all categories of Medicaid, which in Missouri is also referred to as MO HealthNet. Active enrollment does not necessarily mean that services were used during a particular month.
- Medicaid enrollment rates were calculated using the number of actively enrolled residents on June 30, 2012, as the numerator and 2012 population estimates from the U.S. Census Bureau as the denominator. The number of actively enrolled residents was obtained from the Medicaid Records MICA.[41,42]

†ACS refers to the American Community Survey, which is conducted by the U.S. Census Bureau.

Table 10: Health Care Access Indicators –Poverty, Uninsured, and Medicaid Enrollment (continued)

Geography	Poverty, 2013			Uninsured, 2012			Medicaid Enrollment, June 30, 2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Missouri	15.8			15.8			16.1		
Adair	24.9	101	5	17.8	52	3	15.1	36	2
Andrew	10.1	5	1	13.0	6	1	9.8	5	1
Atchison	13.2	19	1	16.2	29	2	11.4	10	1
Audrain	19.7	69	3	18.1	57	3	15.6	41	2
Barry	20.2	76	4	21.7	106	5	20.6	75	4
Barton	18.5	60	3	18.8	67	3	20.7	78	4
Bates	21.6	86	4	19.7	77	4	17.6	60	3
Benton	23.1	95	5	20.4	90	4	20.3	72	4
Bollinger	19.6	67	3	18.3	62	3	24.0	94	5
Boone	19.8	71	4	14.5	12	1	11.7	12	1
Buchanan	17.8	52	3	17.2	41	2	19.3	69	3
Butler	22.0	88	4	17.1	39	2	27.9	102	5
Caldwell	15.3	26	2	17.3	42	2	14.9	33	2
Callaway	13.8	22	1	14.9	16	1	14.2	27	2
Camden	18.0	54	3	20.2	86	4	14.9	32	2
Cape Girardeau	15.8	30	2	14.5	12	1	15.1	37	2
Carroll	17.7	50	3	17.4	43	2	17.3	55	3
Carter	23.7	98	5	21.5	104	5	28.8	106	5
Cass	9.2	3	1	13.1	7	1	12.4	16	1
Cedar	25.5	103	5	20.0	84	4	23.4	93	5
Chariton	16.8	39	2	16.8	36	2	16.1	46	2
Christian	11.4	9	1	14.8	15	1	13.5	22	1
Clark	17.5	45	2	18.9	70	4	17.5	57	3
Clay	10.0	4	1	12.9	5	1	10.1	6	1
Clinton	11.5	11	1	15.6	23	1	11.6	11	1
Cole	13.7	21	1	12.7	4	1	15.0	35	2
Cooper	15.5	28	2	16.3	30	2	14.8	30	2
Crawford	20.1	74	4	18.7	66	3	22.3	91	4
Dade	18.4	56	3	20.4	90	4	18.4	65	3
Dallas	21.7	87	4	20.4	90	4	21.2	83	4
Daviess	18.9	64	3	20.6	96	5	15.6	42	2

Table 10: Health Care Access Indicators –Poverty, Uninsured, and Medicaid Enrollment (continued)

Geography	Poverty, 2013			Uninsured, 2012			Medicaid Enrollment, June 30, 2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
DeKalb	17.2	41	2	15.7	24	2	10.6	8	1
Dent	23.0	94	5	20.4	90	4	25.4	99	5
Douglas	22.5	93	5	21.2	100	5	25.4	98	5
Dunklin	27.0	109	5	18.5	63	3	34.8	114	5
Franklin	10.8	7	1	15.2	19	1	13.3	21	1
Gasconade	15.8	30	2	17.8	52	3	14.3	28	2
Gentry	16.1	33	2	19.8	81	4	15.1	38	2
Greene	20.2	76	4	17.7	49	3	16.3	50	3
Grundy	21.4	83	4	18.2	59	3	18.3	63	3
Harrison	19.0	65	3	19.2	73	4	20.2	71	4
Henry	18.4	56	3	17.0	38	2	20.3	73	4
Hickory	24.7	100	5	24.4	113	5	18.7	66	3
Holt	13.1	18	1	18.0	56	3	12.3	14	1
Howard	15.9	32	2	16.6	34	2	17.3	54	3
Howell	27.6	111	5	18.1	57	3	25.0	97	5
Iron	22.0	88	4	18.8	67	3	29.5	110	5
Jackson	17.2	41	2	17.7	49	3	17.9	62	3
Jasper	18.3	55	3	20.4	90	4	20.1	70	4
Jefferson	11.5	11	1	14.1	8	1	12.4	15	1
Johnson	17.7	50	3	14.4	10	1	11.4	9	1
Knox	21.3	82	4	24.6	114	5	14.8	31	2
Laclede	22.1	91	4	18.9	70	4	22.7	92	4
Lafayette	12.7	16	1	15.0	18	1	16.2	49	3
Lawrence	18.6	62	3	19.7	77	4	19.2	68	3
Lewis	17.5	45	2	17.1	39	2	13.6	23	1
Lincoln	11.9	14	1	15.5	20	1	15.7	43	2
Linn	19.6	67	3	17.4	43	2	17.7	61	3
Livingston	17.2	41	2	16.4	32	2	16.0	45	2
Macon	18.8	63	3	17.6	47	3	17.2	53	3
Madison	21.4	83	4	18.8	67	3	24.6	96	5
Maries	17.5	45	2	18.6	65	3	14.1	25	2
Marion	16.8	39	2	15.7	24	2	21.9	88	4
McDonald	20.7	79	4	24.9	115	5	21.9	90	4

Table 10: Health Care Access Indicators –Poverty, Uninsured, and Medicaid Enrollment (continued)

Geography	Poverty, 2013			Uninsured, 2012			Medicaid Enrollment, June 30, 2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Mercer	17.6	48	3	20.2	86	4	15.3	39	2
Miller	20.5	78	4	19.2	73	4	20.7	81	4
Mississippi	36.3	115	5	18.2	59	3	29.5	111	5
Moniteau	14.1	23	1	18.2	59	3	12.4	17	1
Monroe	15.7	29	2	19.7	77	4	16.2	48	3
Montgomery	15.3	26	2	17.7	49	3	20.7	79	4
Morgan	22.0	88	4	23.3	110	5	20.7	80	4
New Madrid	23.7	98	5	16.7	35	2	29.7	112	5
Newton	16.1	33	2	21.3	102	5	17.5	56	3
Nodaway	18.5	60	3	14.4	10	1	8.5	3	1
Oregon	26.4	107	5	21.1	98	5	28.6	104	5
Osage	10.1	5	1	15.5	20	1	8.5	4	1
Ozark	26.2	104	5	23.8	111	5	21.8	87	4
Pemiscot	31.4	113	5	14.9	16	1	37.9	115	5
Perry	12.7	16	1	15.5	20	1	14.2	26	2
Pettis	20.1	74	4	20.2	86	4	20.4	74	4
Phelps	16.4	37	2	17.9	55	3	17.5	58	3
Pike	19.8	71	4	18.9	70	4	16.2	47	3
Platte	7.7	2	1	10.7	2	1	7.1	2	1
Polk	20.0	73	4	17.6	47	3	21.2	84	4
Pulaski	15.1	25	2	15.9	26	2	10.6	7	1
Putnam	17.9	53	3	21.2	100	5	15.7	44	2
Ralls	11.4	9	1	16.1	27	2	13.1	20	1
Randolph	22.4	92	4	16.5	33	2	21.3	85	4
Ray	13.2	19	1	14.7	14	1	13.9	24	2
Reynolds	23.3	96	5	19.9	83	4	26.6	100	5
Ripley	23.6	97	5	20.5	95	5	33.8	113	5
Saline	18.4	56	3	17.5	45	2	20.6	77	4
Schuyler	21.2	81	4	23.8	111	5	17.1	52	3
Scotland	17.6	48	3	22.4	108	5	14.5	29	2
Scott	18.4	56	3	16.3	30	2	26.6	101	5
Shannon	31.5	114	5	22.5	109	5	28.3	103	5
Shelby	17.2	41	2	18.5	63	3	17.6	59	3

Table 10: Health Care Access Indicators –Poverty, Uninsured, and Medicaid Enrollment (continued)

Geography	Poverty, 2013			Uninsured, 2012			Medicaid Enrollment, June 30, 2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
St. Charles	6.4	1	1	10.1	1	1	6.4	1	1
St. Clair	26.4	107	5	20.1	85	4	20.6	76	4
St. Francois	20.7	79	4	16.9	37	2	21.8	86	4
St. Louis	10.9	8	1	12.4	3	1	11.9	13	1
St. Louis City	27.2	110	5	19.2	73	4	28.9	107	5
Ste. Genevieve	12.3	15	1	14.3	9	1	12.8	18	1
Stoddard	16.3	36	2	17.5	45	2	24.6	95	5
Stone	16.1	33	2	21.5	104	5	15.6	40	2
Sullivan	16.5	38	2	21.1	98	5	18.8	67	3
Taney	19.7	69	3	22.1	107	5	18.4	64	3
Texas	25.4	102	5	21.4	103	5	21.9	89	4
Vernon	21.5	85	4	19.7	77	4	20.8	82	4
Warren	11.7	13	1	16.1	27	2	15.0	34	2
Washington	26.2	104	5	17.8	52	3	29.3	109	5
Wayne	26.3	106	5	19.8	81	4	28.7	105	5
Webster	19.5	66	3	19.6	76	4	17.0	51	3
Worth	15.0	24	2	20.3	89	4	12.9	19	1
Wright	29.1	112	5	20.7	97	5	29.3	108	5

Table 11: Health Care Access Indicators – Medicare Enrollment, Inadequate Prenatal Care, and Low Birth Weight

Medicare Enrollment Data Sources and Notes:

- "Medicare is the federal health insurance program for people who are 65 or older, certain younger people with disabilities, and people with End-Stage Renal Disease (permanent kidney failure requiring dialysis or a transplant, sometimes called ESRD)."[43]
- Medicare enrollment rates represent the percentage of residents enrolled in Medicare. These rates include both aged and disabled participants with hospital and/or supplemental medical insurance.
- Medicare enrollment rates were calculated using the total number of Medicare recipients on July 1, 2012, from the Centers for Medicare and Medicaid Services and 2012 population estimates from the U.S. Census Bureau. [44,45] The number of Missouri recipients was calculated by summing the county totals.

Inadequate Prenatal Care Data Sources and Notes:

- Adequacy of prenatal care measures when a pregnant woman first received prenatal care and how often she received prenatal care throughout her pregnancy.[46] "Babies born to mothers who received no prenatal care are three times more likely to be born at low birth weight, and five times more likely to die, than those whose mothers received prenatal care."[47]
- Inadequate prenatal care rates are percentages calculated using the Missouri Index developed by Wayne Schramm with the Missouri Department of Health and Senior Services. Using this index, inadequate prenatal care is defined as fewer than 5 prenatal visits for pregnancies less than 37 weeks in length, fewer than 8 visits for pregnancies 37 weeks or longer, or care beginning after the first 4 months of pregnancy. If adequacy of prenatal care can be determined even if the month prenatal care began or the number of prenatal care visits is unknown, these records are included. Inadequate prenatal care rates utilizing the Missouri Index tend to be higher than inadequate prenatal care rates that utilize the Kotelchuck Index, a commonly cited alternative prenatal care adequacy measure.
- Inadequate prenatal care rates were obtained from the Birth MICA, which contains data from Missouri resident birth certificates, and represent the 2008-2012 time period. (Rates for both the Missouri Index and the Kotelchuck Index definitions of inadequate prenatal care are available in the Birth MICA.)

Low Birth Weight Data Sources and Notes:

- Low birth weight is associated with many negative health outcomes during infancy and may be connected to some chronic diseases that occur later in life.[48]
- Low birth weight rates are percentages that reflect the number of resident infants with a birth weight less than 2,500 grams (5 pounds, 8 ounces) divided by the total number of resident live births. Infants with a very low birth weight of less than 1,500 grams (3 pounds, 5 ounces) are included in low birth weight rates.
- Low birth weight rates were obtained from the Birth MICA, which contains data from Missouri resident birth certificates, and represent the 2008-2012 time period.

Table 11: Health Care Access Indicators – Medicare Enrollment, Inadequate Prenatal Care, and Low Birth Weight (continued)

Geography	Medicare Enrollment, July 1, 2012			Inadequate Prenatal Care, 2008-2012			Low Birth Weight, 2008-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Missouri	19.2			15.1			8.0		
Adair	17.9	17	1	9.4	9	1	8.3	86	4
Andrew	18.6	21	1	9.8	10	1	6.4	19	1
Atchison	27.0	100	5	8.9	7	1	6.1	15	1
Audrain	21.0	44	2	24.8	106	5	7.7	65	3
Barry	23.7	62	3	18.6	80	4	7.3	54	3
Barton	24.2	70	4	22.1	99	5	7.1	48	3
Bates	24.0	65	3	13.2	37	2	7.8	70	4
Benton	34.7	114	5	14.3	47	3	7.7	65	3
Bollinger	24.1	68	3	11.5	18	1	6.7	28	2
Boone	13.2	2	1	12.7	29	2	7.7	65	3
Buchanan	19.0	24	2	13.0	33	2	7.9	76	4
Butler	25.7	88	4	20.3	92	4	9.7	105	5
Caldwell	22.2	52	3	10.4	14	1	9.1	100	5
Callaway	18.6	22	1	15.7	58	3	9.9	106	5
Camden	26.8	97	5	11.8	21	1	5.9	13	1
Cape Girardeau	18.8	23	1	12.9	32	2	8.3	86	4
Carroll	25.7	86	4	15.2	54	3	8.6	91	4
Carter	26.3	95	5	22.8	101	5	11.3	110	5
Cass	17.9	16	1	13.6	40	2	6.9	41	2
Cedar	30.8	112	5	16.9	69	3	6.2	16	1
Chariton	26.0	90	4	11.9	22	1	5.7	12	1
Christian	18.0	19	1	9.8	10	1	6.2	16	1
Clark	24.1	69	3	13.6	40	2	5.2	4	1
Clay	15.8	6	1	12.6	28	2	6.7	28	2
Clinton	17.8	15	1	9.3	8	1	6.7	28	2
Cole	17.2	12	1	15.5	56	3	7.8	70	4
Cooper	20.7	38	2	21.4	97	5	10.3	108	5
Crawford	23.1	60	3	14.1	45	2	8.2	82	4
Dade	26.9	98	5	12.7	29	2	7.4	56	3
Dallas	24.3	73	4	15.0	53	3	6.9	41	2
Daviess	22.7	56	3	29.2	110	5	5.2	4	1

Table 11: Health Care Access Indicators – Medicare Enrollment, Inadequate Prenatal Care, and Low Birth Weight (continued)

Geography	Medicare Enrollment, July 1, 2012			Inadequate Prenatal Care, 2008-2012			Low Birth Weight, 2008-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
DeKalb	16.9	10	1	7.3	2	1	7.2	52	3
Dent	25.3	81	4	14.3	47	3	8.1	80	4
Douglas	25.2	78	4	13.0	33	2	8.2	82	4
Dunklin	25.4	83	4	19.0	84	4	11.7	111	5
Franklin	19.5	30	2	10.0	12	1	6.8	37	2
Gasconade	26.0	91	4	13.5	39	2	6.8	37	2
Gentry	27.7	106	5	16.5	65	3	5.2	4	1
Greene	19.4	26	2	13.1	35	2	7.4	56	3
Grundy	25.2	79	4	27.3	108	5	6.7	28	2
Harrison	25.9	89	4	19.4	87	4	6.4	19	1
Henry	28.5	107	5	17.1	70	4	7.8	70	4
Hickory	36.1	115	5	17.4	73	4	7.5	60	3
Holt	25.7	87	4	8.1	4	1	8.7	93	5
Howard	20.9	42	2	12.0	24	2	8.6	91	4
Howell	25.6	85	4	12.2	26	2	6.9	41	2
Iron	27.4	104	5	18.1	76	4	7.3	54	3
Jackson	17.3	13	1	20.5	93	5	8.3	86	4
Jasper	19.4	27	2	23.5	103	5	6.7	28	2
Jefferson	17.0	11	1	8.2	5	1	6.8	37	2
Johnson	13.9	3	1	19.1	86	4	6.3	18	1
Knox	25.3	82	4	33.0	114	5	4.9	3	1
Laclede	23.4	61	3	15.9	60	3	7.0	46	2
Lafayette	22.1	51	3	14.9	52	3	6.5	22	1
Lawrence	22.8	59	3	15.6	57	3	7.8	70	4
Lewis	21.2	45	2	21.6	98	5	5.4	7	1
Lincoln	16.4	8	1	10.8	15	1	6.6	26	2
Linn	26.3	94	5	16.6	66	3	4.8	2	1
Livingston	22.8	58	3	12.8	31	2	6.5	22	1
Macon	25.6	84	4	18.9	83	4	7.5	60	3
Madison	26.0	92	4	15.9	60	3	6.5	22	1
Maries	24.1	67	3	13.8	44	2	5.6	10	1
Marion	22.5	54	3	18.8	81	4	7.9	76	4
McDonald	17.5	14	1	31.8	112	5	8.7	93	5

Table 11: Health Care Access Indicators – Medicare Enrollment, Inadequate Prenatal Care, and Low Birth Weight (continued)

Geography	Medicare Enrollment, July 1, 2012			Inadequate Prenatal Care, 2008-2012			Low Birth Weight, 2008-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Mercer	24.4	75	4	31.0	111	5	7.6	62	3
Miller	20.8	40	2	13.7	43	2	6.4	19	1
Mississippi	22.1	49	3	24.3	105	5	12.4	114	5
Moniteau	18.1	20	1	16.7	67	3	6.7	28	2
Monroe	25.0	77	4	19.9	90	4	10.1	107	5
Montgomery	24.0	66	3	13.2	37	2	6.7	28	2
Morgan	30.7	111	5	19.0	84	4	6.6	26	2
New Madrid	22.1	50	3	18.8	81	4	12.0	112	5
Newton	20.6	37	2	23.9	104	5	6.8	37	2
Nodaway	16.1	7	1	8.7	6	1	5.4	7	1
Oregon	27.0	99	5	14.3	47	3	8.9	98	5
Osage	18.0	18	1	10.0	12	1	6.7	28	2
Ozark	31.1	113	5	19.5	88	4	9.1	100	5
Pemiscot	23.8	63	3	23.2	102	5	13.6	115	5
Perry	20.3	32	2	7.5	3	1	7.7	65	3
Pettis	20.2	31	2	17.9	75	4	6.7	28	2
Phelps	19.4	28	2	14.1	45	2	7.9	76	4
Pike	20.6	35	2	25.1	107	5	8.8	97	5
Platte	14.9	4	1	12.4	27	2	6.9	41	2
Polk	20.9	41	2	11.9	22	1	7.4	56	3
Pulaski	10.6	1	1	14.3	47	3	7.4	56	3
Putnam	27.2	103	5	16.8	68	3	6.5	22	1
Ralls	22.8	57	3	20.2	91	4	8.4	90	4
Randolph	20.8	39	2	16.4	62	3	7.0	46	2
Ray	20.3	33	2	15.4	55	3	7.6	62	3
Reynolds	27.2	102	5	21.2	96	5	7.2	52	3
Ripley	26.7	96	5	20.5	93	5	10.4	109	5
Saline	21.2	46	2	11.7	20	1	8.1	80	4
Schuyler	24.3	72	4	27.4	109	5	8.2	82	4
Scotland	20.9	43	2	42.9	115	5	4.4	1	1
Scott	24.2	71	4	16.4	62	3	9.5	104	5
Shannon	25.2	80	4	13.1	35	2	7.6	62	3
Shelby	24.8	76	4	18.5	77	4	8.7	93	5

Table 11: Health Care Access Indicators – Medicare Enrollment, Inadequate Prenatal Care, and Low Birth Weight (continued)

Geography	Medicare Enrollment, July 1, 2012			Inadequate Prenatal Care, 2008-2012			Low Birth Weight, 2008-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
St. Charles	15.1	5	1	6.7	1	1	7.1	48	3
St. Clair	29.9	109	5	17.6	74	4	8.2	82	4
St. Francois	22.0	48	3	16.4	62	3	8.3	86	4
St. Louis	19.1	25	2	10.9	16	1	8.7	93	5
St. Louis City	16.6	9	1	22.6	100	5	12.2	113	5
Ste. Genevieve	21.3	47	3	11.5	18	1	7.1	48	3
Stoddard	26.1	93	5	18.5	77	4	9.2	103	5
Stone	30.1	110	5	17.1	70	4	8.0	79	4
Sullivan	24.4	74	4	13.6	40	2	7.8	70	4
Taney	24.0	64	3	18.5	77	4	7.8	70	4
Texas	22.6	55	3	12.1	25	2	7.7	65	3
Vernon	22.3	53	3	20.5	93	5	7.1	48	3
Warren	19.4	29	2	11.4	17	1	5.6	10	1
Washington	20.6	36	2	17.2	72	4	9.0	99	5
Wayne	29.0	108	5	19.7	89	4	9.1	100	5
Webster	20.4	34	2	32.0	113	5	5.9	13	1
Worth	27.1	101	5	14.7	51	3	5.5	9	1
Wright	27.5	105	5	15.8	59	3	6.9	41	2

*This rate is based on fewer than 20 cases and is considered to be unstable.

Table 12: Health Care Access Indicators – Preventable Hospitalizations, Dental Visit in Past Year, and Dental-Related Emergency Room Visits

Preventable Hospitalizations Data Sources and Notes:

- A "seminal article on this topic is from Billings, et al. (1993).[†] As defined in this article, preventable hospitalizations (also called ambulatory care sensitive conditions) are '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...'"[49] "Although not all such hospitalizations can be avoided, admission rates in populations and communities can vary depending on access to primary care, care-seeking behaviors, and the quality of care available. Because hospitalization tends to be costlier than outpatient or primary care, potentially preventable hospitalizations often are tracked as markers of health system efficiency."[50]
- Preventable hospitalization rates are reported per 10,000 residents under age 65 and were obtained from the Preventable Hospitalizations MICA, which contains data from Missouri resident hospital records submitted through the Missouri Patient Abstract System.
- Preventable hospitalization rates are age-adjusted to the 2000 U.S. Standard Population and reflect 2010 data.

Dental Visit in Past Year Data Sources and Notes:

- "The health of the mouth and surrounding craniofacial (skull and face) structures is central to a person's overall health and well-being."[51] "Research findings have pointed to possible associations between chronic oral infections and diabetes, heart and lung diseases, stroke, and low-birth-weight, premature births," as well as other negative health outcomes.[52] "Most healthy adults should visit a dentist at least once per year. During this visit, a dentist or dental hygienist will examine the teeth and gums, look for broken or damaged teeth, and will look for signs of oral cancer. Additionally, teeth will be cleaned to remove plaque and tartar in order to prevent tooth decay. Dental professionals often educate patients about proper brushing and flossing techniques, good dietary practices, avoiding tobacco products, and ways to avoid injuring teeth and gums."[53] Thus, regular dental exams are another form of health screening and provide a way to prevent poor health outcomes or treat them before they become severe.
- Dental visit in past year rates are percentages from the 2011 County-Level Study survey of non-institutionalized Missouri resident adults ages 18 and older. These percentages are not age-adjusted.
- Dental visit in past year rates are derived from "Within the past year (anytime less than 12 months ago)" responses to the following question: "How long has it been since you last visited a dentist or a dental clinic for any reason?" Visits to dental specialists such as orthodontists are included.

†Billings, J., Zeitel, L., Lukomnik, J., Carey, T.S., Blank, A.E., & Newman, L. (Spring 1993). Impact of Socioeconomic Status on Hospital Use in New York City. *Health Affairs 12*(1), 162-173.

Dental-Related Emergency Room (ER) Visits Data Sources and Notes:

- The American Dental Association has identified dental care ER visits as an area of health care in which costs could be reduced and patient care and outcomes improved.[54] The dental-related ER visit rates in this report were obtained from the Emergency Room MICA diagnosis category of disorders of teeth and jaw. The specific diagnoses "included in the 'disorders of teeth and jaw' category have been reviewed by DHSS-affiliated dentists to ensure they represent complaints that specifically exclude injuries and malignancies. Therefore, these dental emergency department (ED) visits can be considered preventable and non-traumatic. Dentists have also confirmed that these complaints could all be treated in a dental office rather than a hospital. Furthermore, EDs generally only provide short-term relief of symptoms for this class of dental problems, which means that an additional visit to a dentist will be necessary for most patients to complete their treatment."[55]
- Dental-related ER visit rates are reported per 1,000 residents and were obtained from the Emergency Room MICA, which contains data from Missouri resident ER records submitted through the Missouri Patient Abstract System.
- Dental-related ER visit rates are age-adjusted to the 2000 U.S. Standard Population and represent the 2010-2012 time period.

Table 12: Health Care Access Indicators – Preventable Hospitalizations, Dental Visit in Past Year, and Dental-Related Emergency Room Visits (continued)

Geography	Preventable Hospitalizations, 2010			Dental Visit in Past Year, 2011			Dental-Related ER Visits, 2010-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Missouri	141.3			57.5			10.3		
Adair	162.8	86	4	62.5	24	2	5.7	26	2
Andrew	89.5	12	1	61.9	25	2	2.9	5	1
Atchison	113.9	40	2	61.2	27	2	3.8	10	1
Audrain	104.1	27	2	52.1	70	4	14.4	90	4
Barry	105.7	31	2	47.8	91	4	22.6	110	5
Barton	222.3	107	5	54.3	61	3	16.4	97	5
Bates	211.7	105	5	58.3	38	2	17.5	100	5
Benton	141.2	67	3	47.6	93	5	13.0	80	4
Bollinger	104.4	29	2	55.9	49	3	6.4	34	2
Boone	103.5	26	2	66.2	15	1	7.3	43	2
Buchanan	194.3	101	5	54.9	57	3	8.6	53	3
Butler	238.6	110	5	53.1	67	3	13.5	83	4
Caldwell	149.8	76	4	60.9	28	2	6.0	27	2
Callaway	135.0	59	3	56.8	44	2	18.5	104	5
Camden	90.9	13	1	54.2	62	3	14.3	89	4
Cape Girardeau	110.7	35	2	68.9	10	1	11.4	73	4
Carroll	240.6	111	5	62.8	23	1	8.6	53	3
Carter	225.3	108	5	48.3	90	4	6.2	31	2
Cass	100.5	20	1	69.6	8	1	8.9	55	3
Cedar	146.8	73	4	47.2	94	5	12.7	78	4
Chariton	114.6	41	2	50.7	75	4	8.3	51	3
Christian	76.7	4	1	60.4	30	2	6.3	33	2
Clark	148.4	74	4	56.6	46	2	2.4	3	1
Clay	141.2	67	3	68.9	9	1	6.8	38	2
Clinton	157.4	79	4	70.5	5	1	6.1	29	2
Cole	118.0	44	2	73.9	3	1	13.5	83	4
Cooper	113.8	39	2	59.2	34	2	11.6	74	4
Crawford	138.3	65	3	41.9	110	5	14.6	91	4
Dade	104.2	28	2	47.0	96	5	9.1	58	3
Dallas	95.7	19	1	48.4	89	4	9.9	62	3
Daviess	112.3	36	2	49.4	84	4	4.5	18	1

Table 12: Health Care Access Indicators – Preventable Hospitalizations, Dental Visit in Past Year, and Dental-Related Emergency Room Visits (continued)

Geography	Preventable Hospitalizations, 2010			Dental Visit in Past Year, 2011			Dental-Related ER Visits, 2010-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
DeKalb	103.1	25	2	47.8	92	4	3.8	10	1
Dent	125.4	51	3	46.4	99	5	17.6	101	5
Douglas	73.0	2	1	39.6	113	5	4.0	14	1
Dunklin	349.6	114	5	39.7	112	5	16.9	98	5
Franklin	143.0	71	4	61.5	26	2	18.8	106	5
Gasconade	129.8	54	3	57.2	42	2	10.4	67	3
Gentry	157.4	79	4	52.2	69	3	5.6	24	2
Greene	117.5	43	2	63.2	21	1	17.7	102	5
Grundy	157.5	81	4	55.5	52	3	6.7	37	2
Harrison	158.6	82	4	45.0	104	5	5.6	24	2
Henry	180.3	97	5	54.6	59	3	12.2	76	4
Hickory	87.5	10	1	49.3	85	4	8.3	51	3
Holt	101.6	22	1	54.8	58	3	2.8	4	1
Howard	83.3	8	1	55.1	55	3	8.9	55	3
Howell	141.9	69	3	55.6	51	3	13.2	81	4
Iron	169.8	90	4	45.4	102	5	25.9	113	5
Jackson	154.9	78	4	63.6	20	1	11.3	72	4
Jasper	166.6	88	4	50.2	80	4	25.2	112	5
Jefferson	135.2	60	3	65.3	17	1	5.5	23	1
Johnson	122.4	48	3	64.8	18	1	6.4	34	2
Knox	103.0	24	2	50.3	78	4	3.9	12	1
Laclede	113.0	38	2	50.3	79	4	15.6	96	5
Lafayette	161.8	84	4	60.2	33	2	13.7	85	4
Lawrence	106.6	32	2	54.9	56	3	20.9	108	5
Lewis	53.8	1	1	59.1	35	2	1.8	1	1
Lincoln	136.9	62	3	56.6	45	2	18.5	104	5
Linn	161.8	84	4	56.9	43	2	7.0	40	2
Livingston	119.5	46	2	66.2	14	1	8.1	48	3
Macon	130.8	57	3	45.0	103	5	6.0	27	2
Madison	159.8	83	4	51.3	72	4	23.4	111	5
Maries	77.5	5	1	51.1	73	4	4.5	18	1
Marion	142.5	70	4	49.5	82	4	10.3	65	3
McDonald	139.1	66	3	56.1	48	3	7.8	46	2

Table 12: Health Care Access Indicators – Preventable Hospitalizations, Dental Visit in Past Year, and Dental-Related Emergency Room Visits (continued)

Geography	Preventable Hospitalizations, 2010			Dental Visit in Past Year, 2011			Dental-Related ER Visits, 2010-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Mercer	144.0	72	4	44.7	105	5	2.9	5	1
Miller	108.2	34	2	50.4	77	4	14.0	88	4
Mississippi	222.2	106	5	57.5	40	2	3.7	9	1
Moniteau	92.4	14	1	55.3	53	3	6.9	39	2
Monroe	89.4	11	1	63.0	22	1	9.2	59	3
Montgomery	123.0	49	3	52.9	68	3	11.2	71	4
Morgan	122.1	47	3	45.9	100	5	11.6	74	4
New Madrid	203.0	104	5	48.6	87	4	4.8	20	1
Newton	127.8	53	3	49.0	86	4	15.2	93	5
Nodaway	82.1	7	1	78.9	1	1	3.5	8	1
Oregon	126.4	52	3	50.5	76	4	7.2	41	2
Osage	94.3	17	1	68.1	11	1	7.3	43	2
Ozark	116.4	42	2	46.4	98	5	3.2	7	1
Pemiscot	509.5	115	5	43.7	106	5	11.1	70	4
Perry	93.4	15	1	74.2	2	1	12.9	79	4
Pettis	130.4	55	3	58.5	37	2	13.8	86	4
Phelps	135.2	60	3	60.4	31	2	15.0	92	4
Pike	130.5	56	3	53.7	64	3	8.9	55	3
Platte	85.2	9	1	73.2	4	1	3.9	12	1
Polk	119.4	45	2	53.3	66	3	11.0	69	3
Pulaski	93.4	15	1	65.5	16	1	4.3	17	1
Putnam	194.0	100	5	51.0	74	4	4.0	14	1
Ralls	75.3	3	1	60.3	32	2	4.1	16	1
Randolph	177.5	93	5	49.4	83	4	15.5	94	5
Ray	173.5	91	4	56.3	47	3	10.2	64	3
Reynolds	202.2	103	5	41.9	109	5	17.4	99	5
Ripley	279.7	113	5	36.5	115	5	17.9	103	5
Saline	178.7	95	5	46.5	97	5	10.9	68	3
Schuyler	166.0	87	4	60.8	29	2	2.3	2	1
Scotland	167.3	89	4	55.8	50	3	6.1	29	2
Scott	191.9	99	5	66.2	13	1	9.2	59	3
Shannon	112.9	37	2	37.8	114	5	19.2	107	5
Shelby	79.4	6	1	49.6	81	4	5.2	22	1

Table 12: Health Care Access Indicators – Preventable Hospitalizations, Dental Visit in Past Year, and Dental-Related Emergency Room Visits (continued)

Geography	Preventable Hospitalizations, 2010			Dental Visit in Past Year, 2011			Dental-Related ER Visits, 2010-2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
St. Charles	101.4	21	1	70.3	6	1	4.8	20	1
St. Clair	178.4	94	5	48.5	88	4	9.5	61	3
St. Francois	188.7	98	5	54.0	63	3	28.3	115	5
St. Louis	137.9	64	3	70.0	7	1	6.5	36	2
St. Louis City	233.9	109	5	57.3	41	2	10.3	65	3
Ste. Genevieve	105.4	30	2	58.9	36	2	8.2	50	3
Stoddard	180.1	96	5	54.3	60	3	10.0	63	3
Stone	102.4	23	1	55.1	54	3	13.4	82	4
Sullivan	242.3	112	5	58.2	39	2	7.2	41	2
Taney	152.2	77	4	64.2	19	1	21.8	109	5
Texas	123.3	50	3	47.1	95	5	15.5	94	5
Vernon	148.4	74	4	51.7	71	4	13.9	87	4
Warren	137.0	63	3	67.2	12	1	12.6	77	4
Washington	198.2	102	5	43.4	107	5	27.0	114	5
Wayne	175.3	92	4	41.1	111	5	8.1	48	3
Webster	95.5	18	1	53.6	65	3	8.0	47	3
Worth	107.6	33	2	45.5	101	5	6.2	31	2
Wright	131.4	58	3	42.2	108	5	7.3	43	2

Table 13: Health Care Access Indicators –Mammogram, Pap Test, and Sigmoidoscopy/Colonoscopy Screenings

Health Screenings Data Sources and Notes:

- Appropriate health screenings provide a way to identify and combat potentially lethal health conditions before they become life threatening.[56]
- Screening rates are age-adjusted percentages from the 2011 County-Level Study survey of non-institutionalized Missouri resident adults ages 18 and older.
- Mammogram screening rates are derived from responses of "1 year or more" from women ages 40 and older to the following questions: "How long has it been since you had your last mammogram?" AND "How long has it been since your last breast exam (clinical breast exam by a doctor or other health professional)?"
- Pap test screening rates are derived from responses of "3 years or more" from women ages 18 and older to the following question: "How long has it been since you had your last Pap test?"
- Sigmoidoscopy/Colonoscopy screening rates are derived from responses of "10 years or more" from men and women ages 50 and older to the following question: "How long has it been since you had your last sigmoidoscopy or colonoscopy?"

Table 13: Health Care Access Indicators – Mammogram, Pap Test, and Sigmoidoscopy/Colonoscopy Screenings (continued)

Geography	No Mammogram or Clinical Breast Exam in Last Year for Women Ages 40+, 2011			No Pap Test in Last Three Years for Women Ages 18+, 2011			No Sigmoidoscopy or Colonoscopy in Past 10 Years for Adults Ages 50+, 2011		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Missouri	30.7			25.1			37.7		
Adair	36.0	59	3	32.3	65	3	41.6	42	2
Andrew	30.5	22	1	19.0	6	1	44.0	52	3
Atchison	35.6	53	3	26.4	34	2	41.7	43	2
Audrain	22.1	4	1	20.2	9	1	36.2	18	1
Barry	41.1	76	4	33.0	70	4	59.7	115	5
Barton	35.7	55	3	34.7	76	4	56.5	112	5
Bates	45.1	99	5	36.8	89	4	41.0	41	2
Benton	31.6	24	2	38.9	99	5	47.6	75	4
Bollinger	35.1	50	3	32.7	68	3	37.8	25	2
Boone	24.9	6	1	18.6	5	1	29.5	5	1
Buchanan	36.0	59	3	30.8	57	3	48.9	84	4
Butler	27.4	14	1	27.5	40	2	44.1	56	3
Caldwell	26.5	10	1	33.8	75	4	44.1	56	3
Callaway	31.6	24	2	27.3	38	2	28.0	1	1
Camden	41.5	77	4	23.2	21	1	42.9	48	3
Cape Girardeau	34.3	45	2	27.8	41	2	36.9	23	1
Carroll	46.5	103	5	36.0	84	4	48.1	79	4
Carter	30.8	23	1	32.3	65	3	48.9	84	4
Cass	34.6	48	3	20.4	10	1	36.6	20	1
Cedar	42.4	84	4	36.9	90	4	38.2	28	2
Chariton	49.3	107	5	18.3	4	1	46.5	68	3
Christian	35.9	57	3	25.8	30	2	36.6	20	1
Clark	34.2	43	2	40.7	104	5	45.5	66	3
Clay	28.3	16	1	25.4	28	2	33.5	12	1
Clinton	38.8	67	3	46.1	112	5	33.0	11	1
Cole	27.2	13	1	26.6	36	2	29.3	4	1
Cooper	45.0	97	5	33.6	73	4	40.9	40	2
Crawford	39.3	70	4	36.6	88	4	42.5	47	3
Dade	30.1	21	1	43.2	107	5	45.2	64	3
Dallas	41.5	77	4	45.6	110	5	51.2	94	5
Daviess	38.2	65	3	37.8	95	5	52.8	96	5

Table 13: Health Care Access Indicators – Mammogram, Pap Test, and Sigmoidoscopy/Colonoscopy Screenings (continued)

Geography	No Mammogram or Clinical Breast Exam in Last Year for Women Ages 40+, 2011			No Pap Test in Last Three Years for Women Ages 18+, 2011			No Sigmoidoscopy or Colonoscopy in Past 10 Years for Adults Ages 50+, 2011		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
DeKalb	43.2	88	4	33.4	72	4	47.2	74	4
Dent	42.4	84	4	47.1	114	5	52.9	97	5
Douglas	47.9	104	5	37.0	91	4	49.6	88	4
Dunklin	48.7	106	5	23.8	24	2	48.1	79	4
Franklin	26.8	12	1	23.0	20	1	34.3	13	1
Gasconade	32.3	27	2	27.3	38	2	38.5	31	2
Gentry	41.5	77	4	25.8	30	2	57.3	113	5
Greene	26.4	9	1	29.4	51	3	35.1	16	1
Grundy	36.2	62	3	38.4	97	5	50.4	93	5
Harrison	44.9	96	5	35.1	79	4	45.3	65	3
Henry	40.9	75	4	39.7	100	5	44.7	60	3
Hickory	40.2	74	4	41.3	105	5	48.2	82	4
Holt	42.2	83	4	37.3	92	4	40.5	36	2
Howard	38.5	66	3	40.5	103	5	46.5	68	3
Howell	45.0	97	5	35.6	81	4	54.5	106	5
Iron	50.7	111	5	36.0	84	4	47.9	77	4
Jackson	29.0	17	1	23.4	23	1	32.3	9	1
Jasper	32.8	32	2	26.5	35	2	53.1	98	5
Jefferson	33.2	36	2	22.9	18	1	29.9	6	1
Johnson	41.9	82	4	29.3	50	3	38.3	29	2
Knox	33.0	35	2	45.9	111	5	46.3	67	3
Laclede	44.0	94	5	34.8	78	4	46.5	68	3
Lafayette	29.7	19	1	17.7	2	1	37.8	25	2
Lawrence	42.4	84	4	47.0	113	5	50.3	92	4
Lewis	32.5	30	2	30.1	54	3	44.0	52	3
Lincoln	39.4	71	4	32.2	64	3	41.8	44	2
Linn	43.9	92	4	36.5	86	4	49.9	91	4
Livingston	37.2	64	3	29.4	51	3	44.3	58	3
Macon	32.4	28	2	35.7	82	4	35.0	15	1
Madison	27.4	14	1	28.5	43	2	37.5	24	2
Maries	38.9	69	3	22.6	17	1	42.4	46	2
Marion	32.8	32	2	31.8	62	3	47.7	76	4
McDonald	49.5	109	5	41.6	106	5	55.2	108	5

Table 13: Health Care Access Indicators – Mammogram, Pap Test, and Sigmoidoscopy/Colonoscopy Screenings (continued)

Geography	No Mammogram or Clinical Breast Exam in Last Year for Women Ages 40+, 2011			No Pap Test in Last Three Years for Women Ages 18+, 2011			No Sigmoidoscopy or Colonoscopy in Past 10 Years for Adults Ages 50+, 2011		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Mercer	35.3	52	3	35.2	80	4	48.1	79	4
Miller	41.6	80	4	24.9	27	2	43.1	49	3
Mississippi	38.8	67	3	28.6	44	2	38.0	27	2
Moniteau	39.7	72	4	25.7	29	2	43.6	50	3
Monroe	35.9	57	3	21.0	12	1	38.4	30	2
Montgomery	24.9	6	1	19.8	8	1	35.9	17	1
Morgan	53.7	114	5	50.6	115	5	44.5	59	3
New Madrid	34.0	41	2	32.0	63	3	40.8	39	2
Newton	29.9	20	1	27.2	37	2	48.7	83	4
Nodaway	32.9	34	2	26.3	33	2	47.1	73	4
Oregon	43.9	92	4	29.2	48	3	55.8	110	5
Osage	19.1	2	1	24.3	25	2	36.5	19	1
Ozark	39.9	73	4	40.4	102	5	57.9	114	5
Pemiscot	32.4	28	2	14.2	1	1	49.2	87	4
Perry	33.9	40	2	22.9	18	1	49.1	86	4
Pettis	35.6	53	3	28.6	44	2	44.9	61	3
Phelps	33.8	39	2	29.1	47	3	39.4	34	2
Pike	45.6	100	5	28.2	42	2	45.0	63	3
Platte	20.8	3	1	21.9	16	1	28.7	3	1
Polk	34.4	46	2	37.5	94	5	53.2	99	5
Pulaski	34.2	43	2	31.3	60	3	32.2	7	1
Putnam	41.8	81	4	23.3	22	1	53.9	105	5
Ralls	17.5	1	1	19.2	7	1	36.6	20	1
Randolph	34.0	41	2	30.2	55	3	42.2	45	2
Ray	51.5	112	5	43.7	108	5	43.7	51	3
Reynolds	42.8	87	4	29.2	48	3	55.2	108	5
Ripley	57.8	115	5	38.8	98	5	44.9	61	3
Saline	26.0	8	1	17.8	3	1	38.8	32	2
Schuyler	36.4	63	3	32.6	67	3	53.7	103	5
Scotland	52.3	113	5	43.9	109	5	54.5	106	5
Scott	33.7	38	2	31.4	61	3	44.0	52	3
Shannon	49.3	107	5	36.5	86	4	52.1	95	5
Shelby	36.1	61	3	29.4	51	3	44.0	52	3

Table 13: Health Care Access Indicators – Mammogram, Pap Test, and Sigmoidoscopy/Colonoscopy Screenings (continued)

Geography	No Mammogram or Clinical Breast Exam in Last Year for Women Ages 40+, 2011			No Pap Test in Last Three Years for Women Ages 18+, 2011			No Sigmoidoscopy or Colonoscopy in Past 10 Years for Adults Ages 50+, 2011		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
St. Charles	29.6	18	1	21.1	13	1	28.6	2	1
St. Clair	33.6	37	2	40.3	101	5	53.8	104	5
St. Francois	32.6	31	2	34.7	76	4	39.3	33	2
St. Louis	22.3	5	1	20.6	11	1	32.6	10	1
St. Louis City	26.6	11	1	21.4	15	1	39.4	34	2
Ste. Genevieve	34.4	46	2	21.2	14	1	40.5	36	2
Stoddard	43.4	89	4	31.1	59	3	47.9	77	4
Stone	32.2	26	2	26.2	32	2	32.2	7	1
Sullivan	46.2	102	5	37.3	92	4	53.5	102	5
Taney	44.6	95	5	33.6	73	4	46.9	72	4
Texas	43.4	89	4	33.3	71	4	56.3	111	5
Vernon	48.1	105	5	32.9	69	3	53.3	100	5
Warren	34.7	49	3	37.8	95	5	34.9	14	1
Washington	35.8	56	3	35.8	83	4	46.8	71	4
Wayne	43.7	91	4	24.6	26	2	49.7	89	4
Webster	35.2	51	3	28.9	46	2	40.7	38	2
Worth	46.0	101	5	30.2	55	3	53.4	101	5
Wright	50.2	110	5	30.8	57	3	49.8	90	4

Table 14: Health Care Access Indicators – Population-to-Provider Ratios for Primary Care Providers, Mental Health Providers, and Dentists

Population-to-Provider Ratios Data Sources and Notes:

- Population-to-provider ratios are important access to care indicators because "many areas … lack sufficient providers to meet patient needs; as of January 2014, there were about 6,000 primary care, 3,900 mental health, and 4,800 dental federally designated 'Health Professional Shortage Areas' in the U.S. Having a usual primary care provider is associated with a higher likelihood of appropriate care, and a usual source of care is associated with better health outcomes. In 2010, 86 percent of Americans had a usual source of care, but those with low incomes were less likely to than those with higher incomes, and the uninsured were twice as likely as the insured to lack a usual care source."[57]
- Population-to-provider ratios represent the ratio of the county population to the number of providers in the specified health care category.
- Population-to-provider ratios were obtained from the 2014 County Health Rankings and Roadmaps website. The mental health provider and dentist ratios utilized in this report reflect updates made to the County Health Rankings and Roadmaps website as of July 11, 2014. An explanation of these updates is available at http://www.countyhealthrankings.org/content/data-changes.
- Population-to-provider ratios were not available for a small number of counties. In these instances, the average of the ratios from surrounding counties was used. If one of the surrounding counties was also missing the population-to-provider ratio, that county was excluded from the average calculation. Counties for which substitute ratios were calculated are flagged in the data table. (Counties from other states were included in the substitute ratios as appropriate.)

Primary Care Provider Ratio Notes:

- "Primary care physicians include non-federal, practicing physicians (M.D.'s and D.O.'s) under age 75 specializing in general practice medicine, family medicine, internal medicine, and pediatrics… Sufficient availability of primary care physicians is essential for preventive and primary care, and when needed, referrals to appropriate specialty care… Although the relationship between primary care physicians and improved health outcomes is supported in the literature, this measure has a number of limitations. First, primary care physicians are classified by county, but physicians living on the edge of counties or who practice in multiple locations may see patient populations that reside in surrounding counties. Second, physicians are not the only type of primary care provider available for most patients. This measure does not include nurse practitioners, physician assistants or other practitioners available for primary care services. Last, the way care is organized and coordinated may be just as important to health outcomes as the number of primary care physicians in an area."[58]
- Counties with missing primary care provider ratios in the 2011 data file were Chariton, Putnam, Shelby, and Worth.

Mental Health Provider Ratio Notes:

- "This measure represents the ratio of the county population to the number of mental health providers including psychiatrists, psychologists, licensed clinical social workers, counselors, and advanced practice nurses specializing in mental health care… This data comes from the National Provider Identification data file, which has some limitations. Providers who transmit electronic health records are required to obtain an identification number, but very small providers may not obtain a number. While providers have the option of deactivating their identification number, some mental health professionals included in this list may no longer be practicing or accepting new patients."[59]
- Counties with missing mental health provider ratios in the 2013 data file were Andrew, Bollinger, Caldwell, DeKalb, Miller, Monroe, Ozark, Putnam, Schuyler, Shannon, Shelby, Sullivan, and Worth.

Dentist Ratio Notes:

- "This measure estimates the population per dentist in the county… Dentists are classified by county, but dentists living on the edge of counties or who practice in multiple locations may see patient populations that reside in surrounding counties. This data comes from the National Provider Identification data file, which has some limitations. Providers who transmit electronic health records are required to obtain an identification number, but very small providers may not obtain a number. While providers have the option of deactivating their identification number, some dentists included in this list may no longer be practicing or accepting new patients."[60]
- Counties with missing dentist ratios in the 2012 data file were Chariton and Shannon.

Table 14: Health Care Access Indicators – Population-to-Provider Ratios for Primary Care Providers, Mental Health Providers, and Dentists (continued)

Geography	Primary Care Providers, 2011			Mental Health Providers, 2013			Dentists, 2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Missouri	1,455			947			1,985		
Adair	852	2	1	1,112	23	1	2,132	21	1
Andrew	8,598	108	5	†3,199	72	4	4,354	76	4
Atchison	5,569	97	5	2,759	65	3	1,839	13	1
Audrain	1,420	20	1	801	14	1	3,660	58	3
Barry	1,960	44	2	3,950	86	4	3,950	67	3
Barton	2,465	60	3	2,467	56	3	12,337	112	5
Bates	5,669	98	5	3,342	74	4	8,355	105	5
Benton	2,389	58	3	3,792	83	4	4,741	83	4
Bollinger	12,356	113	5	†2,406	54	3	6,191	93	5
Boone	941	3	1	430	2	1	1,702	8	1
Buchanan	1,470	22	1	854	17	1	1,794	12	1
Butler	979	5	1	730	10	1	2,050	18	1
Caldwell	9,315	110	5	†6,245	103	5	9,145	106	5
Callaway	2,613	63	3	715	9	1	4,923	86	4
Camden	1,213	13	1	1,827	36	2	2,192	22	1
Cape Girardeau	1,064	9	1	916	20	1	1,425	5	1
Carroll	3,087	73	4	9,086	108	5	2,272	25	2
Carter	6,365	101	5	2,087	46	2	6,262	95	5
Cass	4,002	86	4	2,788	66	3	3,861	62	3
Cedar	2,790	67	3	1,971	40	2	3,450	52	3
Chariton	†2,290	53	3	7,649	106	5	†3,067	45	2
Christian	2,619	65	3	2,753	63	3	3,628	57	3
Clark	2,340	56	3	3,485	79	4	3,485	54	3
Clay	1,656	29	2	1,388	29	2	1,792	11	1
Clinton	1,890	42	2	5,127	99	5	1,864	15	1
Cole	1,176	12	1	898	18	1	1,909	16	1
Cooper	2,523	62	3	1,593	34	2	3,504	55	3
Crawford	6,200	99	5	4,139	88	4	8,277	104	5
Dade	1,952	43	2	1,892	37	2	7,568	101	5
Dallas	16,749	115	5	4,200	90	4	4,200	73	4
Daviess	8,313	106	5	8,239	107	5	4,120	72	4

Table 14: Health Care Access Indicators – Population-to-Provider Ratios for Primary Care Providers, Mental Health Providers, and Dentists (continued)

Geography	Primary Care Providers, 2011			Mental Health Providers, 2013			Dentists, 2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
DeKalb	4,256	88	4	†4,402	91	4	12,940	113	5
Dent	2,613	63	3	1,956	39	2	2,235	23	1
Douglas	4,516	90	4	2,717	62	3	2,717	36	2
Dunklin	1,683	33	2	2,652	61	3	3,978	68	3
Franklin	1,521	23	1	2,415	55	3	2,415	28	2
Gasconade	2,167	48	3	2,139	47	3	4,991	88	4
Gentry	2,262	51	3	3,389	77	4	2,259	24	2
Greene	983	6	1	592	4	1	1,485	6	1
Grundy	2,046	45	2	1,149	24	2	2,585	33	2
Harrison	1,773	37	2	793	12	1	2,909	41	2
Henry	1,587	26	2	671	7	1	2,461	29	2
Hickory	9,628	111	5	2,348	51	3	9,391	107	5
Holt	2,407	59	3	2,328	50	3	4,655	80	4
Howard	3,401	81	4	3,390	78	4	2,542	32	2
Howell	1,356	17	1	1,231	26	2	2,902	40	2
Iron	5,328	96	5	2,075	44	2	10,374	111	5
Jackson	1,331	16	1	689	8	1	1,355	4	1
Jasper	1,234	14	1	841	16	1	1,859	14	1
Jefferson	4,304	89	4	2,622	60	3	3,863	63	3
Johnson	2,323	54	3	1,360	28	2	3,022	44	2
Knox	1,032	8	1	4,082	87	4	4,082	71	4
Laclede	1,549	24	2	1,476	30	2	3,935	66	3
Lafayette	3,321	79	4	2,757	64	3	3,308	50	3
Lawrence	1,841	40	2	1,012	21	1	2,748	38	2
Lewis	3,385	80	4	2,035	42	2	10,174	109	5
Lincoln	6,635	103	5	3,811	84	4	6,669	98	5
Linn	1,571	25	2	4,161	89	4	6,242	94	5
Livingston	1,370	18	1	3,007	70	4	1,671	7	1
Macon	3,118	75	4	2,596	59	3	2,596	34	2
Madison	3,049	71	4	2,075	44	2	3,112	46	2
Maries	9,171	109	5	4,507	92	4	3,005	43	2
Marion	1,149	11	1	898	18	1	2,053	19	1
McDonald	7,659	105	5	22,876	115	5	3,813	61	3

Table 14: Health Care Access Indicators – Population-to-Provider Ratios for Primary Care Providers, Mental Health Providers, and Dentists (continued)

Geography	Primary Care Providers, 2011			Mental Health Providers, 2013			Dentists, 2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
Mercer	3,804	85	4	3,729	82	4	3,729	60	3
Miller	4,128	87	4	†4,631	93	5	4,963	87	4
Mississippi	3,577	83	4	4,774	96	5	7,161	100	5
Moniteau	3,139	77	4	5,208	100	5	3,906	65	3
Monroe	2,911	68	3	†3,375	76	4	4,352	75	4
Montgomery	3,068	72	4	2,999	69	3	5,998	92	4
Morgan	5,126	94	5	5,029	98	5	10,059	108	5
New Madrid	6,261	100	5	9,244	109	5	4,622	79	4
Newton	4,868	92	4	6,563	105	5	5,907	91	4
Nodaway	1,676	32	2	1,561	32	2	4,684	81	4
Oregon	11,017	112	5	10,997	113	5	5,499	90	4
Osage	13,915	114	5	13,858	114	5	4,619	78	4
Ozark	4,798	91	4	†2,308	49	3	4,801	84	4
Pemiscot	3,635	84	4	6,037	102	5	18,111	115	5
Perry	2,380	57	3	2,377	52	3	2,717	36	2
Pettis	2,481	61	3	1,176	25	2	2,645	35	2
Phelps	1,000	7	1	750	11	1	2,499	31	2
Pike	3,095	74	4	9,283	110	5	3,713	59	3
Platte	1,420	20	1	1,644	35	2	1,770	9	1
Polk	1,732	36	2	795	13	1	3,877	64	3
Pulaski	3,545	82	4	1,087	22	1	1,024	1	1
Putnam	†1,807	39	2	†3,590	81	4	2,466	30	2
Ralls	5,141	95	5	10,277	112	5	10,277	110	5
Randolph	1,690	34	2	2,303	48	3	2,814	39	2
Ray	2,323	54	3	5,766	101	5	7,688	102	5
Reynolds	1,647	28	2	833	15	1	1,111	2	1
Ripley	7,072	104	5	4,679	94	5	7,018	99	5
Saline	1,791	38	2	1,556	31	2	3,334	51	3
Schuyler	2,191	49	3	†3,055	71	4	4,370	77	4
Scotland	966	4	1	4,877	97	5	4,877	85	4
Scott	1,702	35	2	2,060	43	2	1,779	10	1
Shannon	8,432	107	5	†3,926	85	4	†4,077	70	4
Shelby	†2,214	50	3	†2,383	53	3	3,117	48	3

Table 14: Population-to-Provider Ratios for Primary Care Providers, Mental Health Providers, and Dentists (continued)

Geography	Primary Care Providers, 2011			Mental Health Providers, 2013			Dentists, 2012		
	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points	Rate	Basic Rank	Quintile Points
St. Charles	2,123	46	2	1,562	33	2	1,920	17	1
St. Clair	1,607	27	2	9,474	111	5	4,737	82	4
St. Francois	1,131	10	1	646	6	1	2,996	42	2
St. Louis	850	1	1	607	5	1	1,283	3	1
St. Louis City	1,414	19	1	484	3	1	2,374	27	2
Ste. Genevieve	2,266	52	3	2,957	68	3	3,548	56	3
Stoddard	1,656	29	2	3,311	73	4	4,256	74	4
Stone	3,226	78	4	3,508	80	4	7,892	103	5
Sullivan	1,665	31	2	†2,549	58	3	6,546	97	5
Taney	1,256	15	1	2,942	67	3	3,115	47	3
Texas	2,161	47	3	6,453	104	5	6,453	96	5
Vernon	2,995	69	3	423	1	1	3,458	53	3
Warren	6,503	102	5	4,679	94	5	5,459	89	4
Washington	5,015	93	5	2,510	57	3	3,137	49	3
Wayne	2,695	66	3	3,351	75	4	13,402	114	5
Webster	3,037	70	4	2,020	41	2	4,039	69	3
Worth	†1,854	41	2	†1,914	38	2	2,079	20	1
Wright	3,119	76	4	1,242	27	2	2,329	26	2

†Population-to-provider ratio was not available. An estimated value calculated by averaging the ratios of surrounding counties was used.

APPENDIX B

Glossary

Age-Adjusted Rates

Statistical Significance

Unstable Rates

Behavioral Risk Factor Surveillance System (BRFSS)

Missouri County-Level Study

Healthy People 2020

Body Mass Index

Resident

Age-Adjusted Rates

Age adjusting rates is a way to make fairer comparisons between groups with different age distributions. For example, a county having a higher percentage of elderly people may have a higher rate of death or hospitalization than a county with a younger population, merely because the elderly are more likely to die or be hospitalized. (The same distortion can happen when comparing races, genders, or time periods.) Age adjustment can make the different groups more comparable.

A "standard" population distribution is used to adjust death and hospitalization rates. The age-adjusted rates are rates that would have existed if the population under study had the same age distribution as the "standard" population. Therefore, they are summary measures adjusted for differences in age distributions.

The National Center for Health Statistics recommends that the U.S. 2000 standard population be used when calculating age-adjusted rates. The U.S. 2000 standard population was used for all age-adjusted rates in this report unless otherwise noted.

When age-adjusted rates from different sources are compared, it is very important to verify that the same standard population was used in both sources. **It is not legitimate to compare adjusted rates which use different standard populations.** Users of Missouri Information for Community Assessment (MICA) have the option of selecting age-adjusted rates based on the U.S. 1940, 1970 or 2000 standard populations when generating tables where age adjustment is utilized. Age-adjusted rates in the Community Data Profiles use the U.S. 2000 standard population. Age-adjusted rates published elsewhere (e.g., in the annual *Missouri Vital Statistics*) may be slightly different from those found in the MICAs or Community Data Profiles due to updating of population estimates for years between decennial Censuses.

The constant or "per population" number used for the age-adjusted rates may vary depending on the type of event. For example, the age-adjusted rates for deaths are reported per 100,000 residents. However, age-adjusted rates for hospitalizations and procedures are reported per 10,000 residents, and age-adjusted rates for emergency department visits are reported per 1,000 residents.

The use of different standard populations can also affect general trends in total mortality and cause of death and differences in mortality by race and gender. For more information on this topic see: "Effects of Changing from the 1940 to the Year 2000 Standard Population for Age-Adjusted Death Rates in Missouri": *Missouri Monthly Vital Statistics, 33*.12 (Feb. 2000).

Statistical Significance

Statistical significance tests are performed to determine whether the difference between two rates is probably the result of chance factors or if it is meaningful.

Unstable Rates

Unstable rates are rates based on fewer than 20 events. They can be common for small population areas, such as certain counties, or for low-frequency events, such as cause-specific deaths or birth defects. If the use of data from one specified year is not required, combining multiple years of data can often generate a stable rate. Similarly, data from several counties can be combined to create a stable regional rate. In this report, multiple years of data were combined for indicators with unstable rates for a large number of counties.

Behavioral Risk Factor Surveillance System (BRFSS)

The Behavioral Risk Factor Surveillance System (BRFSS) is an annual landline and cell telephone survey that collects information on health risk behaviors, preventive health practices, and health care access from non-institutionalized adults ages 18 and older. The annual BRFSS sample size of over 6,000 Missouri residents produces prevalence estimates at the state and regional levels.

BRFSS Regions
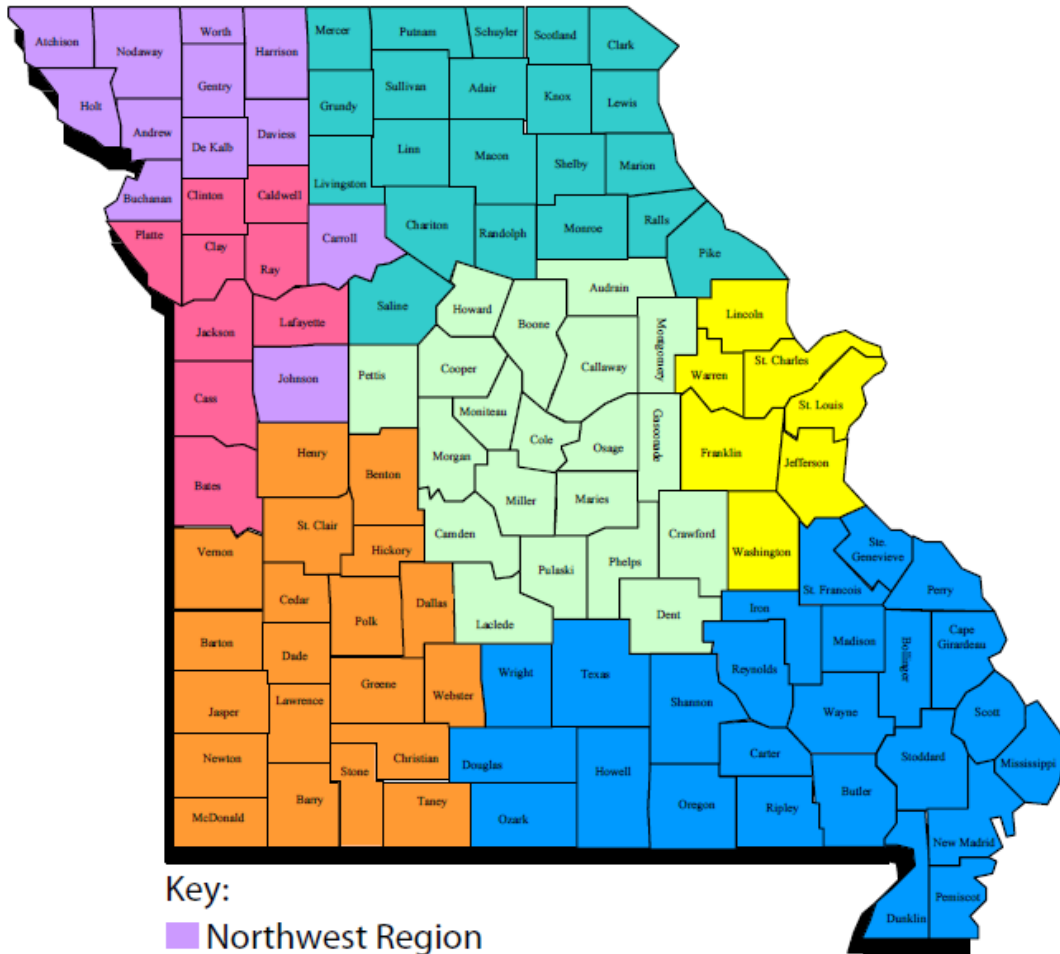
Key:
- Northwest Region
- Northeast Region
- Kansas City Metro Region
- Central Region
- St. Louis Metro Region
- Southwest Region
- Southeast Region

Source: http://www.health.mo.gov/data/brfss/BRFSSRegionsMap.pdf

Missouri County-Level Study

The Missouri County-Level Study (CLS) is a BRFSS-like landline and cell telephone survey that was conducted in 2007 and 2011 with approximately 50,000 non-institutionalized adults ages 18 and older. Sufficient data were collected to produce prevalence estimates for each of the state's 114 counties and the City of St. Louis.

Healthy People 2020

Healthy People 2020 objectives are health status targets for the entire U.S. Targets are set using baseline U.S. data. Objectives are organized into 42 topic areas, with Leading Health Indicators identified in 12 of these topic areas. Additional information about Healthy People 2020 is available at http://www.healthypeople.gov/2020/default.aspx.

Body Mass Index

Body Mass Index (BMI) is an indicator of body fat. The Behavioral Risk Factor Surveillance System and Missouri County-Level Study derive Overweight (25.0 – 29.9 BMI) and Obese (>=30 BMI) indicators by calculating BMI using responses to the following questions:

"About how much do you weigh without shoes?"
"About how tall are you without shoes?"

Resident

Resident means the person was a resident of Missouri at the time of the event in question (birth, death, emergency room visit, etc.). Data in the MICA (Missouri Information for Community Assessment) system are reported by resident status. For example, a record for a Missouri resident treated in a Kansas hospital would be reported as a Missouri hospitalization. Missouri receives vital records and hospital data from most of its border states.

APPENDIX C

The MICA (Missouri Information for Community Assessment) System

MICA System Tools

Accessing the MICA Tools

MICA System Tools

Community Data Profiles are static tables and are available for various subject areas. Each Community Data Profile table provides data on 15-30 indicators for the county/city selected. Information provided includes data years, number of events, county/city rate, state rate, statistical significance (compared to the state), quintile ranking, links to additional graphing functions, and multiple downloading options.

MICA (Missouri Information for Community Assessment) datasets provide information on health conditions and associated topics. Users can choose from among the many conditions, generate data tables by year of occurrence, age, gender, race, and county or zip code of residence, and obtain age-adjusted rates. MICA also allows users to download tables into other applications in order to produce charts or graphs. Data for the MICAs are extracted and summarized from files maintained by the Missouri Department of Health and Senior Services. Frequencies are then pre-computed for each combination of the variables. This provides two major advantages: the response time to create and return a table is usually less than five seconds, and no individual record can be accessed. Confidentiality rules have been developed to protect the privacy of individuals.

Priorities MICA provides a structured process for determining the priority health needs within a community. This tool allows a user to select diseases or risk factors for prioritization and then choose criteria to be used to determine the priority health needs among those diseases or risk factors. Users can rate the level of community support for each disease/risk factor and the importance of each criterion. Priorities can be determined for the state of Missouri, individual counties, or selected cities/areas. A total weight is given to each disease/risk factor based on the user's choices, and the diseases/risk factors are then presented as a ranked list.

CHIR (Community Health Improvement Resources) is an interactive, evidence-based planning tool which incorporates its predecessor, Intervention MICA. It provides links to information and resources which can be used to design, implement, and evaluate interventions that improve the health of a community. CHIR includes seven steps: Partnerships, Assessment, Readiness, Capacity, Intervention, Evaluation, and Momentum.

Together these four tools can assist public health professionals with the process of continuous community health improvements.

Accessing the MICA Tools

Much of the health data included in this report may be accessed on the Missouri Department of Health and Senior Services (DHSS) Community Data Profiles and MICA websites. Users can easily create different types of tables, charts, or maps pertaining to health indicators.

The following step-by-step guide offers instructions for accessing health data on the DHSS Community Data Profiles website.

1. Go to the DHSS Community Data Profiles website:
    http://health.mo.gov/data/CommunityDataProfiles/index.html

2. From the topic list, select a Profile. Then use the pull-down geography menu to choose whether to view data by city, county, or at the state level. Data for BRFSS Regions are available for some topics. Click the Submit button.

3. The requested data table will appear.

4. The Trend Line and Comparison Bar Graph columns at the right side of the table provide links to available graphics. Users can select the Trend Line icon to create a graph showing three-year moving average trend lines for the selected geography and the state. Users can select the Comparison Bar Graphs icon to create a bar chart showing the rates for a specific indicator in selected geographies or compare indicators within a single geography.

The following step-by-step guide offers instructions on accessing data on the DHSS MICA website.

1. Go to the DHSS MICA website: http://health.mo.gov/data/mica/MICA/

2. Choose a topic from the list of MICA datasets.

3. Select a viewing option. Options may include county/city tables, maps, or ZIPzip cCode tables. Each option provides a query screen that allows users to customize the data output.

For more detailed information on using the Community Data Profiles and MICAs, please refer to the MICA User Handbook at http://health.mo.gov/data/mica/MICA/CHAIPTraining.html or contact the DHSS Bureau of Health Care Analysis and Data Dissemination at 573-751-6272.

The Bureau also offers free health data trainings which are posted at http://health.mo.gov/data/mica/MICA/healthdatatraining.html. A quarterly newsletter describing data and feature updates is available through this link as well.

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