Final Report

Advancing Women and Infant's Health

A funded project of the Missouri Foundation for Health
Submitted by Maternal and Child Health Consulting and Research, LLC

12567 County Road 4039
Holts Summit, MO 65043
573-301-0046

Research Team:
Pamela K. Xaverius, PhD
Deborah Kiel, PhD, PHCNS-BC
Leigh E. Tenkku, PhD, MPH
Beverly Triana-Tremain, PhD

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EXECUTIVE SUMMARY

The focus of the Patient Protection and Affordable Care Act (ACA) on primary preventive services is a profound shift from a reactive system that primarily responds to acute problems and urgent needs (secondary and tertiary prevention) to one that helps foster optimal health and well-being. This project considered the spectrum of prevention services, focused specifically at infant mortality and related disparities, and included two phases to the project: an Analysis Phase (Phase I) and a Recommendations for Sustainable Programs Phase (Phase II). Phase I included four major analyses, including a (1) review of evidence based Practices and frameworks related to maternal and child health, (2) qualitative analysis including the key informant interviews and online surveys, (3) qualitative analysis including data from the five regional forums, and (4) quantitative analysis including formation of the GISArc database and analysis of factors for sustainability and growth. Key Phase 1 findings include:

1. Communities were more prepared to focus on disease than risk factors (i.e., primary prevention).
2. Overwhelmingly, communities reported low readiness to address infant mortality, with the exception of region 8, which primarily reported medium readiness. No communities were highly ready to address infant mortality.
3. Region 10 which includes the Bootheel of Missouri has clear deficits in the areas of the highest unemployment rates, inadequate prenatal care, maternal smoking during pregnancy, premature births, low birth weight babies, high teen birth rates, high rates of sedentary lifestyles and high rates of current smoking and tobacco use. Within this region, Pemiscot County is most affected by these gaps and assets.
4. Region 4 which includes the St. Louis Metropolitan area also exhibited clear deficits in the areas of having the highest percentage of the population at or below the Federal poverty income levels, the highest annual number of high school dropouts, highest number of asthma ER visits, highest number of child abuse and neglect incidents and highest rate of binge drinking overall. Within this region, St. Louis City is most affected by these gaps and assets.

For Phase II, we used findings from our four analyses to identify factors needed for sustainable programs, and to implement best practices in identified service gaps. The steps taken to complete this phase included the identification of 3-5 priority areas, matching best practices from the best practices analysis with the identified service gap priorities, and identifying sustainability factors necessary for longevity of the chosen best-practice strategies.

Programs and services to address obesity, tobacco, and teen pregnancy were the most frequently identified priority areas identified by key informants. Diabetes, mental health, and drug abuse were diseases also identified as priorities. Priorities were also identified to address primary obstacles, which included knowledge and awareness, the social environment, systems of care, and pre-existing conditions. The readiness of communities to address primary prevention (i.e., risk factors) was also lower than their readiness to address tertiary prevention (i.e., diseases), suggesting the need for primary prevention support in communities. Important priorities regarding unique aspects of urban and rural communities were clearly identified. Finally, in order to move communities to high readiness, important strategies should include education and informational campaigns for leaders, providers and consumers.

Sustainability recommendations are as follows:

1. Funding for maternal and child health (MCH) related activities should integrate and coordinate with Title V funded activities but allow flexibility to meet county or community-specific needs identified by the needs assessment or SWOT analysis.
2. MCH and infant mortality reduction initiatives should require collaboration among agencies in order to create a climate of integrated service provision and collaboration and not competition among agencies.
3. There is a need to increase awareness about infant mortality and related disparities among the legislators in order for them to understand the importance of continued and expanded funding for MCH and women's health services
4. There is a need for continuous funding/revenue streams for successful programs and evidence-based practice strategies. Programs that demonstrate progress in improving MCH indicators should be earmarked as priority programs for continued funding and be exempt from changes in priorities in funding streams at the Federal and State level. Foundations and other funding sources should consider creating grant lines that would allow for on-going support of successful programs instead of creating a climate that requires development of a new program to accomplish the same goals as a successful program that has lost or is losing funding.
5. There is an overarching need to raise awareness of infant mortality in all of the target communities by broadening stakeholder support and creating a public sensitivity to this issue. Achieving this goal will require a combination of dedicated funding and community-engagement activities that should be broader in scope than the health departments and related MCH providers and should be inclusive of business, clergy, educators and formal and informal community leaders.
6. These recommendations should be accomplished by building on community-identified strengths and utilizing the expertise and current MCH leadership within communities. This leadership includes the dedicated MCH workforce within state, county and local health departments and community-based coalitions dedicated to the improvement of MCH and reducing infant mortality.

ACKNOWLDGEMENTS

The Research Team would like to thank the Missouri Foundation for Health for giving us this opportunity to work as a team on the very important issue of women and children's health. Also, to Kathleen Holmes and members of the Women's Health Team, your continual guidance on our monthly calls was invaluable.

We would also like to thank Ben Cooper who provided us with the expertise in Arc GIS technology and in creation of the maps showing the key indicators for all MFH regions.

SECTION 1. INTRODUCTION

The focus of the Patient Protection and Affordable Care Act (ACA) on preventive services is

> *a profound shift from a reactive system that primarily responds to acute problems and urgent needs to one that helps foster optimal health and well-being.*

The ACA addresses preventive services for both men and women of all ages, and women in particular stand to benefit from additional preventive health services. The inclusion of evidence-based screenings, counseling and procedures that address women's greater need for services over the course of a lifetime may have a profound impact for individuals and the nation as a whole.

Given the magnitude of change, the U.S. Department of Health and Human Services charged the IOM with reviewing what preventive services are important to women's health and well-being and then recommending which of these should be considered in the development of comprehensive guidelines. The IOM defined preventive health services as measures—including medications, procedures, devices, tests, education and counseling—shown to improve well-being, and/or decrease the likelihood or delay the onset of a targeted disease or condition.

The IOM recommends that women's preventive services include:

- Improved screening for cervical cancer, counseling for sexually transmitted infections, and counseling and screening for HIV;
- A fuller range of contraceptive education, counseling, methods, and services so that women can better avoid unwanted pregnancies and space their pregnancies to promote optimal birth outcomes;
- Services for pregnant women including screening for gestational diabetes and lactation counseling and equipment to help women who choose to breastfeed do so successfully;
- At least one well-woman preventive care visit annually for women to receive comprehensive services;
- Screening and counseling for all women and adolescent girls for interpersonal and domestic violence in a culturally sensitive and supportive manner.

SECTION 2. BACKGROUND ON INFANT MORTALITY

Missouri has persistently high rates of preterm birth (PTB), low birth weight (LBW), and infant mortality (IM) (see Figure 1) as well as significant disparities by race. In 2009, birth certificate data indicated 12.5% of all births in Missouri were preterm, with 19.0% of Black births preterm and 11.3% of White births preterm. The overall LBW rate in Missouri in 2009 was 8.1% with 14.2% of Black births LBW and 7.0% of White births LBW. IM rates during that same time frame were 7.2 deaths per 1,000 births overall, with 13.8 deaths per 1,000 Black births versus 6.1 deaths per 1,000 White births. According to national objectives, no more than 11.4% of births should be preterm, no more than 7.8% of births should be LBW, and no more than 6.0 babies per 1,000 births should die before their first birthday (DHSS, Healthy People 2020). Factors that contribute to PTB and LBW are not well known, however, prenatal care, individual level behaviors and social risk factors are thought to play a role.

Figure 1: Preterm birth, low birth weight birth, and infant mortality rates in Missouri, between 1999 and 2009.

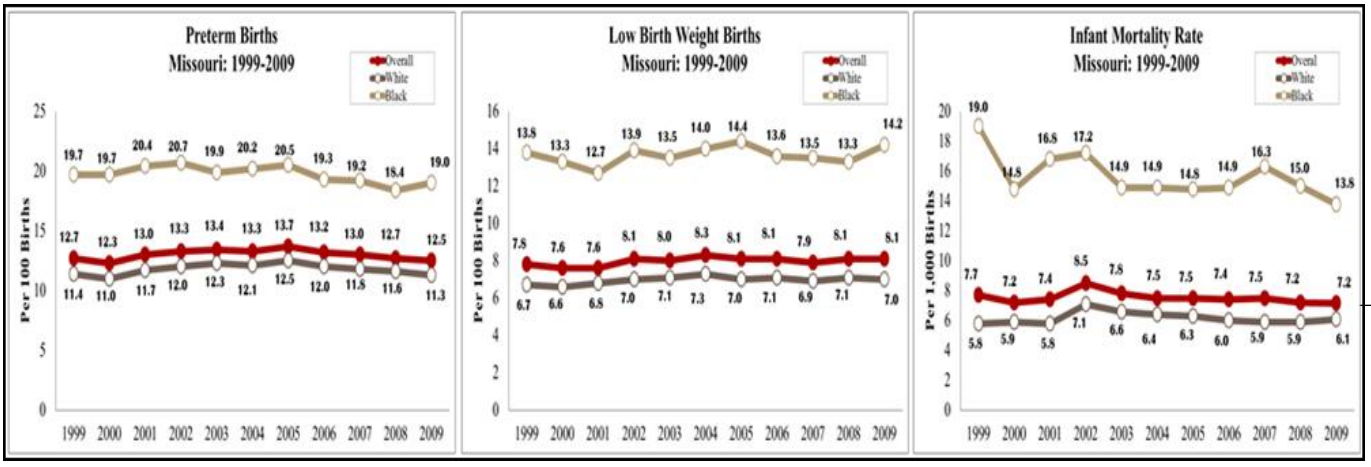


Figure 1

Although much of the disparity of PTB and LBW is associated with racial groups living under suboptimal conditions, poverty alone does not explain the disparities in pregnancy outcomes between Whites and Blacks (Geronimus, 1996). When birth outcomes are evaluated within communities with homogeneous economic climates, such as military bases, racial disparities in birth outcomes persist. Interestingly, birth outcome disparities persist in environments where socioeconomic status is more equal to white women. (Adams, Read, Rawlings, Harlass, Samo, & Rhodes, 1993; Shoendorf, Hogue, Kleinman, & Rowley, 1992). Risk factors for PTB have been identified through numerous studies, and include: multifetal gestation, history of prior PTB, cervical, uterine, or placental abnormalities, reproductive tract infections, race, maternal age, socioeconomic status, inter-conceptional interval, maternal chronic conditions (e.g., diabetes, hypertension), stress, low maternal weight, substance abuse (e.g., alcohol, tobacco), assistive reproductive technology, and working during pregnancy (Goldenberg, 2002; Iams, 2003; Meis, Goldenberg, Mercer, Iams, Moawad, Miodovnik, et al., 1998). Further, these variables all interact in complex pathways that lead to PTB, making the identification of PTB interventions for minorities equally complex and challenging (Buekens, Klebanoff, 2001; Green, Damus, Simpson, Iams, Reece, et al., 2005). The biobehavioral mechanisms that trigger labor remain unknown, however, numerous

mechanisms have been studied (Gennaro, 2005). For example, the stress of infection has a strong association with poor birth outcomes (Goldenberg, Goepfert, & Ramsey, 2005; Fiscella, 1996).

Black women have a higher rate of infection from virtually every genital microorganism compared to White or Hispanic women. Others suggest a relationship between psychosocial stressors (e.g., stressful life events, depression) and poor birth outcomes, mediated by cortisol-induced increases in placental secretions. One large study analyzed anxiety, stress, self-esteem, and depression and found that only stress predicted PTB. Each of these pathways interacts at a cellular level and may play an important role in PTB and LBW.

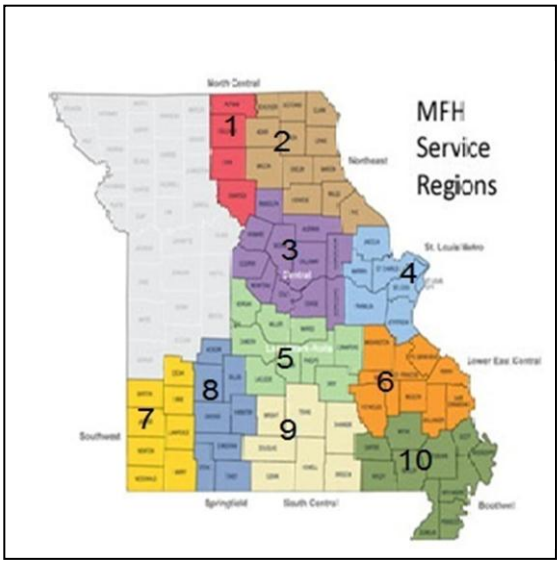


Figure 2

In Missouri, many of these issues are addressed by researchers, clinicians, and policy makers across the state. For example, federal funds are funneled into Missouri Department of Health and Senior Services to fund Title V programs and services (e.g., nurse home visiting, prenatal case management, fetal and infant mortality review, Healthy Start, SIDS resources, and nutrition services for Women, Infants, and Children [WIC]). Title X funds are funneled from the Family Health Council to the community to assist women and families with family planning. Federally qualified health care centers offer evidence- based and best practices to the poor and underserved. Maternal, Child and Family Health coalitions are uniting communities to address such issues as infant mortality and preconception health. Additionally, researchers continue to receive funding to explore innovations in maternal and infant health. Many of these services are offered independently of each of other, and rarely are they considered holistically in terms of their effect on the overall population of women and children in Missouri. The overarching goal of this proposal is to consult with appropriate state, local and community stakeholders to map overall opportunities (and gaps), in specific catchment areas of the Missouri 84 counties and the city of St. Louis, served by the Missouri Foundation for Health (MFH) (See Figure 2).

The 84 counties and the city of St. Louis, are segmented into 10 Service areas including:

1	North Central	6	Lower East
2	Northeast	7	Southwest
3	Central	8	Springfield
4	St. Louis Metro	9	South Central
5	Lake Ozark	10	Bootheel

It is the intent for the results of these efforts to provide guidance to the MFH Board and staff on future funding options for improving health outcomes for women and babies in Missouri and more specifically to reduce racial and ethnic infant mortality rate disparities by encouraging healthy behaviors, meeting service needs, and creating healthier communities for women and babies. Our approach in accomplishing the objective of the work was to collect, produce, study, and report on (1) state, regional and community gaps and assets; (2) promising strategies and interventions to promote health and prevent disease; and (3) steps needed to create sustainable and successful programs.

SECTION 3. TIMELINE OF THE PROJECT

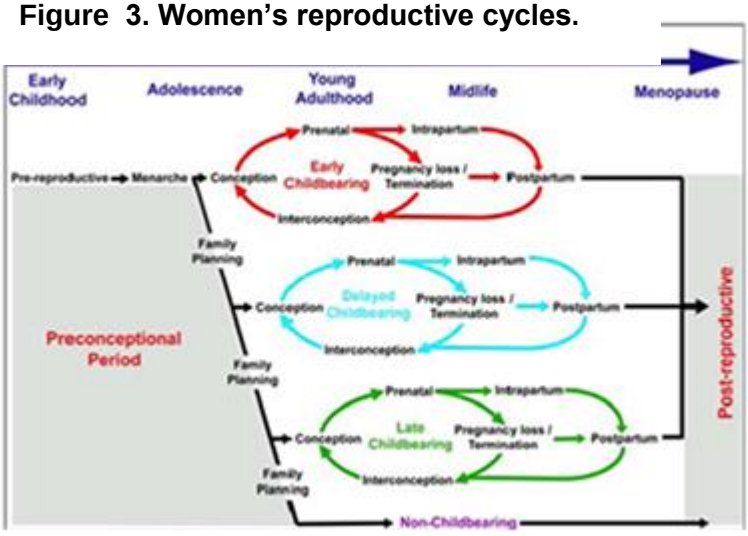
The 6-month project had two distinct phases. The first phase was to build infrastructure for the needs assessment, including organization of the project, planning for forums, identifying key informants for interviews, developing instruments, and creating databases (including ArcGIS). The second phase was the collection and analysis of data from forums, key informant interviews and populating the databases, and finally synthesis of data and development of recommendations. See Appendix A for a complete timeline and project management matrix.

SECTION 4. THEORETICAL APPROACH TO THE PROJECT

The following theoretical models provided a framework for our data collection.

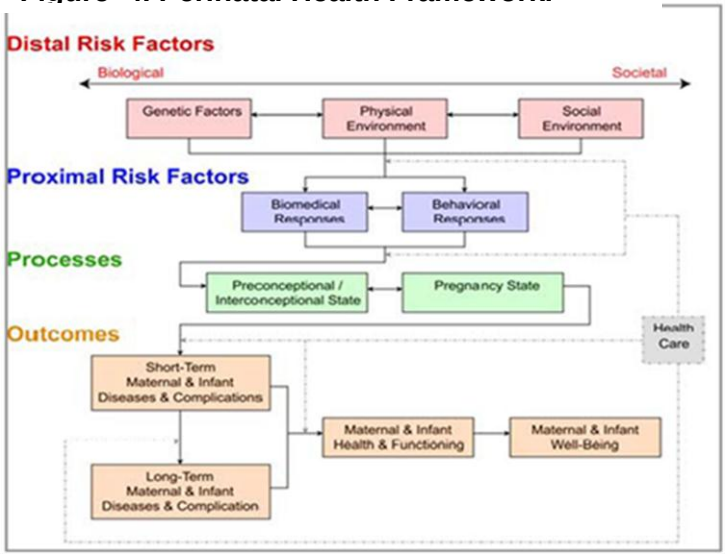
1. Life Course – Grason and Misra (2006) have posited that while those involved in the practice of public health recognize the importance of general health and wellness over the life course as it relates to maternal and child health, this knowledge is not translated into practice. The life course model suggests that it is not just your health when you are pregnant that influences the birth outcome, but rather, it is your health over the life course (i.e., childhood adolescence, adulthood, and to menopause) that influence your health during pregnancy (Figure 3).

Figure 3. Women's reproductive cycles.



2. Perinatal Health Framework. The perinatal health framework targets factors across the life course (i.e., early childhood through menopause), not just the prenatal period, including diseases and complication, health and functioning, well-being, and considering distal risk factors (i.e., genetic factors, physical environment, and social environment) and proximal risk factors (i.e., risk factors that have a direct impact on health: behavioral and biomedical actions). Health care is then defined as abroad range of activities from primary prevention (societal level interventions) to medical interventions (Figure 4).

Figure 4. Perinatal Health Framework.



3. Pyramid of Maternal and Child Health Services (Fine & Kotelchuck, 2010) - The MCH Pyramid of Health Services (Figure 5) has been used for more than a decade to describe the range of MCH services. The pyramid (at right)[1] categorizes services, starting with Infrastructure Building Services (forming the base of the pyramid), followed by Population-Based Services (services available to the entire population); Enabling Services (essential health system services); and Direct Health Care Services. Components of the Pyramid are:

Figure 5

a. **Infrastructure building services:** These services comprise the foundation of the MCH pyramid of health services. These activities are focused on improving and maintaining the health status of all women and children by providing support for development and maintenance of comprehensive health services systems. These services include development and maintenance of health services standards/guidelines, and training, data and planning systems. Examples include needs assessment, evaluation, planning, policy development, coordination, quality assurance, standards development, monitoring, training, applied research, information systems and systems of care. In the development of systems of care it should be assured that the systems are family centered, community based and culturally competent.

b. **Population-based services:** Preventive interventions and personal health services, developed and available for the entire MCH population of the State rather than for individuals in a one-on-one situation. Disease prevention, health promotion, and statewide outreach are major components. Common services include newborn screening, lead screening, immunization, Sudden Infant Death Syndrome counseling, oral health, injury prevention, nutrition and outreach/public education. These services are generally available whether the mother or child receives care in the private or public system, in a rural clinic or an HMO, and whether insured or not.

[1] Health Resources and Services Administration. Maternal and Child Health Pyramid of Health Services. Available at: http://www.amchp.org/AboutTitleV/Documents/MCH_Pyramid_Purple.pdf. Accessed on August 29, 2011.

c. **Enabling services:** Services that allow or provide access to and derivation of benefits from, the array of basic health care services and include things such as transportation, translation services, outreach, respite care, health education, family support services, purchase of health insurance, case management, coordination of with Medicaid, WIC and education. These services are especially required for the low income, disadvantaged, geographically or culturally isolated, and those with special and complicated health needs. For many of these individuals, the enabling services are essential - for without them access is not possible. Enabling services most commonly provided by agencies for Children with Special Health Care Needs (CSHCN) and include transportation, care coordination, translation services, home visiting, and family outreach. Family support activities include parent support groups, family training workshops, advocacy, nutrition and social work.

d. **Direct healthcare services:** Services generally delivered one-on-one between a health professional and a patient in an office, clinic or emergency room which may include primary care physicians, registered dietitians, public health or visiting nurses, nurses certified for obstetric and pediatric primary care, medical social workers, nutritionists, dentists, sub-specialty physicians who serve children with special health care needs, audiologists, occupational therapists, physical therapists, speech and language therapists, specialty registered dietitians. Basic services include what most consider ordinary medical care, inpatient and outpatient medical services, allied health services, drugs, laboratory testing, x-ray services, dental care, and pharmaceutical products and services. State Title V programs support - by directly operating programs or by funding local providers - services such as prenatal care, child health including immunizations and treatment or referrals, school health and family planning. For CSHCN, these services include specialty and sub-specialty care for those with HIV/AIDS, hemophilia, birth defects, chronic illness, and other conditions requiring sophisticated technology, access to highly trained specialists, or an array of services not generally available in most communities.

SECTION 5. SCOPE OF THE PROJECT : METHODS AND RESULTS

After establishing the infrastructure for this project, two distinct phases remained:

Phase I: Analysis Phase
Five major analyses were conducted for this project:

A. Review of Evidence Based Practices and Frameworks related to Maternal and Child Health
B. Qualitative analysis including the key informant interviews and online surveys
C. Qualitative analysis including data from the five regional forums
D. Quantitative Analysis including formation of the ARC Database
E. Analysis of Factors for Sustainability and Growth

Phase II: Recommendations for Sustainable Programs:

We used findings from our five analyses to identify factors needed for sustainable programs, and to implement best practices in identified service gaps. The steps taken to complete this phase included:

A. Identification of 3-5 priority areas
B. Matching best practices from the best practices analysis with the identified service gap priorities
C. Identifying sustainability factors necessary for longevity of the chosen best-practice strategies

Phase 1 A. *Review of Evidence Based Practices and Frameworks related to Maternal and Child Health*

Methods

Detailed internet searches were conducted to identify (a) current programs, services, promising and best practices and (b) policy and sustainability considerations. Three data sources were used: federal websites such as CityMATCH, AMCHP, HRSA/MCHB; the Community Guide (www.thecommunityguide.org); and library databases. Key Informants identified current practices and strategies in their communities.

These data sources collectively informed our recommendations for evidence-based programs. We also include a discussion of best practice strategies to as they related to the life course perspective. We cross-referenced best practice strategies found in these sources with the Life Course/Perinatal Framework perspective and the ecological model (i.e., public policy, environment/community, organization, and individual components).

Results

Table 1 shows there are a significant number of public policy interventions, environment/community interventions, and organizational interventions, which tend to have the strongest impact on population level health. There are very few individual level interventions which support the notion that larger level systems and policy interventions have the most profound impact on behavioral change and health outcomes.

Table 1. Life Course/Perinatal Framework perspective with the ecological [2]

	Infants/Children	Adolescents	Adults
PUBLIC POLICY	***Safety***: Safety seat laws and enforcement		
	Vaccinations: Vaccination requirements for child care, school and college attendance and financial support		
		Tobacco: Increasing tobacco taxes; Smoking bans and restrictions; Reduce out-of-pocket expense for tobacco cessation therapies	
		Alcohol: Maintain current minimum legal drinking age (MLDA) laws; Increase alcohol taxes; Maintain limits on days/hours of alcohol sale; Lower blood alcohol content (BAC) laws for young or inexperienced drivers; Regulate alcohol outlet density;	
	Neural Tube Defect: Interventions to fortify products with folic-acid		
	Physical Activity and Obesity: Creation of or enhanced access to places for physical activity combined with informational outreach		
	Housing: Tenant-based rental assistance		
	Insurance: Medicaid for the poor and underserved		
ENVIRONMENT/ COMMUNITY	**Infants/Children**	**Adolescents**	**Adults**
	Alcohol: Reduce Alcohol Impaired Driving: Sobriety checkpoints; Training in responsible beverage service; Education and awareness; Mass media campaigns/ multicomponent interventions with community mobilization		
	Sexual risk behaviors in adolescents: Behavioral interventions coordinated with community services		
	Safety: Distribution, incentive and education programs for use of child safety seats		
	Cancer: Small media campaigns regarding the importance of screening		
	Violence: Home visits		
	Vaccination rates: Home visits		
	Physical activity: Social support and community-wide Information interventions in community settings; Community/street-scale urban design and land use policies; Informational outreach; Behavioral/social support		
	Tobacco cessation: Multicomponent interventions that include telephone support; Mass media combined with other interventions		
	Tobacco initiation: Mass media campaigns when combined with other interventions; Restrict minors' access to tobacco products		
	Dental: Community wide fluoridation		
	Community programs: WIC; Healthy Start		
	Folic Acid Supplemental Use: Community wide campaigns		

[2] U.S. Department of Health and Human Services. Healthy People 2020. Available at: www.healthypeople2020.gov. Retrieved August 20, 2011.

	Infants/Children	Adolescents	Adults
ORGANIZATION	***Early childhood development:*** Comprehensive, center-based programs for children of low-income families	***HIV Prevention in Pregnancy***: Group based comprehensive risk reduction	***Depression:*** Screening for depression in adults; Collaborative Care
	Vision: Screening for visual impairment in children younger than age 5 years	***Alcohol:*** School based programs to reduce impaired driving	***Nutrition***: Behavioral counseling in primary care to promote a healthy diet
	Dental: School-based or linked sealant delivery programs		***Tobacco Cessation***: Incentives and competitions
	Obesity prevention: Enhanced school-based physical education; Behavioral and social approaches		***General Health:*** Assessment of health risks with feedback
	Safety (Seats): Distribution and education programs; Parental incentives	***Violence:*** School based programs Therapeutic foster care	***Obesity:*** Worksite programs; Clinical screening
		HIV Screening: Screen all adolescents and adults for HIV	
	Mental Health: Collaborative care for depression; Screening and treatment; Cognitive-behavioral therapy for children and adolescents who have psychological symptoms resulting from exposure to traumatic events		
	Physical Activity: Behavioral interventions to reduce screen time; School-based physical education		
	Obesity: Screening for high blood pressure, lipid disorders, obesity (adults and children)/ behavioral counseling in primary care		
	Screening: Screening for sickle cell disease in newborns	***Cancer:*** Genetic risk assessment and BRCA mutation testing for breast and ovarian cancer susceptibility	
	Healthy diet: Behavioral counseling in primary care		
	Vaccination: Provider reminders through notations, stickers, or other prompts in clients' charts, or through computer databases or registries; client reminder system; provider assessment and feedback		
	General Health: School-based Programs (instructional programs; peer organizations such as Students Against Destructive Decisions (SADD); and social norming campaigns)		
	Tobacco: Community-wide interventions to reduce youth access to tobacco products; Smoke free policies		
		Parenting: Person-to-Person interventions to improve caregivers' parenting skills	
		Alcohol: Screening and behavioral counseling interventions in primary care to reduce alcohol misuse	
		Breastfeeding: Primary care intervention to promote breastfeeding	
		Sexually Transmitted Infections: Screening for asymptomatic bacteriuria in adults, chlamydia infections, hypothyroidism, gonorrhea, Hepatitis B., HIV, iron deficiency, PKU, Rh (D), and syphilis; Counseling	

		Tobacco: Counseling and interventions to prevent tobacco use and tobacco-caused disease in adults and pregnant women; provider reminders; provider education;	
		Tobacco Cessation: Provider reminder systems for tobacco cessation efforts; Provider education	
		Mental Health: Clinic-based and home-based depression care management involves active screening for depression, measurement-based outcomes, trained depression care managers, case management, a primary care provider and patient education, antidepressant treatment and psychotherapy, and a supervising psychiatrist	
		Overall Health: Group based comprehensive risk reduction interventions for adolescents. [Comprehensive risk reduction (CRR) promotes behaviors that prevent or reduce the risk of pregnancy, HIV, and other sexually transmitted infections]	
		Vaccination: Home visits; Healthcare Workers	
	Vaccination: Provider assessment and feedback involves retrospectively evaluating the performance of providers in delivering one or more vaccinations to a client population and giving them feedback on their performance		
		Sexual Risk Behaviors: Youth development behavioral interventions coordinated with community service	
INDIVIDUAL	**Infants/Children**	**Adolescents**	**Adults**
			Heart Disease: Daily aspirin intake
			Diabetes: Self-management education
	Vaccination: Client reminder and recall interventions; involve reminding members of a target population that vaccinations are due (reminders) or late (recall)		
	Physical Activity: Individually adapted behavior change programs; Reduce screen time		

Phase I B. Qualitative analysis including the key informant interviews and online surveys

Methods

There were two methods for qualitative data collection, the online surveys and key informant interviews. The surveys were sent to members of the Missouri Association for Rural Health Clinics (MARHC) and the Public Health Nurses through the Center for Local Public Health Services (CLPHS). Key informant interviews were co-determined by the research consultant team and the Missouri Foundation for Health.

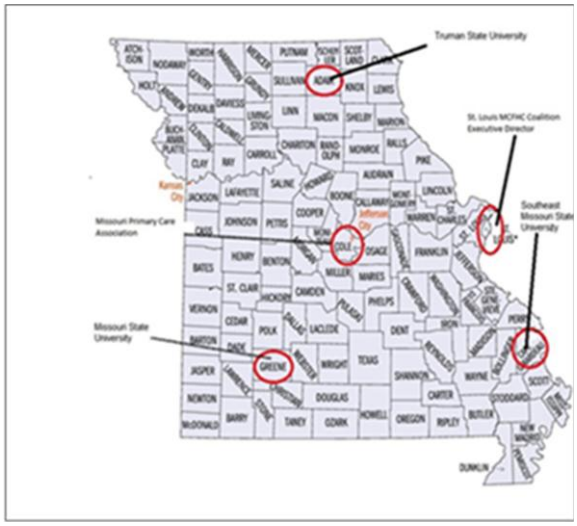


Figure 6

Respondents were first asked to identify priority 'diseases' and 'risk factors,' related to infant mortality and related diseases, and modeled after the items listed on the Missouri Information for Community Assessment Priority Setting Model (Priority MICA), an online system that captures population level data for the state (Simoes, Land, Metzger & Mokdad, 2006). In order to gain a more comprehensive understanding of community organization around the issue of infant mortality and related disparities, we employed the Dimensions of Community Readiness Model as a model for the survey and interview protocols. Dimensions of readiness are key factors that influence a community's preparedness to take action on an issue. The six dimensions identified and measured in the Community Readiness Model are comprehensive in nature and are an excellent tool for diagnosing community readiness to mobilize and take action on an issue. The six dimensions of community readiness include:

1. Community Efforts: To what extent are there efforts, programs, and policies that address the issue?
2. Community Knowledge of the Efforts: To what extent do community members know about local efforts and their effectiveness, and are the efforts accessible to all segments of the community?
3. Leadership: To what extent are appointed leaders/influential community members supportive of the issue?
4. Community Climate: What is the prevailing attitude of the community toward the issue? Is it one of helplessness or one of responsibility and empowerment?
5. Community Knowledge about the Issue: To what extent do community members know about the causes of the problem, consequences, and local implications?
6. Level of Expertise/Resources Related to the Issue: To what extent are local resources –

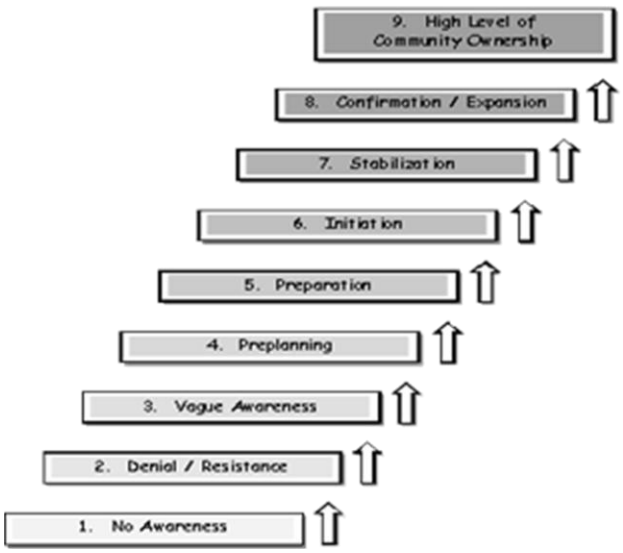


Figure 7

people, time, money, space, etc. – available to support efforts

Each dimension is scored on a scale of 1 -9, where 1 is lowest readiness and 9 is Highest Readiness (Figure 7). Scores were collapsed into three overall categories of readiness as follows (Table 2):

Table 2. Collapsed Level of Readiness	
Level of Readiness	Score Range
Low Readiness	1 – 3
Some Readiness	4 – 6
High Readiness	7-9

In addition to answering questions about levels of readiness, each respondent was asked to provide three risk factors and three diseases they identified as a problem for their community. They were also asked for each of these risk factors and disease to identify the level of opposition to each in their community given these categories:

1. Active community opposition
2. No groups/persons showing interest
3. Some interest groups/persons showing interest but not organized
4. Community coalition organized or supported by elected official(s) or private business

A description of The Community Readiness Model, survey protocol, and a list of interviewees, their current position and expertise is available in Appendices B, C, and D, respectively.

Results

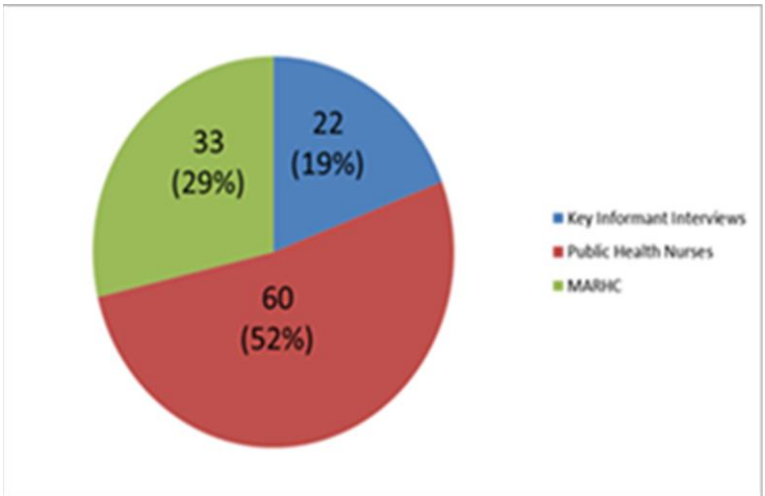


Figure 8

An expanded SWOT Analysis was created using the qualitative data gathered from the key informant interviews and online surveys. Telephone interviews were conducted with 22 key informants. An online survey posing the same questions as the key informant interviews was sent to members of the Missouri Association for Rural Health Clinics (MARHC) and the Public Health Nurses through the Center for Local Public Health Services (CLPHS). Thirty-three respondents completed the MARHC survey and 60 respondents completed the public health nurses survey. Sixty-two percent of the geographic status of the qualitative data was rural representation. The survey and key informant interview protocols were very similar with a few noted differences. Data from these methods were combined (Figure 8).

The top three most frequently identified risk factors were smoking, obesity, and teen pregnancy, respectively. There were a few exceptions. Regions 2 and 9 identified no health insurance as a priority. Regions 3 and 4 identified no prenatal care as a priority. Region 9 identified high blood pressure. See Table 3.

In terms of diseases, diabetes, mental health, and drug use were most prominently mentioned. Additionally, Regions 2, 3, and 8 identified dental health as a prominent disease. Responses (Risk Factors and Diseases) for all 10 Regions are represented in Table 3.

Table 3. Most Frequently Identified Risk Factors and Diseases by Region													
	Region	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Region Total**	**State**
Risk Factors	**Smoking**	X	X	X	X	X	X	X	X	X	X	10	X
	Obesity	X		X	X	X	X	X	X		X	8	X
	Teen Pregnancy		X			X	X	X	X		X	6	X
	No Health Insurance		X							X		2	
	No Prenatal Care			X	X							2	
	High Blood Pressure									X		1	
Diseases	**Diabetes**		X	X	X	X	X	X	X	X	X	9	X
	Mental Health	X		X		X	X		X		X	6	
	Drug Use	X	X				X	X				4	X
	Dental Health		X	X					X			3	
	Heart Disease				X			X				2	
	STIs					X						1	
	COPD									X		1	
	Abuse											0	X

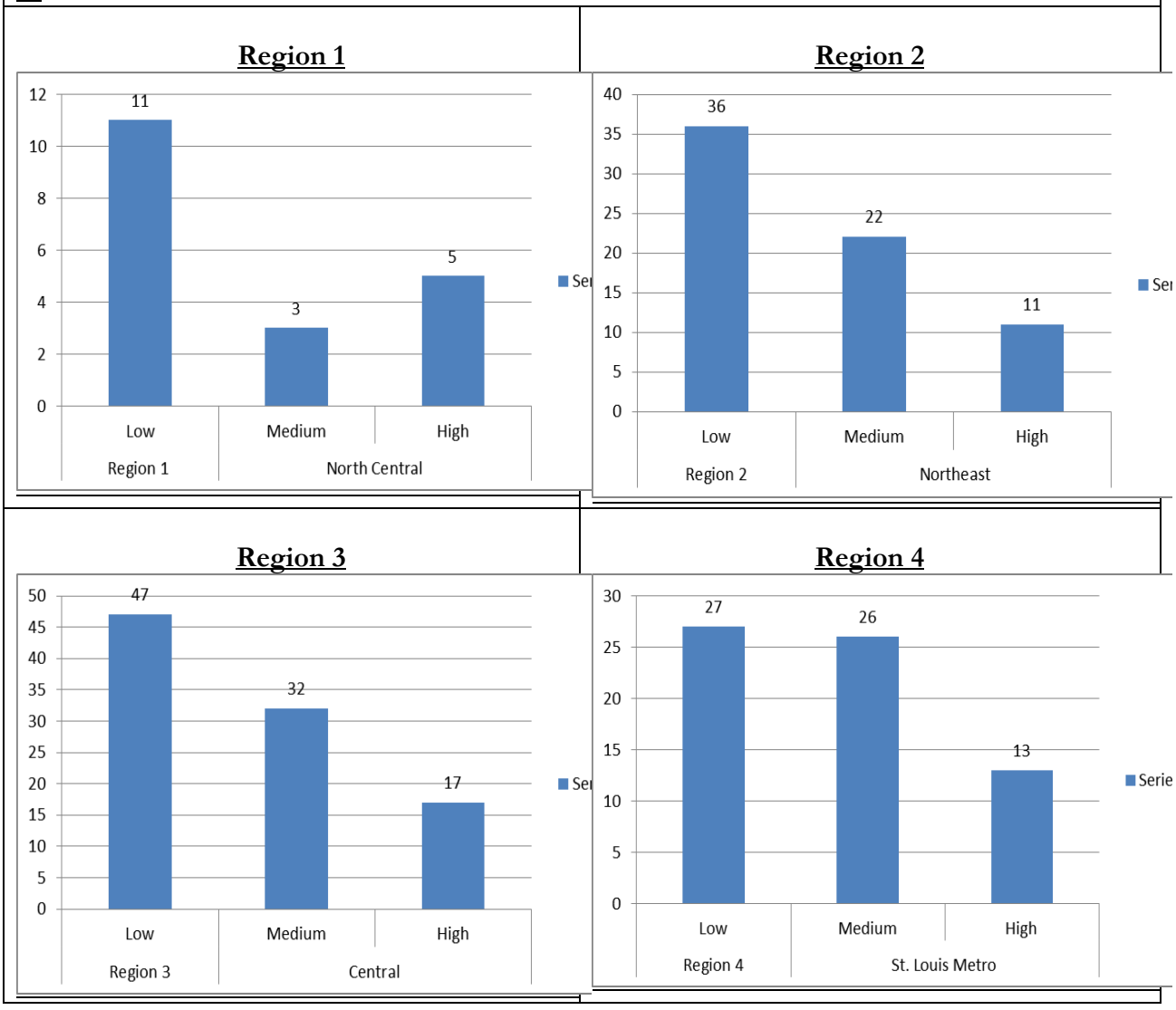
Key informants were also asked about how well their community was organized around identified risk factors and diseases. Table 4 shows total responses, sorted by region, in terms of community organization around risk factors and diseases. As shown, the majority of communities had little to no interest in addressing risk factors, while there was some mobilization to address diseases. Communities are better equipped to focus on diseases (i.e., tertiary prevention), than risk factors (i.e., primary prevention). It is a weakness of communities in terms of their lower efforts around primary prevention. Additionally, in almost every community (Regions 1, 2, 3, 6, 7, 8, 9, and 10), there was active opposition to addressing diseases or risk factors, a stark contrast with the organized coalitions that are also in those same communities. This may be explained in several ways. Those working toward improving the public's health approach the challenges from a variety of angles, resources, capacity, and skill level and therefore are able to communicate a more positive attitude about the challenges they face. Certain organizations may have a stronger hold on the solutions and therefore collaborate more willingly with others in the community. Part of the challenge lies in finding a place for those organizations that may feel alienated and/or identify the problems of the community as hopeless. A most important aspect of any community intervention understands why there is opposition and work to reduce the factors that create it.

Table 4. Community Organization Around Identified Risk Factors and Disease by Region (4-Point Scale)

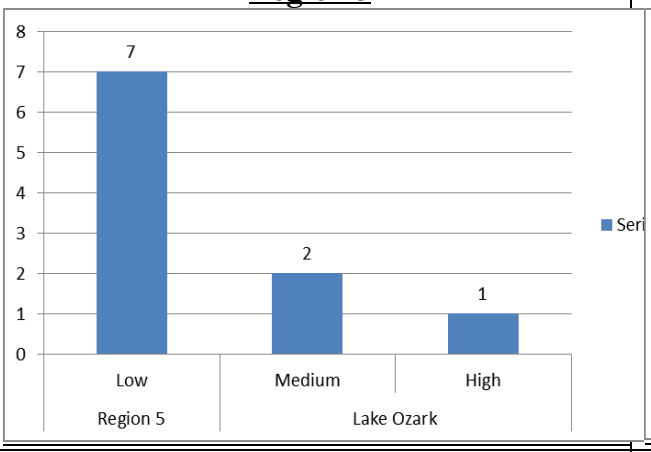
	Risk Factors				Diseases			
Region	Active Opposition	No Interest	Some interest	Organized coalition	Active Opposition	No Interest	Some interest	Organized coalition
1	1	7	2	1	0	0	7	2
2	1	14	17	6	1	6	14	6
3	1	14	27	10	0	9	25	8
4	0	5	20	9	0	6	21	9
5	0	2	6	2	0	4	2	0
6	2	3	10	1	3	0	12	6
7	1	4	24	8	0	3	12	18
8	2	5	24	6	1	4	15	13
9	6	7	2	2	1	4	6	4
10	3	9	14	6	0	8	14	12

Each of the key informants and the survey respondents was asked to score their community in each of the six dimensions of community readiness with regards to infant mortality. These data were collapsed and are presented in Figure 9 below for each Region (1 through 10). Overwhelming, communities reported low readiness to address infant mortality, with the exception of region 8, which primarily reported medium readiness. No communities were highly ready to address infant mortality.

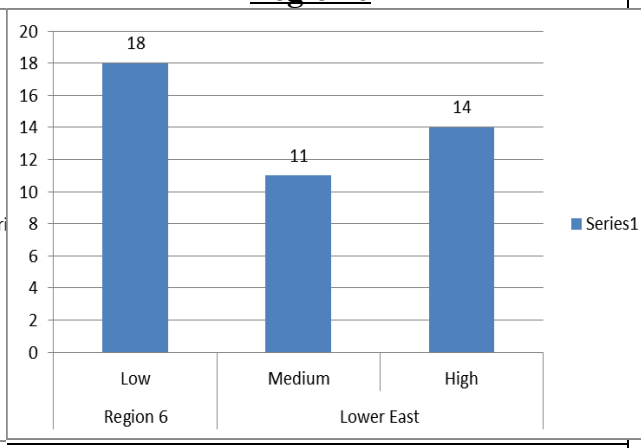
Figure 9. Overall Level of Readiness for All Dimensions for MFH Service Regions 1 through 10



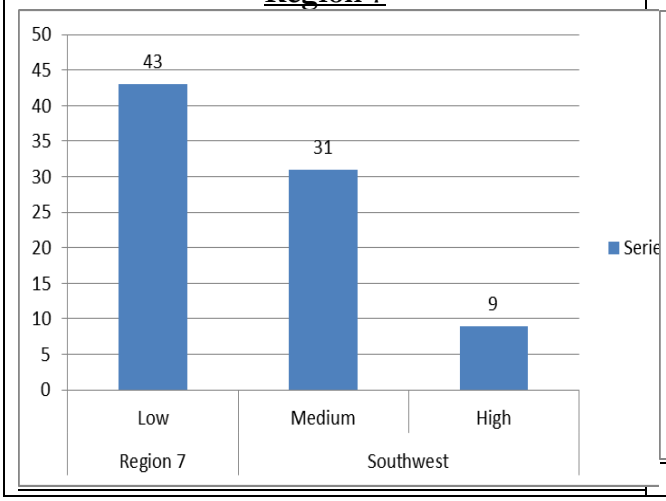
Region 5



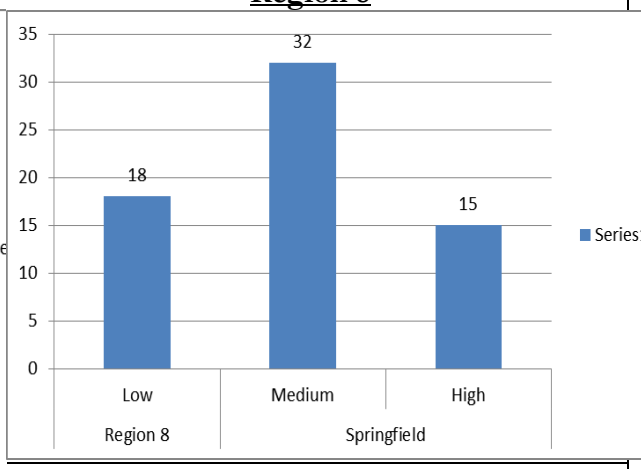
Region 6



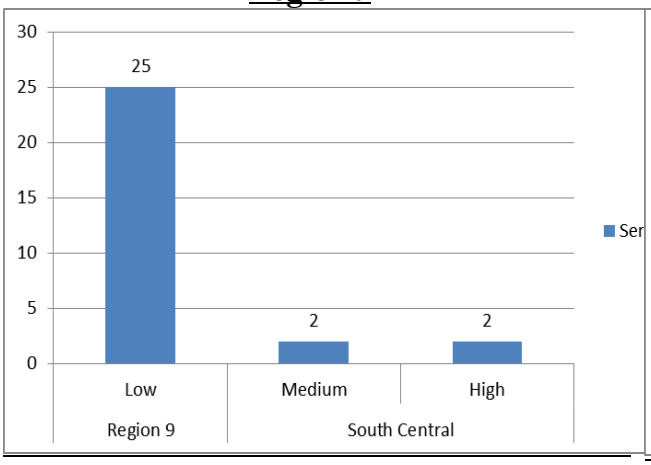
Region 7



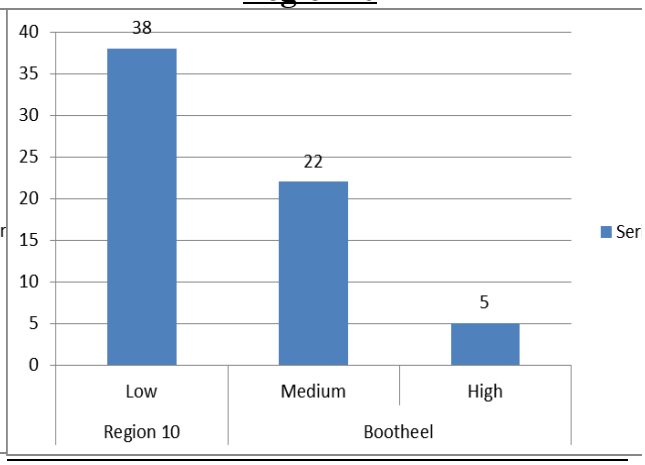
Region 8



Region 9



Region 10



In Appendix E, the raw scores for each region and separate dimensions are provided but overall themes are presented below. These findings were validated with participants at the regional forums and discussed to see if participants agreed with or questioned the community readiness scores with regards to infant mortality and related disparities. We found a very high degree of agreement between the scores from the key informants and survey respondents and the participants at the regional forums. The online survey also questioned about key leaders on this issue and initiatives in Missouri focused on women and infant health. A collection of those responses is located in Appendix F and G, respectively. Appendix H shows strategies to address funding approaches and technical assistance, contingent upon level of readiness.

Region 1: The majority of responses showed that region one had 'low readiness' to address infant mortality and related disparities. Community climate had the most pronounced variability in terms of low, medium, and high readiness.

Region 2: Leadership had overwhelmingly low readiness. Good distribution of scores between low to medium readiness.

Region 3: Existing community effort had low, medium, and high responses. Good distribution of scores between low to medium readiness.

Region 4: Community climate had overwhelmingly low readiness. Similar scores between low to medium readiness.

Region 5: Leadership and community climate had only low readiness scores. Majority of scores were low readiness.

Region 6: Community climate had mostly low readiness. High distribution of responses across low, medium, and high readiness.

Region 7: Existing community effort had low, medium, and high responses. Level of expertise and resources were only low and medium readiness. Majority of scores were low to medium readiness.

Region 8: Community climate had more medium readiness scores. Knowledge of infant mortality issues was scored mostly medium readiness. Majority of scores for medium readiness.

Region 9: Knowledge of infant mortality and level of expertise and resources were only low readiness. Majority of scores were low readiness.

Region 10: Community knowledge of efforts was only scored low readiness. Good distribution of scores from low to medium readiness.

Primary obstacles to addressing infant mortality in the community were also gathered and grouped into the following factors: knowledge and awareness, social environment, systems, and pre-existing conditions. Figure 10 illustrates the multi-dimensional nature and complex bio-psychosocial nature of working to improve the lives of women and children.

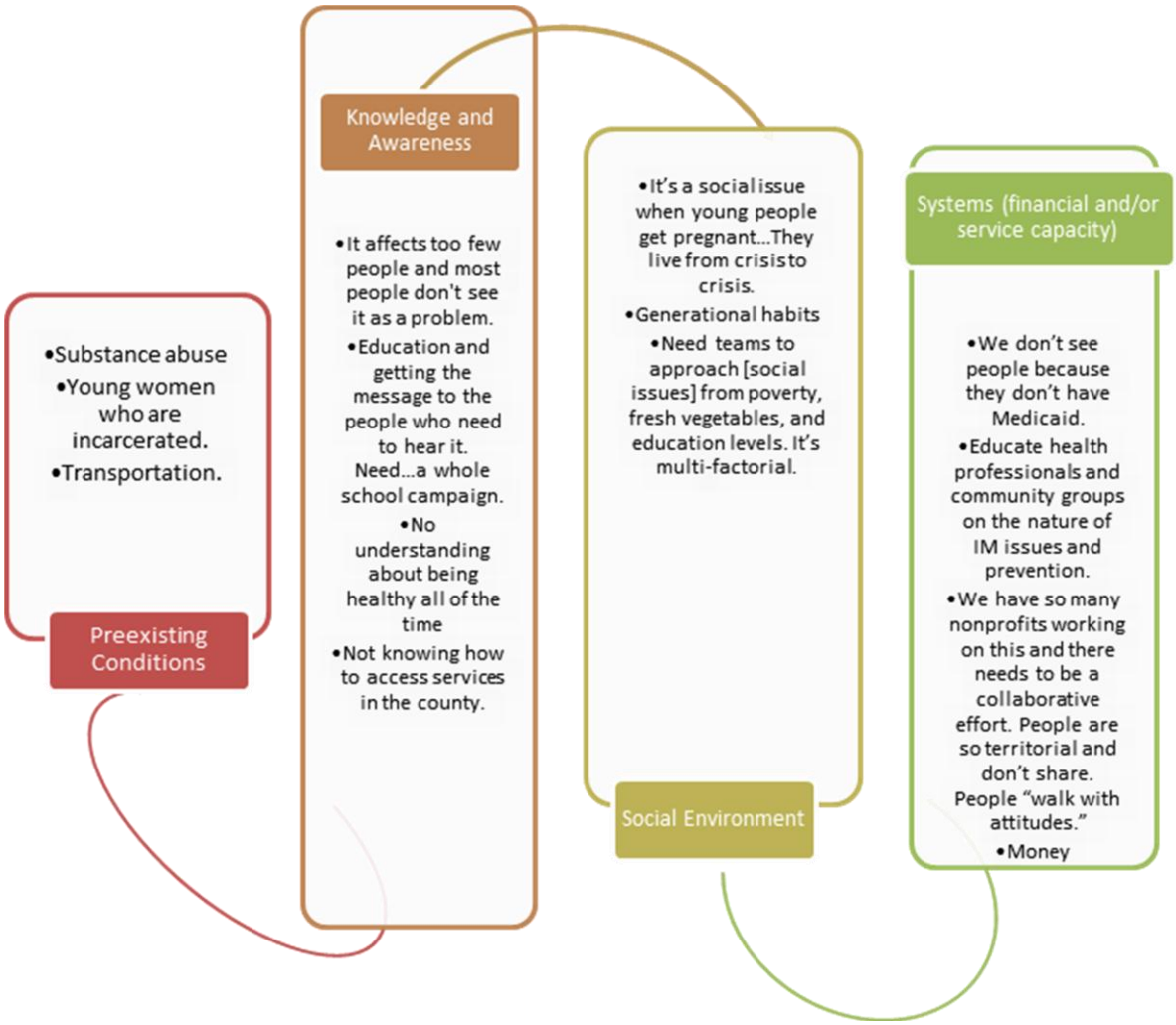


Figure 10

Comments by front line key informants provided additional insight into some regional differences in providing services for women and infant's across the state along with some issues that were common across all regions

Rural . Some comments from regions in the rural areas of the state confirmed previous concerns surrounding significant transportation issues, getting to and from locations where health services are located as well as the lack of healthcare providers in the rural areas

- *Transportation issues in rural areas*
- *Lack of specialized care availability*
- *…dying for psychiatrists in this area*
- *If you aren't close to I-70, nobody pays attention…*
- *Geographic isolation in northeast Missouri.*

However, some comments raise the question of how best we can meet perceptions of interference by some of our public health programs, particularly those focused on those providing parental support for our children.

- *Any efforts to help raise children are met with opposition.*
- *Suspicion by population of government involvement.*
- *People hang on tight to tradition. They want you to stay out of their business.*

Urban . Several comments from regions in urban areas are commonly known in the provision of healthcare services such as the challenges of navigating the large complex health systems which often results in fragmented services or in the perception that our health systems and health service agencies are non-cooperative.

- *There is a 'balkanization' of many of these issues.*
- *Urban area are disenfranchised*
- *Big complex systems in urban settings*
- *Fragmented services in St. Louis.*

A further concern expressed by those in the urban areas is the inability to provide care for the increasing numbers of high risk OB patients which is likely the result of the increased malpractice suits.

- *"As an urban community, of having a low number of physicians for a large number of high risk patients. OB and primary pediatric network is very thin. Thinner because of malpractice issues. There is less of a community echo when a baby dies…"*

Across all regions. Several comments appear to cross both urban and rural concerns. For example, poverty exists in both urban and rural populations

- *Concentration of poverty pockets*
- *African American women concentrated in poor neighborhoods*

The changing demographics of both our urban and rural areas resulting in the need to address both health literacy issues and increasing disagreements between cultures

- *Serving the Hispanic population*
- *Language barriers*
- *Low literacy levels as a risk factor.*
- *Violence*

The increasing numbers who do not have access to health insurance or accessibility to health services

- *Lack of Health insurance*
- *Part of a safety net that needs more help.*
- *Need to use the Title X agencies.*
- *…infrastructure is not there…*
- *We do not go to where the patient is.*

The consistent theme of continuing education for all and especially our youth.

- *It is important for us to educate our youth to be more aware of what impacts their health…we do not educate them on this stuff in school.*
- *Cautious talking about sex*

And finally, we heard several comments on the need for a broader approach to how the health systems view the provision of services for women as well as a need for a statewide Perinatal collaborative to address the infant mortality rates in Missouri.

- *The whole idea of life course theory and how important that is…and the long term effects. Not just what happens when you are pregnant.*
- *Build on education, infant mortality, disparities, and preconception care.*
- *No collaborative pediatric initiatives to reduce IM and focus specifically on it.*

Phase I C. Qualitative analysis including data from five regional forums

Methods

Regional Forums were held with key stakeholders in five regions. The purposes of the forums were to

- to present the results of data collected regarding the readiness of Missouri communities to address women and infant's health
- to obtain feedback from participants about results relevant to your community
- to engage in a discussion of solutions, capacity, trade-offs, and factors that affect implementation and sustainability of strategies in the participants' community and in the state of Missouri.

The day of the forum the team members reviewed the purpose of the forum and participants introduced themselves. The lead team member asked permission to record the conversation, as discussion would be transcribed. One team member was the observer and recorder during the meeting and noted strengths, weaknesses, opportunities, and threats. Four questions were posed to the participants at the end of the forum:

1. What interest do you have in improving women and babies' health in Missouri?
2. What programs and services exist in your region for women and infant's programs?
3. What is your readiness/capacity to use best practice strategies in Missouri?
4. What factors can we identify as a group that would affect implementation and sustainability of strategies in Missouri?

A power point helped guide the discussion and included the results of the online surveys and key informant interviews. Participants were asked to agree, disagree, or provide comments about their community's data.

Results

The forums yielded very rich discussion among 28 attendees (including 7 for Cape Girardeau, 1 at Kirksville, 5 at Jefferson City, 6 at Springfield, and 9 at St. Louis.

Susan Wilson from the Missouri primary Care Association stated,

> *The project has increased our awareness of the barriers that stand in the way of decreasing infant mortality and improving women's health outcomes. The Health Centers will benefit from the community readiness assessment performed by this group to determine how to move forward with addressing this vital issue in each individual community. We will be able to identify other non-profit agencies in our communities to partner with to streamline limited resource to benefit the community as a whole. Educating providers and their teams has made a positive impact and should be continued with new providers and nurses regarding women's health and infant mortality. –*

And Ericka Klinger, an Administrator from the Putnam County Health Department said,

> *I found great value in participating in the MFH Advancing Women and Infant's Health Forum. I was thankful to have the opportunity to be a voice as a representative of a rural, low-income county. I found the information sharing extremely important because there is such a large diversity of programming that occurs from county to county for women and infant health. I am excited about the development of a new grant program from the Foundation in this area, especially knowing that life expectancy rates for women in many Missouri counties are either stagnant or declining.- Ericka*

The forum discussions were audiotaped and reproduced by a professional transcriptionist. Transcribed notes of about 65 pages single spaced were reviewed for thematic content. Four main categories were used in the beginning, that is, Strength, Weaknesses, Opportunities, and Threats (SWOT). As review continued, additional themes were noted and coded making this an expanded SWOT technique. The presentation below represents the themes sorted from the narrative in Table 5 for across forums and Table 6, 7, 8, 9, and 10, respectively, for each regional forum.

Table 5. Across Forums Extended SWOT Analysis	
Strength/Best Practices	• Importance of building relationships with those who are served and knowing them over time. • Initiatives that do not create fear in women who need help could improve efforts to serve them. • The combination of policy and individual activities is more impactful. • The use of databases is important, but should not replace going into the community.
Weakness/System Problem	• Students today are not taught the basic skills they need to create good homes for their children. • The balance between direct services and prevention is difficult. • Policies that require you to be pregnant to qualify for Medicaid. • The lack of a "hub" or organizational structure contributes to the inability to build an infrastructure. Is there the workforce capacity to do what is necessary in MCH? • Funding models are too restrictive and narrow. • Transportation is a major barrier to getting care. • Old data comprises the ability of the workforce to plan and implement timely programs. • The delivery of care is sometimes too narrow and specific that professionals are not seeing other problems that contribute to an overall lack of health. Are their contingency plans built into job descriptions that help workers spot other potential health risks? • The ability to use the services is sometimes met with serious barriers (e.g., need Medicaid, no Medicaid doctor, paperwork, geographic residence). • All people are not getting the same services: those who have insurance and those who do not. • The importance of understanding class as a risk factor more so than race and the negative attitudes they face from legislators and medical providers about their situation.
Opportunity/Paradigm Shift	• Where policy change is not possible or likely, work with community businesses to make self-imposed rules to better their business. • Advocate for systems and policy level change. • The pipeline approach that includes from infant, early childhood, and all the way through life. • The struggle and balance between "prevention and treatment," "health and health services" will become a political battle. • Reframing the "risk factors" into class, health literacy, reading ability instead of the negative race.
User Characteristics	• Women's wisdom is not getting passed down in our culture. • Health providers understand of the reasons behind drug abuse (e.g., stress reliever) and how that should inform intervention efforts. • So much of the benefit of the prenatal period focus is that environmental factors are so hard to move once the babies are here. • Second class citizen treatment if you have no health insurance or are poor.
Operating Framework in MCH Pyramid of Services	• The entire MCH Pyramid of Services is affected by the census. • The lack of prevention, equity, disparities, and positive connotation is noticeable in the pyramid. • The administrators over the programs have a real disconnect about what needs to be done and how it's to be done. This is not how I see my community. Should the pyramid be turned upside down?
Communication	• Infant mortality is a difficult and confusing message to community. Preterm birth rate may yield a better connection between behaviors and poor birth outcomes. • Programs must be developed by those who have the experience or have seen it up close. • The delivery of WIC programs (education) is seen as a barrier to getting the subsidy. • Evidence based practices and research are important, but should not be placed before relationships between community health workers and the people they serve. • The health workforce must learn the best communication methods for younger patients.

Table 6. Extended SWOT Results for Jefferson City Forum	
Strength/Best Practices	• FQHCs were largely driven by the high rates in infant mortality. This has gotten buried deeper as chronic diseases have exploded. • Perinatal outreach from Kansas City and St. Louis divided up into regions. • U.S. Public Health Service Prevention Services Task Force recommended set of screenings. • Only about 35% of women return for their 6-week checkup. • The Missouri Medicaid Home Initiative is focused on chronic diseases, but should be for everyone. • Evidence based home visitation
Weakness/System Problem	• I find the counties that have gotten away from direct services; I don't know how they can… • It's a constant dilemma that the health centers are focused on prevention, but when the person is sitting at the front desk my schedule is going to fill-up with people who need care for something that could have been prevented. I do my best to inject prevention, but it's a constant tension. • The federal level is much more interested in prevention than they are at the state level. • Term limits has hurt the whole prevention focus. These are long term problems and they are only there for 6 years. • 50% of our births are Medicaid. Ninety days after they deliver, they lose the Medicaid.
Opportunity/Paradigm Shift	• Do you think that there would be some room for facilitating some relationships between FQHCs and health departments? • Someone very high up in the health department was in a meeting with the legislature and was asked the question, "what does the health department have to do with smoking?" • The whole issue of prevention versus services is going to end as a big political issue and the politics is really what controls it because it's the funding. • The Missouri Primary Care Health Home Initiative with MO Health Net Division states you have to have 2 chronic illnesses. We talked them into included diabetes by itself because it is a risk factor for other chronic diseases. • People in general are interested, but how do you get them into action.
User Characteristics	• We see a lot of Mennonite women. Teen pregnancy is a relatively new phenomenon.
Communication	• We have some needs assessments, but I don't think they are true needs assessments. Health departments…are going to the state health department and pulling down their profiles and so to me they're not. We haven't gone into the community and asked them what their needs are. • Women have historically known that if you don't have Medicaid you can't go to St. Mary's. That's been the community message. People still do not believe you can now go. • Most people hear about children drowning. It's not on the news this baby died at birth.

Table 7. Extended SWOT Results for Kirksville	
Strength/Best Practices	• We are focusing on smoking, physical activity, and nutrition as they relate to chronic disease.
Weakness/System Problem	• Funding is too specific and narrow.
Opportunity/Paradigm Shift	• The health of our communities is pretty dependent upon the health of our moms or the women. The health of the family is really what drives it all. • Sometimes people get too focused on just doing a program. It needs to be more of a holistic approach, individual activities, policy and environmental and system changes. It's when you combine all these together that you see the impact.

Table 8. Extended SWOT Results for Cape Girardeau	
Strength/Best Practices	• Region G 501-c -3 status to obtain better funding. • Local health departments no longer do a SWOT analysis. They now do a SWON with needs. • I had a teen pregnancy prevention program in all four schools when my MCH focus was on first trimester and adequate prenatal care. Then MCH changed to tobacco, obesity, and injury. I had to give it up and it's started to climb back up again. Funding drives it. You got a program and it's going good and then the funding is gone. • Caring Communities [was awesome] and basically all the same people going to the same meetings and nothing was getting done. • Triumph Campaign was a program for African-American community to reduce infant mortality rate, which was worse than if they were born in Cuba.
Weakness/System Problem	• Data are always old. It floors me that we collect all of this data and when I get on the DHSS I can't get anything until 2009 and we're in 2011 and that's like two years old. • Our women have to travel between 70 to 95 miles just to see an OBGYN. Many don't make it because they don't have transportation. • I think one of the biggest things is being rural you have a vast land mass and you don't have a transit system. • It's very, very hard in the rural areas because you can't look just at one particular area and say we have to focus on this when you don't have the spokes in the wheel to help support that center. • No mental health resources in our region at all. Mental health can affect obesity, smoking, and teen pregnancy. • We have the lowest cigarette tax in the nation. • We have one grocery store in 811 square miles. • They know infant mortality is a problem, but lack of providers, pediatricians, nurse practitioners – the expertise is not there. • We don't have mammograms down here in this rural area. We called and asked if they would bring a van down, but they said they didn't want the vans on our rural roads. • If you don't live close to I-70, no one pays attention. • There is a lack of Medicaid providers.
Opportunity/Paradigm Shift	• I don't think of these problems in terms of infant mortality, but more preterm birth rate. • Everything is streamed to general mental health. There's nobody with any specialty in addictions. We have a detox center, but that's a crisis center. They stay for 48 hours and then they are let go; no sustainability. • Right now our schools in Missouri are not allowed to discuss human reproduction and STDs.

	Missouri is abstinence only state. • I've run into the mentality of people that have negative attitudes about the people who have nothing. Their considered lazy, unworthy. • I don't think we understand the effect that poverty has on health outcomes.
User Characteristics	• It's a status thing for these young girls to get pregnant by an older man like 30 and 40 years. • Drug use in Region 10. • Huge stigma for mental health resources. • Our clients tell us that drug use is a "stress reliever" for them, instead of going for a walk or exercising. • 44% of the women in Reynolds County who are pregnant smoke. • In my area, that's [Children's Division] is a dirty word. They're going to come in and take my children away. You have no idea how many people turn me down for prenatal case management because they think I have the authority to come into their house and take their children.
Operating Framework in MCH Pyramid of Services	• The MCH Framework is triangle and I don't see my community as a triangle. The title V money is supposed to be used on needs assessments, evaluations, planning, policy development, coordination, quality assurance. Then the next chunk of money is supposed to go to newborn screening, lead screening, immunizations, SIDS, etc. Maybe it should be turned upside down. • MDHSS gives locals six areas in which to focus their work and funding should be directed.
Communication	• We can create the best program in the world, but if it's thought up by a bunch of folks who haven't really experienced it or see it close up. • There is less of a community echo when a baby dies.

Table 9. Extended SWOT Results for Springfield Forum

Strength/Best Practices	• For there to be a gate keeper who "looks like me" [so they will come in]. • The Springfield schools try to get all of the pregnant and parenting teens in one school or two schools so they can combine resources like nurseries and education. • Nurses for Newborns do wonderful work with their home visitation model. • Carol Jones Recovery Center, where women can go with their children to get drug treatment. • St. John's satellite clinic helps them get care where they had nothing before. • Region G coordinating all of their WIC services. This is the infrastructure that is smarter financially. It's a model to show how rural areas can work. • They do not offer home economics classes anymore; not learning how to cook or basic skill sets. • It goes back to this whole wisdom of women not getting passed down.
Weakness/System Problem	• The Freedom from Smoking was the best practice program, but had to be dropped because it was too expensive. The nurses felt like you had a captive audience in the hospital. • You have to be pregnant to qualify for Medicaid. There are so many residency and income guidelines. • The whole region 9 was no man's land. No organizational structure to help them out. • No transportation in city or rural areas to receive care. • Pediatric Specialists are starting to limit their Medicaid practice.
Opportunity/Paradigm Shift	• When you get out in the county the majority of the businesses have self-imposed smoking bans for the betterment of their businesses.
User Characteristics	• The Hispanic population has a lot of premature births and a lot of co-sleeping. They don't have beds for the baby specifically.

	• We have a huge Mennonite population. If you were to pull out the data for Webster County and you looked at inadequate, late entry into prenatal care, birth spacing, births to less than 12 years of education, they would be very high, but not necessarily problematic. It's a cultural norm. You look at the birth outcomes, their fine. There's not a direct correlation between what we consider risk factors in that population. These are true risk factors more in the urban population. • The combination of wisdom and community support is missing from our populations. • I'm seeing a lot of depression in Hispanics.
Operating Framework in MCH Pyramid of Services	• If you were allowed to do anything you wanted with your MCH money, would it look like this pyramid? • You could have more impact if you try to work with policy so you can build the infrastructure core and maintain and then the other will fall into place. • The state has a contract to local health departments to do core functions and part of that is needs assessment, monitoring and that's been pared down. All across the pyramid there's reduced dollars. • That's public health as a whole [getting reduced funding] and the MCH contract gets filtered through the Title V, it's based on the maternal child population in that area. So, if you have people accessing services and not accounted for then the need is still there, but the dollars may go to a different County. • In the fall [October 2012] with our new MCH contracts…adverse birth outcomes will be added.
Communication	• I've never been exposed to the Hispanic culture and it's different. • Probably 5 years ago we hit peak on education [about Meth and drug use]. I don't much about prevention, but sending the mom somewhere when she tests positive. There is no adequate treatment for women and children. They think taking the benefits away if she tests positive for drugs will only affect her. They're going to pull back in their caves and say don't mess with my kids. • We have a problem because we have two NICU and the Children's Miracle Network every summer and the average Joe on the street would say there's no problem here.

Table 10. Extended SWOT Results for St. Louis Forum	
Strength/Best Practices	• Better Family Life monthly meetings • When I was at St. Louis County Health Department, I had a geographic area. I knew every family in my community, policy, fire, DFS worker. • We almost use that as a screener…women who have the most difficulty in stopping smoking are the ones with mental health issues.
Weakness/System Problem	• …that agency may be able to help them, but they have to go through this long line of paperwork and they need immediate help…it just seems like it becomes more of a hassle… • I've noticed over the years that a baby gets dismissed with 3 different appointments on 3 different days, but the mother has 4 other children and it's two bus transfers… • Do we have the workforce to do the things in MCH that need to be done? • We get the mom with no electricity, no formula, and a public health nurse twice a day. Baby's starving, no electricity, but her job is to dress the wound. We have people with their protocol and they know which part of the elephant to look at. • In regards to the city/county line…you might have a really good program, but because I live in the city or county, I can't go. • It's all about how we administer and fund the work. Funding has to be flexible. • MCH is regional, but that's too big. Each county is different. Funding needs to be more flexible and transient. • Mental health is nonexistent in St. Louis. • The conversation needs to be about the consumer…and [let] there be a consciousness about the process so that consumers are engaged. • People still aren't getting prenatal care and no one is putting that consumer in the spotlight. We gave them transportation, but they put all these road blocks to use it. • We are running two different health care systems…one for those who have an insurance card and one for those who don't. • It's really hard to sort out class and race issues; there both really critical. • I've seen legislators I've worked on the Governor's Commission to Reform Missouri State Government and I've had a Republican legislator, a Senator tell me, I want you to be sure that all those people that work, that live at poverty level just to get something for nothing, get nothing.
Opportunity/Paradigm Shift	• The possibilities for change are most dramatic at this moment. • We (DHSS) have changed some of the contracts that we offer LHD. • We need to be advocating for systems and policy level change. • We are trying to "build the pipeline" from infant, early childhood and all the way through the life continuum…and think of other ways we can think about systems and policy change. • We need to be talking health, not health services. • Competing agencies don't work together. • When we talk about preconception…they don't get eligible until they are pregnant. • I think we struggle with things getting disconnected… [baby obituaries]. • I wonder if we can reframe it away from disparities and into more of a health literacy issue…we're so racially polarized. Is it a poverty issue? • If you look at race as a risk factor that's something that's negative and we don't want to…remove. • A lot of the disparities come from whether you have an insurance card…I got so darn tired you're a second class citizen because you don't have a card.

User Characteristics	• Many of them can't read. • Low income people move sometimes 8 ties per year. • Grandmothers are raising them and also the person with the most influence. • Provide services that look like "me." • Environmental factors are very intricate and "hard to move" once babies are [here], so much is right about the prenatal period…
Operating Framework in MCH Pyramid of Services	• There's nothing really about prevention in here [MCH Framework], nothing about social determinants and community environmental issues that affect women and children. • Your direct practice, the people doing direct practice versus the people that are over the institution have a disconnect in regards to what's needed and how the stuff is supposed to be done [when talking about the MCH Pyramid] • …that agency may be able to help them, but they have to go through this long line of paperwork and they need immediate help…it just seems like it becomes more of a hassle… • I've noticed over the years that a baby gets dismissed with 3 different appointments on 3 different days, but the mother has 4 other children and it's two bus transfers… • Do we have the workforce to do the things in MCH that need to be done? • Equity and disparities is really missing from the pyramid [MCH] in the way of infrastructure of building and services. • Maternal mental health and social isolate should be up there [MCH Pyramid] and [affect] health outcomes.
Communication	• WIC services are losing clients, but there birth rates are not going down…Clients say they don't have time to sit there and listen to the education that WIC requires them to receive in order to get their subsidy. • I love research and evidenced-based practice and so on and so on, but it comes down to relationships and am I going to trust you. • This is my 10th time seeing this [MCH] Pyramid and every time my eye goes right to the word 'enabling' because it's such a negative term. • Folks don't think the same way they once did…society changes, but we still stick to the same ole…same ole • I've started to figure out how you to talk to the clients in the past is not working with this generation…it's a whole new thought process.

Phase I D. Quantitative Analysis including formation of the ARC Database

Methods

A geographical maps of assets and gaps based upon database searches was created in ArcGIS format, considering policy, community, organization, and individual level indicators across the lifespan. The maps include an identification of all assets and geographic areas needing special focus. Using a color-coded interval metric (quintiles), each map identifies counties that may be at the lowest quintile (identified as needing attention) or 'gap' versus being at the highest quintile, therefore an 'asset' (does not need attention at this time) for that county. Each map contains a short description of how to read the metric. Finally, we included a comparison between Missouri and National statistics for each Maternal Child Health indicator to provide a picture of how these indicators in Missouri compare to the nation as a whole.

Our search of datasets included, Centers for Disease Control and Prevention (BRFSS), Missouri Department of Health & Senior Services (MICA), Annie E. Casey Foundation (KidsCount) and the Robert Wood Johnson Foundation (County Health Rankings). We created six broad categories of health indicators that included, socioeconomic health, women's health, infant health, children's health, adolescent female health and adult female health. Within each of these categories, we selected a number of key variables and created the Maternal Child Health Key Indicator Database.

Results

One of the challenges in the summary of this secondary data across the regions was the difference in types of data and years. We have created a summary chart (Final Indicator Data Dictionary) located in Appendix I that lists each indicator with type of indicator (percent, number or rate) as well as the source for that indicator and year of the data. The indicator type created some challenge in how to present the severity levels of indicators by region while also highlighting best and worst counties with each region. Thus, we chose to use a consistent interval metric (quintiles) for each region since the data are highly skewed within some counties for certain regions thus creating one legend for the state as a whole, rather than for each region. Quintiles are less sensitive to skewed data and retain consistent meaning for the reader from region to region. These maps allow us to recommend where a community may have gaps in education and therefore funds for health education are needed or where a community needs additional resources to address a particular issue such as teen pregnancy.

We were unable to create a map of infant mortality rates by county, due to small cell sizes and instability of that data. However, when we compiled regional data, infant mortality could be compiled for region 4, the results were striking, with 5.5 deaths of white babies, per 1,000 births, before their first birthday and almost three times that amount (14.6 Black infant mortality rate) for Black infants (Figure 11). While Region 4 accounted for the highest percentage of African-American births (82.9%) in MFH catchment area, Region 10 accounted for the second highest percentage at (5.6%).

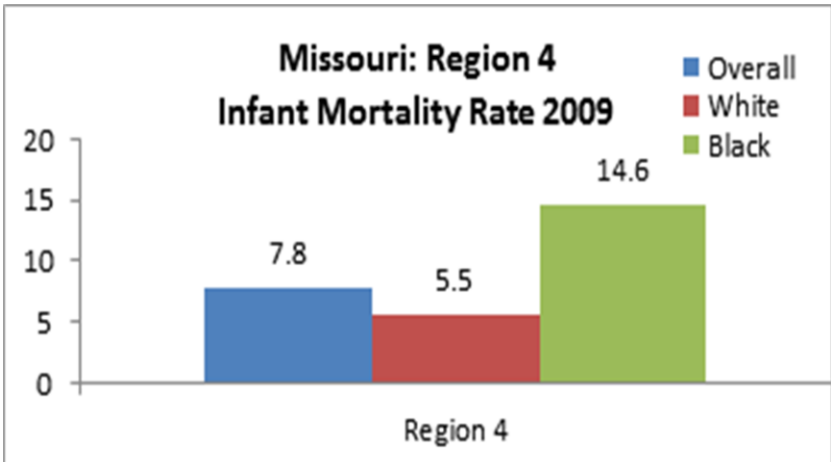


Figure 11

A summary of the maps is provided below.

SES Health

Percent with No Health Care Coverage_2007: *Region 2* had the highest number of counties with the highest rates of no health care compared with *Region 10* with the highest number of counties with the lowest rates of no health care. Counties with the highest number of adults with no healthcare occur in both Schuyler County (24%) in *Region 2* and Sullivan County (24%) in *Region 1* which is considerably higher than the national average of 18% versus St. Charles County having the lowest number of adults with no healthcare at 9%. The Healthy People 2020 objectives are set for 100% of adults who will HAVE healthcare coverage by 2020 suggesting there is room for improvement.

Percent of Population at or Below the Federal Poverty Level_2008: With the exception of St. Louis City, *Region 4* had the lowest number of counties with populations at or below the federal poverty level in 2008. In comparison to *Region 9* which had the highest number of counties with populations at or below the federal poverty level. Pemiscot County in Region 10 has the highest number of population at or below the federal poverty level at 31.7% which is considerably higher than the national average of 14.3%, compared to St. Charles County in Region 4 at 5.0%.

Percent of Annual High School Dropouts_2008: Regions 4 and 7 reported the highest number of counties with the highest number of high school dropouts as compared to Region 9 reporting the highest number of counties with the lowest number of high school dropouts. There is considerable variability from region to region, with every region having at least one county in the lowest quintile of education, except those counties in region 1. In 2008, the county with the lowest number of high school dropouts is Shannon County with 0.4% compared to St. Louis City with the highest number of high school dropouts at 22.2% which is considerably higher than the national average of 6%. The HP2020 objectives are set for 97.9% of students who complete their high school education, suggesting there is room for improvement.

Unemployment Rate_2009: In 2009, Region 3 reported the highest number or counties with the lowest unemployment rate compared to Region 10 with the highest number of counties with the highest unemployment rates. Boone and Cole Counties in Region 4 reported the lowest unemployment rates at 4% compared to Hickory County in Region 8 and Washington County in Region 6 reporting the highest unemployment rate at 10% which is slightly higher than the national average which is currently at 9.3%.

Access to Healthy Foods_2008: Region 4 reported the highest number of counties with high rates of healthy food outlets as compared to Regions 1, 3, 9 and 10 reporting no counties with high rates of healthy food outlets. Madison County in Region 6 reported 100% of zip codes having access to a healthy food outlet compared to Butler County in Region 10 which only had 11% of zip codes having access to a healthy food outlet. The national goal for access to healthy foods is set in census tracts with the objective of having 72% of all census tracts with a healthy food retailer within a half mile of the boundaries of the tract.

Women's Health

Women Receiving Inadequate Prenatal Care_2009: Region 10 had the highest number of counties with the highest rates of inadequate prenatal care compared to Region 4 with the highest number of counties with the lowest rates of inadequate prenatal care with the exception St. Louis City. Scotland County in Region 2 had the highest rate of inadequate prenatal care at 40% which is severely worse in comparison to the national percent of 8.4% of all live births, compared to Perry County in Region 6 at 3.9%. Clearly one can see a significant contrast between St. Louis City and all surrounding counties as well as pronounced high rates in the Bootheel of Missouri.

Reported Maternal Smoking During pregnancy_2009: Regions 9 and 10 have the highest rates of smoking during pregnancy compared to Region 4 which report the lowest rates of smoking during pregnancy. Iron County in Region 6 had the highest rate of maternal smoking reported at 40.8% compared to Scotland County in Region 2 which had the lowest rates of smoking at 6.2%. The HP2020 objective is to increase smoking cessation during pregnancy to 30% and to increase abstinence from cigarettes during pregnancy to 98.6% suggesting room for improvement.

Reported Maternal Drinking During Pregnancy_2009: Region 3 has the highest number of counties with highest maternal drinking during pregnancy compared to Regions 2 and 6 with the lowest number of counties with maternal drinking during pregnancy. Audrain County in Region 3 had the highest rate of maternal drinking at 33.4 compared to several counties across the state that have low rates at 0%. These low rates need to be considered in light of the high degree of social desirability to not drink during pregnancy which may be a factor in the number of counties with 0% rates. The HP2020 objective is to increase abstinence from alcohol use during pregnancy to 98.3% suggesting room for improvement.

Infant Health

Premature Births_2004-2008: Region 10 has the highest number of counties with the highest rates of premature births compared to Region 4 which has the highest number of counties with the

lowest rates of premature births. Pemiscot County in Region 10 has the highest rate of premature births at 19.4 per 1000 live births compared to Knox County in Region 2 at 9.8 per 1000 live births.

Low Birth Weight_2001-2007: Region 10 has the highest number of counties with the highest rates of low birth babies compared to Region 8 which has the highest number of counties with the lowest rates of low birth weight babies. Within regions, St. Louis City in Region 4 has the highest number of low birthweight babies born at 11.8% which is considerably higher than the national average of 8.2% compared to Scotland County in Region 2 with a rate of 5% suggesting there is room for improvement.

Public Clinic Immunizations_2005: Regions 7, 9 and 10 had the highest number of counties with the lowest percentages of two-year-olds immunized as compared to the remainder of the regions in the state. Morgan County in Region 5 had the highest percentage (99%) of two-year olds immunized compared to Wright County in Region 9 at 40.8% compared to the national average of 75.7% suggesting there is room for improvement.

Child Health

Asthma ER visits_2008: Region 4 had the highest number of counties with the highest rates of asthma-related ER visits compared to Region 8 which had the lowest number of counties with asthma-related ER visits. St. Louis City in Region 4 has the highest rates for asthma-related ER visits at 23.2 per 1000 ER visits compared to 0.0 per 1000 ER visits in Putnam (Region 1) and Schuyler (Region 2) counties.

Child Abuse and Neglect_2008: Region 4 had the highest number of counties with the highest rates of CAN incidents reports compared to Region 2 having the lowest number of counties with high rates of CAN incidents. St. Louis County in Region 4 reported 3,834 CAN incidents compared to Putnam County in Region 1 which reported 35 CAN incidents. Bear in mind the differences in population density between these two counties.

Adolescent Female Health

Teen Pregnancy Rate_2001-2007: Region 10 reported the highest number of counties with the highest teen birth rates compared to Region 2 which reported the highest number of counties with the lowest teen birth rates. Pemiscot County in Region 10 reported 114 teen births per 1000 births which is significantly higher than the national average of 41.5 per 1000, as compared to 19 teen births per 100 births reported in Scotland County in Region 2 suggesting there is room for improvement.

STDs-Chlamydia_2008: Region 3 reported the highest number of counties with the highest rates of Chlamydia per 100,000 compared to Region 1 with the highest number of counties with the lowest rates of Chlamydia per 100,000. St. Louis City in Region 4 reported the highest number of Chlamydia incidents (1265 per 100,000) which is significantly higher than the national average of 409.2 per 100,000 compared to Scott County in Region 10 reporting 0 incidents suggesting there is room for improvement.

Adult Female Health

Overweight/obesity_2008: Region 6 reported the highest number of counties with the highest weighted percentage of individuals considered overweight or obese compared to Region 8 reporting the highest number of counties with the lowest weighted percentage of individuals considered overweight or obese. In general, about 30% of Missourians across the state are at risk for being considered overweight or obese. Several counties are the upper 32% of the range which include: Iron, Pemiscot, Scott, St. Louis City and Washington counties and several counties are the lower 28% of the range which include: Christian, St. Louis County, St. Charles, and Morgan. The national average of those considered overweight or obese is currently 63.8% in 2010 suggesting that Missouri is at less risk compared to the rest of the country.

Sedentary Lifestyle_2007: Region 10 reported the highest number of counties with the highest weighted percent of adults with a sedentary lifestyle compared to Region 4 reporting the highest number of counties with the lowest weighted percent of adults with a sedentary lifestyle. Boone County in Region 3 reported the lowest weighted percent of adults (18.8%) with a sedentary lifestyle compared to Pemiscot County in Region 10 reporting the highest weighted percent of adults (37.8%) with a sedentary lifestyle which is considerably higher than national averages of 25.4% of all adults suggesting there is room for improvement.

Smoking/Tobacco Use_2007: Region 10 reported the highest number of counties with the highest weighted percentage of the population age 18 and older who are currently smoking or use tobacco compared to Region 2 reporting the highest number of counties with the lowest weighted percentage of the population age 18 and older currently smoking or using tobacco. Boone County in Region 3 reported the lowest weighted percentage (18.0%) of current smoker and tobacco users compared to Taney County in Region 8 at 36.5% which is considerably higher than the national average of 17.2% suggesting there is room for improvement.

Binge Drinking_2003-2009: Region 3 reported the highest number of counties with none of the population reporting heavy or binge drinking episodes compared to Region 4 reporting the highest number of counties with the highest rates of the population reporting heavy or binge drinking. Several counties throughout the state reported too low to report episodes of heavy or binge drinking and include: Sullivan County in Region 1, Shelby County in Region 2, Cooper, Gasconade, Howard, Montgomery and Osage in Region 3, Crawford and Maries counties in Region 5, Reynolds County in Region 6, Cedar and Dade counties in Region 7, Hickory and Webster counties in Region 8, Douglas and Oregon counties in Region 9 and Carter and Ripley counties in Region 10. Conversely, Monroe County in Region 2 and Cole County in Region 3 had the highest rates of binge drinking at 22.0% which is considerably higher than the national average of 15.7% suggesting there is room for improvement.

In review of the results of the geographical maps of assets and gaps, two regions are identified as having severe gaps in services.

a. Region 10 which includes the Bootheel of Missouri has clear deficits in the areas of the highest unemployment rates, inadequate prenatal care, maternal smoking during pregnancy, premature births, low birth weight babies, high teen birth rates, high rates of sedentary lifestyles, high rates of current smoking and tobacco use, and limited access to healthy foods. On the flip side however, they had the lowest rates of percentage of the population

with no health care coverage and public clinic immunizations. Within this region, Pemiscot County is most affected by these gaps and assets.

b. Region 4 which includes the St. Louis Metropolitan area also exhibited clear deficits in the areas of having the highest percentage of the population at or below the Federal poverty income level, the highest annual number of high school dropouts, highest number of asthma ER visits, highest number of child abuse and neglect incidents and highest rate of binge drinking overall. In contrast, Region 4 was highest for having access to healthy foods along with the fewest number of individuals leading sedentary lifestyles, and having the lowest number of women receiving inadequate prenatal care, lowest number of premature births, and lowest number of women reporting smoking during pregnancy. Within this region, St. Louis City is most affected by these gaps and assets.

Phase I E. Analysis of Factors for Sustainability and Growth

Methods

Three Models are cited consistently in the literature as conceptual frameworks for program sustainability and growth. Only the model developed by Shediac-Rizkallah and Bone (1998) is consistently used to measure sustainability of health intervention programs.

This framework identifies the following 3 groups of factors as potential influences on sustainability:

1. *Project design and implementation factors:* These include inclusion of community stakeholders in the design process, effectiveness and visibility of the program, duration, funding, type and training requirements of the project
2. *Factors within the organizational setting:* Factors here include institutional strength and maturity, alignment of program goals with that of the organization, ability of the program to integrate with existing programs and services and program leadership or champion
3. *Factors in the broader community environment:* These include the stability and favorability of external political and socioeconomic factors such as market forces impinging on the program, support from community leaders and the community at-large, funding availability and other resources as inputs into the program

The framework identifies three types of measures of program sustainability:

1. *Maintenance of health benefits achieved through the program*
2. *Institutionalization of a program within an organization*
3. *Capacity of the community to develop and deliver the program*

Scheirer (2005) employed this framework to review 19 empirical studies on the sustainability of health programs in Canada and the United States. Cross-study analysis showed consistent support for 5 factors influencing sustainability:

1. The ability of a program to be modified over time
2. The presence of a program champion

3. The program is aligned with the organization's mission and procedures
4. Benefits to clients and staff members are readily perceived
5. Stakeholders and other organizations provide support

The Shediac-Rizkallah and Bone Framework Model is depicted in Figure 12 below.

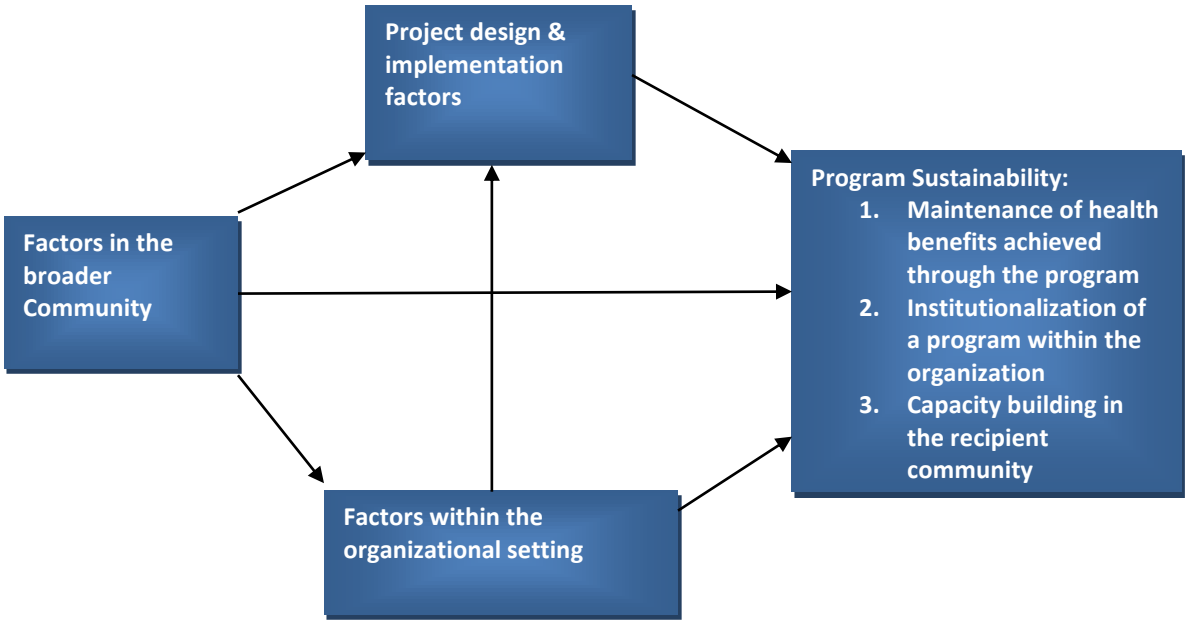


Figure 11

An analysis of sustainability and growth factors was conducted in order to appraise the potential for sustainability of programs and successful strategies within the communities served by the Foundation. In order to assess the potential of communities to sustain and grow successful programs community sustainability factors and program sustainability factors were used for the analysis. A matrix of the community sustainability factors of politics and policy, community engagement and funding across the five factors influencing health program sustainability identified by Scheirer (2005) was employed to identify facilitators and barriers to sustainability and growth. The volume and complexity of the data warranted two matrices. The first matrix (Table 11) identifies threats to sustainability and growth and the second (Table 12) identifies strengths to support sustainability and growth. The data populating the matrices are from the key informant interviews, community readiness analysis and the regional forums.

Results:

Infant mortality and related disparity needs vary widely by region, county and even at the community level within the Missouri Foundation for Health service areas. While it is important to identify and

engage in best-practice strategies to reduce infant mortality, communities struggle with their ability to sustain and grow successful programs. Many best practice strategies and programs are unable to be sustained over time and fail to grow because the threats to sustainability outweigh sustainability strengths. More specifically many best practice strategies and programs fail due to lack of political will, lack of funding or lack of community engagement and advocacy around the issue or some combination of these 3 factors. Many best practice strategies do not fit into community-specific context and norms to begin with because their inception is far from the point of implementation either geographically or ideologically.

Political and Policy Factors Affecting Sustainability:

Title V Funding: Current MCH policy is largely driven by Federal Title V funds (part of the Social Security Act) which authorize annual financial awards to all states in the form of Maternal and Child Health Block Grants. The Title V Block Grant Program requires that every $4 of federal Title V money must be matched by at least $3 of State and local money (in-kind matching is permitted). The program also requires that a minimum of 30% of federal Block Grant funds be used to support services for Children with Special Health Care Needs and that a minimum of 30% of federal funds be used to provide preventive and primary care services for children. The States may spend no more than 10% of federal Title V funds on administrative costs. These requirements create a program focus which is prescriptive and narrow in scope. The requirements allow for flexibility in program development, but priorities are set by entities that are external to the communities and geographically distant from the point of service. This creates threats to program sustainability in that program modification can occur only if it falls within the guidelines of Title V and creates a program alignment at the Federal and state level but not necessarily with organizations within the communities themselves. This creates frustration at the community level when funding for successful programs is ended due to changing priorities at the Federal or state level.

While Title V funds can be used to address system issues for MCH services such as infrastructure, they do not address the broader social determinants of health. This failure to address social determinants of health creates a silo for Title V services and a potential for lack of coordination with social service agencies and other entities that address social determinants of health. This gap in coordination of services between social services and Title V threatens program sustainability in that broader stakeholders do not see themselves as integral to the success of MCH best-practices. MCH providers in our forums verbalize that the community at large does not understand infant mortality and its associated risk factors.

Medicaid: Another critical policy driver in maternal and child health is Medicaid. Medicaid for pregnant women is limited to pregnancy and therefore does not allow for preconception health care. Current Medicaid policy for women does not support the current IOM recommendations for women's health or the ACOG recommendations for preconception health as women are not eligible until they become pregnant and lose eligibility 60 days after delivery of their child. With this episodic program of care, it is difficult for women's health to be seen on a continuum. This focus on episodic care threatens women's health programs in that benefits to women for preventive care are not readily perceived and since they are not supported in policy, reinforce that behaviors such as well woman care, contraception for appropriate spacing of pregnancies, immunizations and screening and counseling for high risk behaviors are not important. Key informant and regional

forum participants talked about the constant threat to preventive care due to the overwhelming need for acute care and chronic disease management in our communities. Participants expressed repeated concerns and some degree of frustration at the continual erosion of preventive services due to policy decisions that reduce funding to successful prevention programs.

Political Will and Funding for Prevention: Dedicating revenue to prevention efforts such as well woman exams, smoking cessation and obesity prevention are in competition for scarce resources with acute care and chronic disease management programs. This funding problem is exacerbated by the creation of term limits for legislators which has hindered their ability to understand the root causes of illness and the program funding that it would take to prevent complex health issues such as infant mortality. Additionally there is a stigma associated with poverty and lack of medical insurance that creates significant barriers to accessing care and there is question about the quality of care delivered to those without insurance or those on Medicaid.

MCH Expertise and Unique Efforts within Communities: In spite of the very real and apparent threats to MCH and women's health programming, this climate has created unique opportunities for collaboration and sharing of resources to meet needs for MCH. State and local health departments and community-wide coalitions have developed considerable expertise in MCH and are seen as leaders in the communities in which they serve. County and local public health agency personnel have considerable expertise conducting needs assessments and SWOT analyses and articulating the needs of their jurisdictions. This is the direct result of MCH infrastructure-building activities on the part of Title V which requires MCH focused needs assessment within each county by requiring a SWON analysis for Title V, MCH Block Grant Funding.

Community Engagement Factors Affecting Sustainability:

MCH Workforce: No assessment has been conducted specific to the MCH workforce and its capacity to meet the MCH needs of the community. Most MCH providers are educated in a specific area within MCH and deliver a specific and specialized service within the spectrum of MCH. Few MCH experts with a deep understanding of best practices, policy, community engagement and funding exist within communities, making it difficult to recruit community and program champions for MCH and infant mortality reduction.

Community Engagement in Community Assessment and Program Development: Key informants and forum participants discussed their needs assessment processes and expressed desire to be able to have the resources to garner greater community input into their needs assessment processes. Broad community input into the needs assessment process could serve as an important first step in community engagement and reducing threats to program sustainability by improving stakeholder and organizational support. Barriers to implementation of evidence-based strategies to reduce infant mortality may meet with resistance if they do not fit into the context of the community. Requiring community input into the development of new programs and adapting strategies to fit unique community needs could improve uptake of new programs and concepts. Having patients participate in the design of programs may make them more user-friendly, improve utilization and increase satisfaction with the programs.

Community Engagement and Infant Mortality as a Policy Issue: Participants in our forums verbalized that infant mortality and its associated risk factors are not well understood by the community-at-large and that there is not much personalization of the issue. When a child dies from

a drowning or other accidental injury there is often a community acknowledgement of this incident. This is not true for infant mortality from preterm birth, congenital anomalies or SIDS. Forum and key informants also expressed that political leaders do not see infant mortality as an issue that affects their constituents in great numbers and as a cause that they should champion. The lack of personalization of infant mortality and the lack of political support create significant threats to program sustainability in that the issue does not have a very high profile within the community and there are no public champions.

Funding Factors Affecting Sustainability:

Title V funding is a consistent source of funding for every county. Although the funding is not adequate to meet the MCH needs of any of the counties, it is allocated in a way that encourages infrastructure for MCH activities. Many of the counties have become quite skilled at grant-writing to seek other sources of funding to shore up unmet needs within their counties. These grant writing activities and the accompanying administrative activities that come with the funds take away time from delivery of essential services in regions where demand for services is high and human capital is low. Funding is focused largely on disease management and not on prevention which makes it difficult to create programs aimed at prevention. Due to the scarcity of funding for MCH, service gaps create issues for women trying to access services and there is a lack of community resources to combat specific risk factors such as obesity.

Recommendations to Improve Program Sustainability:

- Funding for MCH related activities should integrate and coordinate with Title V funded activities but allow flexibility to meet county or community-specific needs identified by the needs assessment or SWON analysis.
- MCH and infant mortality reduction initiatives should require collaboration among agencies in order to create a climate of integrated service provision and collaboration and not competition among agencies.
- There is a need for increasing awareness about infant mortality and related disparities among the legislators in order for them to understand the importance of continued and expanded funding for MCH and women's health services
- There is a need for continuous funding/revenue streams for successful programs and evidence-based practice strategies. Programs that demonstrate progress in improving MCH indicators should be earmarked as priority programs for continued funding and be exempted from changes in priorities in funding streams at the Federal and State level. Foundations and other funding sources should consider creating grant lines that would allow for on-going support of successful programs instead of creating a climate that requires development of a new program to accomplish the same goals as a successful program that has lost or is losing funding.
- There is an overarching need to raise awareness of infant mortality in all of the target communities by broadening stakeholder support and creating a public sensitivity to this issue. Achieving this goal will require a combination of dedicated funding and community-engagement activities that should be broader in scope than the health departments and

related MCH providers and should be inclusive of business, clergy, educators and formal and informal community leaders.

- These recommendations should be accomplished by building on community-identified strengths and utilizing the expertise and current MCH leadership within communities. This leadership includes the dedicated MCH workforce within state, county and local health departments and community-based coalitions dedicated to the improvement of MCH and reducing infant mortality.

Table 11. Community-Specific Threats to Sustainability and Growth

1. Ability of Programs to be Modified Over Time

Political and Policy Factors	Community Engagement	Funding
• Narrow and specific program focus. (Regional Forum Data and Key Informant Interviews: "*The delivery of care is sometimes too narrow and specific that professionals are not seeing other problems that contribute to an overall lack of health"*) • Medicaid is not prevention focused and does not support current IOM recommendations for women's health or ACOG recommendations for preconception health. (Regional Forum Data and Key Informant Interviews: *"Medicaid policy requires you to be pregnant to access services and you get kicked off 60 days after delivery."* … *"The medical system is not designed to focus on prevention."*… *"Fifty percent of the pregnancies in the United States are unplanned. How are you supposed to plan a pregnancy when the only time you can see a doctor is when you are pregnant?"*) • Even though we talk prevention we fund acute and chronic care services. (Regional Forum Data: "*The whole issue of prevention versus services is going to end as a big political issue and the politics is really what controls it because it's the funding."*…. *"There is an unwritten mandate that any money that came in would go to provide medical services.")* • Funding for MCH programs is continually being reduced. (Regional Forum Data: *"Funding for public health programs is low and is constantly being reduced or is under the threat of being reduced. It is hard to plan programs when you know that the funding may not be there."*) • Programs have geographic restrictions. (Regional Forum Data: "*In regards to the city/county line…you might have a really good program, but because I live in the city or county, I can't go.")*	• MCH workforce capacity. (Regional Forum Data and Key Informant Interviews: *"Is there sufficient workforce capacity to do what is necessary in MCH?"* … *"Do we have the workforce to do the things in MCH that need to be done? Do we have enough workforce and do are they appropriately educated?"*) • Rural programs are difficult to develop, implement and administer because of the geographic distance between small population centers. (Regional Forum Data and Key Informant Interviews: "*It's very, very hard in the rural areas because you can't look just at one particular area and say we have to focus on this when you don't have the spokes in the wheel to help support that center."*	• Programs change with the needs of the funding source which may or may not fit the needs of the specific community. (Regional Forum Data: "*I had a teen pregnancy prevention program in all four schools when my MCH focus was on first trimester and adequate prenatal care. Then MCH changed to tobacco, obesity, and injury. I had to give it up and it's started to climb back up again. Funding drives it. You got a program and it's going good and then the funding is gone."* … *"It's all about how we administer and fund the work. Funding has to be flexible."*) • Program focus is still largely on disease management and not on prevention. (Regional Forum Data: "*The Missouri Primary Care Health Home Initiative with MO Health Net Division states you have to have 2 chronic illnesses. We talked them into included diabetes by itself because it is a risk factor for other chronic diseases.")* • There is a lack of mental health services in rural areas and mental health issues exacerbate health problems. (Regional Forum Data: "*No mental health resources in our region at all. Mental health can affect obesity, smoking, and teen pregnancy."* …"*Even if there was treatment available, it would not be well used because there is a huge stigma about seeking care for mental health issues… we need to do a lot of community education.")* • Drug use is prevalent in both rural and urban areas that there is little funding to support treatment programs or primary prevention efforts in the community. (*Regional Forum Data: There is a huge drug problem in our region."* … *"Drug treatment is different from mental health treatment and*

• The MCH Pyramid of Service Delivery is very focused on traditional medical and public health services. (Regional Forum Data: "*There's nothing really about prevention in here [MCH Framework], nothing about social determinants and community environmental issues that affect women and children.")*		*we need providers that specialize in addiction treatment for individuals and entire families." … "Our clients tell us that drug use is a stress reliever for them, instead of going for a walk or exercising."*)
2. Presence of a Program Champion		
• Term limits for the legislators have hindered their ability to understand the root causes of illness and what it would take to prevent health problems. (Regional Forum Data: "*Term limits has hurt the whole prevention focus. These are long term problems and they are only there for 6 years.*" … "*Someone very high up in the health department was in a meeting with the legislature and was asked the question, 'what does the health department have to do with smoking?"*) • Politicians do not see infant mortality as an issue that affects their constituents in great numbers and as a cause that they should champion. (Key Informant Interview Data: *"The mayor and elected officials see infant mortality as the job of the health department and do not get involved in this issue. It is not as politically important as other things on their plate."….. "It was surprising to one of our elected officials to discover that infant mortality in their community was as high as the infant mortality rate in Cuba."*) • Smoking is a problem in most of the communities throughout the state and yet there is a disconnect between evidence-based policy which supports higher cigarette taxes as a way to decrease tobacco consumption and state policy. (Regional Forum Data: "*We have the lowest cigarette tax in the nation."* … *"44% of the women in our county who are pregnant smoke cigarettes.")*	• Stimulating community engagement is difficult. (Regional Forum Data: ("*People in general are interested, but how do you get them into action?")*	

3. Program is Aligned with Organization's Mission and Procedures		
• Title V funding which requires funding be allocated according to the MCH Pyramid of health services makes it difficult to meet direct health care service needs when there are no service providers in the county or geographic area is meeting that need. • There are significant barriers to accessing care if you are uninsured and the quality of care differs by your ability to access. (Regional Forum Data and Key Informant Interviews: "*The ability to use the services is sometimes met with serious barriers such as Medicaid eligibility, lack of Medicaid doctors, paperwork, or geographic residence"…. "Second class citizen treatment if you do not have health insurance or are poor." … "There are so much red tape in applying for Medicaid that women do not know how to apply or they get discouraged when they do apply." … "We are running two different health care systems…one for those who have an insurance card and one for those who don't."*)	• Needs assessments in the form of SWON analysis are required of each county as part of Title V funding, but needs assessments may lack community involvement. (Regional Forum Data: "*We have some needs assessments, but I don't think they are true needs assessments. Health departments…are going to the state health department and pulling down their profiles and so to me they're not. We haven't gone into the community and asked them what their needs are.*") • Lack of medical providers to deliver essential and necessary services. (Regional Forum Data: "*We know infant mortality is a problem, but lack of providers, pediatricians, nurse practitioners – the expertise is not there.")* •	
4. Benefits to Clients and Staff Members are Readily Perceived		
• It is difficult to carry forward a prevention message when the need for services for acute and chronic problems is present. (Regional Forum Data: "*It's a constant dilemma. The health centers are focused on prevention, but when the person is sitting at the front desk my schedule is going to fill-up with people who need care for something that could have been prevented and I do my best to inject prevention services or advice…it's a constant tension.*")	• Barriers exist to embracing evidence-based practice strategies and these barriers may be associated with the strategy's ability to fit into the context of the community. (Regional Forum Data and Key Informant Interviews: "*Evidence based practices and research are important, but should not be placed before relationships between community health workers and the people they serve."*) • The focus becomes the delivery of the program and program recipients and providers lose sight of why the program exists. (Regional Forum Data: "*Sometimes people get too focused on just doing a program. It needs to be more of a holistic approach, … and we need to remember why we have the program in the*	• Service gaps create issues for women trying to access services. (Regional Forum Data: "*Our women have to travel between 70 to 95 miles just to see an OBGYN. Many don't make it because they don't have transportation." … "I think one of the biggest things is being rural you have a vast land mass and you don't have a transit system."… "Many women do not want to use the transportation provided by Medicaid because the drivers are rude to them.")*

	first place.") • Lack of medical providers to deliver essential and necessary services. (Regional Forum Data: *"I feel sorry for someone when I identify their problem and then there is no way to help them. We have a HRSA grant through our hospital, but we don't have a specialist and we did not build in transportation money, so how are they going to get to a large city or town where the services are located?"* …. *"We don't have mammograms down here in this rural area. We called and asked if they would bring a van down, but they said they didn't want the vans on our rural roads."* … *"If you don't live close to I-70, no one pays attention.")* • Prevention requires behavior changes and we do not have good evidence-based strategies for changing behaviors. (Regional Forum Data and Key Informant Interviews: *"It's really hard to change behaviors, knowledge and attitudes."*) • Lack of coordination of services for clients. (Regional Forum Data: "*I've noticed over the years that a baby gets discharged with 3 different appointments on 3 different days, but the mother has 4 other children and will need two bus transfers for each trip. Do you really think she's coming to any of these appointments?")*	

5. Stakeholders and Other Organizations Provide Support		
• Substance abuse is not well understood by many medical providers and social service agencies. (Regional Forum Data and Key Informant Interviews: "*Health providers do not understand the reasons and triggers behind drug abuse (e.g., stress reliever) and how that should inform intervention efforts."*) • We lack policies that require collaboration. (Regional Forum Data: "*Competing agencies don't work together.")*	• Racism and classism exist in our systems of health care delivery and in our systems of social and family support. (Regional Forum Data and Key Informant Interviews: *"The importance of understanding class as a risk factor more so than race and the negative attitudes they face from legislators and medical providers about their situation." … "I've worked on Governor's Commissions and I've had a legislator, a Senator tell me, I want you to be sure that all those people that work, that live at poverty level just to get something for nothing, get nothing."*) • Infant mortality and its associated risk factors is not well understood by the community-at-large. (Regional Forum Data and Key Informant Interviews: "*Infant mortality is a difficult and confusing message to community." … "Most people hear about children drowning or other accidental injuries, but it's not on the news that a baby died at birth or that a baby died of SIDS." … "There is less of a community echo when a baby dies."*) • Some stakeholders are under-represented in needs assessment and program development. (Regional Forum Data: "*We see a lot of Mennonite women and they have high rates of teen pregnancy but not adverse outcomes." …. "We have a huge Mennonite population. If you were to pull out the data for Webster County and you looked at inadequate, late entry into prenatal care, birth spacing, births to less than 12 years of education, they would be very high, but not necessarily problematic. It's a cultural norm. You look at the birth outcomes, they're fine. There's not a direct correlation between what we consider risk factors and adverse outcomes in that population." … "The Hispanic population has a lot of*	• Lack of community resources to combat specific problems like obesity. (Regional Forum Data: "*We have one grocery store in 811 square miles.")*

	premature births and a lot of co-sleeping. They don't have beds for the baby specifically.") • Family support services are available through Social Services but these services are not well accepted by community members, especially those with high levels of family disorganization. (Regional Forum Data: "*In my area, that's [Children's Division] is a dirty word. They're going to come in and take my children away. You have no idea how many people turn me down for prenatal case management because they think I have the authority to come into their house and take their children.")* • In many communities programs sponsored by the Federal/State government are seen as an intrusion on individual rights. (Key Informant Interview Data: *"Many of the programs in our county are viewed as the government telling them how to live their lives and raise their families."*) • It is difficult to be engaged and advocate for yourself when you are poor. (Regional Forum Data: *"There is no stability to your life. Low income people move as much as 8 times per year").*	

Table 12. Community-Specific Strengths to Support Sustainability Factors			
	Political and Policy Factors	**Community Engagement**	**Funding**
1. Ability of Programs to be Modified Over Time			
• Scarce resources have created a climate where communities and even counties pool resources to increase and improve services. (Regional Forum Data: *"Region G is a 501-C3. It is a collaborative between several counties as a way to improve services and create partnerships."*)	• Home economics programs were once the foundation courses for healthy behaviors, but are no longer taught or required in Missouri schools. (Regional Forum Data: "*Home economics was required in high school and this is where women learned about nutrition and other healthy home behaviors and practices. We do not require these courses anymore but they would be a good place to teach these basic skills – things like nutrition, cooking, child care, and other basic life skills."*)		• Title V Funding is consistent and is available to every county and is outcome based. (Regional Forum Data: *"We are required to do a SWON analysis for each county. This helps us to identify priorities. It is not perfect, but it does hold us to outcomes which is good. I wish it was more flexible."*) • Most health departments and service providers apply for a variety of funding to assist with filling in gaps in MCH services. (Regional Forum Data and Key Informant Interviews: *"Most of us apply for funding for things that we need, but that goes 2 ways. We spend a lot of time writing grants and we can't provide services, but if we get the grant that's good. The grants are always for a specific thing and sometimes we need things that you can't find a grant for."*)
2. Presence of a Program Champion			
	• State and county health departments champion MCH issues and run programs in every rural county. • In St. Louis the Maternal Child and Family Health Coalition is seen as a leader in MCH issues. (Key Informant Interview Data: *" The Maternal Child and Family Health Coalition is able to work across the City/County boundary issue and bring everyone together to work on maternal and child health issues."*)		• Missouri Foundation for Health has been a major source of funding for health related initiatives in rural areas. (Regional Forums and Key Informant Interviews: *"The Foundation has made a lot of things possible for us."*)

3. Benefits to Clients and Staff Members are Readily Perceived			
	• Women and family friendly drug treatment is important and necessary. (Regional Forum Data: *"Carol Jones Recovery Center, where women can go with their children to get drug treatment.")*	• Nurse-based home visitation programs are funded by the State Department of Health and were present in every region. They are widely recognized as national models of infant mortality reduction programs and are positively received by the communities. (Regional Forum Data: *"Nurse home visitation programs are evidence-based and have an impact on infant mortality.")*	

4. Stakeholders and Other Organizations Provide Support			
	• Rural Health Centers and FQHCs provide women's health services and provide Obstetrical services if there are no other providers in their catchment areas. (Regional Forum Data: *"Rural health centers provide OB care and women's health services, but they are not available in every county or every region."*)	• Community-based programs to meet identified needs are identified in every region. (Regional Forum Data: *"Kennett started a Farmers' Market and now WIC vouchers can be used there."* … *"St. Louis has the Triumph Campaign aimed at reducing infant mortality and is targeted toward African American women in a specific neighborhood in the city.")*	

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ABOUT THE RESEARCH TEAM

Dr. Pamela Xaverius is an Assistant Professor at Saint Louis University, School of Medicine, Department of Family & Community Medicine (SLU-FCM), and adjunct professor in the School of Public Health (SLU-SPH). She received her PhD in Psychology from the University of Kansas (KU) in 2001. Prior to her current position, she was the maternal and child health (MCH) epidemiologist at the Missouri Department of Health and Senior Services (MODHSS) (2002-2005). As the MCH epidemiologist for the Missouri Department of Health, she oversaw applied studies of women's health issues, experiences that were enhanced through a two year health disparity scholarship through the National Institutes of Health and funding from the Centers for Disease Control and Prevention to evaluate racial disparities in infant mortality. In that position, Dr. Xaverius established a statewide MCH research agenda, a project in particular that provides a strong foundation for the work described within this proposal. The establishment of that statewide MCH research agenda involved establishing a core group of stakeholders, soliciting input from researchers and practitioners across the state, and ultimately identifying MCH research priorities for the state.

Dr. Deborah Kiel is currently an Assistant Professor of Nursing at the University of Missouri-St. Louis, and an adjunct professor at the School of Public Health at St. Louis University where she teaches Maternal and Child Health Epidemiology. Dr Kiel's career spans 34 years of service to the St. Louis community. During her career, Dr. Kiel has focused her practice on maternal and child health issues. In the course of her career, Dr. Kiel has been a practicing public health nurse, supervised clinical operations at a Federally Qualified Neighborhood Health Center, and worked as a staff consultant for the Director of Health to provide consultation on community engagement and implementation of core public health functions for department directors at the St. Louis County Department of Health. During her tenure with the St. Louis County Department of Health, Dr. Kiel was successful in developing several community-based coalitions and securing grant funding for significant population-based health needs. In 1999, Dr. Kiel was successful helping the community leverage partnerships to create
the Maternal-Child and Family Health Coalition of Greater St. Louis and subsequently served as its first chair. During her tenure as chair of the Coalition, St. Louis secured its first Healthy Start Grant infusing 2.2 million dollars into the community to reduce the high rates of infant mortality, especially in women of color. Dr Kiel continues to work with a variety of practitioners, providers and coalitions in activities related to community engagement, needs assessment, evaluation and participatory action research.

Dr. Leigh Tenkku has, for over twenty-five years, designed, implemented and evaluated community health programs, including five years as the evaluator for the highly successful Midwest Region Fetal Alcohol Syndrome Training Center (MRFASTC). She has been principal investigator for the MRFASTC program for the past four years implementing satellite MRFASTC teams within the seven Midwest states of Arkansas, Missouri, Illinois, Iowa, Kansas, Nebraska and Oklahoma. The MRFASTC program is viewed across the country as a strong, train-the-trainer model where many of the program elements are being implemented in newly funded regional training programs. She also received one of only two CDC-funded studies in the country in which she is designing an intervention for the treatment of youth and young adults with Fetal Alcohol Spectrum Disorders (FASDs). Dr. Tenkku is considered an expert nationally in the design of treatment programs for those affected by FASDs and speaks at several conferences each year on this topical area. She has acted as principal and co-investigator on program evaluations for numerous community projects including a study on breast cancer of African American women in St. Louis, a study focused on alcohol-exposed
pregnancies, 6 and a community-based program offering career development and work-based learning opportunities in the healthcare industry for high school students, and conducted secondary analysis of nationwide databases regarding alcohol use of women before and after becoming pregnant

Dr. Beverly Triana-Tremain is President and Owner of Public Health Consulting, LLC, a registered Minority Business Enterprise (MBE) and Women Business Enterprise (WBE) (Certification #B04099) has at least 20 years of public health, teaching, research, and consulting experience. Her background and skill set blends important theoretical and practical approaches and focuses on Evaluation, Research, and Quality Improvement Processes. She is a fellow in the National Public Health
Leadership Institute. She established Public Health Consulting, LLC in 2006 to assist agencies in improving the public health system. She serves as a technical consultant to various local, state, and national private and public organizations in the areas of logical modeling, process, impact, and outcome evaluation, quantitative and qualitative data collection and analysis (SPSS), instrument/survey development and implementation, and interview protocols.

Appendices

Appendix A

Project Management Matrix for February 15 2011 to August 14, 2011		
Task	**Timeline**	**Responsibility / Organizer**
Phase 1: Administrative Organization, Planning for Forums, Key Informant Interviews, Instruments, and Databases (including ArcGIS)	*Feb 15-Apr 15*	*Team*
Bi-weekly Meetings for Project Team	Feb-Mar	Tremain
First Meeting for Team and MCH Staff	Feb-Mar	Team
Modify project plan, logic model, and timeline after MFH review.	Feb-Mar	Team
Conduct internet searches.	Feb-Mar	Xaverius, Tenkku, Kiel
Determine content for key informant interviews (i.e., data collection elements).	Feb-Mar	Team
Create preliminary list of stakeholders and key informants focusing on selected researchers to share promising and best practices for sustainable and successful programs.	Feb-Mar	Team
Determine locations for Forums.	Feb-Mar	Tremain
Create invitation materials for stakeholders.	Feb-Mar	Tremain
Create preliminary list of resources, evidence based, and policy concerns in project area.	Feb-Mar	Xaverius, Tenkku, Kiel
Identify process for Forums (including agenda, final questions, data collection, follow-up, etc.)& interview protocol for key informant interviews.	Feb-Mar	Xaverius, Tenkku, Kiel
Begin initial structure of database of national best internet searches regarding local practices, national best practices, and policy/sustainability considerations.	Feb-Mar	Xaverius, Tenkku, Kiel
Begin initial structure of ArcGIS format	Feb-Mar	Cooper
Interim Report #1 Due	15-Apr-11	Tremain
Phase 2: Collection and Analysis of Data from Forums and Key Informant Interviews and Populating Databases	*Apr 16-Jun 15*	*Team*
Bi-weekly Meeting for Project Team	Apr-Jun	Tremain
Monthly Meeting with Project Team and MFH Staff	Apr-Jun	Tremain
Finalize stakeholders and key informant interview content.	Apr-Jun	Xaverius, Tenkku, Kiel

Conduct key informant interviews.	Apr-Jun	Xaverius, Tenkku, Kiel
Send out request and schedule 5 Regional Forums covering the 10 Services of the MFH.		Tremain
Host five (5) Regional Forums covering the ten (10) service regions of the MFH.	Apr-Jun	Team
Attend the Preconception Summit to meet with national MCH leaders and discuss findings from this project.	June	Xaverius, Tenkku
Update ArcGIS data base that includes internet search material with material garnered from the regional forums.	Apr-Jun	Cooper
Interim Report #2 Due	15-Jun-11	Tremain
Phase 3: Synthesis of Data and Development of Recommendations (Report Writing)	*Jun 16-Aug 15*	*Team*
Bi-weekly Meeting for Project Team	Jun-Aug	Tremain
Monthly Meeting with Project Team and MFH Staff	Jun-Aug	Tremain
Using data from internet searches, key informant interviews, and regional forums, write a white paper that matches resources from private foundations and other partners, readiness and capacity of organizations to implement best practice strategies in MO factors likely to affect implementation and sustainability of strategies in MO.	Jun-Aug	Team
Finalize ArcGIS data base that includes internet search material with material garnered from the regional forums.	Jun-Aug	Cooper
Written final report & oral presentation with policy directions, recommendations and program strategies (last monthly meeting) MO.	15-Aug-11	Team

Appendix B The Community Readiness Model

Dimensions of readiness are key factors that influence your community's preparedness to take action on an issue. The six dimensions identified and measured in the Community Readiness Model are very comprehensive in nature. They are an excellent tool for diagnosing your community's needs and for developing strategies that meet those needs.

A. **Community Efforts**: To what extent are there efforts, programs, and policies that address the issue?

B. **Community Knowledge of the Efforts**: To what extent do community members know about local efforts and their effectiveness, and are the efforts accessible to all segments of the community?

C. **Leadership**: To what extent are appointed leaders and influential community members supportive of the issue?

D. **Community Climate**: What is the prevailing attitude of the community toward the issue? Is it one of helplessness or one of responsibility and empowerment?

E. **Community Knowledge about the Issue**: To what extent do community members know about the causes of the problem, consequences, and local implications?

F. **Resources Related to the Issue**: To what extent are local resources – people, time, money, space, etc. – available to support efforts?

Your community's status with respect to each of the dimensions forms the basis of the overall level of community readiness.

Next, each of the nine stages of readiness in the Community Readiness Model is defined.

Appendix B, Continued Stages of Community Readiness

STAGE	DESCRIPTION
1. No Awareness	Issue is not generally recognized by the community or leaders as a problem (or it may truly not be an issue).
2. Denial / Resistance	At least some community members recognize that it is a problem, but there is little recognition that it might be a local problem.
3. Vague Awareness	Most feel that there is a local problem, but there is no immediate motivation to do anything about it.
4. Preplanning	There is clear recognition that something must be done, and there may even be a committee. However, efforts are not focused or detailed.
5. Preparation	Active leaders begin planning in earnest. Community offers modest support of efforts.
6. Initiation	Enough information is available to justify efforts. Activities are underway.
7. Stabilization	Activities are supported by administrators or community decision makers. Staff are trained and experienced.
8. Confirmation/ Expansion	Standard efforts are in place. Community members feel comfortable using services, and they support expansions. Local data are regularly obtained.
9. High Level of Community Ownership	Detailed and sophisticated knowledge exists about prevalence, causes, and consequences. Effective evaluation guides new directions. Model is applied to other issues.

Appendix C Online Survey Protocol

Dimension A. Existing Community Efforts	Dimension B. Community Knowledge of the Efforts	Dimension C. Leadership
Q. Using a scale from 1-10, how much of a concern is WOMEN AND INFANTS HEALTH in your community (with 1 being "not at all" and 10 being "a very great concern")?	1 Community has no knowledge of the need.	**Q. Who are the "leaders" specific to IM in your community?**
1 No awareness of the need	2 Community has no knowledge about efforts addressing IM.	1 Leadership has no recognition of IM.
2 No efforts addressing the issue.	3 A few members of the community have heard about efforts, but knowledge is limited.	2 Leadership believes IM not an issue.
3 A few recognize the need to initiate some effort, but no immediate motivation to do anything.	4 Some know about local efforts.	3 Leader(s) recognize need to do something about IM.
4 Some community members met and discussed developing community efforts.	5 Community has basic knowledge about local efforts.	4 Leader(s) is/are trying to get something started.
5 Efforts (programs/activities) are being planned.	6 Some community members have knowledge of local efforts. Trying to increase the knowledge of community.	5 Leaders are part of a committee or group that addresses this issue.
6 Efforts (programs/activities) have been implemented.	7 There is evidence that the community has specific knowledge of local efforts including contact persons, training of staff, clients involved, etc.	6 Leaders are active and supportive of the implementation of efforts.
7 Efforts (programs/activities) have been running for several years.	8 There is considerable community knowledge about different community efforts, as well as the level of program effectiveness.	7 Leaders are supportive of continuing basic efforts and are considering resources available for self-sufficiency.
8 Several different programs, activities and policies are in place, covering different age groups and reaching a wide range of people. New efforts are being developed based on evaluation data.	9 Community has knowledge of program evaluation data on how well the different local efforts are working and their benefits and limitations.	8 Leaders are supportive of expanding/improving efforts through active participation in the expansion/improvement.
9 Evaluation plans are routinely used to test effectiveness of many different efforts, and the results are being used to make changes and improvements.		9 Leaders are continually reviewing evaluation results of the efforts and are modifying support accordingly.

Dimension D. Community Climate	Dimension E. Community Knowledge about IM	Dimension F. Resources Related to the IM
Q. How does the community support the efforts to address IM? **Q. What are the primary obstacles to addressing IM in your community?** 1 The prevailing attitude is that it's an accepted part of community life. 2 The prevailing attitude is "There's nothing we can do." 3 Community climate is neutral, disinterested, or IM doesn't affect whole community. 4 The attitude in the community is now beginning to reflect interest in the issue, but not sure what to do. 5 The attitude in the community is "This is our problem," and they are beginning to reflect modest support for efforts. 6 The attitude in the community is "This is our responsibility" and is now beginning to reflect modest involvement in efforts. 7 The majority of the community generally supports programs, activities, or policies. 8 Some community members or groups may challenge specific programs, but the community in general is strongly supportive of the need for efforts. High Participation 9 Highly supportive, and actively involved in evaluating and improving efforts and demand accountability.	**Q. How knowledgeable are you about the causes of IM and RD? (Prompt: causal pathways, prevalence/incidence, social determinants, signs of descriptive epidemiology** 1 Not viewed as an issue. 2 No knowledge about IM. 3 A few in the community have some knowledge about IM. 4 Some community members recognize signs/symptoms of IM, but information is lacking. 5 Community members know that the signs and symptoms of this issue occur locally, and general information is available. 6 A majority of community members know the signs/symptoms of IM and that it occurs locally, and local data are available. 7 Community members have knowledge/access to local prevalence. 8 Community members have knowledge about prevalence, causes, risk factors, and consequences. 9 Community members have detailed information about IM and effectiveness of local programs.	***Q. To whom would an individual affected by IM turn to first for help in your community? Why?*** ***Q. On a scale from 1 (low) to 10 (high), what is the level of expertise and training among those working on IM & RD?*** **Q. Identify <5 initiatives occurring in your community for IM & RD?** 1 No awareness resources are needed to deal with this issue. 2 No resources available for dealing with IM. 3 Community not sure how/where to initiate. 4 Community has individuals, organizations available for IM. 5 Some members of the community are looking into the available resources. 6 Resources obtained and/or allocated for this issue. 7 Much local support of ongoing efforts; looking at additional resources. 8 Diversified resources secured; efforts expected to be permanent. Additional support for efforts. 9 Continuous and secure support for programs; evaluation is routinely expected and completed; new resources.

Appendix D List of Interviewees and Affiliation	
Stephanie Powelson, EdD, MPH	Truman State University
Margaret Wilson, DO	Kirksville College of Osteopathic Medicine
Patricia Schnitzer, PhD, RN	University of Missouri, Columbia
Walter Cal Johnson, PhD	Lincoln University
Georganne Syler, PhD	Southeast Missouri State University
Sheila Hirsch	Missouri Department of Education: Early Childhood Education
Jo Anne Ralston, Director	Missouri Department of Education: Early Childhood Education
Melinda Sanders	Title V Director for Missouri
Sharmini Rogers, MBBS, MPH	Chief, Bureau of Genetics and Healthy Childhood, Missouri Department of Health and Senior Services
Susan Wilson, MPA	COO of the Missouri Primary Care Association
Connie Cunningham, MBA	Exec. Director of the Missouri Family Health Council (Title X)
Marie Peoples, PhD, MPH	Local Public Health Departments: Cole County Health Department
Gretchen Berhorts	Missouri Department of Education: Early childhood Education Staff contact
Lana Brookes	Missouri Department of Education: Early childhood Education Staff contact
Ellen Schaumberg	Hermann Area District Hospital
Diane Anthony	Ozarks Area Community Action Corporation
Kevin Gipson, MHA	Springfield-Greene County Public Health Center
Dalen Duitsman, HSD	Missouri State University
Chris Gilliam	Howell County Health Department
Loreen Huffman, PhD	Missouri Southern State University
Judy Rushton	Local Public Health Departments: Macon County Health Department
Melanie DeWitt	Mississippi County Health Department
Jayne Dees	New Madrid County Health
Cynthia Dean	Bootheel MCFHC Coalition Executive Director
Lee Rodriguez	Economic Security Corporation of Southwest Area
Vetta Sanders, PhD	Washington University
Felicia Brown, MD	St. Louis County Health Department
Mary Kogut	Planned Parenthood in St. Louis
Louise Flick, DrPH	St. Louis School for Public Health/ Director of the national Children's Health Study
F. Sessions Cole, MD	Washington University
Kendra Copanas	St. Louis MCFHC Coalition Executive Director
Melinda Ohlemiller	Nurses for Newborns Foundation Executive Director
Dr. Corrine Walentik	St. Louis University
Melba Moore	City of St. Louis Health Department

Appendix E
Regional Levels of Low, Medium, and High Readiness

Dimensions of Readiness (low, medium, high) for Region 1			
Dimension	**Low Readiness**	**Medium Readiness**	**High Readiness**
1 Existing community effort	2	0	2
2 Community knowledge of effort	2	1	0
3 Leadership	2	0	1
4 Community climate	1	1	1
5 Knowledge of IM	2	1	0
6 Level of expertise	2	0	1

Dimensions of Readiness (low, medium, high) for Region 2			
Dimension	**Low Readiness**	**Medium Readiness**	**High Readiness**
1 Existing community effort	3	3	5
2 Community knowledge of effort	5	4	2
3 Leadership	10	1	0
4 Community climate	8	3	1
5 Knowledge of IM	7	5	0
6 Level of expertise	3	6	3

Dimensions of Readiness (low, medium, high) for Region 3			
Dimension	**Low Readiness**	**Medium Readiness**	**High Readiness**
1 Existing community effort	6	4	6
2 Community knowledge of effort	10	6	0
3 Leadership	9	4	3
4 Community climate	10	3	3
5 Knowledge of IM	7	6	3
6 Level of expertise	5	9	2

Dimensions of Readiness (low, medium, high) for Region 4			
Dimension	**Low Readiness**	**Medium Readiness**	**High Readiness**
1 Existing community effort	4	1	6
2 Community knowledge of effort	3	7	1
3 Leadership	7	2	2
4 Community climate	4	7	0
5 Knowledge of IM	6	5	0
6 Level of expertise	3	4	4

Dimensions of Readiness (low, medium, high) for Region 5			
Dimension	**Low Readiness**	**Medium Readiness**	**High Readiness**
1 Existing community effort	2	0	0
2 Community knowledge of effort	1	1	0
3 Leadership	2	0	0
4 Community climate	2	0	0
5 Knowledge of IM	1	1	0
6 Level of expertise	1	0	1

Dimensions of Readiness (low, medium, high) for Region 6			
Dimension	**Low Readiness**	**Medium Readiness**	**High Readiness**
1 Existing community effort	2	1	4
2 Community knowledge of effort	2	2	3
3 Leadership	3	2	2
4 Community climate	4	2	1
5 Knowledge of IM	3	2	2
6 Level of expertise	3	2	2

Dimensions of Readiness (low, medium, high) for Region 7			
Dimension	**Low Readiness**	**Medium Readiness**	**High Readiness**
1 Existing community effort	5	4	5
2 Community knowledge of effort	7	7	0
3 Leadership	9	4	1
4 Community climate	7	4	2
5 Knowledge of IM	7	6	1
6 Level of expertise	8	6	0

Dimensions of Readiness (low, medium, high) for Region 8			
Dimension	**Low Readiness**	**Medium Readiness**	**High Readiness**
1 Existing community effort	3	3	6
2 Community knowledge of effort	5	4	2
3 Leadership	3	5	2
4 Community climate	2	7	2
5 Knowledge of IM	3	8	0
6 Level of expertise	2	5	3

Dimensions of Readiness (low, medium, high) for Region 9			
Dimension	**Low Readiness**	**Medium Readiness**	**High Readiness**
1 Existing community effort	3	1	1
2 Community knowledge of effort	4	0	1
3 Leadership	4	0	0
4 Community climate	4	1	0
5 Knowledge of IM	5	0	0
6 Level of expertise	5	0	0

Dimensions of Readiness (low, medium, high) for Region 10			
Dimension	**Low Readiness**	**Medium Readiness**	**High Readiness**
1 Existing community effort	5	5	3
2 Community knowledge of effort	13	0	0
3 Leadership	8	3	1
4 Community climate	7	6	0
5 Knowledge of IM	9	4	0
6 Level of expertise	8	4	1

Dimensions of Readiness (low, medium, high) for Region 11 (State)			
Dimension	**Low Readiness**	**Medium Readiness**	**High Readiness**
1 Existing community effort	0	1	2
2 Community knowledge of effort	0	1	2
3 Leadership	0	1	2
4 Community climate	0	1	2
5 Knowledge of IM	0	2	1
6 Level of expertise	0	2	1

Appendix F List of Key Leaders on Women and Infant Mortality in Community

Organizations

- Local Health Departments
- Health care providers/Hospitals Nurses for Newborns Foundation
- Parents as Teachers
- FQHC
- Local churches
- Physician, nurses
- Community Bereavement
- Hospital
- Internet

Government

- FQHC/Primary care
- State (if high rate)
- 911
- Children's Division
- City Councils
- Legislators
- Federal Government
- Office of Minority Health
- MDHSS
- Governor

Key People

- Kendra Copanas (St. Louis Metro Area)
- Greg Carter (St. Louis City)
- Joe Palm (State)
- Bill Dodson (St. Louis City)
- Corinne Walentik (St. Louis Metro and State-wide)
- Pam Walker (St. Louis City)
- Sessions Cole (St. Louis Metro, State-wide, National)
- Delores Gunn (St. Louis County)
- Louise Flick (St. Louis Metro and National)
- Rich Patton (St. Louis Metro Area)
- Deb Kiel (St. Louis Metro and State-wide)
- Don Suggs (St. Louis Metro)
- Darryl Lynch
- Jerry Paul (St. Louis Metro)
- Bridgette Flood (St. Louis Metro)
- Cynthia Green
- Arthur Freeland
- Margaret Donnelly
- Katie Plax (St. Louis Metro)

Appendix G

The online survey questioned about initiatives in Missouri focused on women and infant health. Initiatives mentioned more than once are:

- Parents as Teachers
- Immunization Clinics, WIC
- FQHC
- Healthy Start
- Nurses for Newborns
- Local Health Departments
- Home Visitation
- Triumph Campaign
- MFH Tracking Disparities
- Breastfeeding Coalition
- Child Birthing
- Fetal Infant Mortality Registry
- Show Me Healthy Woman Program
- Safe Sleep
- Stay at home parent project
- Title X
- Weekend Coalition for Obesity

Other initiatives mentioned one time are as follows:

- First Chance Books
- SIDs Resources
- March of Dimes
- American Academy of Pediatrics
- Medicaid Management Care Plan
- First Time Mother Initiative
- New born Screening
- Mayor's Commission for Children's Health
- High Risk Prenatal Referrals
- Victim Support Services
- Extension Centers
- Schools (free and reduced lunch)
- Roadway Safety
- Leadership Skills for Teenagers
- Lifeline
- Genesis House
- Bright Beginnings
- Missouri Coalition Maternal and Children's Health

Appendix H
Using the Readiness Data to Develop Strategies for Technical Assistance and Funding Design

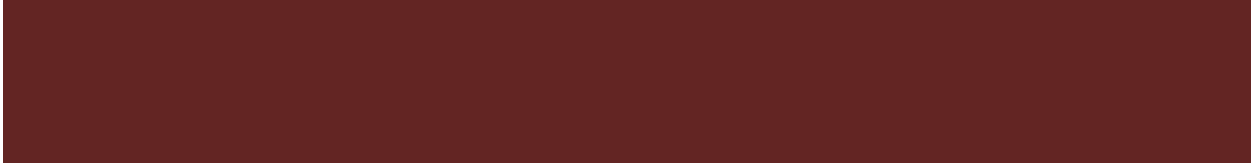
The intended purpose of the readiness instrument is to develop strategies for change in a community based on their own level of readiness across the dimensions. These findings can also inform funding and technical assistance strategies that can be more directed at the potential grantee's needs. For example, an agency with low readiness would need to engage in activities that foster more communication strategies. Agencies in Denial and resistance would need to do more relationship building and championing of the intended outcomes.

Table #. Goals and General Strategies Appropriate for Each Stage[3]

Level of Readiness	Goal	Sample Strategies for Technical Assistance and Funding
1. No Awareness	Raise awareness of the issue	• Make one-on-one visits with community leaders and members. • Visit existing and established small groups to inform them of the issue. • Make one-on-one phone calls to friends, potential supporters.
2. Denial / Resistance	Raise awareness that the problem or issue exists in this community	• Continue one-on-one visits and encourage those you've talked with to assist. • Discuss descriptive local incidents related to the issue. • Approach and engage local educational/health outreach programs to assist in the effort with posters or brochures. • Point out media articles that describe local incidents. • Submit articles for church bulletins, local newsletters, club newsletters, etc. • Present information to local related community groups.
3. Vague Awareness	Raise awareness that the community can do something	• Present information at local community events and to unrelated community groups. • Post flyers, posters, and billboards. • Begin to initiate your own events (pot lucks, potlatches, etc.) to present information on the issue. • Conduct informal local surveys and interviews with community people by phone or door-to-door. • Publish newspaper editorials and articles with general information and local implications.
Preplanning	Raise awareness with concrete ideas to combat condition	• Introduce information about the issue through media. • Visit and invest community leaders in the cause. • Review existing efforts in community (programs, activities) to determine target populations and degree of success. • Conduct focus groups to discuss issues, develop strategies. • Increase media exposure through radio/TV public service announcements.

[3] Plested, B., Edwards, R., Jumper-Thurman, P. Community Readiness Model. Available path: www.triethniccenter.colostate.edu. Retrieved March 17, 2008. Used with permission.

Preparation	Gather existing information with which to plan strategies	• Conduct school drug and alcohol surveys. • Conduct community surveys. • Sponsor a community picnic to kick off the effort. • Conduct public forums to develop strategies. • Utilize key leaders/influential people to speak to groups and participate in local radio and television shows.
Initiation	Provide community-specific information	• Conduct in-service training for professionals and paraprofessionals. • Plan publicity efforts associated with start-up of program or activity. • Attend meetings to provide updates on progress of the effort. • Conduct consumer interviews to identify service gaps and improve existing services. • Begin library or Internet search for resources and funding.
Stabilization	Stabilize efforts and programs	• Plan community events to maintain support for the issue. • Conduct training for community professionals. • Conduct training for community members. • Introduce program evaluation through training and newspaper articles. • Conduct quarterly meetings to review progress, modify strategies. • Hold recognition events for supporters or volunteers. • Prepare and submit newspaper articles detailing progress and future plans. • Begin networking among service providers, community systems.
Confirmation / Expansion	Expand and enhance services	• Formalize the networking with qualified service agreements. • Prepare a community risk assessment profile. • Publicize a localized program services directory. • Maintain a comprehensive database. • Develop a local speaker's bureau. • Initiate policy change through support of local city officials. • Conduct media outreach on specific data trends.
High Level of Community Ownership	Maintain momentum and continue growth	• Engage local business community and solicit financial support from them. • Diversify funding resources. • Continue more advanced training of professionals and paraprofessionals. • Continue re-assessment of issue and progress made. • Utilize external evaluation and use feedback for program modification. • Track outcome data for use with future grant requests. • Continue progress reports for benefit of community leaders and local sponsorship.

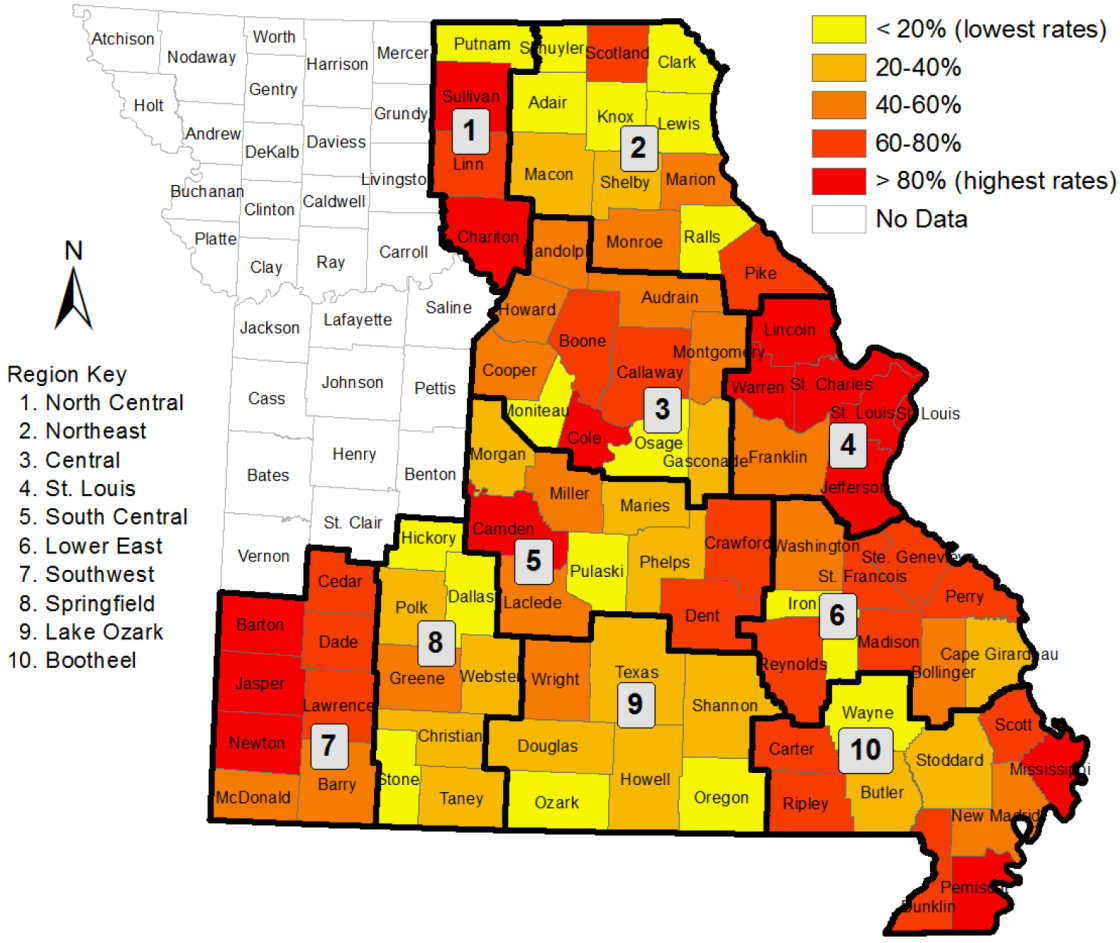


APPENDIX I

GIS MAPS

Asthma Emergency Room Visits

Age-adjusted rate/1000 ER visits



Author: Ben Cooper | Created: 7.31.11

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation

0 12.5 25 50 75 100 Miles

County Level Data Tables

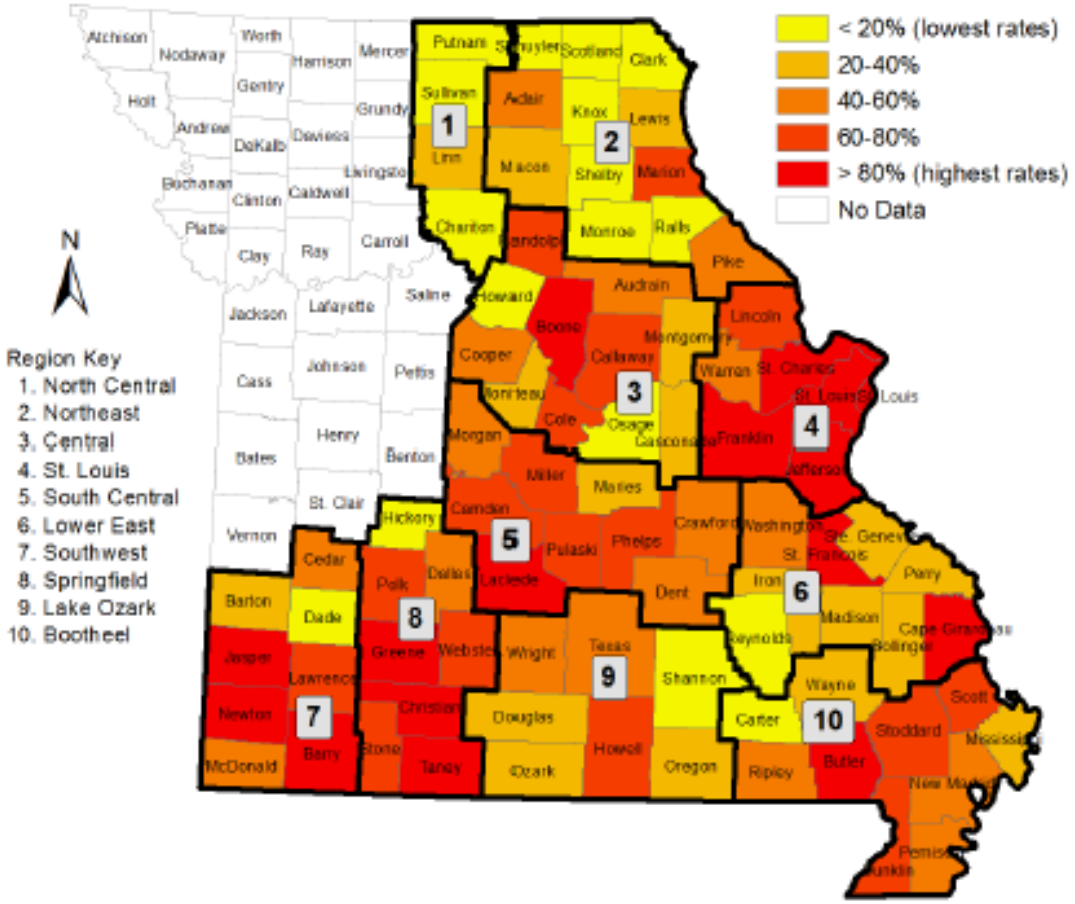
County	Asthma ER Visits Rate/1000 ER visits
Adair	1.7
Audrain	5.1
Barry	5.5
Barton	7.0
Bollinger	4.8
Boone	6.4
Butler	3.4
Callaway	6.0
Camden	7.5
Cape Girardeau	3.6
Carter	6.4
Cedar	5.8
Chariton	7.7
Christian	2.9
Clark	0.6
Cole	6.9
Cooper	4.8
Crawford	6.0
Dade	6.2
Dallas	2.4
Dent	5.8
Douglas	2.7
Dunklin	6.6
Franklin	5.3
Gasconade	3.3
Greene	5.1
Hickory	1.8
Howard	3.8
Howell	3.4
Iron	2.6
Jasper	9.1
Jefferson	7.1
Knox	2.2
Laclede	5.0
Lawrence	5.9
Lewis	0.5
Lincoln	9.5
Linn	6.8
Macon	3.6
Madison	6.8
Maries	3.4
Marion	4.3
McDonald	4.6
Miller	5.5

County	Asthma ER Visits Rate/1000 ER visits
Mississippi	9.1
Moniteau	1.9
Monroe	3.8
Montgomery	4.0
Morgan	3.7
New Madrid	4.8
Newton	7.2
Oregon	2.6
Osage	1.5
Ozark	1.6
Pemiscot	7.3
Perry	5.8
Phelps	3.7
Pike	5.8
Polk	3.3
Pulaski	1.9
Putnam	0
Ralls	2.4
Randolph	4.5
Reynolds	6.0
Ripley	6.4
Schuyler	0
Scotland	6.6
Scott	5.6
Shannon	3.6
Shelby	2.7
St. Charles	7.0
St. Francois	6.8
St. Louis	14.5
St. Louis City	23.2
Ste. Genevieve	5.9
Stoddard	3.5
Stone	2.4
Sullivan	9.5
Taney	2.8
Texas	3.6
Warren	7.3
Washington	5.2
Wayne	1.9
Webster	2.9
Wright	3.9

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Year: 2008

Child Abuse & Neglect

Number of "probable cause" incidents or family assessments (2008)



Author: Ben Cooper | Created: 7.31.11

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation

0 12.5 25 50 75 100 Miles

County Level Data Tables

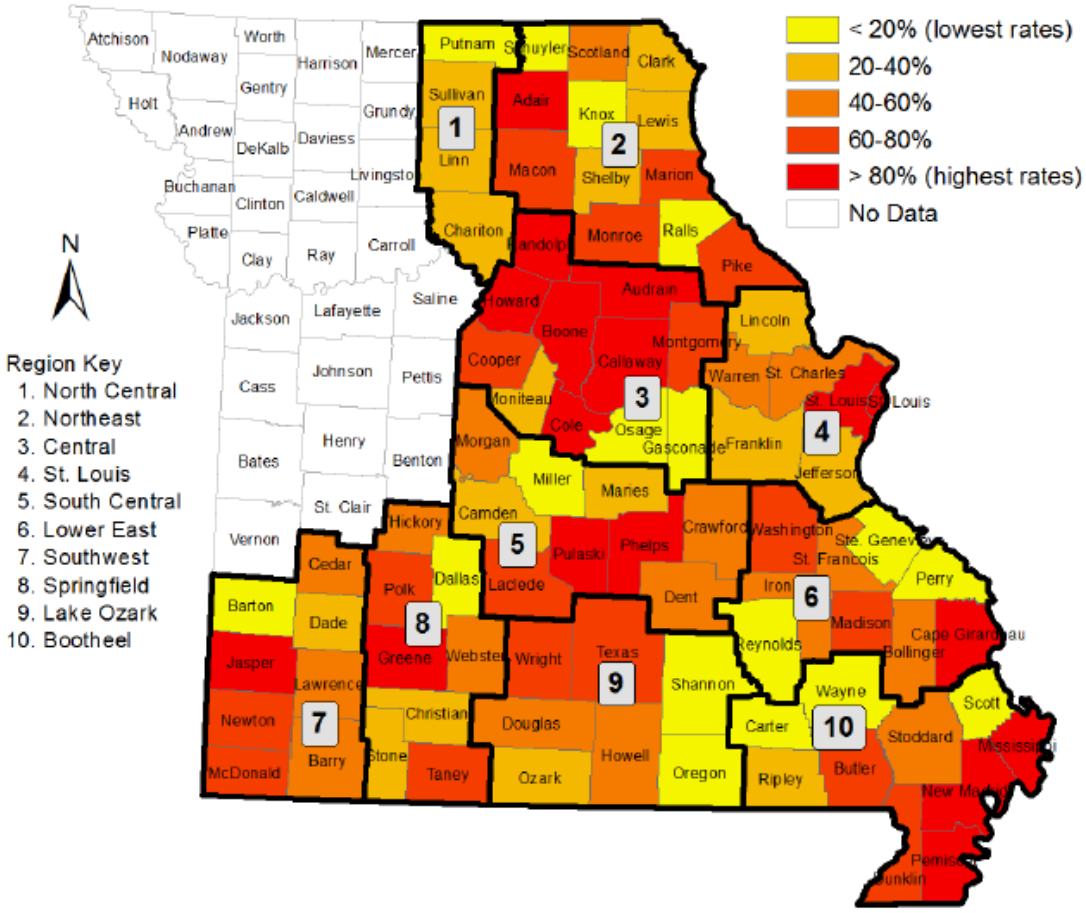
County	Child Abuse and Neglect Number of Incidents
Adair	226
Audrain	227
Barry	463
Barton	147
Bollinger	117
Boone	878
Butler	549
Callaway	372
Camden	352
Cape Girardeau	571
Carter	40
Cedar	159
Chariton	68
Christian	553
Clark	49
Cole	453
Cooper	180
Crawford	233
Dade	67
Dallas	156
Dent	162
Douglas	94
Dunklin	394
Franklin	732
Gasconade	151
Greene	3,629
Hickory	64
Howard	66
Howell	456
Iron	90
Jasper	1,182
Jefferson	1,685
Knox	42
Laclede	466
Lawrence	420
Lewis	78
Lincoln	424
Linn	107
Macon	136
Madison	102
Maries	94
Marion	321
McDonald	260
Miller	339

County	Child Abuse and Neglect Number of Incidents
Mississippi	147
Moniteau	147
Monroe	76
Montgomery	130
Morgan	218
New Madrid	153
Newton	641
Oregon	84
Osage	72
Ozark	83
Pemiscot	264
Perry	151
Phelps	381
Pike	189
Polk	331
Pulaski	419
Putnam	35
Ralls	57
Randolph	282
Reynolds	71
Ripley	201
Schuyler	39
Scotland	15
Scott	349
Shannon	50
Shelby	42
St. Charles	1,343
St. Francois	601
St. Louis	3,834
St. Louis City	2,657
Ste. Genevieve	118
Stoddard	288
Stone	296
Sullivan	59
Taney	506
Texas	255
Warren	281
Washington	268
Wayne	135
Webster	363
Wright	225

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Year: 2008

Sexually Transmitted Infections: Chlamydia

Chlamydia incidence per 100,000 people



Author: Ben Cooper | Created: 7.31.11

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation

0 12.5 25 50 75 100 Miles

County Level Data Tables

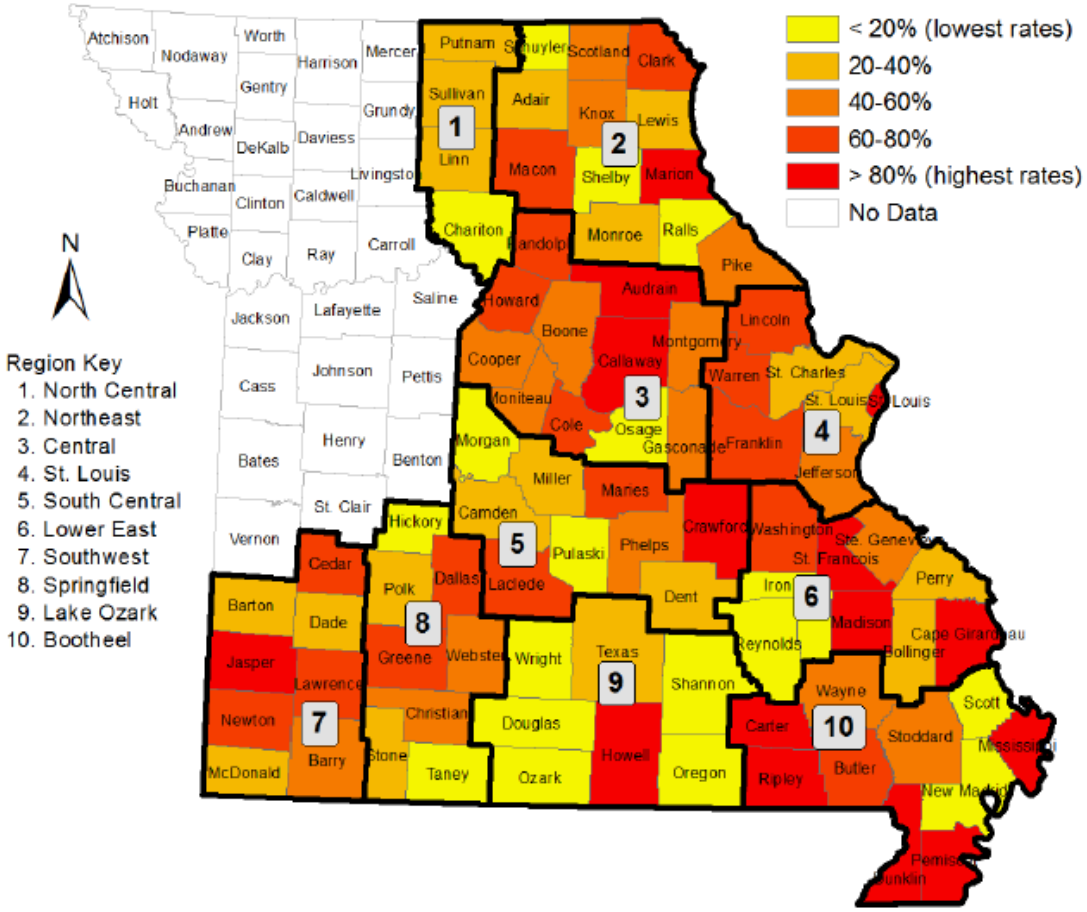
County	STDs: Chlamydia Rate/1000 people
Adair	286
Audrain	338
Barry	146
Barton	92
Bollinger	170
Boone	554
Butler	272
Callaway	385
Camden	119
Cape Girardeau	487
Carter	67
Cedar	150
Chariton	137
Christian	139
Clark	137
Cole	341
Cooper	275
Crawford	150
Dade	141
Dallas	90
Dent	151
Douglas	154
Dunklin	282
Franklin	135
Gasconade	83
Greene	315
Hickory	173
Howard	322
Howell	142
Iron	146
Jasper	314
Jefferson	122
Knox	73
Laclede	205
Lawrence	163
Lewis	138
Lincoln	118
Linn	117
Macon	192
Madison	190
Maries	99
Marion	278
McDonald	231
Miller	96

County	STDs: Chlamydia Rate/1000 people
Mississippi	545
Moniteau	139
Monroe	224
Montgomery	214
Morgan	155
New Madrid	317
Newton	203
Oregon	87
Osage	37
Ozark	107
Pemiscot	663
Perry	86
Phelps	284
Pike	221
Polk	213
Pulaski	659
Putnam	19
Ralls	61
Randolph	283
Reynolds	31
Ripley	129
Schuyler	94
Scotland	142
Scott	0
Shannon	24
Shelby	135
St. Charles	143
St. Francois	167
St. Louis	489
St. Louis City	1265
Ste. Genevieve	49
Stoddard	155
Stone	99
Sullivan	133
Taney	249
Texas	216
Warren	155
Washington	190
Wayne	39
Webster	161
Wright	196

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Year: 2008

High School Dropouts

Percent of Annual high school dropouts



Author: Ben Cooper | Created: 7.31.11

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation

0 12.5 25 50 75 100 Miles

County Level Data Tables

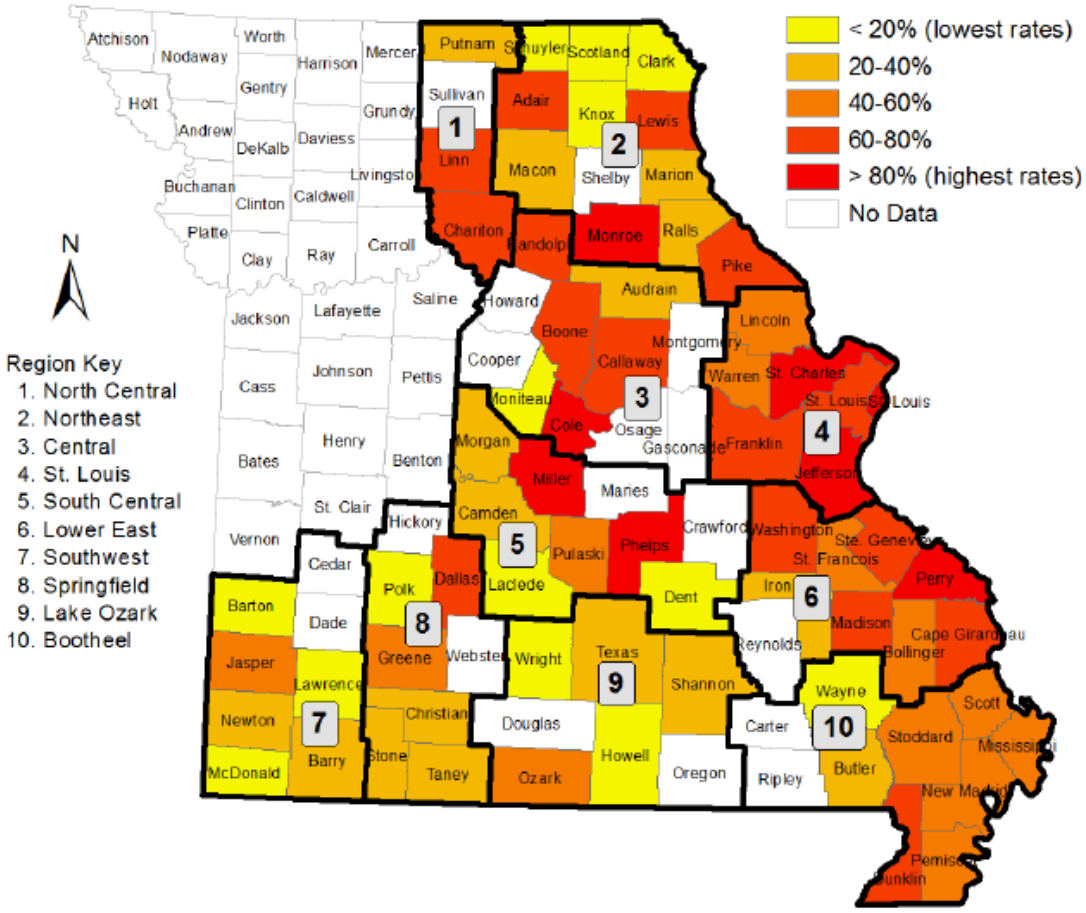
County	High School Dropout Percentage
Adair	2.6%
Audrain	5.1%
Barry	2.8%
Barton	2.3%
Bollinger	2.2%
Boone	3.1%
Butler	4.4%
Callaway	5.3%
Camden	2.1%
Cape Girardeau	6.6%
Carter	6.4%
Cedar	3.5%
Chariton	0.7%
Christian	2.7%
Clark	3.5%
Cole	4.3%
Cooper	3.3%
Crawford	6.6%
Dade	2.3%
Dallas	4.4%
Dent	2.0%
Douglas	1.7%
Dunklin	5.6%
Franklin	3.6%
Gasconade	2.8%
Greene	3.6%
Hickory	1.4%
Howard	4.5%
Howell	4.6%
Iron	1.6%
Jasper	5.0%
Jefferson	2.8%
Knox	3.0%
Laclede	4.1%
Lawrence	4.3%
Lewis	2.4%
Lincoln	4.4%
Linn	2.3%
Macon	3.4%
Madison	4.6%
Maries	4.5%
Marion	5.8%
McDonald	2.5%
Miller	2.5%

County	High School Dropout Percentage
Mississippi	5.9%
Moniteau	2.8%
Monroe	2.1%
Montgomery	3.2%
Morgan	0.8%
New Madrid	1.7%
Newton	3.6%
Oregon	1.1%
Osage	1.6%
Ozark	1.8%
Pemiscot	4.9%
Perry	2.5%
Phelps	2.8%
Pike	3.1%
Polk	2.1%
Pulaski	1.8%
Putnam	2.6%
Ralls	1.8%
Randolph	3.8%
Reynolds	0.9%
Ripley	5.4%
Schuyler	1.7%
Scotland	3.3%
Scott	1.8%
Shannon	0.4%
Shelby	1.8%
St. Charles	2.2%
St. Francois	5.1%
St. Louis	2.1%
St. Louis City	22.2%
Ste. Genevieve	3.0%
Stoddard	3.0%
Stone	2.6%
Sullivan	2.3%
Taney	1.2%
Texas	2.5%
Warren	4.1%
Washington	3.6%
Wayne	3.0%
Webster	3.1%
Wright	1.3%

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Year: 2008

Excessive Alcohol Use

Percent of population reporting binge or heavy drinking



Author: Ben Cooper | Created: 7.31.11

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation

0 12.5 25 50 75 100 Miles

County Level Data Tables

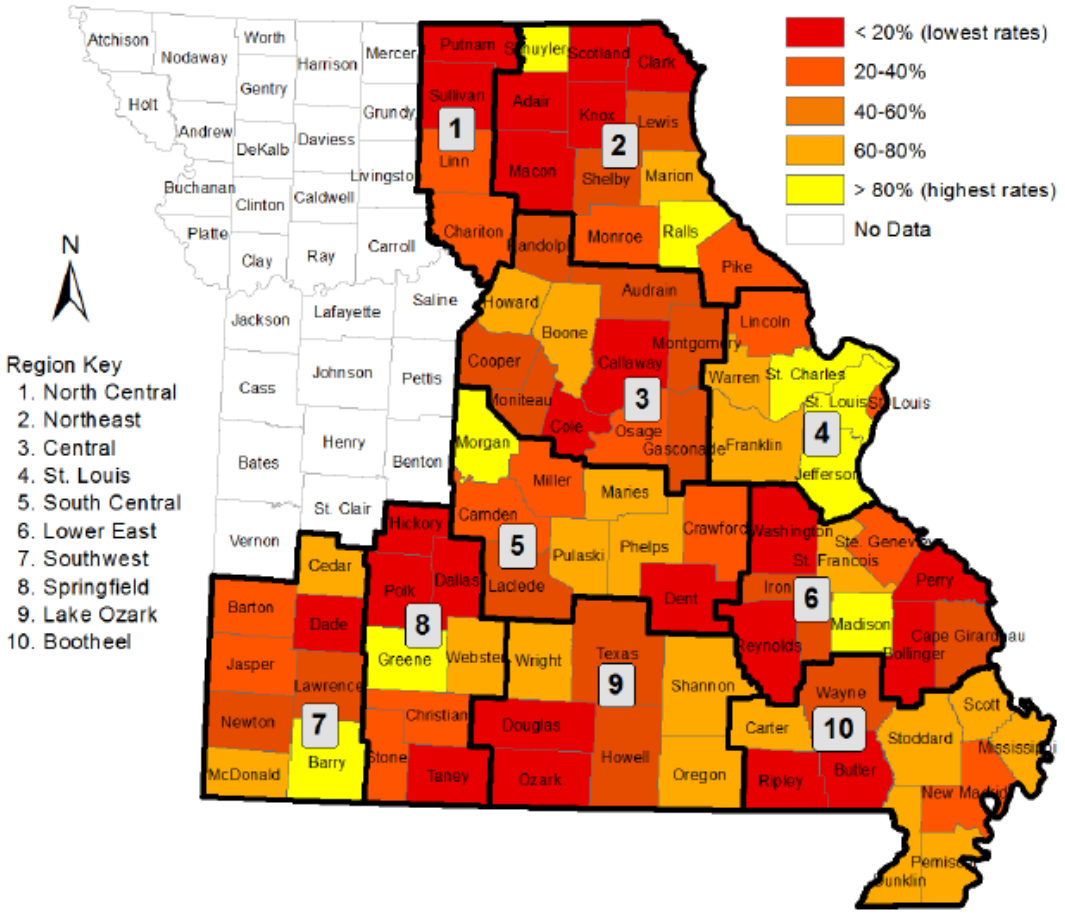
County	Excessive Alcohol Use Percent of Population
Adair	18%
Audrain	9%
Barry	11%
Barton	5%
Bollinger	14%
Boone	17%
Butler	12%
Callaway	17%
Camden	11%
Cape Girardeau	17%
Carter	--
Cedar	--
Chariton	18%
Christian	12%
Clark	8%
Cole	22%
Cooper	--
Crawford	--
Dade	--
Dallas	15%
Dent	8%
Douglas	--
Dunklin	15%
Franklin	16%
Gasconade	--
Greene	13%
Hickory	--
Howard	--
Howell	8%
Iron	10%
Jasper	14%
Jefferson	21%
Knox	4%
Laclede	7%
Lawrence	6%
Lewis	16%
Lincoln	14%
Linn	16%
Macon	11%
Madison	18%
Maries	--
Marion	12%
McDonald	5%
Miller	20%

County	Excessive Alcohol Use Percent of Population
Mississippi	14%
Moniteau	6%
Monroe	22%
Montgomery	--
Morgan	12%
New Madrid	14%
Newton	10%
Oregon	--
Osage	--
Ozark	13%
Pemiscot	13%
Perry	19%
Phelps	19%
Pike	16%
Polk	2%
Pulaski	13%
Putnam	9%
Ralls	12%
Randolph	15%
Reynolds	--
Ripley	--
Schuyler	6%
Scotland	4%
Scott	13%
Shannon	10%
Shelby	--
St. Charles	21%
St. Francois	14%
St. Louis	18%
St. Louis City	19%
Ste. Genevieve	16%
Stoddard	13%
Stone	12%
Sullivan	--
Taney	10%
Texas	10%
Warren	13%
Washington	18%
Wayne	6%
Webster	--
Wright	2%

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Years: 2003-2009

Access to Healthy Foods

Percent of zip codes in a county with a healthy food outlet



Author: Ben Cooper | Created: 7.31.11

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation

0 12.5 25 50 75 100 Miles

County Level Data Tables

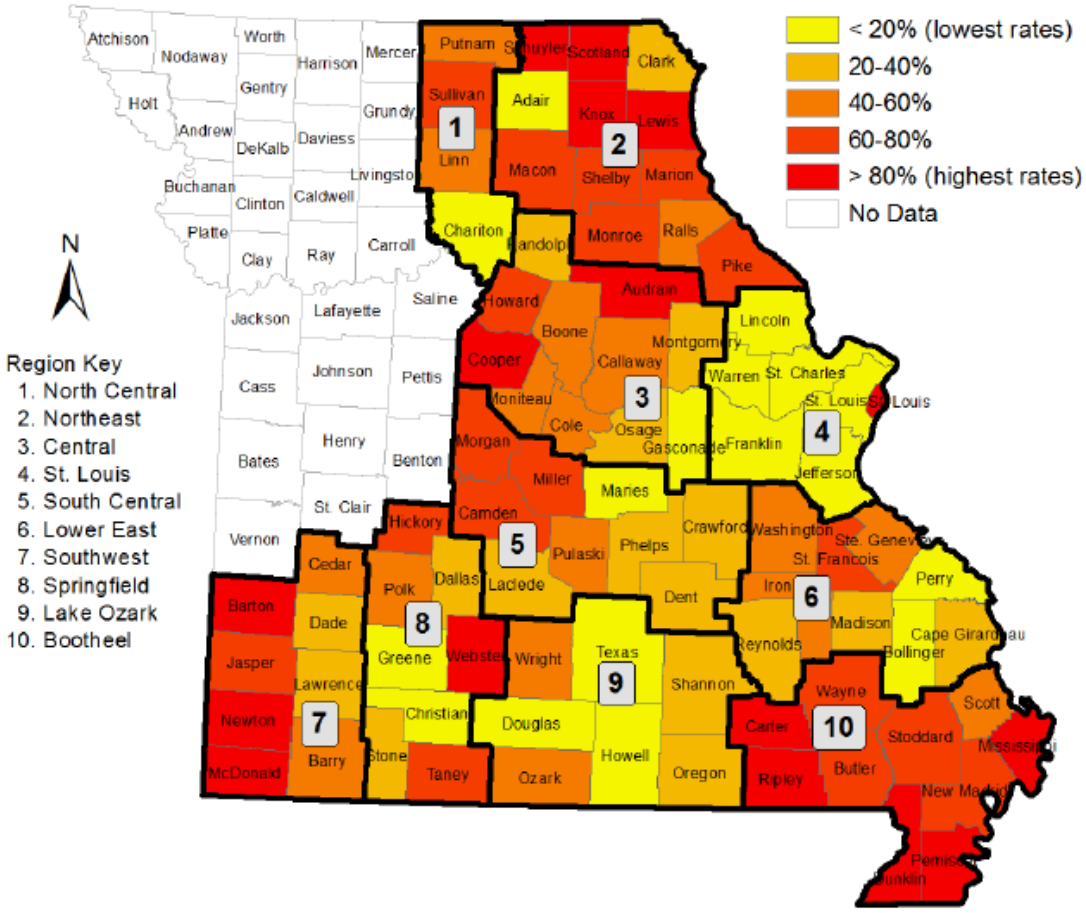
County	Access to Healthy Foods Percent of zip codes
Adair	20%
Audrain	25%
Barry	55%
Barton	33%
Bollinger	13%
Boone	39%
Butler	11%
Callaway	20%
Camden	33%
Cape Girardeau	25%
Carter	50%
Cedar	50%
Chariton	38%
Christian	33%
Clark	14%
Cole	18%
Cooper	29%
Crawford	38%
Dade	17%
Dallas	14%
Dent	20%
Douglas	20%
Dunklin	50%
Franklin	45%
Gasconade	29%
Greene	54%
Hickory	14%
Howard	40%
Howell	30%
Iron	30%
Jasper	33%
Jefferson	58%
Knox	14%
Laclede	29%
Lawrence	27%
Lewis	25%
Lincoln	36%
Linn	33%
Macon	20%
Madison	100%
Maries	50%
Marion	40%
McDonald	44%
Miller	38%

County	Access to Healthy Foods Percent of zip codes
Mississippi	50%
Moniteau	25%
Monroe	33%
Montgomery	25%
Morgan	63%
New Madrid	31%
Newton	30%
Oregon	40%
Osage	33%
Ozark	13%
Pemiscot	40%
Perry	17%
Phelps	44%
Pike	38%
Polk	18%
Pulaski	50%
Putnam	20%
Ralls	75%
Randolph	25%
Reynolds	14%
Ripley	17%
Schuyler	60%
Scotland	20%
Scott	45%
Shannon	50%
Shelby	25%
St. Charles	53%
St. Francois	40%
St. Louis	69%
St. Louis City	38%
Ste. Genevieve	33%
Stoddard	50%
Stone	33%
Sullivan	13%
Taney	18%
Texas	27%
Warren	40%
Washington	13%
Wayne	23%
Webster	50%
Wright	43%

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Year: 2008

Inadequate Prenatal Care

Rate/1,000 births



Author: Ben Cooper | Created: 7.31.11

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation

0 12.5 25 50 75 100 Miles

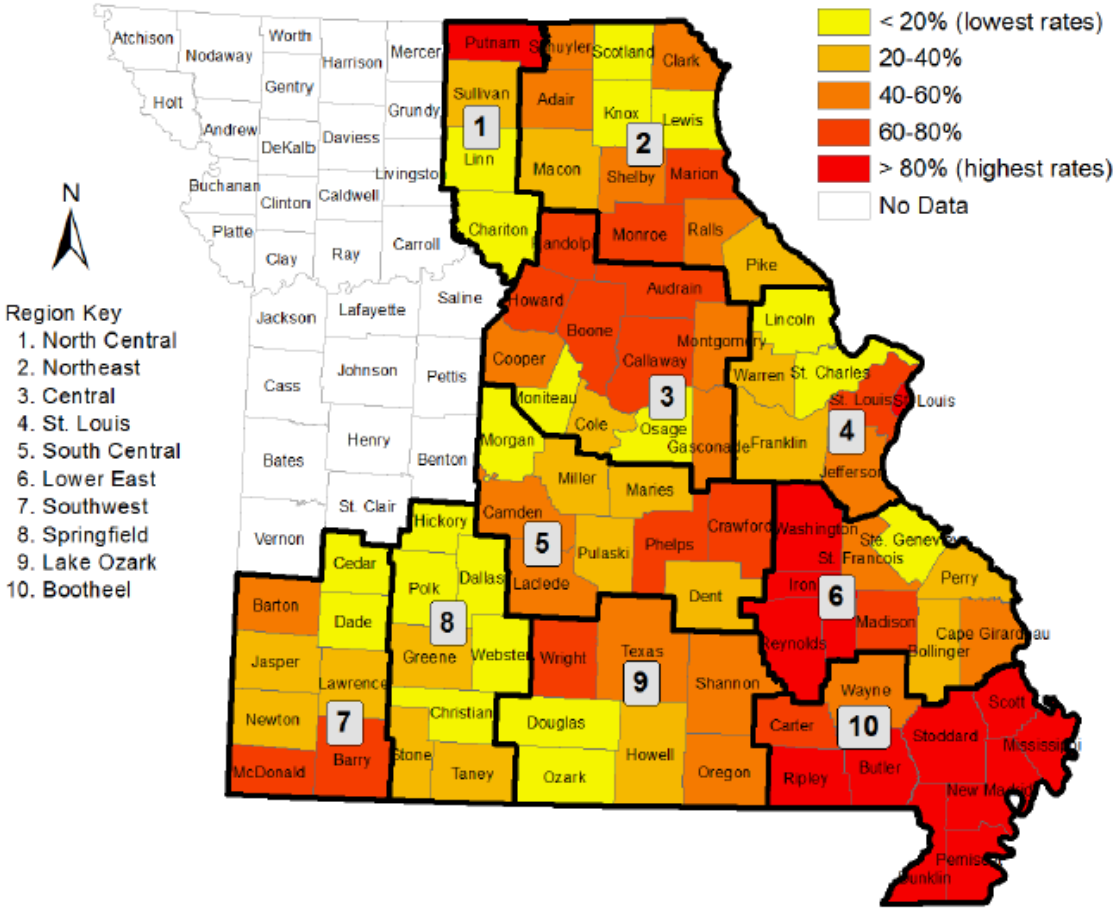
County Level Data Tables

County	Inadequate Prenatal Care Rate/1000 Births
Adair	7.5
Audrain	25.7
Barry	12.8
Barton	22
Bollinger	7.5
Boone	12.4
Butler	17.3
Callaway	14
Camden	15.2
Cape Girardeau	10.9
Carter	22.7
Cedar	14.3
Chariton	6.2
Christian	5.3
Clark	9.1
Cole	12.7
Cooper	20.6
Crawford	10.5
Dade	10.5
Dallas	10.3
Dent	11.3
Douglas	8.3
Dunklin	19.7
Franklin	6.7
Gasconade	8.1
Greene	7.2
Hickory	17.9
Howard	18.8
Howell	6.8
Iron	13.7
Jasper	19.5
Jefferson	6.6
Knox	27.6
Laclede	10.3
Lawrence	10.3
Lewis	22.9
Lincoln	8.1
Linn	12
Macon	15.6
Madison	10.4
Maries	7.1
Marion	16.6
McDonald	28
Miller	17.6

County	Inadequate Prenatal Care Rate/1000 Births
Mississippi	20.6
Moniteau	14.6
Monroe	18.7
Montgomery	9.7
Morgan	18
New Madrid	16.7
Newton	20.1
Oregon	11.4
Osage	9.2
Ozark	13.5
Pemiscot	22.9
Perry	3.9
Phelps	9.2
Pike	19.4
Polk	11.9
Pulaski	12
Putnam	11.5
Ralls	14.8
Randolph	11.4
Reynolds	10.9
Ripley	20.8
Schuyler	30.4
Scotland	40
Scott	13.4
Shannon	10.9
Shelby	19.5
St. Charles	4.8
St. Francois	16.4
St. Louis	8.1
St. Louis City	20
Ste. Genevieve	11.9
Stoddard	15.4
Stone	11.1
Sullivan	16.7
Taney	15.3
Texas	8.8
Warren	7.3
Washington	12.9
Wayne	16.4
Webster	24.5
Wright	11.5

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Year: 2009

Percent Low Birth Weight Babies



Author: Ben Cooper | Created: 7.19.11

County Level Data Tables

County	Percent Low Birth Rate
Adair	7.8%
Audrain	8.0%
Barry	8.3%
Barton	7.3%
Bollinger	7.1%
Boone	8.3%
Butler	9.8%
Callaway	8.7%
Camden	7.3%
Cape Girardeau	7.7%
Carter	8.2%
Cedar	6.6%
Chariton	6.3%
Christian	5.5%
Clark	7.9%
Cole	7.1%
Cooper	7.6%
Crawford	8.7%
Dade	6.5%
Dallas	6.3%
Dent	7.2%
Douglas	6.6%
Dunklin	10.5%
Franklin	6.8%
Gasconade	7.3%
Greene	7.0%
Hickory	5.3%
Howard	8.4%
Howell	6.7%
Iron	8.8%
Jasper	6.8%
Jefferson	7.3%
Knox	6.4%*
Laclede	7.5%
Lawrence	6.8%
Lewis	6.2%
Lincoln	6.6%
Linn	6.6%
Macon	7.2%
Madison	8.6%
Maries	6.7%*
Marion	8.2%
McDonald	8.1%
Miller	6.8%

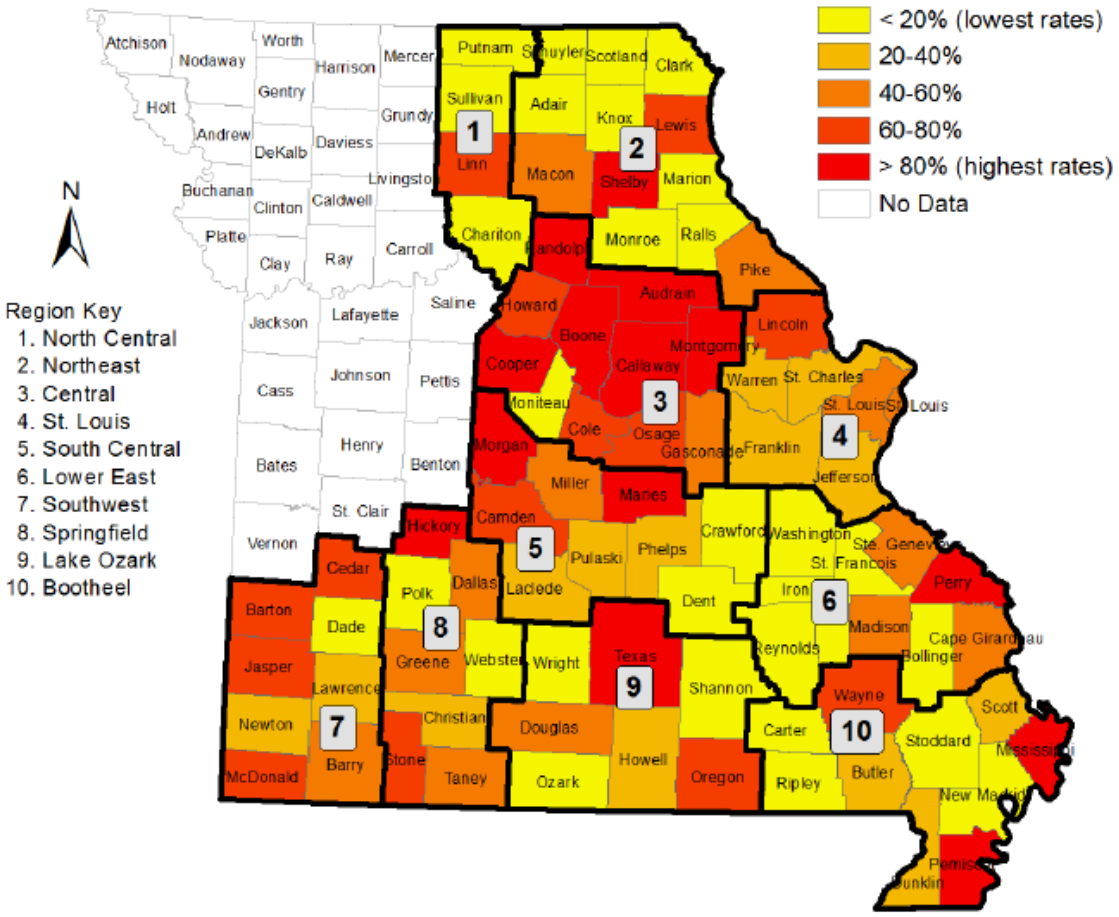
County	Percent Low Birth Rate
Mississippi	11.3%
Moniteau	6.5%
Monroe	8.6%
Montgomery	7.6%
Morgan	6.3%
New Madrid	11.0%
Newton	6.7%
Oregon	7.8%
Osage	6.0%
Ozark	5.2%*
Pemiscot	11.6%
Perry	7.2%
Phelps	8.7%
Pike	6.8%
Polk	6.5%
Pulaski	7.2%*
Putnam	9.7%
Ralls	7.9%
Randolph	8.2%
Reynolds	9.6%*
Ripley	10.1%
Schuyler	7.4%*
Scotland	5%*
Scott	9.3%
Shannon	7.7%
Shelby	7.6%*
St. Charles	6.6%
St. Francois	7.4%
St. Louis	8.6%
St. Louis City	11.8%
Ste. Genevieve	5.8%
Stoddard	9.5%
Stone	7.1%
Sullivan	6.9%*
Taney	6.8%
Texas	7.9%
Warren	6.8%
Washington	9.7%
Wayne	7.8%
Webster	6.5%
Wright	8.0%

* Estimates for these counties may span multiple years due to low incidence rates.

Data Source(s): Centers for Disease Control, Missouri Dept. of Health Senior Services, Annie E. Casey Foundation
Data Year: 2001-2007

Maternal Drinking During Pregnancy

Rate/1000 live births



County Level Data Tables

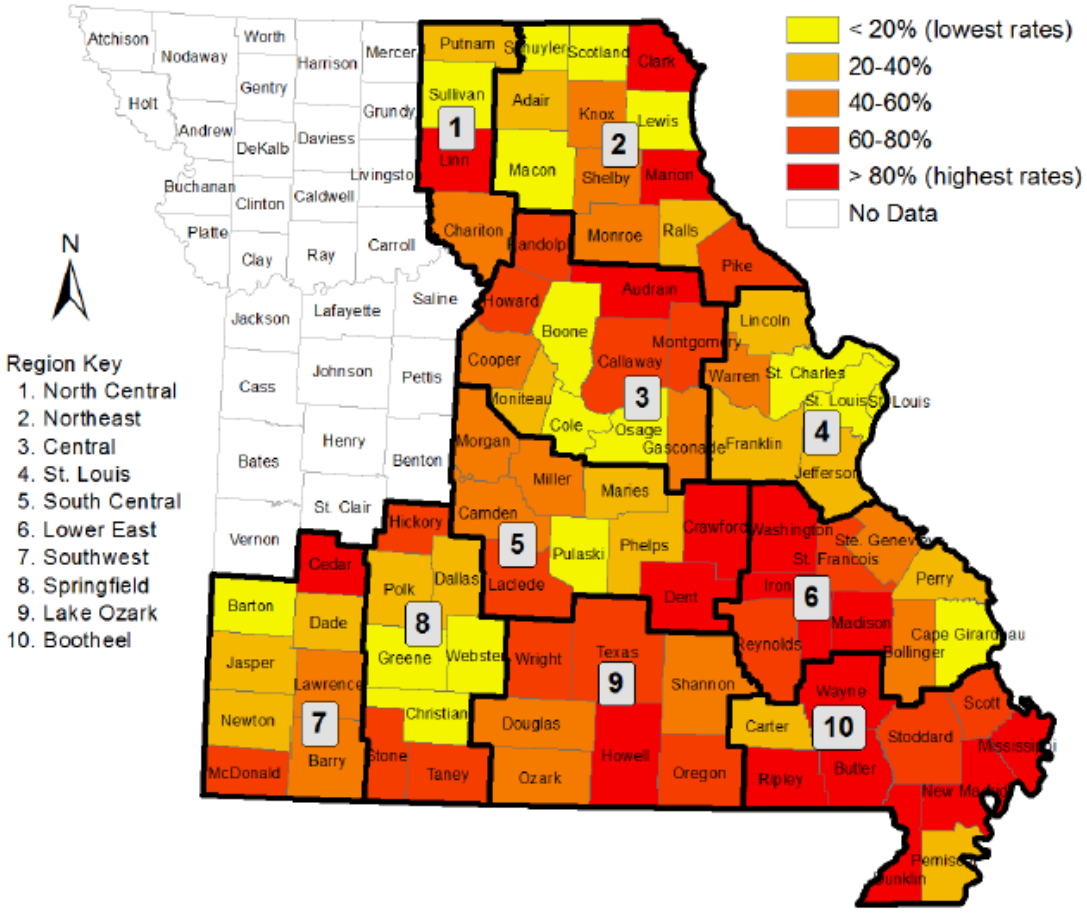
County	Maternal Drinking During Pregnancy Rate/1000 Births
Adair	0
Audrain	33.4
Barry	4.2
Barton	6.7
Bollinger	0
Boone	19.4
Butler	3.1
Callaway	15.2
Camden	6.8
Cape Girardeau	6.1
Carter	0
Cedar	6.4
Chariton	0
Christian	3.8
Clark	0.0
Cole	7.9
Cooper	21.2
Crawford	0
Dade	0
Dallas	4.7
Dent	0
Douglas	5.5
Dunklin	4.1
Franklin	3.7
Gasconade	5.5
Greene	5.2
Hickory	14.7
Howard	9.1
Howell	1.7
Iron	0
Jasper	7.0
Jefferson	2.8
Knox	0
Laclede	3.9
Lawrence	1.7
Lewis	9.3
Lincoln	6.3
Linn	6.5
Macon	5.5
Madison	6.1
Maries	10.8
Marion	0
McDonald	6.7
Miller	6.0

County	Maternal Drinking During Pregnancy Rate/1000 Births
Mississippi	11.1
Moniteau	0
Monroe	0.0
Montgomery	12.6
Morgan	11.5
New Madrid	0
Newton	4.0
Oregon	8.5
Osage	6.6
Ozark	0
Pemiscot	10.1
Perry	15.4
Phelps	3.8
Pike	4.2
Polk	0
Pulaski	3.8
Putnam	0
Ralls	0
Randolph	9.4
Reynolds	0
Ripley	0
Schuyler	0
Scotland	0
Scott	1.7
Shannon	0
Shelby	11.5
St. Charles	3.8
St. Francois	0
St. Louis	5.2
St. Louis City	5.2
Ste. Genevieve	4.6
Stoddard	0
Stone	9.3
Sullivan	0
Taney	5.9
Texas	9.4
Warren	2.3
Washington	0
Wayne	7.4
Webster	0
Wright	0

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Year: 2009

Maternal Smoking During Pregnancy

Rate/1,000 births



County Level Data Tables

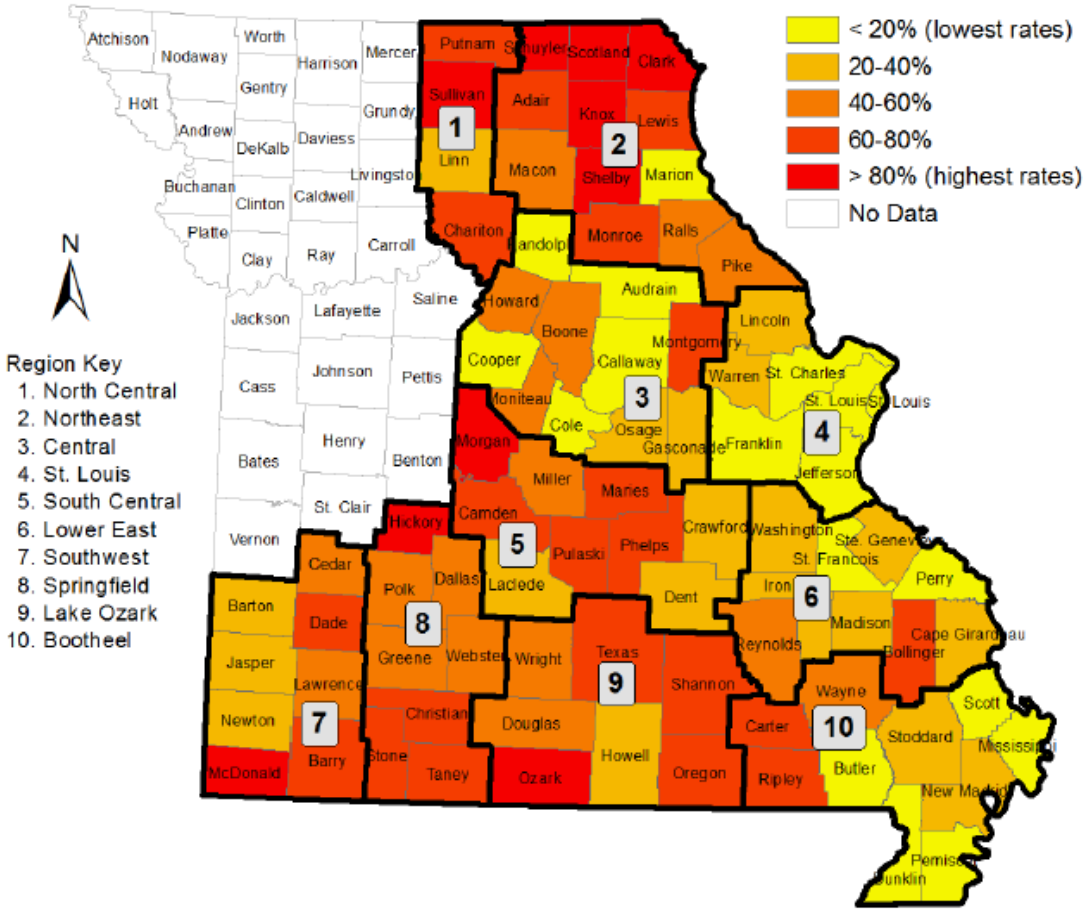
County	Maternal Smoking During Pregnancy Rate/1000 Births
Adair	20.0
Audrain	37.7
Barry	25.3
Barton	18.7
Bollinger	24.1
Boone	16.5
Butler	32.8
Callaway	26.6
Camden	25.9
Cape Girardeau	19.1
Carter	22.5
Cedar	29.9
Chariton	25.3
Christian	12.7
Clark	34.4
Cole	15.2
Cooper	24.6
Crawford	30.7
Dade	22.5
Dallas	23.1
Dent	30.6
Douglas	25.7
Dunklin	29.3
Franklin	21.9
Gasconade	23.8
Greene	17.8
Hickory	26.5
Howard	28.2
Howell	29.2
Iron	40.8
Jasper	21.6
Jefferson	19.4
Knox	24.1
Laclede	29.1
Lawrence	24.0
Lewis	13.9
Lincoln	20.4
Linn	32.5
Macon	17.1
Madison	36.0
Maries	20.4
Marion	30.1
McDonald	28.2
Miller	26.0

County	Maternal Smoking During Pregnancy Rate/1000 Births
Mississippi	34.4
Moniteau	22.6
Monroe	23.6
Montgomery	27.0
Morgan	25.7
New Madrid	32.8
Newton	21.6
Oregon	26.5
Osage	17.2
Ozark	25.5
Pemiscot	23.3
Perry	20.9
Phelps	22.4
Pike	27.1
Polk	22.9
Pulaski	16.5
Putnam	22.6
Ralls	19.8
Randolph	27.4
Reynolds	28.3
Ripley	33.7
Schuyler	19.2
Scotland	6.2
Scott	28.4
Shannon	26.3
Shelby	25.3
St. Charles	9.9
St. Francois	27.6
St. Louis	8.4
St. Louis City	13.8
Ste. Genevieve	25.5
Stoddard	28.3
Stone	27.9
Sullivan	14.1
Taney	27.9
Texas	28.5
Warren	23.8
Washington	29.4
Wayne	40.4
Webster	16.2
Wright	26.7

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Year: 2009

No Health Care Coverage

Percent of adults under age 65 with no health insurance



Author: Ben Cooper | Created: 7.31.11

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation

0 12.5 25 50 75 100 Miles

County Level Data Tables

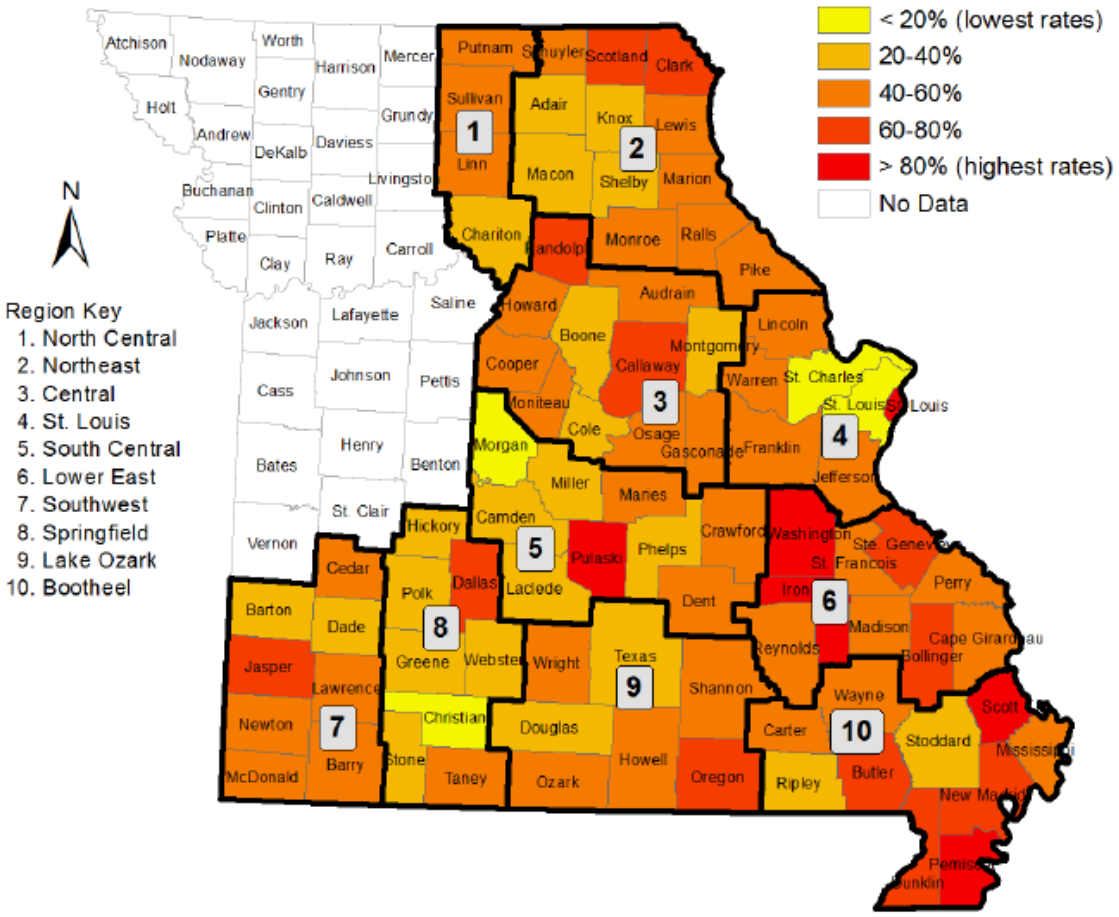
County	No Health Care Coverage Percent of Adults Under 65
Adair	20%
Audrain	13%
Barry	20%
Barton	15%
Bollinger	18%
Boone	16%
Butler	13%
Callaway	13%
Camden	20%
Cape Girardeau	15%
Carter	20%
Cedar	17%
Chariton	20%
Christian	19%
Clark	21%
Cole	13%
Cooper	13%
Crawford	15%
Dade	19%
Dallas	17%
Dent	15%
Douglas	16%
Dunklin	12%
Franklin	13%
Gasconade	15%
Greene	16%
Hickory	21%
Howard	17%
Howell	15%
Iron	14%
Jasper	15%
Jefferson	12%
Knox	24%
Laclede	14%
Lawrence	17%
Lewis	20%
Lincoln	15%
Linn	15%
Macon	17%
Madison	15%
Maries	19%
Marion	12%
McDonald	23%
Miller	16%

County	No Health Care Coverage Percent of Adults Under 65
Mississippi	13%
Moniteau	17%
Monroe	19%
Montgomery	19%
Morgan	23%
New Madrid	14%
Newton	15%
Oregon	19%
Osage	15%
Ozark	21%
Pemiscot	10%
Perry	13%
Phelps	18%
Pike	16%
Polk	16%
Pulaski	18%
Putnam	20%
Ralls	16%
Randolph	12%
Reynolds	16%
Ripley	19%
Schuyler	24%
Scotland	23%
Scott	12%
Shannon	18%
Shelby	23%
St. Charles	9%
St. Francois	13%
St. Louis	12%
St. Louis City	13%
Ste. Genevieve	14%
Stoddard	14%
Stone	20%
Sullivan	24%
Taney	18%
Texas	20%
Warren	14%
Washington	14%
Wayne	16%
Webster	17%
Wright	16%

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Year: 2007

Percent Overweight or Obese

weighted percentage



County Level Data Tables

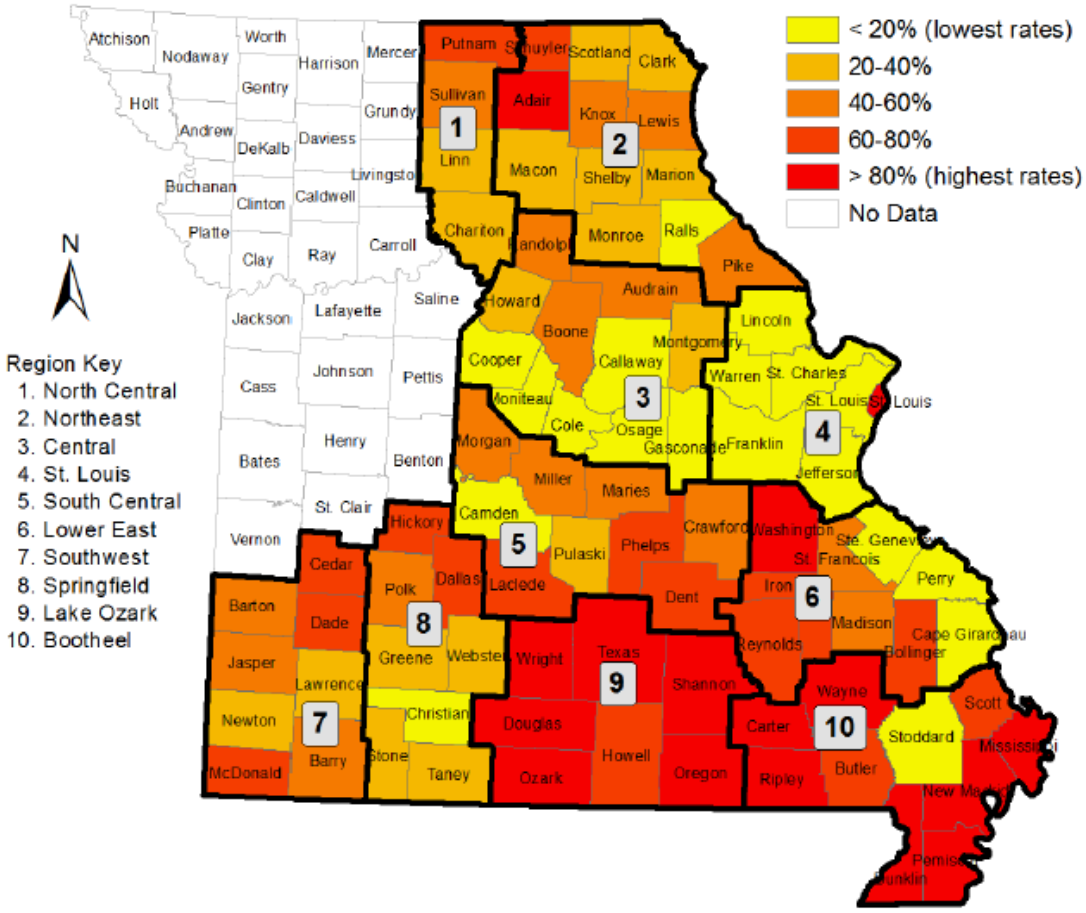
County	Overweight/Obesity Percent
Adair	29%
Audrain	30%
Barry	30%
Barton	29%
Bollinger	31%
Boone	29%
Butler	31%
Callaway	31%
Camden	29%
Cape Girardeau	30%
Carter	30%
Cedar	30%
Chariton	29%
Christian	28%
Clark	31%
Cole	29%
Cooper	30%
Crawford	30%
Dade	29%
Dallas	31%
Dent	30%
Douglas	29%
Dunklin	31%
Franklin	30%
Gasconade	30%
Greene	29%
Hickory	29%
Howard	30%
Howell	30%
Iron	32%
Jasper	31%
Jefferson	30%
Knox	29%
Laclede	29%
Lawrence	30%
Lewis	30%
Lincoln	30%
Linn	30%
Macon	29%
Madison	30%
Maries	30%
Marion	30%
McDonald	30%
Miller	29%

County	Overweight/Obesity Percent
Mississippi	30%
Moniteau	30%
Monroe	30%
Montgomery	29%
Morgan	28%
New Madrid	31%
Newton	30%
Oregon	31%
Osage	30%
Ozark	30%
Pemiscot	32%
Perry	30%
Phelps	29%
Pike	30%
Polk	29%
Pulaski	32%
Putnam	30%
Ralls	30%
Randolph	31%
Reynolds	30%
Ripley	29%
Schuyler	30%
Scotland	31%
Scott	32%
Shannon	30%
Shelby	29%
St. Charles	28%
St. Francois	30%
St. Louis	28%
St. Louis City	32%
Ste. Genevieve	31%
Stoddard	29%
Stone	29%
Sullivan	30%
Taney	30%
Texas	29%
Warren	30%
Washington	32%
Wayne	30%
Webster	29%
Wright	30%

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Year: 2008

Households in Poverty

Percent of population at or below Federal Poverty Level (2008)



Author: Ben Cooper | Created: 7.31.11

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation

0 12.5 25 50 75 100 Miles

County Level Data Tables

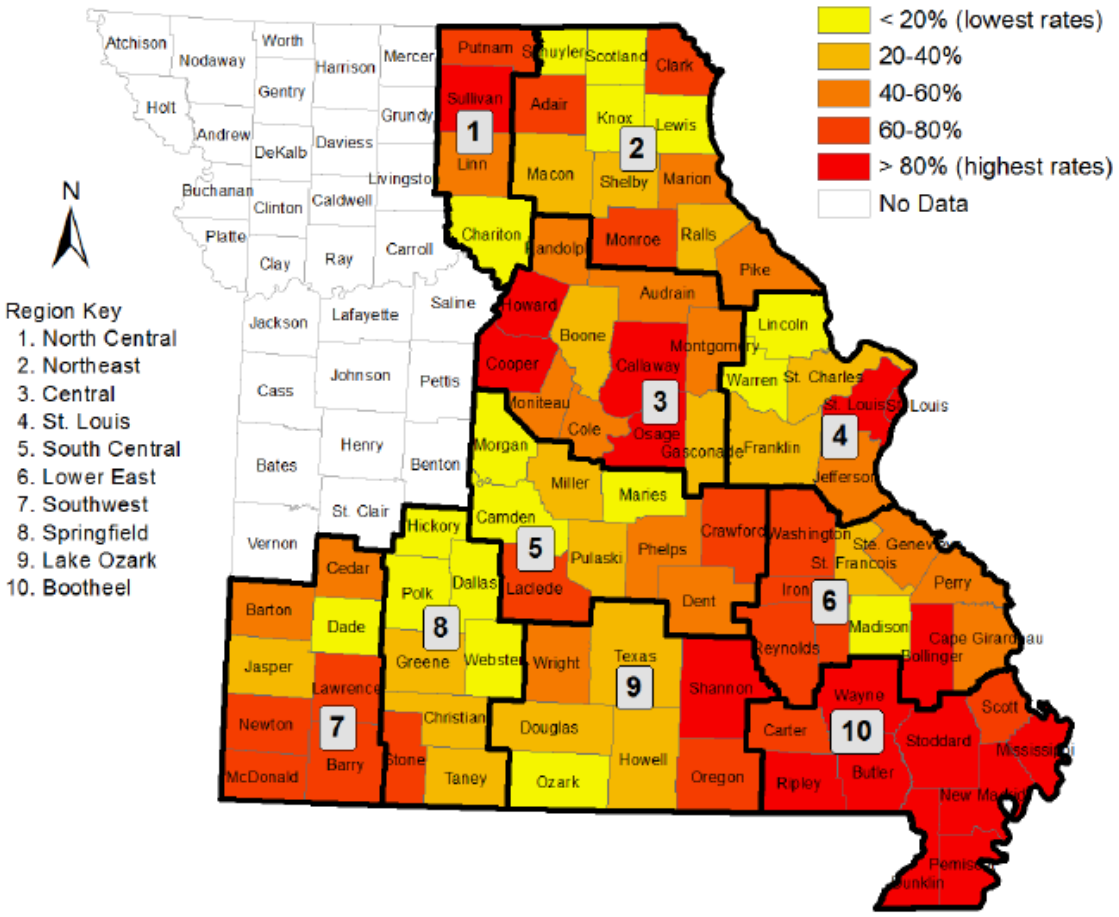
County	Households in Poverty Percent at/below FPL (2008)
Adair	27.3%
Audrain	17.2%
Barry	16.9%
Barton	17.4%
Bollinger	18.0%
Boone	16.8%
Butler	20.8%
Callaway	11.3%
Camden	12.4%
Cape Girardeau	13.5%
Carter	25.4%
Cedar	20.9%
Chariton	14.1%
Christian	9.5%
Clark	15.4%
Cole	9.3%
Cooper	13.5%
Crawford	17.8%
Dade	18.1%
Dallas	18.6%
Dent	19.4%
Douglas	21.8%
Dunklin	25.0%
Franklin	9.0%
Gasconade	13.1%
Greene	15.4%
Hickory	20.0%
Howard	14.9%
Howell	19.2%
Iron	21.6%
Jasper	17.9%
Jefferson	8.2%
Knox	17.0%
Laclede	18.1%
Lawrence	15.8%
Lewis	17.2%
Lincoln	10.5%
Linn	16.3%
Macon	14.8%
Madison	17.3%
Maries	17.0%
Marion	15.8%
McDonald	21.0%
Miller	17.0%

County	Households in Poverty Percent at/below FPL (2008)
Mississippi	26.1%
Moniteau	12.7%
Monroe	13.6%
Montgomery	14.7%
Morgan	17.2%
New Madrid	23.7%
Newton	14.6%
Oregon	23.4%
Osage	10.0%
Ozark	21.7%
Pemiscot	31.7%
Perry	12.3%
Phelps	18.2%
Pike	17.8%
Polk	17.4%
Pulaski	14.0%
Putnam	18.0%
Ralls	10.6%
Randolph	17.8%
Reynolds	21.0%
Ripley	25.6%
Schuyler	19.4%
Scotland	15.3%
Scott	19.4%
Shannon	26.0%
Shelby	15.1%
St. Charles	5.0%
St. Francois	16.8%
St. Louis	9.0%
St. Louis City	26.5%
Ste. Genevieve	10.3%
Stoddard	13.5%
Stone	15.3%
Sullivan	17.0%
Taney	14.6%
Texas	22.6%
Warren	10.9%
Washington	24.1%
Wayne	25.3%
Webster	16.3%
Wright	23.2%

Data Source(s): Centers for Disease Control, Missouri Dept. of Health Senior Services, Annie E. Casey Foundation
Data Year: 2008

Premature Births

Rate/1000 live births



County Level Data Tables

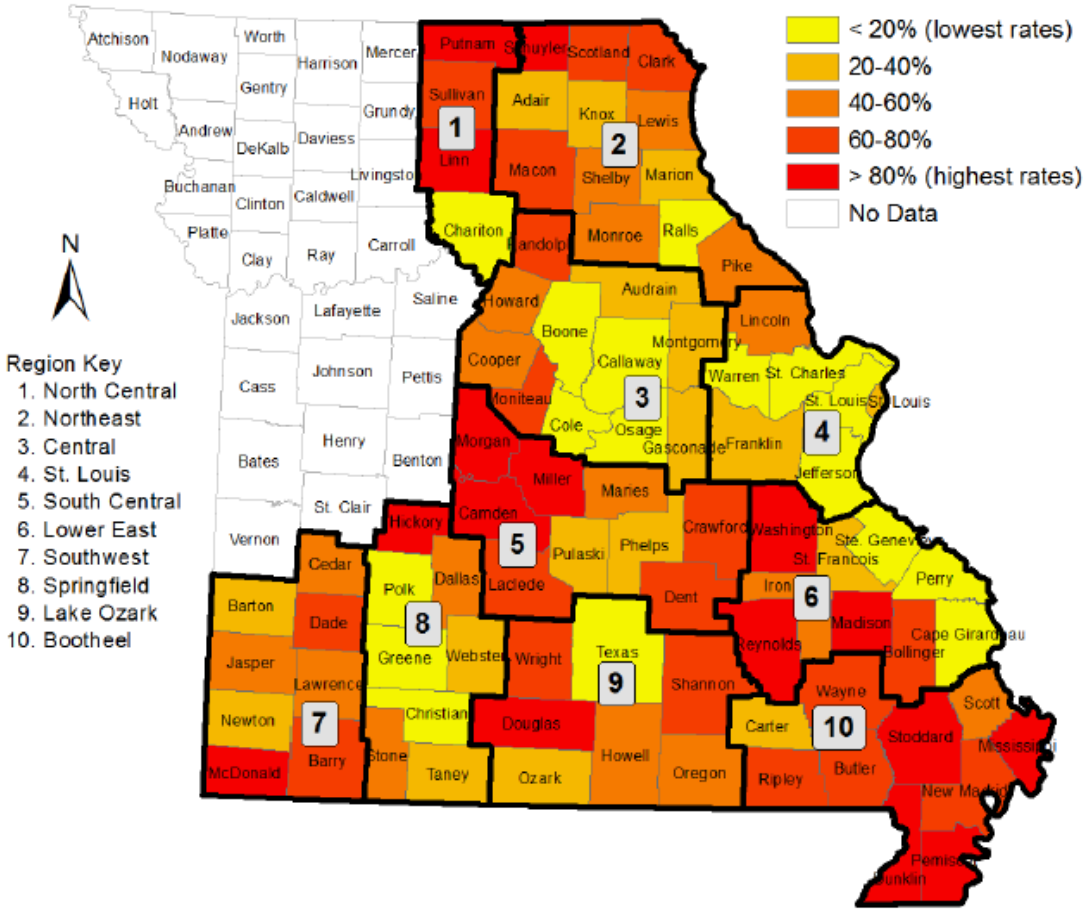
County	Premature Birth Rate
Adair	14.22
Audrain	13.04
Barry	13.78
Barton	12.65
Bollinger	14.47
Boone	11.81
Butler	18.1
Callaway	14.82
Camden	10.05
Cape Girardeau	13.27
Carter	13.84
Cedar	12.57
Chariton	10.09
Christian	11.43
Clark	13.64
Cole	13.34
Cooper	14.71
Crawford	13.99
Dade	11.21
Dallas	10.24
Dent	12.61
Douglas	12.00
Dunklin	17.39
Franklin	11.75
Gasconade	11.45
Greene	11.84
Hickory	10.54
Howard	15.91
Howell	11.95
Iron	13.82
Jasper	11.63
Jefferson	12.55
Knox	9.80
Laclede	13.93
Lawrence	13.56
Lewis	9.86
Lincoln	10.58
Linn	12.54
Macon	11.69
Madison	10.82
Maries	11.09
Marion	12.30
McDonald	13.72
Miller	11.65

County	Premature Birth Rate
Mississippi	16.41
Moniteau	12.52
Monroe	13.65
Montgomery	12.61
Morgan	11.08
New Madrid	17.42
Newton	13.37
Oregon	13.54
Osage	14.64
Ozark	9.98
Pemiscot	19.40
Perry	13.14
Phelps	12.16
Pike	12.15
Polk	11.31
Pulaski	11.60
Putnam	13.38
Ralls	11.53
Randolph	12.68
Reynolds	13.69
Ripley	18.72
Schuyler	8.44
Scotland	6.63
Scott	14.13
Shannon	16.51
Shelby	11.92
St. Charles	11.85
St. Francois	12.05
St. Louis	14.59
St. Louis City	18.73
Ste. Genevieve	12.15
Stoddard	15.36
Stone	13.36
Sullivan	15.64
Taney	11.81
Texas	12.08
Warren	9.98
Washington	13.36
Wayne	15.5
Webster	10.70
Wright	12.42

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Year: 2004-2008

Adults with Sedentary Lifestyle

Weighted percent of adults



Author: Ben Cooper | Created: 7.31.11

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation

0 12.5 25 50 75 100 Miles

County Level Data Tables

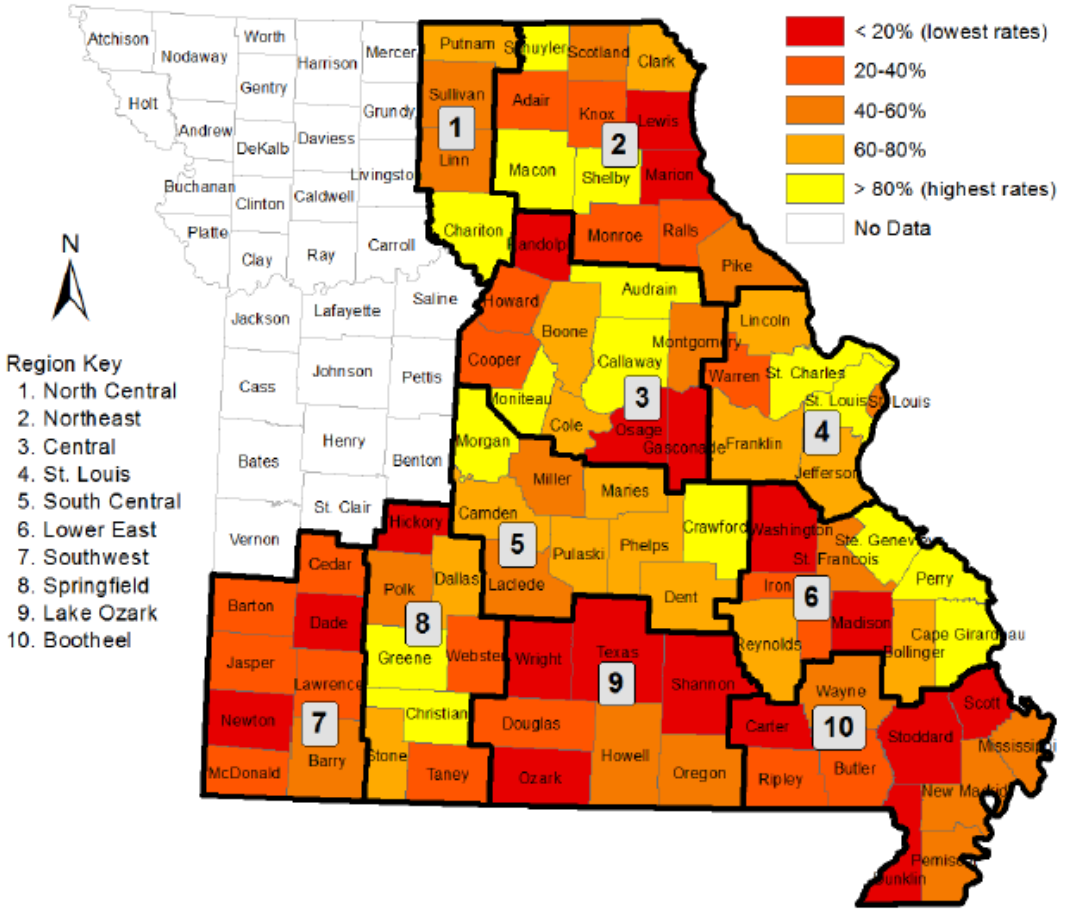
County	Sedentary Lifestyle Weighted Percentage
Adair	24.3%
Audrain	26.8%
Barry	30.5%
Barton	26.5%
Bollinger	31.3%
Boone	18.8%
Butler	30.3%
Callaway	23.8%
Camden	33.7%
Cape Girardeau	21.1%
Carter	25.0%
Cedar	27.9%
Chariton	23.7%
Christian	20.0%
Clark	31.4%
Cole	19.5%
Cooper	28.6%
Crawford	30.4%
Dade	31.3%
Dallas	28.3%
Dent	30.4%
Douglas	35.1%
Dunklin	35.6%
Franklin	27.4%
Gasconade	24.7%
Greene	22.6%
Hickory	35.2%
Howard	29.4%
Howell	28.2%
Iron	29.4%
Jasper	29.0%
Jefferson	23.7%
Knox	26.6%
Laclede	30.3%
Lawrence	27.8%
Lewis	27.5%
Lincoln	28.1%
Linn	35.0%
Macon	30.1%
Madison	35.8%
Maries	29.1%
Marion	27.4%
McDonald	32.2%
Miller	34.0%

County	Sedentary Lifestyle Weighted Percentage
Mississippi	33.8%
Moniteau	30.2%
Monroe	29.6%
Montgomery	25.5%
Morgan	32.8%
New Madrid	30.4%
Newton	26.3%
Oregon	29.4%
Osage	22.7%
Ozark	25.0%
Pemiscot	37.8%
Perry	22.5%
Phelps	25.6%
Pike	29.8%
Polk	23.4%
Pulaski	26.3%
Putnam	32.2%
Ralls	19.9%
Randolph	30.4%
Reynolds	32.0%
Ripley	30.9%
Schuyler	32.7%
Scotland	30.4%
Scott	28.0%
Shannon	31.2%
Shelby	28.9%
St. Charles	20.3%
St. Francois	27.2%
St. Louis	22.7%
St. Louis City	24.4%
Ste. Genevieve	22.9%
Stoddard	33.2%
Stone	28.1%
Sullivan	29.9%
Taney	25.9%
Texas	22.0%
Warren	21.6%
Washington	37.3%
Wayne	30.5%
Webster	25.4%
Wright	31.4%

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Year: 2007

Public Clinic Immunizations

Percent of two-year olds properly immunized



Author: Ben Cooper | Created: 7.31.11

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation

0 12.5 25 50 75 100 Miles

County Level Data Tables

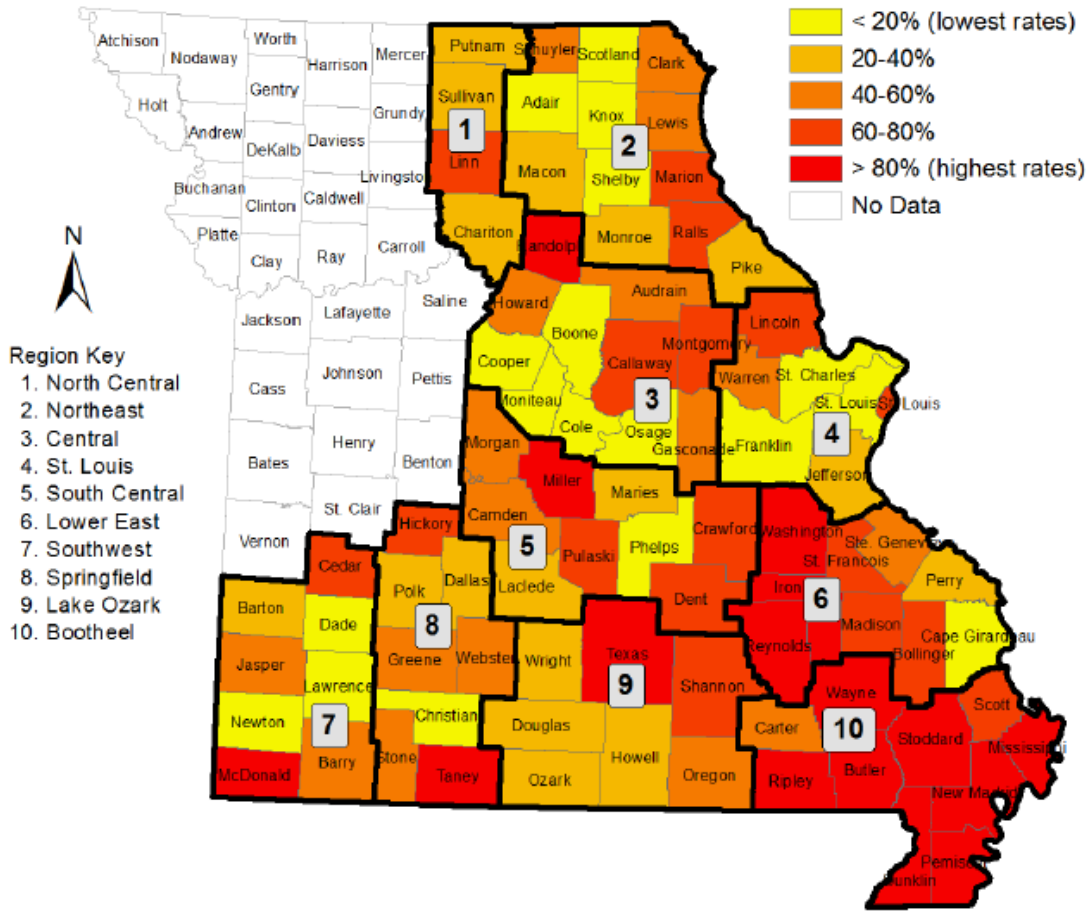
County	Public Clinic Immunizations Percent of 2-yr. olds
Adair	74.8%
Audrain	90.4%
Barry	78.6%
Barton	67.7%
Bollinger	85.0%
Boone	83.8%
Butler	70.1%
Callaway	90.3%
Camden	85.2%
Cape Girardeau	91.7%
Carter	54.8%
Cedar	72.0%
Chariton	88.4%
Christian	86.3%
Clark	82.2%
Cole	84.4%
Cooper	75.5%
Crawford	88.9%
Dade	60.0%
Dallas	84.4%
Dent	82.2%
Douglas	71.1%
Dunklin	51.5%
Franklin	81.8%
Gasconade	66.7%
Greene	90.4%
Hickory	66.7%
Howard	73.3%
Howell	76.4%
Iron	72.8%
Jasper	67.1%
Jefferson	86.0%
Knox	70.8%
Laclede	81.3%
Lawrence	72.8%
Lewis	65.3%
Lincoln	85.1%
Linn	79.1%
Macon	93.8%
Madison	66.3%
Maries	82.2%
Marion	64.1%
McDonald	75.4%
Miller	78.8%

County	Public Clinic Immunizations Percent of 2-yr. olds
Mississippi	79.6%
Moniteau	90.2%
Monroe	72.2%
Montgomery	81.5%
Morgan	99.0%
New Madrid	81.7%
Newton	56.8%
Oregon	77.9%
Osage	66.7%
Ozark	64.3%
Pemiscot	79.5%
Perry	89.5%
Phelps	82.2%
Pike	78.7%
Polk	77.5%
Pulaski	82.4%
Putnam	86.0%
Ralls	75.6%
Randolph	45.0%
Reynolds	82.1%
Ripley	72.1%
Schuyler	90.3%
Scotland	77.2%
Scott	63.6%
Shannon	55.6%
Shelby	91.4%
St. Charles	87.0%
St. Francois	76.4%
St. Louis	94.7%
St. Louis City	80.0%
Ste. Genevieve	91.7%
Stoddard	60.0%
Stone	84.0%
Sullivan	79.0%
Taney	72.7%
Texas	52.8%
Warren	75.6%
Washington	52.4%
Wayne	78.6%
Webster	74.7%
Wright	40.8%

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Year: 2005

Current Smoking/Tobacco Use

Weighted percentage of population age 18 or over



Author: Ben Cooper | Created: 7.31.11

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation

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County Level Data Tables

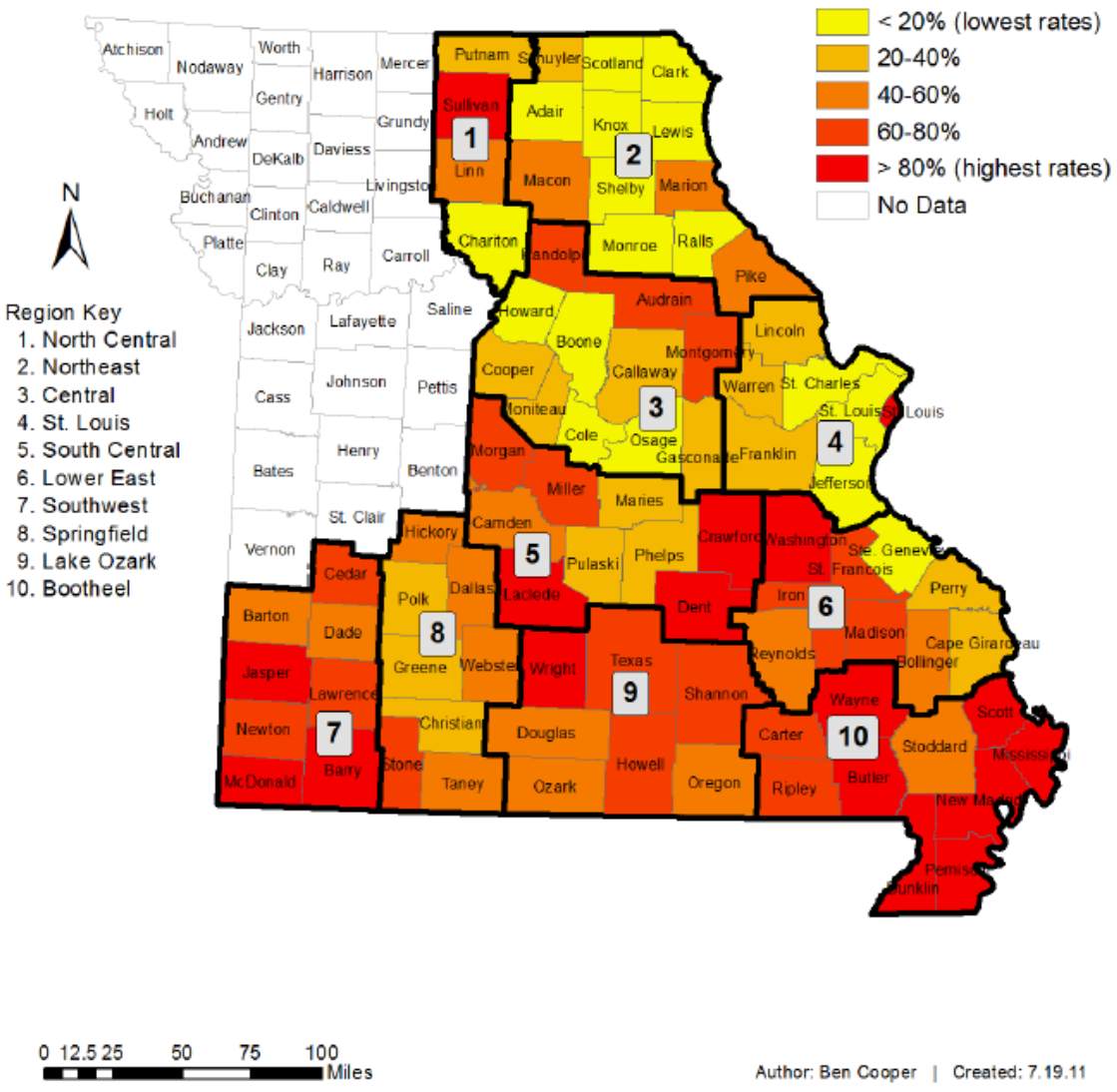
County	Current Tobacco Use Weighted Percent 2007
Adair	19.6%
Audrain	25.2%
Barry	26.1%
Barton	22.1%
Bollinger	27.6%
Boone	18.0%
Butler	32.5%
Callaway	27.2%
Camden	25.7%
Cape Girardeau	19.9%
Carter	26.4%
Cedar	28.4%
Chariton	22.3%
Christian	18.7%
Clark	26.6%
Cole	16.9%
Cooper	20.6%
Crawford	28.3%
Dade	20.4%
Dallas	24.0%
Dent	28.4%
Douglas	23.6%
Dunklin	31.3%
Franklin	19.7%
Gasconade	25.6%
Greene	25.3%
Hickory	29.4%
Howard	24.7%
Howell	23.1%
Iron	31.5%
Jasper	24.2%
Jefferson	23.7%
Knox	18.1%
Laclede	22.2%
Lawrence	18.5%
Lewis	26.7%
Lincoln	30.2%
Linn	27.2%
Macon	23.2%
Madison	29.7%
Maries	22.3%
Marion	27.4%
McDonald	33.6%
Miller	31.9%

County	Current Tobacco Use Weighted Percent 2007
Mississippi	34.7%
Moniteau	21.1%
Monroe	22.1%
Montgomery	28.3%
Morgan	26.3%
New Madrid	33.9%
Newton	19.1%
Oregon	25.8%
Osage	18.1%
Ozark	23.1%
Pemiscot	31.4%
Perry	23.1%
Phelps	21.1%
Pike	23.0%
Polk	22.9%
Pulaski	28.3%
Putnam	22.4%
Ralls	27.2%
Randolph	31.7%
Reynolds	31.7%
Ripley	33.7%
Schuyler	24.2%
Scotland	18.3%
Scott	27.6%
Shannon	27.9%
Shelby	18.4%
St. Charles	18.6%
St. Francois	28.8%
St. Louis	18.6%
St. Louis City	27.6%
Ste. Genevieve	26.0%
Stoddard	32.5%
Stone	25.2%
Sullivan	22.7%
Taney	36.5%
Texas	30.4%
Warren	26.1%
Washington	34.7%
Wayne	34.0%
Webster	27.0%
Wright	23.9%

Data Source(s): Missouri Dept. of Health Senior Services
Data Year: 2007

Teen Birth Rate

Rate/1000 births, ages 15-19 yrs



County Level Data Tables

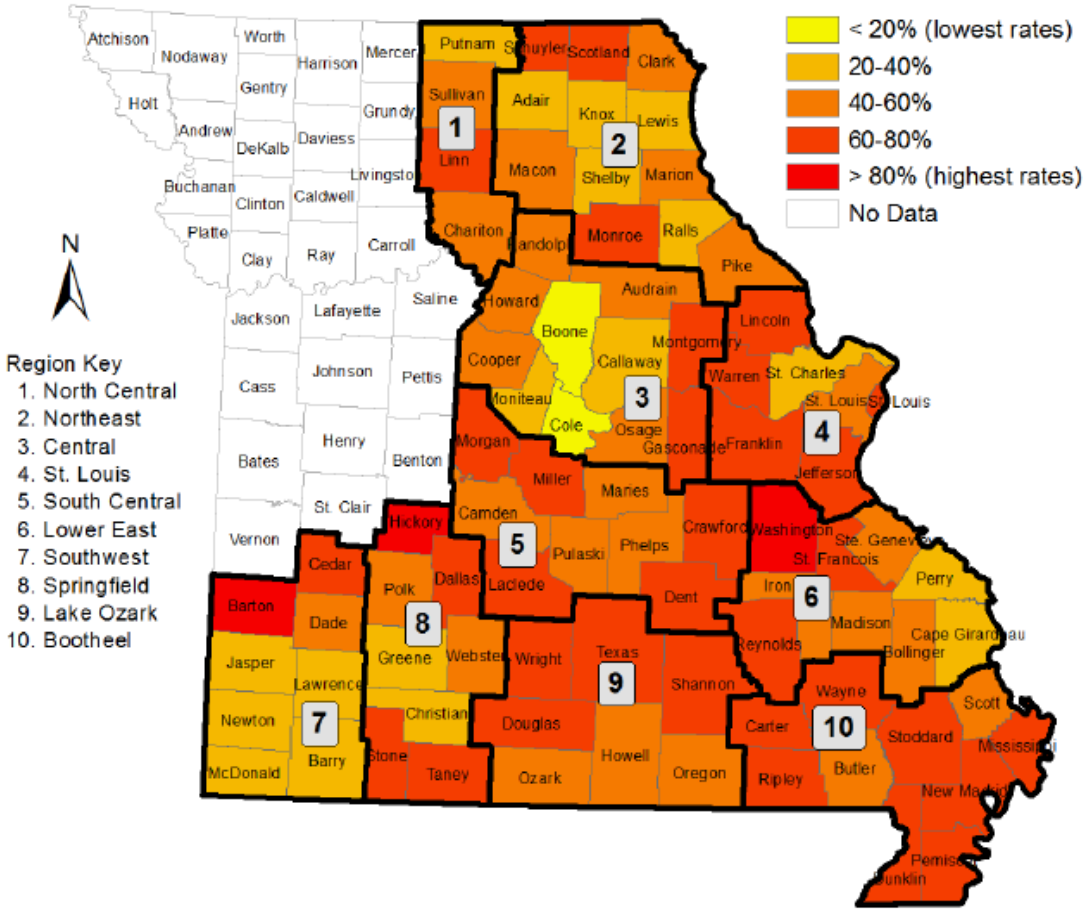
County	Teen Birth Rate (rate/1000, age 15-19 yrs.)
Adair	15
Audrain	61
Barry	78
Barton	56
Bollinger	53
Boone	23
Butler	81
Callaway	41
Camden	55
Cape Girardeau	37
Carter	67
Cedar	58
Chariton	28
Christian	40
Clark	34
Cole	35
Cooper	45
Crawford	69
Dade	53
Dallas	56
Dent	69
Douglas	54
Dunklin	97
Franklin	41
Gasconade	45
Greene	43
Hickory	56
Howard	21
Howell	62
Iron	62
Jasper	69
Jefferson	35
Knox	33
Laclede	72
Lawrence	62
Lewis	24
Lincoln	42
Linn	51
Macon	52
Madison	63
Maries	47
Marion	50
McDonald	91
Miller	67

County	Teen Birth Rate (rate/1000, age 15-19 yrs.)
Mississippi	102
Moniteau	48
Monroe	35
Montgomery	57
Morgan	63
New Madrid	80
Newton	59
Oregon	56
Osage	34
Ozark	50
Pemiscot	114
Perry	49
Phelps	49
Pike	55
Polk	38
Pulaski	41
Putnam	36
Ralls	35
Randolph	61
Reynolds	53
Ripley	67
Schuyler	45
Scotland	19
Scott	69
Shannon	66
Shelby	30
St. Charles	22
St. Francois	65
St. Louis	27
St. Louis City	74
Ste. Genevieve	30
Stoddard	51
Stone	62
Sullivan	74
Taney	55
Texas	59
Warren	46
Washington	79
Wayne	73
Webster	52
Wright	83

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Year: 2001-2007

Adult Unemployment

Percent of population 16 or older looking for work



Author: Ben Cooper | Created: 7.31.11

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation

0 12.5 25 50 75 100 Miles

County Level Data Tables

County	Adult Unemployment Percent 16 or older
Adair	5%
Audrain	6%
Barry	5%
Barton	9%
Bollinger	6%
Boone	4%
Butler	6%
Callaway	5%
Camden	6%
Cape Girardeau	5%
Carter	7%
Cedar	7%
Chariton	6%
Christian	5%
Clark	6%
Cole	4%
Cooper	6%
Crawford	8%
Dade	6%
Dallas	8%
Dent	8%
Douglas	7%
Dunklin	8%
Franklin	8%
Gasconade	8%
Greene	5%
Hickory	10%
Howard	6%
Howell	6%
Iron	6%
Jasper	5%
Jefferson	7%
Knox	5%
Laclede	8%
Lawrence	5%
Lewis	5%
Lincoln	8%
Linn	7%
Macon	6%
Madison	6%
Maries	6%
Marion	6%
McDonald	5%
Miller	7%

County	Adult Unemployment Percent 16 or older
Mississippi	7%
Moniteau	5%
Monroe	7%
Montgomery	7%
Morgan	8%
New Madrid	7%
Newton	5%
Oregon	6%
Osage	6%
Ozark	6%
Pemiscot	8%
Perry	5%
Phelps	6%
Pike	6%
Polk	6%
Pulaski	6%
Putnam	5%
Ralls	5%
Randolph	6%
Reynolds	8%
Ripley	7%
Schuyler	7%
Scotland	7%
Scott	6%
Shannon	8%
Shelby	5%
St. Charles	5%
St. Francois	7%
St. Louis	6%
St. Louis City	8%
Ste. Genevieve	6%
Stoddard	8%
Stone	8%
Sullivan	6%
Taney	8%
Texas	7%
Warren	8%
Washington	10%
Wayne	7%
Webster	6%
Wright	7%

Data Source(s): Centers for Disease Control, Missouri Dept. of Health & Senior Services, Annie E. Casey Foundation
Data Year: 2009