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kids
count

DATA
BOOK



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TABLE OF CONTENTS

Acknowledgements	3
Advisory Board	5

INTRODUCTION

Introduction	6
10 National Indicators	8

ORAL HEALTH

Introduction	11
Data Section	13
Programs & Policy Considerations	30
Success Story: The Mississippi State Department of Health's Oral Health Program	35

MENTAL HEALTH

Introduction	43
Data Section	45
Programs & Policy Considerations	59
Success Story: MYPAC: Mississippi Youth Programs Around the Clock	63

OBESITY

Introduction	69
Data Section	71
Programs & Policy Considerations	84
Success Story: Community Foundation of Northwest Mississippi, "Get a Life! My Life, My Health, My Choice" Initiative	93

BIRTH OUTCOMES

Introduction	101
Data Section	103
Programs & Policy Considerations	116
Success Story: Early Beginnings Teen Parent Program, Pascagoula School District	118

APPENDIX

125

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Mississippi KIDS COUNT Advisory Board *(for a full listing see page 5)*

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Mississippi State University’s Social Science Research Center

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Linda H. Southward

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The Family and Children Research Unit (FCRU) conducts research on issues affecting the health, safety, education and economic well-being of children and families. It employs an interdisciplinary approach for program planning and evaluation while conducting basic and applied research to build effective service systems as well as inform state, local, and national policymakers. FCRU partnerships with public and private agencies allow for the development and implementation of common goals.

INTRODUCTION



Since the establishment of **Mississippi KIDS COUNT** in January 2007 at Mississippi State University's Social Science Research Center's Family & Children Research Unit, three **Mississippi KIDS COUNT** Data Books have been produced. The first two Data Books provided an overview of the following areas of children's lives: health, education, economic well-being and safety.

Beginning with this year's 2009 Data Book release and the Mississippi KIDS COUNT 3rd Annual Summit, we will focus each year on one of the four focus areas. This will provide a more in-depth look on a major topic affecting the lives of Mississippi's children each year. We will continue to rotate among each of the four areas, with every fifth year providing an overview/assessment of trends in the four general areas.

HEALTHY KIDS, HEALTHY FUTURES

In concert with the theme of the 2010 **Mississippi KIDS COUNT** Summit—*Healthy Kids, Healthy Futures*—the 2009 **Mississippi KIDS COUNT** Data Book focuses on the health of Mississippi's children.

The areas of childhood obesity, oral health, mental health and teenage pregnancy/birth outcomes comprise the four sections of this year's Data Book. Realizing that there is an array of health concerns and challenges (and successes) within the state of Mississippi, these four were chosen as areas that have far-reaching impacts for a very large percentage of Mississippi's children. Effective prevention and intervention strategies addressing these issues are crucial to the future well-being of children, families and communities.

Each of these health issues is affected by children and families' environments, and effective strategies include working with Mississippi's communities. Indeed, the success stories highlighted in each of these health areas are successful because of their ability to address the health needs of the children within the larger context of their families, schools and communities. Furthermore, the evidence is mounting that when sound health policies are enacted and supported at the community level, the return on investment is enhanced.

When health challenges are not addressed holistically, the future of the state's economic well-being is, at the very least, compromised. Poor health among children can hinder early brain development and affect children's educational attainment, which can result in a less than optimal capacity for participating in the workforce. Each of the success stories in this Data Book demonstrates ways of providing the emotional and economic security that children need to enhance their ability to become a productive member of society.

INTRODUCTION

In addition to presenting available children's health data, we provide an overview of programs, coupled with policy considerations for decision-makers and all who care for and about children across the state of Mississippi. We were truly honored to spend time with the program staff and community members associated with each of the success stories highlighted in this year's Data Book. The phrase "service over self" is an understatement to the dedication and passion demonstrated by these individuals.

GETTING INVOLVED

The year 2010 represents a new year and a new decade for **Mississippi KIDS COUNT**. While the symbolism of a new year and a new decade often holds promise and hope for better times to come, the reality of the current economic times are clearly less than optimal for many children and families and children across the state of Mississippi. At a time when current services and programs are facing fiscal constraints, the needs of children and families are increasing. These include, but are not limited to: education, health, safety and economic well-being. **Mississippi KIDS COUNT** staff members often hear the question posed, "What can one person do to improve the lives of children and families across Mississippi?"

We here, at **Mississippi's KIDS COUNT**, have also been contemplating how we can do more than just provide the statistics and highlight success stories on the status of Mississippi's children, families and communities. We are in the process of facilitating the establishment of "Giving Circles" for children in Mississippi, based upon the successful models of KIDS COUNT grantees in the states of Colorado and Oregon. We are hopeful that by the end of the next decade there will be an established "Giving Circles for Children" presence in each of Mississippi's 82 counties. Please periodically check our web-site in 2010 to learn how these are evolving and how you might become involved!

Next year's **Mississippi KIDS COUNT** Data Book and Summit will focus on public education in Mississippi. As you think about programs that are doing exceptionally well, please take time to nominate them as a Success Story for 2010-2011. Information forms on making nominations will be on our website by February 1, 2010 and the deadline for submitting nominations will be April 15, 2010!

Sincerely,

Linda H. Southward



10 NATIONAL INDICATORS

Since 1994 the Annie E. Casey Foundation has compiled 10 state-level indicators or measures that, taken together, are an overall assessment of children's well-being (shown in the table below). The Foundation uses these measures to rank all 50 states relative to one another, as well as to look at the nation as a whole. The most recent data available for all states are years 2006 and 2007. Rankings for individual years (i.e., "MS rank" in the table) indicate how our state is doing on these 10 measures of children's well-being relative to all the other states. Changes in rates or percentages between two years (i.e., "Change since 2000") indicate whether or not our state is becoming relatively better or worse on a particular measure over time. In this year's data book Mississippi showed improvement in two measures (child deaths and teens who are high school dropouts), no change in five measures (infant mortality, teen deaths, teen births, teens not attending school and not working, and children in single-parent families), and worsening in three measures (low-birthweight babies, children living in families where no parent has full time year-round employment and children in poverty). Taken together, Mississippi ranked 50th among the states in the nation. More telling is the fact that Mississippi has ranked 50th in the nation in every year since the 1998 data book.

KIDS COUNT Data Book Indicators: Mississippi

Indicator	Year 2000 (rate or %)	Current Year	Current Year (rate or %)	Current Year (number of children)	Change Since 2000*	MS Rank
Low-birthweight babies (less than 5.5 pounds)	10.7%	2006	12.4%	5,698	Worse	50
Infant mortality (per 1,000)	10.7	2006	10.6	488	Same	50
Child deaths, ages 1-14 (per 100,000)	36.6	2006	29.5	172	Better	47
Teen deaths from all causes, ages 15-19 (per 100,000)	103.4	2006	91.0	201	Same	44
Teen births, ages 15-19 (per 1,000)	70.1	2006	68.4	7,404	Same	50
Teens (16-19) who are high school dropouts	15.4%	2007	8.0%	15,717	Better	36
Teens (16-19) not attending school and not working	10.9%	2007	9.6%	18,806	Same	40
Children living in families where no parent has full-time, year-round employment	35.6%	2007	42.6%	326,840	Worse	50
Children in poverty (100%)	26.4%	2007	29.3%	220,446	Worse	50
Children in single-parent families	42.7%	2007	43.7%	304,764	Same	50

FIGURE 1

Notes:

The values reported in Figure 1 were taken from the following sources:

Population Reference Bureau (2009) analysis of data from the Centers for Disease Control, National Center for Health Statistics.

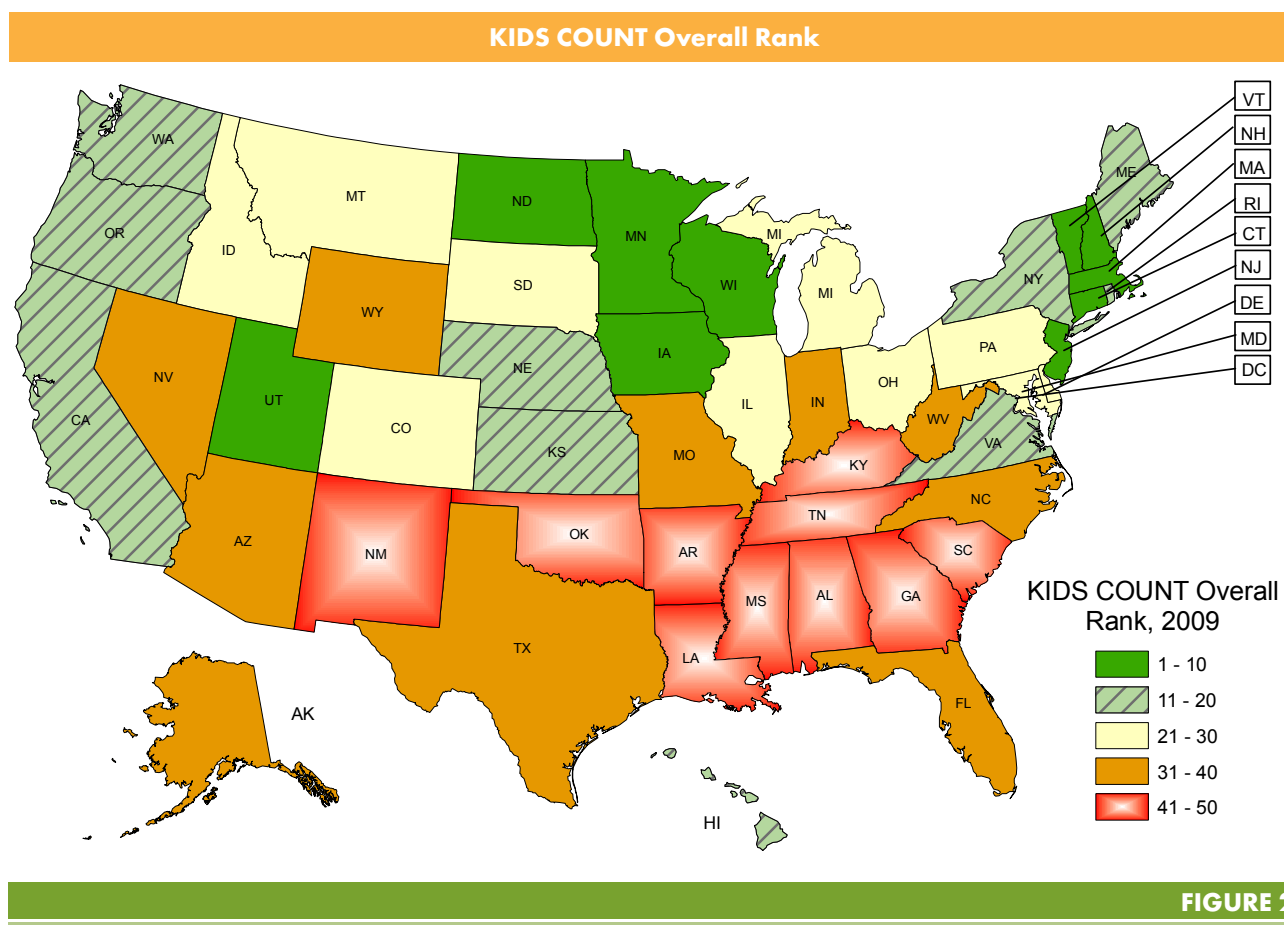
The Annie E. Casey Foundation, KIDS COUNT Data Center. Accessed from <http://datacenter.kidscount.org>

Refer to the KIDS COUNT Data Center website for further information on data sources, definitions and applicable notes for each indicator.

*Change since 2000 judgements were based on statistical significance calculations (90% CI) from the Population Reference Bureau (2009).

INTRODUCTION

When mapped, a clear geographic pattern is evident. Of the top ten states with the worst overall KIDS COUNT rankings, eight of these states are located in the South. Bordering this core are states in the next lowest level. The top ten ranking states in the nation tend to be located in New England and the upper central states.



Source: Annie E. Casey Foundation, KIDS COUNT Data Center



ORAL HEALTH



ORAL HEALTH



The overlapping systems that touch children's lives and affect their health—their families, communities, health care providers and the policies that affect the health care they receive—are inextricably linked to positive or poor health outcomes. When it comes to oral health, these outcomes determine whether children experience good oral health or the daily pain and burden associated with tooth decay (Casamassimo, Thikkurissy, Edelstein, & Maiorini, 2009).

When tooth decay occurs among very young children, it is referred to as Early Childhood Caries (ECC). One common name that has been used to describe ECC is “baby bottle mouth.” This transmissible and infectious disease process can occur even when bottles are not used, with simple interactions

between young children and their caregivers. Activities such as feeding the infant/toddler from the caregivers' mouth can transfer bacteria-laden saliva to the child's mouth, which then feeds on sugary substances and begins the process of decay (Platt & Cabezas, 2000).

Beginning with the first ever Office of the Surgeon General's Conference on Oral Health in 2000 (HHS, 2001), the last decade has seen a dramatic increase in the number of articles, policies and programs addressing children's oral health (Mouradian, Wehr, & Crall, 2000; Edelstein, 2008; Krol, 2004; Savage, Kotch, & Vann, 2004). This increased awareness has highlighted the important and critical role that children's environments play in the prevention and intervention of children's oral health (Hale, 2003; Halfon, DuPiessis, & Inkeias, 2007).

Policies and programs over the last decade have focused on preventive measures. Early risk assessment and intervention for tooth decay in very young children have been promoted by numerous professional groups. The American Academy of Pediatrics recommends that children who are at risk for ECC should be referred for dental care by age one, and the American Academy of Pediatric Dentistry recommends that young children should be seen by a dentist by the age of one or by the time of their first tooth eruption.

CONSEQUENCES OF POOR ORAL HEALTH

ECC is the most common chronic childhood disease, occurring five times more often than childhood asthma. It has been cited as the number one reason for missed school days (Bonita & Cooper, 2001). In addition to the physical pain and suffering, studies have also demonstrated that, if left untreated, it progresses to plaque build-up, spots on enamel, and ultimately, infections/abscesses that often result in emergency procedures and, in some cases, death.

2 in 5

or 41% of Mississippi's Head Start children (ages 3 to 5) have untreated tooth decay and need dental care (MSDH, 2009)

As recently as February 2007, the death of 12-year-old Deamonte Driver in Maryland made national headlines. His death resulted from an abscess after the infection spread to his brain. His death could have been easily prevented with a routine dental check-up and tooth extraction (Edelstein, 2008). Less than two weeks later, another child, this time from Mississippi, also died due to unmet oral health needs. Once again, this death could have been preventable through routine oral health care, had he received it.

Tooth decay does not happen overnight. It is a process that has been likened to a chronic disease process, such as diabetes. There is not one “silver bullet” or immunization to prevent either of these disease processes, yet much can be done within children’s environments. Tooth decay, however, does not affect the population evenly, and “one size fits all” assessments, prevention and intervention strategies are not cost-effective (Edelstein, 2008).

In this section, we will provide an overview of the following:

1. Data on the oral health status of children and adolescents in Mississippi
2. Data on fluoridation levels across Mississippi communities
3. Data on dental professionals and Medicaid providers in Mississippi
4. Information on numerous oral health prevention efforts and programs in Mississippi
5. Policy considerations for promoting oral health in Mississippi

We conclude this section with a success story, spotlighting the work of the Office of Oral Health within the Mississippi State Department of Health.

BOTTLED WATER

Many families enjoy bottled water as part of their regular diet (Sriraman, Patrick, Hutton, & Edwards, 2009). However, there are two health concerns associated with children consuming the majority of their water from plastic-bottled sources.

First, plastic-bottled water may lack fluoride, which is essential to protecting young teeth. “Bottled” water producers use water from a city’s tap water system (EWG, 2009), which may contain fluoride, or they may use spring water, which does not typically contain naturally occurring fluoride. When fluoride is added to plastic-bottled water, the FDA requires that the term “fluoridated,” “fluoride added,” or “with added fluoride” be used on the label. Parents are encouraged to directly contact bottled water manufacturers to determine the fluoride levels in their plastic-bottled water.

A second concern is chemicals introduced into the water by the plastic bottles themselves. Chemicals such as phthalates can leach into plastic-bottled water (and other plastic bottled beverages) over time (NRDC, 2008). The total exposure and full health risks of these chemicals are still in debate (Montuori, Jover, Morgantini, Bayona, & Triassi, 2008). Parents should be aware of these concerns if their children consume plastic-bottled water or plastic-bottled beverages.

ORAL HEALTH

DATA SECTION



ORAL HEALTH STATUS

National Survey of Children's Health (NSCH)

The National Survey of Children's Health is a telephone-based survey of households with children under age 18. For this survey, adults provide information about their children's health (including oral health) and well-being.

For the 2007 NSCH, the majority of parents in Mississippi (66.8%) rated the condition of their children's teeth as Excellent or Very Good, 24.3% rated the condition as Good and 8.9% rated the condition as Fair/Poor. Differences in ratings were observed as a function of the age of the child. [FIGURE 3]

A significantly higher percentage of parents of 1- to 5-year-old children (76.3%) rated the condition of their children's teeth as Excellent or Very Good compared to 59.7% of parents of 6- to 11-year-old children who gave the same rating. Likewise, a significantly lower percentage of parents of 1- to 5-year-old children (5.2%) rated the condition of their children's teeth as Fair or Poor, compared to 12.0% of parents of 6- to 11-year-old children who gave the same rating.

Source:

U.S. Department of Health and Human Services (HHS). *The National Survey of Children's Health, 2007.*

Condition of Mississippi Children's Teeth (NSCH, 2007)

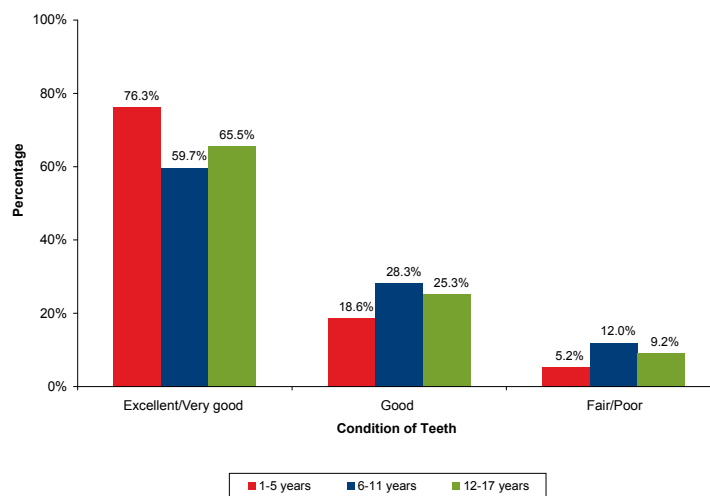
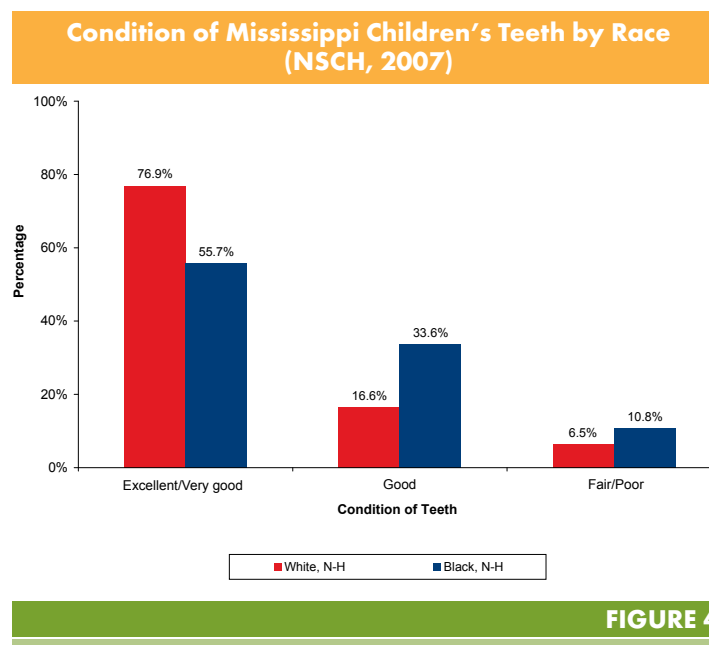


FIGURE 3

When examined by race there were significant differences between White and Black children as well. [FIGURE 4] While 76.9% of parents of White children rated the condition of their children's teeth as Excellent or Very Good, only 55.7% of parents of Black children gave that rating. A significantly higher percentage of Black parents (33.6%) rated their children's teeth as Good compared to parents of White children (16.6%). Finally, 10.8% of parents of Black children rated their teeth as being in Fair or Poor condition, while only 6.5% of parents of White children did so, although the difference was not significant. The survey included other racial and ethnic categories, but the samples were too small to be statistically reliable.



Source:
U.S. Department of Health and Human Services (HHS). *The National Survey of Children's Health, 2007.*



ORAL HEALTH

DATA SECTION

When asked about oral health problems that their children (ages 1-17) had experienced within the six months before the survey, almost one-quarter (23.1%) of parents indicated that their child had experienced tooth decay or cavities [FIGURE 5], and one-sixth (16.2%) had experienced a toothache, while much smaller percentages had experienced broken teeth (5.8%) and bleeding gums (2.3%). In a separate question, parents were asked how many of these problems their children had experienced in the six months before the survey. Of the parents responding, 68.4% reported no oral health problems had been experienced, 19.2% reported that their child had experienced one oral health problem, and 12.4% reported that their child had experienced two or more oral health problems in the six months before the survey (HHS, n.d.). [FIGURE 6]

Source:

U.S. Department of Health and Human Services (HHS). *The National Survey of Children's Health, 2007.*



Percentage of Mississippi Children (Ages 1-17) With Specific Oral Health Problems in the Past Six Months (NSCH, 2007)

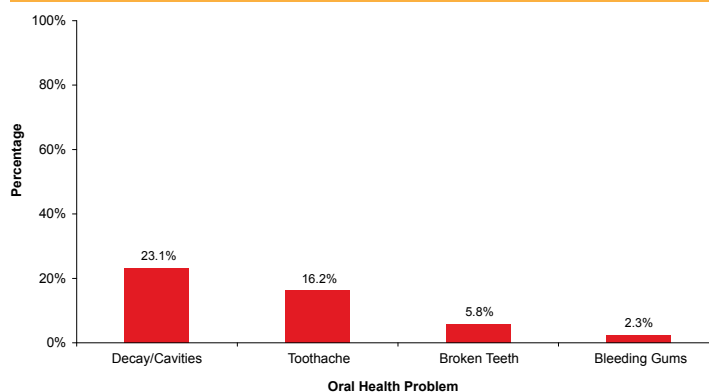


FIGURE 5

Number of Oral Health Problems, Mississippi Children (Ages 1-17) (NSCH, 2007)

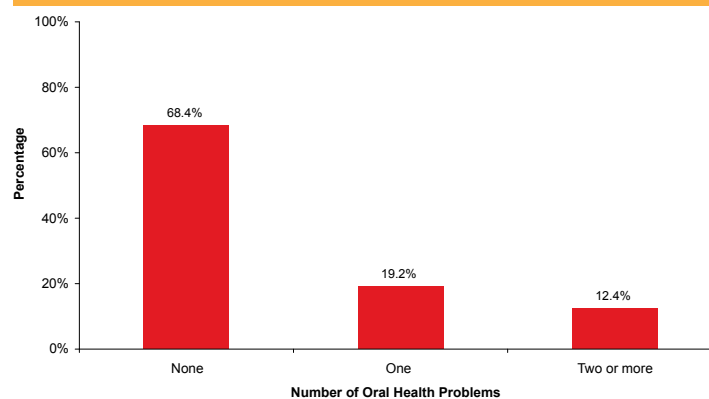


FIGURE 6

When examined by age group and compared to the national rates, a significantly higher percentage of Mississippi parents of children ages 6-11 (32.2%) reported that their children had decayed teeth or cavities in the 6 months before the survey, compared to the national rate of 25.9% for that age group. Among Mississippi children ages 1-5 the rate was 13.3%, and among Mississippi children ages 12-17 the rate was 22.8%. Neither of these rates were significantly different from national rates (HHS, n.d.). [FIGURE 7]

According to the National Survey of Children's Health (2007), three-quarters (75.5%) of Mississippi parents indicated that their child (ages 1-17) had seen a dentist for preventive dental care within the 12 months before the survey. However, an examination of the results by age group revealed that a significantly lower percentage of children ages 1-5 years old had seen a dentist (52.4%), compared to 86.5% for 6-11 year olds and 84.1% for 12-17 year olds.

Mississippi vs. US Children (Ages 1-17) with Decayed Teeth or Cavities in the Past 6 Months (NSCH, 2007)

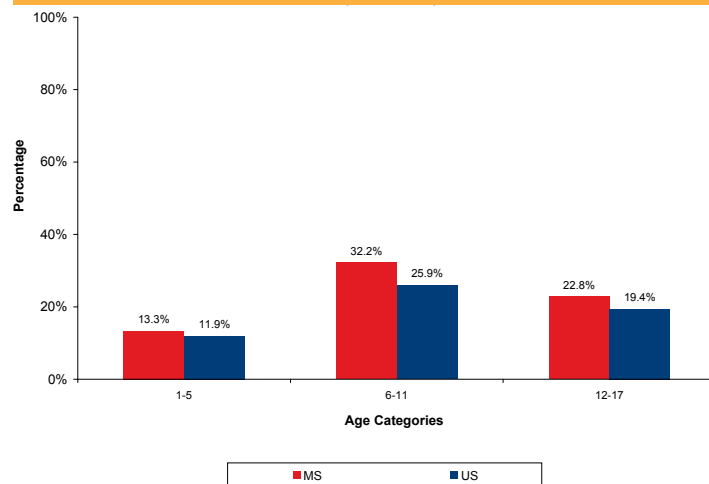


FIGURE 7

Source:

U.S. Department of Health and Human Services (HHS). *The National Survey of Children's Health, 2007.*

2007-2008 Survey of Children Ages Three-to-Five Years in Mississippi Head Start Programs

During the 2007-2008 school year, a clinical oral health survey of children ages three-to-five years old in Mississippi Head Start programs was conducted. Mississippi has approximately 220 Head Start centers with an enrollment of 23,743 children in 1,260 classrooms. The survey sampled 10% of these centers, and of the 2,605 children enrolled at the 22 randomly selected Head Start centers, a total of 2,128 were screened for an overall response rate of 81.7%. Over 83% of children were Black and 11% were Non-Hispanic White (MSDH, 2009).

56%

of all Head Start children in Mississippi have experience with tooth decay

ORAL HEALTH

DATA SECTION

Disease measures provided in Figure 8 show that 55.9% of Head Start children had experience with dental caries, and 40.9% of children had untreated dental cavities. 41% of Head Start children were in need of dental treatment, and 7.2% of children had urgent need for care due to infection, pain or swelling.

Oral Health of Mississippi Head Start Children, 2007-2008 School Year			
Variable	Percent	Lower 95% CL	Upper 95% CL
Caries Experience (% yes)	55.9	53.8	58.1
Untreated Decay (% yes)	40.9	38.8	43.1
Treatment Urgency (% yes)			
Early	33.8	31.8	35.9
Urgent	7.2	6.1	8.3
Any Treatment (early & urgent)	41.0	38.9	43.2

FIGURE 8

Source: Mississippi State Department of Health (MSDH), 2009.

Survey of Mississippi 3rd-grade Children

The state's first weighted survey of third graders was performed during the 2004-2005 school year by the Mississippi State Department of Health. Data regarding experience with dental caries, untreated dental caries, and treatment urgency were collected in this survey. Dental professionals screened 2,824 children ages eight to nine years in 48 randomly selected public elementary schools. While dental sealants are a proven method for preventing decay, the majority of Mississippi's third-grade children do not have access to this valuable preventive service. Only 26% of the third-grade children had dental sealants (MSDH, 2005).

The study also found that approximately 7 in 10 (69%) third-grade children had experience with dental caries, and one in four (39%) 3rd-grade children had untreated dental caries. Ten percent, or 1 in 10 children, attended school with infection or pain from dental disease, which means that more than 3,800 third-grade children had pain or infection because of dental caries. It is possible that Mississippi's lack of community water fluoridation programs contributed to the high prevalence of dental decay among school-age children.

Oral Health Status of Mississippi's 3rd-grade Children Adjusted for Non-response			
	Number with Data	Percent	95% CI
% caries free	2,822	31.1	29.8 – 32.5
% with caries experience	2,822	68.9	67.5 – 70.2
% with untreated decay	2,823	39.1	37.7 – 40.5
% with dental sealants	2,819	25.6	24.3 – 26.8
Treatment Need	2,820		
% with no obvious problem		57.6	56.2 – 59.1
% needing early dental care		32.5	31.1 – 33.9
% needing urgent dental care		9.9	9.0 – 10.8

FIGURE 9

Source: Mississippi State Department of Health (MSDH), 2005.

Compared to White children, Mississippi's African American children had a significantly higher prevalence of decay experience and untreated decay and a significantly lower prevalence of protective dental sealants. In addition, almost twice as many African American children were in need of urgent care because of pain or infection (12% vs.7%). Compared to children from higher income schools (<50% eligible for free or reduced price meals), children in low-income schools (> 75% eligible for free or reduced price meals) had a significantly higher prevalence of decay experience and untreated decay, plus a significantly lower prevalence of dental sealants.

Figure 10 shows the oral health survey results by Public Health District. The nine counties in Public Health District III had the lowest dental sealant utilization rate at 12%, and about one in two (47%) 3rd-grade children had untreated decay. Third-grade enrollment in public schools in Public Health District III was estimated at 4,600 children, which means that approximately 2,300 children had untreated dental disease and would have benefited from simple preventive interventions.

Oral Health Status of 3rd-grade Children Stratified by Public Health District, Adjusted for Non-Response

District	Caries Experience	Untreated Decay	Dental Sealants	Treatment Need	
				Early Dental Care	Urgent Care
I	68.7%	46.2%	28.0%	29.7%	16.3%
II	76.2%	51.9%	34.9%	62.0%	12.6%
III	69.9%	47.2%	12.0%	36.7%	14.1%
IV	61.6%	52.0%	16.0%	35.9%	20.0%
V	67.6%	28.9%	29.7%	25.1%	4.3%
VI	76.1%	51.6%	24.6%	33.4%	19.4%
VII	70.7%	29.9%	19.0%	24.7%	1.4%
VIII	64.5%	20.9%	33.8%	16.5%	1.4%
IX	59.5%	28.9%	28.1%	29.6%	2.6%

FIGURE 10

Source: Mississippi State Department of Health (MSDH), 2005.

Approximately

10%

of Mississippi 3rd-grade students surveyed had urgent treatment needs

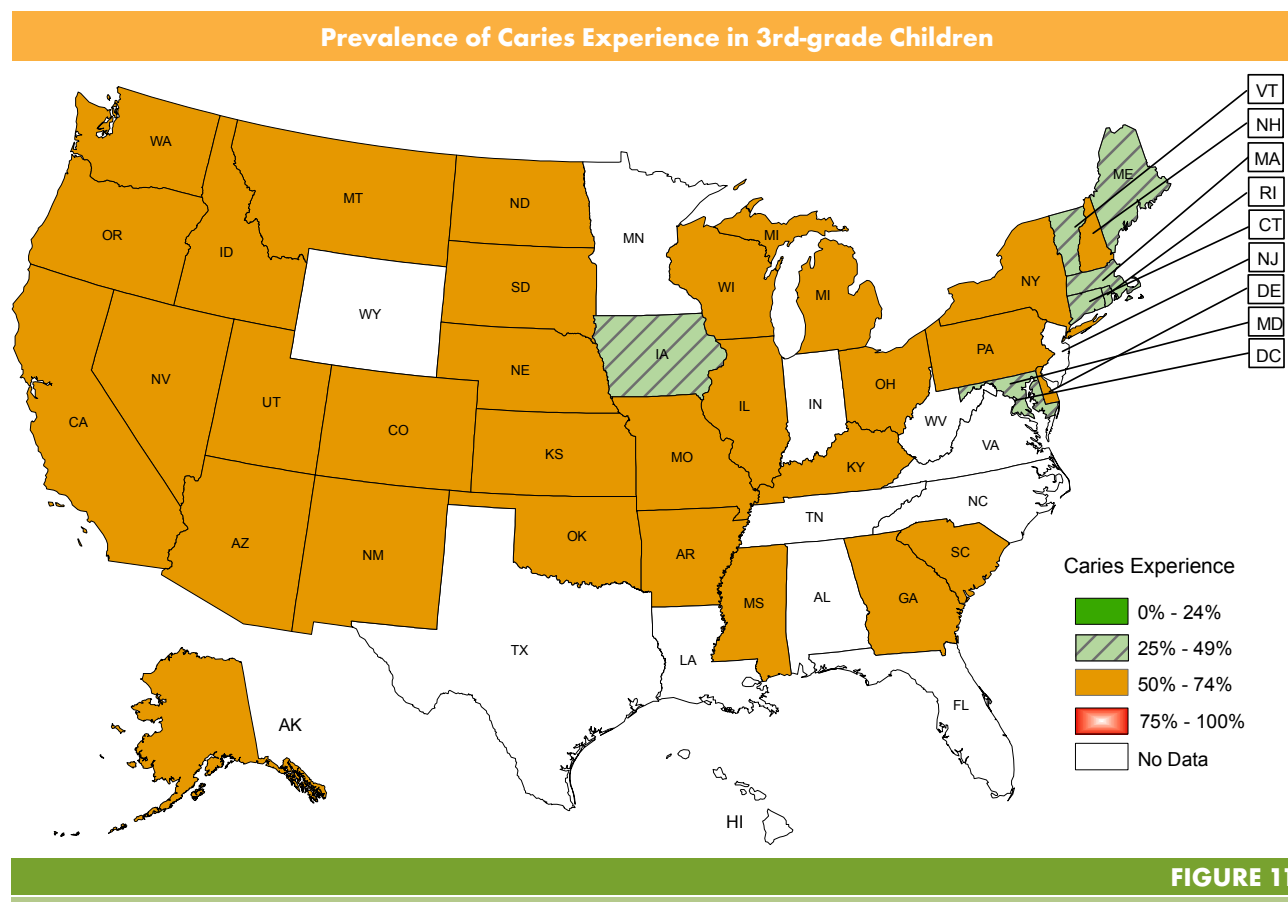
ORAL HEALTH

DATA SECTION

Comparison to Other States (3rd-grade Children)

When a survey of 3rd-grade children was conducted in 2004-2005, Mississippi children ranked among the top states for oral health concerns. [Figures 11-13](#) compare the oral health of Mississippi's 3rd-grade children with the oral health of children from several other states. Each of the states represented in the figures gathered oral health status information using the same protocols as Mississippi. Of the 50 states, 37 conducted the survey between 1998 and 2008 and the most recent data for each state are shown on the map, so Mississippi's survey was conducted in the latter half of the data collection period. In general, Mississippi children had poorer oral health than children from many other states (HHS, 2009a, 2009b).

Among 3rd-grade children, Mississippi had among the highest (worst) rates for this map (i.e., the 50-74% category) of students with caries experience, or 3rd-graders with treated or untreated tooth decay. [\[FIGURE 11\]](#) Mississippi's rate was 68.9% of 3rd-grade children, comparable to the rates for Nevada (71.4%), California (70.9%), Arizona (66.7%) and Oregon (66.3%). Mississippi's rate was higher than the rates for Kentucky (59.8%), Georgia (56.3%), Missouri (54.7%), or the best state, Connecticut (40.6%) (HHS, 2009a).



Source: HHS, 2009a

Mississippi's percentage of 3rd-graders with untreated tooth decay also ranked among the highest in the nation. In **Figure 12**, Mississippi ranks in the highest (worst) category for this map (i.e., 25-49%). Mississippi's rate of 39.1% was comparable to the rates for Arkansas (42.1%), Arizona (39.4%), New Mexico (37.0%) and Oregon (35.4%). Mississippi's rate was higher than the rates for Kentucky (34.6%), Georgia (27.1%), Missouri (27.0%) and, the state with the lowest percentage, Vermont (16.2%) (HHS, 2009b).

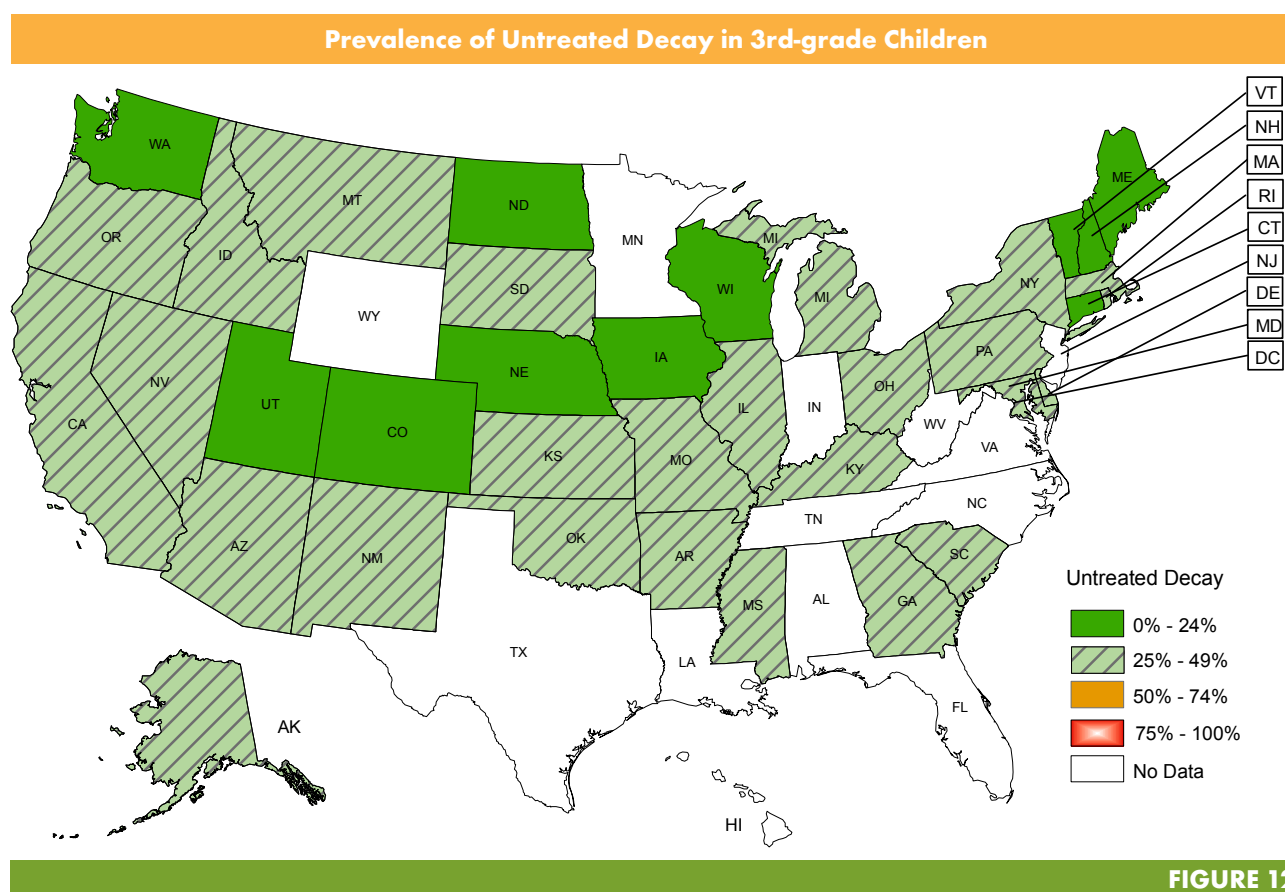


FIGURE 12

Source: HHS, 2009b

DATA SECTION

Prevalence of Dental Sealants in 3rd-grade Children



21

Comparison to Healthy People 2010 Objectives (3rd-grade Children in MS)

The National Oral Health Objectives for the Year 2010 (Healthy People 2010) outline several oral health status objectives for young children. For 6-to-8 year-old children there are three primary oral health status objectives. It should be noted that the Mississippi Oral Health Survey of 3rd-grade children was not designed to be representative of 6-to-8 year old children; with the majority of 3rd-grade children screened being 9-10 years of age. Approximately 69% of the 3rd-graders screened in Mississippi had experienced dental caries, which is substantially higher than the Healthy People 2010 objective of 42% (HHS, 2007). Mississippi's rate of treated and untreated tooth decay would have to drop some 27% to meet national health goals. Approximately 39% of Mississippi's 3rd-graders had un-treated caries compared to the Healthy People 2010 objective of 21%. Mississippi's rate of untreated tooth decay among 3rd-graders would have to drop by 18% to reach the national health goals set for 2010. Finally, 26% of Mississippi's 3rd-graders had dental sealants compared to the Healthy People 2010 objective of 50%. To meet the national health goal, Mississippi's use of dental sealants among 3rd-graders must increase by almost a quarter, 24% (MDHS, 2005). [FIGURE 14]

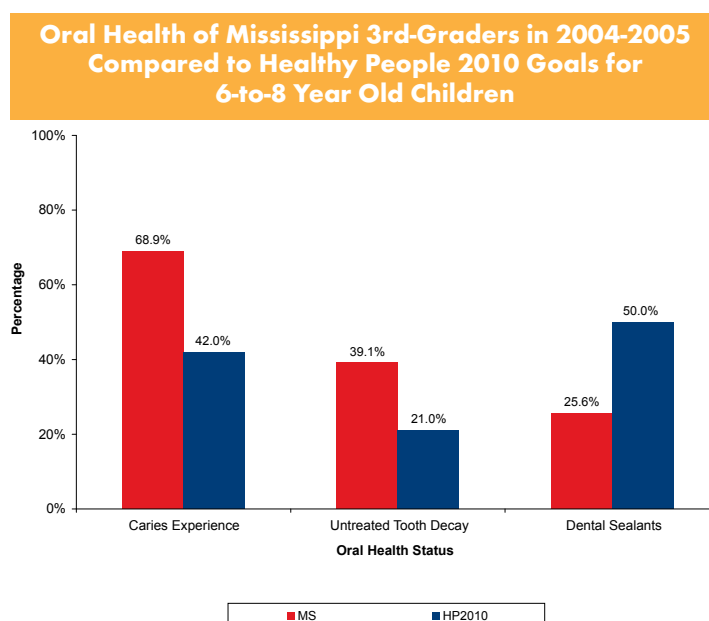


FIGURE 14

Sources:

Mississippi State Department of Health (MSDH), 2005; U.S. Department of Health and Human Services (HHS), 2007.

ORAL HEALTH

DATA SECTION

WATER FLUORIDATION

The national health objective for water fluoridation (Healthy People 2010) is to increase to 75% the proportion of children and adults using fluoridated water (HHS, 2007). The Centers for Disease Control and Prevention hosts a Water Fluoridation Reporting System that some states use to track and manage water fluoridation in their states. According to the most recent data on the CDC's website (as of November 2009), only 19 states with available data are meeting the Healthy People 2010 goal for water fluoridation (i.e., those states highlighted in green in Figure 15). In Mississippi, approximately 53.8% of the state's public water systems population is receiving fluoridated water, which is less than the national goal of 75% (HHS, 2009d).

Percentage of State Public Water Systems (PWS) Population Receiving Fluoridated Water

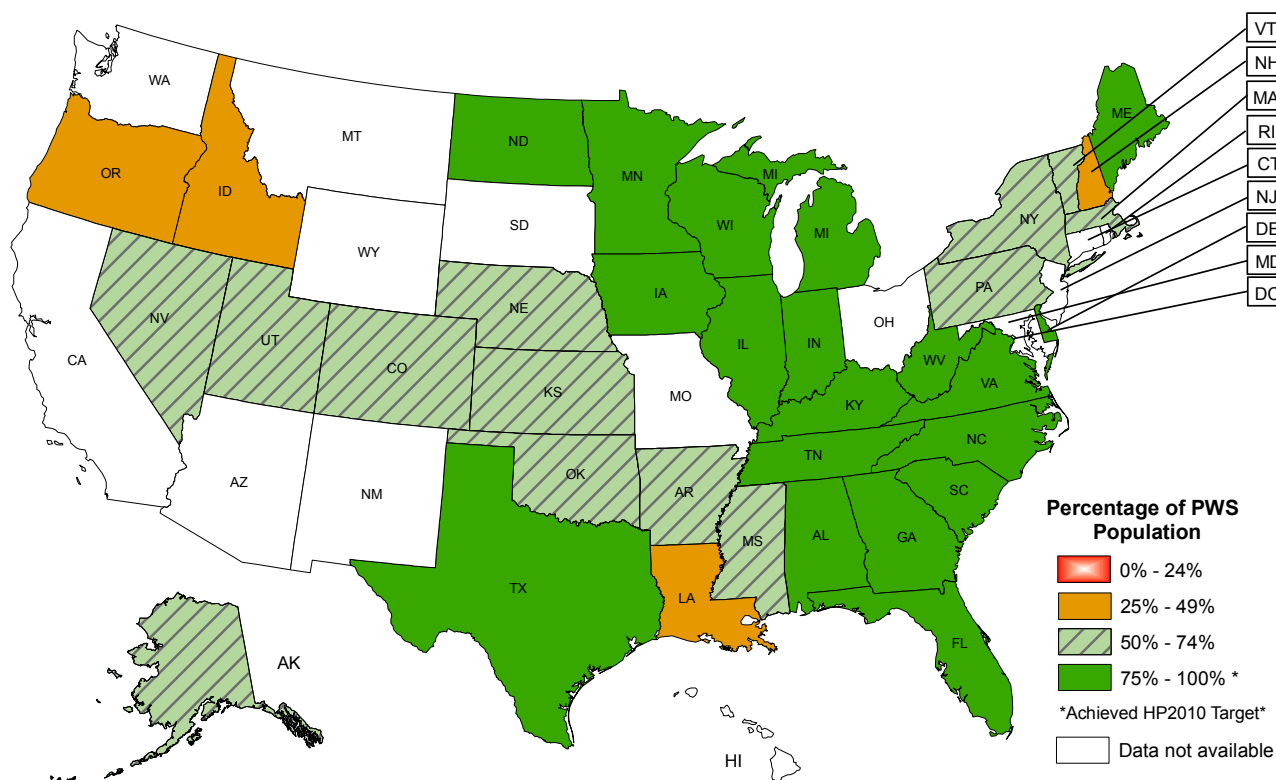


FIGURE 15

Source: HHS, 2009d

ORAL HEALTH

1. Fluoride is nature's cavity fighter. It is already present in all water sources, even the ocean. Water Fluoridation is the controlled adjustment of the natural fluoride concentration in a public water supply up to the level recommended for preventing tooth decay.
2. Fluoridation protects against tooth decay throughout life, benefiting both children and adults. Inadequate exposure to fluoride places children and adults in a high risk category for tooth decay.
3. Fluoridation is the single most effective public health measure to prevent tooth decay and to improve oral health for a lifetime, for both children and adults.
4. An estimated 51 million school hours are lost each year due to dental-related illness.
5. The average cost for a community to fluoridate its water is estimated to range from approximately \$0.50 a year per person in large communities to approximately \$3.00 a year per person in small communities. The average cost for one dental filling is \$101.94.
6. About 70% of the population, or more than 184 million people on public water systems, receive fluoridated public water. The Healthy People 2010 goal is to raise this number to 75% by 2010.
7. The Centers for Disease Control and Prevention (CDC) has proclaimed community water fluoridation one of 10 greatest public health achievements of the 20th century.

**FIGURE 16**

- Source:** Mississippi State Department of Health, 2008

ORAL HEALTH

DATA SECTION

Mississippi Public Water Systems with Water Fluoridation (as of January 2009)

County	Public Water System Name
Adams	City of Natchez
Alcorn	City of Corinth
Alcorn	Farmington WA
Attala	City of Kosciusko
Benton	Town of Ashland WA
Bolivar	City of Cleveland
Calhoun	City of Calhoun City
Chickasaw	City of Houston
Chickasaw	City of Okolona
Choctaw	French Camp Academy
Choctaw	Town of Ackerman
Claiborne	Town of Port Gibson
Clarke	Town of Shubuta
Clay	City of West Point
Copiah	Crystal Springs Water Service
Copiah	Town of Hazlehurst WA
Copiah	Town of Wesson
Covington	City of Collins
Covington	Town of Mount Olive
DeSoto	Belmont WA
DeSoto	Bright's WA
DeSoto	City of Hernando
DeSoto	City of Olive Branch
DeSoto	City of Southaven
DeSoto	Days WA
DeSoto	Eudora Water Association
DeSoto	Horn Lake WA
DeSoto	Lewisburg WA
DeSoto	Nesbit WA
DeSoto	Pleasant Hill WA
DeSoto	Walls WA - Lake Forest
DeSoto	Walls Water Association
Forrest	City of Hattiesburg
Forrest	City of Petal
Forrest	Glendale Utility District
Forrest	Rawls Springs Utility Dist
Forrest	Sunrise Utility WA
George	City of Lucedale
George	Combined Utilities
Greene	Beat III WA #3 Jonathan
Greene	S. E. Greene WA
Greene	Town Of Leakesville
Hancock	Diamondhead Utilities
Harrison	Keesler Air Force Base
Hinds	City of Clinton
Hinds	City of Jackson/OB Curtis

Holmes	City of Durant
Holmes	Lebanon WA
Holmes	Town of Lexington
Holmes	Town of Pickens
Holmes	Town of Tchula
Humphreys	City of Belzoni
Humphreys	Town of Louise
Itawamba	City of Fulton
Itawamba	Ne Itawamba WA #1
Itawamba	NE Itawamba WA #2
Itawamba	NE Ms Regional WA
Jackson	City of Pascagoula
Jackson	Westwick Utility Porteaux Bay
Jefferson	Union Church WA
Jeff Davis	Double Ponds WA
Jeff Davis	Town of Prentiss
Jones	City of Laurel
Jones	Ellisville State School #1
Jones	Ellisville State School #2
Jones	Glade WA
Jones	Hatten WA
Jones	Sharon WA
Jones	Southwest Jones WA
Kemper	Town of Dekalb
Lafayette	City of Oxford
Lafayette	Hopewell WA
Lafayette	University of Mississippi
Lamar	North Lamar WA
Lauderdale	City of Meridian
Lauderdale	Collinsville WA
Lauderdale	Meridian Naval Air Station
Lauderdale	North Lauderdale WA
Lauderdale	Toomsba WA
Lawrence	Lawrence County WA
Lawrence	Sontag-Wanilla WA
Lawrence	Town of Monticello
Lawrence	Town of New Hebron
Leake	City of Carthage
Leake	Freney WA #1
Leake	Marydell WA
Leake	Southwest Leake WA
Lee	City of Nettleton
Lee	City of Tupelo
Lee	Town of Guntown
Leflore	City of Itta Bena
Leflore	Ms Valley State University
Lincoln	City of Brookhaven

Mississippi Public Water Systems with Water Fluoridation (as of January 2009)

Lowndes	Prairie Land WA
Madison	Bear Creek WA East
Madison	Bear Creek WA West
Madison	City of Canton
Madison	City of Madison
Madison	City of Ridgeland
Madison	East Madison WA West
Madison	Lake Lorman Utilities
Madison	PRVWSD Main Harbor
Madison	PRVWSD Twin Harbor
Madison	Town Of Flora
Marion	Cedar Grove Harmony WA
Marion	City Of Columbia
Marion	Highway 98 E. Subdivision
Marion	Kokomo Shiloh WA
Marshall	City of Holly Springs
Marshall	Town of Byhalia
Monroe	Cason WA
Monroe	City of Amory
Monroe	Quincy WA #1 & #2
Monroe	Town of Hatley
Montgomery	City of Winona
Neshoba	City of Philadelphia
Neshoba	MBCI - Bogue Chitto
Neshoba	MBCI - Pearl River
Neshoba	MBCI - Tucker
Newton	City of Newton
Newton	MBCI - Conehatta
Newton	Town of Union
Noxubee	Macon Electric and Water
Oktibbeha	City of Starkville
Oktibbeha	Town of Maben
Oktibbeha	Town of Sturgis
Panola	City of Batesville
Panola	City of Sardis
Panola	Town of Como
Pearl River	City of Picayune
Pearl River	Town of Poplarville
Perry	NE Perry Utility Association
Perry	Town of Richton
Pike	City of Magnolia
Pike	City of McComb
Pike	Sunny Hill WA
Pike	Town of Summit
Pontotoc	City of Pontotoc
Prentiss	Booneville WA
Prentiss	Town of Baldwyn

FIGURE 17

Rankin	City of Pearl
Rankin	City of Richland
Rankin	Evergreen WA
Rankin	Greenfield WA
Rankin	Hudspeth Center
Rankin	MS State Hospital - Whitfield
Rankin	PRVWSD Highway 43
Rankin	PRVWSD Pelahatchie Bay
Rankin	SW Rankin Water # 1
Rankin	SW Rankin Water # 2
Rankin	Town of Puckett
Scott	City of Forest
Scott	City of Morton
Scott	L & F WA
Sharkey	City of Rolling Fork
Simpson	City of Magee
Simpson	City of Mendenhall
Simpson	Okatoma WA
Simpson	Shivers WA
Simpson	Smiths Crossing WA
Smith	Center Ridge WA
Smith	City of Raleigh
Smith	Town of Taylorsville
Stone	City of Wiggins
Sunflower	City of Indianola
Sunflower	City of Ruleville
Sunflower	Town of Doddsville
Sunflower	Town of Drew
Sunflower	Town of Inverness
Tate	City of Senatobia
Tippah	City of Ripley
Tippah	Town of Blue Mountain
Tishomingo	City of Iuka
Tunica	Town of Tunica
Union	City of New Albany
Walthall	Town of Tylertown
Warren	City of Vicksburg
Warren	Culkin WA
Washington	City of Greenville
Washington	City of Hollandale
Washington	City of Leland
Wayne	City of Waynesboro
Webster	City of Eupora
Winston	City of Louisville
Yalobusha	City of Water Valley
Yazoo	Central Yazoo WA
Yazoo	City of Yazoo City

Note: Public water systems in blue/bold are pending activation (revised January 2009). To learn the fluoride content of your water system, visit www.HealthyMS.com/fluoride

Source: Mississippi State Department of Health, 2009.

ORAL HEALTH

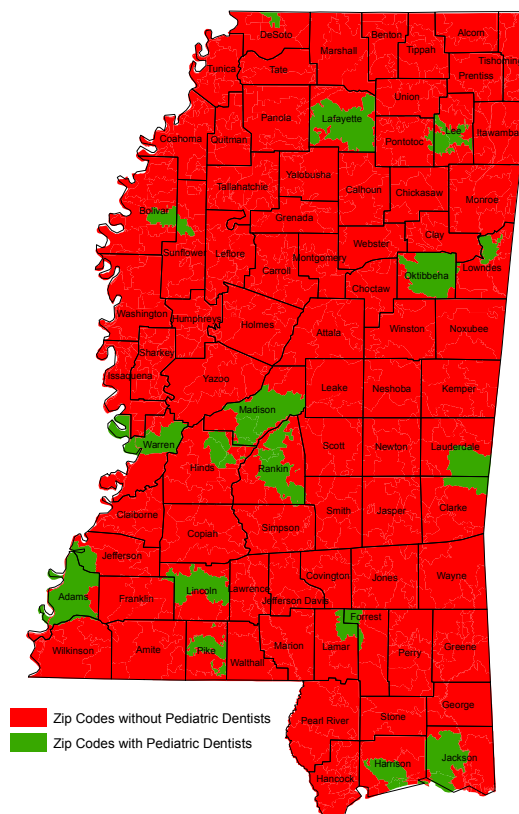
DATA SECTION

WORKFORCE / MEDICAID PROVIDERS

According to the American Academy of Pediatric Dentistry's website, as of November 2009, there were 48 pediatric dentists in Mississippi. Pediatric dentists are those who are "dedicated to improving the oral health of infants, children, adolescents and patients with special health care needs" (AAPD, n.d.). [FIGURE 18] Mississippi's pediatric dentists are located in only 30 Mississippi zip codes, leaving a large portion of the state without access to a pediatric dentist within a reasonable driving distance.

A statewide assessment of dental professionals conducted by the MSDH Office of Primary Care in 2005 (pre-Katrina) determined that 62 of 82 counties could qualify as dental health professional shortage areas. The HRSA Office of Workforce Analysis has designated 44 counties as such, and another 16 counties are awaiting approval. Of Mississippi's 82 counties, seven counties—Carroll, Franklin, Greene, Kemper, Quitman, Tunica, and Webster—have only one active dentist each, and six counties—Amite, Benton, Humphreys, Issaquena, Jefferson, and Sharkey—have no active dentist. The state's goal is to improve the distribution of dentists so that no county has more than 5,000 persons per dentist and primary dental care is available within 30 minutes travel time of all areas (N. Mosca, personal communication, September 29, 2009).

Location of Mississippi Pediatric Dentists
(by Zip Code)



Source: aapd.org

FIGURE 18

In Mississippi, dental hygienists are required to work under the *direct* supervision of a dentist, as opposed to being under their *general* supervision. In essence, this limits the opportunities for dental hygienists to perform non-invasive and preventive oral health procedures, such as applying fluoride varnish. Mississippi is only one of five states where dental hygienists are limited in their reach of providing educational and preventive care (ADHA, n.d.). The Mississippi State Department of Health is the public health entity in Mississippi where registered dental hygienists, who serve as Regional Oral Health Consultants, are authorized to perform non-invasive and preventive oral health procedures. These are the only dental hygienists in the state who are authorized to perform non-invasive and preventive oral health procedures. All other registered dental hygienists in Mississippi must be under the direct supervision of a dentist to perform these oral health procedures.

States Where Dental Hygienists May Perform Some Services in at Least One Setting Under General Supervision

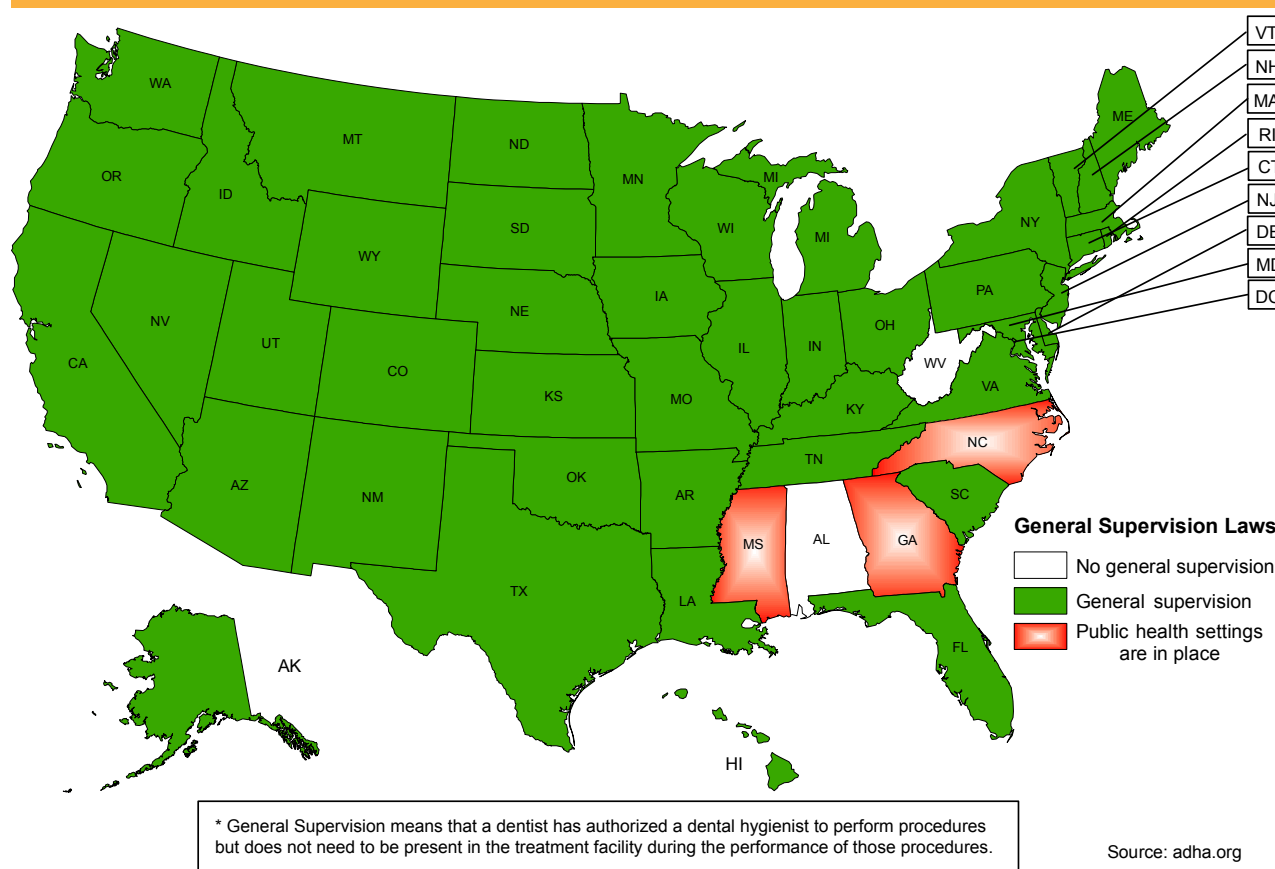


FIGURE 19

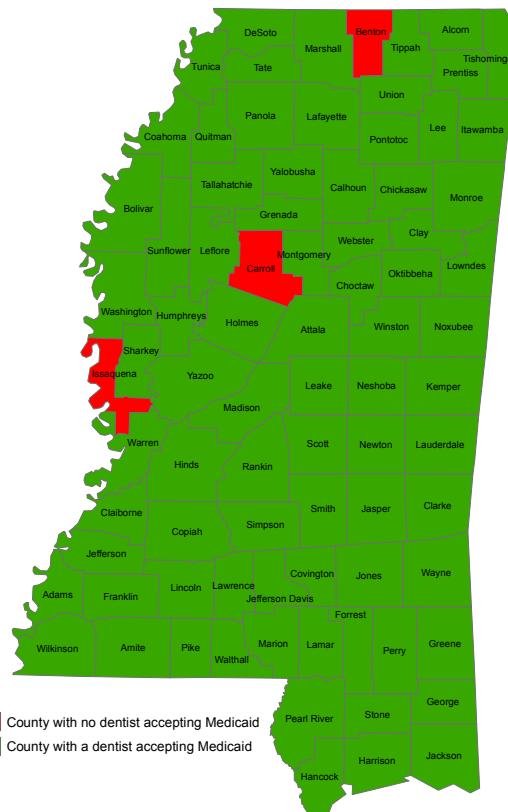
ORAL HEALTH

DATA SECTION

The Mississippi Division of Medicaid collects data on individual dentists who were actively enrolled as dental providers. Individual dentists include those in private practice and dentists who are employed in a Federally Qualified Health Center (FQHC). During the first half of FY 2008, there were 635 dentists enrolled as Mississippi Medicaid providers; 622 enrolled dentists were located in-state, and 13 enrolled dentists were located in other states. Approximately 80% of the dentists who were enrolled as Medicaid providers actually billed Medicaid for services in the first half of FY 2008. Three of 82 counties—Benton, Carroll, and Issaquena—did not have a dentist enrolled in the Medicaid program (Mississippi Division of Medicaid, 2008; N. Mosca, personal communication, September 29, 2009).

Note: For more up to date information on Medicaid Providers, see the Mississippi Division of Medicaid's website, <https://msmedicaid.acs-inc.com/msenvision/providerSearch.do>

Mississippi Dentists Accepting Medicaid



Source: Mississippi Division of Medicaid, 2008

FIGURE 20

PROGRAMS & POLICY CONSIDERATIONS

ORAL HEALTH PROGRAMS IN MISSISSIPPI



Just as national efforts to promote sound oral health programs and policies have increased since the Surgeon General's Conference on Oral Health in 2000, so have Mississippi's oral health efforts. These efforts have centered around proactive prevention programs and the development of policies to promote optimal oral health environments for children, their families and their communities. Sensible solutions include simple preventive interventions and low-cost treatments to ensure all citizens have an opportunity for good oral health. An overview highlighting some of the efforts in Mississippi are noted below.

Office of Oral Health, Mississippi State Department of Health

Mississippi's state oral health program provides the public health infrastructure and capacity to implement simple preventive interventions. Beginning October 2002, the Mississippi State Department of Health (MSDH) hired its first full-time dental director. Before this time, the only MSDH-funded programs in the state were a weekly school fluoride mouth rinse program for grades 1 through 5 and a Dental Corrections Program for children with no other source of dental payment (i.e., Medicaid or private insurance).

The state oral health program strives to decrease the need for dental care through effective disease prevention strategies and to improve oral health by improving the public's awareness and understanding. At the onset of having a full-time dental director, the first project sought to identify the unmet dental needs of Mississippi's population and to facilitate the planning and implementation of the most effective strategies.

Department of Pediatric Dentistry at the University of Mississippi Medical Center

Recognizing the need for pediatric dentistry training in Mississippi, the University of Mississippi Medical Center School of Dentistry established a training and residency program for pediatric dentists in Mississippi in July 2003. The program has graduated 10 pediatric dentists with 60% practicing in Mississippi. Pediatric dental residents participate in service and research programs across the state of Mississippi. The primary clinical location is the Blair E. Batson Children's Hospital at the University of Mississippi Medical Center.

In 2008, the clinical program provided services to approximately 4,800 patients, with approximately 40% of whom are children with special health care needs.

ORAL HEALTH

PROGRAMS & POLICY CONSIDERATIONS

Mississippi Oral Health Community Alliance (MOHCA)

MOHCA is a consortium of concerned people who want to protect and promote oral health for all Mississippians. MOHCA's mission is to:

- offer a comprehensive approach to improve the oral health status of Mississippians by serving as an advocate for optimal oral health;
- mobilize community partnerships between and among policymakers, state agencies, professionals, organizations, the public and other groups that are interested in improving oral health;
- develop plans and policies that improve oral health through a collaborative process; and
- establish an oral health services infrastructure that assures the protection, promotion and provision of oral health care for all Mississippians.

Give Kids a Smile Day

The Mississippi Dental Association participates in this nationally sponsored program, for which dental professionals may agree to provide assessments and some care for children free of charge. The national Give Kids a Smile for 2010 is slated for February 5, 2010. For more information on the exact day of Mississippi's Give Kids a Smile Day, check with the University of Mississippi Medical School of Dentistry (http://dentistry.umc.edu/departments/pediatric_and_public_health_dentistry/index.html) and through the Mississippi Dental Association (<http://www.ms dental.org/cms/>).

Early Periodic Screening, Diagnosis, and Treatment Program

Mississippi Medicaid provides comprehensive dental care for eligible children through the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program. For eligible adults 19 years of age and older, limited emergency dental care is available without any preventive or restorative dental care.

Medicaid beneficiaries have also experienced poor access to dental care as compared to children with private dental insurance, historically. In FY 2003, just 28% of Medicaid-eligible children in Mississippi received any dental services, and only one in four (24%) received any preventive dental service. Comparing Medicaid-eligible beneficiaries by age in FY 2003, 44% of children ages three to five and only 0.1% of children ages one to two received any preventive dental services in Mississippi.



Assess the Situation and Set Access to Care Goals

The most recent version of the Children's Health Insurance Program (CHIP) contains a provision to measure the accessibility to oral care. The federal Government Accountability Office has been directed to "conduct a study assessing children's access to dental service....;" and directs the Secretary of Health and Human Services to establish a core set of child health quality measures for assessing state's Medicaid and CHIP programs, including measures for the availability of dental services and the quality of pediatric dental care (p. 104).



The American Academy of Pediatric Dentistry Head Start Dental Home Initiative

In 2007, the federal Office of Head Start (OHS) awarded a five-year contract to the American Academy of Pediatric Dentistry (AAPD) to help create dental homes for Head Start children throughout the U.S. A dental home is a source of comprehensive, continuously accessible, coordinated and family-centered oral health care provided by dentists.

Although the initiative does not directly fund dental treatment, AAPD's efforts will help Head Start (HS) and Early Head Start (EHS) children access oral health care through the development of a network of pediatric and general dentists who will provide quality dental homes for HS and EHS children. The AAPD-OHS collaboration will help provide

parents, caregivers and Head Start staff with the latest evidence-based information on how they can help prevent tooth decay and establish a foundation for a lifetime of oral health. Dentists also will be offered information to enhance their understanding of the needs of the HS/EHS population.

Recognizing that establishing dental homes for almost 30,000 children enrolled in Mississippi's Head Start programs annually is no small task, and the MSDH State Oral Health Program is working with Ms. Holley Spivey, the State HS Collaboration Director; Dr. Peggy Ainsworth, President of the MS Head Start Association; the Mississippi Dental Association and the Mississippi Dental Society to develop collaborative partnerships to accomplish this goal. The State Team Leader is Dr. Neva Eklund, Chair of Pediatric and Public Health Dentistry at the University of Mississippi School of Dentistry.

The state team is working with AAPD to implement a program launch on March 12, 2010, possibly in conjunction with the Head Start Association Spring Conference. For more information about how you can become involved in this important initiative, please visit the AAPD web site at www.aapd.org/headstart/.

ORAL HEALTH

PROGRAMS & POLICY CONSIDERATIONS

The Delta Oral Health Project

For the Delta Oral Health Project, researchers at the Social Science Research Center at Mississippi State University have teamed up with personnel from the Mississippi State Department of Health to determine the best ways to expand oral health services to children in the Mississippi Delta. The Delta Oral Health Project is funded by the Delta Health Alliance.

Year one goals and objectives are as follows:

- To increase the use of oral health services among children in licensed child care centers (and their families) in Coahoma County
- To provide oral health education to 1) state professionals, 2) child care center staff in the Delta and 3) parents of children attending licensed child care centers in Coahoma County
- To work toward statewide policies and practices that will improve the oral health of MS residents

In order to accomplish these goals, the Delta Oral Health Project will provide free oral health screenings and fluoride varnish applications, as well as referrals to dental providers, for children attending licensed child care centers in Coahoma County. Oral health education using the Washington Dental Cavity Free Kids curriculum is also being provided to state health and education professionals, as well as Mississippi Delta child care center staff and parents.



Assessment of Mississippi Head Start Programs

During the 2007-2008 school year, a clinical oral health survey of children ages 3-to-5 years in Mississippi Head Start programs was conducted by the Mississippi State Department of Health. Mississippi has approximately 220 Head Start centers with an enrollment of 23,743 children. The survey randomly sampled 22 of these centers, and of the children enrolled, a total of 2,128 were screened for an overall response rate of 81.7%. Some of the results of this survey are presented in the data section of this chapter.

POLICY CONSIDERATIONS

As noted above, there have been a number of programs and services implemented within the past decade to improve the oral health of Mississippians. Policy considerations to promote additional improvements in children's oral health across Mississippi include the following:

1. Continue to increase caregiver and provider education and awareness on the importance of sound oral health prevention and intervention strategies with young children and their families
2. Implement supervised tooth-brushing in child care facilities
3. Require comprehensive oral health examinations for all children prior to entering kindergarten programs (similar to requirement of immunizations for children) and to make public provision for children's examinations
4. Require that all children who are participating in the Early and Periodic Screening Diagnostic and Treatment (EPSDT) receive at least one initial or periodic screening annually
5. Promote fluoridation for all communities, schools, colleges and universities throughout Mississippi
6. Increase the number of dentists and pediatric dentists who accept Medicaid payments in Mississippi, while simultaneously increasing the regular and customary payments to dentists and dental providers
7. Increase the utilization of dental hygienists to conduct screening and referrals
8. Expand the use of school-based dental sealant programs at eligible schools in Mississippi



ORAL HEALTH

SUCCESS STORY

The Mississippi State Department of Health Oral Health Program

A puzzle consists of separate pieces. Together, those pieces come together to make up the whole, with one piece building on another. When one piece is lost, discarded or overlooked, completion of the puzzle is compromised. We aren't able to see the entire picture until all the pieces have been put together.

Children's health is a lot like a puzzle, and the path leading to optimal health is made up of many "pieces." Proper nutrition, physical activity, and quality medical care quickly come to mind when one considers the pieces of a child's overall health puzzle. Often one piece that is overlooked, however, is a child's oral health. Good oral health reduces the likelihood of disease, and confident smiles improve a child's self-esteem, social interaction, and overall quality of life. Without good oral health, the whole picture of health is not complete.

Children who brush and floss their teeth regularly, receive semi-annual dental check-ups, and have access to fluoridated water greatly increase their chances of being healthy, happy adults. When this key component is left out of children's lives, there is an increased risk of such conditions as diabetes, heart disease, stroke, osteoporosis, and other diseases. Many school hours are lost each year due to dental-related illness, and caregivers miss valuable work time.

In Mississippi, where 56% of all Head Start children and 69% of third graders have had some form of tooth decay (Hammersmith, Kranz, Shukla, & Mosca, 2009), the Mississippi State Department of Health (MSDH) Division of Dental Services is creatively addressing many of the issues associated with poor oral health. It all came about in 2002 when Mississippi hosted one of three regional oral health policy academies, sponsored by the National Governors Association. Participants



recognized the need for a full-time state dental director, as well as the revitalization of the community water fluoridation program, which had been operational in Mississippi from the 1950's to the mid 1980's. As a result of the policy academy, a full-time dental director was hired, and the state oral health program was revitalized with the initial goal of increasing the proportion of Mississippi citizens who were using properly fluoridated water.

In Mississippi, approximately

53.8%

of the state's public water systems population is receiving fluoridated water

Water fluoridation can reduce tooth decay by

20-40%



*Dr. Nicholas Mosca, DDS
Director, Office of Oral Health
MSDH*

"We felt that [the community water fluoridation program] was the foundational disease prevention strategy," says Dr. Nicholas Mosca, the state's Dental Director. "Anything else that we did, we would build on that, but we would always have that foundation." In 2004, the community water fluoridation program (CWF) was reinstated. Today, with financial help from the Bower Foundation and federal Preventive Health and Human Services Block Grants, municipal water systems and non-profit water boards are eligible to receive start-up funds to install and operate water fluoridation systems for a two-year period. After that, communities must commit to maintaining the system. "It's not a one time thing," Mosca says. "You start it, and it benefits the community as long as it's ongoing."

The Centers for Disease Control and
Prevention has proclaimed
water fluoridation
one of the 10 greatest public health
achievements of the 20th century

ORAL HEALTH

SUCCESS STORY



Carla Bassett, RDH
Branch Director II, Office of Oral
Health, MSDH

Regional oral health consultants (ROHCs), who are also registered dental hygienists, promote the process in schools, child care centers, municipalities, water boards and health organizations in non-fluoridated areas with assurances that fluoridation is safe, beneficial to all stakeholders, and cost-effective. "We work with everyone we can get our hands on," says Carla Bassett, who oversees the work of the consultants. After identifying areas in need and making initial contact, the oral health consultants give presentations outlining the reasons for fluoridated systems. "The bottom line is not only do you have to call people's attention to the need for a solution, but then you have to explain the solution," says Mosca. Often people are misinformed or afraid that fluoride is somehow harmful and/or expensive. "There are just some old wives tales," says John Justice, the former Fluoridation Administrator for the Mississippi State Department of Health. "A lot of it on our part is education."

During presentations, stakeholders are reminded that studies have proven that water fluoridation can reduce tooth decay by 20-40% (MSDH, 2008) and can save money in the long run. The average cost for a community to fluoridate its water is estimated to range from approximately \$0.50 a year per person in large communities to approximately \$3.00 a year per person in small communities. The average cost for one dental filling is \$101.94 (MSDH, 2008).

The Centers for Disease Control and Prevention (CDC) has proclaimed water fluoridation one of the ten greatest public health achievements of the 20th century (MMWR, 1999). Dr. Mosca states, "This is about making communities more livable, more influential for your health; it's about improving the environment, not sabotaging it." He says that the state's high rate of poverty and the fact that many people don't have access to dental care are all the more reason to continue the CWF program. "It's our motivation today to continue the program even though it's a challenging program to implement."

Since the inception of the CWF program five years ago, almost 300,000 Mississippians have implemented or plan to implement water fluoridation programs. According to the Centers for Disease Control and Prevention's Water Fluoridation Reporting System, in Mississippi, approximately 53.8% of the state's public water system population is receiving fluoridated water (HHS, 2009d). Mosca hopes to sustain those accomplishments and grow the program even more. The long term goal is to reach 75% by 2012.



"You can't just put a brochure out on a table and then sit by the phone. We aggressively go out into the community and show that fluoridation improves the standard of living."

—Dr. Nicholas Mosca
Director, Office of Oral Health, MSDH

“Your mouth isn’t separated from your body,” says Amber Simpson, one of seven regional oral health consultants. “It’s all connected; you’ve got to start taking care of it.” That’s the message conveyed to children and parents when ROHCs conduct oral health screenings and risk assessments in all nine of the state’s public health districts. It’s all part of an effort to link those in need with accessible oral health services. “It might not mean much to them at first, but after I talk to them, they start thinking about the importance of oral health,” says Simpson. “It really hits home with them.”

“Your mouth isn’t separated from your body. It’s all connected; you’ve got to start taking care of it.”

—Amber Simpson, Oral Health Consultant, MSDH

At Head Start centers across the state, fluoride varnish applications are administered by the ROHCs. Recognizing that two in five (41%) of Mississippi’s Head Start children have untreated dental decay and need dental care (N. Mosca, personal communication, October 2, 2009), Mosca and his staff solicited and received approval from the Mississippi State Board of Dental Examiners to implement a board regulation allowing the ROHCs to apply the varnish. They are, in fact, the only dental hygienists in the state who are licensed to provide varnish, as well as visual dental screenings. The fluoride varnish program got its start in January 2009. This proactive approach at such an early age can have lasting implications. “Our approach is very different from when I first started working here,” says Bassett, Branch Director II for MSDH. “Before, we were on the field, but we didn’t get to play with the ball. Now we’re taking that ball and running down the field. We’re very hands-on, and that’s exciting to me.”



Amber Simpson
Regional Oral Health Consultant, MSDH



ORAL HEALTH

SUCCESS STORY



In addition to their visits to Head Start Centers, the regional oral health consultants also conduct classes at Women Infant and Children (WIC) Centers in an effort to educate mothers about the importance of oral health.

Begun in 2000, the Mississippi Seals program connects MSDH with federally qualified health centers to provide dental sealants for second graders in 11 counties. "Sealants act like an umbrella when it rains," says Mosca of the technique to prevent tooth decay. "It protects what's underneath the tooth." Working with community health centers, licensed dentists place sealants on permanent first molar

teeth at no cost to children via a statewide partnership with federally qualified health centers. Communities with high poverty rates are targeted. Plans are being made to go statewide with the program. "Our next step is child care centers. They are rich with opportunity," adds Mosca.

The strength of Mississippi's oral health program is imbedded in collaboration. Dr. Mosca and his staff have found creative ways to connect MSDH departments, theirs and others, with community health care providers and health awareness entities in an effort to emphasize good oral health. "We've taken the oral health message and incorporated it into what we do," says Dr. Victor Sutton, the Director of Preventive Health for MSDH. "Instead of addressing parts and pieces, we address the whole person." Sutton's community health educators work with faith-based organizations, work sites, schools and community coalitions to emphasize all areas of good health. Now their message always includes an oral health component.

"It's really just a matter of integration," says Mosca. He and Sutton get their staffs together to see how both can share their respective messages when they go out into the field. "We've been trying to grow and nurture their relationships," says Sutton. "Now my folks don't think about doing things without incorporating oral health." Mosca adds, "We know we've connected when the cardiovascular folks want to include oral health in their brochures."

The two programs share more than ideas; they share money and stretch it to make a greater impact on the citizens of the state. "If we didn't have the relationship, we wouldn't be able to use some of the funds that we have," says Mosca. Traditionally oral health budgets are much smaller than those allocated for chronic



*Dr. Victor Sutton
Director, Preventive Health, MSDH*



*Sherelda Jones
Division Director I
Office of Oral Health, MSDH*

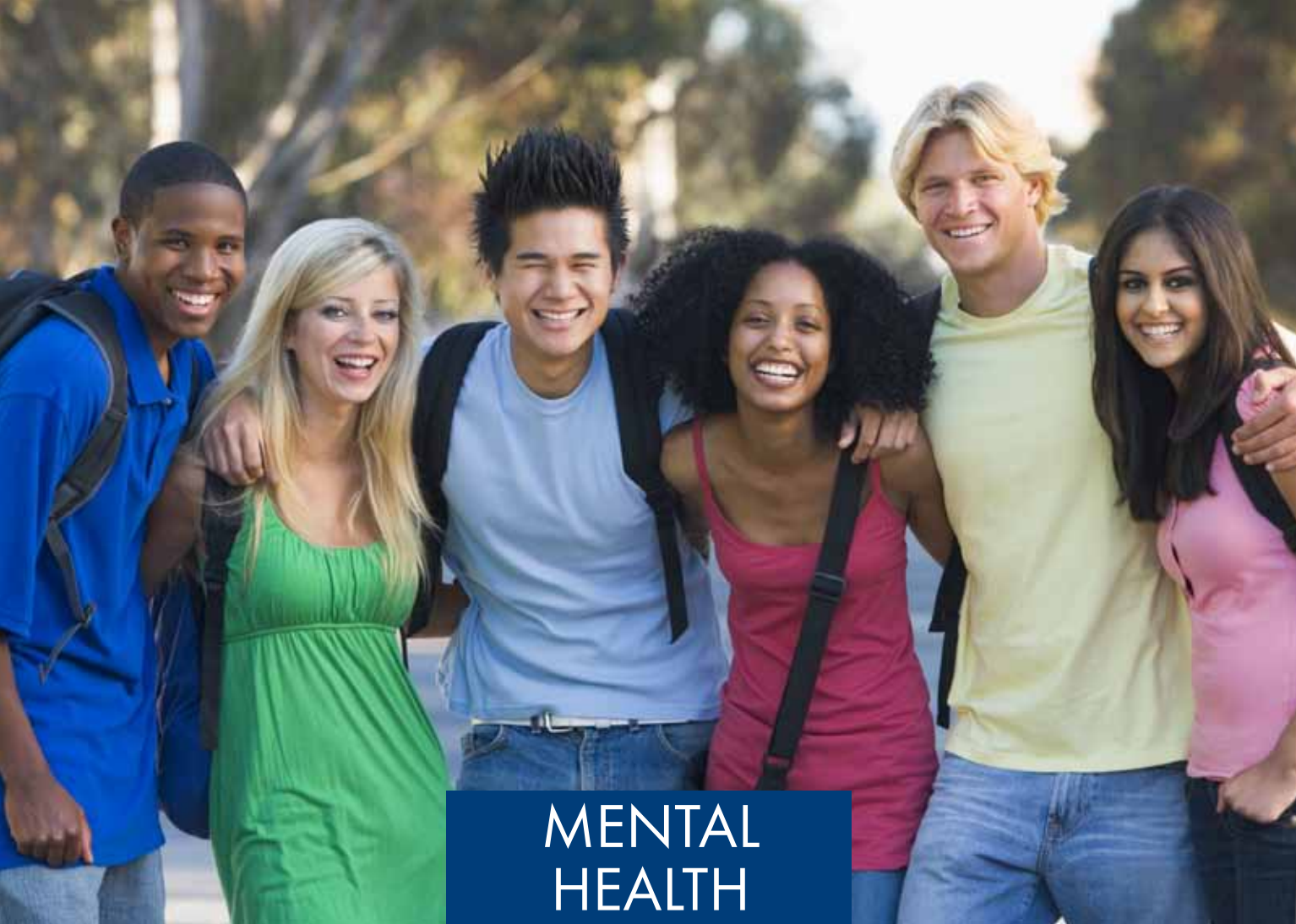


health awareness. Through preventive block grants, the fluoride varnish program is funded along with other work provided by the ROHCs.

The Dental Services office is also learning from the Preventive Health arm of MSDH about the importance of coalition building, a key tool that is often underutilized in public health according to Mosca. After examining the operation of the Mississippi Chronic Illness Coalition, oral health advocates created the Mississippi Oral Health Community Alliance (MOHCA) in August 2007. Any individual or organization who is interested in improving oral health for Mississippians is invited to join (MOHCA@healthmys.com). “We’ve learned a lot from his [Sutton’s] program,” says Mosca. MOHCA’s mission is to mobilize community partnerships and develop plans and policies related to the improvement of oral health. Organizers hope to form regional chapters in each public health district in the state.

The efforts of the MSDH Oral Health Program demonstrate that programs on a state level that utilize multiple groups and foster collaboration can be hugely beneficial to Mississippi’s children and families. Furthermore, by efficiently allocating resources for programs that foster citizen’s oral health from early childhood through adulthood, the MSDH Oral Health Program contributes to a reduction in healthcare expenditures and a healthy citizenry that can participate meaningfully in the state’s economy.

At first eruption, children’s teeth are free of disease and decay. Proper care at an early age ensures that their permanent teeth will also be healthy and maintainable throughout their lives. The MSDH Oral Health Program is working to create a bright environment for the children of the state and their families. “To work with a group of people who actually care about the children means a lot,” says Sherelda Jones, Division Director I, Office of Oral Health. “There are those who might get set aside. We take that group, and we say we want to help them first.” Bassett adds, “On this level, in public health, we have the opportunity to greatly improve the oral health outcome for Mississippi.” And they are taking it one puzzle piece at a time.



MENTAL HEALTH



MENTAL HEALTH



The foundation of social, emotional, behavioral and cognitive development of young children has life-long implications for their mental health and well-being (Shonkoff, 2008; Shonkoff, 2004). Recognizing the importance of mental health from a public health perspective holds much promise in promoting healthy, functioning individuals among all population groups throughout the life course. A recent publication on the mental health of children by the National Center for Children in Poverty (NCCP) (Cooper, Masi, & Vick, 2009) notes the following:

- *Social-emotional problems among young children are common.*
- *Family and environmental factors can make a child more vulnerable to social, emotional and behavioral problems.*
- *Young children in child welfare settings have greater needs and are less likely to receive services.*
- *Young children of color are more likely to experience key risk factors.*

Viewing mental health across the lifespan, with ongoing developmental changes occurring at each stage of the life cycle, it is not surprising that adolescents, due to both hormonal changes and ongoing brain development, are “more prone to depression and more likely to engage in risky and thrill-seeking behaviors than either younger children or adults” (NCCP, n.d.; Schwarz, 2009).

Although it is sometimes easy to overlook mental health problems in the context of clearly observable physical illness and behavioral risk factors, social-emotional health is a crucial component in the overall well-being of children, adolescents and families. Individuals’ physical and mental health is inextricably connected. Mental health problems also affect a significant number of adults in Mississippi. In 2007, 34.5% of adults in the state reported having poor mental health (Kaiser, 2007). The mental health issues of these adults can, in turn, have an adverse impact on their families—in particular, the children of mothers who suffer from depression face increased risk of a wide variety of health problems, including growth retardation, behavioral problems, and anxiety (Early Childhood Iowa, 2006; Parlikar, 2004; Rahman et al., 2004).

A recent policy statement of the American Academy of Pediatrics (2009, July) on mental health cited high prevalence rates among children and adolescents needing mental health services stating that an estimated 10% -11% of children and adolescents, nationally, have mental health disorders and evidence of functional impairment.

The Mississippi Department of Mental Health (DMH) publication, *FY 2009 Edition of the Division of Children and Youth Services Directory*, notes that the child/adolescent who demonstrates traits or is associated with demographic factors that are thought to predispose a population to the development of serious emotional disorder is considered at high risk. Factors associated with this risk include, but are not limited to, “failure

"The healthy development of all children benefits all of society by providing a solid foundation for economic productivity, responsible citizenship, and strong communities."

—Dr. Jack Shonkoff, Harvard Center for the Developing Child

to thrive" syndrome in infancy, as well as environmental stressors, such as parental unemployment; severe deprivation due to poverty; having a single parent; having an incarcerated parent; or being subjected to abuse or neglect, family alcoholism/drug addiction or mental illness (DMH, 2009).

CONSEQUENCES OF POOR MENTAL HEALTH

Consequences resulting from poor mental health cover a wide spectrum; however, some of the most common outcomes, particularly without intervention, may include the following (AECF, n.d.; DMH, 2009; Gunnar, Levitt, & Nelson, 2008; NCCP, n.d.):

- Anti-social behavior
- Attachment disorders
- Missed school days
- Poor academic performance
- Depression
- Physical pain
- Serious emotional disorders
- Domestic violence
- Child abuse and neglect
- Risk for alcohol and/or other substance abuse problems
- Incarceration
- Suicide
- Homicide



Given the current economic difficulties in the state of Mississippi and throughout the country, there is cause to be concerned about the increasing environmental stressors on families. Thus, a closer look and more realistic understanding of the etiologies of mental health and the important role that the environment plays in optimal mental health and physical well-being is critical in prevention, intervention and sound policies.

In this section, we will provide an overview of the following:

1. Data on the state and national level (as available) on the mental health status of children and adolescents
2. Data on family-level stressors in Mississippi that impact children/adolescent mental health status
3. An excerpt from the study, *An Assessment and Study of the Mississippi System of Care*, commissioned by the Center for Mississippi Health Policy, which highlights critical information to consider in the reauthorization of Mississippi's current mental health system of care
4. Policy considerations for promoting children and adolescents' mental health in Mississippi

This section concludes with a success story focusing on the Division of Medicaid's Mississippi Youth Programs Around the Clock (MYPAC): An Alternative to Psychiatric Residential Treatment Facilities. The \$49.5 million federal demonstration grant provides uniquely structured mental health services for children and youth by implementing a team approach using both caregivers and individual families as partners in the development of services (Mississippi Division of Medicaid, n.d.).

MENTAL HEALTH

DATA SECTION

NATIONAL PREVALENCE RATE AND AGE-OF-ONSET FOR MENTAL DISORDERS

According to the National Institute of Mental Health (NIMH), mental disorders can be diagnosed in an estimated 26.2%, or one-in-four adults, living in the United States. Almost half (45%) of those with mental disorders suffer from more than one disorder at a time. For people between the ages of 15 and 44 in the U.S. and Canada, mental disorders are the leading cause of disability. Thus, mental disorders are much more widespread and disabling than is commonly known. Mental disorders include, but are not limited to, major depressive disorder, dysthymic disorder, bipolar disorder, suicide, schizophrenia, anxiety disorders, panic disorder, post-traumatic stress disorder (PTSD), generalized anxiety disorder (GAD), and obsessive-compulsive disorder (OCD) (NIMH, 2008). The first symptoms of some disorders may begin during childhood or adolescence. In fact, “research shows that half of all lifetime cases of mental illness begin by age 14” (Kessler, et al., 2005; NIMH, 2009).

MENTAL HEALTH PROBLEMS IN CHILDREN

According to the National Institute of Mental Health, approximately 1-in-10 children in the U.S. today suffers from a mental disorder that causes impairment. These disorders in children include anxiety disorders, attention deficit hyperactivity disorder (ADHD), autism spectrum disorders, eating disorders, bipolar disorder, depression, borderline personality disorder, suicide, and schizophrenia (NIMH, n.d.). While mental illness begins early in life (half by age 14), the median delay in receiving treatment is almost a decade, with the longest delays being 20-23 years (NIMH, 2005). Thus, an important opportunity for intervention occurs during this long period of delayed care.

With respect to young children (from birth through age 5) in the U.S., between 9.5% and 14.2% suffer social-emotional problems that have a negative impact on their development, functioning and school-readiness (Brauner & Stephens, 2006; Cooper, Masi, & Vick, 2009). Examining specific mental health disorders (see Figure 21), data shows that up to 11% of young children have anxiety disorders or simple phobias; up to a quarter (26%) have oppositional defiant disorder; up to 5% have conduct disorder, and up to 7% have ADHD (Cooper, Masi, & Vick, 2009; McDonnell & Glod, 2003).

Mental Health Disorders in Young Children

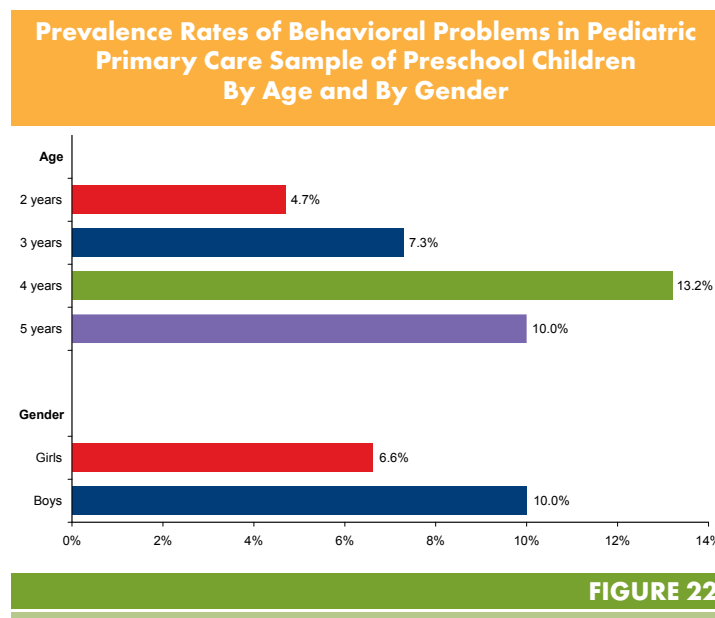
Disorder	Prevalence
Anxiety Disorders	1 to 11 %
Simple Phobias	1 to 11%
Oppositional Defiant Disorder	1 to 26%
Conduct Disorder	1 to 5%
Attention Deficit/Hyperactivity Disorder	1 to 7%

FIGURE 21

Source:

Cooper, Masi & Vick, 2009; McDonnell & Glod, 2003

Across ages, prevalence rates of behavioral problems almost double from age 2 to age 3 and again from age 3 to age 4. While only 4.7% of 2-year-olds have behavioral problems, 7.3% of 3-year-olds do, and 13.2% of 4-year-olds do. Regarding gender differences, 10% of boys and 6.6% of girls have behavior problems (Cooper, Masi, & Vick, 2009; Lavigne et al., 1996). [FIGURE 22] The implications for undiagnosed and untreated mental disorders can be life-changing for the child. At the very least these issues can impair early school success, and behavioral problems are often predictors of later conduct problems, anti-social behavior and delinquency (Cooper, Masi, & Vick, 2009).



Source:

Lavigne, Gibbons, Christoffel, Arend, Rosenbaum, Binns, Dawson, Sobel & Isaacss, 1996.

MISSISSIPPI PREVALENCE RATES

According to a 2009 press release from the Mississippi Department of Mental Health, “nearly 35,000 of Mississippi’s children and youth have severe and persistent mental health needs that can impact every aspect of their lives. These children and youth [those with severe and persistent mental health needs] *come from Mississippi’s cities, suburbs and rural areas; from wealthy, middle-class and poor families; and from every race and culture.*” (DMH, 2009, April 29)

MENTAL HEALTH

DATA SECTION

MISSISSIPPI FACILITIES AND SERVICES

In addition to providing services to children, youth, and adults with mental illness, the Mississippi Department of Mental Health also provides services to individuals with substance abuse problems and those with developmental or intellectual disabilities. Their service delivery system includes three key components: state-operated facilities, regional community mental health/mental retardation centers, and profit/nonprofit service agencies and organizations (DMH, n.d., 2008 Annual Report; DMH, n.d., FY 2010-2020).

“An ounce of prevention is much cheaper than a pound of cure. In these tough economic times, it is more important than ever that our state use its scarce resources wisely. We must streamline the delivery of community-based mental health and social services to our children and families. A comprehensive and reliable statewide data clearinghouse is needed that will allow all agencies to share information and focus their service delivery efforts. Good data allows for good decision-making at all levels of government, because behind every number is a child who deserves nothing short of our best efforts.”

—Judge Thomas H. Broome,
Rankin County Youth Court

State-operated Facilities

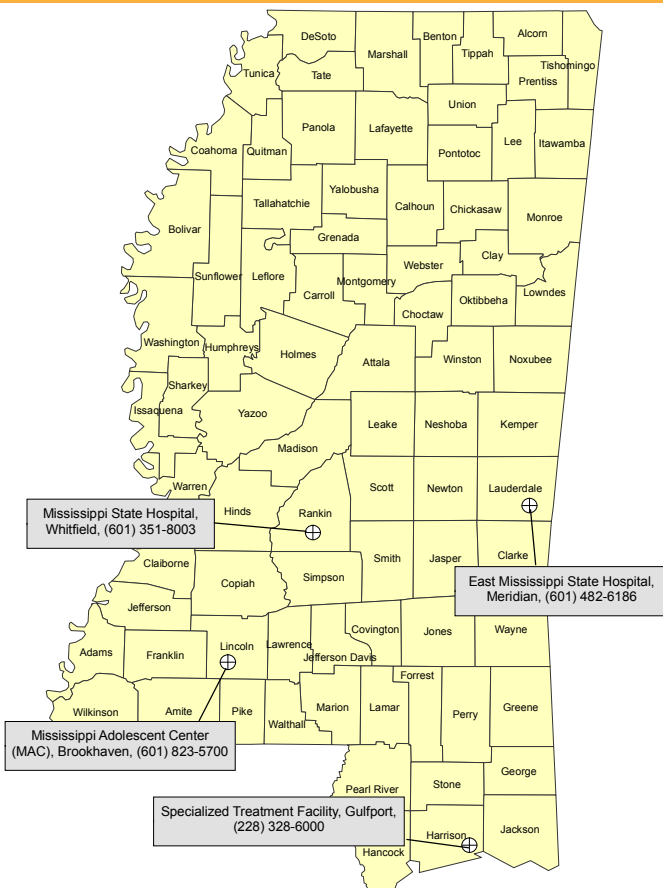
The Mississippi Department of Mental Health operates the following facilities (DMH, n.d., FY 2010-2020):

- Five psychiatric facilities—North Mississippi State Hospital (Tupelo), Central Mississippi Residential Center (Newton), Mississippi State Hospital (Whitfield), East Mississippi State Hospital (Meridian), and South Mississippi State Hospital (Purvis). The services provided at the psychiatric hospitals include inpatient services for individuals with substance abuse and serious mental illness, as well as transitional, community-based care.
- Five regional centers—North Mississippi Regional Center (Oxford); Hudspeth Regional Center (Whitfield); Boswell Regional Center (Magee); Ellisville State School (Ellisville), and South Mississippi Regional Center (Long Beach). These facilities provide residential services to individuals who have developmental/intellectual disabilities and are a primary medium for distributing community services.
- Seven crisis intervention centers—located in Corinth, Batesville, Laurel, Newton, Brookhaven, Cleveland, and Grenada (DMH, n.d., Crisis Intervention Centers). These facilities provide services to stabilize and treat individuals experiencing psychiatric crisis who have been committed to one of the psychiatric hospitals. “The goal [of these centers] is to treat the person as close to their community as possible and as quickly as possible to abate the crisis and avoid hospitalization.”
- Two juvenile facilities—Mississippi Adolescent Center (Brookhaven), and Specialized Treatment Facility (Gulfport). These facilities provide specialized services for adolescents.

Figure 23 shows the Mississippi Department of Health-operated facilities that provide inpatient services for children and/or youth (DMH, 2009, July 13).



Mississippi Department of Mental Health-operated Facilities that Provide Inpatient Services for Children and/or Youth



Source: DMH, 2009

FIGURE 23

Regional Community Mental Health/Mental Retardation Centers

Fifteen regional centers in Mississippi provide a variety of community-based services for those with mental health or substance abuse problems, or developmental/intellectual disabilities (in some regions). These centers “operate under the supervision of regional commissions appointed by county boards of supervisors comprising their respective service areas” (DMH, n.d., FY 2010-2020). See [Figure 24](#) for a map of the service areas for these 15 centers. Additional information about these centers is available on the Mississippi Department of Mental Health website (<http://www.dmh.state.ms.us>).

Profit/Nonprofit Service Agencies and Organizations

Certified profit/nonprofit service agencies and organizations may receive funding from the Mississippi Department of Mental Health or other sources. These agencies and organizations provide community-based services for alcohol/drug abuse, developmental or intellectual disabilities, or children who have emotional problems or mental illness (DMH, n.d., FY 2010-2020).

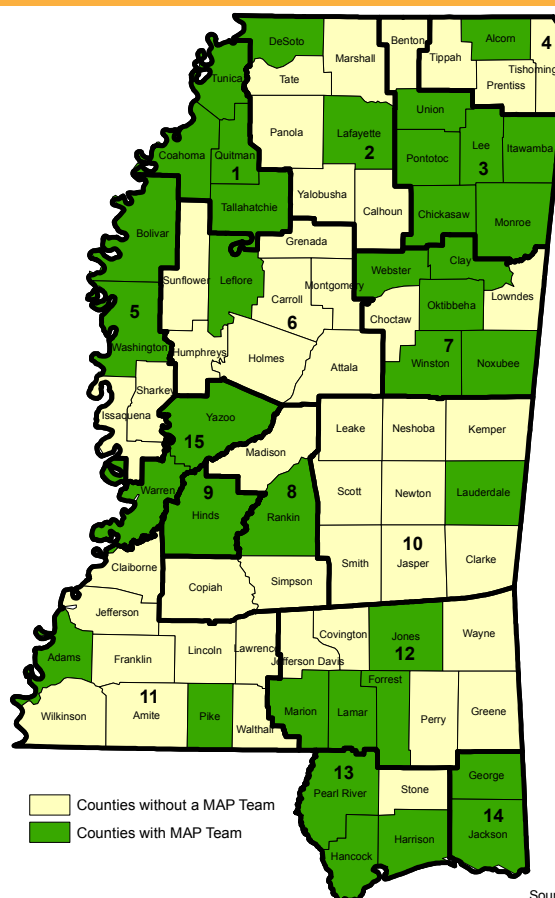
MENTAL HEALTH

DATA SECTION

MISSISSIPPI CHILDREN AND YOUTH SERVED (FY 2008)

As noted in the previous paragraphs, the Mississippi Department of Mental Health (DMH) provides/supports both facility and community-based services for children and youth. Community services for children and youth include, but are not limited to: prevention/early intervention, therapeutic group homes, therapeutic foster care, intensive crisis intervention services, emergency services, outpatient therapy, day treatment, physician/psychiatric services, case management services, and local Making a Plan (MAP) teams. MAP Teams are “multidisciplinary local teams that review cases concerning children and youth who have [Serious Emotional Disorders] and who are at immediate risk for an inappropriate 24-hour institutional placement. The members of these teams meet on a monthly basis to identify community-based services and resources that may divert children from inappropriate inpatient care” (DMH, n.d., Special Programs). Of the state’s 82 counties, 37 have MAP teams (DMH, 2009, July 13). See [Figure 24](#) for the counties that have local MAP teams.

Community Mental Health/Mental Retardation Center Service Areas and Counties with Local Making a Plan (MAP) Teams



Source: DMH, 2009

FIGURE 24

According to the Mississippi Department of Mental Health’s 2008 Annual Report, the following community services were provided to children and youth during the 2008 Fiscal Year (DMH, n.d., 2008 Annual Report).

- Prevention/Early Intervention - 620 children and youth
- Therapeutic Group Homes - 426 children and youth
- Therapeutic Foster Care - 177 children and youth
- Intensive Crisis Intervention Services - 483 children and youth
- Emergency Services - 8,292 children and youth
- Outpatient Therapy - 24,660 children and youth
- Day Treatment - 6,002 children and youth
- Physician/Psychiatric Services - 15,081 children and youth
- Case Management Services - 15,011 children and youth
- MAP Teams - 1,286 children and youth

According to Mississippi mental health services data that is provided to the Center for Mental Health Services, a total of 96,334 clients (children and adults) were served in 2008. The majority (91,367) were served in community settings, and the remaining clients (4,835) were served in state hospitals. Figure 25 shows the age distribution for individuals served in community settings: 33% of those served were children and youth (ages 0-17); 4% were between 18 and 20; 58% were between 21 and 64; and 4% were ages 65 and over (DHS-SAMHSA, 2009).

Overall, in Mississippi, some 3.2% of the state's children and pre-teens (ages 0 to 12 years) were served in fiscal year 2008, which was higher than the national average of 1.7% for this age group. Of Mississippi teens (ages 13-17 years), 6.1% were served, almost double the U.S. average of 3.8% (DHS-SAMHSA, 2009).^a

Specifically examining state psychiatric hospitals, 0.06% of Mississippi's children and teens (ages 0 to 17) were served, almost three times the U.S. average of 0.02% (DHS-SAMHSA, 2009).^a

Specifically examining community mental health programs, approximately 4.0% of Mississippi's children and teens (ages 0 to 17 years) were served, which was higher than the U.S. average of 2.1%. Figure 26 shows the percentage of each age group population served in community mental health programs in FY 2008 (DHS-SAMHSA, 2009).^a

Age Distribution for Persons Served in Mississippi Community Mental Health Programs (FY 2008) (N=91,367)

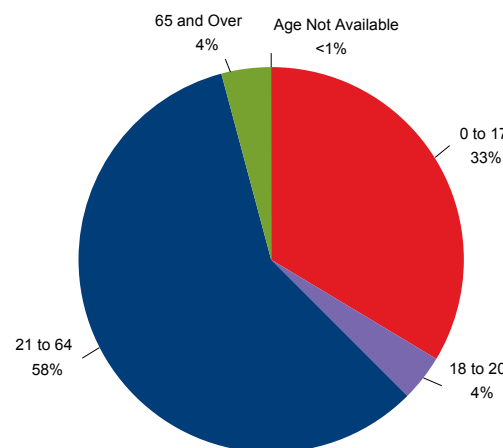


FIGURE 25

Source: DHS-SAMHSA, 2009

Note: Percentages in Figure 25 may not equal 100 due to rounding.

Percentage of Population Served in Community Mental Health Programs by Age Group (FY 2008)

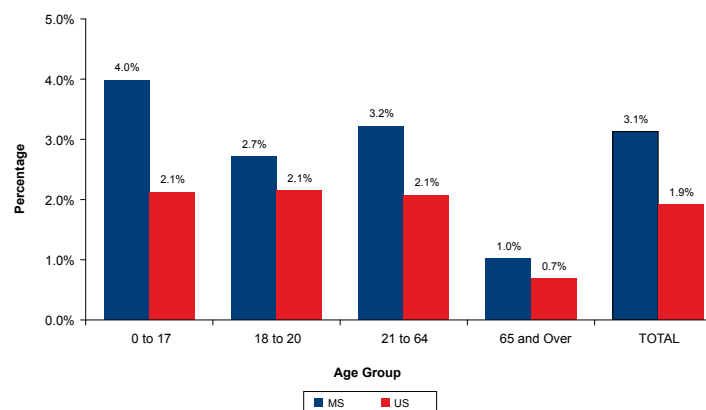


FIGURE 26

Source: DHS-SAMHSA, 2009

MENTAL HEALTH

DATA SECTION

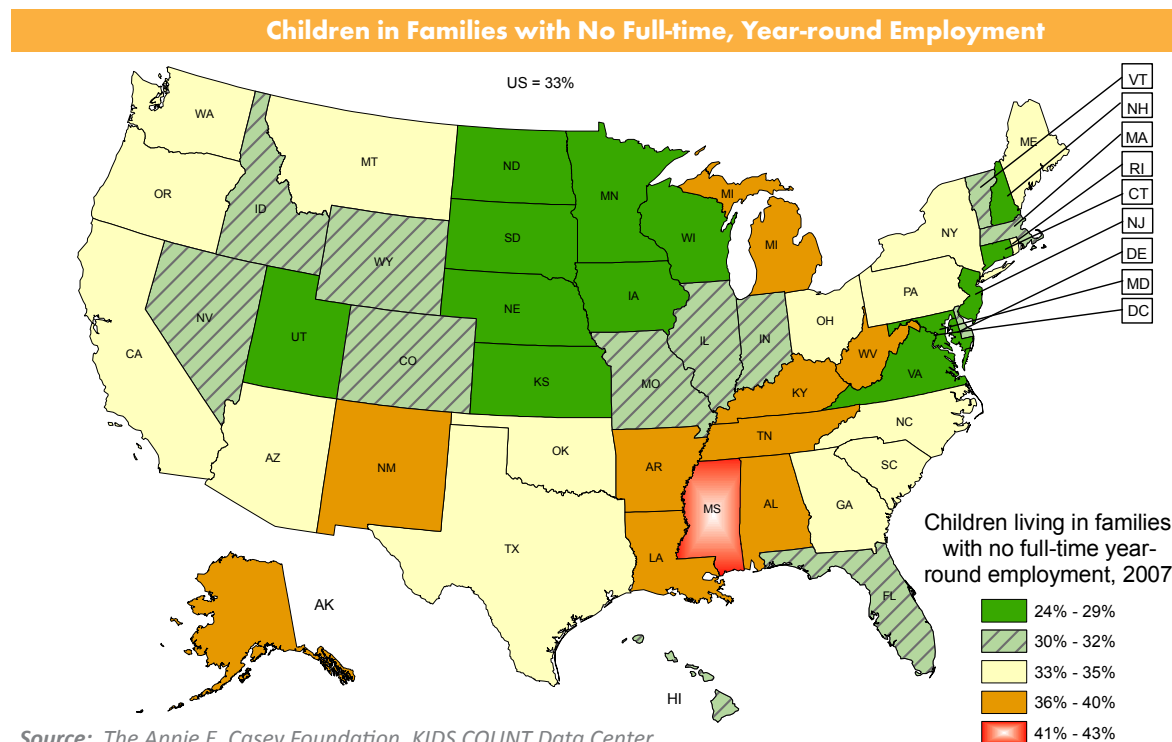
Even though thousands of children and youth are served each year in Mississippi, data suggest that many more are in need of mental health services. Data from the 2007 National Survey of Children's Health (NSCH) revealed that approximately 43% of Mississippi children (ages 2-17) with developmental, emotional, or behavioral problems requiring counseling actually received care. This is compared to the U.S. average of 60% (NSCH, n.d.). As a point of reference, the national health objective for 2010 is to increase the percentage of children with mental health problems who receive treatment to 66%, which is higher than Mississippi's current rate (HHS, 2007, Objective 18-7).

ENVIRONMENTAL RISK FACTORS

Environmental factors such as parental unemployment, severe deprivation due to poverty, single parenthood in a family, and regular exposure to domestic violence or abuse put children at higher risk for the development of mental health problems (DMH, 2009, July 13; National Scientific Council on the Developing Child, 2008; DHS – SAMHSA, n.d.).

Children Living in Families Where No Parent Has Full-time, Year-round Employment

In 2007, Mississippi ranked 50th in the nation for the highest percentage of children living in families where no parent had full-time, year-round employment^b (approximately 43% or 327,000 children). This percentage was higher than the nation as a whole (33%), as well as other Southern states and was also significantly higher (worse) than Mississippi's percentage in 2000 (36%) (AECF, n.d.; Population Reference Bureau, 2009). [FIGURE 27]



Children in Poverty

In 2007, Mississippi ranked 50th for children living in poverty^c (i.e., in families with incomes less than the federal poverty level, defined as \$21,027 for a family of two adults and two children in 2007) (U.S. Census Bureau, 2007). Using this threshold, approximately 29%, or 220,000, of Mississippi's children were living in poverty in 2007. This was higher than the nation as a whole (18%), other Southern states and also significantly higher (worse) than Mississippi's percentage in 2000 (26%) (AECF, n.d.; Population Reference Bureau, 2009).

[FIGURE 28]

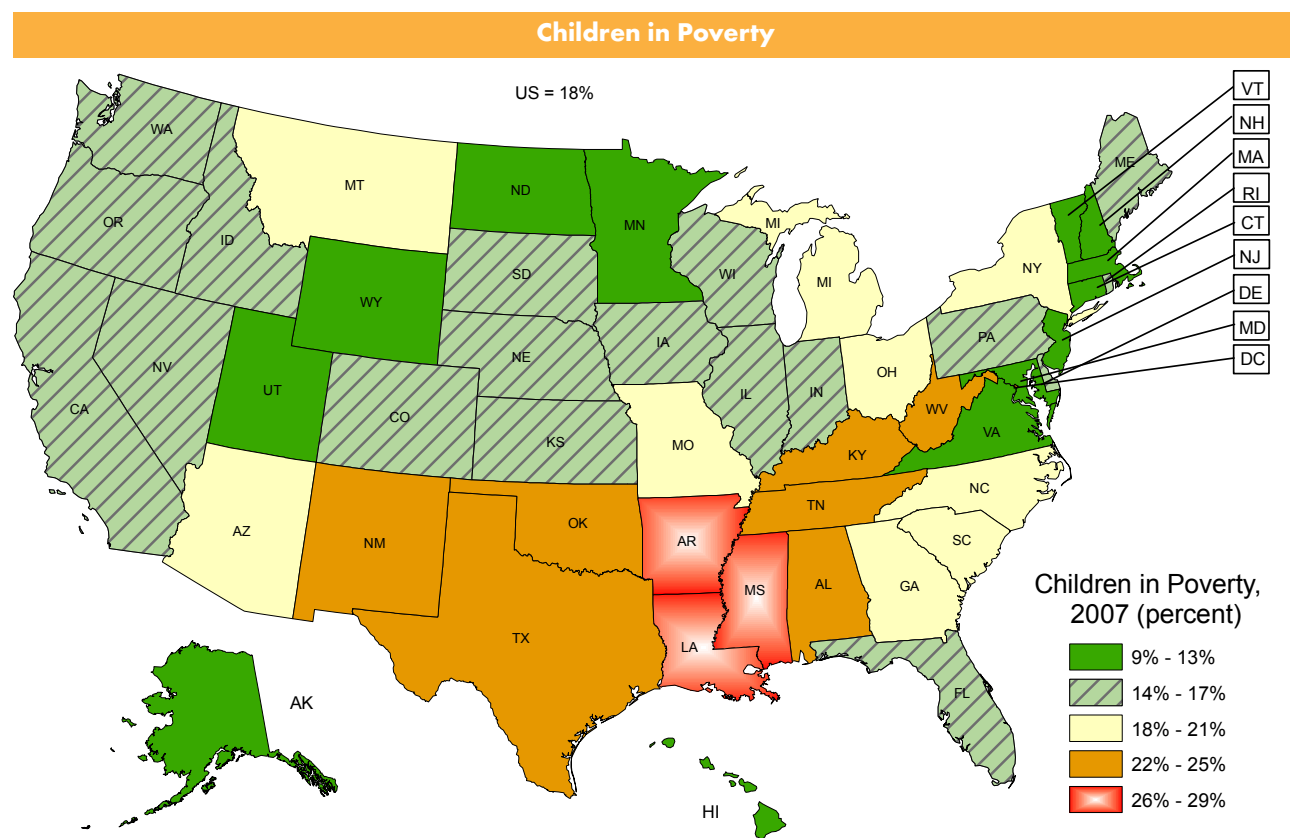


FIGURE 28

Source: The Annie E. Casey Foundation. KIDS COUNT Data Center

MENTAL HEALTH

DATA SECTION

Children in Single-parent Families

In 2007, Mississippi ranked 50th for having the highest percentage in the nation of children living in single-parent families^d, followed only by the District of Columbia and Puerto Rico, which are not included in the rankings. In 2007, almost half (approximately 44%, or 305,000) of Mississippi's children lived in families headed by one parent, as compared to the national average of 32%. Mississippi's percentage in 2007 was not significantly different from its percentage in 2000 (43%) (AECF, n.d.; Population Reference Bureau, 2009). [FIGURE 29]

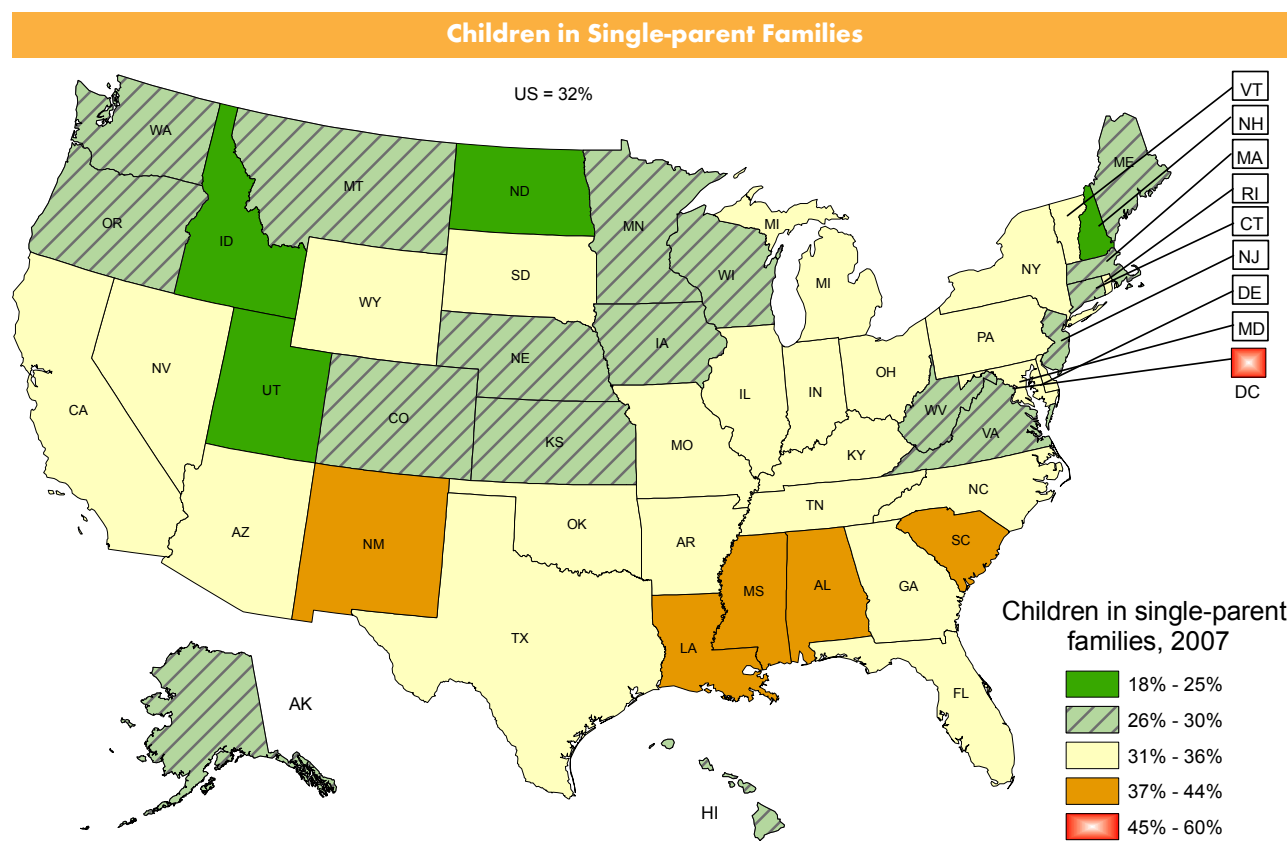


FIGURE 29

Source: The Annie E. Casey Foundation. KIDS COUNT Data Center

Domestic Violence

According to the Bureau of Justice Statistics (U.S. Department of Justice, n.d.), domestic violence includes violence between intimate partners, as well as between family members.

According to the 2005 Behavioral Risk Factor Surveillance System Survey (CDC, 2005), approximately one-in-four women will be the victim of domestic violence sometime during their lifetime, as will approximately one-in-nine men. Children are often witnesses of these violent episodes. According to Straus (1992), between 3 and 10 million children annually witness intimate partner violence (IPV) against one of their parents. Unfortunately, children who witness intimate partner violence are often victims themselves, as 30% - 60% of those who commit intimate partner violence are also abusive to household children (Edelson, 1999). For more information on reporting abuse, neglect and exploitation of children, see the Mississippi Department of Human Services “Mississippi Abuse, Neglect, and Exploitation Reporting System” website: <https://www.msabusehotline.mdhs.ms.gov/> For reporting any suspected abuse and/or neglect, call the 24 hour/7 day/week emergency hotline at 1-800-222-8000.

When victims of domestic violence leave the relationships, they often have nowhere to go, especially if they have few resources. According to a 2002 survey conducted by the U.S. Conference of Mayors (2002), over half of homeless families (57%) indicated that domestic violence was a primary reason for their homelessness. As of 1990, the United States had almost three times as many animal shelters (3,800) as shelters for battered women (1,500) (Senate Judiciary Hearings, Violence Against Women Act, 1990). These shelters are serving large numbers of children and adults. In a 24-hour census of services provided on November 2nd, 2006, the National Network to End Domestic Violence (NNEDV) found that over 22,000 children and adult victims of domestic violence received housing services (NNEDV, 2007).

In Mississippi, there are currently 14 domestic violence shelters that receive funding from the Mississippi State Department of Health. (See [Figure 30](#) for the location of those shelters and the counties they serve.) Many of these shelters also “provide counseling services and/or referrals to the offender. Also, educational programs relating to battered spouses and domestic violence are provided to the community and specialized



“The consequences of domestic violence can cross generations and truly last a lifetime.”

—National Coalition Against Domestic Violence, 2007

MENTAL HEALTH

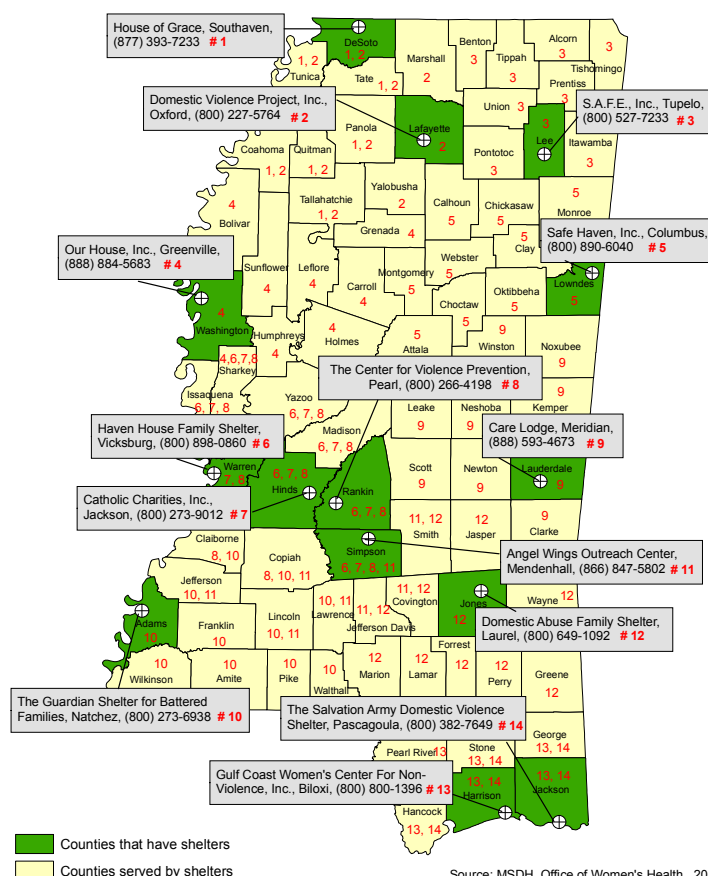
DATA SECTION

professional groups” (MSDH, Office of Women’s Health, 2009). In Fiscal Year 2009 (October 1, 2008 through September 30, 2009), 18,233 domestic abuse-related calls were received, up from the previous year (16,244). In FY 2009, shelter services were provided to 1,063 children, 1,031 women, and three men. Finally, 205 women and 290 children were provided with transitional housing (MSDH, Office of Women’s Health, 2009). The staff of these shelters also provides educational opportunities and public events to increase awareness of domestic violence and its impact on families, their communities, and our society in general. In FY 2009, shelters presented 1,540 educational activities along with 529 media programs (MSDH, Office of Women’s Health, 2009).

Note:

The 14 shelters are numbered 1-14 in red font. The red numbers that appear on each county represent the shelters that serve that county. For example, DeSoto County has the numbers 1 and 2 which indicates that at least some parts of that county are served by House of Grace in Southaven, or Domestic Violence Project, Inc. in Oxford.

Domestic Violence Shelters and the Counties They Serve



Source: MSDH, Office of Women's Health, 2009

FIGURE 30



Some potential outcomes resulting from poor mental health (particularly without intervention) include, but are not limited to: missed school days, poor academic performance, depression, and suicide (AECF, n.d.; DMH, 2009, July 13; Gunnar, Levitt, & Nelson, 2008; NCCP, n.d.).

In 2007, Mississippi ranked 40th in the nation for the percentage of teens between the ages of 16 and 19 who were not in school or working^e. In that year, almost 10% (approximately 19,000) of teenagers in that age group were not attending school or working (full- or part-time). This is higher than the national average of 8%, but not significantly different from Mississippi's percentage in 2000 (11%) (AECF, n.d.; Population Reference Bureau, 2009).



56

MENTAL HEALTH

DATA SECTION

Teens Who Are High School Dropouts

According to 2007 “status dropout” rates collected by the American Community Survey, 8% (approximately 16,000) of Mississippi’s teenagers between the ages of 16 and 19 were not enrolled in high school and were not high school graduates^e (AECF, n.d.). This percentage places Mississippi in 36th place on this indicator, tied with 6 other states, including Texas, Idaho, Kentucky, New Mexico, North Carolina, and Oklahoma. Mississippi’s dropout rate in 2007 (8%) was almost half of its dropout rate in 2000 (15%) and was only slightly higher than the U.S. average of 7% (AECF, n.d.; Population Reference Bureau, 2009).

Teens (16-19) Who Are High School Dropouts

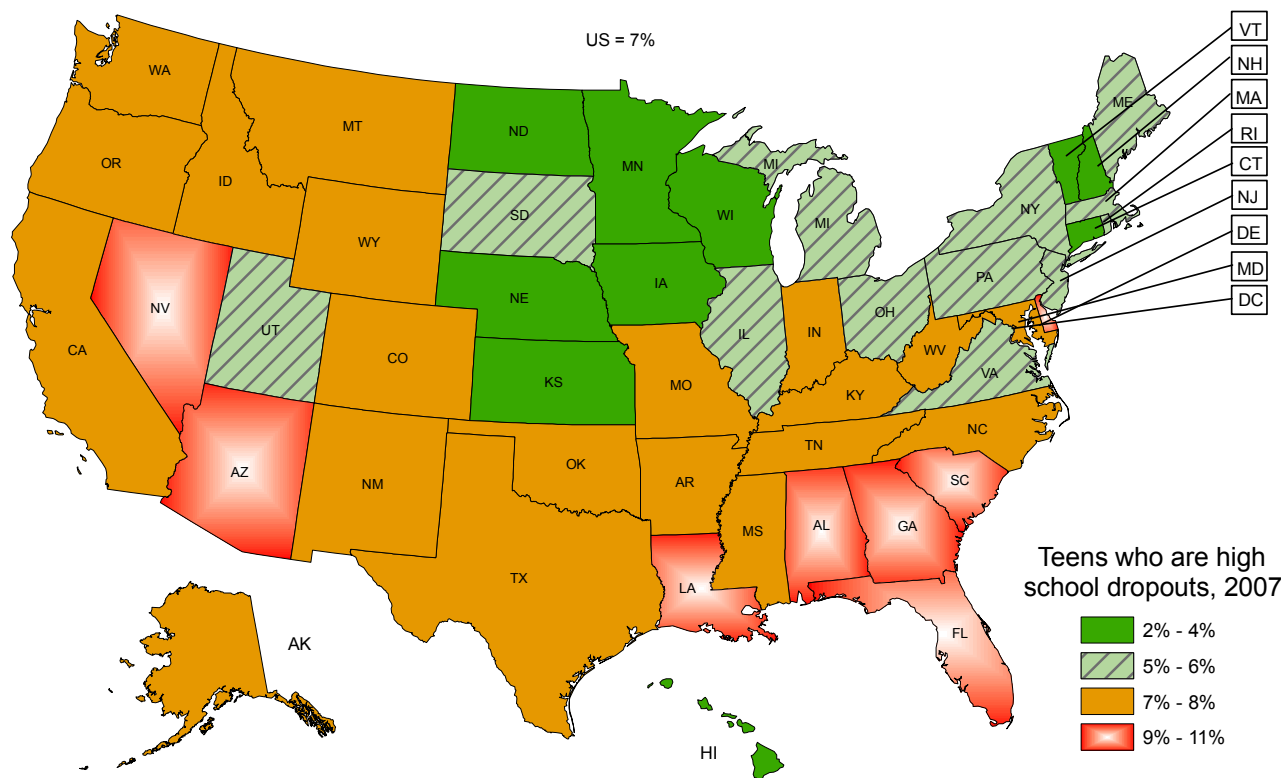


FIGURE 32

Source: The Annie E. Casey Foundation. KIDS COUNT Data Center

Depression and Suicide

In 2007, 28.2% of Mississippi 9th-12th graders reported that during the past 12 months they “felt so sad or hopeless almost every day for 2 or more weeks in a row that they stopped doing some usual activities.” This percentage was not significantly different⁸ from the U.S. average of 28.5% or from Mississippi’s percentage for 2003 (28.7%). The percentages of 9th-12th graders reporting that they “seriously considered attempting suicide (13.4%),” “made a plan about how they would attempt suicide (10.6%),” “attempted suicide one or more times (7.9%),” or whose suicide attempt “resulted in an injury, poisoning, or an overdose that had to be treated by a doctor or nurse” (2.6%) during the 12 months before the survey were not significantly different from the U.S. average for those questions (14.5%, 11.3%, 6.9%, and 2.0%, respectively) (CDC, 2008). [FIGURE 33]

In 2007, a higher percentage of female students than male students in Mississippi reported feeling sad or hopeless (36.8% of females and 19.1% of males) and considered suicide (17.0% of females, and 9.3% of males), but there were not statistically significant gender differences in the percentage of students reporting that they made a suicide plan (13.1% of females and 7.5% of males), attempted suicide (9.0% of females and 6.0% of males), or that their suicide attempt resulted in an injury that had to be treated by a doctor or nurse (2.7% of females and 2.2% of males) (CDC, 2008). [FIGURE 33]

“Numerous studies have documented that maternal depression has adverse effects on fetal and infant well-being...Maternal depression is also a danger to the child during the postpartum and early childhood periods. For example, recent data indicate that maternal depression is a major predictor of negative parenting behaviors (e.g., yelling, spanking) and that each additional depressive symptom increases the likelihood that the mother will exhibit low levels of positive parenting behaviors, such as reading or playing with the child.”

—Peter Daskoch, Neuropsychiatry Reviews, 2001

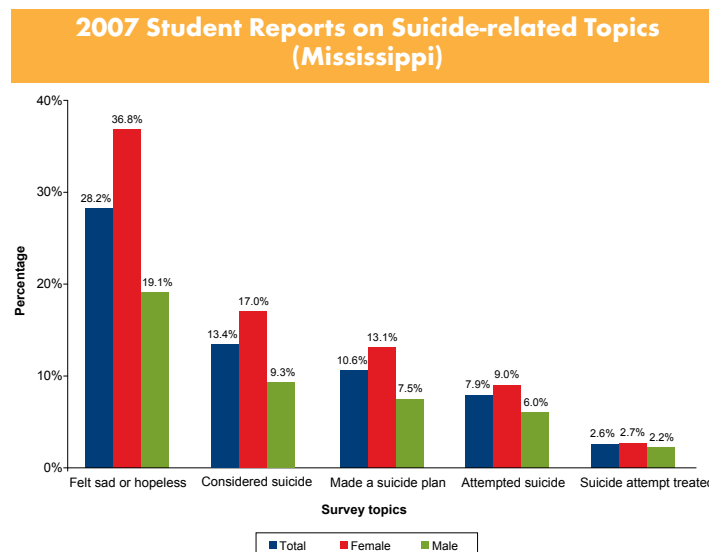


FIGURE 33

Source: CDC, 2008

MENTAL HEALTH

PROGRAMS & POLICY CONSIDERATIONS



MENTAL HEALTH PROGRAMS

In a recent report (2009, November) for the Center for Mississippi Health Policy titled *An Assessment and Study of the Mississippi System of Care*, written by Cliff Davis, Partner with the Human Service Collaborative in Washington, DC, outlines mental health programs in the state of Mississippi. He begins by discussing the Mississippi “system of care” for mental health treatment, followed by a discussion of the entities involved in this system. This report can be found, in full, on the Center for Mississippi Health Policy Web site: <http://www.mshealthpolicy.com/documents/MSAssessmentandStudyReportNov09.pdf>.

With permission (T. Hanna, personal communication, December 11, 2009), we reprint the following excerpts from this report:

System of Care

A true system of care, of necessity, engages all public helping systems through heightened organization and improved alignment of policies, practices, goals, financing, and accountability. The key in a system of care is that helping systems are better organized to provide the services and supports that individual children, youth, and families need, in effective and cost-effective ways.

Collaboration among stakeholders on behalf of the children, youth, and families in need of services and supports is the most important quality of systems of care. In effect, the working partnerships among helpers, advocates, families, and youth, at the community, state, and federal levels, are the system of care, with a shared commitment to the values enacted through these partnerships.

§43-14-1 of the MS statute defines the MS System of Care to include three primary components. The Interagency Coordinating Council for Children and Youth (ICCCY) and the Interagency System of Care Council (ISCC) are both established as state level entities intended to promote collaboration across separate state systems, and local Multidisciplinary Assessment and Planning (MAP) Teams/Adolescent (“A”) Teams (“A” Teams were added in the Juvenile Justice Reform Act of 2005) create collaboration across those same systems for the benefit of individual children, youth, and families at the community level.

MAP and “A” Teams

MAP Teams succeed through better, more creative, application of existing resources from existing community entities, including schools, courts, child protection and advocacy agencies, health and human service providers, and others. MAP and “A” Teams create community opportunities to problem-solve, bringing together diverse knowledge and resources and offering solutions to the problems faced by families in the community. At present, the capacity of the teams is simply limited.

- In 2007 (most recent year for which these data were available), MAP Teams contracted case management for 818 youth, day treatment for 573, outpatient therapy for 935, and family support service for 47 clients for family support services.
- In 2008, 36 MAP Teams served a total of 1,266 youth. Two-thirds (65%) of those youth were African-American, one-third Caucasian, with a negligible number of youth from other racial/ethnic groups. Fifty-four percent were male. The largest age cohort served was 6-12 (48%), followed by 13-17 (39%), 18-21 (7%), and 5 and under (6%). [Please note that this has been updated by the Mississippi Department of Mental Health - 37 MAP Teams served 1,286 children in youth in FY 2008 (DMH, 2009, July 13; DMH, n.d., 2008 Annual Report)].



System of Care Partners

The Mississippi Department of Mental Health holds primary responsibility for the State’s mental health system in all aspects, and it cannot do that job alone. Therefore, the DMH philosophy of collaboration is essential. DMH is not directly responsible to the Governor of Mississippi, a common arrangement in other states, but rather to a State Board of Mental Health, the members of which are appointed by the Governor and confirmed through the Senate.

Community Mental Health Centers (CMHC) are the primary tool through which DMH is able to implement its mission to “plan and develop community mental health services, set minimum standards for ... services, and monitor compliance with those standards.” An effective and positive partnership between DMH and CMHCs is essential to system success. Not surprisingly, there is a clear data correlation between effective, productive CMHC child/adolescent services and effective or high-performing MAP Teams.

CommUNITY Cares is a national grant program (funded through the Substance Abuse and Mental Health Services Administration – SAMHSA) to support system of care development being implemented

MENTAL HEALTH

PROGRAMS & POLICY CONSIDERATIONS

in the Pine Belt Area (Forrest, Lamar, and Marion Counties). This six-year grant was awarded in 2006 to build effective care for adolescents (ages 10-18) experiencing emotional disturbances and substance use problems. The primary approach being developed through this project is team-based: wraparound team planning and monitoring for individual youth and their families; task groups built around system components that bring together multiple stakeholders to plan and implement improvements; and state level interagency partnerships (including the ICCCY and ISCC) to create an environment within which the improvements can be implemented. CommUNITY Cares is already demonstrating the effectiveness of the system of care approach, based on data presented on the project website that show decreased numbers of school expulsions, suspensions, and detentions among participants; improved academic performance and attendance; decreased number of youth experiencing a succession of multiple out-of-home placements; reduced caregiver stress, and diverted youth from the juvenile justice system.

Mississippi Youth Programs Around the Clock (MYPAC) is a 1915(c) Medicaid waiver program specifically aimed at finding and implementing alternatives to residentially-based care for children and youth with serious emotional disturbances. Beginning in October, 2007, the waiver allows Medicaid resources to be used to prevent placements by offering Intensive Case Management, Wraparound Services, and Respite Services for eligible children and youth, with the goal of keeping them in their home and community, when possible. Two statewide providers implement MYPAC, Youth Villages and Mississippi Children's Home Services.

Medicaid data showed that 107 youth were served by the program in FY08 at an average cost of \$17,151 and an average length of stay in the program of 137 days. FY09 data, though incomplete at the time of this Assessment and Study, appear to continue these trends, although per-child spending in FY09 appears somewhat higher. These data reflect a financial gain for the state. If these youth were instead placed in residential treatment facilities at \$200/day the cost for 137 days would be over \$27,000, and there is no reason to believe their lengths of stay would have been limited to this number of days. If these youth were placed in an acute psychiatric hospital setting at approximately \$500 per day, this amount of money (\$17,151) would have paid for just 34 days, with no assurance of any follow-up care in the community.

POLICY CONSIDERATIONS

As noted throughout this section, the mental health of children, adolescents and caregivers is influenced by an array of external factors. The importance of providing a safe, emotionally and economically-secure environmental context through which children, adolescents and families grow and thrive is crucial in promoting the mental well-being of our citizenry. To that end, Mississippi KIDS COUNT endorses the following policy recommendations noted in the aforementioned (see Mental Health Programs section) *Assessment and Study of the Mississippi System of Care*. For a full roster of these recommendations and more explanation on each of these recommendations, please refer to pp 31-37 of full report found at: <http://www.mshealthpolicy.com/documents/MSAssessmentandStudyReportNov09.pdf>

- Reauthorize Mississippi's current system of care statute (43-14-1), with minor language changes
- Empower the Interagency Coordinating Council for Children and Youth (ICCCY) with the authority to impact policy and funding decisions across all public service sectors touching children and adolescents and adding relevant and necessary voices
- [Provide] much more organization and support for the local MAP and "A" Teams
- Establish a framework by both ICCY and Interagency System of Care Council (ISCC) to provide intersystem support, both resources and dedicated recruitment through local agencies, for a statewide advocacy group for this population
- Develop and implement a "System of Care" training curriculum to be utilized across all public service systems
- Employ functional partnerships with other systems to establish more community based, intensive care alternatives, led by the Department of Mental Health (DMH).
- Develop additional child/adolescent psychiatric capacity by strengthening the partnership between DMH and the UMC Department of Psychiatry
- Re-examine the purpose of the SED designation and determine the extent to which current processes support that purpose
- Invest in the development and operation of basic management information systems that provide real-time management data
- Develop and utilize a simple, straight-forward quality management system that links the outcomes and experiences of children and their families to the provision of service
- Review data on differences in diagnoses between African American and White children receiving mental health services

In addition to the aforementioned policy recommendations, we offer the following additional policy considerations:

- Increase access to highly trained mental health consultants in early care and education settings
- Provide statewide preventive and intervention mechanisms to screen and refer pregnant women and postpartum mothers who may be at risk for mental illness
- Provide highly trained mental health consultants to all school systems (K-12) within the state
- Increase the training and expertise of individuals who serve children as foster and/or resource parents
- Fund research to determine and answer basic questions such as trends, persistent areas of need by diagnosis, population groups and geographical areas of the state
- Promote the use of evidence-based prevention and intervention strategies for promoting social and emotional healthy development in children, adolescents and their families



MENTAL HEALTH

SUCCESS STORY

"It takes the community and the family working with the provider [to] wrap the services around the child and family so that everybody who can be involved will be involved."

—Bonlitha Windham
MYPAC Project Director

MYPAC: Mississippi Youth Programs Around the Clock

Having a blanket wrapped securely around you makes you feel comfortable and safe. It envelopes you and keeps the cold from getting in. The concept of "wrap-around" mental health services for children and their families is based on this same premise.

Wrap-around services are individualized, community-based mental health services for children. Children and adolescents with severe emotional and behavioral disorders may continue to live at home instead of being sent to residential treatment facilities. Exact services vary because wrap-around is individualized to address a child's specific needs and builds on the child's and family's strengths.

The wrap-around idea came about in the 1970's in Canada, gained ground in the U.S. in the 1980's and 90's and expanded into the Medicaid arena during the last 10 years (Shirk, 2009). It is a child-centered approach to mental health care and is parent and family driven.

Typically when a child with emotional disorders is sent to a residential treatment facility, he or she may be away from the home setting for months at a time. When the child returns to the home, often he or she has changed, but the family has not. As a result, problems will continue.

"If a child can stay in the home and learn how to deal with the stressors of home and community together with his [or her] family, then that's sustainable difference and something that can change things forever," says Kristi Plotner, the Bureau Director for Mental Health Programs for the Mississippi Division of Medicaid. For nearly 10 years, she studied the wrap-around model and examined ways that Medicaid mental health services could provide similar services. "We started talking about what a system for children's mental health services would look like in an ideal world," she says.

The end result was Mississippi Youth Programs Around the Clock (MYPAC), a \$49.5 million federal demonstration grant awarded to the state Division of Medicaid to provide uniquely structured services for children and youth who qualify for Medicaid and have been diagnosed with Serious Emotional Disturbance (SED). "The model kind of flipped the service provision on its tail," says Plotner. Instead of six- to seven-month stays at psychiatric residential treatment facilities, Medicaid eligible children and youth remain in the family setting to receive help. "We've taken a lot of risks and done a lot of "out there" things to make it [MYPAC] the way it was supposed to be," says Plotner.



Intensive case managers and therapists come into the home a minimum of three times per week and have a presence in the school setting also. Counselors are available to the family 24 hours a day, seven days a week. “If I need her at 2:00 in the morning, I’m able to call her,” says one mother whose 14-year-old son receives MYPAC services. “I’m not left by myself trying to handle the problems that are going on.” Katja Russell, the Director of Programs for Youth Villages, one of two service providers for MYPAC adds, “We don’t just work in the home with the family. We also go into the community or into the school setting if there are issues there. Counselors become the liaison.”

The program does allow brief institutional respite care for up to 29 consecutive days if a child or even a parent needs a break or cooling off period. “To be able to come in and say that we can offer an option for respite, and then we can re-huddle without your child having to go away for a long time and let cooler heads prevail is a really nice piece,” says Dr. John Damon, the Chief Operating Officer for the Mississippi Children’s Home Services, another service provider for MYPAC.

Under the Deficit Reduction Act of 2005, \$218 million dollars was provided for 10 states to explore community alternatives to Psychiatric Residential Treatment Facility (PRTF) care. Plotner and associates from the Department of Mental Health submitted the \$49.5 million dollar proposal, received funding from the Center for Medicare and Medicaid Services (CMS) in December, 2006, and the first four youth were admitted to services in November, 2007. The state of Mississippi matches funds for the five-year program. Mississippi was the first state to provide services under the grant and was also the state to receive the largest amount of money.

Before services could begin in the state, Medicaid had to apply for a waiver to Section 1915(c) of the Social Security Act to provide for home and community-based mental health services. To qualify, the agency had to prove that the revamped services would be budget neutral, meaning that it would cost no more to serve the clients in the community than it does to serve them in an institution. In order to make their case, Medicaid officials had to compare similar services already in place with those that MYPAC would offer. Stays in a PRTF would be the logical comparison to home-based services, but they are not currently included in Section 1915(c). To be able to compare the cost of a PRTF stay to a home-based service, Section 1915(c) would have to be specifically altered to allow the particular cost comparison between the two.



*Kristi Plotner, Mental Health Programs Bureau Director
and Bonlitha Windham, MYPAC Project Director
Mississippi Division of Medicaid*

MENTAL HEALTH

SUCCESS STORY

Medicaid officials did receive a temporary waiver through the demonstration, but their hopes are that it can become permanent. "If that can be changed, Mississippi can continue the program after the five years, and every other state would have the option to provide these services as an alternative to residential treatment," says Plotner. "Everybody would like to provide services in a community-based setting instead of segregating youth from their family."

Bonlitha Windham was hired as the MYPAC Project Director in February 2007. As of January 2010, approximately 425 children across the state have received services. She says the key to MYPAC's success is the wrap-around



*Bonlitha Windham
MYPAC Project Director*



*Dr. John Damon, Chief Operating Officer and Beth Frizzell,
Community Based Services Division Director
Mississippi Children's Home Services*

services. "It takes the community and the family working with the provider [to] wrap the services around the child and the family so that everybody who can be involved will be involved." Reginald Starks, Regional Representative for Youth Villages adds, "For so long, the only option for a child with a certain behavior level was to send him [or her] off to a residential facility. That's difficult for a parent to send a kid off for six to seven months. I think parents really appreciate being able to work through the issues at home."

"There is a big philosophical shift of how mental health care has been historically provided in the state," says Dr. Damon. "In the past it was expert-driven and residentially based. Really it's kind of flipped, so that now the "experts" are the child and family, and they have the voice and choice of what services they get." With wrap-around services, counselors are able to purchase items for the child or even assist with family bills if deemed necessary. For example, often children have been suspended from school because they did not have school uniforms. Counselors are allowed to purchase such items for the child. Wrap-around services also allow counselors to assist in providing extra-curricular activities, sports and tutoring assistance. "They [the service providers] are able to come outside the box and provide services that ordinarily they wouldn't be able to do," says Windham.

“Last year you would have said I was anti-social. I didn’t like being around people, but now you can say I’m a social butterfly.” —Stephanie Kittel, MYPAC participant

Another key to success is that parents are partners in determining and maintaining the services needed for the child. The individualized service plan takes a team approach. Participants, their parents and the MYPAC provider meet regularly to identify specific needs and how they will be addressed. Everyone’s service plan is different. Additionally, other members of the participant’s life become part of the team. “With wrap-around services, the family is encouraged to bring in their natural supports, so we are bringing in people who normally might not have been involved in their services,” says Beth Frizzell, Community Based Services Division Director for the Mississippi Children’s Home Services. “It may be a neighbor or a best friend or a teacher.”

One unique aspect of the MYPAC program is the comradery between MYPAC’s two service providers. Traditionally, Youth Villages and the Mississippi Children’s Home Services may often be seen as competitors, but in this case, they participate in weekly conference calls. “We obviously have different organizations with different missions,” says Dr. Damon. “We’re both trying to advance, but we have a common denominator in that we love kids, and we want to see kids and families together.” He adds, “We do that from different perspectives, but with the same goal.”

Many parents whose children are involved in MYPAC say that the counselors are helping them and changing their lives for the better. “In the past, I felt like I was setting myself up for failure,” says one mom whose son has been a resident in several treatment facilities. “Now they’re helping me learn different ways of handling his outbursts.” She stresses that MYPAC gives parents coping skills while helping them keep their children in the home setting. Linda Kittell whose daughter Stephanie has received MYPAC services says, “MYPAC taught us how to deal with each other. If Stephanie had gone to a residential center, when she would have come home, we would have still had the same issues.”

Ethel Blackmon echoes those feelings. She says the counselors have helped not only her son Vontireous, but they’ve helped her as well. “They recognized issues with me. They helped me see I had to calm down first and get myself together.” Once frustrated with school and seen as a behavior problem, Vontireous now is cited for good behavior, and Ethel is no longer being called to the school to address behavior issues.



Linda Kittell and daughter Stephanie



Ethel Blackmon and son Vontireous

MENTAL HEALTH

SUCCESS STORY



Katja Russell, Director of Programs and Reginald Starks, Regional Representative Youth Villages

The unique services have a fiscal benefit as well. Traditionally, the cost for a residential treatment facility is about \$300 per day. Often a child may stay six months. The bill can add up to \$60,000. Home and community-based services, such as MYPAC, are about half that (K. Plotner, personal communication, October 13, 2009).

All the partners involved in MYPAC are hoping that a permanent Medicaid waiver will pave the way for replication in other states. "We want this waiver to become permanent because we do see it as a new solution to problems that historically have not always been dealt with in the best interest of the

child and the family," says Russell. "I'm excited to be part of a program that is cutting edge and can become system reform not only in Mississippi, but in so many other states." Russell even emphasizes that MYPAC has made Mississippi "a star on the map" when it comes to unique mental health services. "We would love for other states to pick up MYPAC and then create their own versions."

Just as the warm blanket protects us from outside forces, the MYPAC partners are working together to do the same for the children and adolescents who need mental health services. All agree they are doing it with a lot of love and dedication. Plotner sums it up, "If you bring your heart to your job, and you care about what you do, you can make a difference. The difference we are making is phenomenal because it's so far-reaching."

"Agencies don't work with agencies. People work with people. MYPAC has become a real family of people working for a greater purpose."

—Kristi Plotner
Bureau Director, Mental Health Programs
Mississippi Division of Medicaid



OBESITY



OBESITY

OBESITY



The well-being of children is the most important determinant of Mississippi's future. Healthy children and adolescents are much more likely to have higher academic achievement, become healthy adults and provide communities with a viable and productive workforce (Gable, Britt-Rankin, & Krull, 2008; HHS, 2001). Childhood obesity must be addressed to ensure that Mississippi's children have the opportunity to grow into healthy adults. Effective approaches to prevent and reverse childhood obesity involve children's families and communities, coupled with progressive statewide policies.

According to data from the National Health and Nutrition Examination Survey (NHANES), childhood obesity prevalence rates have increased steadily in the U.S. since 1980 (CDC, n.d.). Mississippi's childhood

obesity rates are among the highest in the nation. Data from the 2007 Youth Risk Behavior Surveillance System (YRBSS) of the Centers for Disease Control and Prevention (CDC) showed that 35.8% of Mississippi's high school students were overweight or obese, compared to 28.8% nationwide (CDC, 2008). The Healthy People 2010 national health goal (HHS, 2007, Objective 19-3c) is to reduce the proportion of children and adolescents (aged 6 to 19 years) who are overweight or obese to 5% by 2010. Depending on the data source and age of children included, the percentage of overweight or obese children and adolescents in Mississippi was between seven and nine times more than this goal in 2007 (CDC, 2008; HHS, n.d.).

CONSEQUENCES OF CHILDHOOD OBESITY

The high rates of childhood obesity in Mississippi cause great concern because of the serious consequences for children who are overweight or obese:

- Overweight children are at risk for early development of chronic disease, leading to disability and premature death (Ludwig, & Ebbeling, 2001).
- Overweight children miss more school days and demonstrate lower academic performance (Schwimmer, Burwinkle, & Varni, 2003).
- Childhood obesity is a significant predictor of coronary heart disease in adulthood (Baker, Olsen, & Sorensen, 2007).
- Overweight adolescents have a 70% chance of becoming overweight or obese adults (Office of Surgeon General, 2001).
- Overweight and obese individuals are at increased risk for type 2 diabetes, heart disease, hypertension, osteoarthritis, sleep apnea, gallbladder disease, respiratory problems, stroke, endometrial cancer, breast cancer, colon cancer, prostate cancer, depression, and other conditions (Narayan, Boyle, Thompson, Sorensen, & Williamson, 2003).
- Obesity accounts for a substantial part of increased disability in adults and is expected to result in an increase of 10% – 25% in the nursing home population by 2020 (Lakdawalla et al., 2003).

The national health objective for 2010 is to reduce to

5%

the proportion of children and adolescents (aged 6 to 19 years) who are overweight or obese

Mississippi has the highest rate of adult obesity in the nation and the highest rate of premature death. The state ranks at the top of the list for most chronic disease rankings, including heart disease, hypertension, diabetes, and stroke, and has high disability rates. Given these striking health effects, it is no surprise that obesity has a significant impact on the economy of the state.

- Obesity accounts for approximately 9.1% of total annual medical expenditures (Finkelstein, Fiebelkorn, & Wang, 2003).
- The estimated annual health care cost attributed to adult obesity (in 2003 dollars) in Mississippi is \$757 million (Finkelstein, Fiebelkorn, & Wang, 2004).
- Of the \$757 million, \$223 million is cost to Medicare, and \$221 million is cost to Medicaid (Finkelstein, Fiebelkorn, & Wang, 2004).
- Approximately 8% of private employer medical claims are due to overweight and obesity (Finkelstein, Fiebelkorn, & Wang, 2003).
- About 27% of the increase in medical costs from 1987 to 2001 was due to obesity (Thorpe, Florence, Howard, & Joski, 2004).



HOW THE TOPIC OF OBESITY IS ADDRESSED IN THIS DATA BOOK

Given the consequences and Mississippi's high rates of childhood obesity, the need to address the problem is urgent. An understanding of the collective influences affecting childhood obesity is necessary to change the epidemic of obesity within Mississippi. These interconnected influences on children's lives—their families, schools, communities and access to built environments—all impact children's nutrition and physical activity levels and pose potential benefits or risks for overweight and obesity among Mississippi's children. To explore these influences and the health status of Mississippi's children, the remainder of the chapter will include the following:

- The Data Section provides an overview of a) childhood and adolescent overweight and obesity rates; b) factors that influence those rates (e.g., diet, nutrition and physical activity); c) school health policies in Mississippi designed to reduce childhood obesity and d) key findings of a survey of 3,710 parents in Mississippi on the implementation of the Healthy Students Act of 2007, funded by the Robert Wood Johnson Foundation. Relevant Healthy People 2010 goals appear in the Data Section for the topics discussed.
- The Programs and Policy Considerations Section provides information on numerous efforts that are currently being considered or employed, with promising results, to combat childhood obesity.
- The final section contains a success story that highlights the multifaceted "Get a Life! My Life, My Health, My Choice" program in preventing, intervening and reversing childhood obesity in northwest Mississippi.

OBESITY

DATA SECTION



OVERWEIGHT/OBESITY

According to 2007 data from the Youth Risk Behavior Surveillance System (YRBSS), 35.8% of high school students in Mississippi were defined as overweight (17.9%) or obese (17.9%) using body mass index (BMI) calculations from self-reported height and weight. These percentages were significantly higher than those for the nation as a whole (15.8% overweight and 13.0% obese). In addition, Mississippi had a significantly higher percentage of students who were obese, compared to other Southern states (e.g., 13.9% for Arkansas and 13.8% for Georgia). In that same year, 27.1% of Mississippi high school students described themselves as slightly or very overweight. This percentage was significantly lower than the percentage for the nation as a whole (29.3%), but was not significantly different from Arkansas (27.3%) or Georgia (28.5%) (CDC, 2008). [FIGURE 34]

2007 High School Students' Reports on Overweight / Obesity-related Topics

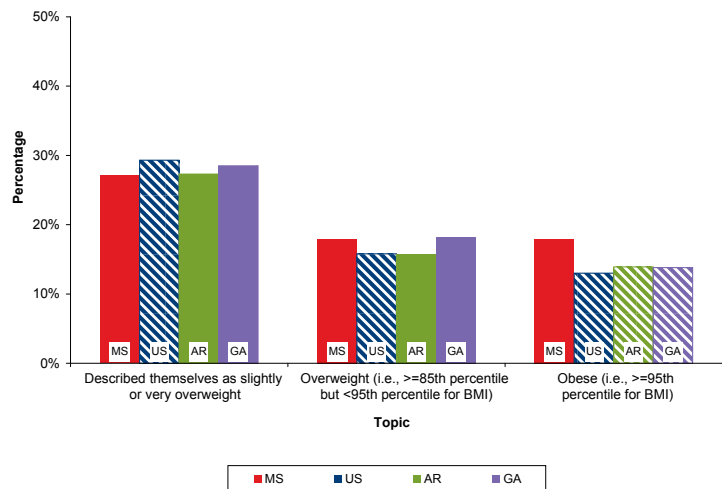


FIGURE 34

Source:

Figure 34 was created using data from the Youth Risk Behavior Surveillance System (YRBSS), 2007.

Notes:

Bars with diagonal lines indicate that Mississippi was significantly different than the U.S. and/or other states. For example, if the U.S. bar is filled with diagonal lines, then Mississippi is significantly different from the United States. Solid bars indicate the differences were not significant between Mississippi and the U.S. and/or other states.^a

The topic labels in Figure 34 are abbreviated versions of the YRBSS questions. For further information, visit the CDC's YRBSS web site at <http://www.cdc.gov/HealthyYouth/yrbss/>

Research that uses actual height and weight measurements of students in Mississippi suggests that the actual prevalence of overweight and obesity could even be higher than the YRBSS data indicate. Researchers from the College of Health at the University of Southern Mississippi developed the Child and Youth Prevalence of Overweight Survey (CAYPOS) to estimate the prevalence of obesity among children in Mississippi using actual height and weight measurements. When 2003 YRBSS self-reported data were compared to data collected through measured heights and weights (CAYPOS), researchers found that the measurements revealed even higher childhood obesity rates (Kolbo et al., 2006).

[FIGURE 35]

Source: Kolbo, Penman, Meyer, Speed, Molaison, & Zhang, 2006. Prevalence of overweight among elementary and middle school students in Mississippi compared with prevalence data from the Youth Risk Behavior Surveillance System.

When the CAYPOS measurements were collected again in 2005, children at almost every grade level showed increasing prevalence of overweight and obesity (Molaison et al., 2007). [FIGURE 36]

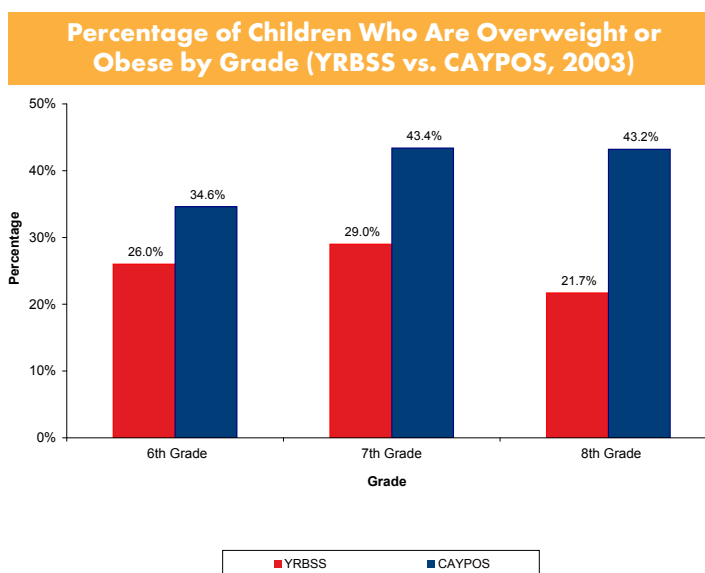


FIGURE 35

Percentage of Children in Mississippi (Grades 1-8) Who Were Overweight or Obese, CAYPOS 2003 vs. 2005		
Grade	Overweight or Obese 2003	Overweight or Obese 2005
1st	26.9%	42.1%
2nd	31.7%	35.2%
3rd	42.8%	41.9%
4th	42.5%	50.1%
5th	44.7%	50.4%
6th	34.6%	50.7%
7th	43.4%	54.9%
8th	43.2%	42.9%

FIGURE 36

Source: Molaison, Kolbo, Speed, Dickerson, & Zhang, 2007. Prevalence of overweight among children and youth in Mississippi: A comparison between 2003 and 2005.

OBESITY

DATA SECTION

Results of the 2007 Child and Youth Prevalence of Overweight Survey (CAYPOS) provided the first signs that childhood obesity rates in Mississippi may be reaching a plateau. Although not statistically significant, the survey showed drops in obesity rates in middle school and high school students (Kolbo et al., 2008). [FIGURE 37]

Source:

Kolbo et al., 2008. *Prevalence of obesity and overweight among children and youth in Mississippi: Current trends in weight status.*

2007 data from the National Survey of Children's Health (NSCH) indicate that, for children ages 10-17 in Mississippi, 44.5% were overweight or obese. In this telephone-based survey, adults provided information about the height and weight of a child in the household, and BMI information was calculated from those reports. For this survey, 22.6% of children ages 10-17 in Mississippi were classified as overweight, and 21.9% were classified as obese in 2007 (HHS, n.d.). Using these statistics, the percentage of overweight and obese children ages 10-17 in Mississippi was almost nine times more than the national Healthy People 2010 goal of 5% (HHS, 2007). When these results are extrapolated to the entire population of children in the state, the magnitude of the issue is sobering. An estimated 75,543 children, ages 10-17, statewide were overweight, and an estimated 73,308 were obese in 2007 (HHS, n.d.). [FIGURE 38]

Source:

U.S. Department of Health and Human Services (HHS), (n.d.) Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children's Health (NSCH), 2007.* Retrieved from <http://www.childhealthdata.org/content/Default.aspx>

Percentage of Public School Students in Mississippi Who Were Overweight or Obese (CAYPOS, 2005 & 2007)

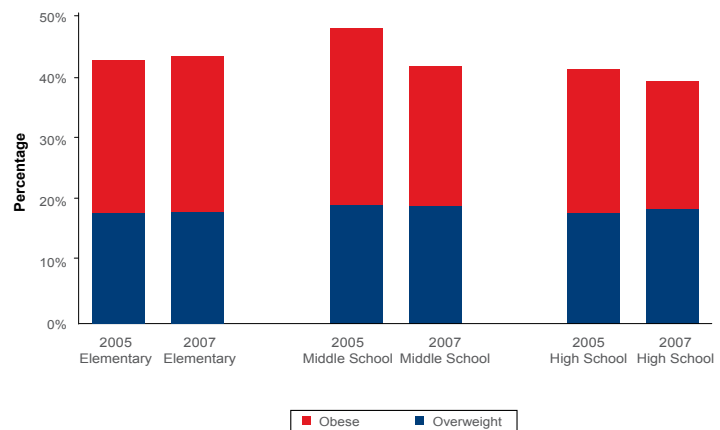


FIGURE 37

Weight Status of Mississippi Children Ages 10-17, 2007 National Survey of Children's Health

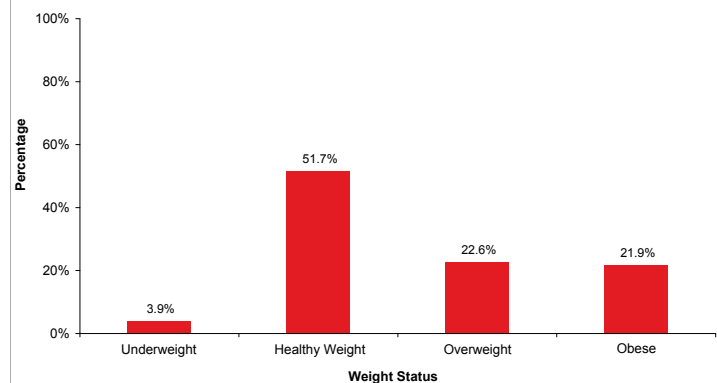


FIGURE 38

In 2009, a telephone-based survey of parents of Mississippi school-aged children (kindergarten through 12th grade), funded by the Robert Wood Johnson Foundation, was conducted to evaluate the impact and implementation of the Mississippi Healthy Students Act of 2007 (Southward et al., 2009). As part of that survey, 3,710 parents of Mississippi public school children were asked to provide heights and weights for themselves and for their children. Statewide, 39.2% of parents were classified as obese, and 37.3% of children were classified as overweight or obese based on parent reports of height and weight (Southward et al., 2009). [See Figure 40, next page] The 2009 data suggest that the percentage of overweight and obese school-aged children in Mississippi is approximately seven and a half times more than the national health goal (HHS, 2007). The national health objective for 2010 is to reduce to 5% the proportion of children and adolescents (aged 6 to 19 years) who are overweight or obese (HHS, 2007). Figure 39 shows the percentage of children who were classified as overweight or obese by public health district in Mississippi (Southward et al., 2009). [FIGURE 39]

Percentage of School-aged Children (Kindergarten-12th Graders) Who Were Overweight or Obese, 2009

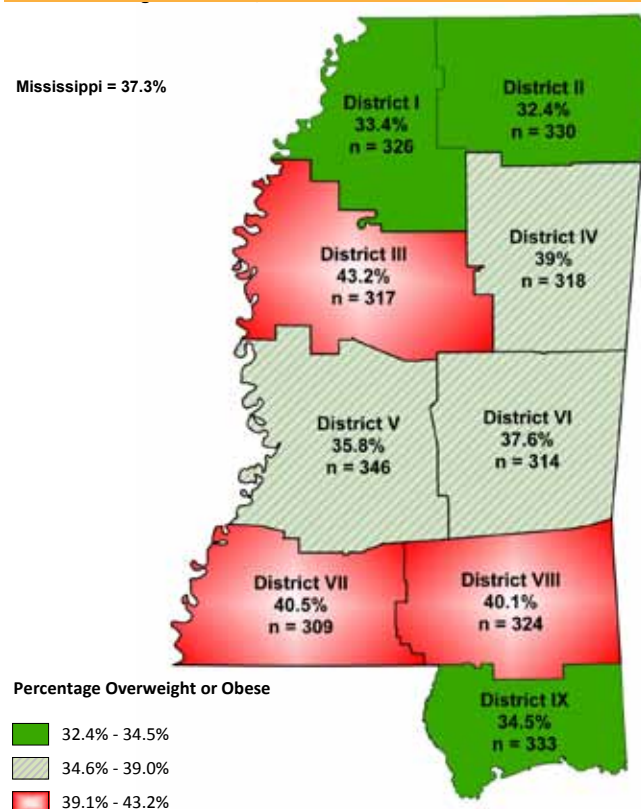


FIGURE 39

“American society has become ‘obesogenic,’ characterized by environments that promote increased food intake, nonhealthful foods, and physical inactivity. Policy and environmental change initiatives that make healthy choices in nutrition and physical activity available, affordable, and easy will likely prove most effective in combating obesity.”

—Centers for Disease Control and Prevention, Overweight and Obesity, 2009

OBESITY

DATA SECTION

**Weight Status Categories for School-aged Children in Mississippi and Their Parents
(Parent Responses)**

Weight Status Category	Parents		Children	
	n	%	n	%
Underweight	40	1.2%	195	6.7%
Normal / Healthy Weight	882	25.9%	1,633	56.0%
Overweight	1,151	33.8%	474	16.2%
Obese	1,335	39.2%	615	21.1%
Total	3,408	100.0%	2,917	100.0%

FIGURE 40

Source:

Southward, Cross, Baggett, Hanna, Edwards, Carmack, Parrish, Buffington, Mathews, & Thompson, 2009. *Parents', Youth and Policymakers' Perspectives on the Mississippi Healthy Students Act of 2007: Baseline Findings*. The Center for Mississippi Health Policy, funded by The Robert Wood Johnson Foundation.

Notes:

For **Figures 39 and 40**: BMI for parents, BMI and BMI percentiles for children, and weight status categories were calculated using standard formulas and tools available on the Centers for Disease Control and Prevention's web site: <http://www.cdc.gov/healthyweight/assessing/index.html>. In this survey, parents reported their own height and weight, as well as the height, weight and gender of their child. To determine BMI, age was inferred from the grade level provided for the child (e.g., those who were in Kindergarten were assumed to be 6 years old, and one year was added for each grade level, up to those who were in 12th-grade that were assumed to be 18 years old).

By applying a finite population correction formula, the margin of error for the total dataset ($n \geq 3,500$) is no larger than $\pm 2.5\%$ at a 99% confidence level (for binomial response options with 50/50 split). For sub-samples of approximately 400 cases, the margin of error is no larger than $\pm 5.0\%$ at a 95% confidence level. For sub-samples of approximately 300 cases, the margin of error is no larger than $\pm 5.0\%$ at a 90% confidence level.



DIET AND NUTRITION

As part of the 2007 YRBSS, Mississippi high school students answered questions related to diet and nutrition. The results from selected questions are shown in Figure 41 (CDC, 2008).

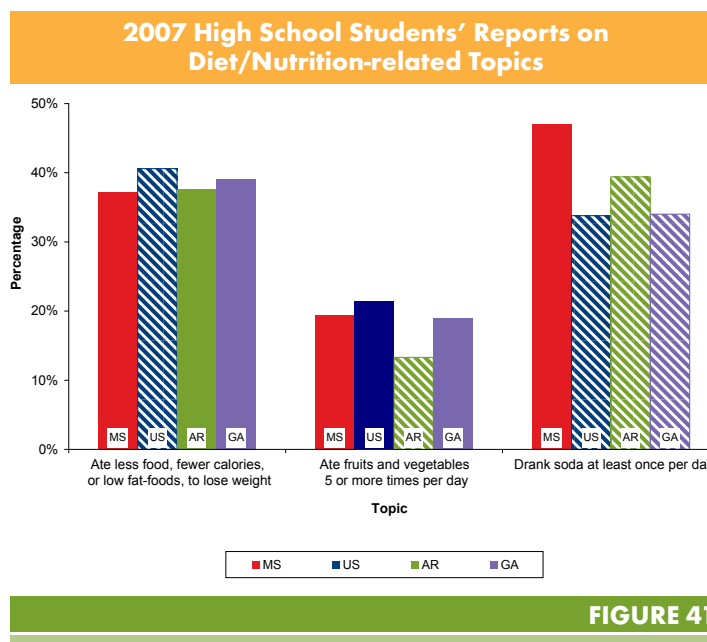
Source:

Figure 41 was created using data from the Youth Risk Behavior Surveillance System (YRBSS), 2007.

Notes:

Bars with diagonal lines indicate that Mississippi was significantly different than the U.S. and/or other states. For example, if the U.S. bar is filled with diagonal lines, then Mississippi is significantly different from the United States. Solid bars indicate the differences were not significant between Mississippi and the U.S. and/or other states.^a

The topic labels in Figure 41 are abbreviated versions of the YRBSS questions. For further information, visit the CDC's YRBSS web site at <http://www.cdc.gov/HealthyYouth/yrbss/>



In 2007, a significantly lower percentage of Mississippi high school students reported eating less food, fewer calories, or low-fat foods to lose weight or to keep from gaining weight, compared to the nation as a whole (37.2% of Mississippi students compared to 40.6% nationwide).

In that same year, only 19.4% of Mississippi high school students reported that they ate fruits and vegetables five or more times per day, compared to 21.4% nationwide. As a point of reference, the national health objective for 2010 is to increase to 75% the proportion of children and adults who consume at least two daily servings of fruit (Objective 19-5), and increase to 50% the proportion of children and adults who consume at least three daily servings of vegetables (HHS, 2007, Objective 19-3c).

In addition, in 2007, a significantly higher percentage of Mississippi high school students reported that they drank “a can, bottle, or glass of soda or pop (not including diet soda or diet pop) at least one time per day during the seven days before the survey,” compared to the nation as a whole (47% of Mississippi students compared to 33.8% nationwide). This percentage was also significantly higher than those for other Southern states, including Arkansas (39.4%) and Georgia (34%) (CDC, 2008).

Overweight adolescents have a **70%** chance of becoming overweight or obese adults

OBESITY

DATA SECTION

In a 2009 Robert Wood Johnson Foundation-funded telephone survey of 3,710 parents of Mississippi school children, parents were asked, “How many servings or helpings of fruits and vegetables do you think a person should eat each day for good health?” Approximately 2 out of 10 parents (18.3%) responded that a person should eat five or more servings each day (Southward et al., 2009). These results align well with the 2007 YRBSS results that show that approximately 2 out of 10 high school students (19.4%) indicated that they ate fruits and vegetables five or more times per day (CDC, 2008). [See FIGURE 42]

How Many Servings of Fruits and Vegetables Should a Person Eat Each Day for Good Health?
(n=3,710 Mississippi Parents, 2009)

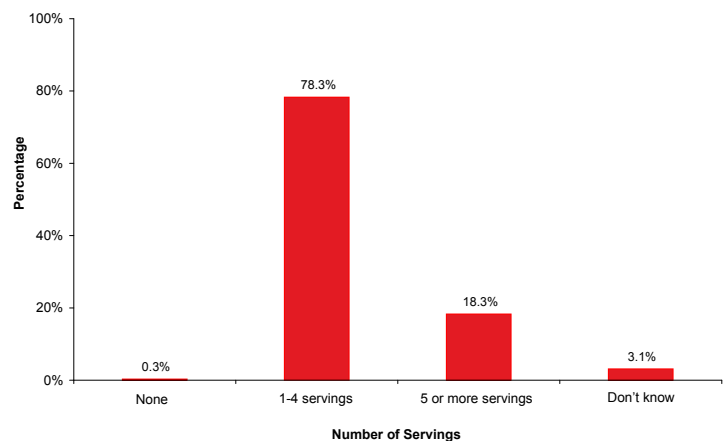


FIGURE 42

In the same survey, parents were asked, “During the past week, how many days were sodas served to your family?” Over 25% of parents indicated that sodas were served every day during the past week, and 27.8% of parents indicated that sodas were not served at all (i.e., served on 0 days) during the past week (Southward et al., 2009). [FIGURE 43]

During the Past Week, How Many Days Were Sodas Served to Your Family?
(n=3,710 Mississippi Parents, 2009)

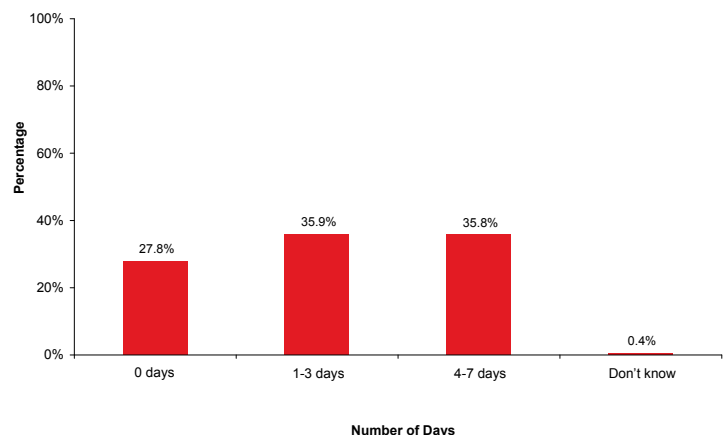


FIGURE 43

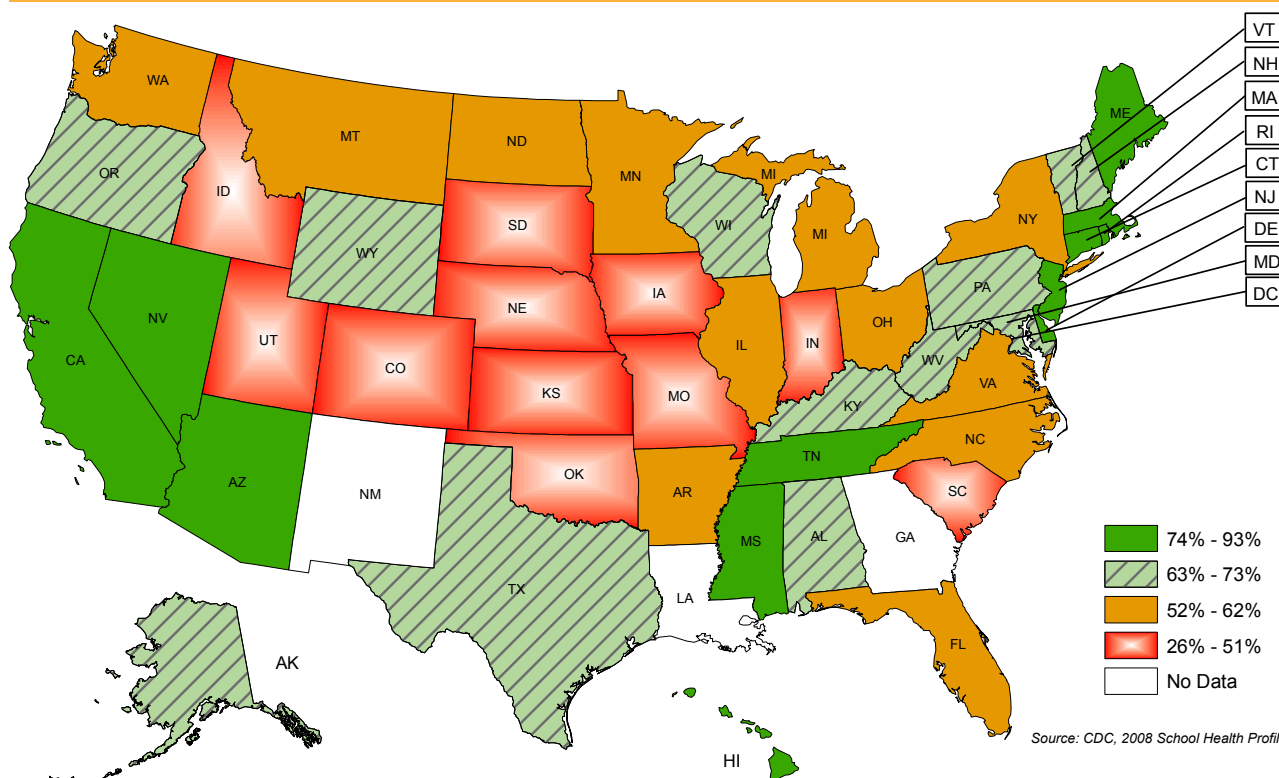
Source: Southward et al., 2009

One of the primary components of the **Mississippi Healthy Students Act of 2007** is the promotion of healthy food options

The promotion of healthy food options is one of the primary components of the Mississippi Healthy Students Act of 2007. Through the Office of Healthy Schools within the Mississippi State Department of Education, a multifaceted approach has been employed to improve the nutritional environments of school-age children in Mississippi. This has included, but is not limited to the following: installation of combination-ovens (offering baking as alternative to frying foods) and providing more healthy choices in vending machines, including snack and beverage machines (Mississippi Office of Healthy Schools, 2008).

According to the Centers for Disease Control and Prevention's (CDC) 2008 School Health Profiles Survey for public secondary schools, 74.7% of schools in Mississippi reported that their students could not purchase soda or fruit drinks that were not 100% juice from school vending machines or snack bars. This was a significant increase from the 21.8% of schools reporting the same for the 2006 School Health Profiles Survey. In fact, according to a report by the CDC, "from 2006 to 2008, the largest increases in the percentage of schools in which students could not purchase candy, salty snacks, and soda pop were observed in Mississippi and Tennessee." (CDC, 2009a). In addition, 61.7% of Mississippi schools reported that they "did not sell less nutritious foods and beverages anywhere outside the school food service program." These foods and beverages included "baked goods not low in fat, salty snacks not low in fat, chocolate candy, other kinds of candy, and soda pop or fruit drinks that are not 100% juice" (Brener et al., 2009; CDC, 2009b). [FIGURES 44 and 45]

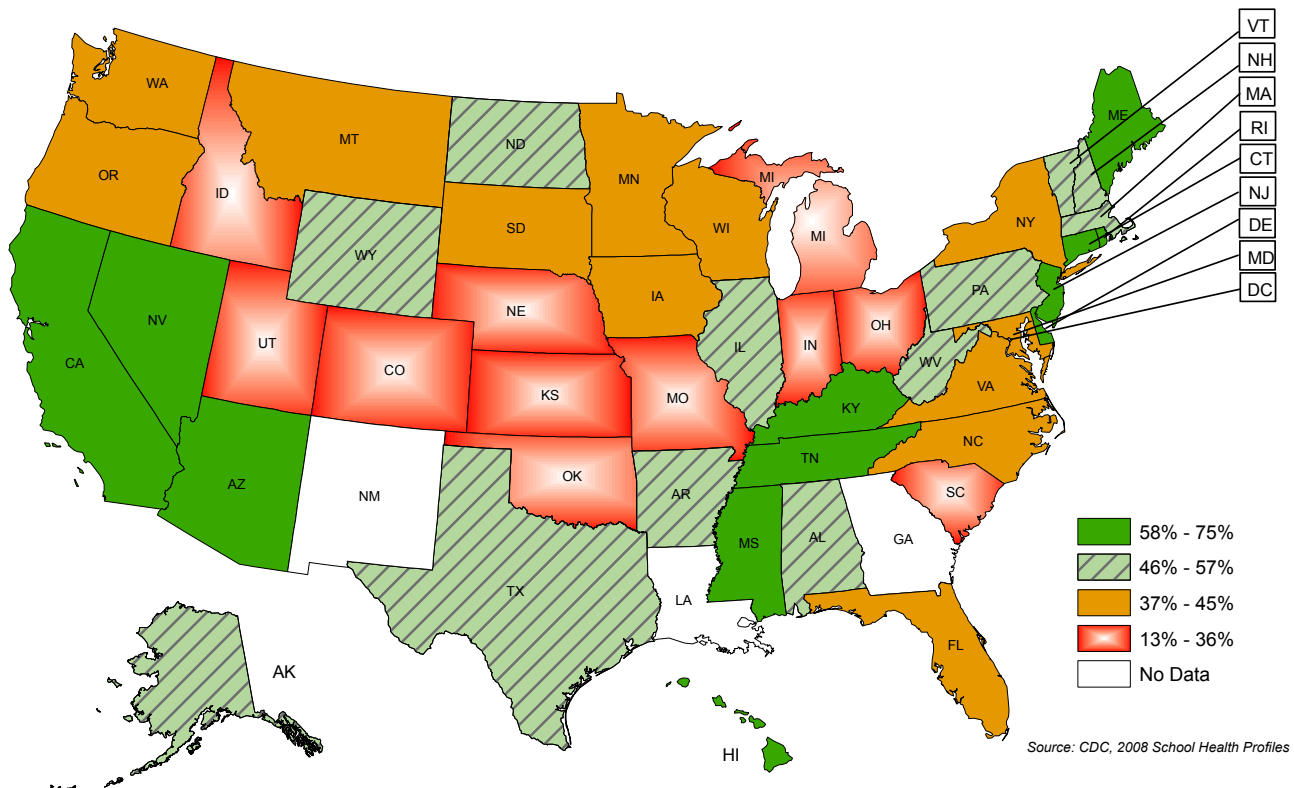
Percentage of Schools in Which Students Could Not Purchase Soda Pop or Fruit Drinks That Are Not 100% Juice from Vending Machines or at the School Store, Canteen, or Snack Bar



OBESITY

DATA SECTION

Percentage of Schools That Did Not Sell Less Nutritious Food and Beverages*
Anywhere Outside the School Food Service Program



*Baked goods not low in fat, salty snacks not low in fat, chocolate candy, and soda pop or fruit drinks that are not 100% juice

FIGURE 45

"Although the school is only one of many exposures, I am inspired that, based on the MS-NEEDS data, Mississippi schools are rising to the challenge and implementing positive changes to the school nutrition environment. Such changes will help to stimulate sustainable improvements in the health of our children over time, and that is exactly what MS needs!"

—Teresa Carithers, PhD, RD, AD
Associate Dean, School of Applied Sciences Chair,
Department of Family & Consumer Sciences, University of Mississippi



PHYSICAL ACTIVITY

In 2007, Mississippi high school students who completed the YRBSS were asked several questions related to physical activity. Just over 36% of Mississippi students indicated that they were physically active for at least 60 minutes per day for at least five of the seven days prior to the survey. This figure is slightly, but not significantly, higher than the national average of 34.7%, though it is significantly lower than the percentages for students in Arkansas (42%) and Georgia (43.8%) (CDC, 2008).

When asked about the amount of time spent watching television, 47.4% of Mississippi high school students indicated that, on an average school day, they watched television for three or more hours each day. This is significantly higher than the nation as a whole (35.4%) and for students in Arkansas (34.3%). In addition, 23.3% of Mississippi students reported that, on an average school day, they played video or computer games or used a computer for things unrelated to school work for three or more hours each day. This figure is significantly higher than the percentage of students in Arkansas (19%), but is not significantly different than Georgia (24.2%) or the nation as a whole (24.9%) (CDC, 2008). [FIGURE 46]

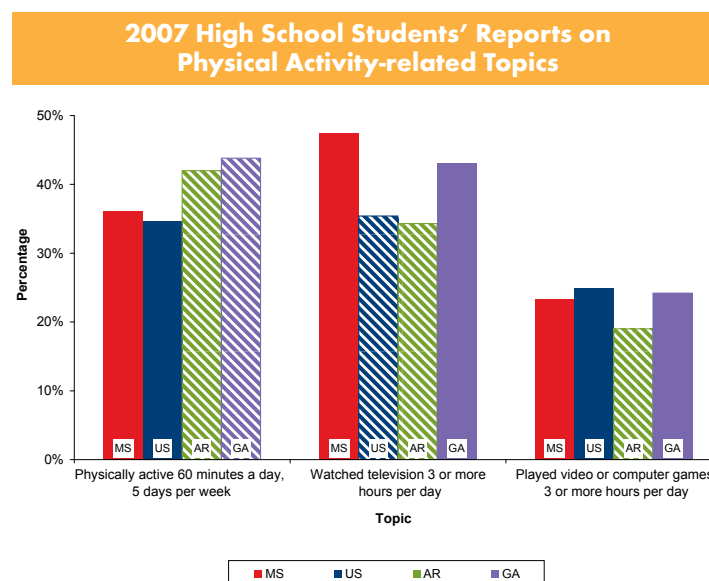


FIGURE 46

Source:

Figure 46 was created using data from the Youth Risk Behavior Surveillance System (YRBSS), 2007.

Notes:

Bars with diagonal lines indicate that Mississippi was significantly different than the U.S. and/or other states. For example, if the U.S. bar is filled with diagonal lines, then Mississippi is significantly different from the United States. Solid bars indicate the differences were not significant between Mississippi and the U.S. and/or other states.^a

The topic labels in Figure 46 are abbreviated versions of the YRBSS questions. For further information, visit the CDC's YRBSS web site at <http://www.cdc.gov/HealthyYouth/yrbs/>

OBESITY

DATA SECTION

When it comes to physical education in the classroom, the national Healthy People objective for 2010 is to increase to 50% the proportion of adolescents (grades 9-12) who participate in daily school physical education (HHS, 2007, Objective 22-9). This is approximately double the percentage of Mississippi students who attended physical education class five days a week in 2007 (23.4%). It should be noted that these data were collected prior to the implementation of the Healthy Students Act of 2007. [FIGURE 47]

2007 High School Students' Reports on Physical Activity-related Topics (Mississippi vs. United States)			
Topic	Mississippi	United States	Significantly Different?
Percentage of students who were physically active for at least 60 minutes each day on at least 5 of the 7 days before the survey	36.1%	34.7%	No
Percentage of students who watched television 3 or more hours per day on an average school day	47.4%	35.4%	Yes
Percentage of students who used a computer for something unrelated to school work or who played video or computer games for 3 or more hours per day on an average school day	23.3%	24.9%	No
Percentage of students who attended physical education classes on 1 or more days in an average week when they were in school	35.9%	53.6%	Yes
Percentage of students who attended physical education classes 5 days in an average week when they were in school	23.4%	30.3%	No
Percentage of students who played on at least one team (run by their school or community groups) during the 12 months before the survey	53.4%	56.3%	No

FIGURE 47

Source:

Figure 47 was created using data from the Youth Risk Behavior Surveillance System (YRBSS), 2007.

In a 2009 Robert Wood Johnson Foundation-funded telephone survey of 3,710 parents of Mississippi school children, 52% of parents indicated that they had increased their child's physical activity or exercise in the past year, and 60.1% indicated that they had signed their child up for sports or exercise classes. Figure 48 shows the percentage of parents who indicated that they had increased their child's exercise or physical activity in the past year, by public health district (Southward et al., 2009).

In the same survey, parents were asked if they limited the amount of time that their child could spend using the internet, watching television or playing video games; 62.3% of parents who had a home computer reported that they limited internet time for their children; 60.9% of parents reported that they limited time spent watching television or playing video games (Southward et al., 2009).

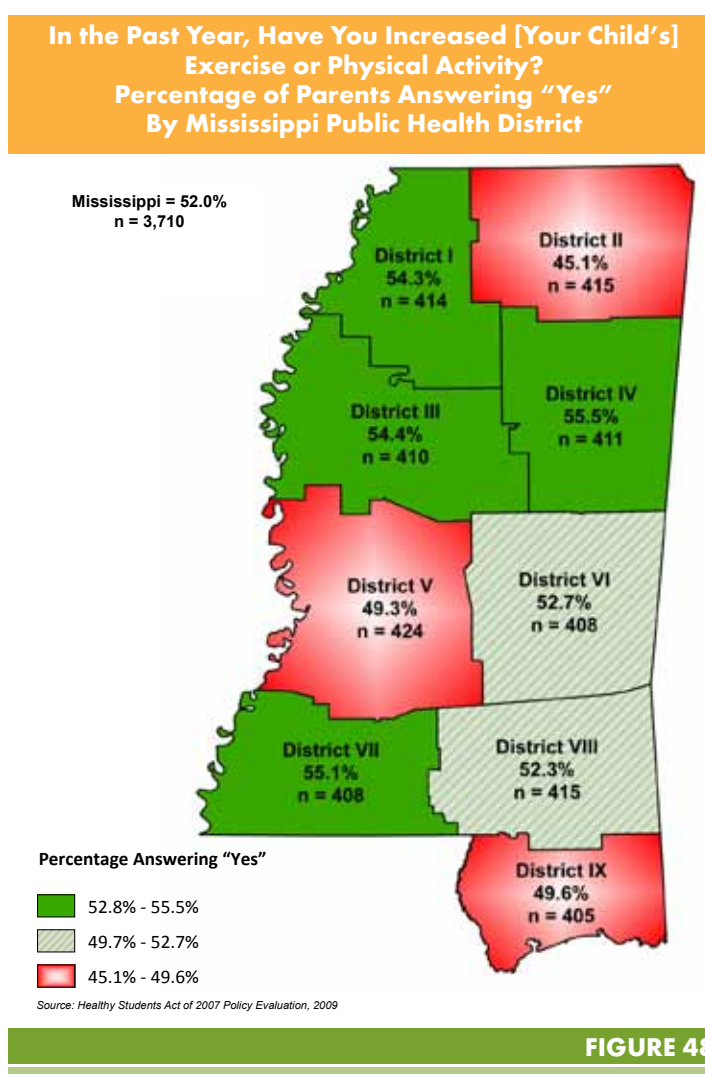


FIGURE 48

Note:

By applying a finite population correction formula, the margin of error for the total dataset ($n \geq 3,500$) is no larger than $\pm 2.5\%$ at a 99% confidence level (for binomial response options with 50/50 split). For sub-samples of approximately 400 cases, the margin of error is no larger than $\pm 5.0\%$ at a 95% confidence level. For sub-samples of approximately 300 cases, the margin of error is no larger than $\pm 5.0\%$ at a 90% confidence level.

OBESITY

DATA SECTION

The National Survey of Children's Health (NSCH) also includes questions related to children's physical activity (HHS, n.d.). Parents were asked, "During the past week, on how many days did your child exercise, play a sport, or participate in physical activity for at least 20 minutes that made him/her sweat and breathe hard?" In 2007, only 10.1% of Mississippi parents reported zero days of physical activity, one-quarter (24.5%) reported one to three days of physical activity, and almost two-thirds (65.4%) of parents reported that their child exercised from four to seven days. When the results were divided by age group, older children (ages 12-17) were significantly less likely to participate in physical activity everyday (21.0% versus 37.6% for children ages 6-11) (HHS, n.d.). As a reference point, the national Healthy People objective for 2010 is to increase to 35% the proportion of adolescents (grades 9-12) who engage in moderate physical activity for at least 30 minutes per day on five or more days per week (Objective 22-6). The national goals for vigorous exercise are much higher. The Healthy People 2010 objective is to increase to 85% the proportion of adolescents (grades 9-12) who engage in vigorous physical activity three or more days per week for 20 minutes or more (HHS, 2007, Objective 22-7). [FIGURE 49]

Source:

U.S. Department of Health and Human Services (HHS), (n.d.) The National Survey of Children's Health (NSCH), 2007.

How Many Days Did Your Child Exercise, Play a Sport, or Participate in Physical Activity for 20 Minutes... (NSCH, 2007)

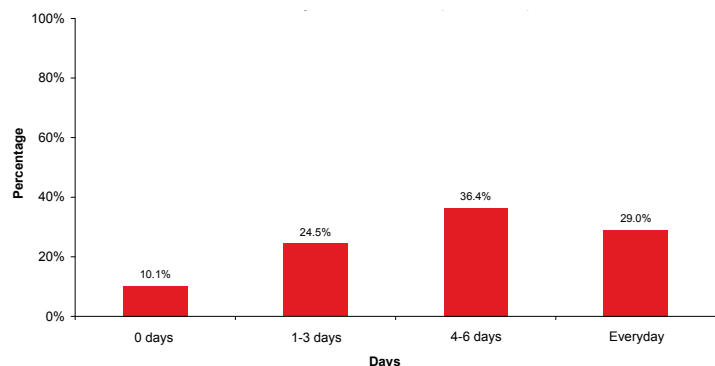


FIGURE 49

"People may make decisions based on their environment or community. For example, a person may choose not to walk to the store or to work because of a lack of sidewalks. Communities, homes, and workplaces can all influence people's health decisions. Because of this influence, it is important to create environments in these locations that make it easier to engage in physical activity and to eat a healthy diet."

—Centers for Disease Control and Prevention, Overweight and Obesity, 2009

PROGRAMS & POLICY CONSIDERATIONS

CREATING HEALTHIER LIFESTYLES THROUGH EDUCATIONAL SETTINGS



The Mississippi Healthy Students Act of 2007

In 2007, the Legislature passed the Mississippi Healthy Students Act, which accomplishes the following:

- Mandates minimum requirements for health education and physical education in public schools
 - » for grades K – 8, 150 minutes per week of physical education and 45 minutes per week of health education
 - » for grades 9 – 12, ½ Carnegie unit in physical education or physical activity for graduation requirement
- Designates an appropriation for a physical activity coordinator at the State Department of Education
- Makes the statutory duties of local school health councils mandatory rather than permissive
- Directs the State Board of Education to adopt regulations that address healthy food and beverage choices, healthy food preparation, marketing of healthy food choices to students and staff, food preparation ingredients and products, minimum and maximum time allotments for lunch and breakfast periods, the availability of food items during lunch and breakfast periods, and methods to increase participation in the Child Nutrition School Breakfast and Lunch Programs
- Provides for the appointment of an advisory committee to advise the State Board of Education in developing these regulations

The Department of Education has utilized multiple strategies to support the implementation of the Healthy Students Act of 2007 by Mississippi schools. The following are the most prominent strategies:

- Through funding from The Bower Foundation, several schools have been awarded a Five Star Food Grant to increase consumption of fruits and vegetables in Mississippi Public Schools.
- The Nutrition Integrity Grant Initiative was designed to remove fryers from school kitchens and replace them with combination oven steamers. A joint effort of the Mississippi Department of Education/Office of Healthy Schools and The Bower Foundation, this program also includes a step-by-step guide to implementation, including site suitability surveys and kitchen modifications.

OBESITY

PROGRAMS & POLICY CONSIDERATIONS

- The Excellence in Physical Education Certificate Program is a joint program between the Governor's Commission on Physical Fitness and Sports and Mississippi Department of Education's Office of Healthy Schools. The program offers an annual award available to public and private schools to officially recognize a school's commitment to a quality physical education program.
- The Committed to Move Grant project, funded by the Bower Foundation, provides school districts with curriculum, training, and up to \$9,400 to purchase physical education equipment and resources to assist in complying with the Mississippi Healthy Students Act of 2007.
- Through the Health in Action Initiative, health education and physical education lesson plans are available to teachers to provide instruction through an online database of 1,300 lesson plans.
- The John D. Bower, MD School Health Network enables school districts to strengthen the role of health coordinators, establish local school health councils, improve the school health instruction programs for all students, reconfigure the use of existing school resources, and nurture broad-based school and community support for a coordinated school health program.
- Through Local School Wellness Policy Technical Assistance, the Mississippi Department of Education (MDE) provides help to Mississippi schools to ensure school compliance with federal requirements that schools develop wellness policies.



- The Office of Healthy Schools, Child Nutrition Programs awarded 20 Mississippi schools Team Nutrition Grants to achieve the goal of promoting student and staff wellness by involving parents, students, school board members, school administrators and the community in the development of nutrition and physical wellness policies.

- The Mississippi Department of Education's Office of Healthy Schools and The University of Mississippi Medical Center's Center of Excellence partnered to promote TEAM Mississippi: A Partnership for Healthy

Families. This partnership began as a result of understanding the relationship between the health of students and academic achievement and the role the parent plays in promoting a healthy environment in the home setting.

- Launched by Blue Cross & Blue Shield of Mississippi, the Let's Go Walkin' Mississippi program provides teachers and students with promotional materials, motivational tools and tracking systems to help children meet the 150 minutes physical activity requirement of the Mississippi Healthy Students Act of 2007.

Healthy Students Act of 2007 Policy Evaluation

In October 2008, the Robert Wood Johnson Foundation (RWJF) awarded the Center for Mississippi Health Policy a five-year, \$2 million grant to study the impact of the Mississippi Healthy Students Act of 2007 on childhood obesity. The Center uses the RWJF grant in conjunction with a Bower Foundation grant to evaluate the effectiveness of state policies aimed at preventing childhood obesity, working in coordination with similar projects in five other states.

This evaluation project is directed by the Center for Mississippi Health Policy in collaboration with researchers at the University of Southern Mississippi, Mississippi State University, and the University of Mississippi. The comprehensive evaluation effort is comprised of several studies:

- Child and Youth Prevalence of Overweight Survey (CAYPOS) – The purpose of the Child and Youth Prevalence of Overweight Survey is to estimate the prevalence of overweight and obesity among children in Mississippi using height and weight measures. It is conducted every two years by researchers from the College of Health at the University of Southern Mississippi.
- School Wellness Policy Principal Survey – Principals of all public schools in Mississippi are surveyed to gauge the implementation of the federal Child Nutrition and WIC Reauthorization Act of 2004 and the Mississippi Healthy Students Act of 2007. The survey assesses the degree to which schools have established school wellness policies and implemented requirements of the federal and state laws and associated regulations. This survey is conducted every two years by researchers from the College of Health at the University of Southern Mississippi.
- Committed to Move Evaluation – The 25 schools selected to participate in the Committed to Move Quality Physical Education Program offer the Physical Best Curriculum and



OBESITY

PROGRAMS & POLICY CONSIDERATIONS

electronically document fitness (muscle strength and endurance, flexibility, aerobic capacity) and body mass index (BMI) data on all students through the FITNESSGRAM. Data are being collected on individual students over five periods, from spring 2008 to spring 2010, by researchers from the College of Health at the University of Southern Mississippi. Data will be matched with academic performance records to study the relationship between fitness and academic performance.

- **Survey of Local and State-level Policymakers** – The goal of this survey is to assess state and local policymakers' knowledge and opinions of the Mississippi Healthy Students legislation and their support for it. The study considers state and local policymakers to include state legislators, members of the State Board of Health and State Board of Education, local school board members, school district superintendents and local health officials. Policymaker surveys are conducted by researchers from the Social Science Research Center at Mississippi State University.
- **Parent Survey** – The annual Parent Survey evaluates parental attitudes, changes in family environments and changes in children's health behaviors throughout the evaluation period. The purpose is to better understand how parents feel about school health policies, how they influence those policies and to what extent family knowledge, attitudes, practices and constraints influence children's health and health behaviors. Parent surveys are conducted by researchers from the Social Science Research Center at Mississippi State University.
- **Mississippi School Nutrition Environment Evaluation Data System (MS-NEEDS)** – To obtain an independent assessment of statewide progress implementing school nutrition policies, researchers at the University of Mississippi conduct onsite evaluations of school nutrition environments at a representative sample of schools statewide.



In a RWJF-funded telephone survey,

52%

of Mississippi parents indicated that they had increased their child's physical activity in the past year

The POWER Project

Mississippi received funding through the National Governors' Association's Healthy Kids, Healthy America Program for a project entitled Preventing Obesity with Every Resource (POWER). The State Department of Education was designated by the Office of the Governor as the lead agency for this project. Under the POWER project, the Department engaged a wide range of stakeholders to identify additional opportunities for childhood obesity prevention policy development in Mississippi. At the initiation of the project, the State Department of Health conducted an environmental scan of childhood obesity prevention efforts in Mississippi. The report issued by the department presented information from literature reviews and key informant interviews outlining the extent to which state and local governments, businesses, and community-based organizations were collaborating to address childhood obesity in Mississippi.

Amory School District Coordinated School Health Program

The school district's comprehensive health initiative began three years ago when it received a \$3,000 grant from the Mississippi Office of Healthy Schools. The grant, along with funding from The Blue Cross & Blue Shield Foundation, built the foundation for the district's Coordinated School Health Program.

The Amory School District has implemented a variety of programs, including Supper at School, giving the students and their parents the opportunity to enjoy a healthy meal together at the school. Recipes are distributed to parents to help them incorporate the healthier eating habits at home.

Preventive healthcare is another component of the Coordinated School Health Program, which the district has taken several steps further. It is the first in the country to support three onsite Medicaid clinics at its schools, offering preventive and screening services. Dental care is another overlooked preventive service when it comes to children's health services. Making Smiles is another program funded through the grant, which has provided screenings for students with no coverage and has enabled some of the children to see a dentist for the very first time for preventive and basic dental care.



OBESITY

PROGRAMS & POLICY CONSIDERATIONS

Other programs in the district include the Healthy Choice Meal, which offers healthier lunch options meeting nutritional guidelines. Panther Pause, a program funded by the Foundation grant, brings the school mascot into classrooms, leading children in quick exercise bursts and encouraging nutritious snacks.

Special needs and disabled students are also getting their share of exercise time. These children, who are physically and mentally challenged, are now riding bikes for the first time as part of a new school-based bicycle club. While it is part of their individual rehabilitation, it has also helped them become physically active.

Amory Middle School was recently recognized as one of the healthiest schools in the country by *Health* magazine for its all-inclusive approach to incorporating health and wellness activities into the schools. The school features an abundance of fitness opportunities including a rock climbing wall and fitness center for students, teachers and even parents.



Project Fit America

Following the passage and implementation of the Mississippi Healthy Students Act of 2007, 46 schools across the state received Project Fit America fitness equipment in 2008 through funding from the Blue Cross & Blue Shield of Mississippi Foundation. As the 2009-2010 school year begins, 122 schools now enjoy the equipment and curriculum.

The Project Fit America equipment was designed by the University of California, Los Angeles to address all the deficient areas where children fail fitness tests, including upper and lower body strength and cardiovascular fitness.

The program also includes indoor mobile fitness equipment for schools to use in gymnasiums and multi-purpose rooms. To support the physical activity component, the program features two separate curricula, including one for classroom-based health education and one for physical education teachers. Schools also receive onsite training during both the first and second year of the program. Although the initial program is only for two years, the equipment permanently belongs to the schools. Project Fit America provides each school the tools and resources to continue indefinitely.

In data collected at schools that began the Project Fit America program in fall 2008, students increased their performance in a cardiovascular step test by more than 20%, increased their upper body strength by 60% and improved their abdominal strength by 20%. DeSoto County Schools have enjoyed the program for several years and continue to see marked improvements in the fitness levels of their students. At the conclusion of the second school year using the equipment, students at Oak Grove Central Elementary saw a 107% increase in lower body strength and a 53% increase in upper body strength. Students at Pleasant Hill Elementary also saw a sharp improvement in lower body strength, with a nearly 70% increase on vaults, and they improved their cardiovascular strength 32% during a step test.

Moving Toward the Art of Good Health

Malcolm White, Executive Director of the Mississippi Arts Commission, a state agency serving artists and arts organizations, got the idea to promote the arts as a vital component in the recovery effort along the coast after Hurricane Katrina. White had read a study about the impact of the arts on healthcare, and the notion of ballroom dancing in the classroom as a form of physical fitness seemed like the perfect medicine for a community whose spirit had been dampened by the hurricane.

Knowing that overall good health and well-being is a key component in the mission of the Blue Cross & Blue Shield of Mississippi Foundation, White approached the organization to seek backing for the pilot program, and they agreed. With the support of the Bay St. Louis - Waveland School District administration, the ballroom dance pilot program, Moving Toward the Art of Good Health, danced its way toward reality.

Now in its third year, the ballroom dancing pilot program has been integrated into 5th-grade physical education, the 6th-grade health curriculum, 7th- and 8th-grade elective block, and is now offered in the 9th-grade health curriculum at the high school.

Mississippi Healthiest Hometown Award

Beginning September, 2009, towns and cities across Mississippi began a “healthy” competition for Mississippi’s Healthiest Hometown Award to be awarded July, 2010.

This is being sponsored by the Blue Cross & Blue Shield of Mississippi Foundation. The five areas that municipalities will be scored on include:

1) community leadership and involvement; 2) promotion, support and encouragement of exercise; 3) being a tobacco-free community; 4) encouragement of health community nutrition and 5) ensuring healthy students. Being recognized as the healthiest hometown within the state of Mississippi would be quite an honor, indeed.

For more information on the award criterion and application process, please see the following link: http://www.healthiermississippi.org/healthy_hometown.php

OBESITY

PROGRAMS & POLICY CONSIDERATIONS

The program is an artful response to and meets the criteria for the Mississippi Healthy Students Act of 2007, which requires Mississippi's public schools to provide increased amounts of physical activity and health education instruction for K-12 students. Moving Toward the Art of Good Health encompasses not only the ballroom dancing portion for physical fitness, but includes instruction on wellness and good nutrition.

One unanticipated result is that Bay-Waveland Middle School has also seen an increase in parent participation. In the past, the school had low attendance at school activities, and now they have a packed house at events featuring the students' ballroom dancing. Children may not be able to change their eating and exercise habits by themselves, so having this level of buy-in from the families helps to ensure the children's overall success and may even benefit additional family members.



47.4%

of Mississippi high school students who completed the YRBSS in 2007 reported that, on an average school day, they watched television for three or more hours

OTHER STATEWIDE EFFORTS

In December 2008, the Mississippi Health Summit was held in downtown Jackson and was hosted by Governor Haley Barbour and First Lady Marsha Barbour, along with the Mississippi Department of Education. Participants at the Summit heard about the many programs and initiatives active in Mississippi at both the state and local levels. At the end of the Summit, all participants were provided with the list of policy initiatives developed through the stakeholder meetings and asked to rate their priority. The resulting ranking of the top 10 policy initiatives from highest priority to lowest was as follows:

1. Improve built environments to promote physical activity in communities
2. Replace fryers with combination oven steamers in school kitchens
3. Increase the number of school nurses in the schools

4. Support comprehensive fitness testing in schools
5. Improve state standards for child care centers and youth programs to promote healthy foods
6. Encourage recipients of public benefit programs to purchase healthy foods
7. Restrict advertising of unhealthy foods to children and/or require public service announcements that offer health messages
8. Require schools to provide BMI (Body Mass Index) reports to parents.
9. Improve access to supermarkets/produce
10. Require labeling of restaurant menus and prepared foods

Action has occurred on several of these initiatives since the Summit. The Legislature increased funding for school nurses; the State Department of Health has strengthened nutrition standards for licensed child care centers; and the State Department of Education has awarded over \$1 million from federal stimulus funds to school districts to replace fryers with combination oven steamers.

ADDITIONAL POLICY CONSIDERATIONS

The success of multiple statewide policies and community-level programs across Mississippi are providing a clear and steady course for implementing and promoting changes that can affect the course of the childhood obesity epidemic in Mississippi. Additional policy considerations include the following:

- Require schools to provide fitness testing reports along with BMI reports to parents of school-age children
- Provide increased access to school gyms and tracks after school hours to community members
- Promote full implementation of the Healthy Students Act of 2007
- Promote community gardens as one way of improving access to fresh produce

In 2007, **19.4%** of Mississippi high school students reported that they ate fruits and vegetables five or more times per day, according to the Youth Risk Behavior Surveillance System (YRBSS)

OBESITY

SUCCESS STORY

Community Foundation of Northwest Mississippi

"GET A LIFE! MY LIFE, MY HEALTH, MY CHOICE" INITIATIVE

A well-maintained car can have a long life. However, without gas it will quickly come to a stop, and cheaper grades of fuel may make it sluggish. To run efficiently, it must be given regular maintenance check-ups. It must be driven; it cannot sit idly in the garage on a day-by-day basis. When the owner pays attention to maintenance, the vehicle lasts longer, looks better and saves money by avoiding expensive repairs.

So it is with the health of people. Just like the newly purchased automobile, children deserve to be well-nourished and cared for. They must be given opportunities to eat healthy foods and to run and play. When given a healthy diet on a daily basis, children have the energy and attention to devote to their school work. When provided recreational facilities and places to play, as well as an opportunity to participate in school physical fitness activities, their bodies become well-maintained machines. A child who learns at an early age to eat nutritionally and to exercise daily is much more likely to grow up to be an adult who does the same.

Children who eat properly and exercise regularly will not be among the one-third in our nation who are either obese or at risk of becoming obese. Their quality of life will increase, and their futures will look brighter. They also reduce their risk of adult onset diseases, such as diabetes, heart disease and hypertension.

In Mississippi, which leads the nation in childhood obesity rates, all children do not necessarily have the "equipment" to lead a healthy life. Because approximately 30% of the state's children are living in poverty (Population Reference Bureau, 2009; AECF, n.d.), parents may be forced to serve foods that are cheaper, but often not nutritionally sound. Many communities do not have the recreational facilities needed to provide a healthy environment for their youngest members. When faced with the fact that approximately 45% of the state's children are overweight or obese (HHS, n.d.), many communities wring their hands and leave it up to individual family units to try and solve the problem.



"We have a chance to change things."

—Chip Johnson
Mayor, Hernando

The **Community Foundation of Northwest Mississippi**, located in Hernando, is partnering with schools, faith-based groups, local governments and businesses to make bright futures for the children of the eight Mississippi Delta counties they represent. The goal of their **“Get A Life! My Life, My Health, My Choice”** initiative is to end obesity in the region by improving access to nutritious foods and increasing opportunities for more physical activities for children.

The idea started in 2005 when board members decided they wanted to focus on improving health and education for young people. Focusing first in DeSoto County, they quickly realized there had been no work done in preventing childhood obesity and consequently no model to follow. Brainstorming resulted in the formation of the first community health council, made up of diverse groups of citizens who represented all facets of life in the community. Ideas were exchanged, and the “Get A Life!” initiative took flight. Today there are health councils in every county represented by the foundation, and a regional health council has been added. Tom Pittman, the President of the Community Foundation said the board members quickly came to realize, “Health is not just something medical people are concerned about. Health is something the community is concerned about...It’s something that the community has to take responsibility for.”



Tom Pittman
Community Foundation of Northwest Mississippi President

OBESITY

SUCCESS STORY

“Health is not just something medical people are concerned about. Health is something the community is concerned about... It’s something that the community has to take responsibility for.”

—Tom Pittman

President, Community Foundation of Northwest Mississippi



Mayor Chip Johnson and Tom Pittman

The foundation itself does not provide direct services; instead they provide resources and links to faith-based organizations, schools, government officials and businesses as they work together to create healthier communities. “We identify things that might be helpful.” He adds, “We’re developing the capacity of local people to do what they want to do in their local community.”

“We have a chance to change things,” said Chip Johnson, who is beginning his second term as mayor of Hernando. Just four years ago, the town of 15,000 did not even have a Parks and Recreation department. Today, it is one of 93 cities in 33 states selected as a Playful City USA recipient. The national recognition program honors cities and towns who are committed to physical activity for their youngest residents.

Johnson said that a little ingenuity goes a long way, “You must have people who are willing to work...commit to work, and that’s all it takes.” When members of his staff noticed that an abandoned football field owned by the city schools was simply collecting weeds, Johnson contacted the school superintendent. The school district gave the field to the city; they cleaned it up, and now kids are playing football there every Saturday morning. The city also renovated an old abandoned factory located in a low-income neighborhood and turned the front yard into a community garden. Before long, residents of the neighborhood began to show up. “If you work in the garden, you get some food,” said Johnson.

Dr. Michael O. Minor, Pastor of the Oak Hill Baptist Church, was part of the community foundation’s initial planning team in 2005. He had been working for several years with the Rising Sun Usher Federation in his congregation to promote healthy living. “It was the meeting of two rivers,” he recalls. Today over 500 congregations from various denominations in the area are part of the Healthy Congregations coalition.



Dr. Michael O. Minor
Pastor, Oak Hill Baptist Church

Participating congregations are encouraged to form their own health ministries. How-to guides developed by the Usher Foundation are distributed across the Healthy Congregations coalition. Ideas are exchanged. For example, some churches host “Taste Test Sundays” in which healthy desserts are sampled during church luncheons. “If you’ve got people bringing healthy dishes to church, then hopefully, prayerfully, they’re doing something at home, too,” said Minor. Churches are encouraged to serve healthy foods at church functions, and healthy and cost-efficient menus are shared. Emphasis is placed on healthy meal planning for families.

Minor stresses that exchanging ideas and building on them is important, “The key to success is not starting something new, but working on something and building upon it. It’s not about us. It’s all about what we can do as a community.”



The school community echoes that sentiment. At Shadow Oaks Elementary, a K-2 school located in DeSoto County, signs fill the hallways and classrooms proclaiming the school to be free of junk food. Healthy eating has become a mindset among the students and staff. “It’s just understood,” said Anna Holland, a first-grade teacher. “I don’t even remember a time when a child tried to bring a canned drink to school.” Physical activities are emphasized, and physical education classes are a priority. “You don’t miss PE, no matter what,” said fellow teacher Patty McAlexander.

Recognizing that more than 60% of children and adolescents eat too much fat and saturated fats and not enough fruits and vegetables, the school implemented a community garden last year. Each grade has its own planting box. “Children are fascinated that food is growing from the ground,” said Holland. The garden is part of a local Kiwanis Club initiative to locate a garden at each of the 17 elementary schools in DeSoto County by Earth Day 2011.



*Patty McAlexander and Anna Holland
Shadow Oaks Elementary School teachers*

OBESITY

SUCCESS STORY



*Dr. Norma Strickland
ICS Director of Curriculum*



The younger children of the area are getting in on the action, too. The Institute of Community Services (ICS) operates 20 Head Start centers in 13 counties. Children in the centers spend part of their day singing, dancing and moving their way to healthier lifestyles with the help of Choosy (Choose Healthy Options Often and Start Young), a furry green champion of healthy living. Adopted by the national Head Start “I Am Moving, I Am Learning” Initiative, Choosy Kids, Inc. influences children to adopt physically active lifestyles and healthy food choices with the aid of the mascot Choosy.

Structured and unstructured movement is grounded in daily classroom activities. “They are moving around as they are learning,” said Dr. Norma Strickland, the Director of Curriculum for ICS. She adds, “It’s becoming a part of our classroom structure. It’s becoming a part of our curriculum.”

Last summer, five teachers from ICS attended training seminars and became certified in the Choosy Kids program. They have returned to train others. The goal is to have all teachers in the Head Start centers using the Choosy Kids ideas in their classrooms. Three community health councils in the area were the primary funders for the training.

In Charleston, Mississippi, children who participate in Boys and Girls Club activities are dancing their way to fitness. Nedra Jackson, the director of the Mississippi Delta Boys and Girls Club’s Charleston Unit, said, “In Charleston, we don’t have a gym, so we make fun.” With financial help from five health councils and the Blue Cross & Blue Shield of Mississippi Foundation, the video dance game *Dance Dance Revolution* was purchased. A dance pad lights up the floor, and participants try to keep up with the choreographed moves.



Latacha Davis and Nedra Jackson
Mississippi Delta Boys and Girls Club
Charleston Unit

The partnership between the Boys and Girls Club and the Community Foundation was further extended last summer when the “Get A Life!” Director, Judy Belue, approached Jackson with the idea of starting an organic garden at the club. “If there’s an opportunity there, she will let me know, so I can jump on it. I would have never been in the garden if it wasn’t for her,” said Jackson. Today members of the Green Thumb Club till and plant vegetables and fruit in their garden that they named the “So Fresh So Clean” organic garden, named for a popular song of the same title.



“When groups start to share ideas, big things can happen. It’s just a lot of love and a desire to really impact the youth and expose them to things that will change them—mind, body and soul.”

—Nedra Jackson
Director, Mississippi Delta Boys and Girls Club
Charleston Unit

As a community service, the members proudly donate their produce to local retirement homes. Latacha Davis, the club’s Health and Life Skills instructor said, “It gives the kids a sense of ownership...That’s something I accomplished.” With a staff of five, Jackson said it’s important to involve parents and volunteers. “It’s knowing what you’re working with and using the person who’s the best fit.”

“Connecting People who Care with Causes that Matter” is the Community Foundation’s slogan. The “Get A Life!” initiative does connect all working partners in their efforts to curb childhood obesity. With the Community Foundation serving as the “facilitator for healthy living,” government, churches, schools, and businesses are merging their ideas, each contributing different components to ensure that children’s bodies are the “well-maintained machines” they need to be for lasting health.

OBESITY

SUCCESS STORY

Other Mississippi communities may want to replicate the successes in Hernando. Many improvements can result from communication, collaboration and sharing of resources within communities. Other efforts may warrant funding and support from organizations outside of the community. The efforts of the Community Foundation of Northwest Mississippi have been supported through grants from the Robert Wood Johnson Foundation and others. Many state and national agencies and foundations support the efforts of communities that seek to improve the health of their residents.

All of the stakeholders agree it takes a lot of passion, enthusiasm and creativity. Their collaborative approach enhances creativity and reaches into every corner of community life. When groups start to share ideas, big things can happen. According to Ms. Jackson, "It's just a lot of love and a desire to really impact the youth and expose them to things that will change them—mind, body and soul."



"The key to success is not starting something new, but working on something and building upon it."

—Dr. Michael O. Minor
Pastor, Oak Hill Baptist Church



BIRTH OUTCOMES



BIRTH OUTCOMES



Teen pregnancy, infant mortality, and low birthweight are some of the core causes of poor birth outcomes. These issues are three distinct but interrelated areas of the utmost importance to children's health. Pregnant teens are at high risk for low birthweight and infant mortality. Together, these three health issues intimately affect and determine the well-being of children, their mothers, and society as a whole. Fortunately, their interrelatedness provides an opportunity for significant and effective change and improvement.

While these birth outcome issues are of national concern, Mississippi, in particular, faces challenges. The CDC released data in January of 2009 stating that Mississippi has the highest rate of teen pregnancy, 60% higher than the 2006 national average in (2009). Infant mortality in Mississippi is a concern with a 6-year average of 10.6, higher than the national 6-year average of 6.8 per 1,000 live births (CDC, Compressed Mortality, 2009). In fact only the District of Columbia is higher, the 6-year average totaling 11.6. Finally, Mississippi, according to the Annie E. Casey Foundation, in 2006, had the highest percentage of low-birthweight babies (12.4%) and very low-birthweight babies (2.3%) (KFF, 2009). Addressing negative birth outcomes, therefore, is critical to the general health and well-being of citizens of Mississippi.

CONSEQUENCES OF NEGATIVE BIRTH OUTCOMES

The high rates of teen pregnancy, infant mortality, and low birthweight in Mississippi create serious consequences for the children and the mothers involved. These consequences are often long-term and produce serious harms of their own. Some of the consequences include the following:

- Teen parents are more likely to drop out of high school (CDC, 2009).
- Pregnant teens are at an increased risk for poor maternal weight gain and a higher maternal mortality rate (Klein et al., 2005).
- Children of teenage mothers are more likely to have lower cognitive attainment and proficiency scores when entering kindergarten; have behavioral problems and chronic medical conditions; and drop out of high school (CDC, 2009).
- Low-birthweight babies are more likely to experience complications during and directly after birth, such as infection, difficulty in feeding, and neurological problems (Weill Cornell Medical College, 2009).
- Low-birthweight babies are more likely in the long term to suffer from respiratory distress syndrome, brain bleeding, and various serious heart, intestinal, and eye conditions (March of Dimes, 2009).

In addition to the serious ramifications for individual children and mothers, Mississippi as a whole suffers considerable consequences. The striking health problems caused by teen pregnancy, infant mortality, and low birthweight create significant societal and financial costs that must be borne by the people of Mississippi:

In 2008, almost

1/4

of Mississippi's live births were low birthweight, premature, or both

- Childbearing teens cost Mississippi taxpayers at least \$135 million in 2004, primarily consisting of costs associated with increased public health care, child welfare, incarceration, and decreased earnings and spending (The National Campaign to Prevent Teen Pregnancy, 2006).
- The average cost for low birthweight and preterm babies between birth and one year of age was \$15,100 as opposed to \$600 for infants born with no complications (Russell, et al., 2007).
- Preterm and low-birthweight babies spent an average of 13 days in the hospital, as opposed to two days for healthy newborns (Russell, et al., 2007).



FACTORS AFFECTING BIRTH OUTCOMES

At the first Mississippi KIDS COUNT summit, Dr. Michael Lu discussed the life course perspective as it related to birth outcomes (Lu, 2008). Simply stated, the life course perspective is a way of looking at life not as disconnected stages, but as an integrated continuum. It is a conceptual framework that recognizes that each stage of life is influenced by the stages that precede it, and it in turn influences the life stages that follow it. Lu's research focused on the influences that racial and ethnic disparities have on birth outcomes (Lu, 2008). His research is applicable to all populations. Lu found that the long-term health of a child was influenced prior to the birth of their mother. Over the mother's life span (including the health of their mother), a host of risk factors reduce reproductive potential and viability. In addition, a host of protective factors also influence health outcomes.

The important message is that even later-life health outcomes such as heart disease, stroke and diabetes have been influenced by development in the womb, as well as events prior to conception, such as the health and stress level of the mother. The implication is that we must look beyond prenatal care. As a test of that hypothesis, consider the state of Mississippi. We have the highest infant mortality rate in the nation, the highest rates of low birthweight and premature births. Yet, in 2008, only 1.4% of mothers had no prenatal care whatsoever. Of all births, 81.6% received prenatal care in the first trimester (MSDH, Selected Live Birth Statistics, 2008). These statistics suggest that prenatal care is only the first step in addressing infant mortality and birth risk factors in Mississippi.

HOW THE TOPIC OF BIRTH OUTCOMES IS ADDRESSED IN THIS DATA BOOK

To explore these issues, consequences, and solutions, the remainder of the chapter will include the following:

- Data on the topics of teen pregnancy, infant mortality and low birthweight
- Programs addressing birth outcomes in Mississippi
- Policy considerations for improving birth outcomes
- A birth outcomes Success Story in Mississippi

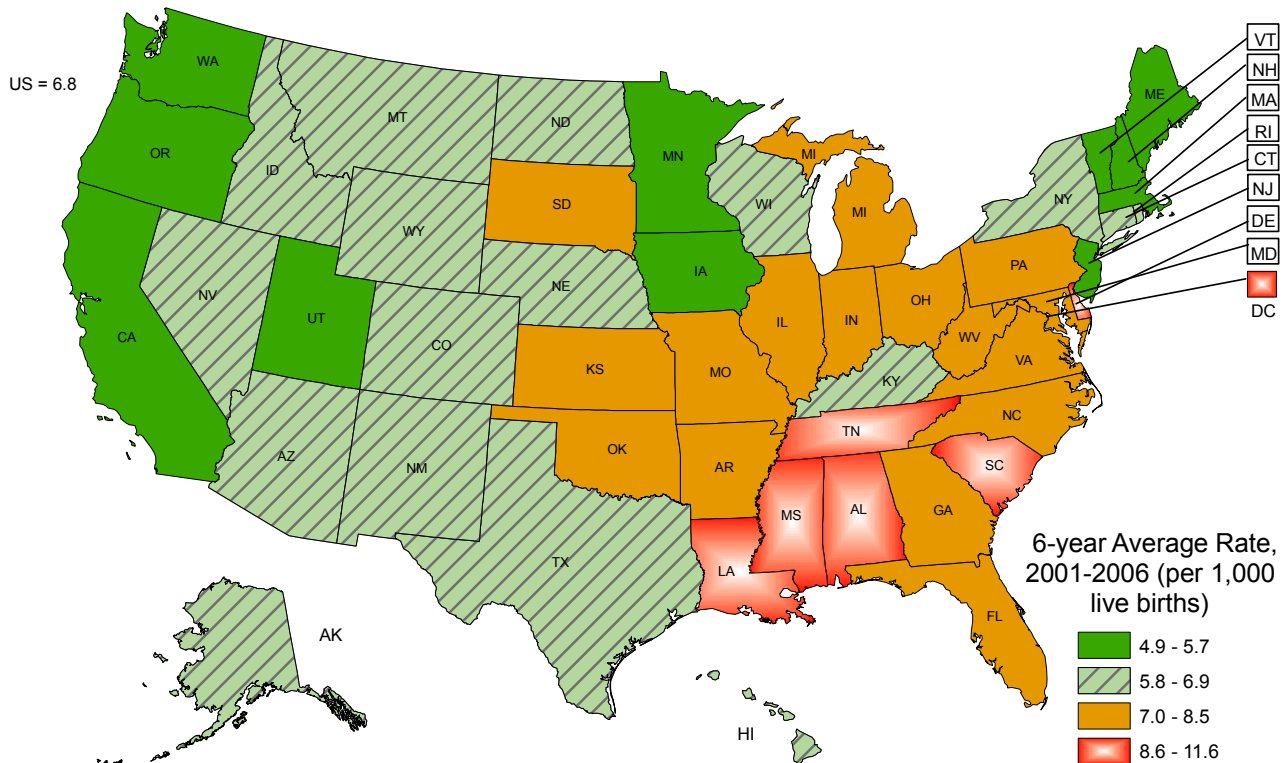
BIRTH OUTCOMES

DATA SECTION

INFANT MORTALITY IN THE U.S.

Infant mortality in Mississippi remains among the highest in the United States. In a snapshot of 2006 (the latest year for which all states have reported), Mississippi's infant mortality rate was the highest of all the states, at 10.6 deaths per 1,000 live births. The District of Columbia had a slightly higher rate of 11.3 per 1,000 live births, and Louisiana had a slightly lower rate of 9.9 per 1,000 live births that year. While the South, as a region, has higher infant mortality rates than the rest of the nation, Mississippi's rate is persistently higher than the nation as a whole, as well as other southern states. As a point of reference, the U.S. infant mortality rate was 6.7 per 1,000 live births in 2006, compared to 10.6 per 1,000 in Mississippi. Mississippi's infant mortality rate is currently higher (9.9 per 1,000 in 2008) than the national rate was in 1990 (9.2 per 1,000 live births) (AECF, 2009; MSDH, 2008). **Figure 50** shows 6-year average infant mortality rates in the U.S. Mississippi's 6-year average (2001-2006) was 10.6 per 1,000 live births compared to 6.8 per 1,000 live births for the nation as a whole. Mississippi's average rate was exceeded only by the District of Columbia, with a 6-year average rate of 11.6 per 1,000 (CDC, n.d.).

US Infant Mortality (2001 - 2006)



Source: Centers for Disease Control and Prevention, Compressed Mortality Data, 2009

FIGURE 50

INFANT MORTALITY IN MISSISSIPPI

Examining single year rates introduces volatility but also reveals trends sooner than 5- or 6-year averages. In 1998, Mississippi's infant mortality rate was 10.2 per 1,000 live births. Despite fluctuations, Mississippi's rate in 2008 was 9.9, which is only slightly lower than the 1998 rate by 0.3 infant deaths per 1,000 live births. Infant mortality among Whites rose slightly, from 6.4 per 1,000 in 1998 to 7.4 per 1,000 live births in 2008, while infant mortality rates among Nonwhites dropped slightly from 14.5 per 1,000 in 1998 to 12.9 per 1,000 live births in 2008. Neither change can be called a trend until additional years of data are collected (MSDH Vital Statistics, 2008, Table 23). [FIGURE 51]

Switching from a single-year snapshot measure to a 5-year average, the state's infant mortality rate has remained persistently high for the last 15 years. Mississippi's 1994-1998 average rate was 10.6 infant deaths per 1,000 live births. In every 5-year time period since then, the average rate has been between 10.3 and 10.5 per 1,000, ending the latest period (2004-2008) at 10.3 per 1,000 live births. It is this persistently high infant mortality rate that has kept Mississippi locked in the rank of 49th or 50th among all states in the national KIDS COUNT rankings since 1991 (the first year of national rankings) (MSDH, n.d., 2008 Vital Statistics; AECF, n.d.).

Infant Mortality (Rate Per 1,000 Live Births): Mississippi (1998 - 2008)

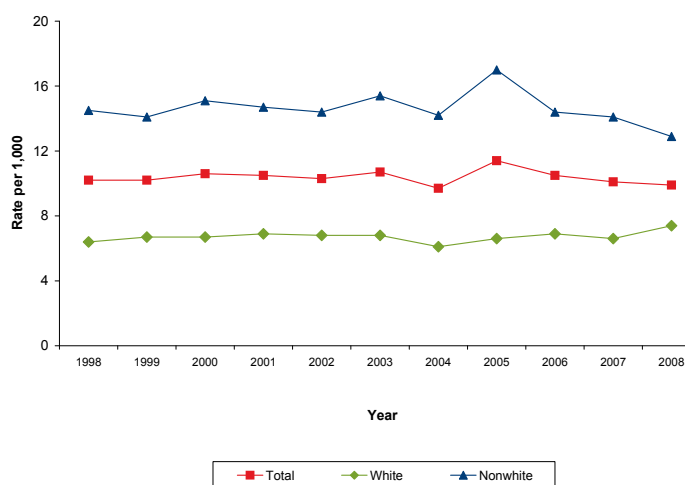


FIGURE 51

Source:
MSDH Vital Statistics, 2008

Mississippi's 5-year
average (2004-2008)
infant mortality rate was

10.3
per 1,000 live births

or more than double the 2010
national health goal of
4.5 per 1,000 live births

BIRTH OUTCOMES

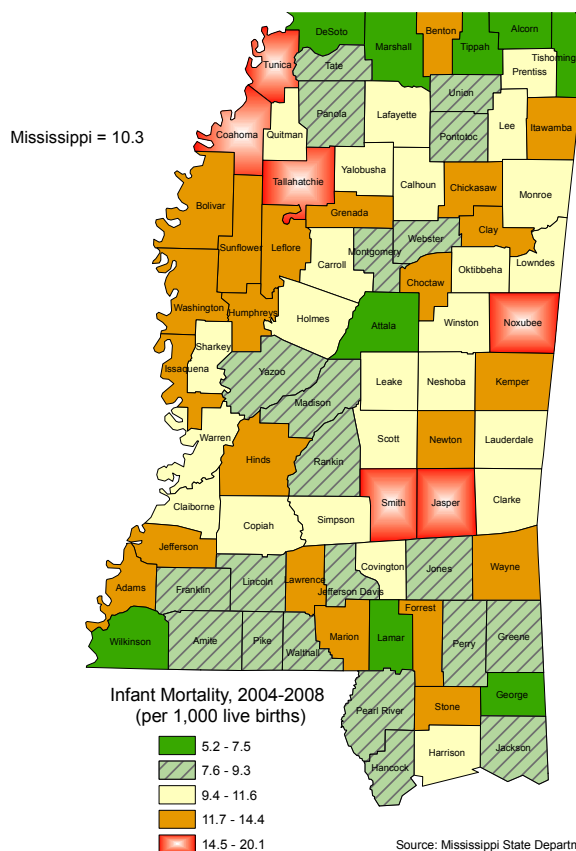
DATA SECTION



Within the state of Mississippi, the six counties with the highest 5-year average infant mortality rates for 2004-2008 were Tunica, Noxubee, Jasper, Coahoma, Smith, and Tallahatchie, but the Mississippi Delta continues to stand out as a region with very high infant mortality rates in the state. [FIGURE 52] Claiborne County has the distinction of sharing the same rate as the state, 10.3 infant deaths per 1,000 live births. One apparent cluster of lower-than-state-average infant mortality counties are five along the state's border with Tennessee (DeSoto, Marshall, Tippah, Alcorn and Tishomingo). Five-year averages are computed to account for fluctuations in rates for very rural counties. Thus, changes in the rankings among the counties over time are slow to appear and are not discussed or mapped here.

As a point of reference, the national health objective for 2010 is to reduce to 4.5 per 1,000 live births the rate of all infant deaths, down from a national rate of 7.2 per 1,000 live births in 1998 (HHS, n.d. Objective 16-1c). **Mississippi's 5-year average (2004-2008) infant mortality rate was 10.3 per 1,000 live births, or more than double the national health goal of 4.5 per 1,000 live births.** (MSDH, n.d., 2008 Vital Statistics)

MS Infant Mortality (2004 - 2008)



Source: Mississippi State Department of Health

FIGURE 52

Examining infant mortality rates by race shows decidedly different geographic patterns. For Whites, who comprised 40% of infant deaths in 2008, the rates ranged from zero reported deaths to a high of 18.5 per 1,000 (Tunica), with a statewide average of 6.8 per 1,000^a. [FIGURE 53] A band of counties in the Mississippi Delta contain three of the top five rates for White infant mortality (Tunica, Sunflower and Humphreys). The lower rate counties are scattered across the state with no apparent geographic pattern. (MSDH, n.d., 2008 Vital Statistics)

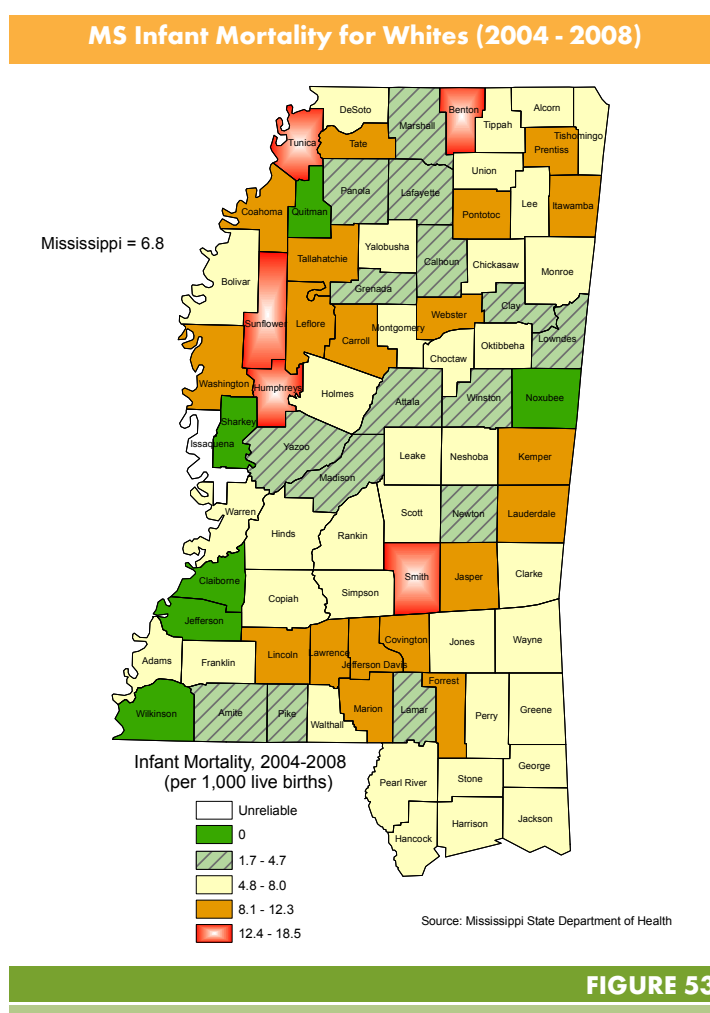


FIGURE 53

For 2004 - 2008, Mississippi's 5-year average
infant mortality rate for
Whites was 6.8, in contrast to the
Nonwhite rate of 14.5
per 1,000 live births

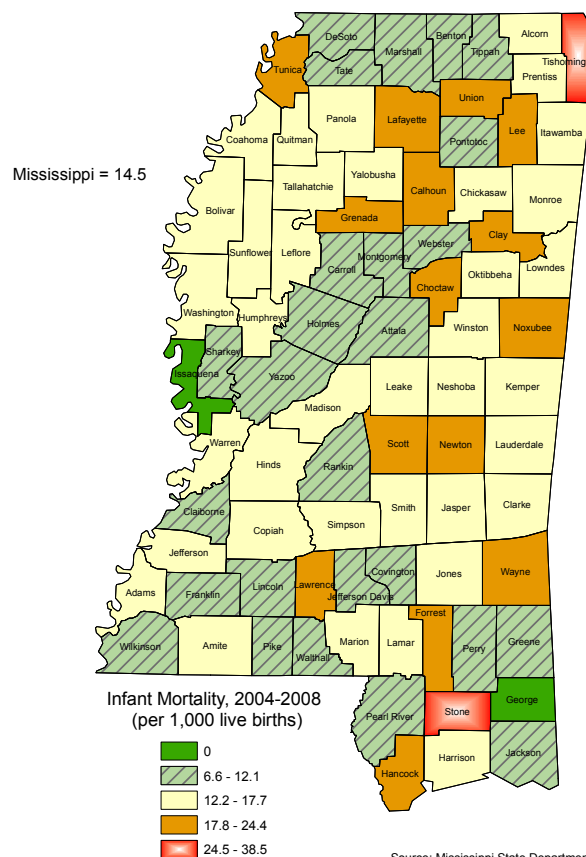
BIRTH OUTCOMES

DATA SECTION

For Nonwhites,^b who comprised 60% of infant deaths in 2008, an interesting lack of geographic clustering of infant mortality rates is evident. Although the range of rates is higher for Nonwhites than for Whites, with a top rate of 38.5 per 1,000 for Nonwhites (Tishomingo) versus Whites (18.5 per 1,000 live births in Tunica), and race-specific rates have an important role in the state's overall infant mortality rate, there are few clusters of note. In fact, the Mississippi Delta does not stand out as the region with the highest infant mortality rates for Nonwhites in Mississippi. [FIGURE 54] (MSDH, n.d., 2008 Vital Statistics)

Whether 5-year averages or 1-year rates are used, the disparity between White and Nonwhite infant mortality rates in Mississippi remains persistent. For 2004-2008, the 5-year average infant mortality rate for Whites was 6.8, in contrast to the Nonwhite rate of 14.5 per 1,000 live births. Examining 1-year rates of Nonwhite to White infant mortality, the ratio has averaged 2.2 from 1998-2008. Only in the last year (2008) has the ratio dropped below 2 to 1.7. [FIGURE 55] However, Mississippi's Nonwhite infant mortality rate is not necessarily responsible for our national ranking of 50th among states. (MSDH, n.d., 2008 Vital Statistics)

MS Infant Mortality for Nonwhites (2004 - 2008)



Source: Mississippi State Department of Health

FIGURE 54

MS Infant Mortality Rates (1998 - 2008)

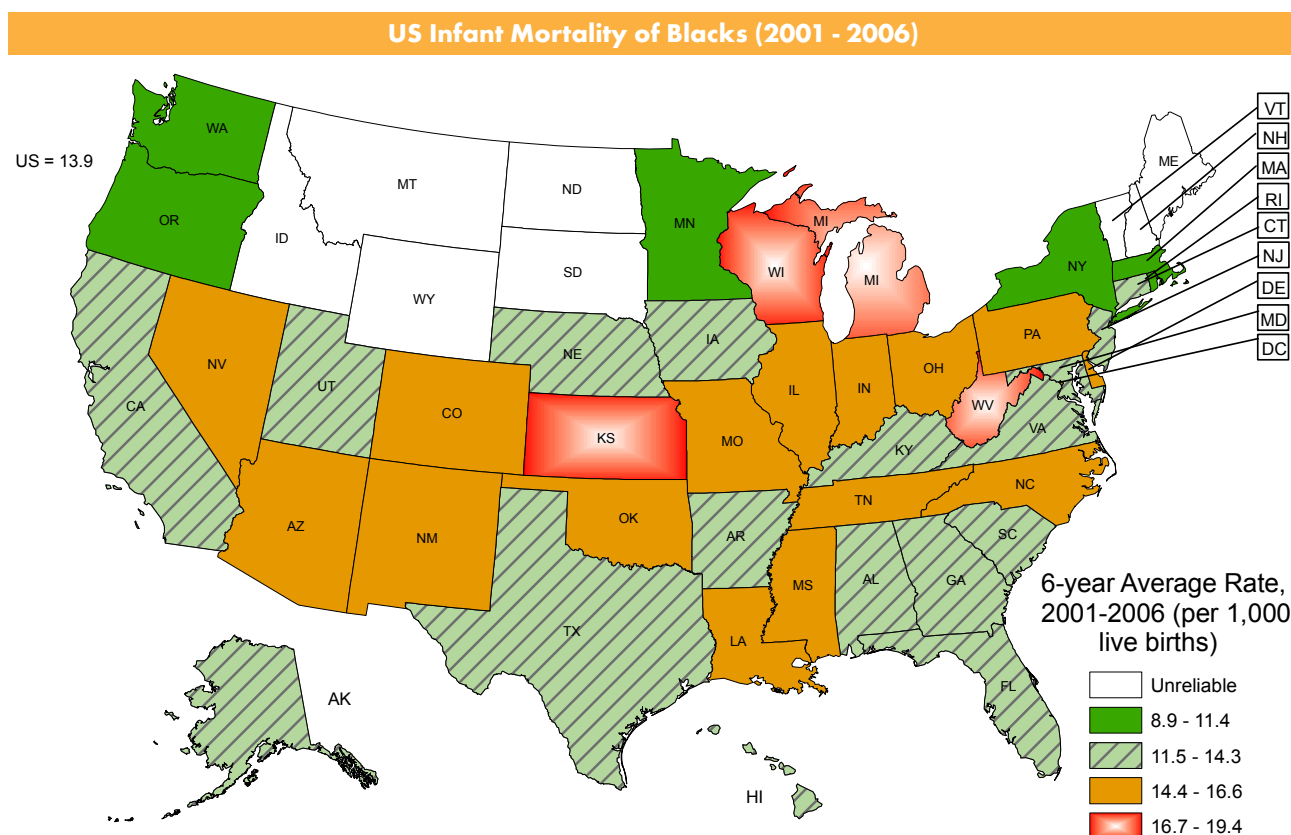
Year	Total	White	Nonwhite	Ratio
1998	10.2	6.4	14.5	2.3
1999	10.2	6.7	14.1	2.1
2000	10.6	6.7	15.1	2.3
2001	10.5	6.9	14.7	2.1
2002	10.3	6.8	14.4	2.1
2003	10.7	6.8	15.4	2.3
2004	9.7	6.1	14.2	2.3
2005	11.4	6.6	17	2.6
2006	10.5	6.9	14.4	2.1
2007	10.1	6.6	14.1	2.1
2008	9.9	7.4	12.9	1.7

FIGURE 55

Source:

MSDH, n.d., 2008 Vital Statistics

Researchers from the Social Science Research Center (SSRC) recently examined the alleged turnabout in infant mortality rates in Mississippi (Cosby & Jones, forthcoming). The claim had been made that 1-year infant mortality rates had increased sharply from 2004 to 2005 (which was true, see [FIGURE 55](#)), and that this was the harbinger of a trend (later proved false) and that Nonwhite mortality rates were driving the change (Eckholm, 2007). The SSRC research team examined the infant mortality rates of Blacks (a narrower definition than the Nonwhite category used by the Mississippi State Department of Health) and found that Mississippi did not even rank in the top quarter among states for the highest Black infant mortality rates. Using 6-year averages (2001-2006), the highest Black infant mortality rate in the nation was in West Virginia (19.4 per 1,000 live births) followed by Wisconsin (18.0), Kansas (17.3), and Michigan (17.3). In contrast, Mississippi's Black infant mortality rate was 15.2 per 1,000, and the national average was 13.9 per 1,000 live births. [\[FIGURE 56\]](#) In fact, the most striking geographic pattern in this national map is the lack of a cluster of high Black infant mortality states in the South (CDC, n.d.).^c



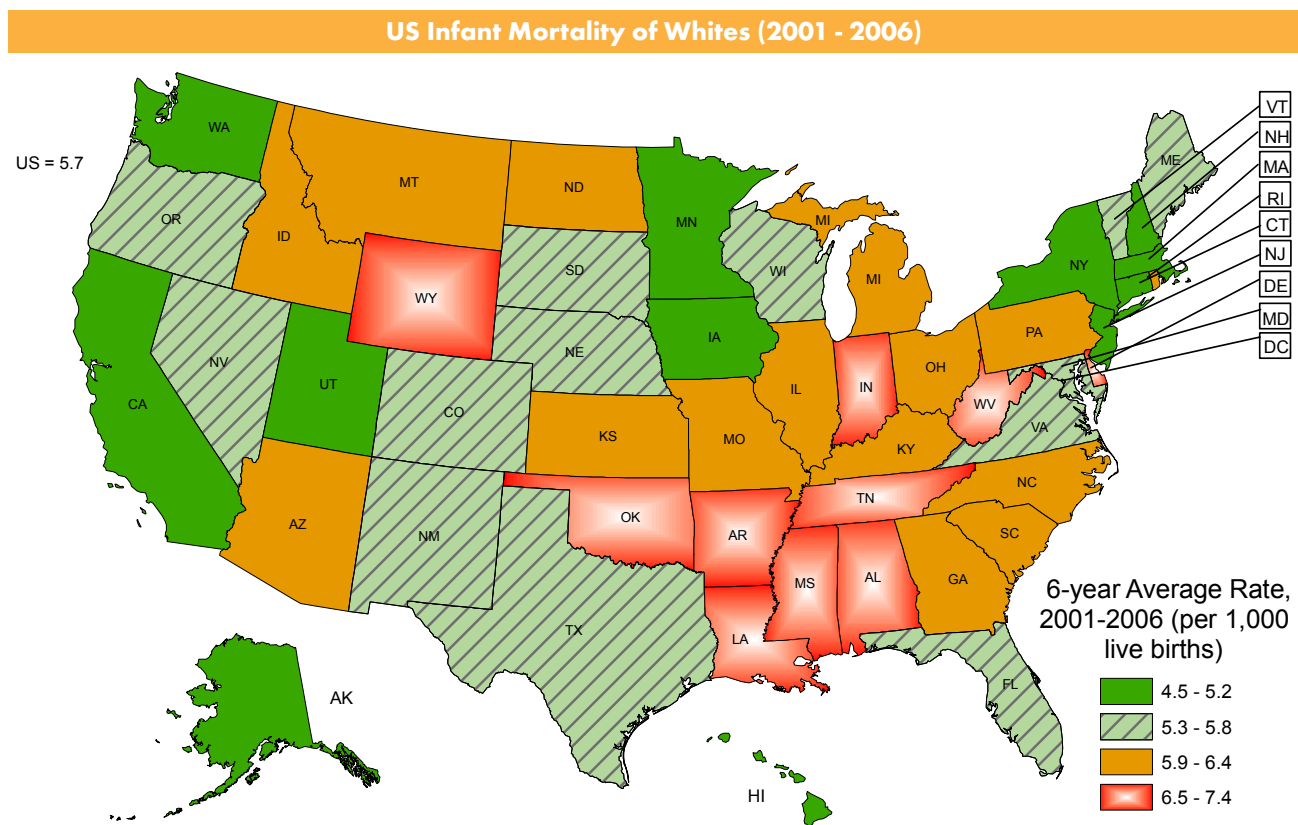
Source: Centers for Disease Control and Prevention, Compressed Mortality Data, 2009

FIGURE 56

BIRTH OUTCOMES

DATA SECTION

Compare the nation's Black infant mortality map with that of White infant mortality in the nation. [FIGURE 57] Mississippi's 6-year average (2001-2006) White infant mortality rate is among the highest in the nation at 6.8 per 1,000 live births, compared to the national average of 5.7 per 1,000 live births. Other states among those with higher White infant mortality rates are West Virginia (7.4), Oklahoma (7.0), Arkansas (6.9), Tennessee (6.9), Alabama (6.8), and Indiana (6.8). An interesting geographic pattern is that the traditional clustering of high mortality states in the South may have shifted north (to include Indiana and West Virginia) and west (to include Oklahoma). The conclusion that we can draw from these two national maps is that when we examine infant mortality rates by race, a much different pattern emerges in terms of Mississippi's ranking among states. [FIGURES 56 and 57]



Source: Centers for Disease Control and Prevention, Compressed Mortality Data, 2009

FIGURE 57

We now turn our attention to the causes of infant mortality. According to the Mississippi State Department of Health (MSDH, n.d.), the leading causes of infant mortality are as follows:

- Premature birth or low birthweight
- Sudden Infant Death Syndrome (SIDS)
- Birth defects
- Accidents and maternal difficulties

To put this list in perspective, in 2008 **almost a quarter of Mississippi's live births were low birthweight, premature, or both (MSDH, 2008, Table A9)**. Of all births, 22.6% were low birthweight or premature. Among births to White mothers, 17.8% were low birthweight and/or premature, compared to 28.2% for Nonwhite mothers. To the above list of direct causes, we can also add major contributing factors including teenage pregnancy, lack of prenatal care, living in poverty and births to single mothers (Hohmann, 2009; Elo, et al., 2009; Rosenthal, Robertson, Milstein, 2009; Philliber & Nolte, 2008).

PREMATURE BIRTHS IN THE U.S.

Mississippi leads the nation in the highest percentage of premature (or preterm) births.^d In 2006, the state rate was 18.8%, while the national average was 12.8%, and the lowest rate was Vermont at 9.6%. The percentages for other southern states, including Alabama (17.1%), Louisiana (16.4%), South Carolina (15.4%), Kentucky (15.1%), and Tennessee (14.8%), were also above the national average. The entire South is well represented in the upper half for high premature birth rates (AECF, n.d.).

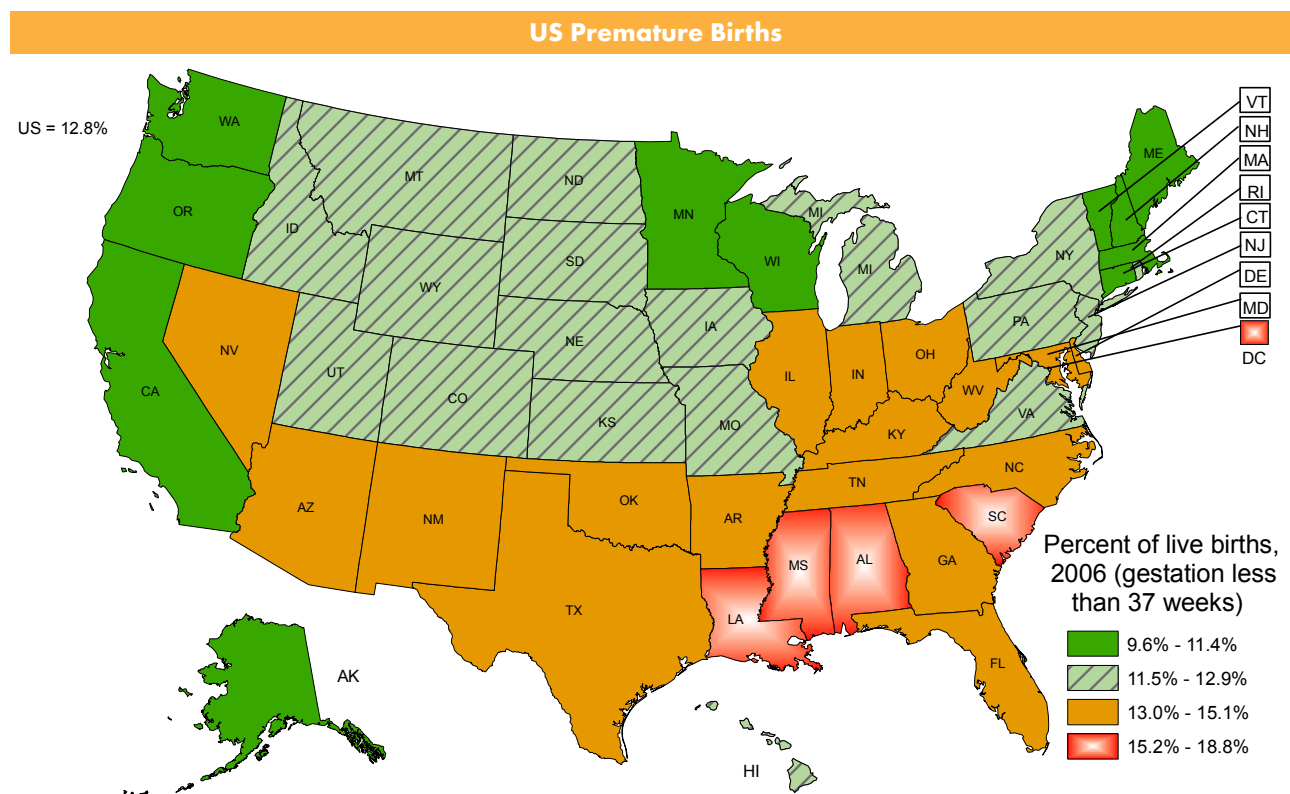


FIGURE 58

Source: The Annie E. Casey Foundation. KIDS COUNT Data Center, 2009

BIRTH OUTCOMES

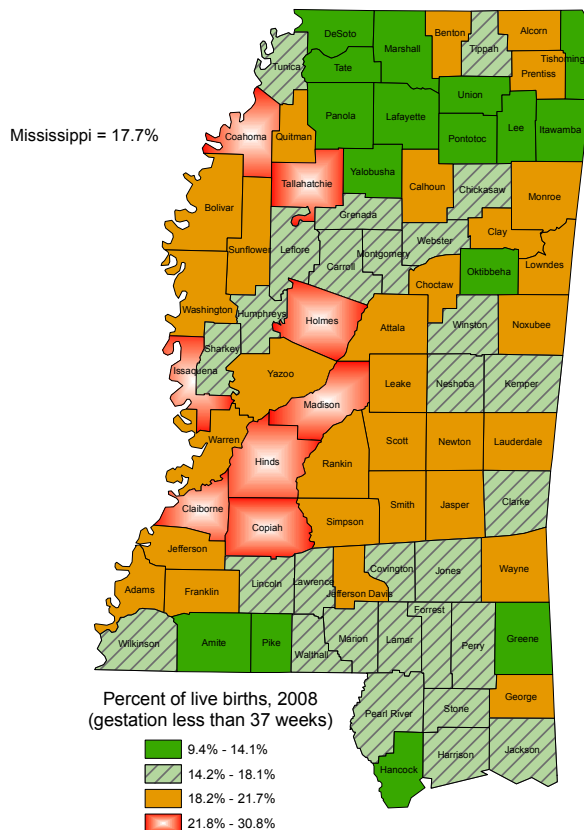
DATA SECTION

PREMATURE BIRTHS IN MISSISSIPPI

In 2008, the percent of premature births in Mississippi ranged from a high of 30.8% in Issaquena County, to a low of 9.4% in DeSoto County, with a state average of 17.7% (equal to the rate in Perry County). A cluster of counties with lower percentages (9.4% - 14.1%) predominate the north part of the state as well as a few scattered in the south. Interestingly, the clusters with the highest percentages of premature births were in the Mississippi Delta and in a band across the lower half of the state, including Hinds County, where 24.4% of live births were premature (20.2% for Whites and 25.7% for Nonwhites). [FIGURE 59]

To provide a point of reference, the national health objective for 2010 is to reduce the percentage of premature or preterm births to 7.6% of live births, down from 11.6% nationally in 1998 (HHS, n.d., Objective 16-11a). **Mississippi's premature birth rate in 2008 was 230% higher than the national objective, 17.7% vs. 7.6% (MSDH, 2009).** In 2008, 14.5% of live births to White mothers in Mississippi were premature, compared to 21.5% for Nonwhites.

MS Premature Births



Source: Mississippi State Department of Health

FIGURE 59

One crude measure of access to health care is the physical location of specialists in the state. An obstetrician/gynecologist is commonly abbreviated as OB/GYN. In a map showing the distribution of OB/GYNs in Mississippi (between July 2008 and June 2009), the largest concentration is in Hinds County (66), home to the University of Mississippi's Medical Center and teaching hospital. Lower concentrations can be found in other parts of the state. In contrast, 48 counties do not have a practicing OB/GYN physician (NE MS AHEC, 2009).

However this is not the total picture of access to care. Many general practice and family practice physicians provide pre-natal care and deliver babies. The map of OB/GYNs indicates where specialty physicians are practicing. [FIGURE 60]

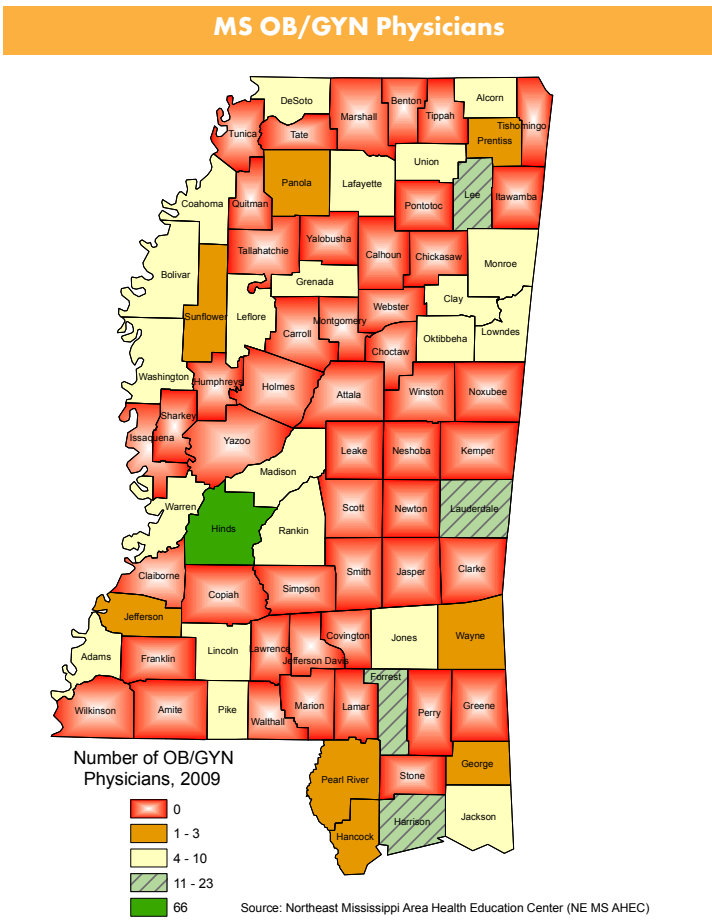


FIGURE 60

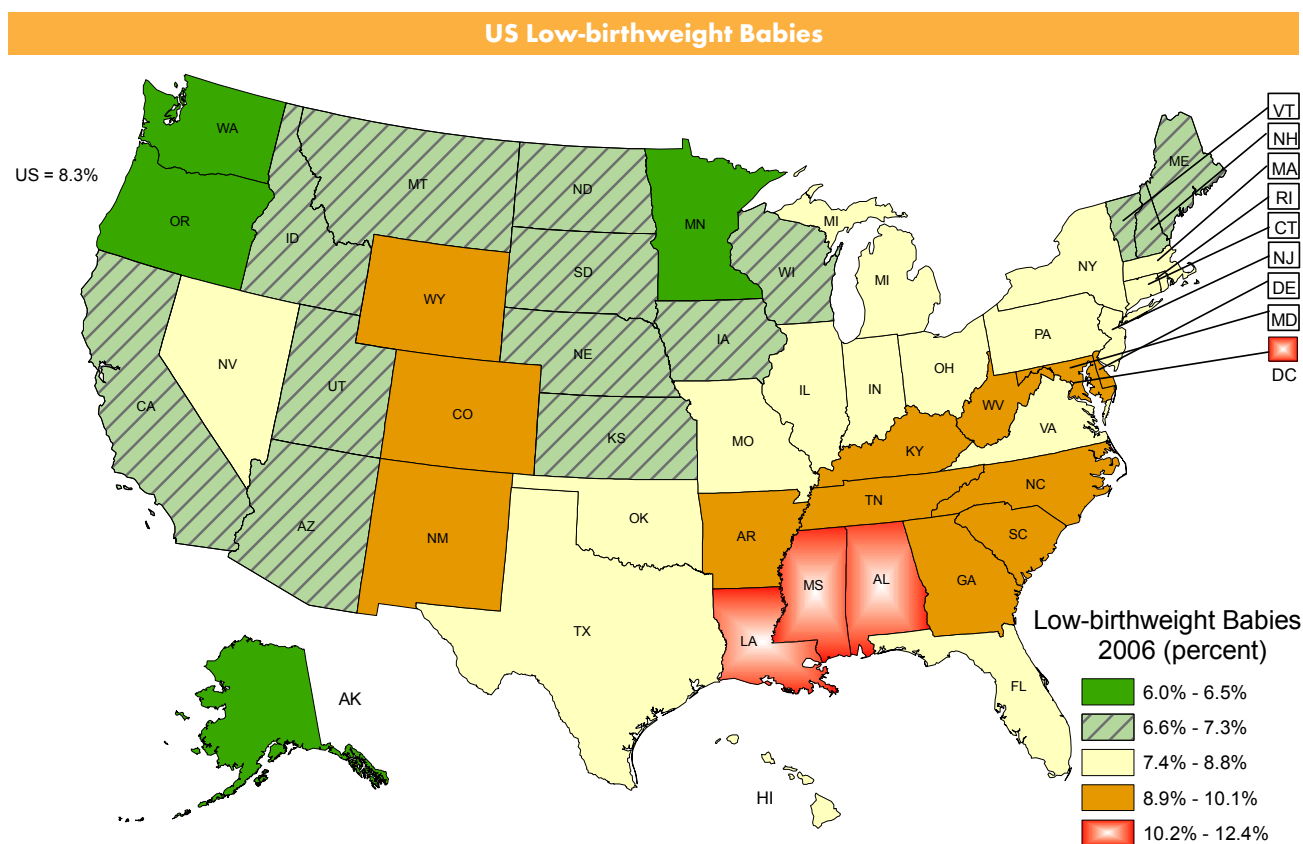


BIRTH OUTCOMES

DATA SECTION

LOW-BIRTHWEIGHT BABIES IN THE U.S.

Low-birthweight babies are at higher risk for complications and mortality than those of average weight.^e In 2006, Mississippi was the state with the highest percentage of low-birthweight babies (12.4%). Alaska (6.0%) had the lowest percentage, and the national average was 8.3%. We share high rates with other southern states, including Louisiana (11.4%), Alabama (10.5%) and South Carolina (10.1%). Again, the South appears overrepresented in the number of states with high percentages of low-birthweight babies (AECF, n.d.). [FIGURE 61]



Source: The Annie E. Casey Foundation. KIDS COUNT Data Center, 2009

FIGURE 61

LOW-BIRTHWEIGHT BABIES IN MISSISSIPPI

In 2008, Issaquena County led the state with the highest percentage of low-birthweight babies at 30.8%, followed by Tallahatchie County at 19.6%, while Webster County had the lowest percentage at 6.7%. The state average was 11.8% (equivalent to the rates in Forrest and Leake Counties). Again, a cluster of high-rate counties are seen in the Mississippi Delta, but there are no obvious clusters of counties with lower percentages (MSDH, n.d., 2008 Vital Statistics). [FIGURE 62]

To provide a point of reference, the national health objective for 2010 is to reduce to 5.0% of live births the proportion of low-birthweight babies (less than 5.5 pounds), which would be down from 7.6% nationally in 1998 (HHS, n.d., Objective 16-10a). **Mississippi's low-birthweight rate in 2008 is more than double the national objective, 11.8% vs. 5.0% (MSDH, n.d.).** In 2008, 8.5% of live births to White mothers in Mississippi were low birthweight, compared to 15.8% for Nonwhites.

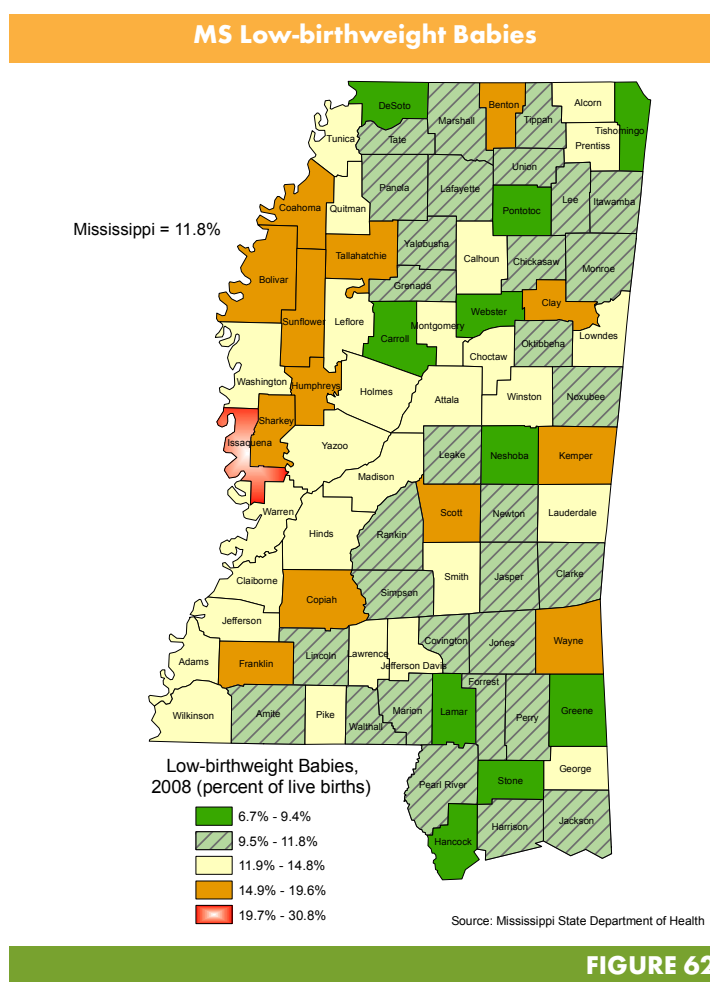


FIGURE 62

“Birthweight is a strong indicator not only of a birth mother’s health and nutritional status but also a newborn’s chances for survival, growth, long-term health and psychosocial development.” (UNICEF, n.d.)

BIRTH OUTCOMES

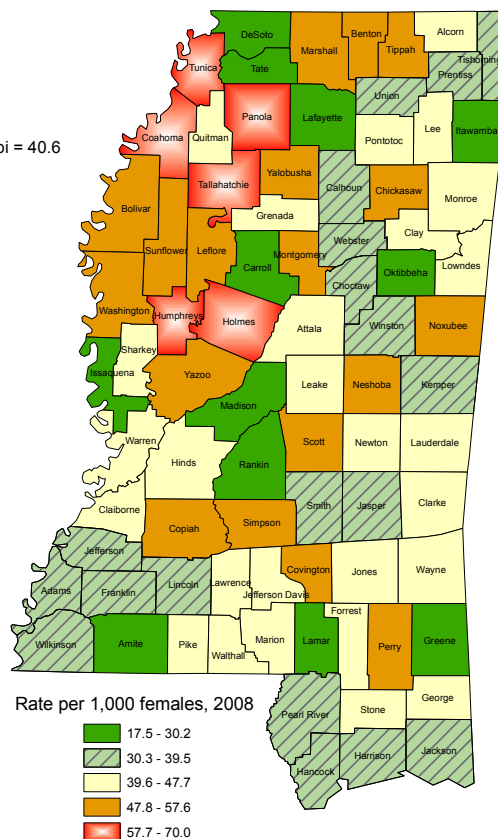
DATA SECTION

TEENAGE PREGNANCIES IN MISSISSIPPI

Of all births in Mississippi in 2008, 16.3% were to teenage mothers. When we examine the individual county teenage pregnancy rates, the counties of Tunica, Tallahatchie, Coahoma and Panola were a cluster of 4 of the 6 counties that had some of the highest rates of teenage pregnancy in the state in 2008 (70 per 1,000 teenage females, 68.8, 62.2 and 61.6, respectively), while Humphreys and Holmes rounded out the 6 counties in the state with the highest teenage pregnancy rates, at 64.5 per 1,000 and 59.9 per 1,000, respectively. The statewide teenage pregnancy rate in 2008 was 40.6 per 1,000 teenage females. The lowest rates in the state were in Lafayette (17.5 per 1,000), Issaquena (18.9 per 1,000), and Greene (21.5 per 1,000) (MSDH, 2008, Table 18b).

MS Teenage Pregnancy Rate

Mississippi = 40.6



Source: Mississippi State Department of Health

FIGURE 63

BIRTHS TO SINGLE MOTHERS

Among the contributing factors to infant mortality are births to single mothers (Hohmann, 2009; Elo, et al., 2009; Rosenthal, Robertson, & Milstein, 2009; Philliber & Nolte, 2008).

Of the 44,904 live births in Mississippi in 2008, 54.4% were to single mothers. Calculated by race, the percentage of births to single mothers was 33.5% among Whites and 78.9% among Nonwhites (MSDH, 2008, Table A6).

Combining the two categories of teens and single mothers, **14.3% of all births in Mississippi in 2008 were to teenage, single mothers (9.5% for Whites and 20.0% for Nonwhites)** (MSDH, 2008, Table A6 and A7).

PROGRAMS & POLICY CONSIDERATIONS

PROGRAMS

In an analysis of Mississippi births between 1999 and 2003, it was determined “that the largest contributor to Mississippi’s high infant mortality rate was the excessive number of low-birthweight infants, accounting for more than 60% of Mississippi’s infant deaths. More striking was the finding that more than 50% of infant deaths were from very low-birthweight infants (less than 3.3 pounds) who comprise only about 2% of the births in Mississippi” (Zhang, Hayes, Sledge, Wilson, and Graham, 2007; MSDH, 2009). Thus, the Mississippi Department of Health has chosen to focus on very low-birthweight (less than 3.3 pounds) babies and their mothers (Langston, Graham, and Zhang, 2009). The state instituted the Interpregnancy Care Project of Mississippi, which begat the Metropolitan Infant Mortality Elimination (MIME) Program and the Delta Infant Mortality Elimination (DIME) Program.



“The program enrolls high-risk mothers in a comprehensive 24-month primary-care program that addresses seven areas linked to very low-birthweight deliveries, including poorly controlled chronic diseases, substance abuse, reproductive-tract infections, nutritional disorders and obesity, depression and domestic abuse, periodontal disease and short interpregnancy intervals. To that end, participants are assisted in outlining a reproductive plan allowing for an optimal 18-24 months between pregnancies. They are given a dental screening and offered community outreach support through group meetings and home visits” (MSDH, 2009).

For almost two decades, the Mississippi State Department of Health has maintained the Perinatal High Risk Management Program (PHRM). Funded by the Division of Medicaid, pregnant women who have risk factors for less than optimal birth outcomes are offered a menu of case management services delivered by a team of nurses, nutritionists and social workers. Examples of these services include, but are not limited to the following: medical referrals, home visits, nutritional information, family planning and post-partum follow-ups (MSDH, 2009).

Although there are other programs that address various components of teenage pregnancy, birth outcomes and low-birthweight infants across various systems of care, there is a lack of a systematic central clearinghouse and/or compilation of evidenced-based best practices for this particular population group. Thus, the following policy considerations are offered to assist groups who are working to promote healthy birth outcomes in Mississippi.

BIRTH OUTCOMES

PROGRAMS & POLICY CONSIDERATIONS

POLICY CONSIDERATIONS

- Develop comprehensive services that address behavioral, social and environmental risk factors for poor birth outcomes
- Expand school-based comprehensive school health clinics
- Promote school and community-based programs that encourage pregnant teenagers to stay in school and increase their educational attainments
- Review which counties and populations have persistently high neonatal and post-neonatal infant mortality rates
- Review Medicaid waiver programs that will promote the following preventive strategies:
 - » Increasing prenatal care within the first trimester to above the current rate of approximately 82% in Mississippi
 - » Increasing awareness of the importance of placing infants on their back to sleep as one strategy to prevent Sudden Infant Deaths (SIDS), given that SIDS is the leading cause of post-neonatal mortality
 - » Increasing the use of oral health care among women of childbearing age and particularly among pregnant women, given the strong association between periodontal disease and preterm birth
 - » Increasing the access to and level of interconceptional care, that is, care prior to and between pregnancies
 - » Increase the understanding by providers of the strong association between chronic stressors and negative birth outcomes



SUCCESS STORY



Early Beginnings Teen Parent Program, Pascagoula School District

The high school experience for most young people is full of opportunities, decisions, and challenges. In addition to academic work, students may choose to participate in a multitude of extra-curricular activities involving sports, music and school-related clubs. Their social interaction with peers and educational advancement are critical to their overall well-being.

High school students who are pregnant or raising a child have numerous additional stressors, such as whom to choose for child care or how to get school work done while battling morning sickness. These adult responsibilities can rob teens of the social interaction and educational engagement they need. When teens get overloaded, there is a great temptation to drop out of school altogether.

Teen pregnancy and childcare responsibilities are predominant reasons why approximately 1.3 million U.S. students leave high school each year without a diploma (Alliance for Excellent Education, 2009). Those who do not complete their high school education are likely to be unemployed and living in poverty.

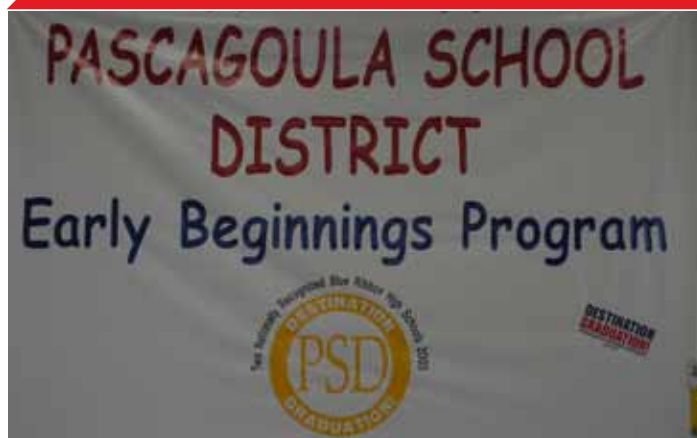
High school dropouts often do not have the tools necessary to compete in this highly technological world. According to U.S. Census data, a bachelor's degree earns an average of \$52,671, while a high school diploma earns \$26,933, and less than a high school education earns \$17,299 on average (U.S. Bureau of the Census, n.d.).

In Mississippi, where teen pregnancy and dropout rates are both high, educators must find ways to keep teen mothers in school. Doing so would contribute to a decrease in the overall state dropout rate and could have significant economic impacts. Dropouts from the class of 2008 will cost Mississippi



BIRTH OUTCOMES

SUCCESS STORY



Wayne Rodolfich
Superintendent, Pascagoula School District



Dr. Connie Jo Williams
Director, Early Beginnings Program

almost \$4 billion in lost wages over their lifetimes (Alliance for Excellent Education, 2009). Teen mothers who stay in school have a better chance to further their education, get better paying jobs, and ensure that their children are prepared for school.

In Pascagoula, educators have created a unique opportunity to encourage teen mothers to stay in school by offering them a much needed support system. “We’re here to make sure that every child has an opportunity to succeed,” says Wayne Rodolfich, the superintendent of schools in Pascagoula and the visionary for the program. “There are so many people who see a young lady who is pregnant and say that’s the job of the family to help her. That may be true, but in our program we’re not going to cast those young ladies aside. We’re going to wrap around them and give them the opportunity to graduate from high school so they have the chance to get to the next level of life rather than perpetuate the cycle of poverty.”

Armed with that sentiment and a lot of creativity, the Pascagoula School District’s Teen Parent Program was begun in January 2008 as part of the district’s Early Beginnings initiative. At that time, 54 teen mothers were identified. They began meeting with the program’s director, Dr. Connie Jo Williams. During the initial meeting, Williams asked the girls to commit to two things: to graduate from high school and to learn to properly prepare their own children for school. “I told them they would see me cheering them on at graduation, and they would see me on the front steps when their child comes to kindergarten.” Today, 97 more participants

“Circumstances do not dictate the quality of life our children should enjoy. We don’t get to limit or judge where they end up based on a circumstance in their life whether it be poverty or pregnancy. The only limitation any child should have is the boundary of their ambition.”

—Wayne Rodolfich
Superintendent, Pascagoula School District

have joined the program, and they too are being asked to commit to the same principles as the inaugural class. Williams stresses to the girls that they can count on the support of the school district long after graduation. “I tell them, ‘We will get through this together. Miss Connie Jo is not going away.’ Just by virtue of that, they are okay.”

Williams says that the Teen Parent Program is a collaborative effort among school administrators, nurses, counselors, teachers and the participants themselves. Administrators in the district’s two high schools, Pascagoula High School and Gautier High School reconfigure class schedules to allow participants to attend bi-monthly support meetings. During the 90-minute sessions, girls share stories, ask questions, encourage each other and even introduce their children to each other. Williams and parent volunteers are there to offer assistance and to answer questions that the girls might be afraid to ask their doctors. “My goal is to let them know they are no different from any other mother. I look at these girls, and I see myself. To know that somebody else has been there and made it through encourages them to keep going.” Liz Strunk, a counselor at Pascagoula High School says, “There is a focus to say, ‘Come on, keep going.’ By getting them together, they have a support system for each other, and they are motivated to stay in school and to be good parents.”

In addition to the support meetings, participants receive monthly newsletters offering developmentally appropriate activities for infants, toddlers, and preschoolers. They also are encouraged to use the district’s Early Beginnings Toy Lending Library. Williams says the young mothers are given the resources they need to be the “most powerful parents possible.” Williams ensures that participants understand brain development, the needs of their children, and the importance of talking, reading and interacting with their babies. She adds,



BIRTH OUTCOMES

SUCCESS STORY

"If you've got a mama who has gotten some stress taken away and some support given, she stands up a little straighter and taller. That baby sees that, and that's the kind of behavior the baby will emulate."

"There is a focus to say, 'Come on, keep going.' By getting them together, they have a support system for each other, and they are motivated to stay in school and to be good parents."

—Liz Strunk

Counselor, Pascagoula High School



Whitney Reaux and Cathy Edwards

"Usually when you walk down the hallway, everybody looks different from you, so you feel odd. I don't feel odd anymore."

—Whitney Reaux

Senior, Pascagoula High School

The third component of the program is Baby Bucks. When a participant attends support group meetings as well as parenting classes, she earns coupons entitling her to "purchase" diapers and wipes. She is also allowed to shop for maternity clothes and baby items which are donated by members of the community. Williams says, "They can come in and shop, and that is just one less thing they have to worry about." Whitney Reaux, a PHS senior adds, "When I found out I was pregnant, I was able to go shopping for maternity and baby clothes. I actually had hope again, that I would get through this."

Whitney is one of 36 girls enrolled in the program this year. She has been accepted at the University of Southern Mississippi School of Nursing and will begin classes at the Long Beach campus immediately following graduation in May 2010. She had plans to drop out of high school but was encouraged to stay in school and join the program. "Usually when you walk down the hallway, everybody looks different from you, so you feel odd. I don't feel odd anymore."

Whitney's friend Cathy Edwards who is raising her son Leo says "It's nice to know you're not alone and that there is help." The PHS sophomore adds, "I would have quit school because it's hard. It really is. I think a program like this saves a lot of girls from dropping out."

Taylor Ladnier graduated from Pascagoula High School in May 2009 and currently

teaches at the First Baptist Church Learning Center in the two-year-old department. Her long range plans include college and dental school. "I've got a lot of schooling left," she says. "I want my son to have so much more than I had." Taylor says that she has received invaluable support from Williams and all the volunteers, and the support did not end when she walked across the stage at graduation. "If I ever need anything, I know I can go there. They have helped me to put everything in order. The program keeps me going. It makes me want to better myself for my child."

"Their [the participants] lives have changed dramatically whether they made that choice or it happened upon them. Whatever the circumstances are, they are amazingly motivated," says Cynthia Jackson, the principal at Pascagoula High School. Administrators are already seeing significant markers of the program's success. During the first year of existence, 85% of the teen parents returned to the school district after the birth of their child. Last year, 100% of the 27 seniors who were enrolled in the program graduated from high school. Four were Mississippi Scholars, and five were honor graduates. One vocational student received a full four-year college scholarship. Jackson adds, "We don't want to promote teenage pregnancy with our girls, but it is real, and it's happening. The program is supporting them, and it gives them tools so they can finish school."

The costs involved in operating the Teen Parent Program are minimal. In fact, the Pascagoula School District does not allocate any funding in its annual budget for the program itself. "We are no different from any other school system that is stretching the resources they've got available so that they can meet the needs of their



Taylor Ladnier and son Braylin Jace

"If you've got a mama who has gotten some stress taken away and some support given, she stands up a little straighter and taller. That baby sees that, and that's the kind of behavior the baby will emulate."

—Dr. Connie Jo Williams
Director, Early Beginnings Program
Pascagoula School District

BIRTH OUTCOMES

SUCCESS STORY



*Cynthia Jackson, Principal and
Liz Strunk, Counselor*

students,” says Williams. Early Beginnings, the umbrella for all pre-school programs and initiatives in the Pascagoula area got its initial funding when Pascagoula became one of nine Excel by 5 communities in the state. The community-based certification designed to improve a child’s well-being by age five is funded by Chevron. Williams serves as the Certification Manager for Excel by 5 Pascagoula as well as the Director for the Early Beginnings program.

Williams makes up a staff of one for the Teen Parent program and relies on volunteer support from school staff and the community to make it all come together. Volunteers collect and sort maternity and baby clothes for the shopping expeditions, and often volunteers participate in the support meetings. Williams did receive a \$1000 grant from the Bacot McCarty Foundation to purchase diapers and baby wipes. “They are not great expenditures, but they mean everything to the mama,” she says. Rodolfich adds, “This is a coalition of people working together for a common goal, and that’s putting students first.”

Williams and Rodolfich insist that the program is easy for other districts to replicate. “Whatever a school district does, they need to make sure they put a person in place who has a commitment to the girls’ finishing school and is willing to do some non-traditional things to make sure they get there,” says Williams. “We want to show people all across America that if we can do it in Mississippi, we can do it anywhere,” adds Rodolfich.

Providing emotional support for teen mothers combined with a sprinkling of understanding and flexibility are the key components for success. Administrators and teachers must be willing to adjust schedules and to be flexible with student assignments. According to Jackson, “When we look at these young ladies, they need safety and understanding. When they have that, they’ll get back in class and stay in class.”

Since inception in January 2008, 151 students have participated in the Teen Parent program, but its effects have extended far beyond those numbers. Williams shares a story about Ebony, a participant whose own mother had been a stumbling block in her road to graduation. She had insisted that Ebony drop out of school and get a job as a housekeeper at a local casino. In spite of numerous obstacles, Ebony did graduate from high school and eventually garnered the support of her mother. At the graduation ceremony, Ebony’s mother remarked that she was going to be a better mother to her younger son than she was to Ebony. Williams points to this moment as the time when she knew the program was working. “This teen mother had taught her mother to parent. I watched that family’s situation change for the better for that young man. I witnessed systemic change.”

“We don’t want to promote teenage pregnancy with our girls, but it is real and it is happening. The program is supporting them, and it gives them tools so they can finish school.”

—Cynthia Jackson
Principal Pascagoula High School



APPENDIX

ORAL HEALTH

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Note(s):

^aAll percentages are age-specific rates. In other words the rate is the number of children served divided by the total number of children in that age category in the state of Mississippi as of the 2000 Census.

^bChildren living in families with no full-time, year-round employment – The share of all children under age 18 living in families where no parent has regular, full-time employment. For children living in single-parent families, this means that the resident parent did not work at least 35 hours per week, at least 50 weeks in the 12 months prior to the survey. For children living in married-couple families, this means that neither parent worked at least 35 hours per week, at least 50 weeks in the 12 months prior to the survey. Children living with neither parent also were listed as not having secure parental employment because those children are likely to be economically vulnerable.

^cChildren in poverty – The share of children under age 18 who live in families with incomes below the federal poverty level, as defined by the U.S. Office of Management and Budget. In calendar year 2007, a family of two adults and two children fell in the “poverty” category if their annual income fell below \$21,027.

^dChildren in Single-parent Families - Children under age 18 who live with their own single parent either in a family or subfamily. In this definition, single-parent families may include cohabiting couples and do not include children living with married stepparents.

^eTeens not attending school and not working - Teenagers between age 16 and 19 who are not enrolled in school (full- or part-time) and not employed (full- or part-time). This measure is sometimes referred to as “Idle Teens” or “Disconnected Youth.” Inclusion of the group quarters population in the ACS in 2007 could have a noticeable impact on the universe population for this age group. Therefore, the 2007 ACS estimates might not be fully comparable to estimates prior to 2006.

^fTeens who are high school dropouts - Teenagers between the ages of 16 and 19 who are not enrolled in high school and are not high school graduates. Those who have a GED or equivalent are included as high school graduates in this measure. The measure used here is defined as a “status dropout” rate. Inclusion of the group quarters population in the ACS in 2007 could have a noticeable impact on the universe population for this age group. Therefore, the 2007 ACS estimates might not be fully comparable to estimates prior to 2006.

^gDetermining Statistical Significance (YRBSS): The Centers for Disease Control and Prevention’s (CDC) Youth Risk Behavior Surveillance System (YRBSS) is a state-level survey. Statistically significant differences between two years for one location (e.g., MS 2003 vs. MS 2007) or between two survey locations (e.g., MS 2007 vs. U.S. 2007) were determined using the YRBSS “Youth Online: Comprehensive Results” comparison feature available at <http://apps.nccd.cdc.gov/yrbss>

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Definition(s) and Note(s):

^a Determining statistical significance (YRBSS):

The Centers for Disease Control and Prevention's (CDC) Youth Risk Behavior Surveillance System (YRBSS) is a state-level survey. Statistically significant differences between two years for one location (e.g., MS 2003 vs. MS 2007) or between two survey locations (e.g., MS 2007 vs. United States 2007) were determined using the YRBSS "Youth Online: Comprehensive Results" comparison feature available at <http://apps.nccd.cdc.gov/yrbss>

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Definition(s) and Notes(s):

^a Issaquena County was listed as having a 5-year White infant mortality rate of 50.0 per 1,000. However, the county had fewer than 20 births per year and thus their rate was considered unreliable.

^b The two categories for race used by the Mississippi State Department of Health are White and Nonwhite. White includes such groups as Caucasian, Anglo-American, Canadian, Cuban, French, Greek, Hispanic, Latin American, Mexican, Puerto Rican, Swedish, etc. Nonwhite includes such groups as Black, African-American, American Indian, Chinese, Japanese, Hawaiian, Filipino, and all other groups not considered as White.

^c The black infant mortality rate for a total of 8 states were flagged as unreliable. Death rates based on counts of twenty or less (death count ≤ 20) are flagged as “Unreliable”. A death rate based on fewer than 20 deaths has a relative standard error (RSE(R)) of 23% or more. A RES(R) of 23% is considered statistically unreliable (CDC, 2009). They were: Wyoming, Montana, South Dakota, North Dakota, Idaho, Maine, New Hampshire, and Vermont.

^d Premature births are those with gestations of less than 37 completed weeks.

^e Low birthweight is defined as less than 2,500 grams or 5.5 pounds.

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APPENDIX

Note(s):

- ^aThe benchmark rates represent 4-year graduation rates calculated for cohorts of students beginning with ninth graders four years prior to the stated school year. For example, the benchmark for 2008-2009 will be compared to the 4-year graduation rate for the student cohort beginning with ninth graders in school year 2005-2006 (Cohort SY0506G09).
- ^bThe benchmark rates represent 4-year ("9-12") dropout rates calculated for cohorts of students beginning with ninth graders four years prior to the stated school year. For example, the benchmark for 2008-2009 will be compared to the 4-year dropout rates for the student cohort beginning with ninth graders in school year 2005-2006 (Cohort SY0506G09). The dropout rates used for assessing performance on Goal #2 will differ from dropout rates calculated for 6-year ("7-12") cohorts.



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