



WHAT IF WE WERE EQUAL:

A MISSISSIPPI HEALTH ASSESSMENT



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THE MISSISSIPPI INSTITUTE
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Health venues in Mississippi, past and present



WHAT IF WE WERE EQUAL?

“What will it take to reduce disparities? What “systems change” could we undertake as a nation to assure that [disparities between black and white mortality rates] do not remain flat over the next four decades? Examples of systems change in health care would include universal health insurance coverage, a primary care medical home for each American, proportionate representation of African Americans in the health professions, and the elimination of bias in the delivery of diagnostic and therapeutic interventions. Systems change related to the health of communities would have to be much broader: from nonviolent and exercise-friendly neighborhoods to more nutritious food outlets, educational equality, career opportunities, parity in income and wealth, home ownership, and ultimately hope.”

*- from “What If We Were Equal? A Comparison of the Black-White Mortality Gap in 1960 and 2000”
by David Satcher, George E. Fryer, Jr., Jessica McCann,
Adewale Troutman, Steven H. Woolf, and George Rust
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What if
we were
EQUAL?



INTRODUCTION

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INTRODUCTION



Mississippi has become a poster child for many of the societal problems affecting the disadvantaged of our nation. Of the challenges facing Mississippi, none are more important than the problems of health and health care pervading our population.

In 2005, in examining excess black mortality rates in America, former Surgeon General Dr. David Satcher asked America, “What if We Were Equal?” Inspired by Dr. Satcher’s work, our report ***What if We Were Equal: A Mississippi Health Assessment*** addresses health in Mississippi by asking some very straightforward questions.

- *What if Mississippians had the same health and health outcomes as the rest of the nation?*
- *What if white Mississippians were equal to the nation’s whites? What if black Mississippians were equal to the nation’s whites?*
- *Essentially, what would it take for Mississippi to reach national norms?*



What if we were EQUAL?

At its roots, this report is an investigation of health disparities. There are profound differences in health and health-related factors across our nation and among its peoples. These differences occur among groups at lower socioeconomic levels, among minority populations, and among rural communities. Identifying and investigating these differences is essential to improving our health. In fact, **Healthy People 2010, which documents our nation's vision and goals for improving health, names the elimination of health disparities as one of the two primary strategies for improving overall national health.**

In Mississippi in particular, where health disparities are so severe and pervasive, the strategy of eliminating health disparities takes on particular import. **Ultimately, the overall health of Mississippi cannot be improved without identifying and eliminating the complex and varied forms of health disparity existing in our state.** This report aims to increase awareness and understanding of health disparities in Mississippi by addressing disparities in incidence, diagnosis, treatment, and prevention of select health issues.

UNDERSTANDING HEALTH DISPARITIES

The natures and forms of health disparities are varied and complex. **Health disparities as gaps in quality of health, incidence of disease, or access to medical care can occur among specific populations as well as across demographic groups** (e.g. according to race/ethnicity, gender, socioeconomic status, and residence) (Health Resources and Services Administration, 2010).

Moreover, **disparities in health can occur not only as inequalities in quality of and access to medical care but also as inequalities related to behaviors, environmental conditions, and societal opportunities.** For example, differences in individual behaviors that result in greater risk for disease or injury (such as tobacco use, diet, levels of physical activity, and alcohol consumption) can be viewed as important health disparities. Disparities in environmental factors such as water and air quality and the availability of safe and healthy foods also have significant impact, as do disparities in occupational environment and safety. As a result, health disparities can involve almost every aspect of society. These indicators are of utmost importance as they provide a more comprehensive picture of health and reveal important avenues for intervention.

Finally, many societal factors that contribute to health disparities intertwine with past and current politics and policy, minority discrimination, and cultural influences (National Institutes of Health, 2008). Hence, investigations into health disparity often move into realms not normally considered 'health-related' such as economics, sociology, and history.



CONCEPTS:

INEQUITIES VERSUS INEQUALITIES

When thinking about health disparities, one must understand the difference between *inequality* and *inequity*. While *inequality* is a measurable difference, *inequity* is a moral quality or judgement. “Health *inequality* is a descriptive term” which does not necessarily involve moral judgment, whereas recognition of a health *inequity* depends on an individual’s beliefs regarding justice, society, and the reasons underlying the existence of inequalities (Kawachi, Subramanian, & Almeida-Filho, 2002, p. 647). **The term ‘health disparity’ typically refers to health inequities – health inequalities seen as preventable and/or caused by a situational or social injustice.** Views on free will and personal responsibility for care often determine whether a health inequality is seen as a health disparity. However, the impact of prenatal and childhood influences on adult health and the dependence of “life chances ... upon contextual factors” significantly undermines the concept of an individual’s complete free will and total responsibility in regards to his or her health (Kawachi et al., 2002, p. 647). Moreover, an absolute concept of free will with regards to health fails to explain various phenomena, such as the persistent socioeconomic gradient in health (Kawachi et al., 2002). **For some, this report will provide an objective and quantifiable analysis of the many health disparities that exist in our state. For others, it might also provide information about inequities that will challenge their sense of societal responsibility and moral obligation with regards to the health of our population.**

MAJOR SOURCES OF HEALTH DISPARITIES

SOCIOECONOMIC STATUS

Persons “at a lower level of socioeconomic position – whether measured by income, occupational grade, or educational attainment” experience worse health (Kawachi et al., 2002, p. 649). For example,

“Americans with low [socioeconomic status] have levels of illness in their thirties and forties that are not seen in groups with higher [socioeconomic status] until three decades of age later” (Williams & Jackson, 2005, p. 327).

Moreover, experiences of worse health according to socioeconomic position hold true even for “those who are already in relatively high socioeconomic groups” (Kawachi et al., 2002).



CONCEPTS:

SOCIAL CAPITAL

Health disparities exist most prominently between socioeconomic groups, between racial and ethnic populations, and between places, from cities and counties to states and regions and countries. **The concept of *social capital* is an important tool in understanding the roots of these inequalities.** Put simply, social capital is the benefit conferred on an individual because of their location in a structure of relationships (social network). This benefit, gained through particular connections to other people within a society, can often explain how some individuals attain greater success in particular settings (Pearce & Smith, 2003). Essentially, the “consequences of... macrolevel social and economic processes that influence health across the life course” create an individual’s social capital (Pearce & Smith, 2003, p. 122).

Differences in positions within social networks create differences in the social capital conferred on individuals or groups. These differences in the distribution of social capital engender the great divide between the *haves* and the *have nots*, the advantaged and the disadvantaged (Khmelkov & Hallinan, 2002). **The unequal distribution of social capital informs the unequal distribution of wealth among different races and ethnicities, different places, etc.** (LeClere & Soobader, 2000). Disparate distributions of social capital produce disparities in health, a cause and consequence of wealth.

Health disparities due to socioeconomic status are attributed to differences in education, income, and health practices as well as psychosocial stressors associated with membership in lower socioeconomic classes (Williams & Jackson, 2005). Leading explanations for the socioeconomic gradient in health incorporate the concepts of relative income and relative poverty; that is, one’s good health depends not on obtaining some concrete amount of goods and services but instead depends on the level of goods and services obtained in comparison to the rest of society. **One’s relative position in terms of society/income can affect health in multiple ways. First, relative income/societal position affects one’s access to goods** (material commodities, social capital, etc.) necessary for ‘good’ health in a particular society. **Second, being of lower income/societal position leads to psychosocial distress, which is associated with both direct and indirect effects on personal health** (Kawachi et al., 2002).

“Chronic exposure to stress is associated with altered physiological functioning, which may increase risks for a broad range of health conditions. People of disadvantaged social status tend to report elevated levels of stress and may be more vulnerable to the negative effects of stressors”

(Williams & Jackson, 2005, p. 328).



The **Mississippi Department of Health Central office** (above) is located in downtown Jackson. The MSDH serves the health needs of Mississippi through a system of district and county offices. (Photo provided by MSDH, 2007.)

The **Hinds County Health Department** (below) is located in the Jackson Medical Mall, an ambulatory health care facility dedicated to serving the urban poor of Jackson, Mississippi. The **Jackson Medical Mall** is governed by the non-profit Jackson Medical Mall Foundation, which aims 1) to foster a holistic approach to health care for underserved populations and 2) to promote economic and community development in the surrounding district. The Mall houses commercial services and shops, restaurants, educational institutions, health care services, human service and nonprofit tenants, clinics, University of Mississippi Medical Center Ambulatory Clinics and Offices, City of Jackson Offices, and more. (Photo provided by MSDH, 2003.)



RACE & ETHNICITY

Most racial and ethnic minorities in the US suffer higher rates of morbidity and mortality in comparison to non-minorities. **As of 2003, the greatest mortality rates in regards to cancer, cerebrovascular disease, heart disease, and HIV/AIDS belonged to African Americans. Though the health of Americans in general is improving, the disparity or gap between minority and non-minority health remains, and is actually increasing in many instances** (Institute of Medicine (IOM), 2003).

A variety of theories surround racial (or ethnic) disparities in health. The oldest attribution is biology, or the belief that racial health disparities arise from genetically-inherited propensity towards certain health problems. However, several studies strongly dispute this conclusion. For example, when rates of hypertension and diabetes among West African and African-originating Caribbean populations are compared to rates among African American and Black British populations, widely differing health experiences are revealed. **Only black populations in our western societies experience higher rates of hypertension and diabetes. If heritable factors had major importance, black populations should demonstrate similar health data no matter the location. Such studies imply that racial disparities are not simple matters of biology** (Kawachi, Daniels, & Robinson, 2005).

The most popular explanation for racial disparities is socioeconomic status, i.e. race as simply a proxy for class (Kawachi et al., 2005). Race is an ascriptive characteristic, a feature, like gender, distinguishing an individual from birth. Ascriptive characteristics can deeply inform other characteristics, such as socioeconomic position, income, and place, which in turn influence an individual's health (Kawachi et al., 2002). Thus, "race [can serve as a simple] marker for differential exposure to multiple disease-producing social factors" (Williams & Jackson, 2005, p. 325). **The observation that minority groups are disproportionately found at lower socioeconomic levels with lower incomes supports the concept of race as a proxy for socioeconomics.** Because these groups are disadvantaged in socioeconomics, they will see higher rates of socioeconomic-related health disparities (IOM, 2003; Kaiser Family Foundation (KFF), 2007).

However, the explanation of race disparities as class disparities is somewhat undermined by the finding that, within individual income groups, racial and ethnic disparities often persist, though at a reduced level (KFF, 2007). For example,

"For both males and females at every level of income, blacks have higher coronary heart disease death rates than whites" (Williams & Jackson, 2005, p. 325).

Minorities are also found to receive lower quality health care in comparison to non-minorities even when they possess equivalent insurance, ability to pay, etc., implying differential access to care based solely on race (IOM, 2003). **Finally, it is incorrect and even disingenuous to dismiss racial differences as merely socioeconomic differences when race often informs an individual's inclusion in a particular socioeconomic tier** (Kawachi et al., 2005).

Other proposed contributions to racial and ethnic health disparities include cultural and environmental risk factors, the persistence of residential segregation leading to issues of neighborhood quality, income effects, increased violence, disease, lack of access to medical care, etc. (IOM, 2003; Williams & Jackson, 2005).

Between
1960 and 1996
the **gap**
between
the life
expectancies
of *white*
Americans
versus black
Americans
increased from
6 to 8
years

(IOM, 2003).



“The meaning of place is often shaped by factors such as race and ethnicity, religious and cultural beliefs, history, economics, and politics — conditions that often shape the context within which inequalities can arise”

(Neaves, Feierabend, Butts, & Weiskopf, 2008; Tschirgi, 2001).

GEOGRAPHY

Sharp differences in health can be attributed to place. For example, before 1920, urban mortality far exceeded rural mortality, this phenomena attributed to more aggressive infection patterns in cities as a result of crowding, lack of sanitation, and “rapid turnover of both goods and people” (Hanes, 2001, p. 3). At the turn of the 20th century, white males in rural areas could anticipate living ten years longer than their urban counterparts. However, as science and medicine advanced, this penalty diminished, virtually disappearing by 1940 (Hanes, 2001). **Recently, researchers have identified the emergence of a rural mortality penalty instead. Beginning in the mid-1980s, improvements in death rates began to slow for rural Americans, resulting in a significant and growing disparity in mortality and longevity between rural and urban populations** (Cosby, Neaves, Cossman, R., Cossman, J., James, et al., 2008).

Understanding the connections between socioeconomic status, race and ethnicity, and place is key to understanding health disparities. It is exceedingly important for researchers to not only answer questions of who and where, but to also attempt to answer questions of why them and why there

(Neaves et al., 2008; de Blij & Murphy, 2003; Campbell, 2001; Weeks, 2002).

While it is easy to see place as just geographical delineation, place is truly a proxy for a constellation of influences that include the consequences of history and the broad array of current circumstances that are brought together in a specific location. Place affects health both collectively and contextually. Collective effects are those effects experienced by an individual as a result of living among a large aggregation of individuals with certain common characteristics. Contextual effects result from political, cultural, institutional, ecological, and environmental factors inherent to a place (Kawachi et al., 2002). **The notion of geography as a determinant of health is thus a complicated one, with varied and ambiguous causal factors.**

For example, **one major area of cross-over and confusion is at the intersection of race and place.** Health care utilization and outcomes vary overall according to place; levels of race-disparity also vary according to place. Minority groups “tend to seek care from different hospitals and from different physicians compared to non-Hispanic Whites” (Chandra & Skinner, 2003, p. 2). Also, the size and presence of racial and ethnic populations vary across place, with, for example, higher minority populations in the West and South (KFF, 2007). **Determining whether variation in health outcomes is race- or place-specific thus becomes a challenge:**

“One may falsely diagnose geographical variation as racial disparities, and conversely” (Chandra & Skinner, 2003, p. 3).

Mississippi, ensnared as it is in problems of economy, history, and race, is a perfect example of the quagmire race and place causation can become.

“Region of residence in the United States is statistically related to important measures of child health and may be among the most powerful predictors of child health outcomes and disparities”

(Goldhagen, Remo, Bryant, Wludyka, Dailey, Wood, ...Livingood, p. e752).

Children raised in the states making up the “Deep South” are subject to poorer health than children in other regions.

MISSISSIPPI: A STATE OF HEALTH DISPARITIES

A HISTORICAL PERSPECTIVE

Health disparities in Mississippi reach back to the roots of her history. From the early days of plantations and slavery, through segregation, to the corridors of the modern hospital, unequal access has been a constant struggle. While many of the causes of disparities of the past have been answered with new policies and regulations, the effects of centuries of discrimination continue in disparate health outcomes for blacks and whites. A history of segregation, experimentation, and discrimination in health care continues to cause disproportionate suffering amongst African Americans in Mississippi.

During the era of slavery in Mississippi, one Mississippi physician called for his peers to seek to understand the “peculiarities” of black medicine, due to the significant role blacks played in the development of the South (Rice & Jones, 1994). Perceived differences in the reactions of blacks and whites to medical treatments and perceptions of differences in susceptibility to certain diseases and resistance to others led to the development of literature that touted distinctions between the black and white patient. For example, blacks were believed to be less susceptible to diseases of the field because of their ability to fight malaria, today known to result from higher prevalence of the recessive sickle cell gene. Meanwhile, common medical practices of the day such as leeching were pursued much more aggressively with black patients, further weakening sickened slaves and leading to claims that they were more susceptible to other diseases. These same differences were often used as political fodder, to support the concept of slaves as inferior and to defend their use as field hands, with the argument that they were better suited than whites to work in the fields because of their ‘immunity’.

GREENWOOD LEFLORE HOSPITAL

Greenwood, named for Choctaw chief Greenwood Leflore, is found on the eastern edge of the Mississippi Delta. In the past, Greenwood enjoyed a thriving cotton economy, which faltered after the Civil War but resurged with the arrival of railroads that made the city a major shipping point for cotton once more. With the decline of the cotton economy, Greenwood saw an end to its boom.



Greenwood Leflore Hospital was initially established in a converted house in 1906 (above) by the King’s Daughters’ Society with the help of the City of Greenwood and Leflore County. A new hospital building was built in 1918, again with the help of the city and county, and in 1931, the Society gifted the hospital to the city and county, at which point the hospital’s name changed from King’s Daughters’ to the current Greenwood Leflore Hospital. In 1936, a 30-bed annex was added, but by 1952, GLH moved to a new

In addition to receiving differential care, slaves were often used as subjects for medical experimentation without their consent. Some physicians even purchased slaves for this purpose. The types of experiments conducted on slaves ranged from experiments in heat exhaustion and new medicines to excruciatingly painful surgical techniques. It is reported that one female slave, Anarcha, who was owned by the much lauded “father of American gynecology” Dr. James Marion Sims, underwent more than thirty operations without anesthesia before Sims succeeding in finding a technique that would heal her vesicovaginal fistula. He also experimented on ten other female slaves in the pursuit of this cure. The ethical standards of the day made it unheard of to utilize these techniques on whites, but the status of slaves permitted the use of blacks throughout the South in medical experiments, leading to pervasive mistrust of American doctors within the black community (Washington, 2006).

During this era, a slave’s health care was entirely dependent upon the slave owner’s pursuit of that health care. While slaves did not necessarily receive quality medical care, the economic interests of the slave owner made slave illness a hindrance to his livelihood. As a result, slaves were often seen by the same doctors that saw and treated slave owners and their families, at the expense of the slave owner. By some accounts, slaves actually received better medical care than their free counterparts because of this economic interest (Rice

Health disparities in Mississippi reach back to the roots of her history. From the early days of plantations and slavery through segregation to the corridors of the modern hospital, unequal access has been a constant struggle.



location (center), which is the site of its present facility (right) at 1401 River Road in the heart of Greenwood. Greenwood Leflore Hospital serves Leflore County and surrounding areas of North Central Mississippi. The hospital is the second largest employer in Leflore County. The largest employer in Leflore, the Viking Range Corporation, is one of the few economic success stories of today’s Mississippi Delta region.

Images provided by Greenwood Leflore Hospital.

The legacies of the plantation economy, the Civil War, and economic hardship do not just affect black Mississippians.

The century following the Civil War saw an unequal distribution of wealth that created a small wealthy elite and left the majority of the state in poverty.

& Jones, 1994). However, the need for labor often pushed slaves back into the field before they could heal and the filth and malnourishment that accompanied their living conditions made them more susceptible to disease than their white counterparts. Additionally, **due to mistrust of white doctors and an effort to retain some autonomy over their own bodies, blacks often turned to home remedies and herbal medicine to avoid the white doctors.** Due to slave owners' objections to herbal remedies, slaves often hid illnesses from their owners, seeking white medical attention only when they were completely overcome by illness.

The end of slavery quickly produced the need for a source of medical care for freed slaves. **While the care of blacks had once been the responsibility of slave owners, this care became the responsibility of the state.** In 1865, The Freedmen's Bureau was established with a provision for the establishment of a Medical Division. This division operated hospitals and pharmacies and visited ill freedmen. In Mississippi, the Bureau's network of physicians and attendants served more than 25,000. However, unsanitary conditions in some of these hospitals led to sickness and death for a number of the freedmen they served. With the end of the Freedmen's Bureau in December of 1868, differential access became the norm in Southern health care (Rice & Jones, 1994). Meanwhile, Radical Reconstruction only furthered existing Southern disdain and uneasiness about Northern ideas, and many Southerners believed only physicians trained in the South were capable of dealing with their "peculiar" medical problems. As a result, medical practices for the entire Southern population suffered.

Where blacks were not denied access to care, they were segregated into separate wards. Public hospitals rarely accepted blacks, and some cities even paid private hospitals to do so. Such separation of public facilities was declared constitutional by the famous *Plessy v. Ferguson* Supreme Court case which approved "separate but equal" facilities. Supposedly

Photos courtesy Library of Congress, Circa 1939.



'separate but equal' practices led to the development of disparate numbers of white and black hospitals, medical schools, and beds for white and black patients. Mississippi communities often created separate hospitals to serve the black community. In 1946, the Hill-Burton Act was passed, providing funding for the expansion of medical services across the country. This act contained a separate but equal clause that would further develop the divide between black and white hospitals. However, in 1962 a challenge of this clause made its way to the Supreme Court where it was found to be unconstitutional. The regulations were revised to state that all portions of a facility funded through the Hill-Burton Act would be available to all persons "without discrimination on account of race, creed, or color" (Rice & Jones, 1994). Despite these significant legal changes, **African Americans have continued to experience differential access to health care and often suffer more severely from poor health outcomes** as advancements in the medical system filter to their communities last.

Moreover, **the legacies of slavery and the plantation system led to problems outside of the health care system that also create and/or affect health disparities.** The 20th century saw rampant disenfranchisement and racial oppression of blacks in Mississippi. As a result, the black population of Mississippi has seen severely limited accumulation of capital. In "the early 1990s, nearly two-thirds (64%) of African Americans in Mississippi reported family incomes of less than \$20,000 a year before taxes, compared to less than one-third (31%) of whites," while whites were "more than twice as likely as blacks to report making over \$40,000 per year, and nearly twice as likely to be college graduates" (Shaffer & Neaves, 2008, p. 168). Such disparities in economic resources and education can have massive impacts on health.

It is important to recognize that the legacies of the plantation economy, the Civil War, and economic hardship do not just affect black Mississippians. "The slave holding plantation economy that drove the state's antebellum economy was shattered by the Civil War. In the ensuing years, the state never fashioned an adequate industrial base, continuing to rely overwhelmingly on agriculture. This left vast numbers of people in poverty or near poverty" (Waltman, 2001, p. 24). The century following the Civil War saw a greatly unequal distribution of wealth, with the majority of the state "mired in relatively primitive economic conditions" with the exception of a small wealthy elite. Though today's Mississippi no longer depends on the flawed agricultural system of old, our history still haunts us and no significant economic innovations have developed to ameliorate the ill effects of our past. Our problems of poverty persist, with no facile solutions in sight (Waltman, 2001).



MISSISSIPPI TODAY

In 2008, an average of 13.2% of Americans lived below the poverty line. In contrast, **21% of Mississippians lived in poverty in 2008, giving Mississippians the largest population (by percentage) living below the poverty line in the entire nation** (U.S. Census Bureau, 2006-2008).

Socioeconomic disparities in Mississippi are visible across several other measures, such as those for income and educational attainment. **Mississippians were last in the nation in median income.** While Americans attained a median income of \$52,175 in 2008, **Mississippians only achieved a median income of \$37,404.**

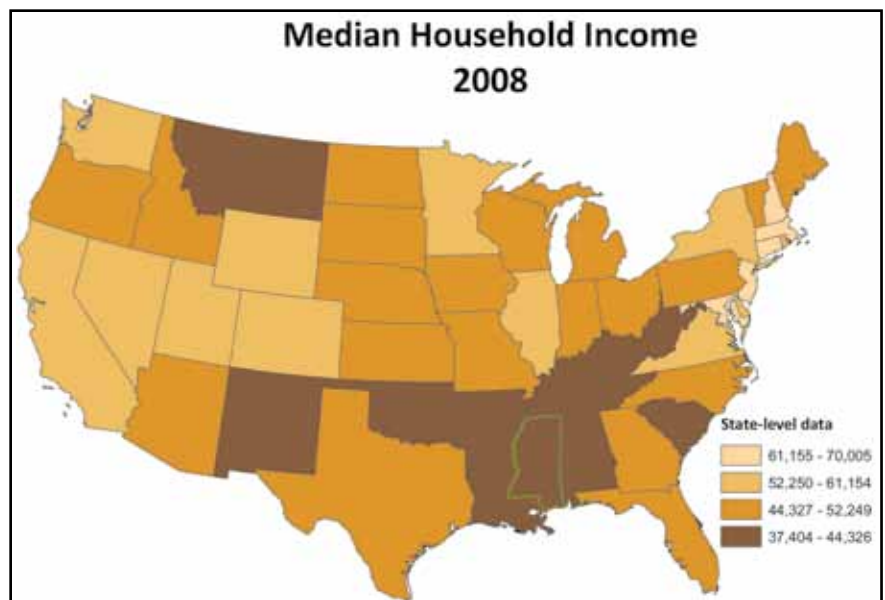
In 2008, 1 in 5 Mississippians lived in poverty.

Median income in Mississippi was \$14,771 below the national average.

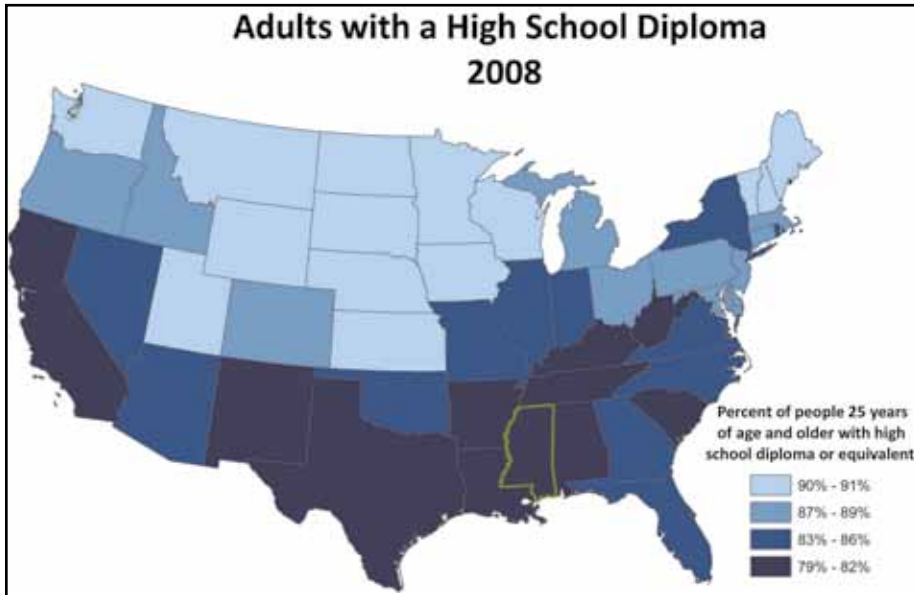


Source: U.S. Census Bureau, American Community Survey (ACS), 2006-2008.

In 2008, Mississippi was **1st in the nation** in poverty and **50th in median income.**



Source: U.S. Census Bureau, ACS, 2006-2008.

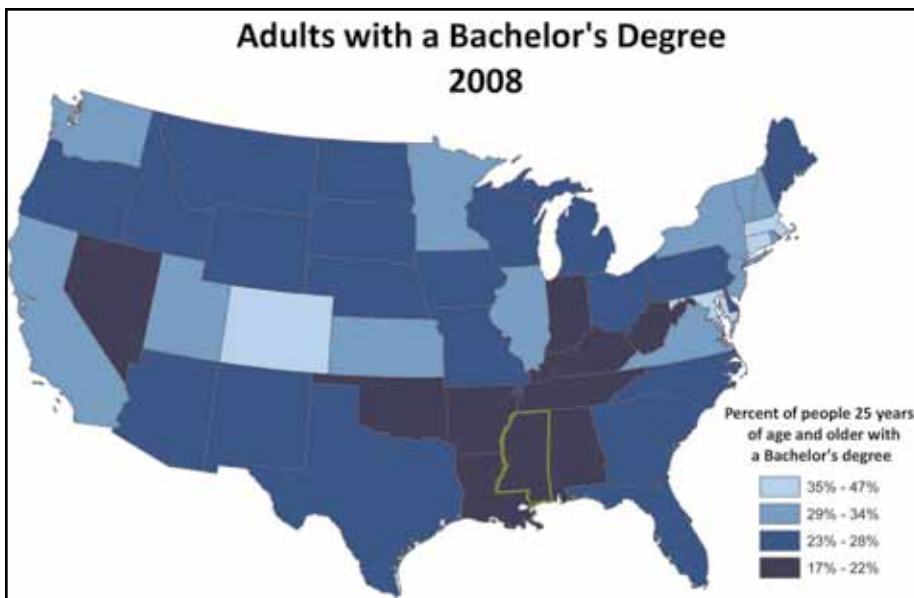


Source: U.S. Census Bureau, ACS, 2006-2008.

Additionally, Mississippi also placed last across the nation in attainment of a high school education and 48th in achievement of college education. **Only 78.8% of adult Mississippians held a high school diploma or higher and only 19% held a bachelor's degree or higher in 2008**, compared to 84.5% and 27.4% of adult Americans, respectively (U.S. Census Bureau, 2006-2008).

Mississippi ranked **50th** in the nation for adults with high school diplomas and **48th** in the nation for adults with college degrees.

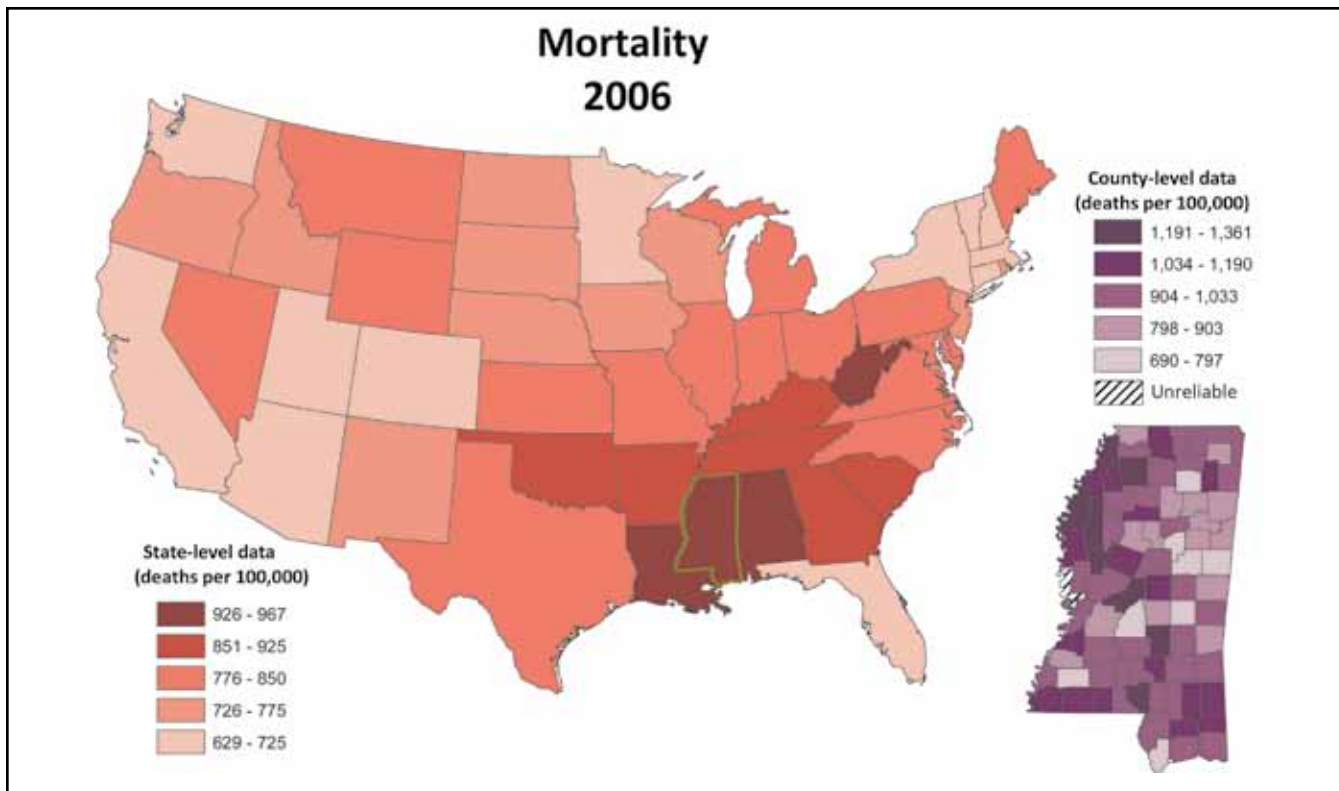
Mississippi's poor status in socioeconomic measures leaves us ripe for the emergence of health disparities, and in fact, Mississippi leads the nation with regards to overall mortality and trails the nation in life expectancy.



Source: U.S. Census Bureau, ACS, 2006-2008.

In 2008, 5.7% fewer adult Mississippians held a high school diploma compared to the nation.

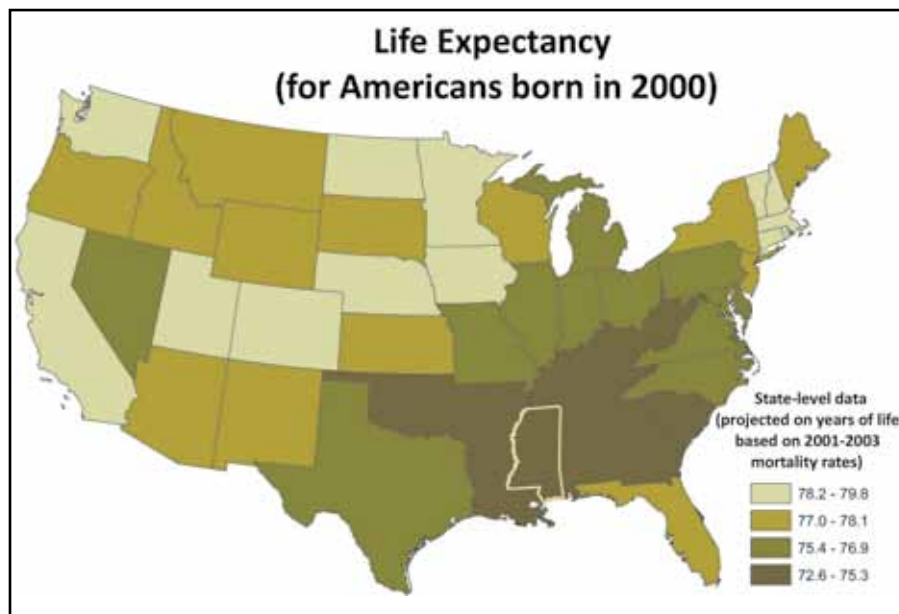
Roughly 2 out of every 3 adult Mississippians without a Bachelor's degree would have received a college education if we had performed like the nation.



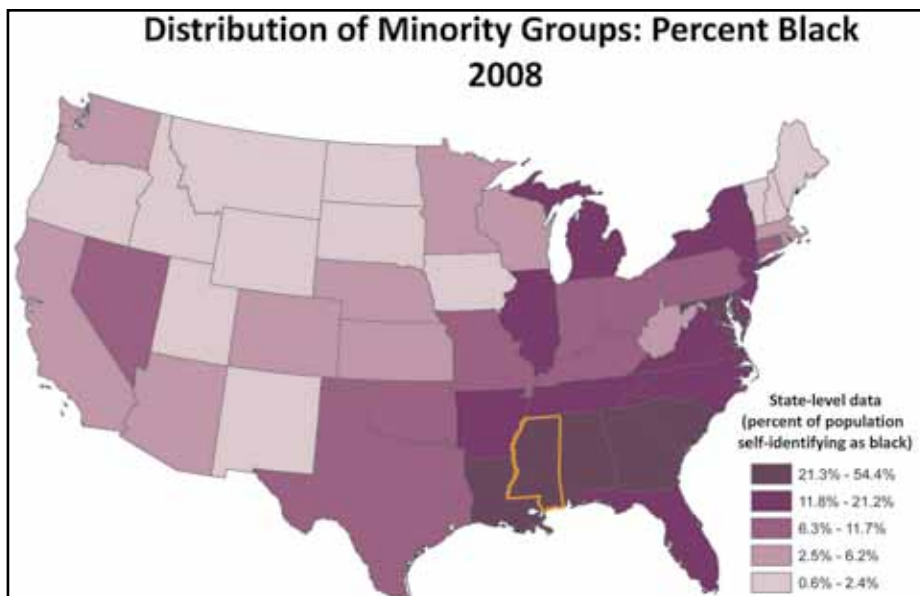
Source: CDC, Compressed Mortality Data, 2009.

In 2006, the nation saw a rate of 777 deaths per 100,000. Mississippi, with the worst rate in the nation, saw 966.8 deaths per 100,000 (CDC, n.d.). On average, those born in the United States in 2000 have a life expectancy of 76.9 years; Mississippians born in 2000 are projected to live to an average of 73.7 years, placing our state last in the nation in life expectancy. Statistically speaking, **by virtue of being born in Mississippi, a child can anticipate 3.2 fewer years of life compared to children across the nation** (U.S. Census Bureau, 2008; U.S. Census Bureau, n.d.).

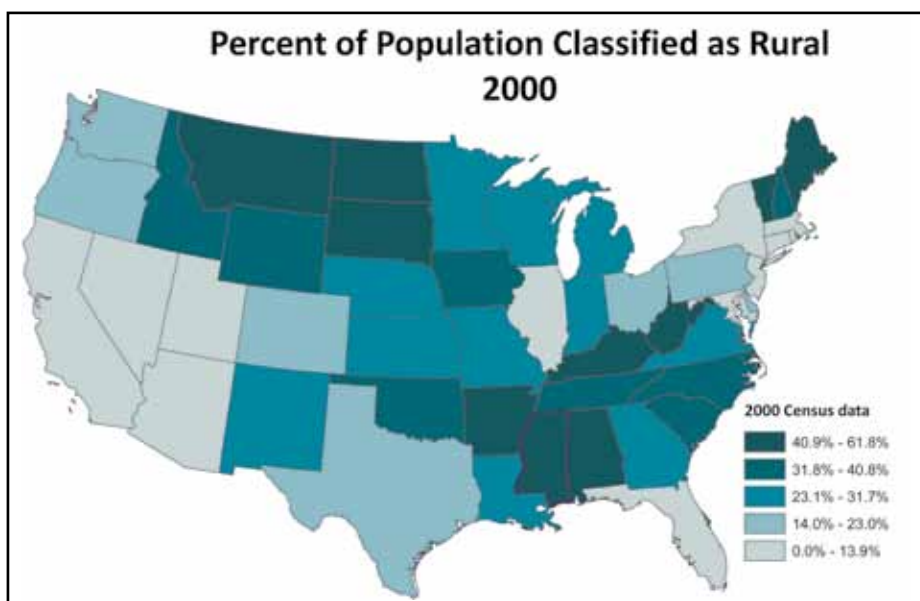
Mississippi was the worst state in the nation for both mortality rates and life expectancy, exceeding the national mortality average by **189.8 deaths** per 100,000 and trailing the average American life span by **3.2 years**.



Source: U.S. Census Bureau, Population Division, Interim State Population Projections, 2005.



Source: U.S. Census Bureau, ACS, 2006-2008.



Source: U.S. Census Bureau, ACS, 2006-2008.

Mississippi is particularly sensitive to the occurrence of health disparities along racial or ethnic divisions. As discussed above, Mississippi has a complex history with regards to race and place. Moreover, strictly from a statistical perspective, issues of racial health disparity hold greater impact for our state because of our demographics. In 2008, 37.1% of the Mississippi population self-identified as black, conferring on Mississippi the largest population (by percentage) of black Americans in the nation. In comparison, black Americans make up only 12.3% of the nation as a whole (U.S. Census Bureau, 2006-2008).

Finally, Mississippi is vulnerable to occurrence of health disparities due to geography. Compared to an

8% rise in the US population from 2000 to 2008, population growth was very low in Mississippi, rising by only 3.3% (U.S. Census Bureau, 2008). These low rates of population growth in Mississippi reflect heavy out-migration, low immigration, and, arguably, shorter life expectancy compared to the rest of the country (Waltman, 2001). In 2008, Mississippi's 46,907 square miles were home to only 2.9 million people in 2008, translating to a ratio of 61.82 persons per square mile (U.S. Census Bureau, 2008). As health care improves, access to good medical care has increasing impact on a population's health. As discussed above, health penalties are growing for persons living in rural versus urban settings. In 2000, 51.2% of the Mississippi population was rural, compared to 21% of the US population as a whole (U.S. Census Bureau, n.d.).



CONCEPTS:

THE CANARY IN THE COAL MINE

The canary in the coal mine is a harbinger of danger. Before the advent of technology capable of detecting lethal gases, canaries, which die from exposure to very small amounts of toxic gas, were kept in cages inside of coal mines. So long as the canary chirped and sang, miners knew the air was safe to breathe. When the canary exhibited signs of distress, the miners knew they were at risk. The canary in the coal mine as a metaphor warns that what the canary suffers, soon so will the rest of us. Ignoring the canary's fate imperils oneself.

Mississippi, delicately balanced over a legacy of racial tensions and poverty and stressed by contemporary problems of socioeconomics and infrastructure, often serves as a canary in the coal mine for the United States.

For example, in 1991, for the first time, certain states saw their population's rate of obesity rise above 15%. Mississippi (along with Louisiana) led this group of 4 states with an obesity rate of 15.7% (Mokdad, 1999). Today, obesity is an epidemic plaguing the entire nation.



Mississippi's racial demographics alone often make our state the stage on which national problems of racial disparity are first noted. Similarly, disparities affecting lower socioeconomic tiers and rural populations are more rapidly visible in our state.

THIS STUDY

NATIONAL EFFORTS INFORMING OUR REPORT

During the 1980s, awareness and concern about health disparities, especially among minority groups, began to rise. It was clear that the continued improvement of the health of the nation would require a new agenda that included the improvement and elimination of health disparities. In 1985, the Secretary of the Department of Health and Human Services (DHHS) issued a landmark document entitled, "Perspectives in Disease Prevention and Health Promotion Report of the Secretary's Task Force on Black and Minority Health," bringing to light the problems of racial and ethnic health disparities in the United States. The Office of Minority Health (OMH) at the Department of Health and Human Services was established in response to this report, as was an Office at the CDC, which eventually became the Office of Minority Health and Health Disparities (OMHD).

The OHMHD has become a national force, providing leadership and coordination of efforts to eliminate disparities in our nation’s health. The scope of the Office has expanded over time and now includes “health disparities experienced by populations defined by race/ethnicity” as well as “[by] socioeconomic status, geography, gender, age, disability status, and risk status related to sex and gender” (OMHD, 2009, History of the Office, para. 4).

Currently, the OMHD outlines six priority areas “in which racial and ethnic minorities experience serious disparities in health access and outcomes” as well as four additional areas of disproportionate impact on racial/ethnic minorities (OMHD, 2009b, Eliminating racial & ethnic health disparities, para. 5). These ten areas of disparity are:

Infant Mortality (1 of 6 priority areas)
Cancer Screening and Management (priority area)
Cardiovascular Disease (priority area)
Diabetes (priority area)
HIV Infection/AIDS (priority area)
Immunizations (priority area)
Mental Health (1 of 4 areas of disproportionate impact)
Hepatitis (disproportionate impact)
Syphilis (disproportionate impact)
Tuberculosis (disproportionate impact)

Ten Areas of Disparity

In developing the organization and content of *What If We Were Equal? A Mississippi Health Assessment*, we have relied heavily on the priorities identified by OMHD for the structure of our chapters and the selection of data sources.

The second guiding force for our report is *Healthy People 2010*. *Healthy People 2010* comprises our national health objectives from which federal, state, and community health policies and focuses may be derived. The 2010 report expands on the goals and successes of two previous reports – *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*, and its predecessor, the 1979 Surgeon General’s Report titled *Healthy People* (DHHS, n.d.a).

The various components of *Healthy People 2010* inform two overarching goals: 1) to **increase the quality and years of healthy life** of the population as a whole and 2) to **eliminate health disparities** that occur between different groups within the population. In pursuit of these goals, *Healthy People 2010* identifies 28 Focus Areas for “disease prevention and health promotion” (DHHS, n.d.b).

WHO WE ARE

In September 2006, the **Mississippi Institute for the Improvement of Geographic Minority Health (MIIGMH)** was established through a competitive grant awarded by the Health and Human Services' Office of Minority Health Research. The goals of the organization include improving awareness of health care issues among minorities and disadvantaged people dwelling in rural areas as well as increasing access to health care for these populations. MIIGMH also focuses on increasing the number of health care providers who attend to minority populations, improving health outcomes for these groups, and developing a model for health disparities elimination that is effective and replicable across the nation.

The Institute has a core strategy of developing partnerships with a broad array of organizations in Mississippi that are involved with health and health-related aspects of the state. One of these organizations is the **Social Science Research Center (SSRC) at Mississippi State University**. The partnership between the SSRC and MIIGMH resulted in a goal to jointly produce reports and other resources that would provide an information infrastructure that assists the Institute's goal of improving geographic minority health. This report was developed as part of this joint venture.

It is our ambition that the information provided in *What If We Were Equal? A Mississippi Health Assessment* will be utilized by the various partners of the Institute to help establish Institute priorities, develop specific programs, and encourage the explicit inclusion of a geographic and minority perspective in state and local health planning and policy. In addition it may inform decisions about health care delivery by public and private health providers.



The Social Science Research Center (SSRC) at Mississippi State University, officially established in 1950, operates as a university-level, multi-disciplinary research unit, organized with university-wide responsibilities under the supervision of the vice presidents for research and graduate studies and of agriculture, forestry and veterinary medicine. The Center offers a superior research environment with an impressive array of research opportunities and options, state-of-the-art facilities, laboratories, and support units that enhance and expand both the scope and quality of social science research. The SSRC fosters a rigorous and independent research environment to ensure objective, relevant, and unbiased analyses. The Center receives support from both internal and external sources, but the majority of its research is supported by outside funding. Examples of past and present funding agencies include NASA, the USDA, the National Institute of Child Health and Human Development, the Mississippi State Department of Health, the Mississippi Department of Transportation, and the Annie E. Casey Foundation. The Center also collaborates with international entities, major examples being an ongoing partnership with the University of Catania, Italy, and ongoing exchanges with Croatian and Mexican universities. (Photo provided by the Social Science Research Center at Mississippi State University.)

STUDY FOCUS

This report examines the major areas of health disparity experienced by racial/ethnic minorities, as identified by the Office of Minority Health and Health Disparity, comparing the status of Mississippians in these areas to the status of Americans in general. Typically, we have measured these areas of disparity using Healthy People 2010 indicators.

To cultivate a slightly more coherent narrative within this report, as well as to broaden its scope somewhat, we have reordered the ten OMHD priority areas into five categories, which are as follows:

Child Health

This section investigates **Infant Mortality**, one of the six OMHD focus areas, along with **Low Birth Weight** and **Preterm Births**. We also look at **Childhood Immunizations** (part of the OMHD focus area of Immunizations) and **Disease Incidence**. Finally, we look at the growing epidemic of **Childhood Obesity**, as well as rates of **Physical Activity** amongst adolescents.

Obesity, Cardiovascular Disease, and Diabetes

This section investigates **Obesity** and two of the six OMHD focus areas, **Heart Disease and Stroke** (representing the OMHD focus area of Cardiovascular Disease) and **Diabetes**. In addition, we look at several **Risk Factors**.

Cancer

This section encompasses the OMHD focus area of Cancer Screening and Management. Specifically, the section will investigate **General Cancer Rates, Lung Cancer, Oropharyngeal Cancer, Breast and Cervical Cancer Screening, Prostate Cancer, and Colorectal Cancer**.

Additional Areas of Disparity

This section investigates **Suicide** (as part of the OMHD priority area of Mental Health), the OMHD priority areas of **HIV Infection/AIDS, Syphilis, Hepatitis, and Tuberculosis**. In addition, we will examine **Unintentional Injury Mortality** and **Homicide**.

Access to Care

This chapter will discuss factors that influence the ability to obtain medical care and health services. Areas examined will include **Adult Immunization** (an OMHD focus area), **Pneumonia Mortality, Insurance, Usual Primary Care Providers**, and other factors surrounding **Access to Care**.

METRIC FOR MEASURING DISPARITY

The study of inequalities in health outcomes and access to quality health care has been approached from a wide variety of perspectives. **This report seeks to identify and understand inequalities in Mississippi, using two specific areas of disparity – geographic and racial.** (Note that these two areas do not encompass the full scope of inequality in Mississippi. For example, analysis by socioeconomic status is one major concept left out of this report, due to space constraints. Differences in socioeconomic status tend to exacerbate racial and geographic inequalities.)

In examining geographic disparities, this study compares overall rates of mortality, screening, and behavior incidence in Mississippi to those for the nation and then examines the progress of both groups toward the Healthy People 2010 goal.

In looking at racial-geographic disparities, this study only examines black and white populations due to the low numbers of other groups in Mississippi. While Hispanic populations are growing in Mississippi, and across the nation, in most instances the available data for Hispanic and other populations in Mississippi is still unreliably small, especially for survey-based indicators (such as the Behavioral Risk Factor Surveillance System (BRFSS), the Mississippi Healthy Survey (MHS), and the Youth Risk Behavior Surveillance System (YRBSS)).

To understand the racial disparities between achievement in Mississippi and achievement at the national level we compare white and black Mississippians to whites across the United States. While not the highest achievers in every single instance, white national averages indicate the rates achieved by the majority of Americans and therefore what should be possible for all. Hence, to answer our driving question, “What if we were equal?”, we detail how Mississippians, both black and white, would perform if they were equal to whites in (or the majority of) the US. Using a national average would not be as effective a measure of what the majority achieves, because racial and ethnic disparities exist across the country and would be reflected in national averages. Setting the national average as the goal would thus underestimate what our population is truly capable of attaining. Because we use this method of comparison, it is important to keep in mind, however, that racial differences displayed at the state level also often exist across the country. For example, in the case of infant mortality, our report will show the reader how far black Mississippi infants fall behind white infants across the nation. What you will not see, however, is how blacks all across the United States experience infant mortality at higher rates than whites. While such information is important, it does not speak to our central question, and is thus not addressed herein.

DATA

In order to comprehensively assess the state of health in Mississippi, a broad set of data were utilized. These data fall into a few distinct categories: mortality data, incidence data, and survey-based data. Mortality data and incidence data are the most straightforward forms of data utilized in this report.

The Centers for Disease Control and Prevention (CDC) maintain national mortality records with detailed information on primary and secondary causes of death, providing a comprehensive set of mortality data for both the national and local level (Compressed Mortality File (CMF), CDC Wonder). Mortality rates for disease are calculated per 100,000 deaths and are age-adjusted to the 2000 US standard population. It is important to note, that so called ‘total’ US and MS mortality data in our report actually only include black and white data. (The exception to this rule is CMF map data, where totals include all races.) CDC Wonder also provides extensive data on infant birth and death. Infant birth and mortality records are calculated using CDC Wonder and rates are stated per 1,000 live births.

Incidence reports, like mortality data are very straightforward. The CDC tracks incidence of reportable diseases, as it is reported by individual states. Many states vary in the diseases that are reported. However, this data is taken from the National Notifiable Diseases Surveillance System, and is reported in accordance with national standards for disease reporting. Natality and immunization data also originate from the CDC.

While mortality and incidence data allow an understanding of the diseases affecting a population, survey-based data allows researchers to capture lifestyle differences and more subtle indicators of health inequalities. This study relies heavily on the national Behavioral Risk Factor Surveillance System (BRFSS), which measures a wide variety of indicators from physical activity to health care access and screening frequencies. This data is collected at the state level and aggregate information is available for the nation as well. We have weighted this survey data to ensure proper representation of the population.

In addition to BRFSS, this study uses survey data from the Mississippi Health Survey, conducted by the Social Science Research Center at Mississippi State University. While this data only addresses Mississippians, it provides a unique glimpse of health access not captured in many national level surveys. The data from the Mississippi Health Survey were weighted to be representative of the state population using US census population estimates.

Finally, this study utilizes the Youth Risk Behavior Surveillance System (YRBSS) to assess difference in adolescent behavior and health. YRBSS data is collected at the state level and aggregated for the national

level through a process similar to BRFSS data. This data is more limited due to the limitations of surveying children, but provides a glimpse into the health of the children of Mississippi and the US and what the country can expect in the coming years.

In addition to the collection of data from a wide variety of sources, extensive review of relevant literature was conducted, providing additional insight into the health of Mississippians. A wealth of information was collected from sources such as the Mississippi Department of Health, KIDS COUNT, the National Cancer Institute, and the National Institutes of Health (NIH), and these sources were vital in providing information required to create context for the vast amount of statistical data addressed in this manuscript.

REFERENCES

- Campbell, J. (2001). *Map use and analysis*. New York, NY: McGraw Hill.
- Centers for Disease Control and Prevention (CDC), National Center for Health Statistics. (n. d.). *Compressed Mortality File 1999-2006*. CDC WONDER On-line Database, compiled from Compressed Mortality File 1999-2006 Series 20 No. 2L, 2009. Accessed on February 2, 2010, from <http://wonder.cdc.gov/cmfi-icd10.html>
- Chandra, A., & Skinner, J. (2003). Geography and racial health disparities (NBER Working Paper 9513). *National Bureau of Economic Research*. Retrieved from <http://ideas.repec.org/p/nbr/nberwo/9513.html>
- Cosby, A. G., Neaves, T. T., Cossman, R. E., Cossman, J. S., James, W. L., Feierabend, N., Mirvis, D. M., Jones, C. A. & Farrigan, T. (2008, August). Preliminary evidence for an emerging nonmetropolitan mortality penalty in the United States. *American Journal of Public Health, 98*(8), 1470-1472. doi 10.2105/AJPH.2007.123778
- deBlij, H. J., & Murphy, A. B. (2003). *Human geography: Culture, society, and space, 7th edition*. New York: John Wiley.
- Goldhagen, J., Remo, R., Bryant, T., Wludyka, P., Dailey, A., Wood, D., . . . Livingood, W. (2005). The health status of Southern children: A neglected regional disparity. *Pediatrics, 116*(6), e746-e753. doi: 10.1542/peds.2005-0366
- Hanes, M. R. (2001). *The urban mortality transition in the United States, 1800-1940*. NBER Historical Working Papers 0134, National Bureau of Economic Research, Inc. Retrieved from <http://www.nber.org/papers/h0134.pdf>
- Health Resources and Services Administration (HRSA), U.S. Department of Health and Human Services. (n.d.). *Homepage*. Retrieved from <http://www.hrsa.gov/>
- Institute of Medicine (IOM). (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care*. In Smedley, B. D., Stith, A. Y., & Nelson, A. R. (Eds.). Washington, D. C. : The National Academies Press. Retrieved from <http://www.nap.edu/openbook.php?isbn=030908265X>
- Kaiser Family Foundation (KFF). (2007, February 2). *Key facts: Race, ethnicity, and medical care, 2007 update*. Retrieved from <http://www.kff.org/minorityhealth/6069.cfm>

- Kawachi, I., Subramanian, S. V., & Almeida-Filho, N. (2002). A glossary of health inequalities. *Journal of Epidemiol Community Health, 56*(9), 647-652. doi:10.1136/jech.56.9.647
- Kawachi, I., Daniels, N., & Robinson, D. E. (2005). Health disparities by race and class: Why both matter. *Health Affairs, 24*(2), 343-352. Retrieved from <http://content.healthaffairs.org/cgi/content/abstract/23/2/343>
- Khmelkov, V. T., & Hallinan, M. T. (2002). Organizational effects on race relations in schools. *Journal of Social Sciences, 55* (4), 627-645. doi 10.1111/0022-4537.00139
- LeClere, F. B., & Soobader, M. J. (2000). The effect of income inequality on the health of selected US demographic groups. *American Journal of Public Health, 90* (12), 1892-1896.
- Mokdad, A. H., Serdula, M. K., Dietz, W. H., & Bowman, B. A., Marks, J. S., & Koplan, J. P. (1999). The spread of the obesity epidemic in the United States, 1991-1998. *Journal of the American Medical Association, 282*(16), 1519-1522.
- National Institutes of Health (NIH), National Center on Minority Health and Health Disparities, (2008). *NIH summit: The science of eliminating health disparities. December 16-18, 2008*. Retrieved from <http://www.blsm meetings.net/2008healthdisparitiessummit/purpose.cfm>
- Neaves, T. T., Feierabend, N., Butts, C. C., & Weiskopf, W. L. (2008). A portrait of the Delta: Enduring hope and enduring despair. *Journal of Health Human Services Administration, 31*(1), 10-29.
- Office of Minority Health & Health Disparities (OMHD), Centers for Disease Control and Prevention (CDC). (2009a). *Disease burden & risk factors*. Retrieved from <http://cdc.gov/omhd/AMH/dbrf.htm>
- Office of Minority Health & Health Disparities (OMHD), Centers for Disease Control and Prevention (CDC). (2009b). *About OMHD*. Retrieved from <http://www.cdc.gov/omhd/About/about.htm>
- Pearce, N., & Smith, G. D. (2003). Is social capital the key of inequalities in health? *American Journal of Public Health, 93*, 122-129.
- Rice, M. F., & Jones, W. (1994). *Public policy and the black hospital: From slavery to segregation to integration*. Westport, CT: Greenwood Press.
- Shaffer, S. D. & Thornton-Neaves, T. (2008). The changing role of African Americans and women in the New South state of Mississippi. In Shields, T. G, & Davis, S. G (Eds.), *New Voices in the Old South: How women and minorities influence southern politics*. Ft. Myers, FL: Florida Institute of Government.
- Tschirgi, N. (2003). Peacebuilding as the link between security and development: Is the window of opportunity closing? *International Peace Academy Studies in Security and Development*. Retrieved from http://www.un.org/esa/peacebuilding/Library/Peacebuilding_as_link_IPA.pdf
- U.S. Census Bureau, Population Division, Interim State Population Projections. (2005, April 21). *Average life expectancy at birth by state for 2000 and ratio of estimates and projections of deaths: 2001 to 2003. Table 2*. Retrieved from <http://www.census.gov/population/projections/MethTab2.xls>
- U.S. Census Bureau. (2008, August). National Population Projections. *Expectation of life at birth and projections, Table 102*. Retrieved from <http://www.census.gov/population/www/projections/2008projections.html>

- U.S. Census Bureau. (2006-2008). 2006-2008 *American Community Survey (ACS)*. (2006-2008). [Data file]. Accessed from <http://www.census.gov/acs/www/>
- U. S. Department of Health and Human Services (DHHS), Office of Prevention and Health Promotion. (n.d.a). *What is Healthy People?* Retrieved from <http://www.healthypeople.gov/about/whatis.htm>
- U. S. Department of Health and Human Services (DHHS), Office of Prevention and Health Promotion. (n.d.b). *What are its goals?* Retrieved from <http://www.healthypeople.gov/About/goals.htm>
- U.S. Census Bureau: State and County Quick Facts, Population Estimates, Census of Population and Housing. (n.d.). *Small area income and poverty estimates. State and county housing unit estimates.* Retrieved from <http://quickfacts.census.gov>
- Waltman, G. (2001). The environment of politics: Mississippi's geography, demography, economy. *Politics in Mississippi* (2nd ed.). Salem, Wisconsin: Sheffield Publishing Company.
- Washington, H. A. (2006). *Medical apartheid: The dark history of medical experimentation on Black Americans from colonial times to the present.* New York: Doubleday.
- Weeks, J. R. (2002). *Population: An introduction to concepts and issues.* Belmont, CA: Thomson Learning.
- Williams, D. R., & Jackson, P. B. (2005). Social sources of racial disparities in health. *Health Affairs* 24(2), 325-334.