

**Data Book 2: Hispanics**  
**Minority Health Disparities in Missouri**



The Missouri Foundation for Health (MFH) was created in January 2000 as part of a negotiated agreement among Blue Cross/Blue Shield of Missouri (BCBSM), the Missouri Department of Insurance and the Missouri Attorney General following the for-profit conversion of BCBSM. The Foundation received a significant portion of the assets of RightChoice, the for-profit created by the conversion. MFH is dedicated to improving the health of the people in the BCBSM service area, which encompasses 84 Missouri counties and the City of St. Louis.

In support of its mission, MFH undertakes policy studies on topics of significance to the Foundation service area and beyond. MFH has created the Show Me Series and other publications to convey information about current health related issues of interest to a broad audience ranging from members of the general public to policymakers.

## PREFACE

In an effort to document health disparities among ethnic and racial groups, the Missouri Foundation for Health (MFH) engaged the Center for Health Information Management and Evaluation (CHIME) at the Missouri Department of Health and Senior Services to assemble data on Missouri’s Hispanic population. Although this population has grown significantly in the past 10 years, Hispanics still constitute a relatively small percentage of Missouri’s overall residents. Therefore, collecting health data for the Hispanic population has been difficult due to a relatively low number of incidents for many health indicators used by CHIME. This publication presents the first health indicator data for Missouri’s Hispanic residents and compares those data to both whites and African Americans in Missouri.

MFH provides this information with three intentions; first, to create a baseline of data for Hispanic health indicators in Missouri; second, to encourage continued and expanded collection and analysis of health status data for this population; and third, to provide a jumping off point for programs seeking to reduce health disparities.

Published in the fall of 2004, a companion publication *Data Book 1: African Americans: Minority Health Disparities in Missouri* may also be of interest. We hope these documents will expand your understanding of health disparities in our state and will provide a sound basis for developing programs to improve the overall health status of Missouri residents.

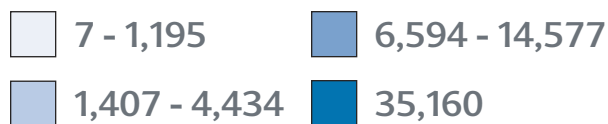
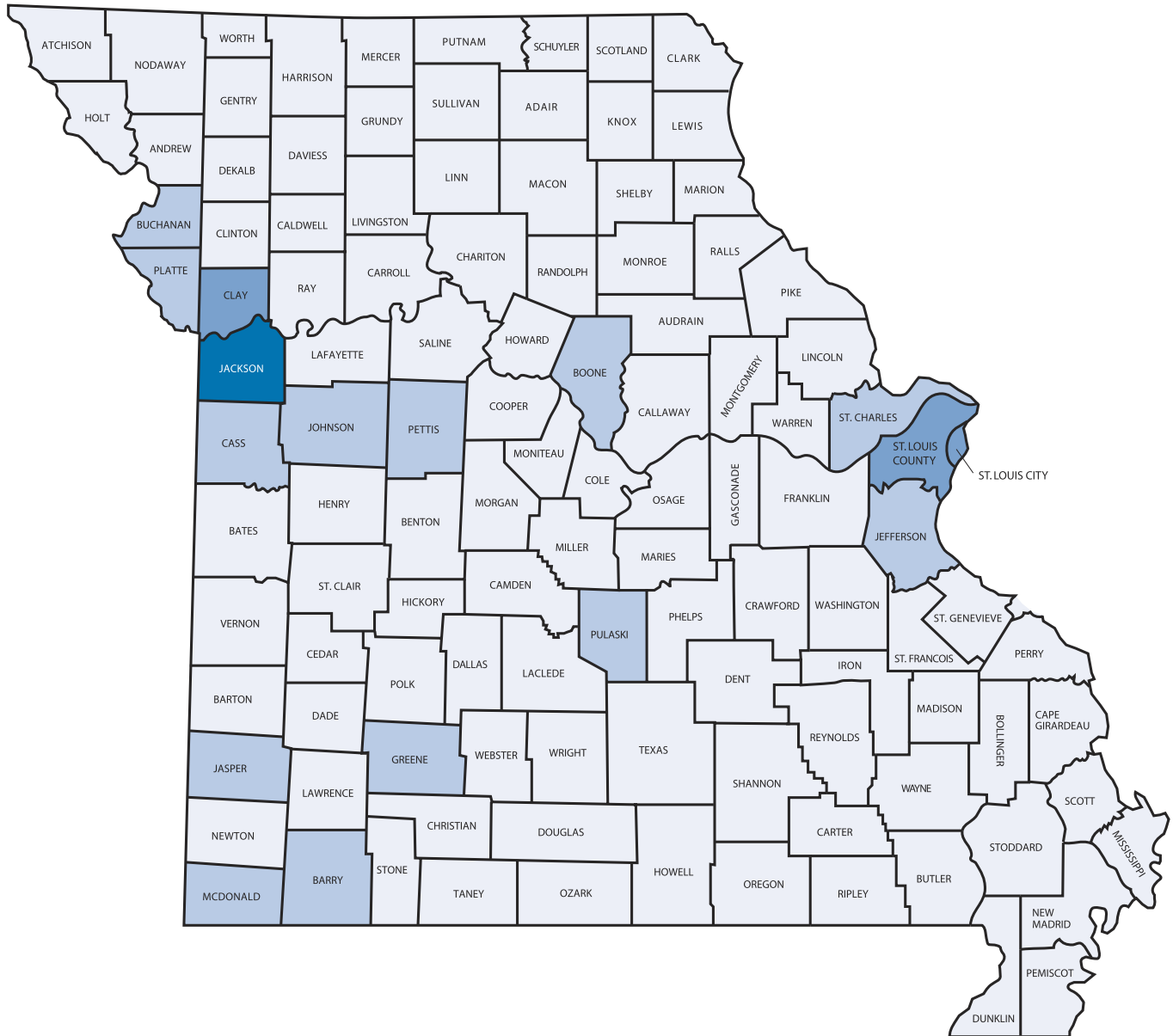
Leslie Reed  
 Vice President for Health Policy  
 Missouri Foundation for Health

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# HISPANIC POPULATION COUNTS IN MISSOURI BY COUNTY\*



\* 2000 Census

## Data Book 2: Hispanics

# Minority Health Disparities in Missouri

Because of the relatively recent addition of ethnicity to many data systems, less is known about Hispanic health, both in Missouri and nationally. Despite the large increase in the Missouri Hispanic population during the 1990s, Hispanics still make up a small proportion (2.1 percent) of Missouri's total population. This results in small numbers for many health events and precludes the calculation of meaningful rates for some indicators. Due to these factors, this report lacks some of the indicators that were included in *Data Book 1: African Americans: Minority Health Disparities in Missouri* published in the fall of 2004 by the Missouri Foundation for Health.

The term 'Hispanic' encompasses a diverse group of peoples who have been variously defined as 'Spanish-Americans,' 'Spanish-surnamed Americans,' or 'Spanish-speaking Americans.' However, not all Hispanics speak Spanish nor come from Spain, and there are non-Hispanics who have Spanish surnames.<sup>1</sup> As defined by the census, Hispanic refers to those who identify themselves as Mexican, Mexican American, Chicano, Puerto Rican, Cuban or those who indicate origins in Spain, Spanish speaking countries of Central or South America, or the Dominican Republic.<sup>2</sup> Though often included as a racial grouping in data systems, Hispanic is more properly an ethnic group, which indicates the sharing of a nationality, language, religious faith, or culture.<sup>3</sup>

During the past 13 years, Missouri has seen a large increase in the Hispanic population of the state. From 1990 to 2000 the Missouri Hispanic population grew from 61,702 to 118,592, an increase of 92 percent.<sup>4</sup> In the three years following the 2000 Census, it is estimated that the number of Hispanics residing in the state has increased an additional 44 percent.<sup>5</sup> Much of the increase has been attributed to demand for labor in the rural counties, particularly in Missouri's meat processing plants. On average, the Hispanic populations more than quadrupled in the counties of Barry, McDonald, Lawrence, Newton, Jasper, Dunklin, Pettis, Moniteau, Saline, and Sullivan during the 1990s. In Taney County, the Hispanic population increased by almost 400 percent during the 1990s due to tremendous employment growth in the entertainment industry.<sup>4</sup> This rapid influx of people with a different

**Data From:**  
**Missouri Department of**  
**Health and Senior Services,**  
**Center for Health**  
**Information Management**  
**and Evaluation**

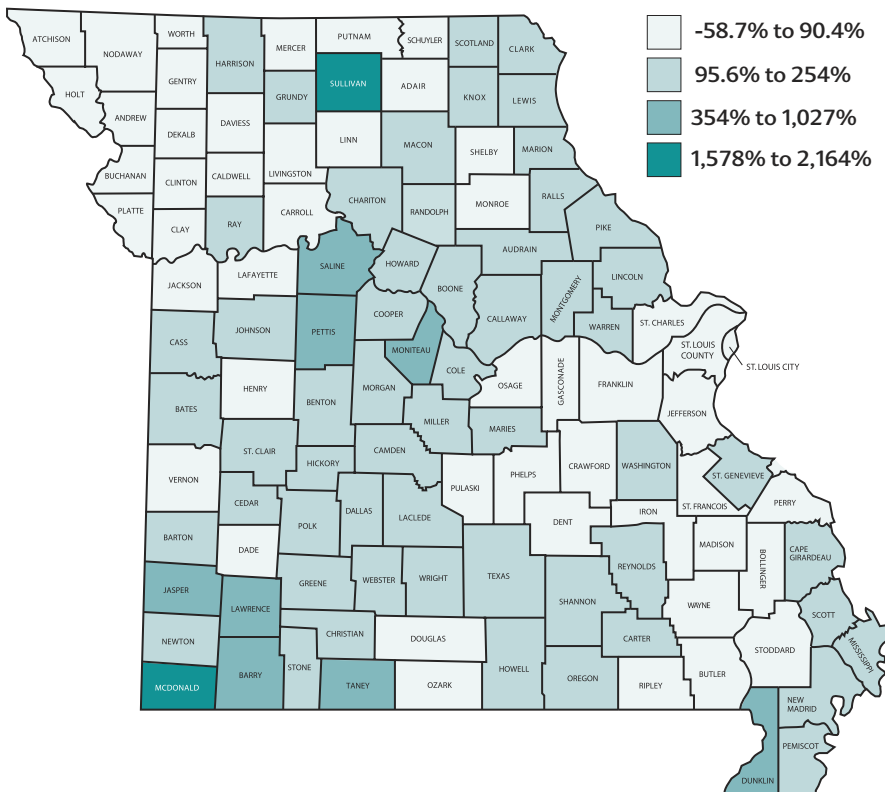
# MINORITY HEALTH DISPARITIES IN MISSOURI

language and culture has strained the ability of health care institutions and resources in these communities to appropriately meet the needs of the Hispanic population.<sup>6</sup>

The significant growth rate in the Missouri Hispanic population from 1990-2000 contrasts with Missouri's non-Hispanic population which posted an increase of only 8.4 percent over the same time span. Therefore, Missouri's Hispanic population increased at a rate over 10 times higher than for non-Hispanic persons. Comparison of the population pyramids (page 3) indicates what portions of the Hispanic population had the most growth. Within the Hispanic population, the largest population increases were seen among young adults (20- to 24-year-old males had the single largest increase) and young children under 5. Older Hispanic age groups did not increase by as much; consequently, their percent relative to the total Hispanic population decreased during the 10 years. Because the largest increases were centered in the younger age groups, Missouri's Hispanic population grew appreciably younger over the 10-year period.<sup>7</sup> In 2000, Hispanics

under the age of 25 made up 48 percent of the Hispanic population. This is a much higher rate compared with the total state population, where only 35 percent is under age 25. The median age for Hispanics is 24.5 while the median age for the entire state population is 36.1.

**Percent Change: Hispanic Population 1990-2000**



When comparing Missouri Hispanics to the much larger population of Missouri African Americans, Hispanics are more dispersed geographically throughout the state. In 2000, only 12 counties in Missouri had fewer than 50 Hispanic individuals, while 40 counties had fewer than 50 African Americans.<sup>8</sup> Missouri Hispanics also tend to be concentrated in the urban areas. In 2000,

30 percent of all Hispanic Missourians lived in Jackson County, 13 percent in St Louis County, and 6 percent in St Louis City. An additional 20 percent of all Missouri Hispanics resided in Greene, St. Charles, Jasper, Boone, Platte, and Clay counties combined.<sup>9</sup>

While 52 percent of Missouri Hispanics reported themselves to be white in the 2000 Census, another 34 percent identified themselves as some other race.<sup>10</sup> Sixty-six percent identified themselves as Mexican,<sup>11</sup> and two-thirds of these said they were born in the United States.<sup>12</sup>

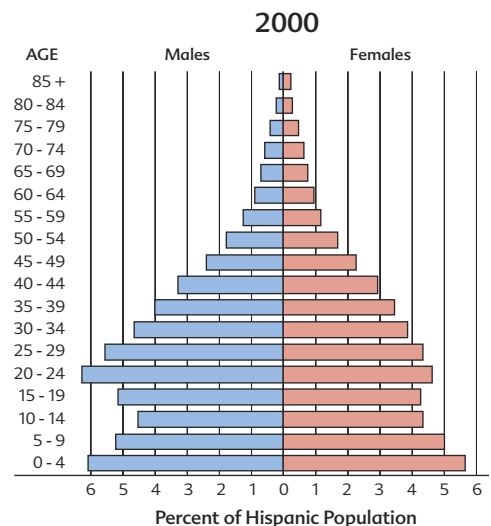
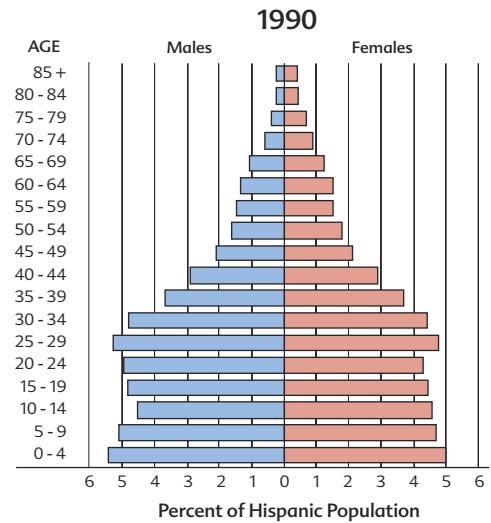
According to the 2000 Census, Missouri Hispanics are less likely to have high school diplomas than either whites or African Americans. They are also less likely than either group to report working in occupations classified as managers, professionals, or technicians. Additionally, lower proportions of Hispanics have health insurance compared to non-Hispanics. The median income for Hispanics is higher than that of African Americans but lower than that of whites. Given that lower socio-economic status and lack of insurance are often associated with poorer health status, one would expect Hispanics to have poorer health outcomes than whites. This is the case for some of the indicators in this report, but not all.

Nationally, Hispanics have higher rates of work-related injuries, diabetes, and kidney disease relative to whites. They are more likely to report violence perpetrated by strangers, and their young adults have high rates of homicide and early alcohol use. Hispanics report higher rates of inactivity and obesity. On the other hand, they have lower rates of smoking and are less likely to report current regular alcohol use or gun ownership relative to whites.<sup>13</sup>

Only some of these national patterns are reflected in Missouri data. According to the 2003 Behavioral Risk Factor Surveillance Survey (BRFSS), Missouri Hispanics reported lower rates of daily smoking, similar rates of physical activity, and lower rates of binge drinking compared to whites.<sup>14</sup> As this report shows, Missouri Hispanics have higher death rates due to homicide, diabetes, HIV/AIDS, chronic liver disease/cirrhosis, and septicemia as well as higher rates of emergency room visits for hypertension compared to whites. They also have higher rates of poor maternal health indicators and higher infant death rates.

## MINORITY HEALTH DISPARITIES IN MISSOURI

Age-Gender Distribution of Missouri Hispanic Population



## MINORITY HEALTH DISPARITIES IN MISSOURI

At this time, the Hispanic health data presented in this book will not be available on the Department of Health and Senior Services (DHSS) Community Data Profiles Web site. The size of the Hispanic population in Missouri limits the calculation of meaningful rates for a number of indicators on a state level, and for the majority of indicators on a county level. In addition, health data relating to the Hispanic population was not collected until relatively recently. As the Hispanic population in Missouri continues to grow, and as data continue to accumulate, it may be appropriate to support DHSS in incorporating Hispanic health data into their Community Data Profiles Web site.

The negative health outcomes among Hispanics are likely related to lower rates of health insurance and poorer economic status. Language barriers undoubtedly exist for some Hispanics as well, for they are underrepresented among doctors, dentists, and nurses.<sup>15</sup> There is also a tendency for Hispanics to be noncompliant rather than confront a health care worker when there are disagreements. Hispanics tend to place less value on prevention and health promotion and are more likely to report no usual place of health care compared to whites.<sup>16, 13</sup> As with other minorities, prejudice and other cultural differences may also play a role in the poor health outcomes of some Hispanics.<sup>16</sup>

Another barrier to health care for Hispanics is the federal welfare reform act, the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA). PRWORA classified immigrants into pre-enactment immigrants and post-enactment immigrants depending on their immigration status on August 22, 1996. With some exemptions, the latter are ineligible to receive SSI, Food Stamps, Medicaid, and TANF or may be barred from receiving them for five years, depending on the benefit. States have the option of providing Medicaid and TANF after five years.<sup>17</sup> One effect of the law is to make it harder for people to get benefits who may need it the most. After living here five years, upwardly mobile groups are less likely to need benefits, while recently-arrived immigrants who experience more barriers to work and support are very likely to need them.<sup>18</sup>

Balanced against the difficulties that Hispanics face are their strengths. Along with a deep religious faith, they have a strong family orientation and place a high value on children. The entire family, as well as friends and relatives, may become involved in the health care of a family member. Hispanics have a high literacy rate overall.<sup>16</sup> Incomes among the Hispanic population have improved over the years.<sup>19</sup> Perhaps most important, many Hispanics immigrate to the United States because they are highly motivated to work and improve their lives.<sup>16</sup>

# SOCIO-ECONOMIC FACTORS

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## Ratios of Hispanics to Whites: Selected Socio-Economic Indicators\* Missouri, 2000

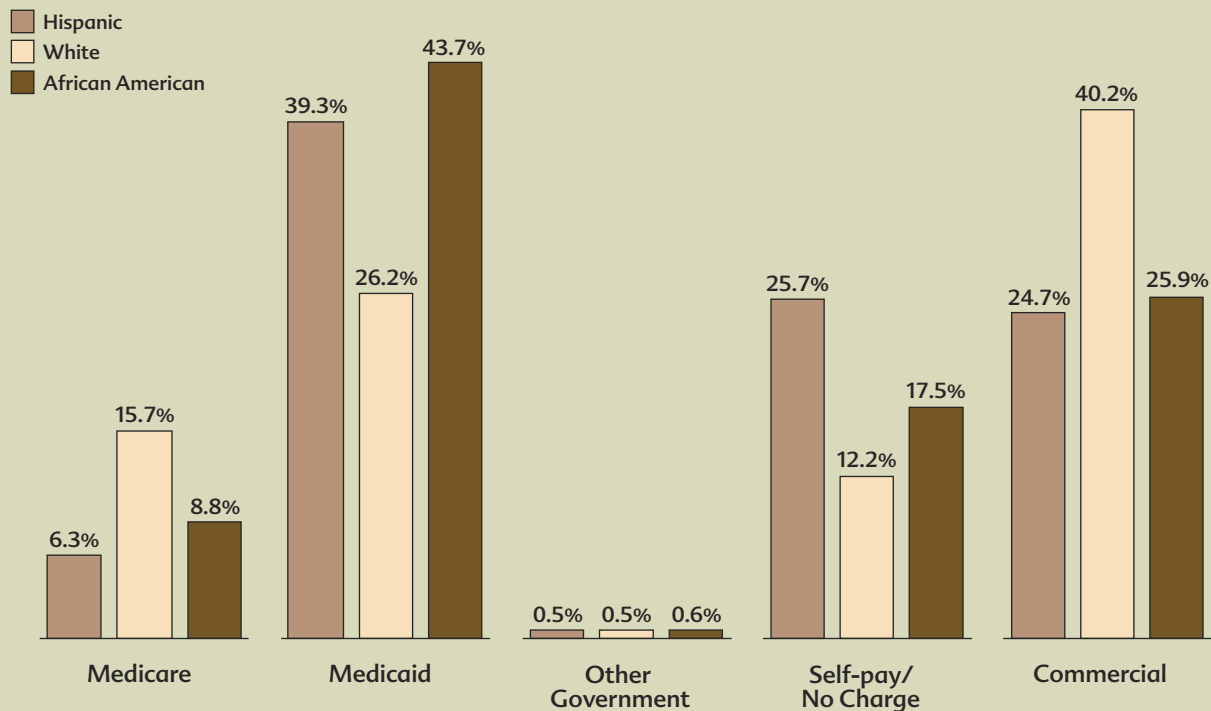


\*2000 Census, Summary File 3  
 \*\*This is a ratio of percentages.

## EXPECTED PAY SOURCE FOR EMERGENCY ROOM VISITS

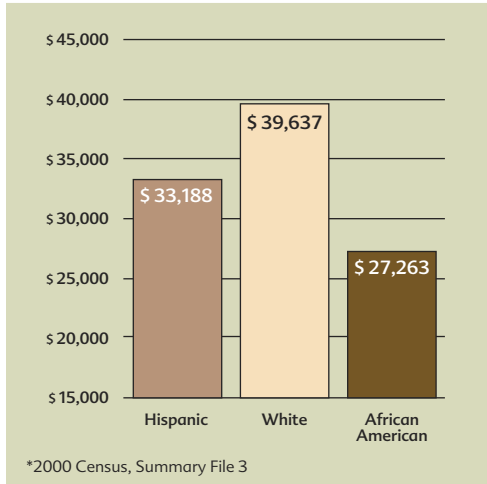
Hispanics are less likely than either whites or African Americans to have insurance coverage for their health care needs, as evidenced by the percent of emergency room visits where the pay source was self-pay or no charge. The 2000 Census indicated that Hispanics have low rates of health coverage. Lack of insurance typically results in less access to health care and poorer overall health.

### Expected Pay Source for Emergency Room Visits Missouri, 2002



**Expected Pay Source for Emergency Room Visits** — The primary source of payment for a patient's hospital or emergency room stay is based on information supplied at the time of admission.

### Median Household Income\* Missouri, 2000



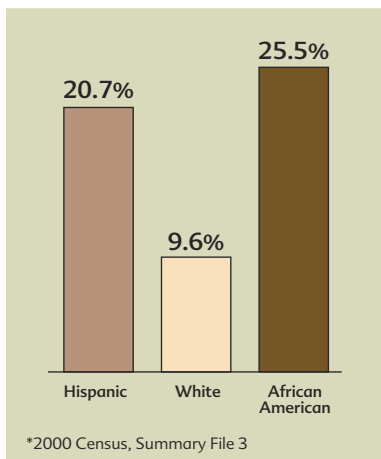
Median household income for persons of Hispanic origin falls between that of whites and African Americans in Missouri. The distribution of household income shows a similar pattern: 27.8 percent of Hispanics had household incomes less than \$20,000 compared to 22.4 percent for whites and 37.4 percent for African Americans. Similarly, at the top of the income spectrum, 13.7 percent of Hispanics had household

incomes over \$75,000 compared to 18.6 percent for whites and 10.1 percent for African Americans.<sup>20</sup>

## MEDIAN HOUSEHOLD INCOME

**Median Household Income** — When household incomes are put in rank order, the median is the income at the midpoint of that ranking.

### Percent of Population Below Poverty Level\* Missouri, 2000



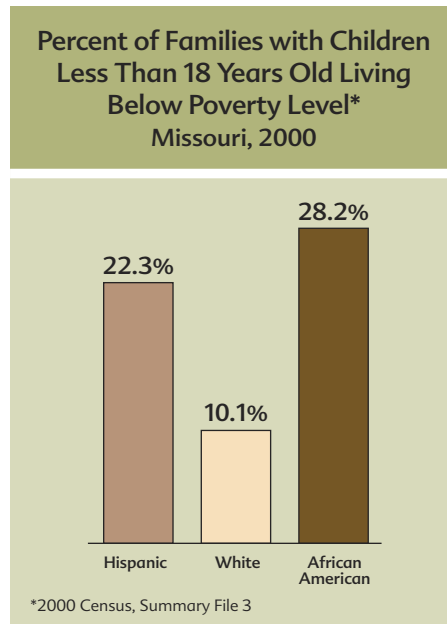
Poverty affects a large portion of the Hispanic population in Missouri. Overall, 20.7 percent of Hispanics fall below the poverty line. This compares to 25.5 percent of African Americans and only 9.6 percent of whites. People of Hispanic origin make up 2.1 percent of the Missouri population, but they account for 3.8 percent of Missourians who fall below the poverty line.<sup>20</sup>

## POPULATION BELOW POVERTY LEVEL

**Percent of Population Below Poverty Threshold** — The percent of individuals whose total income, based on earnings, unemployment compensation, workers' compensation, Social Security, Supplemental Security Income, public assistance, pension, interest dividends, etc. (excluding non-cash benefits such as food stamps), before taxes fall below the poverty income threshold. Members of a family have the poverty level of the family; individuals not in families have their income compared to the appropriate threshold. It is not possible to determine the poverty status of individuals under 15 not living in families nor of persons residing in prisons, nursing homes, military barracks, or unconventional housing situations that are not shelters.

## FAMILIES WITH CHILDREN BELOW POVERTY LEVEL

**Percent of Families with Children Less Than 18 Years Old Living Below Poverty Threshold** — The percent of families whose total income, based on earnings, unemployment compensation, workers' compensation, Social Security, Supplemental Security Income, public assistance, pension, interest dividends, etc. (excluding non-cash benefits such as food stamps), before taxes fall below the poverty income threshold for a family of a given size and age distribution. There are 48 possible poverty thresholds.



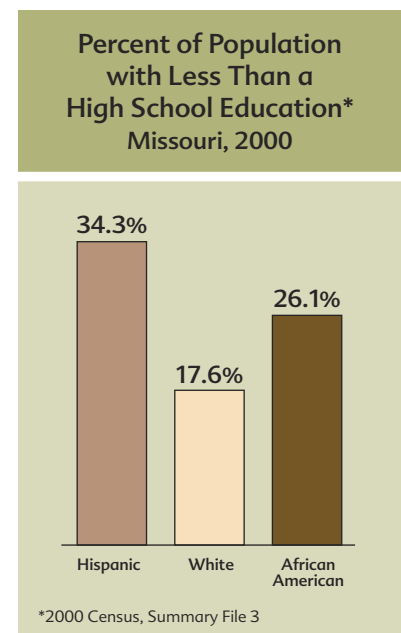
Hispanic families with children less than age 18 are more than twice as likely as whites to fall below the poverty line. On this socio-economic measure, Hispanics come close to mirroring African Americans. In general, Hispanics both in Missouri and nationally have larger families regardless of poverty status. The average family size for Hispanics is 3.6. This compares to 3.3 for African Americans and 3.0 for whites. Additionally, Hispanic fertility rates are 40 percent higher (1998-2002) compared to whites

and 23 percent higher than African Americans. The poverty guidelines are adjusted for family size. The more children there are in a family, the more income is needed to be above the poverty line; thus the tendency toward larger families may result in more Hispanics being included in this poverty indicator.<sup>20</sup>

## POPULATION WITH LESS THAN A HIGH SCHOOL EDUCATION

**Percent of Population with Less Than a High School Education** — The percent of individuals who have not graduated from high school.

Over one-third of Hispanics do not have a high school education. This compares unfavorably to whites (17.6 percent) and African Americans (26.1 percent). It also contrasts with other socio-economic indicators where Hispanics tend to fare better as a group compared to African Americans. Nationally, only 52 percent of Hispanics have a high school education compared to Missouri, where nearly 66 percent reached that level. On the upper end of educational achievement, 16 percent of Hispanics in Missouri have at least a bachelor's degree. This compares to 22 percent of whites and 13 percent of African Americans.<sup>20</sup>

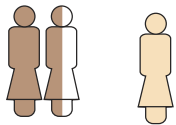


# MATERNAL AND CHILD HEALTH

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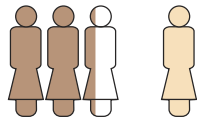
## Ratios of Hispanic to White Rates for Selected Maternal and Child Health Indicators

Missouri, 1998-2002



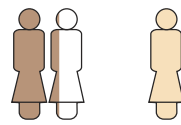
**1.5 to 1**

Births to Unmarried Mothers



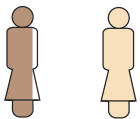
**2.3 to 1**

Inadequate Prenatal Care



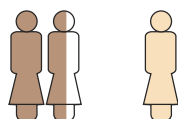
**1.2 to 1**

Infant Deaths



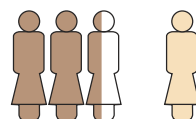
**0.9 to 1**

Low Birth Weight



**1.6 to 1**

Pregnant Women Receiving Medicaid



**2.4 to 1**

Mothers with Less Than a High School Education

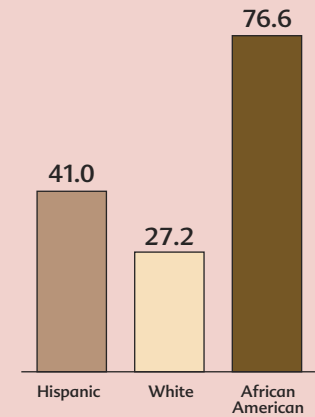
Hispanic  
 White

## BIRTHS TO UNMARRIED MOTHERS

**Births to Unmarried Mothers** — Children born to mothers who are not married at the time of the births.

The rate of births to unmarried Hispanics was about 50 percent higher than the white rate, but 46 percent less than the African American rate. The causes of births to unmarried mothers are very complex and include values, lack of economic and educational opportunities, home environment, peer and media influences, and lack of access to contraceptive services. Infants living in single parent households are more likely to live in poverty and be more at risk for the numerous health problems associated with it.

**Rates of Births to Unmarried Mothers\***  
Missouri, 1998-2002



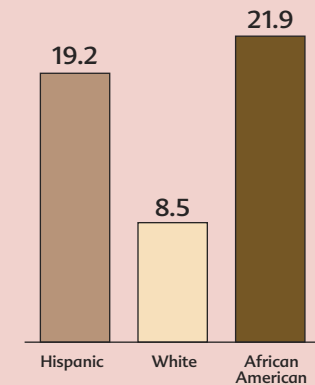
\*Rates per 100 Live Births

## INADEQUATE PRENATAL CARE

**Inadequate Prenatal Care** — Live births to resident mothers who had inadequate prenatal care and the percent this number is of total live births with known adequacy of care for the same time period. Inadequate prenatal care is defined as fewer than five prenatal visits for pregnancies less than 37 weeks, fewer than eight visits for pregnancies 37 weeks or longer, or care beginning after the first four months of pregnancy. If adequacy of prenatal care could be determined even if month care began or visits were unknown, then these records were included.

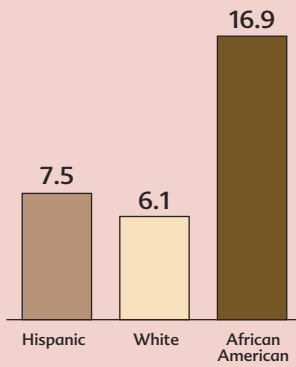
The 1998-2002 rate of inadequate prenatal care for Hispanic mothers was more than double the rate for white mothers and was slightly below the African American rate. The Hispanic rate reflects the low socio-economic level of many Hispanics and possible lack of access to medical care. Other reasons for inadequate prenatal care include lack of transportation, lack of child care, physicians not accepting Medicaid, and pregnancy denial.

**Inadequate Prenatal Care Rates\***  
Missouri, 1998-2002



\*Rates per 100 Live Births

### Infant Death Rates\* Missouri, 1998-2002



\*Rates per 1,000 Live Births

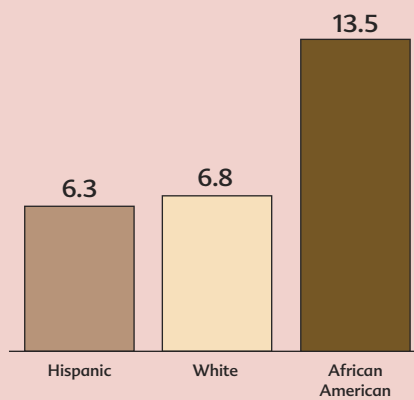
The Hispanic infant death rate was 23 percent higher than the white rate and less than half the African American rate. Hispanics had a higher rate than whites for neonatal (<28 days) deaths and causes related to perinatal conditions including prematurity. The Hispanic rates for postneonatal (1 to 11 months) and SIDS deaths were relatively low.

## INFANT DEATHS

**Infant Deaths** — Deaths to resident babies born alive and dying before their first birthday. Rate is per 1,000 live births during the time period.

Despite the relatively low socio-economic level of Hispanic Missourians, the low-birth-weight (less than 2,500 grams) rate of Hispanics was actually lower than that for whites for 1998-2002 births. Two primary factors that contribute to this lower rate include a rate of smoking during pregnancy that is only one-third of that of whites and fewer multi-fetal pregnancies among Hispanic births.

### Low-Birth-Weight Rates\* Missouri, 1998-2002



\*Rates per 100 Live Births

## LOW BIRTH WEIGHT

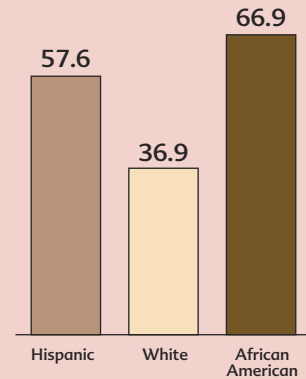
**Low Birth Weight** — Number of infants born alive to resident mothers and weighing less than 2,500 grams (5.5 pounds) and the percent this number is of total live births for the time period.

## PREGNANT WOMEN RECEIVING MEDICAID

**Mothers Receiving Medicaid** — Number of mothers who participated in the Medicaid program during pregnancy.

For more than half the Hispanic births in Missouri, the mother was on Medicaid during her pregnancy. This rate is 1.6 times the white rate and 14 percent less than the African American rate. As with many of the health indicators illustrated in this data book, Hispanics have poorer health outcomes than whites but better outcomes than African Americans.

**Rates of Pregnant Women Receiving Medicaid\* Missouri, 1998-2002**



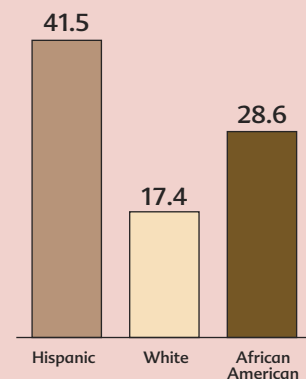
\*Rates per 100 Live Births

## MOTHERS WITH LESS THAN A HIGH SCHOOL EDUCATION

**Mothers with Less Than a High School Education** — Number of mothers with less than a high school education.

Hispanic mothers had lower education levels than either white or African American mothers according to 1998-2002 birth certificates. This partly reflects the Mexican education system, in which less than half progress into upper secondary education (grades 10 to 12). Nearly 30 percent of Missouri Hispanic mothers had less than 10 years of education compared with about 6 percent of non-Hispanic mothers. However, a larger percentage of Hispanic mothers had college degrees than African American mothers (12.9 percent vs. 9.5 percent, respectively). By comparison, 27.6 percent of white mothers had college degrees.

**Rates of Mothers with Less Than a High School Education\* Missouri, 1998-2002**

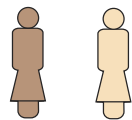


\*Rates per 100 Live Births

# INJURIES TREATED IN HOSPITALS

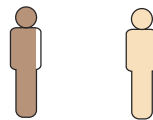
Ratios for Selected Injuries Treated in Hospitals (Inpatient + Emergency Room)	13
Assault	14
Pedestrian	14

## Ratios of Hispanic to White Rates for Selected Injuries Treated in Hospitals Missouri, 2002



**1 to 1**

Assault



**0.9 to 1**

Pedestrian

■ Hispanic  
■ White

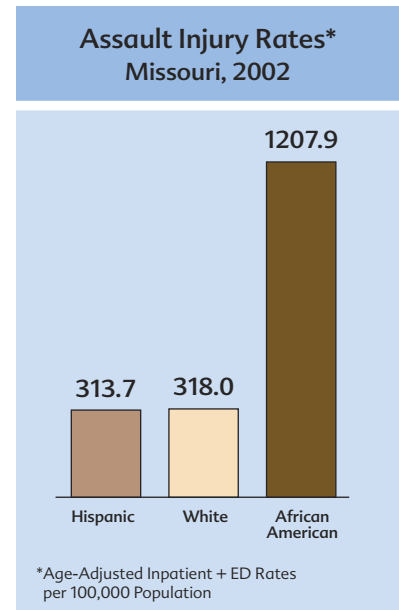
## ASSAULT INJURY

As indicated by combined inpatient hospitalizations and emergency room visits, Hispanics and whites incurred assaults at about the same rate, while African Americans had almost four times the rate of either. Males and persons aged 15 to 34 predominated among all three groups.

Nationally in 2000, the assault rate was similar for Hispanics and whites and highest for African Americans. Both the simple assault rate (no weapon involved and only minor injury suffered) and the aggravated assault rate (weapon involved or serious injury suffered) were similar

for Hispanics and whites and highest for African Americans. For the period 1993-2000, however, the violent crime rate (including assault, rape/sexual assault, and robbery) was similar among Hispanic and African American males, and both were higher than that for white males. Hispanics identified their offender as a stranger at a higher rate than either whites or African Americans.<sup>21</sup>

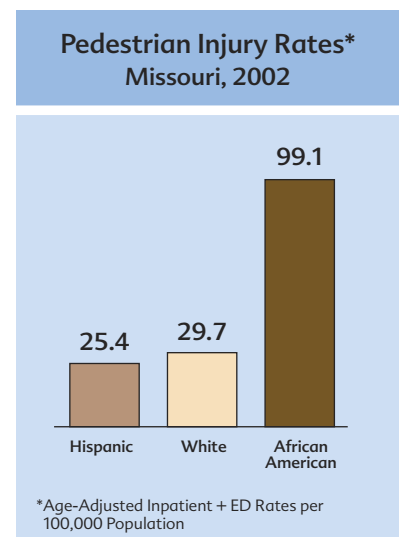
**Assault** — Resident hospital admissions plus emergency room visits for persons injured during an assault. International Classification of Diseases 9th Revision, Clinical Modification (ICD-9) codes are E960-E969, E979, and E999.1.



## PEDESTRIAN INJURY

In 2002, Hispanics had a slightly lower rate of motor-vehicle-related pedestrian injuries than did whites. The rate for African Americans was the highest, being over three times higher than the white rate and nearly four times higher than the Hispanic rate. Nationally, Hispanic children have a slightly higher pedestrian-injury death rate compared to non-Hispanics.<sup>22</sup>

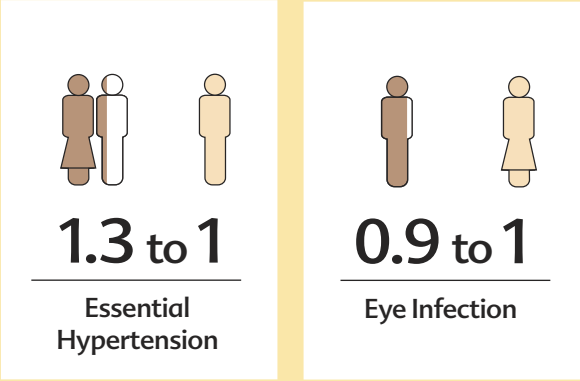
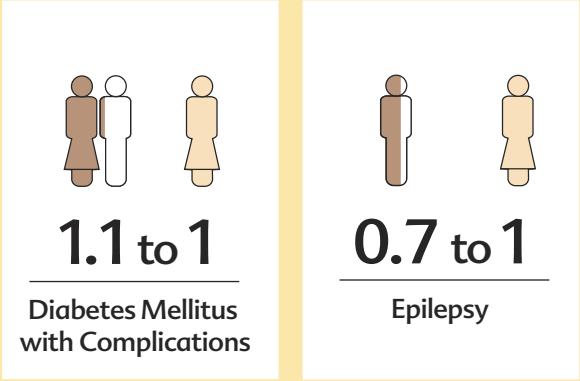
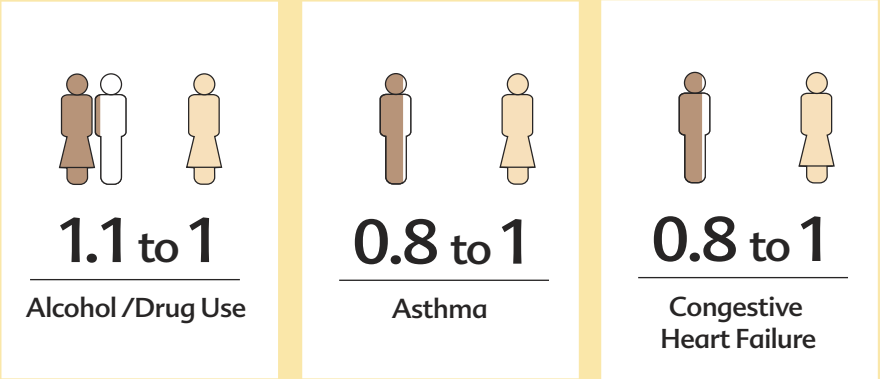
**Pedestrian** — Resident hospital admissions plus emergency room visits for pedestrians injured in collisions with motor vehicles on a roadway. ICD-9 codes are E810.7, E811.7, E812.7, E813.7, E814.7, E815.7, E816.7, E817.7, E818.7, and E819.7.





# EMERGENCY ROOM VISITS

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## Ratios of Hispanic to White Rates for Selected Causes of Emergency Room Visits Missouri, 2002



 Hispanic  
 White

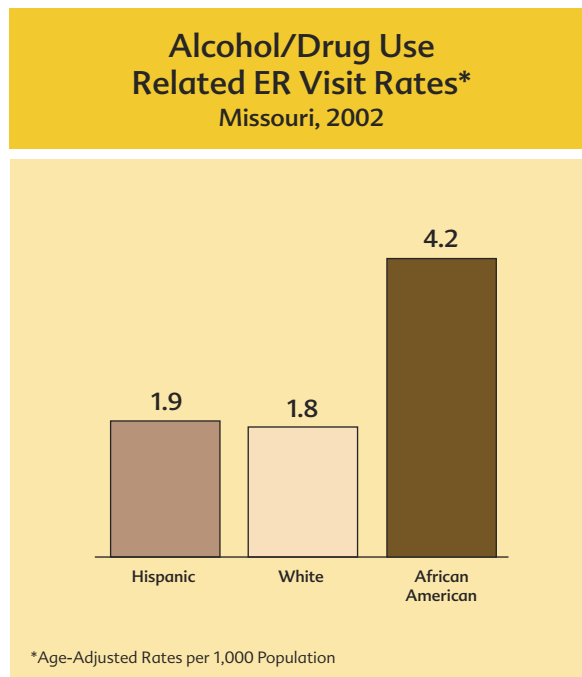
## ER VISITS RELATED TO ALCOHOL/ DRUG USE

Hispanics and whites had similar rates of visits to the emergency room for mental disorders related to alcohol and drug use. The rate for African Americans was about double the rate of either Hispanics or whites. Males had higher rates than females in all three groups, and African males had the highest rate overall of 7.1.

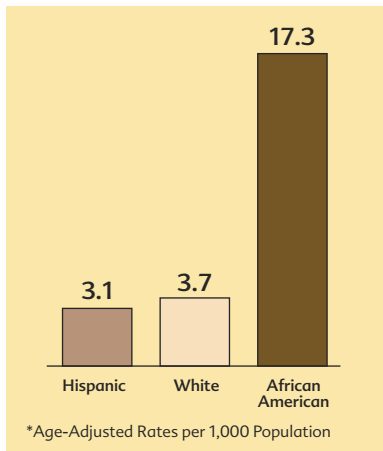
The Behavioral Risk Factor Surveillance Survey (BRFSS) results for Missouri in 2003 suggest similar rates of alcohol use for Hispanics and whites, as 55 percent of both groups report having had at least one drink of alcohol in the last 30 days.<sup>23</sup> Binge drinking (five or more drinks on one occasion) was lower among Hispanics (7.9 percent) than among whites (18.2 percent).

The National Health Interview Survey indicates that in 2001, Hispanics aged 18 and over reported a lower rate of current regular drinking (38.8 percent) than did whites (51.6 percent), and a slightly higher rate than did African Americans (34.7 percent).<sup>13</sup>

**Alcohol/Drug Use** — Resident emergency room visits caused by dependent use or excessive use of alcohol or drugs. ICD-9 codes are 291.0-292.9, 303.00-305.93, or V15.82.



### Asthma Related ER Visit Rates\* Missouri, 2002



Hispanics had the lowest rate of emergency room visits for asthma, whereas African Americans had by far the highest rate. Children under the age of 15 had the highest rate in all three groups.

The National Institutes of Health recognized that asthma is a growing health problem in the United States, particularly in inner-city African American and Latino populations.<sup>24</sup> Low socio-economic status, exposure to urban environmental contaminants, lack of access to medical care, and lack of self-management skills all

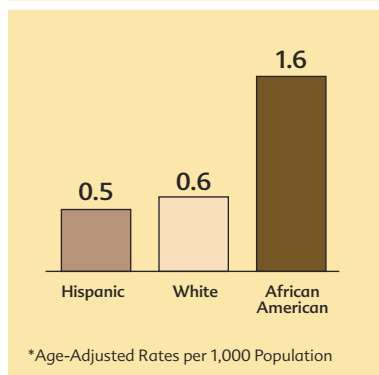
contribute to the increase in deaths in minority communities. "Asthma can 'run in families' and is common in Hispanic people, especially those who come from Puerto Rico."<sup>25</sup>

Hispanics had an age-adjusted rate of 0.5/1000 population for visits to the emergency room related to non-hypertensive congestive heart failure. However this was based on only 28 visits, so the rate may not be a reliable estimate of the true rate for Hispanics. The rate for whites was very similar, whereas African Americans had nearly three times the white rate.

According to the National Health Interview Survey, the self-report rate for all types of heart disease for Hispanics in the U.S. in 2001 was 6.1 percent. The comparable percents for whites and African Americans were 12.2 and 9.6, respectively.<sup>13</sup>

The greatest risk factor for congestive heart failure is hypertension. Diabetes can also be a contributing factor, along with obesity, lack of exercise, and poor eating habits.

### Congestive Heart Failure: ER Visit Rates\* Missouri, 2002



## ER VISITS FOR ASTHMA

**Asthma** — Resident emergency room visits with a primary diagnosis of asthma, which is a chronic lung disease characterized by episodes of breathing difficulties. ICD-9 codes are 493.00-493.92.

## ER VISITS FOR CONGESTIVE HEART FAILURE

**Congestive Heart Failure** — Resident emergency room visits with a primary diagnosis of decreased cardiac output and marked by hypertension and edema. Usually the inability of the heart to pump adequately causes excessive fluid retention, congestion in the lungs, or swelling of torso or legs. ICD-9 codes are 398.91 or 428.0-428.9.

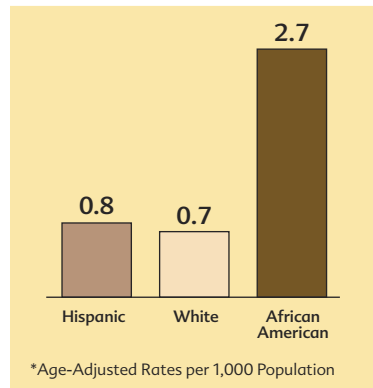
## ER VISITS FOR DIABETES MELLITUS WITH COMPLICATIONS

**Diabetes Mellitus with Complications** — Resident emergency room visits with a primary diagnosis of diabetes mellitus. Diabetes is characterized by an excessive urine excretion and an inability to metabolize carbohydrates, proteins, and fats, due to insufficient secretion of insulin. ICD-9 codes are 250.02-250.93.

## EPILEPSY RELATED ER VISITS

**Epilepsy-Convulsions** — Resident emergency room visits with a primary diagnosis of a recurrent brain function disorder characterized by sudden, brief attacks of altered consciousness or motor activity. Convulsive seizures are the most common, but there are varying levels of symptoms, and there may or may not be loss of consciousness. ICD-9 codes are 345.0-345.91 or 780.31-780.39.

**Diabetes Mellitus with Complications: ER Visit Rates\* Missouri, 2002**

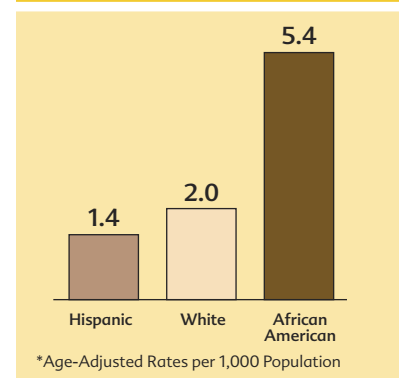


Hispanics and whites had similar rates of visits to the emergency room for diabetes with complications, whereas African Americans had over three times the rate of either group. Among all three groups those aged 65 and over had the highest rates of visits for diabetes. Though the numbers are not very large, Hispanic females had higher rates of emergency room visits for diabetes with complications than did Hispanic males. Among whites and African Americans, the rates for males and females tended to be similar.

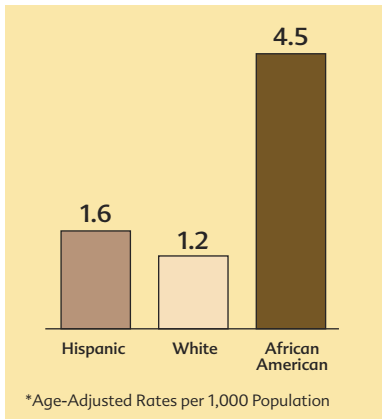
In a study of the 1998-2002 BRFSS results for five states and Puerto Rico (accounting for 84 percent of all U.S. Hispanics), Hispanics had an age-adjusted diabetes rate of 9.8 percent, about twice that of non-Hispanic whites (5.0 percent).<sup>26</sup> The authors found that at each weight level, as measured by the Body Mass Index (BMI), Hispanics had a higher prevalence of diabetes. They speculated that diets lower in fiber and higher in calories might have been a contributing factor, but nutritional factors were not included in their study. Risk factors for diabetes include family history of diabetes, physical inactivity, and being overweight.

The rate of epilepsy related emergency room visits for Hispanics was lower than the rate for whites and African Americans. The latter group had a rate that was over double that of the Hispanics and whites.

**Epilepsy Related ER Visit Rates\* Missouri, 2002**



### Essential Hypertension: ER Visit Rates\* Missouri, 2002

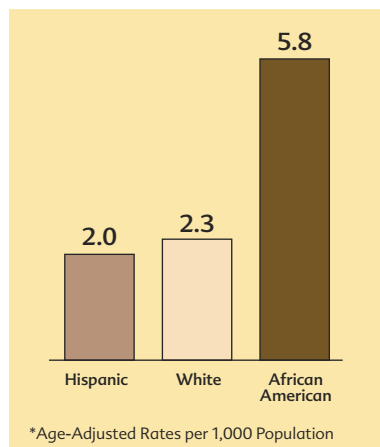


The rate of Hispanic visits to the emergency room for essential hypertension was slightly higher than the rate for whites but substantially lower than the rate for African Americans. Among Hispanics and whites, those aged 65 and over had the highest rate of visits (5.1 and 3.8, respectively.) Among African Americans, those aged 45 to 64 had the highest rate (8.6). Nationally, physician measurements of blood pressure for the 2001 National Health and Nutrition Examination Survey found that non-Hispanic whites had the lowest rate of

high blood pressure (27.2 percent), followed by Mexican Americans (28.7 percent), and non-Hispanic African Americans (38.8 percent). The authors of this study note that regular physical activity, weight control, and nutritious low-salt diets can play a role in reducing hypertension.<sup>27</sup>

Hispanics visited the emergency room for eye infections in 2002 at a slightly lower rate than whites but at a much lower rate than African Americans. Those under the age of 15 and females had the highest rate of visits in all three groups. Use of the emergency room for eye infections may be due to poor access to primary care.

### Eye Infection Related ER Visit Rates\* Missouri, 2002



## ESSENTIAL HYPERTENSION RELATED ER VISITS

### Essential Hypertension —

Resident emergency room visits with a primary diagnosis of persistently high arterial blood pressure without a discoverable organic cause. ICD-9 codes are 401.0 or 401.9.

## EYE INFECTION RELATED ER VISITS

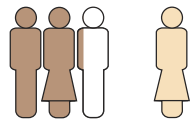
**Eye Infections** — Resident emergency room visits with a primary diagnosis of an infection or rash on the eyelid, eye, cornea, retina, iris, or a disorder of the globe. Infections can be caused by parasites, fungal disease, a bacterial infection or trachoma, as well as other conditions. ICD-9 codes are 021.3, 032.81, 053.20-053.29, 054.40-054.49, 055.71, 076.0-077.99, 115.02, 115.12, 115.92, 130.1-130.2, 139.1, 360.00-360.19, 363.00-363.22, 364.00-364.3, 370.20-370.59, 370.8-370.9, 372.00-372.39, 373.00-373.13, 373.31-373.9, 375.00-375.03, 375.30-375.43, 376.00-376.13, 377.30-377.39, or 379.00-379.09.



# DEATHS

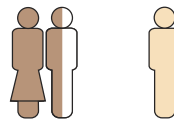
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## Ratios of Hispanic to White Rates for Selected Causes of Death Missouri, 1998-2002



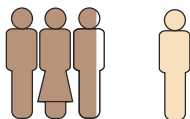
**2.1 to 1**

Chronic Liver Disease/Cirrhosis



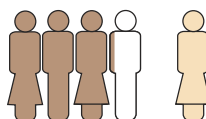
**1.5 to 1**

Diabetes Mellitus



**2.8 to 1**

HIV/AIDS

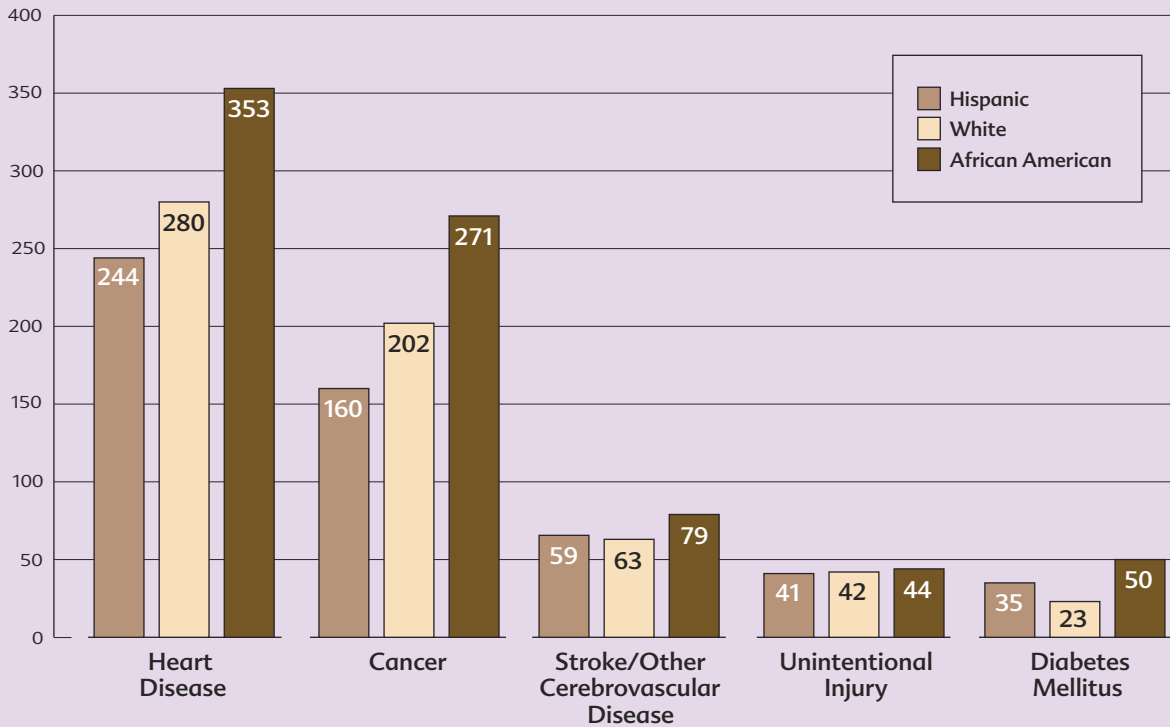


**3.1 to 1**

Homicide

■ Hispanic  
■ White

### Five Leading Causes of Death for Hispanics: A Comparison with Whites and African Americans\* Missouri, 1998-2002



\*Age-Adjusted Rates per 100,000 Population

**Heart Disease** — Resident deaths for which the underlying cause of death was given on the death certificate as heart disease. In addition to ischemic heart disease, some of the causes included are: rheumatic heart disease, hypertensive heart disease, pulmonary embolism, various valve disorders, cardiomyopathy, atrial fibrillation, and congestive heart failure. For data in 1998, ICD-9 codes are 390-398, 402, 404, and 410-429. For data years 1999 forward, International Classification of Diseases 10th Revision, Clinical Modification (ICD-10) codes are I00-I09, I11, I13, and I20-I51.

**Cancer (Malignant Neoplasms)** — Resident deaths for which the underlying cause of death was given on the death certificate as a malignant neoplasm (cancer). This includes leukemia and cancers of various organs, but excludes benign neoplasms, carcinoma in situ, and neoplasms of uncertain behavior. For data in 1998, ICD-9 codes are 140-208. For data years 1999 forward, ICD-10 codes are C00-C97.

**Stroke/Other Cerebrovascular Disease** — Resident deaths for which the underlying cause of death was given on the death certificate as cerebrovascular disease (stroke), whether due to bleeding or to blockage of arteries in the brain. Also includes deaths due to late effects of strokes. For data in 1998, ICD-9 codes are 430-434 and 436-438. For data years 1999 forward, ICD-10 codes are I60-I69.

**Unintentional Injury** — Resident deaths for which the underlying cause of death was given on the death certificate as unintentional injury or poisoning, including medical complications. Motor vehicle crashes usually account for nearly half of the accidental deaths of Missouri residents. For the years 1998-2002, they accounted for 59 percent of accidental deaths to Hispanics. For data in 1998, ICD-9 codes are E800-E869, E880-E929, and E949. For data years 1999 forward, ICD-10 codes are V01-X59 and Y85-Y86.

**Diabetes Mellitus** — Resident deaths for which the underlying cause of death was given on the death certificate as diabetes. For data in 1998, the ICD-9 code is 250. For data years 1999 forward, ICD-10 codes are E10-E14.

Although Missouri's Hispanic population increased dramatically over the last decade, it still remains relatively small. While Hispanics made up approximately 2 percent of the population from 1998-2002, they accounted for less than one percent of the Missouri resident deaths during those years. This is explained in part by the fact that Missouri's Hispanic population is younger than the state as a whole and because most deaths occur among older individuals.

The graphic displays the five leading causes of death for the Missouri Hispanic population, with comparisons provided for the white and African American populations. Heart disease and cancer are the top two leading causes of death among Hispanics, as they are among whites and African Americans. For all three groups, death rates for heart disease are at least four times the death rates of stroke/cerebrovascular disease, unintentional injuries, or diabetes. Cancer death rates are about three times as high as the rates of the other three causes of death. Hispanics appear to have the lowest rates of heart disease and cancer. With the exception of unintentional injuries, where the rates are similar, African Americans have considerably higher death rates than either whites or Hispanics for all of these leading causes of deaths.

## LEADING CAUSES OF DEATH

## CHRONIC LIVER DISEASE/ CIRRHOSIS DEATHS

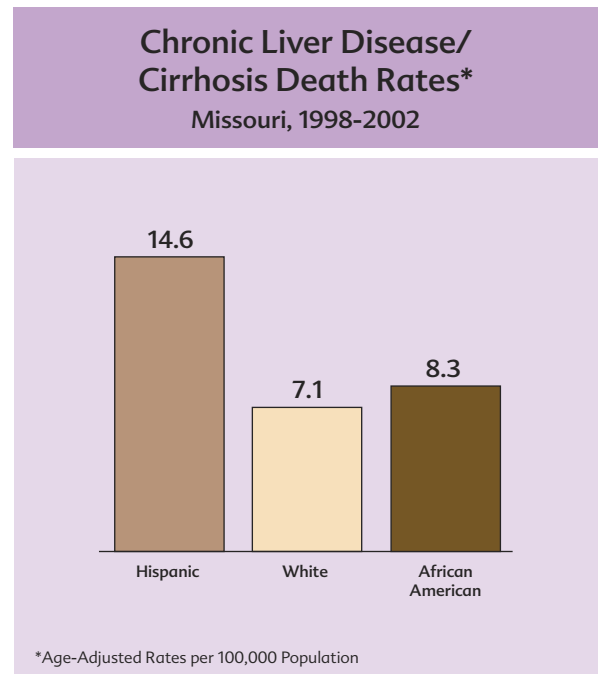
The death rate due to chronic liver disease and cirrhosis for Hispanic Missourians is statistically significantly higher than the rates for both whites and African Americans. It is more than twice the white rate and 1.8 times the rate for African-Americans. The numbers of Hispanic deaths due to liver disease are too small to calculate reliable rates for alcoholic liver disease separately from other chronic liver disease and cirrhosis. There is no indication that the Hispanic percentage of alcohol-related liver disease deaths is different from the percentage for non-Hispanic Missourians.

Though based on somewhat small numbers for Hispanics, the 2003 BRFSS results for Missouri indicate similar rates of current drinking for Hispanics and whites, as 55 percent of both groups reported having had at least one drink of alcohol in the last 30 days. Binge drinking (five or more drinks on one occasion) was lower among Hispanics (7.9 percent) than whites (18.2 percent).<sup>23</sup>

At the other end of the drinking spectrum, the National Health Interview Survey for 2001 reported that Hispanics were more likely than non-Hispanic white adults to be lifetime abstainers (fewer than 12 drinks in lifetime).<sup>13</sup> Only 39 percent of Hispanic adults described themselves as current regular drinkers (at least 12 drinks in the last year), while 53 percent of non-Hispanic white and 35 percent of non-Hispanic African American adults did.

The disparity between genders for liver disease death rates is wide for both Hispanic and non-Hispanic Missourians, with males outnumbering females nearly two to one.

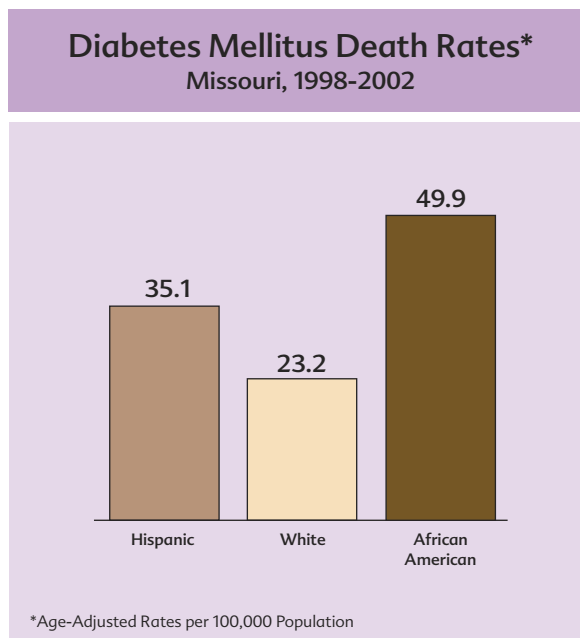
**Chronic Liver Disease and Cirrhosis** — Resident deaths for which the underlying cause of death was given on the death certificate as either alcoholic liver disease or other chronic liver disease and cirrhosis. For data in 1998, the ICD-9 code is 571. For data years 1999 forward, ICD-10 codes are K70, K73, and K74.



The death rate for Hispanics due to diabetes (35.1) is higher than for whites (23.2) and lower than for African Americans (49.9) in Missouri. Both differences are statistically significant. National BRFSS data are consistent with this finding in that they indicate that Hispanics are between whites and African Americans on two key risk factors for diabetes.<sup>23</sup> Specifically, for meeting guidelines for moderate physical activity, Hispanic rates are between the rates for whites and African Americans, but closer to the African American rate. In terms of obesity (BMI of 30 or over), Hispanic rates are between the rates for whites and African Americans, but closer to the white rate. The percent of Hispanics that fall within the guidelines for “overweight” (BMI of 25 or greater, but below thirty) was slightly higher than either whites or African Americans. The National Health Interview Survey for 2002 similarly found that the Hispanic rate of obesity was between that of African Americans and whites, but Hispanic adults were more likely to be “overweight” than either non-Hispanic whites or non-Hispanic African American adults.<sup>28</sup>

The BRFSS also reports that Hispanics had a lower percentage of affirmative answers to the question “Have you ever been told by a doctor that you have diabetes?” This could point to a higher rate of undiagnosed diabetes, leading to increased risk for complications.

In Missouri, diabetes deaths of Hispanics were 62.2 percent female. For African American and white Missourians, respectively, the percents were 56.4 and 54.8.



## DIABETES MELLITUS DEATHS

**Diabetes Mellitus** — Resident deaths for which the underlying cause of death was given on the death certificate as diabetes. For data in 1998, the ICD-9 code is 250. For data years 1999 forward, ICD-10 codes are E10-E14

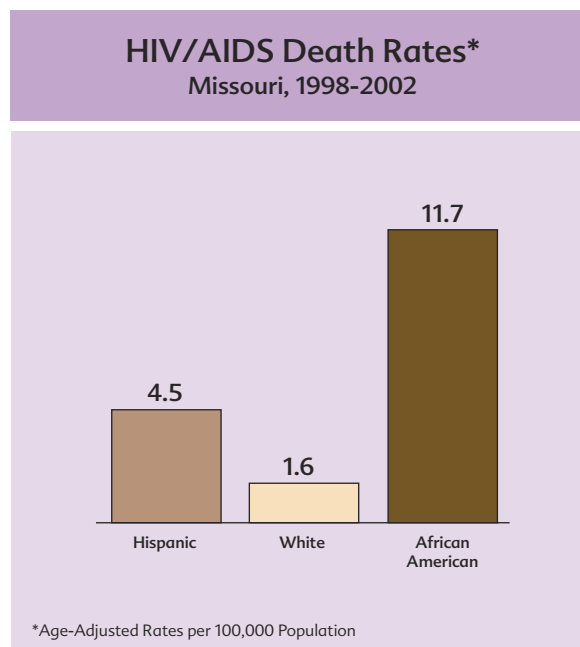
## HIV/AIDS DEATHS

The death rate for Hispanics due to HIV/AIDS (4.5) is nearly three times the white rate (1.6) but 61.5 percent less than the rate for African Americans (11.7). While Hispanics make up about 2 percent of Missouri's population, the 22 Hispanic HIV/AIDS deaths during the years 1998-2002 accounted for 3 percent of all HIV/AIDS death in that time period.

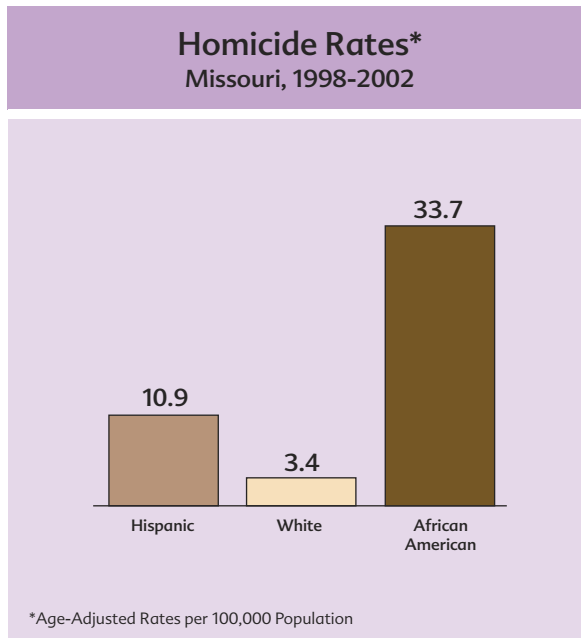
In 2001, the tested and reported Hispanic cases accounted for 2 percent of the reported cases in Missouri.<sup>29</sup> Nationally in 2001, Hispanics accounted for 13 percent of the AIDS cases,<sup>30</sup> roughly their proportion of the population; however, in 2002, Hispanics accounted for 20 percent of the new AIDS cases.<sup>31</sup> In 2001, Hispanic and African American children made up 80 percent of pediatric cases.<sup>32</sup>

Risk factors differ somewhat among Hispanics depending on their country of origin. For Hispanics born in Mexico, homosexual contact is the greatest risk factor for AIDS among men.<sup>31</sup> For Hispanic women in general, heterosexual contact with infected males is the biggest risk factor.<sup>31</sup> The Centers for Disease Control recommend that since many of the infected learn about their condition only after being tested, that Hispanic communities should encourage at-risk persons to get tested for HIV and to promptly access treatment programs if they test positive for the virus.<sup>32</sup>

**HIV/AIDS** — Resident deaths for which the underlying cause of death was given on the death certificate as HIV/AIDS. For data in 1998, ICD-9 codes are 042-044. For data years 1999 forward, ICD-10 codes are B20-B24.



The death rate for Hispanics due to homicide is higher than for whites and lower than for African Americans in Missouri. Both differences are statistically significant and dramatically large. The Hispanic rate (10.9) is more than three times the white rate (3.4), and the African American rate (33.7) is more than three times the Hispanic rate. Hispanic and African American homicide victims were concentrated in ages 15 to 44, while white victims were more dispersed along the lifespan. Only 13.2 percent of Hispanic homicide victims were female, while 17.5 percent of African American and 34.4 percent of white Missouri homicide victims were female.



## HOMICIDE

**Homicide** — Resident deaths resulting from assault by another person, whether or not death was intended. For data in 1998, ICD-9 codes are E960-E969. For data years 1999 forward, ICD-10 codes are U01-U02, X85-Y09, and Y87.1

## GLOSSARY

### **Age-Adjusted Rates**

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

A “standard” population distribution is used to adjust death, hospitalization, or other types of health event rates. The age-adjusted rates are rates that would have existed if the population under study had been distributed by age the same way as in the “standard” population. Therefore, they are summary measures adjusted for differences in age distributions.

The National Center for Health Statistics (NCHS) recommends that the U.S. 2000 standard population be used when calculating age-adjusted rates. We have followed the NCHS recommendation in the preparations for this report. If you compare rates from different sources, it is very important that you use the same standard population on both sides of your comparison. *It is not legitimate to compare adjusted rates that use different standard populations.*

The use of different standard populations can also affect general trends in total mortality and cause of death and differences in mortality by race and gender. For more information on this topic see: “Effects of Changing from the 1940 to the Year 2000 Standard Population for Age-Adjusted Death Rates in Missouri”: *Missouri Monthly Vital Statistics*, Feb 2000, Vol. 33 No. 12.

Age-adjusted rates published elsewhere (e.g., in the annual *Missouri Vital Statistics*) may be slightly different from those found in this report due to updating of population estimates for years between censuses. The “per population” number used for the age-adjusted rate may vary, depending on the type of event. For example, the age-adjusted rates for deaths are per 100,000 population; and the age-adjusted rates for injury hospitalizations are per 100,000 population. However, the age-adjusted rates for emergency department visits are per 1,000 population.

### **Leading Causes of Death**

Leading causes of death are ranked by the number of deaths attributed to the selected causes. The ranking of leading causes of death depends largely on how causes are grouped. DHSS uses the groupings chosen by the National Center for Health Statistics. See Anderson, “Deaths: Leading Causes for 2000,” *National Vital Statistics Reports*, Vol. 50 No. 16, 2002 for a complete list of the 50 rankable causes (Table A) and a description of how they were chosen (beginning on page 1).

### **Resident**

Resident means the person lived in Missouri at the time of the event in question (birth, death, emergency room visit, etc.).

## ENDNOTES

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8. University of Missouri-Columbia – Extension, Office of Social and Economic Data Analysis, "Missouri 2000 Hispanic Population and Change 1990-2000," *Regional Profiles*, 2002, [http://www.oseda.missouri.edu/regional\\_profiles/hispanic\\_pop\\_2000\\_popchg\\_1990\\_2000.html](http://www.oseda.missouri.edu/regional_profiles/hispanic_pop_2000_popchg_1990_2000.html).
9. Missouri, Department of Economic Development, Missouri Economic Research and Information Center, "Missouri Hispanic Population — 2000 Census," *Population Data Series*, <http://www.ded.mo.gov/researchandplanning/indicators/population/hispanic2000.stm>.
10. The race categories used in the 2000 Census were as follows (more than one category could be chosen): 1) White; 2) Black, African American, or Negro; 3) American Indian or Alaska Native; 4) Asian, including Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, and other Asian; 5) Native Hawaiian, Guamanian or Chamorro, Samoan, and other Pacific Islander; and 6) Some other Race.
11. Inter-University Program for Latino Research, "Population Change for Mexican by State," *Census 2000 Latino Population Counts*, [http://www.nd.edu/~iuplr/cic/origins\\_html/3.html](http://www.nd.edu/~iuplr/cic/origins_html/3.html).
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## DATA SOURCES

Population Maps and Pyramids: U.S. Census Bureau.

Socio-Economic Indicators (income, poverty, education): U.S. Census Bureau.

Maternal and Child Health Indicators: Missouri Department of Health and Senior Services Vital Statistics data files (birth certificate records).

Injury Indicators: Missouri Department of Health and Senior Services Patient Abstract System data files (hospital records).

Emergency Room Visit Indicators: Missouri Department of Health and Senior Services Patient Abstract System data files (hospital records).

Death (Mortality) Indicators: Missouri Department of Health and Senior Services Vital Statistics data files (death certificate records).

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