



## Wisconsin Health Facts: Racial and Ethnic Disparities in Infant Mortality

Wisconsin Department of Health Services, January 2010

Elimination of health disparities constitutes an overarching goal of the state health plan, *Healthiest Wisconsin 2010*. One unacceptable health disparity in Wisconsin is the persistent high death rate of infants born to African American women. Infants born to African American women in Wisconsin have been 3 to 4 times more likely to die before their first birthday than infants born to white women. Further, during the past 20 years, no sustained decline has occurred in Wisconsin's African American infant mortality rate. Compared to white infant mortality, disparities also exist among American Indian, Laotian and Hmong, and Hispanic / Latino populations, although disparities are smaller than those for African Americans.

Infant mortality rates (the number of deaths during the first year of life per 1,000 live births in a population group) reflect a tragic loss of life to individuals, families, and the community. The magnitude of infant mortality also reflects broader social and economic conditions that affect maternal and infant health, including factors such as access to high-quality health care, education, poverty, and racism.

In 2008, 501 Wisconsin infants died during the first year of life. Of these, 315 were white and 100 were African American (Table 1). The white infant mortality rate of 5.9 deaths per 1,000 live births in Wisconsin was above the national *Healthy People 2010* objective of 4.5 deaths per 1,000 live births. Infant mortality rates for Wisconsin racial/ethnic minority populations were much further from this objective; the African American infant mortality rate in 2006-2008 was 15.2.

In 2006-2008, the disparity ratio of African American to white infant mortality rates was 2.8, meaning an infant born to an African American woman was 2.8 times more likely to die before reaching its first birthday than an infant born to a white woman. If African American infant mortality were reduced to the white infant mortality level, 57 of the 100 deaths would have been prevented.

**Table 1. Number of Infant Deaths and Births by Race/Ethnicity, Wisconsin, 2008<sup>1</sup>**

	African American	American Indian	Hispanic / Latino	Laotian and Hmong	White	Other / Missing / Unknown	All Races / Ethnicities
<b>Infant Deaths</b>	100	11	49	13	315	13	501
<b>Births</b>	7,236	1,144	7,025	1,356	53,561	1,680	72,002

Table 2 presents three-year infant mortality rates for the 2006-2008 period. Combining years provides more stability in rates with relatively few events in a single year, such as American Indian infant deaths. For each racial/ethnic minority group in Wisconsin, the 2006-2008 infant death rate exceeded that of whites. The infant mortality rate of American Indians was 1.9 times greater than the white rate; the rate for Hispanics / Latinos was 1.2 times the white rate. In comparison to all other groups, the risk of death during the first year of life was greatest for African Americans.

**Table 2. Infant Mortality Rates and Disparity Ratios by Race/Ethnicity, Wisconsin, 2006-2008<sup>1</sup>**

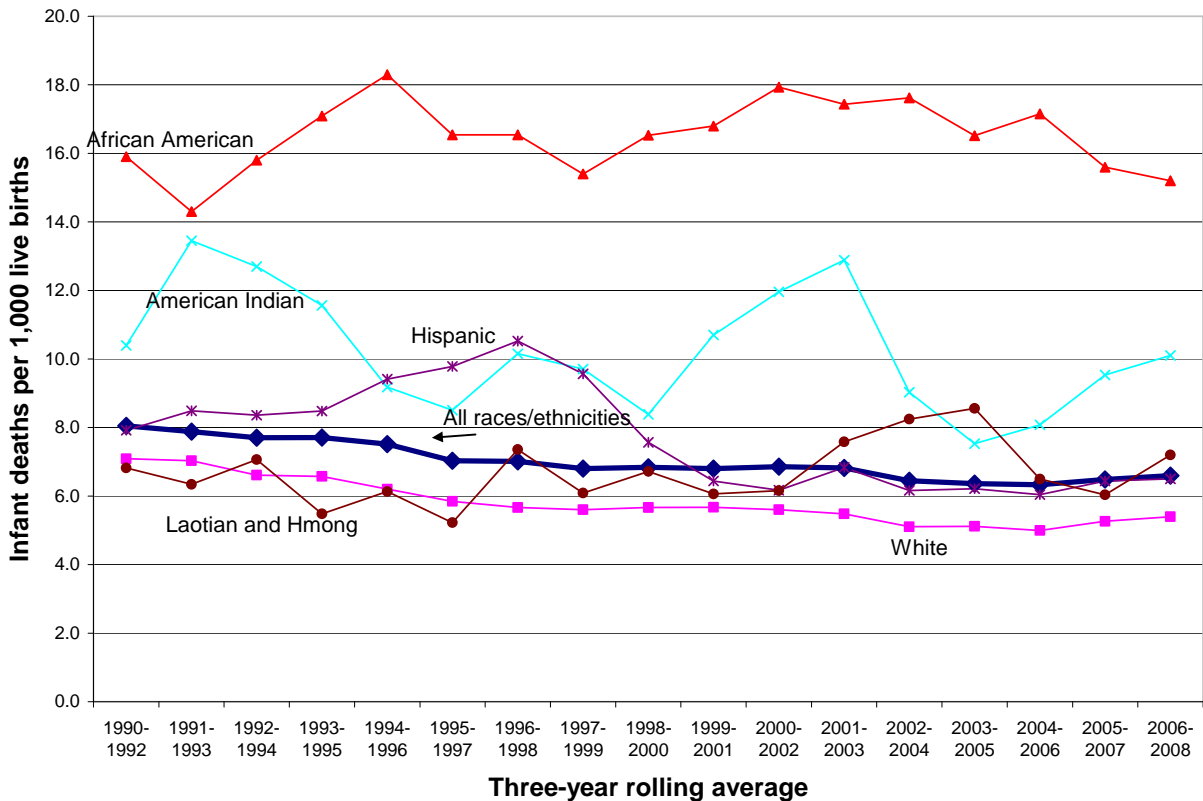
	African American	American Indian	Hispanic / Latino	Laotian and Hmong	White	Other / Missing / Unknown	All Races / Ethnicities
<b>Infant Mortality Rate</b>	15.2	10.1	6.5	7.2	5.4	7.1	6.6
<b>95% Confidence Interval</b>	13.5 – 16.8	6.8 – 13.5	5.4 - 7.6	4.5 - 9.8	5.0 - 5.7	4.7 – 9.4	6.3 - 6.9
<b>Disparity Ratio*</b>	2.8	1.9	1.2	1.3	1.0	1.3	1.2

\* The disparity ratio is the infant mortality rate for a specified group divided by the white rate.  
 Note: Rates are infant deaths per 1,000 births.

**Historical Trends Identify Persistent Gaps**

Wisconsin’s infant mortality rates demonstrate enduring racial and ethnic disparities from 1990-1992 to 2006-2008 (Figure A). Although the overall infant mortality rate declined, these gains did not extend to all minority groups. Based on three-year rolling averages, the overall infant mortality rate declined from 8.0 to 6.6 deaths per 1,000 live births. Declines in infant mortality rates also occurred among Hispanics/Latinos and whites, but not among African American, American Indian, and Laotian and Hmong populations.

**Figure A. Infant Mortality Rates by Race/Ethnicity, Wisconsin, 1990-1992 to 2006-2008<sup>1</sup>**



### Infant Mortality Rank Relative to Other States

Compared to other reporting states and the District of Columbia, Wisconsin's infant mortality ranking has worsened since 1979-1981 (Table 3). In 1979-1981, Wisconsin had the third best African American infant mortality rate (a rank of 3 among the 33 reporting states and the District of Columbia). In 2003-2005, Wisconsin's had the third worst African American infant mortality rate, with at rank of 38 out of 39 reporting states and the District of Columbia. Wisconsin's rank based on white infant mortality rates has also worsened relative to other states, moving from a rank of 5 in 1979-1981 to 13 in 2003-2005. Wisconsin's white infant mortality rate improved during the past two decades, but the improvement did not keep pace with many other states.

**Table 3. Wisconsin's Rank Relative to Reporting States Based on Infant Mortality Rates, 1979-81 and 2003-2005**

	1979-1981 <sup>2</sup>	2003-2005 <sup>3</sup>
<b>African American*</b>	3 (34)	38 (40)
<b>White</b>	5 (51)	13 (51)

\* In 1979-1981, 33 states, and in 2003-2005, 39 states, and the District of Columbia reported African American rates. The number of reporting states and the District of Columbia is indicated in parentheses.

### Causes of Death

Table 4 shows the proportion of infant deaths due to leading causes for the period 2006-2008. Among African Americans, leading causes included preterm and low birthweight (28.8%); Sudden Infant Death Syndrome or SIDS (12.6%); and congenital malformations/birth defects (9.8%). Among whites, the leading causes were congenital malformations/birth defects (22.9%); preterm and low birthweight (16.6%); and SIDS (7.6%). For several of the leading causes of infant mortality, it is possible to modify the underlying risk factors, such as preterm births, low birthweight, and unsafe sleep practices. Reductions in infant mortality can be achieved through improved access to high-quality health care, educational programs, and outreach interventions.

**Table 4. Percent of Infant Deaths Due to Selected Leading Causes, Wisconsin, 2006-2008<sup>1</sup>**

Cause of Death	All Races / Ethnicities	African American	White
Congenital Malformations/Birth Defects	20.9%	9.8%	22.9%
Perinatal: Disorders related to Preterm Birth and Low Birthweight	19.0%	28.8%	16.6%
Sudden Infant Death Syndrome (SIDS)	8.4%	12.6%	7.6%
Accidents (unintentional injuries)	6.6%	4.9%	7.2%
Perinatal: Maternal Complications of Pregnancy	4.7%	7.1%	4.1%
Perinatal: Newborn Complications of Placenta/Cord/ Membranes	3.7%	2.1%	3.9%
Respiratory Distress of the Newborn	3.4%	1.5%	4.2%

### Selected Maternal Characteristics

Examples of maternal characteristics that affect infant mortality, such as age, education, the trimester that prenatal care is initiated, and smoking status, are presented in Table 5. In every category, the African American infant mortality rate exceeded the white infant mortality rate. Corresponding black/white disparity ratios ranged from 1.5 to 4.2.

**Table 5. Infant Mortality Rates for Selected Maternal Characteristics by Race/Ethnicity, 2006-2008<sup>1</sup>**

Maternal Characteristic	Infant Mortality Rate			Black/White Disparity Ratio
	All Races / Ethnicities	African American	White	
<b>Age</b>				
Less than 20 years	10.1	13.3	8.6	1.5
20-29 years	6.5	14.3	5.5	2.6
30-39 years	5.7	19.9	4.7	4.2
40 + years	7.4	20.2	5.9	3.4
<b>Education</b>				
Less than high school	9.3	14.9	9.6	1.5
High school graduate	7.4	13.5	6.2	2.2
More than high school	4.9	13.0	4.2	3.1
<b>Trimester Prenatal Care Began</b>				
First	5.8	13.6	4.8	2.9
Second	5.8	10.1	5.7	1.8
Third or None	21.0	36.9	16.7	2.2
<b>Smoking Status</b>				
Smoked	10.1	19.7	8.6	2.3
Did not smoke	6.0	14.1	4.7	3.0

Note: Rates are infant deaths per 1,000 births.

### Selected Infant Characteristics

Critical risk factors for an infant death presented in Table 6 include low birthweight (less than 2,500 grams, or about 5.5 pounds) and preterm birth (birth before 37 weeks of gestation). Although the infant mortality disparity by race is less for infants born with low birthweight (less than 2,500 grams), all low birthweight infants are at substantial risk. However, a greater proportion of infants born to African American women than those born to white women are low birthweight or preterm.

Thus, both the higher rates of infant mortality at low birthweight and the greater proportion of low birthweight infants born to African American women contribute to the disparity in infant mortality. In the period 2006-2008, about 70 percent of African American infant deaths occurred among low birthweight infants, compared with 61 percent of white infant deaths.

**Table 6. Infant Mortality Rates and Number of Infant Deaths for Selected Infant Characteristics by Race/Ethnicity, 2006-2008**<sup>1</sup>

Infant Characteristic	Infant Mortality Rate (Number of Deaths)			Black/White Disparity Ratio
	All Races / Ethnicities	African American	White	
<b>Birthweight</b>				
Very low (less than 1,500 grams)	262.5 (704)	306.6 (191)	244.6 (408)	1.3
Low (1,500 - 2,499 grams)	15.3 (191)	16.5 (37)	14.5 (122)	1.1
Normal (2,500 - 3,999 grams)	2.7 (478)	5.2 (92)	2.2 (301)	2.3
High (4,000 grams and above)	1.8 (39)	X	1.7 (30)	X
<b>Gestational Age</b>				
Preterm (< 37 weeks)	38.1 (919)	62.9 (234)	33.3 (554)	1.9
Full term (≥ 37 weeks)	2.6 (505)	5.1 (90)	2.2 (315)	2.3
<b>Infant Age at Death</b>				
Less than 28 days (Neonatal)	4.3 (789)	9.8 (211)	3.6 (578)	2.8
28-365 days (Postneonatal)	2.2 (410)	5.4 (115)	1.8 (295)	3.0

Notes: Rates are infant deaths per 1,000 births. The number in parentheses is the number of deaths in the category. Total number of deaths varies by category because deaths with unknown or missing information are excluded. "X" indicates there were fewer than 5 events for that category.

### Summary and Conclusions

Despite declines in Wisconsin's overall infant mortality rate during the past decade, declines did not occur for several racial/ethnic groups, and disparities have persisted. Disparity is greatest among African Americans. Relative to other states, Wisconsin's rank based on African American infant mortality has fallen from among the best rates in the country to among the worst. Factors associated with preterm birth and low birthweight constitute the leading cause of death for infants born to African American women.

### References

<sup>1</sup> Wisconsin Department of Health Services, Division of Public Health, Bureau of Health Information and Policy. Wisconsin Interactive Statistics on Health (WISH) data query system, <http://dhs.wisconsin.gov/wish/>, Infant Mortality Module, accessed 12/1/09. Race/ethnicity is based on self-reported race of the mother. Race groups exclude persons of Hispanic/Latino origin; an individual identified as Hispanic/Latino may be of any race.

<sup>2</sup> Kvale, et al. *Wis. Med J.* 2004;103(5):42-47.

<sup>3</sup> Mathews TJ, MacDorm MF. Infant mortality statistics from the 2005 period linked birth/infant death data set. *National vital statistics reports*; vol. 57, no. 2. Hyattsville, MD: National Center for Health Statistics. 2008. Available at [http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57\\_02.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_02.pdf)

**Note:** This fact sheet was prepared for the Wisconsin Healthy Birth Outcomes Initiative and the Minority Health Program in the Division of Public Health, Department of Health Services, January 2010. Questions about the data may be addressed to Karl Pearson, at [KarlT.Pearson@wisconsin.gov](mailto:KarlT.Pearson@wisconsin.gov) or telephone 608-266-1920.

On the Web: <http://dhs.wisconsin.gov/healthybirths/>