



Wisconsin Health Facts: Racial and Ethnic Disparities in Infant Mortality

Wisconsin Department of Health Services, November 2012

Elimination of health disparities constitutes a major focus area of the state health plan, *Healthiest Wisconsin 2020*. One unacceptable health disparity in Wisconsin is the persistent high death rate of infants born to African American women; these infants in Wisconsin have been 2 to 4 times as likely to die before their first birthday as infants born to white women. Although Wisconsin's African American infant mortality rate declined slightly over the past few years, the rate remains dramatically high. Compared to white infant mortality, disparities also exist for American Indian, Laotian and Hmong, and Hispanic/Latino populations, although the 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 2010, 393 Wisconsin infants died during the first year of life. Of these, 247 were white and 95 were African American (Table 1). African American infants account for a disproportionate percentage of all infant deaths (24%) compared to live births (10%). While the 2008-2010 white infant mortality rate of 5.2 deaths per 1,000 live births in Wisconsin was below the national *Healthy People 2020* objective of 6.0 deaths per 1,000 live births, the infant mortality rate for African Americans, at 14 deaths per 1,000 live births, was well above this objective (Table 2).

Table 1. Number (and Percent) of Infant Deaths and Births by Race/Ethnicity, Wisconsin, 2010¹

	African American	American Indian	Hispanic/Latino	Laotian and Hmong	White	Other/Missing/Unknown	All Races/Ethnicities
Infant Deaths	95 (24%)	6 (2%)	29 (7%)	8 (2%)	247 (64%)	8 (2%)	393 (100%)
Births	6,845 (10%)	1,129 (2%)	6,560 (10%)	1,264 (2%)	50,893 (74%)	1,676 (2%)	68,367 (100%)

In 2008-2010, the disparity ratio of African American to white infant mortality rates was 2.7, meaning an infant born to an African American woman was 2.7 times as likely to die before reaching its first birthday as an infant born to a white woman. If African American infant mortality were reduced to the white infant mortality level, 60 of the 95 deaths in 2010 would have been prevented.

Table 2 presents three-year infant mortality rates for the 2008-2010 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 2008-2010 infant death rate exceeded that of whites. The infant mortality rate of American Indians was 1.4 times the white rate; the rate for Hispanics/Latinos was 1.1 times the white rate. 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, 2008-2010

	African American	American Indian	Hispanic/Latino	Laotian and Hmong	White	Other/Missing/Unknown	All Races/Ethnicities
Infant Mortality Rate	14.0	7.3	5.7	7.8	5.2	6.0	6.3
95% Confidence Interval	12.4 – 15.6	4.4 – 10.1	4.6 – 6.7	5.0 – 10.5	4.9 - 5.6	3.9 – 8.2	5.9 - 6.6
Disparity Ratio*	2.7	1.4	1.1	1.5	1.0 (ref)	1.2	1.2

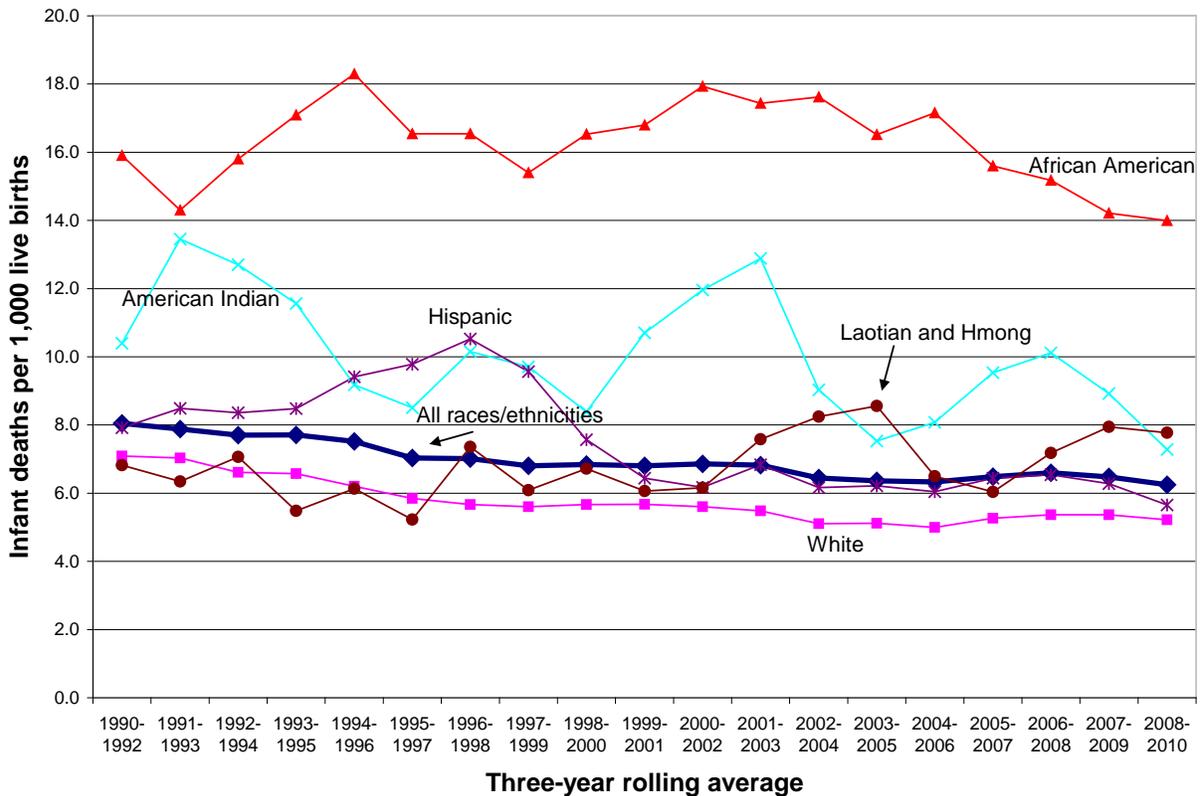
* The disparity ratio is the infant mortality rate for a specified group divided by the white rate.

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 2008-2010 (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 6.3 deaths per 1,000 live births. The white infant mortality rate also declined. An encouraging, sustained decline in the African American infant mortality rate is suggested in recent data. The current (2008-2010) rate is very similar to, or even slightly lower than, where it was in the early 1990s, and significantly lower than the rates seen in the early 2000s.

Figure A. Infant Mortality Rates by Race/Ethnicity, Wisconsin, 1990-1992 to 2008-2010



Infant Mortality Rank Relative to Other States

In 1979-1981, Wisconsin had the third best African American infant mortality rate in the country (a rank of 3rd among the 33 reporting states and the District of Columbia).² While Wisconsin's infant mortality ranking has remained steady for whites over the past three decades, the state's infant mortality rank has worsened for African Americans (Table 3). In 1989-1991, Wisconsin's African American infant mortality rate was average among states, with a rank of 19 out of 37 reporting states and the District of Columbia. However, by 1999-2001 Wisconsin had dropped to 35th (of 36) for African American infant mortality and by 2006-2008 was 36th (of 40), the most recent ranking data available.

Table 3. Wisconsin's Rank Relative to Reporting States Based on Infant Mortality Rates, 1989-91, 1999-2001 and 2006-2008

	1989-1991 ³	1999-2001 ³	2006-2008 ⁴
African American*	19 (37)	35 (36)	36 (40)
White	20 (51)	20 (51)	20 (51)

* Reliable African American rates were reported by 37 states and the District of Columbia (DC) in 1989-1991, by 36 states and DC in 1999-2001, and by 40 states and DC in 2006-2008. The number of reporting entities is shown in parentheses.

Causes of Death

Table 4 shows the proportion of infant deaths due to each leading cause for the period 2008-2010. Among African Americans, leading causes included preterm and low birthweight (29.1%); congenital malformations/birth defects (11.0%); and Sudden Infant Death Syndrome or SIDS (7.7%). Among whites, the leading causes were congenital malformations/birth defects (22.3%); preterm and low birthweight (16.5%); and SIDS (7.9%). 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 infant sleep practices.

Table 4. Percent of Infant Deaths Due to Selected Leading Causes, Wisconsin, 2008-2010¹

Cause of Death	All Races/ Ethnicities	African American	White
Congenital Malformations/Birth Defects	19.8%	11.0%	22.3%
Perinatal: Disorders Related to Preterm Birth and Low Birthweight	19.5%	29.1%	16.5%
Sudden Infant Death Syndrome (SIDS)	7.9%	7.7%	7.9%
Accidents (Unintentional Injuries)	6.4%	7.4%	6.1%
Perinatal: Respiratory Distress of the Newborn	3.9%	3.7%	4.2%
Perinatal: Newborn Affected by Maternal Complications of Pregnancy	3.7%	4.3%	3.4%
Perinatal: Newborn Affected by Complications of Placenta/Cord/Membranes	3.6%	5.7%	2.8%

Selected Maternal Characteristics

Examples of maternal characteristics that are associated with infant mortality, such as age, education, marital status, 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 1.6 to 3.4.

Rates presented in this table are not adjusted for other, related factors. Multiple, complex risk factors are involved in high rates of infant mortality. Rates are higher for African American women who have more than a high school education (13.6), than for white women who have less than a high school education (9.6). Although smoking is a risk factor for all women, African American women who do not smoke have a higher infant mortality rate (12.8), than white women who do smoke (8.2). Therefore, assuring the conditions and environments that facilitate improving risk factors, including modifiable risk factors such as smoking during pregnancy, is important to improving birth outcomes for all racial and ethnic groups.

Table 5. Infant Mortality Rates for Selected Maternal Characteristics by Race/Ethnicity, 2008-2010¹

Maternal Characteristic	Infant Mortality Rate			Black/White Disparity Ratio
	All Races/Ethnicities	African American	White	
Age				
Less than 20 years	10.4	15.4	8.7	1.8
20-29 years	6.1	12.8	5.2	2.5
30-39 years	5.3	15.6	4.6	3.4
40 + years	9.1	23.4	8.3	2.8
Education				
Less than high school	9.6	15.8	9.6	1.6
High school graduate	7.1	11.9	6.4	1.9
More than high school	4.7	13.6	4.1	3.3
Marital Status				
Married	4.6	13.3	4.4	3.0
Not Married	9.1	14.1	7.4	1.9
Trimester Prenatal Care Began				
First	5.5	12.9	4.7	2.7
Second	7.2	12.6	6.7	1.9
Third or None	15.2	25.3	11.3	2.2
Smoking Status				
Smoked	9.4	17.8	8.2	2.2
Did not smoke	5.7	12.8	4.7	2.7

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 2008-2010, about 70 percent of African American infant deaths occurred among low birthweight infants, compared with 60 percent of white infant deaths.

Table 6. Infant Mortality Rates and Number of Infant Deaths for Selected Infant Characteristics by Race/Ethnicity, 2008-2010¹

Infant Characteristic	Infant Mortality Rate (Number of Deaths)			Black/White Disparity Ratio
	All Races/Ethnicities	African American	White	
Birthweight				
Very low (less than 1,500 grams)	244.7 (640)	271.6 (170)	226.6 (370)	1.2
Low (1,500 - 2,499 grams)	14.8 (182)	17.0 (39)	14.3 (117)	1.2
Normal (2,500 - 3,999 grams)	2.5 (437)	4.7 (83)	2.2 (287)	2.1
High (4,000 grams and above)	2.1 (43)	X	2.0 (34)	X
Gestational Age				
Preterm (< 37 weeks)	36.7 (845)	57.7 (199)	32.6 (512)	1.8
Full term (≥ 37 weeks)	2.5 (462)	4.9 (86)	2.1 (299)	2.3
Infant Age at Death				
Less than 28 days (Neonatal)	4.1 (867)	9.2 (196)	3.5 (549)	2.6
28-365 days (Postneonatal)	2.1 (453)	4.8 (103)	1.7 (270)	2.8

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, disparities by race/ethnicity have persisted. This disparity is greatest for infants born to African American mothers compared to white mothers. 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

¹ Wisconsin Department of Health Services, Division of Public Health, Office of Health Informatics. Wisconsin Interactive Statistics on Health (WISH) data query system, <http://www.dhs.wisconsin.gov/wish/>, Infant Mortality Module, accessed 7/11/12. 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.

² Kvale KM, Mascola MA, Glysch R, Kirby RS, Katcher ML. Trends in Maternal and Child Health Outcomes: Where Does Wisconsin Rank in the National Context? Wisconsin Medical Journal. 2004; 103(5):42-47.

³ National Center for Health Statistics. Health, United States, 2007, with Chartbook on Trends in the Health of Americans. Hyattsville, MD: 2007

⁴ Mathews TJ, MacDorman MF. Infant mortality statistics from the 2008 period linked birth/infant death data set. National vital statistics reports; vol. 60, no. 5. Hyattsville, MD: National Center for Health Statistics. 2012. Available at http://www.cdc.gov/nchs/data/nvsr/nvsr60/nvsr60_05.pdf

Note: This fact sheet (P-00144-2012) was prepared for the Wisconsin Healthy Birth Outcomes Initiative and the Minority Health Program in the Division of Public Health, Department of Health Services, November 2012. Questions about the content may be addressed to Patrice Onheiber, at Patrice.Onheiber@dhs.wisconsin.gov or telephone 608-266-3894. Questions about the data may be addressed to Karl Pearson, at KarlT.Pearson@wisconsin.gov or telephone 608-266-1920.