

2008-2012 Minnesota Infant Mortality Race/Ethnicity Data Book



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Introduction

Minnesota's infant mortality rates by race/ethnicity are among the lowest in the nation (Table 1). While the low rankings are promising, some of Minnesota's populations of color and American Indians experience substantial health inequities in infant mortality compared to Whites. These inequities are the result of a complex interaction of many determinants of health including genetic, individual behaviors (e.g. tobacco use during pregnancy), environmental (e.g. environmental hazards), economic (e.g. maternal education) and system (e.g. access to care) factors. To eliminate these inequities, the interaction of health determinants must be better understood. This data book presents an overview of infant mortality in Minnesota by race/ethnicity and includes infant mortality rates by several health determinants. Section 1 of this data book provides an overall view of infant mortality in Minnesota by race/ethnicity, Section 2 presents current trends in infant mortality by race/ethnicity and individual, economic and system factors available on the birth record and Section 3 describes infant mortality rates by race/ethnicity and birth outcomes (e.g. birth weight).

The source of these data is the linked birth and death records of infants who died before their first birthday and were residents of Minnesota when they were born and when they died. The birth record is linked to the death record to gather as much information possible on the experience of the mother and infant during pregnancy and at birth. These data are presented by the year of the infant's birth not year they died.

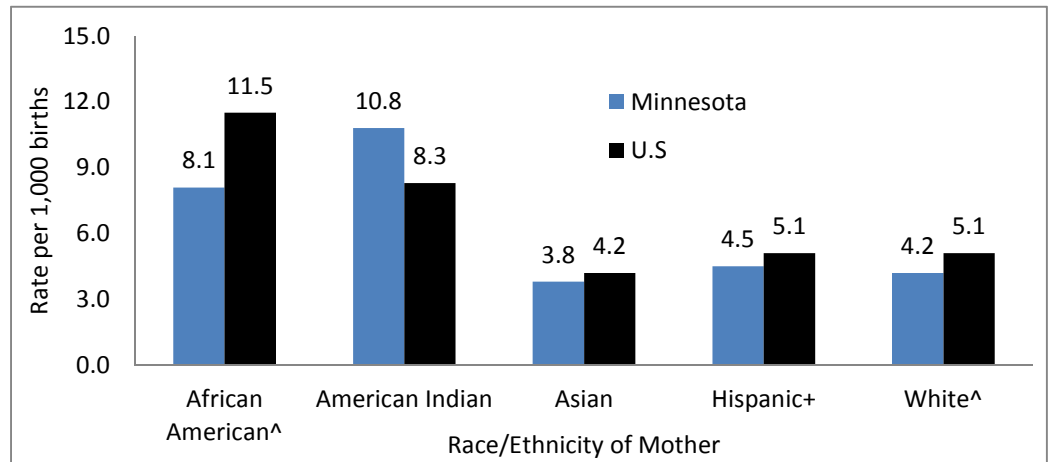
Health inequity: *A health disparity based in inequitable, socially-determined circumstances. Because health inequities are socially-determined, change is possible.*

Health equity: *When every person has the opportunity to realize their health potential — the highest level of health possible for that person — without limits imposed by structural inequities. Health equity means achieving the conditions in which all people have the opportunity to attain their highest possible level of health.*

Section 1: Overview Infant Mortality Rates by Race/Ethnicity of Mother

**Table 1 and Figure 1: Infant Death Rate (IMR) per 1,000 Births by Race/Ethnicity of Mother
Minnesota and United States, 2010-2012 (Birth Year)**

Race/Ethnicity of Mother	Minnesota	U.S	States Reporting*	Minnesota ranking**
African American [^]	8.1	11.4	40	3
American Indian	10.8	8.3	15	11
Asian	3.8	4.2	29	8
Hispanic+	4.5	5.1	39	6
White [^]	4.2	5.1	51	11



*Includes the District of Columbia

**Ranking is best(lowest) to worst(highest)

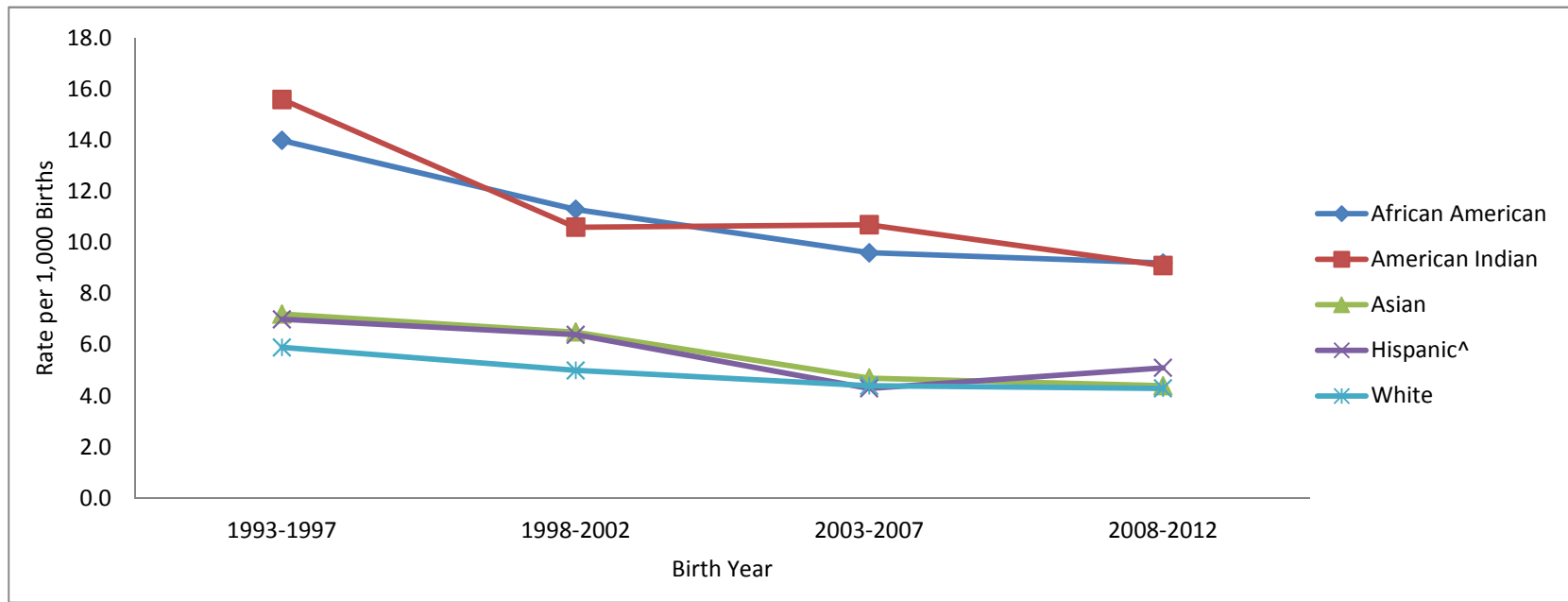
***Non-Hispanic

+Can be any race

Source: CDC WONDER, <http://wonder.cdc.gov>, Linked Birth/Infant Death Records

**Table 2 and Figure 2: Infant Mortality Rate by Race/Ethnicity of Mother
Minnesota 1993-2012 (Birth Year)**

Birth Year*	African American			American Indian			Asian			Hispanic (can be any race)			White		
	Deaths	Births	IMR	Deaths	Births	IMR	Deaths	Births	IMR	Deaths	Births	IMR	Deaths	Births	IMR
1993-1997	209	14,969	14.0	87	5,579	15.6	94	12,972	7.2	70	9,963	7.0	1,675	283,474	5.9
1998-2002	241	21,330	11.3	65	6,160	10.6	110	16,873	6.5	124	19,333	6.4	1,419	285,748	5.0
2003-2007	286	29,831	9.6	76	7,129	10.7	102	21,856	4.7	119	27,641	4.3	1,236	278,898	4.4
2008-2012	308	33,633	9.2	66	7,225	9.1	112	25,192	4.4	133	25,870	5.1	1,124	262,168	4.3

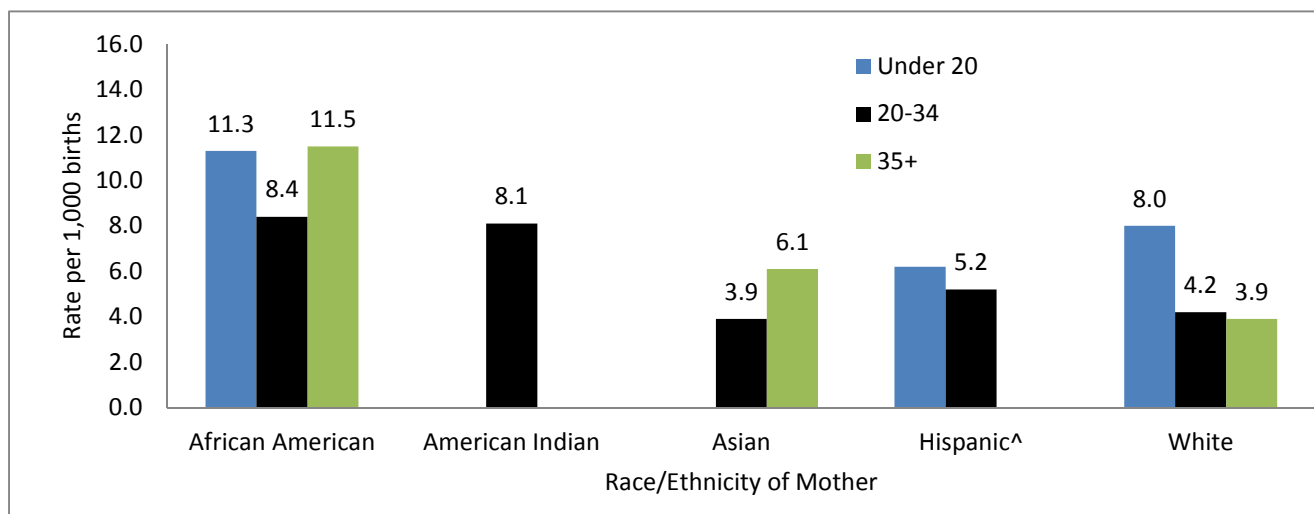


Source: Minnesota Department of Health, Center for Health Statistics

^Can be any race

**Table 3 and Figure 3: Infant Mortality Rate (IMR) by Age of Mother
Minnesota 2008-2012 (Birth Year)**

Race/Ethnicity of Mother	Age of Mother								
	Deaths			Births			IMR		
	Under 20	20-34	35+	Under 20	20-34	35+	Under 20	20-34	35+
African American	40	215	53	3,538	25,472	4,623	11.3	8.4	11.5
American Indian	17	44	5	1,365	5,423	437	*	8.1	*
Asian	11	77	24	1,639	19,632	3,921	*	3.9	6.1
Hispanic [^]	21	101	11	3,370	19,395	3,105	6.2	5.2	*
White	90	883	151	11,317	211,692	39,159	8.0	4.2	3.9



Source: Minnesota Department of Health, Center for Health Statistics *Rates not calculated for less than 20 infant deaths
[^]Can be any race

**Table 4: Number and Percent of Infant Deaths by Cause of Death
Minnesota 2008-2012 (Birth Year)**

Cause	Race/ethnicity of mother									
	African American		American Indian		Asian		Hispanic [^]		White	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Prematurity	71	23.1	8	12.1	26	23.2	25	18.8	194	17.2
Congenital Anomalies	71	23.1	15	22.7	31	27.7	46	34.6	285	25.3
SIDS/Sleep Disorders	33	10.7	19	28.8	9	8.0	18	13.5	144	12.8
Obstet. Cond	38	12.3	4	6.1	15	13.4	10	7.5	130	11.6
Birth Asphyxia	4	1.3	0	0.0	1	0.9	0	0.0	12	1.1
Injury	4	1.3	1	1.5	0	0.0	3	2.3	27	2.4
Other	87	28.2	19	28.8	30	23.3	31	23.3	333	29.6
Total	308	100.0	66	100.0	112	100.0	133	100.0	1,125	100.0

Source: Minnesota Department of Health, Center for Health Statistics [^]Can be any race

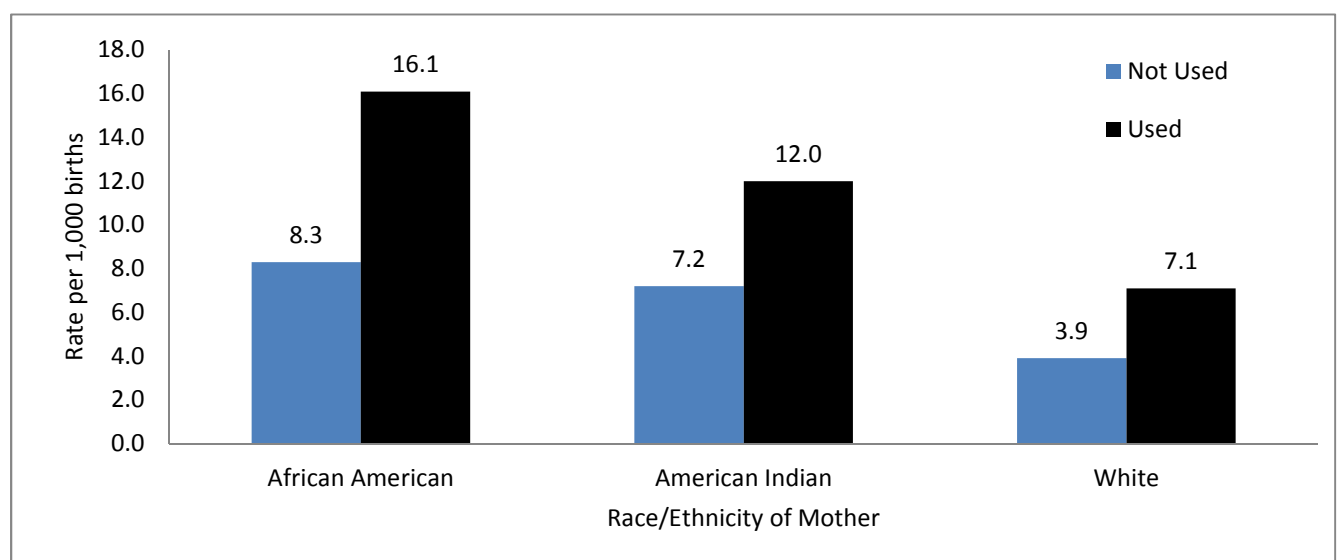
Cause of Death	Definition	ICD-10 Codes
Congenital anomalies	Birth defects of any of the major organ systems and specific anomalies such as spina bifida and anencephaly	Q00-Q99
Prematurity	Disorders related to short gestation and low birth weight, and respiratory distress syndrome	P07, P25, P22, P26, P28
SIDS/sleep disorders	SIDS and any other ill-defined asphyxia-related cause of death	R95, R96, W75, W83, W84
Injury	All injuries and accidents due to the environment or human actions including transport or motor vehicle accidents, accidental drowning and submersion, other accidental threats to breathing, or assaults (homicide)	V01-X59 (except W75, W83, W84), X85-Y09, Y87.1
Obstetric conditions	Multiple gestations, premature rupture of membranes, incompetent cervix, ectopic pregnancy, maternal death, malpresentation before labor, oligohydramnios, and polyhydramnios, placenta praevia, placental separation and hemorrhage, unspecified morphological and functional abnormalities of placenta	P01, P02
Birth asphyxia	Abnormal fetal heart rate, fetal or intrauterine: acidosis, anoxia, asphyxia, distress, hypoxia, meconium in liquor, passage of meconium, anoxia, asphyxia, hypoxia	P20-P21

Section 2: Infant Mortality Rates by Individual Behaviors, Economic Factors and System Factors

a. Individual Behavior

**Table 5 and Figure 5: Infant Mortality Rate by Tobacco Use of Mother during Pregnancy
Minnesota 2008-2012 (Birth Year)**

Race/Ethnicity of Mother	Mother's Tobacco Use during Pregnancy					
	Deaths		Births		IMR	
	Not Used	Used	Not Used	Used	Not Used	Used
African American	250	52	29,972	3,237	8.3	16.1
American Indian	29	37	4,052	3,093	7.2	12.0
Asian	106	5	24,242	697	4.4	*
Hispanic [^]	119	13	24,562	1,136	4.8	*
White	903	202	231,497	28,491	3.9	7.1



Source: Minnesota Department of Health, Center for Health Statistics [^]Can be any race

*Rates not calculated for less than 20 infant deaths

b. Economic

Table 6: Infant Mortality Rate (IMR) by Marital Status of Mother Minnesota 2008-2012 (Birth Year)						
Race/Ethnicity of Mother	Marital Status of Mother					
	Deaths		Births		IMR	
	Married	Not Married	Married	Not Married	Married	Not Married
African American	103	204	13,216	20,405	7.8	10.0
American Indian	6	60	1,090	6,134	*	9.8
Asian	67	44	16,634	8,554	4.0	5.1
Hispanic [^]	43	90	10,958	14,901	3.9	6.0
White	697	427	192,909	69,221	3.6	6.2

Source: Minnesota Department of Health, Center for Health Statistics [^]Can be any race
 *Rates not calculated for less than 20 infant deaths

Table 7: Infant Mortality Rate (IMR) by Birthplace of Mother Minnesota 2008-2012 (Birth Year)						
Race/Ethnicity of Mother	Birthplace of Mother					
	Deaths		Births		IMR	
	US Born	Foreign Born	US Born	Foreign Born	US Born	Foreign Born
African American	206	100	16,633	17,000	12.4	5.9
American Indian	66	0	7,105	120	9.3	*
Asian	29	82	5,871	19,321	4.9	4.2
Hispanic [^]	47	85	8,669	17,201	5.4	4.9
White	1,074	45	251,136	11,032	4.3	4.1

Source: Minnesota Department of Health, Center for Health Statistics [^]Can be any race
 *Rates not calculated for less than 20 infant deaths

**Table 8: Infant Mortality Rate by Educational Status of Mother
Minnesota 2008-2012 (Birth Year)**

Race/Ethnicity of Mother	Educational Status of Mother								
	Deaths			Births			IMR		
	0 to 11 years	12 to 15	16 or more	0 to 11 years	12 to 15	16 or more	0 to 11 years	12 to 15	16 or more
African American	77	198	20	7,828	20,958	3,613	9.8	9.4	5.5
American Indian	21	42	1	2,236	4,450	350	9.4	9.4	*
Asian	11	63	31	3,548	11,817	9,219	*	5.3	3.4
Hispanic [^]	69	49	9	11,937	10,841	2,274	5.8	4.5	*
White	83	605	398	13,645	128,149	117,883	6.1	4.7	3.4

Source: Minnesota Department of Health, Center for Health Statistics *Rates not calculated for less than 20 infant deaths [^]Can be any race

c. System

**Table 9: Infant Mortality Rate by Adequacy of Prenatal Care
Minnesota 2008-2012 (Birth Year)**

Race/Ethnicity of Mother	Adequacy of Prenatal Care (GINDEX)					
	Deaths		Births		IMR	
	Adequate	Inadequate	Adequate	Inadequate	Adequate	Inadequate
African American	139	22	18,682	2,154	7.4	10.2
American Indian	15	12	2,800	1,052	*	*
Asian	51	8	14,784	1,247	3.4	*
Hispanic [^]	65	3	15,898	1,232	4.1	*
White	675	45	197,099	5,190	3.4	8.7

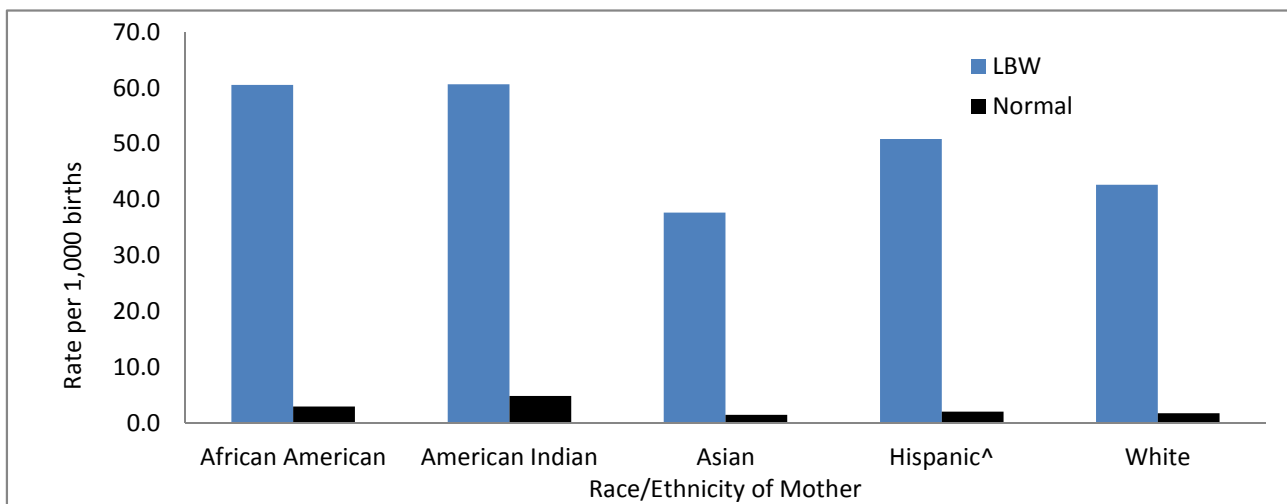
Source: Minnesota Department of Health, Center for Health Statistics [^]Can be any race

GINDEX is determined by combining measures of the month or trimester prenatal care began, the number of prenatal visits, and the gestational age of the infant/fetus at the time of birth. Adequate - intensive or adequate prenatal care is defined as prenatal care starting in the first trimester and the woman having an adequate number of visits (or more) based on the gestational age of the infant at birth. Inadequate care includes no care at all.

Section 3: Infant Mortality Rates by Birth Outcomes

**Table 10 and Figure 10: Infant Mortality Rate (IMR) by Birth Weight of Infant
Minnesota 2008-2012 (Birth Year)**

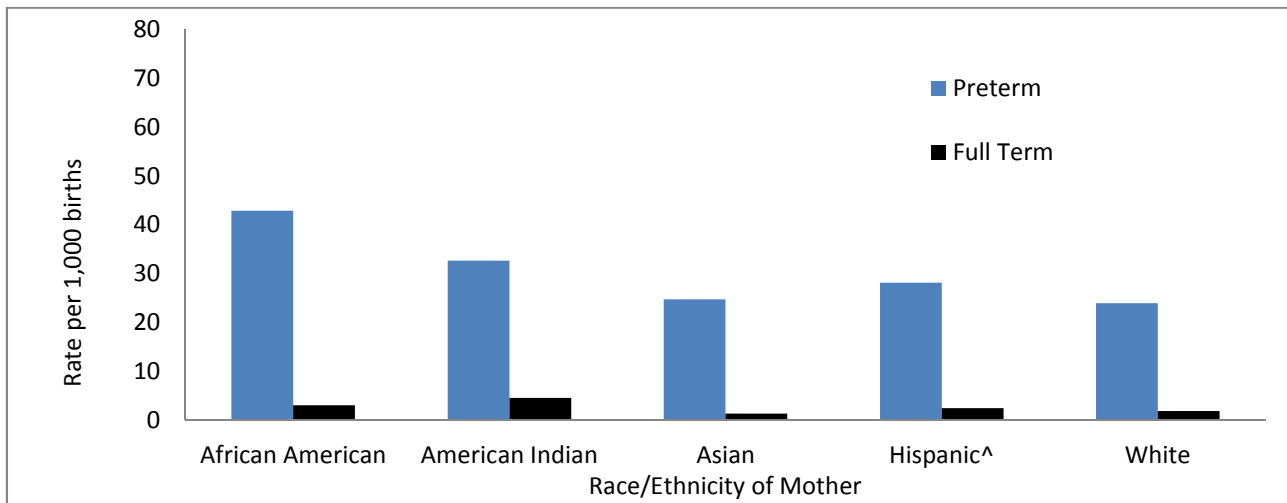
Race/Ethnicity of Mother	Birth Weight					
	Deaths		Births		IMR	
	LBW	Normal	LBW	Normal	LBW	Normal
African American	211	91	3,484	30,128	60.6	3.0
American Indian	33	33	544	6,679	60.7	4.9
Asian	74	35	1,964	23,219	37.7	1.5
Hispanic [^]	78	51	1,533	24,321	50.9	2.1
White	660	450	15,471	246,553	42.7	1.8



Source: Minnesota Department of Health, Center for Health Statistics [^]Can be any race
LBW – less than 2,500 grams at birth and Normal – 2,500 grams or more

**Table 11 and Figure 11: Infant Mortality Rate (IMR) by Gestational Age of Infant
Minnesota 2008-2012 (Birth Year)**

Race/Ethnicity of Mother	Gestational Age					
	Deaths		Births		IMR	
	Preterm	Full Term	Preterm	Full Term	Preterm	Full Term
African American	156	80	3,634	25,601	42.9	3.1
American Indian	27	24	825	5,188	32.7	4.6
Asian	55	29	2,219	20,161	24.8	1.4
Hispanic [^]	64	52	2,271	21,174	28.2	2.5
White	537	413	22,382	218,055	24.0	1.9



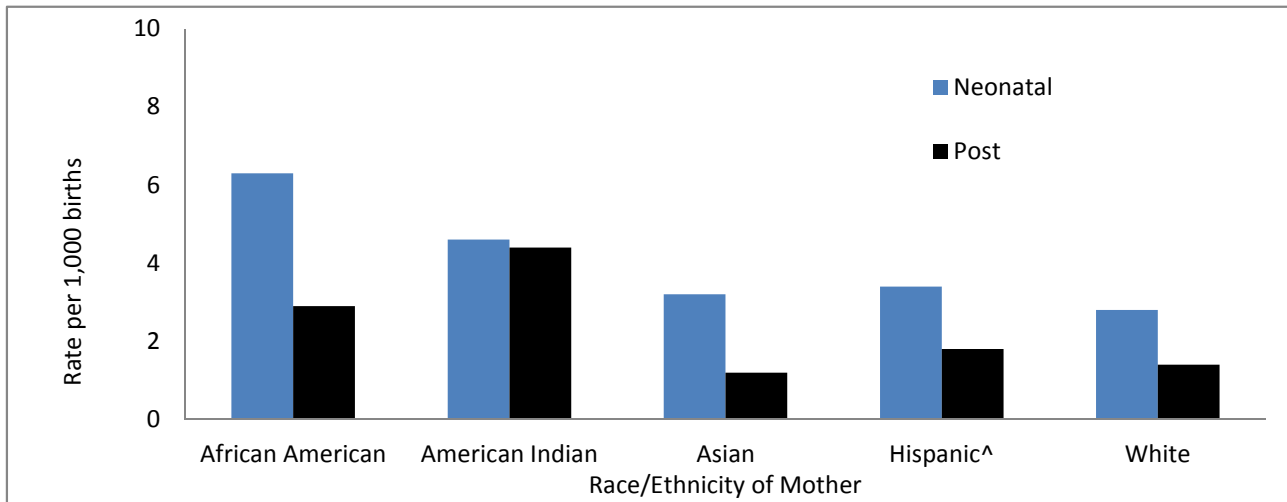
Source: Minnesota Department of Health, Center for Health Statistics [^]Can be any race

Preterm – Less than 37 weeks gestation

Full Term – 37 weeks or more gestation

**Table 12 and Figure 12: Infant Mortality Rate (IMR) by Age of Infant at Death
Minnesota 2008-2012 (Birth Year)**

Race/Ethnicity of Mother	Age of Infant at Death				
	Deaths		Births	IMR	
	Neonatal	Post		Neonatal	Post
African American	211	97	33,633	6.3	2.9
American Indian	33	32	7,225	4.6	4.4
Asian	81	31	25,192	3.2	1.2
Hispanic [^]	87	46	25,870	3.4	1.8
White	746	379	262,168	2.8	1.4



Source: Minnesota Department of Health, Center for Health Statistics [^]Can be any race
Neonatal – Less than 28 days Post – Post-neonatal 28 to 364 days

Infant Mortality Resources at the Minnesota Department of Health

Minnesota Infant Mortality Statistics:

<http://www.health.state.mn.us/divs/chs/infantmortality/index.html>

Infant Mortality Reduction Initiative

<http://www.health.state.mn.us/divs/fh/mch/mortality/index.html>

Infant Mortality Resources at the Centers for Disease Control and Prevention

National Center for Health Statistics – Linked Birth and Infant Death Data

<http://www.cdc.gov/nchs/linked.htm>

Reproductive Health – Infant Mortality

<http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/InfantMortality.htm>

The Minnesota Center for Health Statistics collects, analyzes and disseminates data on the health of Minnesotans to help develop public health policies and programs.

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