

# **Infant Mortality in Minnesota: A Focus on Black/African Americans**

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# Background

## What is Infant Mortality?

- Infant mortality is defined as the death of a live born infant during the first year of life.
- Infant mortality is usually divided into two categories based on age:
  - (1) Neonatal mortality— death of infants aged 0-27 days
  - (2) Post-neonatal mortality— death of infants aged 28 days to 1 year old

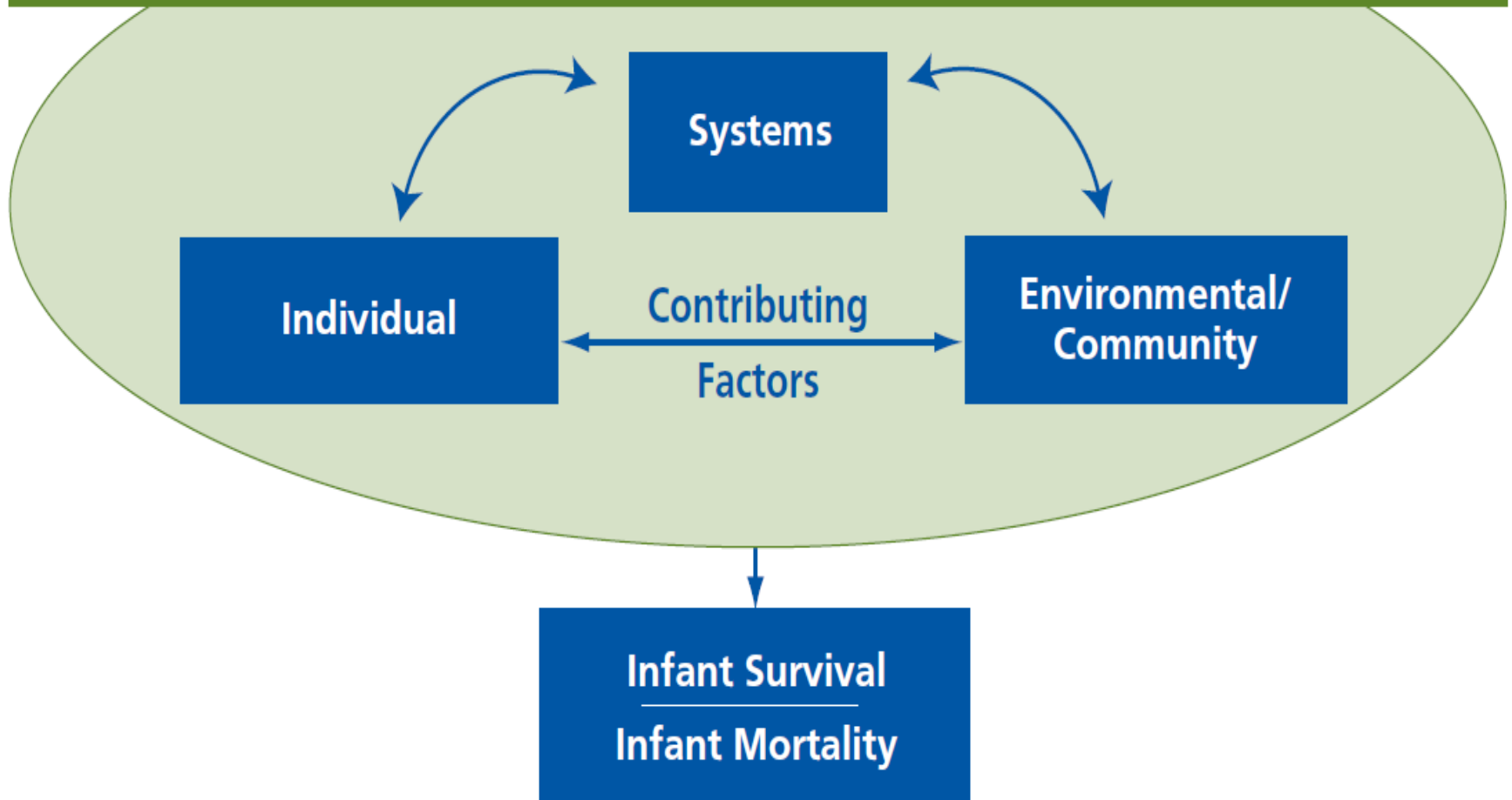
# What Does the Infant Mortality Rate Indicate or Suggest?

- The infant mortality rate is the number of infant deaths per 1,000 live births.
- It is an important indicator of the health status of a population.
  - Factors affecting the health of populations can also affect infant mortality
- The IMR reflects “...a variety of factors such as maternal health, quality and access to medical care, socioeconomic conditions, and public health practices.”<sup>1</sup>

<sup>1</sup>Source: MacDorman MF, Mathews TJ. Recent Trends in Infant Mortality in the United States. NCHS data brief, no 9. Hyattsville, MD: National Center for Health Statistics. 2008.

# A Complex Multi-Factorial Problem

FIGURE 4:  
**Contributing Factors for Infant Mortality**



Source: Disparities in Infant Mortality, January 2009

<http://www.health.state.mn.us/divs/chs/infantmortality/infantmortality09.pdf>

## Contributing Factors to Infant Health Outcomes

- **Individual**
  - Mother ( Health, Demographic, ...)
  - Infant ( Birth Health Status )
- **Environment / Community**
  - Physical (e.g., Housing, Safety, Environmental Hazards)
  - Economic (Income, Employment, *Education*, . . )
  - Social (Culture, Racism, *Stress*, . . .)
- **Systems**
  - Health Care Delivery
  - Public Health (National, State, Local)
  - Other (transportation, interpreters, cultural competence of services)

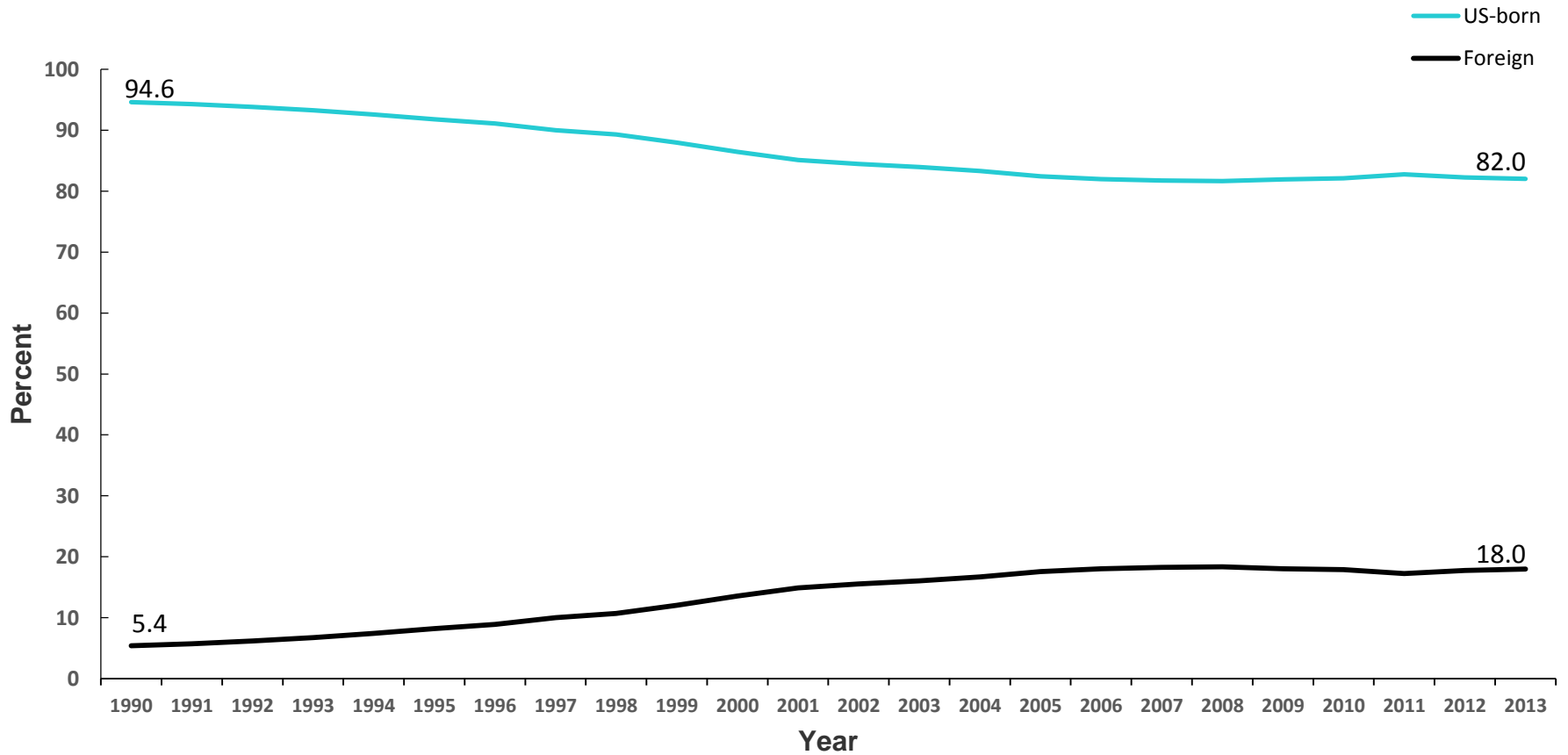
# Infant Mortality Data Reporting

- Data Source
  - Linked Infant Death/Birth Data Set
    - Match the death of the infant to its birth
- Race reported as mother's race
- Reported by birth year

# **Births and Deaths**

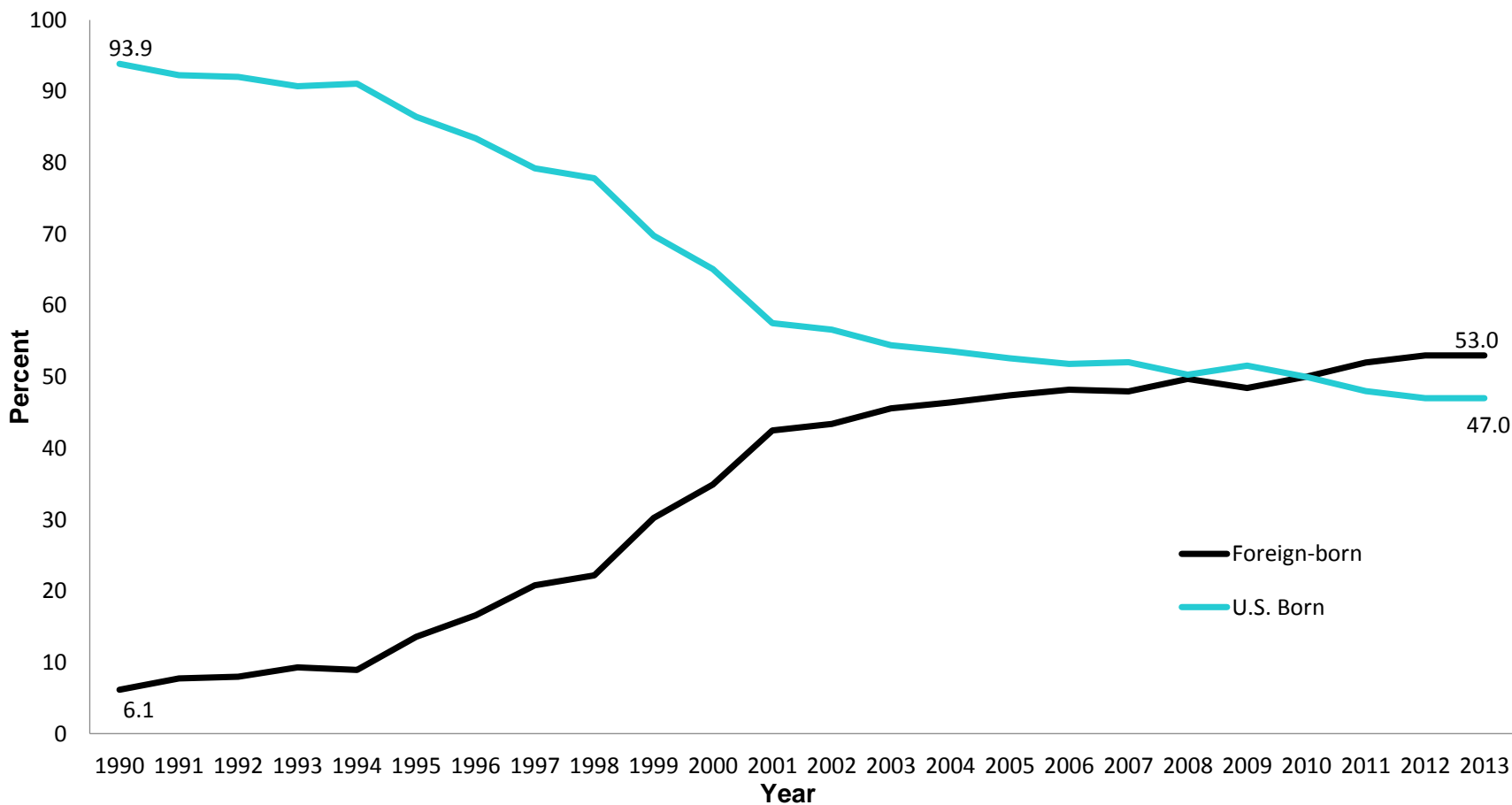


## Percentage of Births by Maternal Nativity, Minnesota, 1990-2013



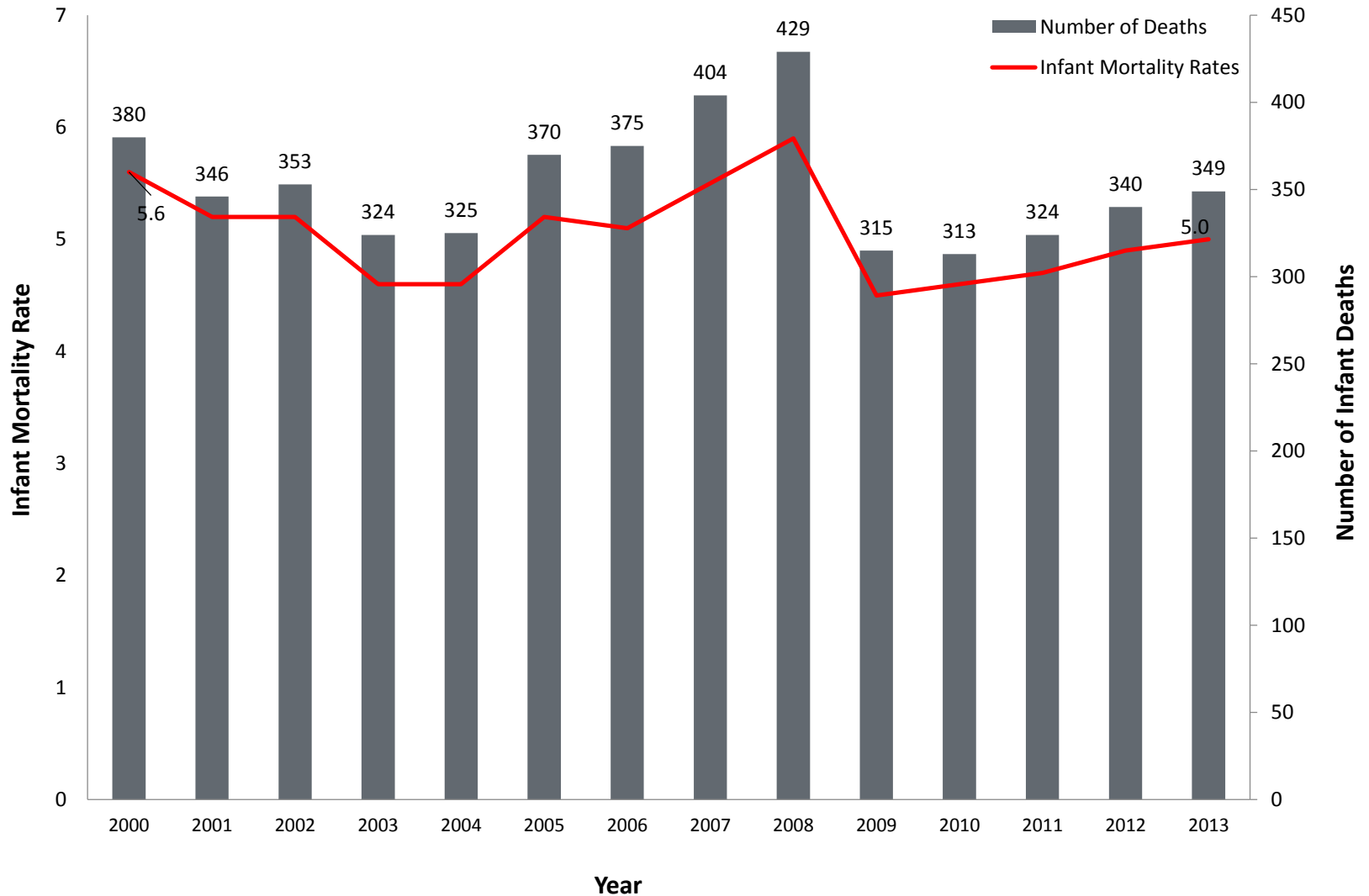
Source: MDH, MCHS linked Infant Death/Birth File

# Percentage of Black/African American Births by Maternal Nativity, Minnesota 1990-2013



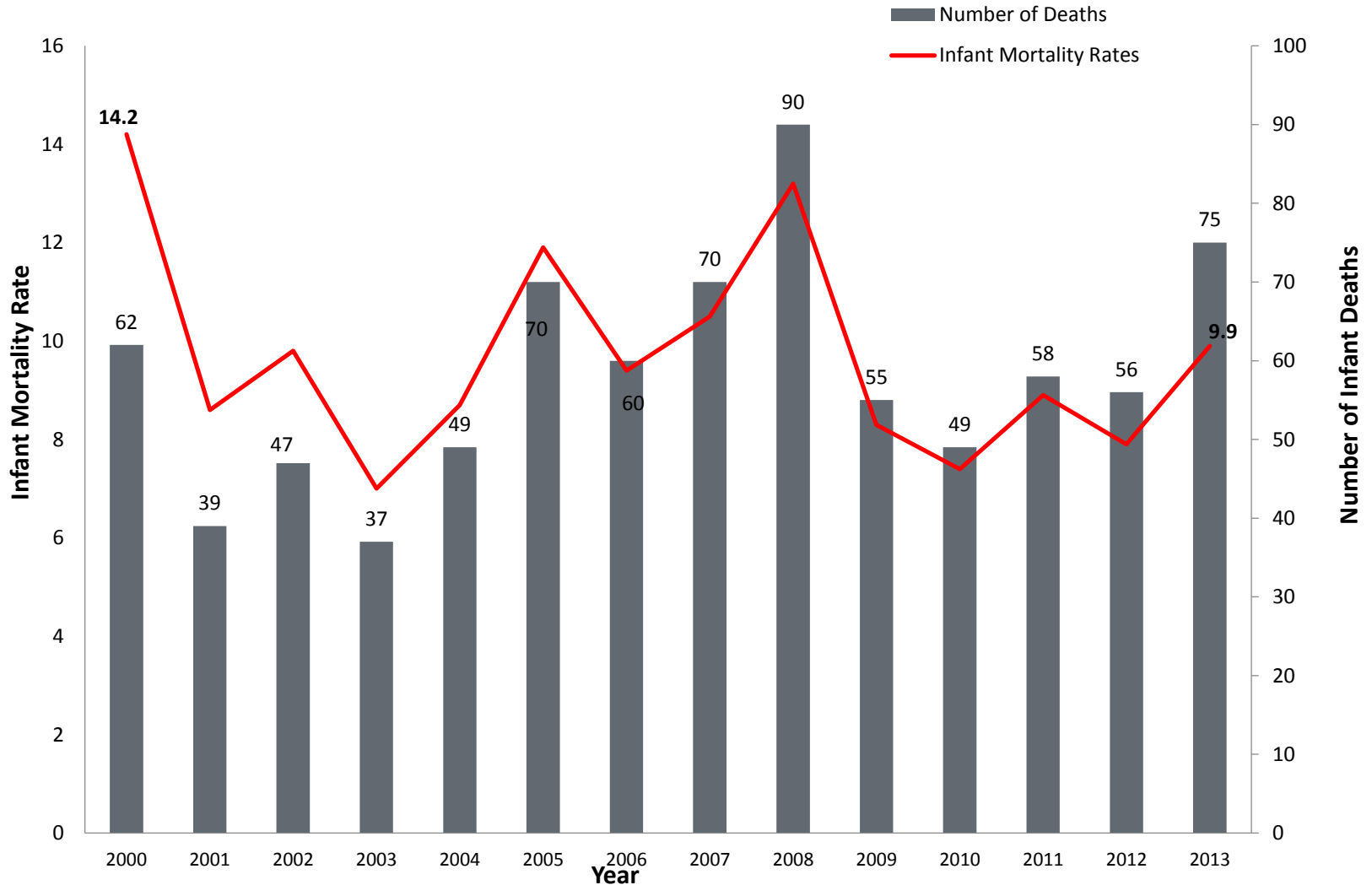
Source: MDH, MCHS linked Infant Death/Birth File

## Number of Infant Deaths and Infant Mortality Rates, Minnesota 2000-2013



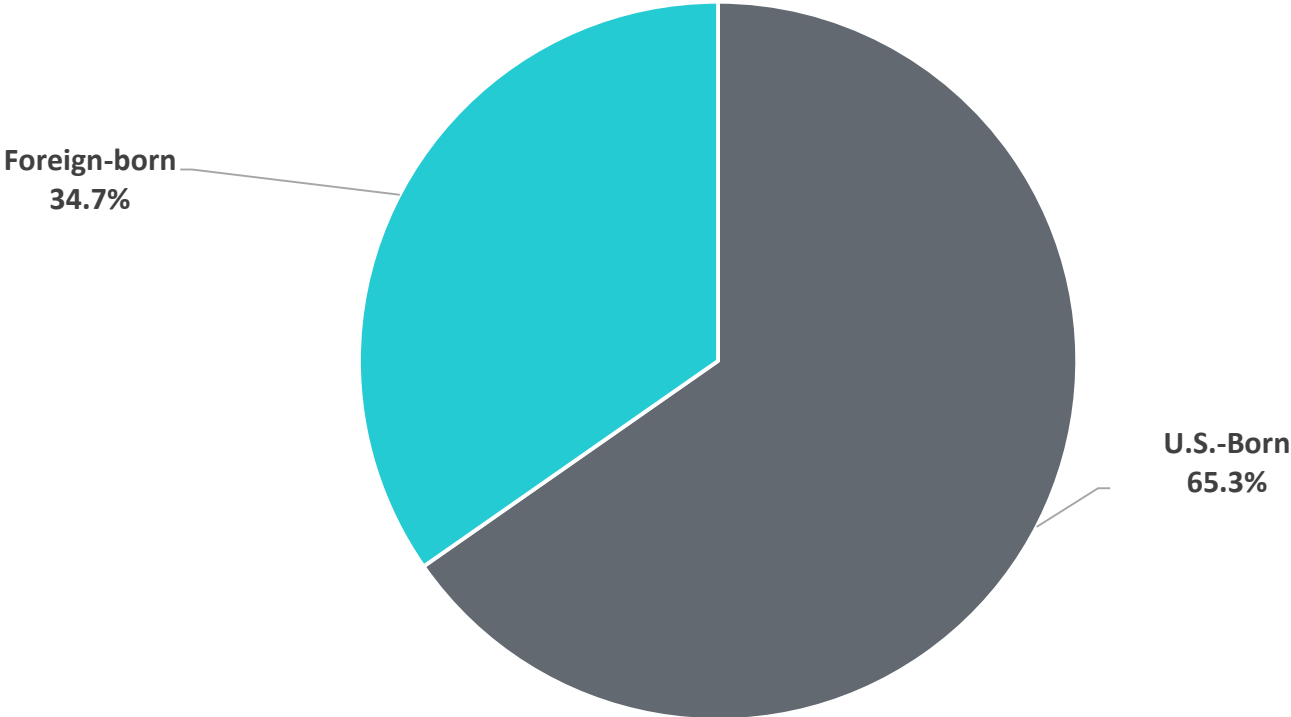
Source: Minnesota Department of Health, Center for Health Statistics

## Number of Infant Deaths and Infant Mortality Rates for Black/African Americans, Minnesota, 2000-2013



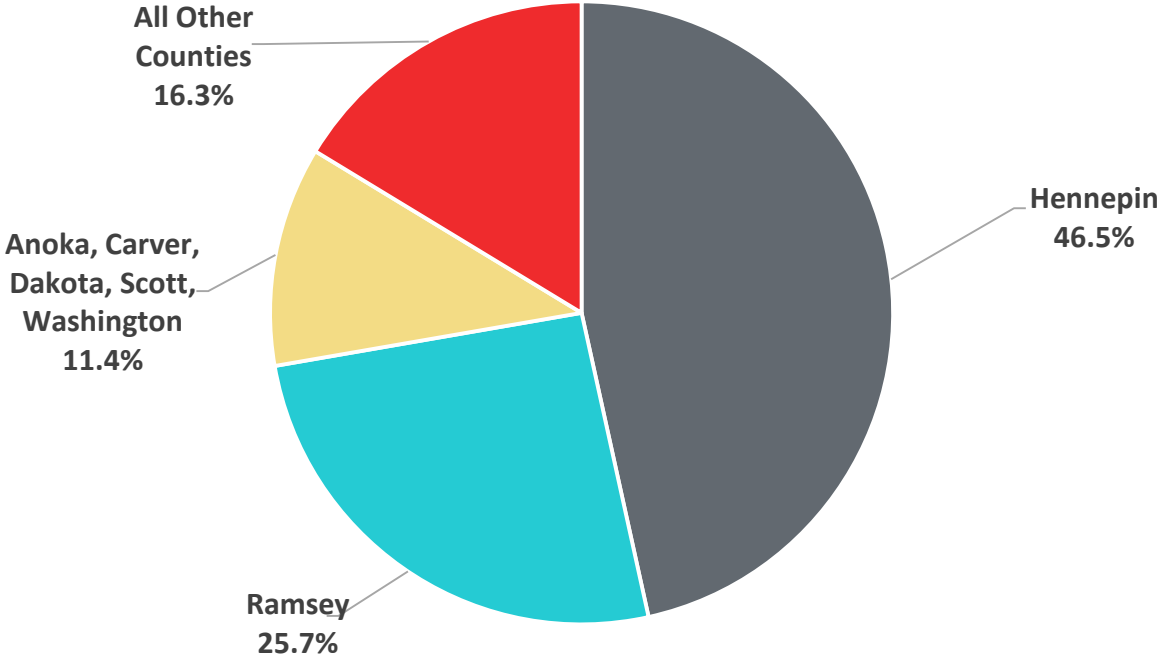
Source: Minnesota Department of Health, Center for Health Statistics

# Percentage of Black/African American Infant Deaths by Maternal Nativity Minnesota, 2000-2013



Source: Minnesota Department of Health, Center for Health Statistics

# Percent Distribution of U.S.-Born Black/African American Infant Deaths by Minnesota County, 2010-2014



Source: Minnesota Department of Health, Center for Health Statistics

## Black/African American Infant Mortality Rates by County and City, Minnesota 2010-2014

County/City	Infant Mortality Rate	Infant Morality Disparity Ratio*	
	(2010-2014)	(2010-2014)	(1995-1999)
Hennepin County	11.3	3.4	1.9
Minneapolis	13.3	3.1	1.9
Brooklyn Park/ Brooklyn Center	11.4	3.2	1.4
Ramsey County	12.9	2.6	2.4
Saint Paul	13.6	2.9	2.1
Anoka, Carver, Dakota, Scott, Washington	11.7	3.4	2.8
Greater MN	16.3	3.6	2.4

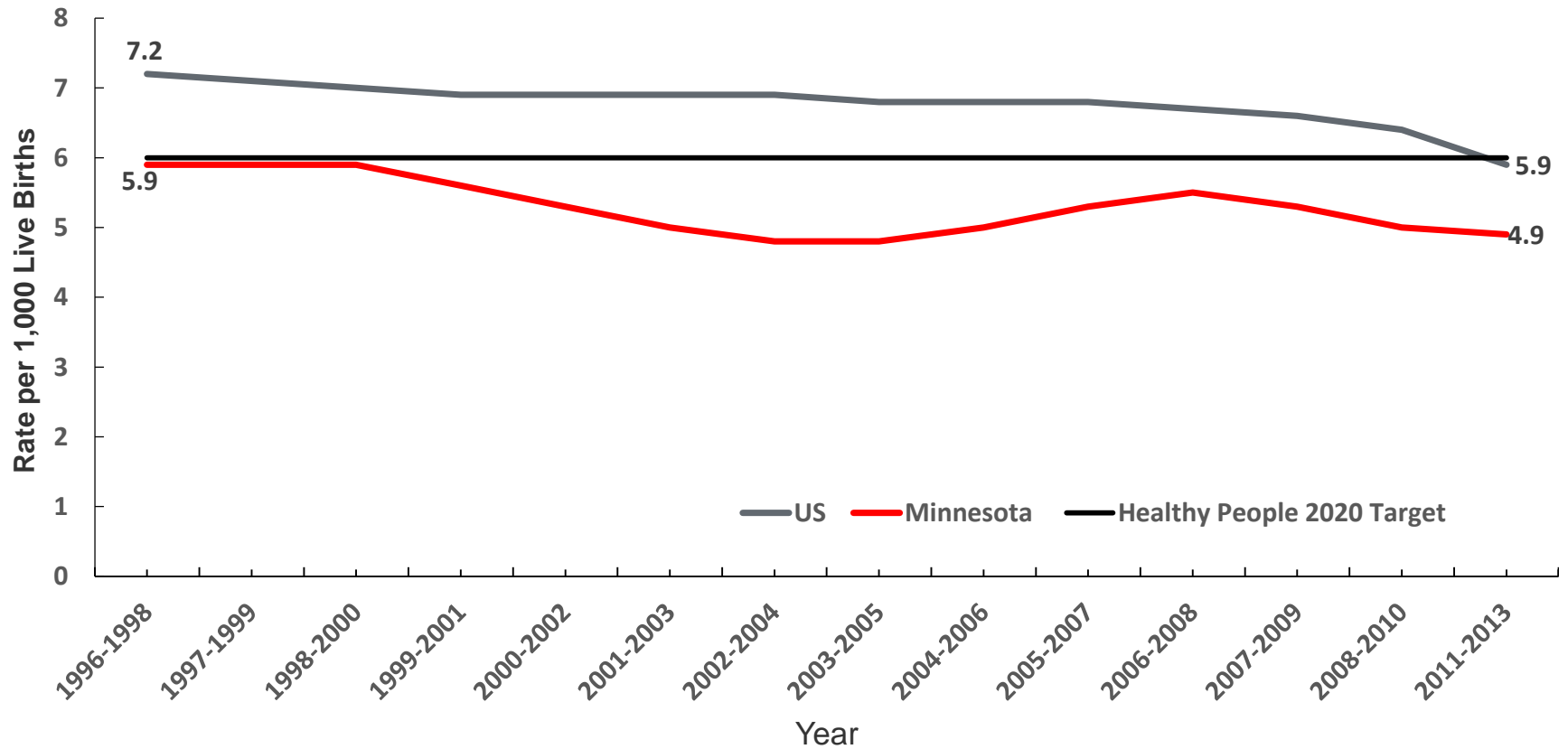
\*US born Non-Hispanic African American vs Non-Hispanic White Rate

Source: MDH, Linked Infant death/Birth File

# **National and Regional Comparisons**

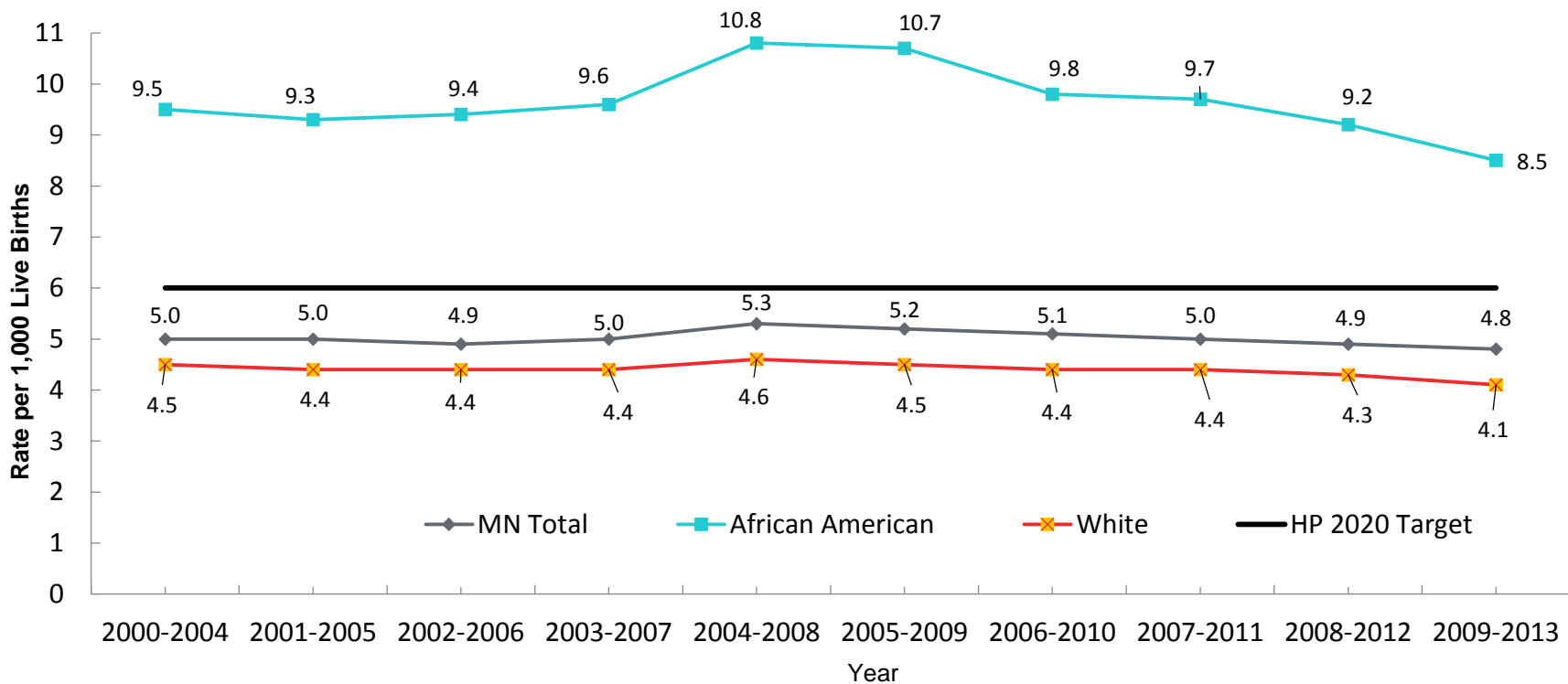


## Infant Mortality Rates by Year of Birth, Minnesota and U.S. 3-Year Averages



\*HP 2020 Infant Mortality Target is 6.0 infant deaths per 1,000 live births  
Source: National Center for Health Statistics

## Black/African-American Infant Mortality Rates,<sup>1</sup> Minnesota, 2000-2004 through 2009-2013



<sup>1</sup>Five-year averages

\*HP 2020 Infant Mortality Target is 6.0 infant deaths per 1,000 live births

Source: Minnesota Department of Health, Center for Health Statistics

## Infant Mortality Rates & Rank by Race/Ethnicity Among Region V States, 2011-2013

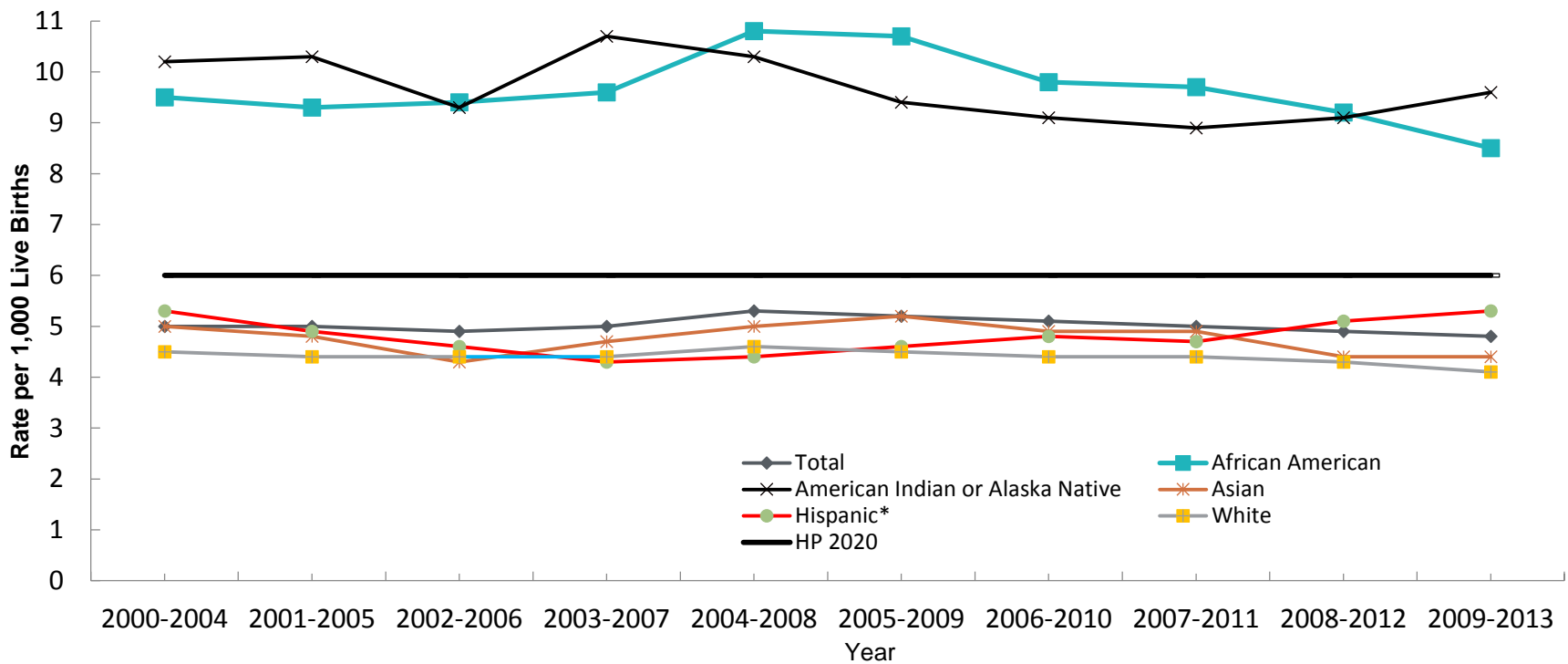
State	Total	Non-Hispanic Black	Non-Hispanic American Indian or Alaska Native <sup>1</sup>	Asian or Pacific Islander	Hispanic	Non-Hispanic White	Region V Rank
Illinois	6.3	12.9	--	4.6	5.2	4.8	3
Indiana	7.1	12.8	--	5.1	6.0	6.4	5
Michigan	6.8	13.1	8.8	4.3	5.9	5.3	4
<b>Minnesota</b>	<b>4.9</b>	<b>8.8</b>	<b>11.2</b>	<b>4.5</b>	<b>5.3</b>	<b>4.2</b>	<b>1</b>
Ohio	7.6	13.5	--	4.2	6.9	6.3	6
Wisconsin	6.0	14.0	8.0	6.7	5.2	5.0	2
<b>U.S.</b>	5.9	11.2	8.0	4.1	5.0	5.0	N/A

Source: National Center for Health Statistics

--Data not available.

<sup>1</sup> Includes Aleuts and Eskimos

## Infant Mortality Rates<sup>1</sup> by Race/Ethnicity of Mother, Minnesota, 2000-2004 through 2009-2013

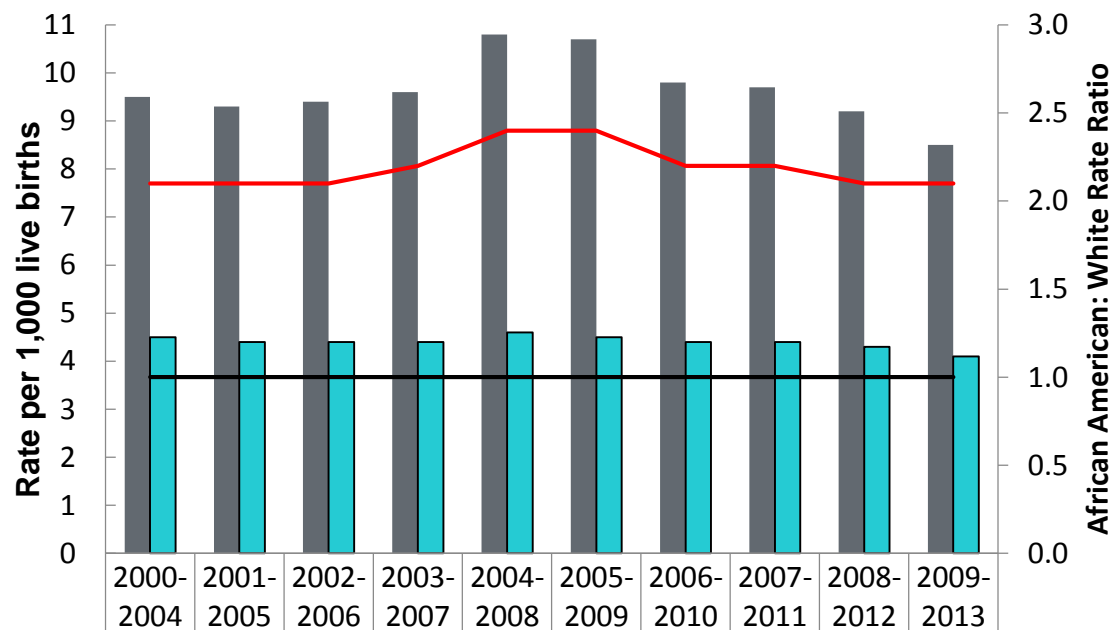


\*Hispanic can be of any race

<sup>1</sup>Five-year rolling averages

Source: Minnesota Department of Health, Center for Health Statistics

## Infant Mortality Rates<sup>1</sup> and Rate Ratios<sup>2</sup> among Infants born to Black/African American Mothers, Minnesota, 2000-2004 through 2009-2013



<span style="display: inline-block; width: 15px; height: 10px; background-color: grey; border: 1px solid black;"></span> African American	9.5	9.3	9.4	9.6	10.8	10.7	9.8	9.7	9.2	8.5
<span style="display: inline-block; width: 15px; height: 10px; background-color: cyan; border: 1px solid black;"></span> White	4.5	4.4	4.4	4.4	4.6	4.5	4.4	4.4	4.3	4.1
<span style="display: inline-block; width: 15px; border-bottom: 2px solid red;"></span> African American-White Ratio	2.1	2.1	2.1	2.2	2.4	2.4	2.2	2.2	2.1	2.1
<span style="display: inline-block; width: 15px; border-bottom: 2px solid black;"></span> White Comparison Group	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

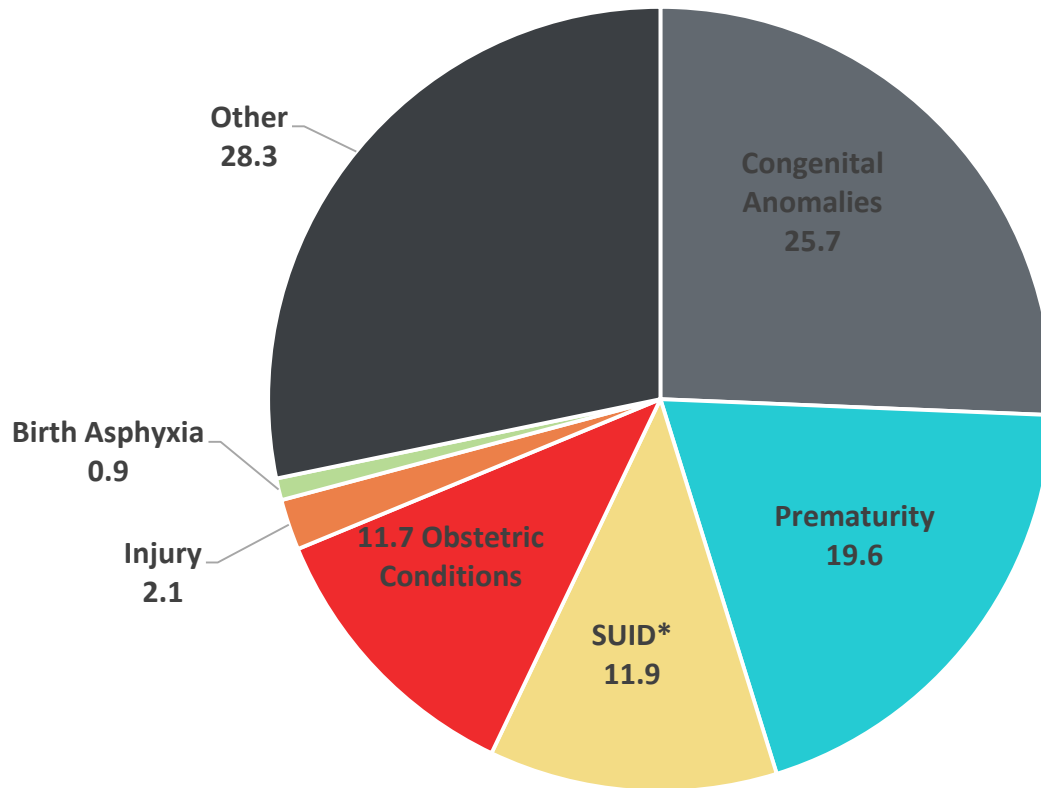
<sup>1</sup>Five-year rolling averages

<sup>2</sup>Rate Ratios are calculated by dividing a specific population's IMR by the White rate

Source: Minnesota Department of Health, Center for Health Statistics

# Causes

# Percent Distribution of the Leading Causes of Infant Deaths, Minnesota, 2009-2013



\*SUID includes SIDS and sleep-related infant deaths

Source: Minnesota Department of Health, Center for Health Statistics

## Top Five Leading Causes<sup>1</sup> of Infant Mortality by Race/Ethnicity of Mother, Minnesota, 2009-2013

Race/Ethnicity	First	Second	Third	Fourth	Fifth
<b>African American</b>	Prematurity (23.2%)	Congenital Anomalies (22.9%)	Obstetric Conditions (11.9%)	SUID (includes SIDS and Sleep-Related Infant Deaths) (11.6%)	Birth Asphyxia (1.0%)
<b>American Indian</b>	SUID (includes SIDS and Sleep-Related Infant Deaths) (29.9%)	Congenital Anomalies (16.4%)	Prematurity (11.9%)	Obstetric Conditions (9.0%)	Injury (3.0%)
<b>Asian</b>	Congenital Anomalies (30.4%)	Prematurity (23.2%)	Obstetric Conditions (14.3%)	SUID (include SIDS and Sleep-Related Infant Deaths) (5.4%)	Birth Asphyxia (0.9%)
<b>Hispanic*</b>	Congenital Anomalies (32.6%)	Prematurity (20.5%)	SUID (includes SIDS and Sleep-Related Infant Deaths) (12.1%)	Obstetric Conditions (8.3%)	Injury (2.3%)
<b>White</b>	Congenital Anomalies (25.4%)	Prematurity (18.3%)	SUID (includes SIDS and Sleep-Related Infant Deaths) (12.1%)	Obstetric Conditions (11.7%)	Injury (2.3%)
<b>Total</b>	Congenital Anomalies (25.7%)	Prematurity (19.6%)	SUID (includes SIDS and Sleep-Related Infant Deaths) (11.9%)	Obstetric Conditions (11.7%)	Injury (2.1%)

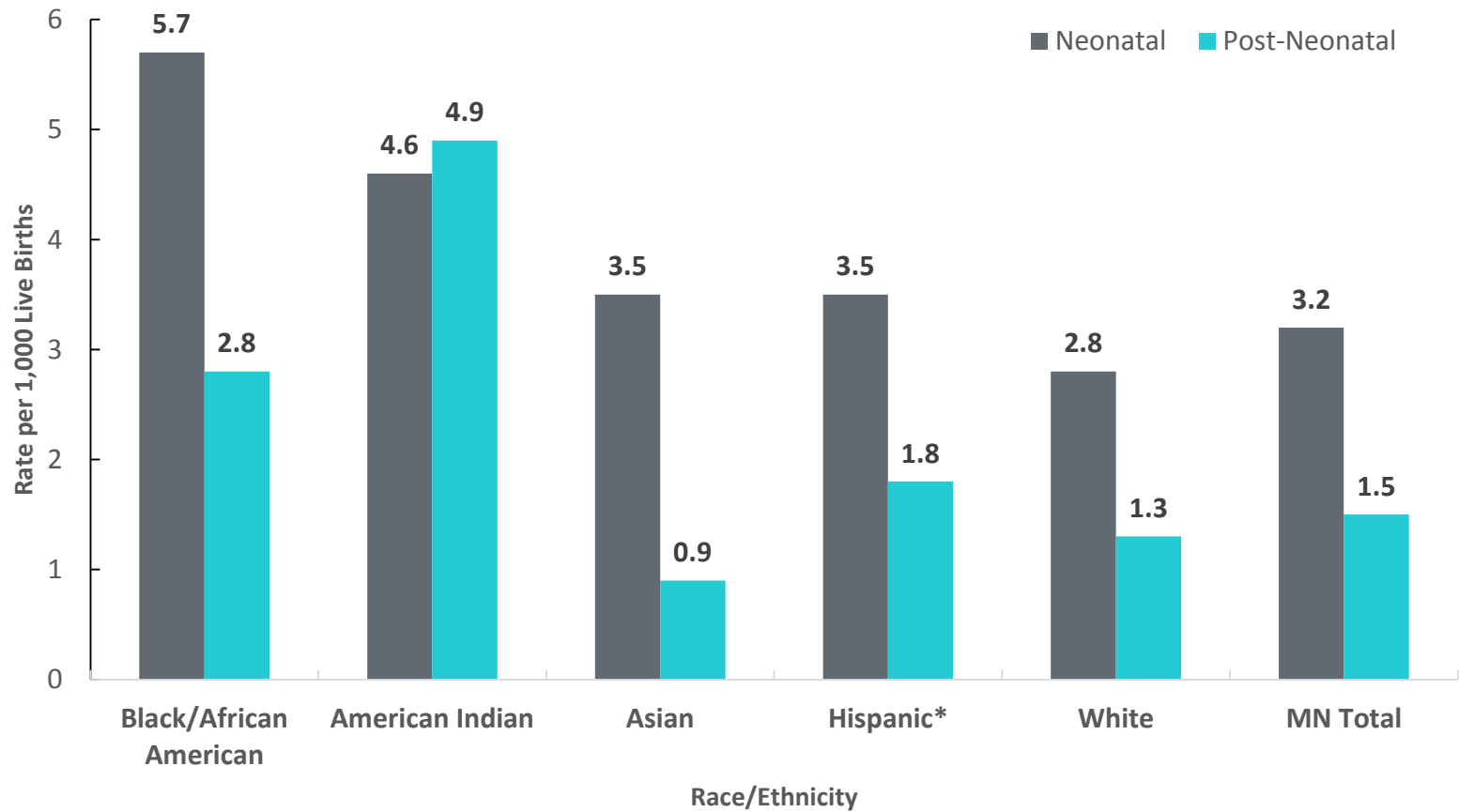
<sup>1</sup>Excludes deaths classified as "other."

\*Can be of any race

Source: Minnesota Department of Health, Center for Health Statistics



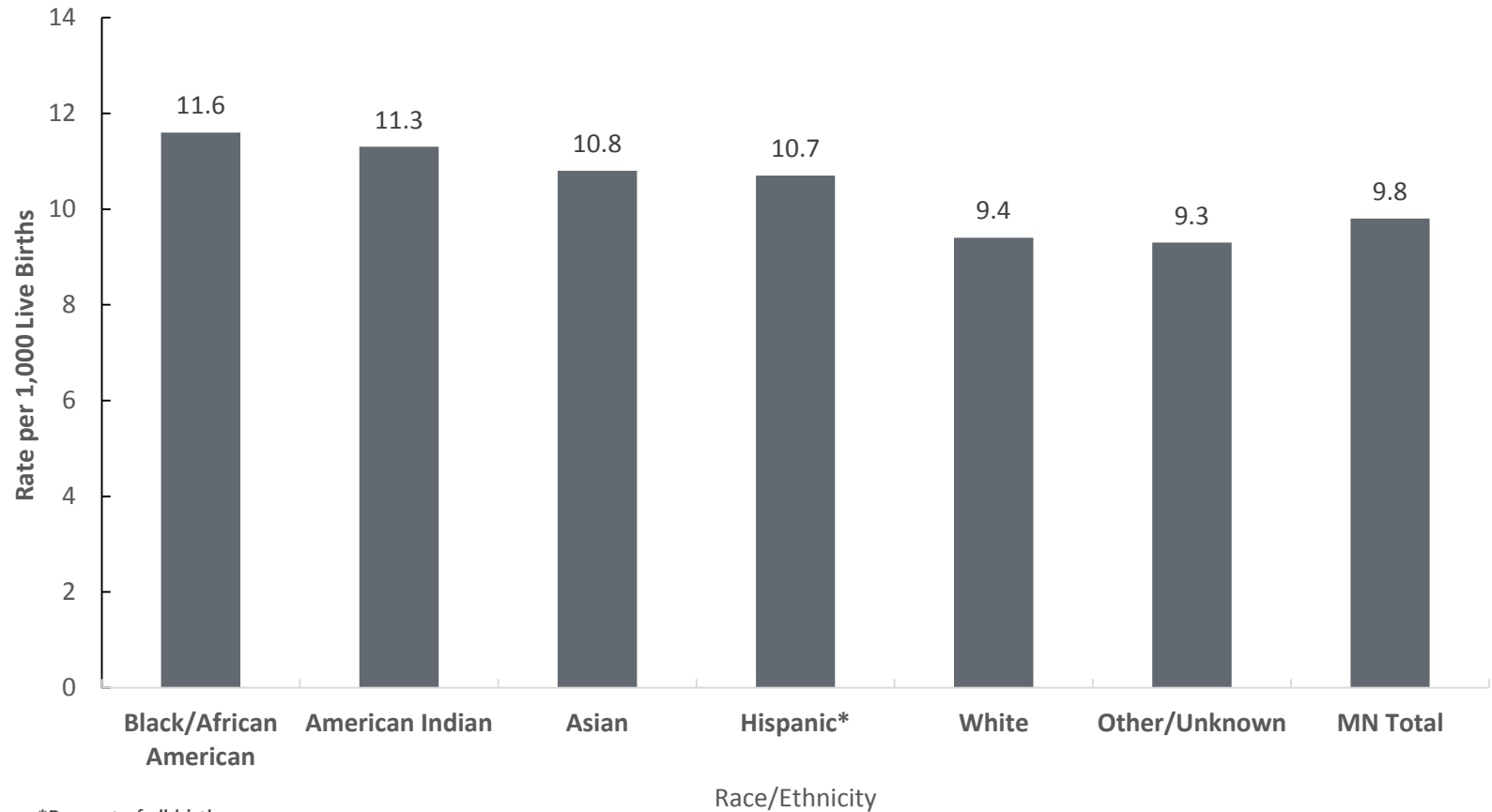
## Neonatal and Post-Neonatal Mortality Rates by Race/Ethnicity of Mother, Minnesota, 2009-2013



\*Can be of any race

Source: Minnesota Department of Health, Center for Health Statistics

## Percentage of Preterm\* births by Race/Ethnicity, Minnesota, 2014



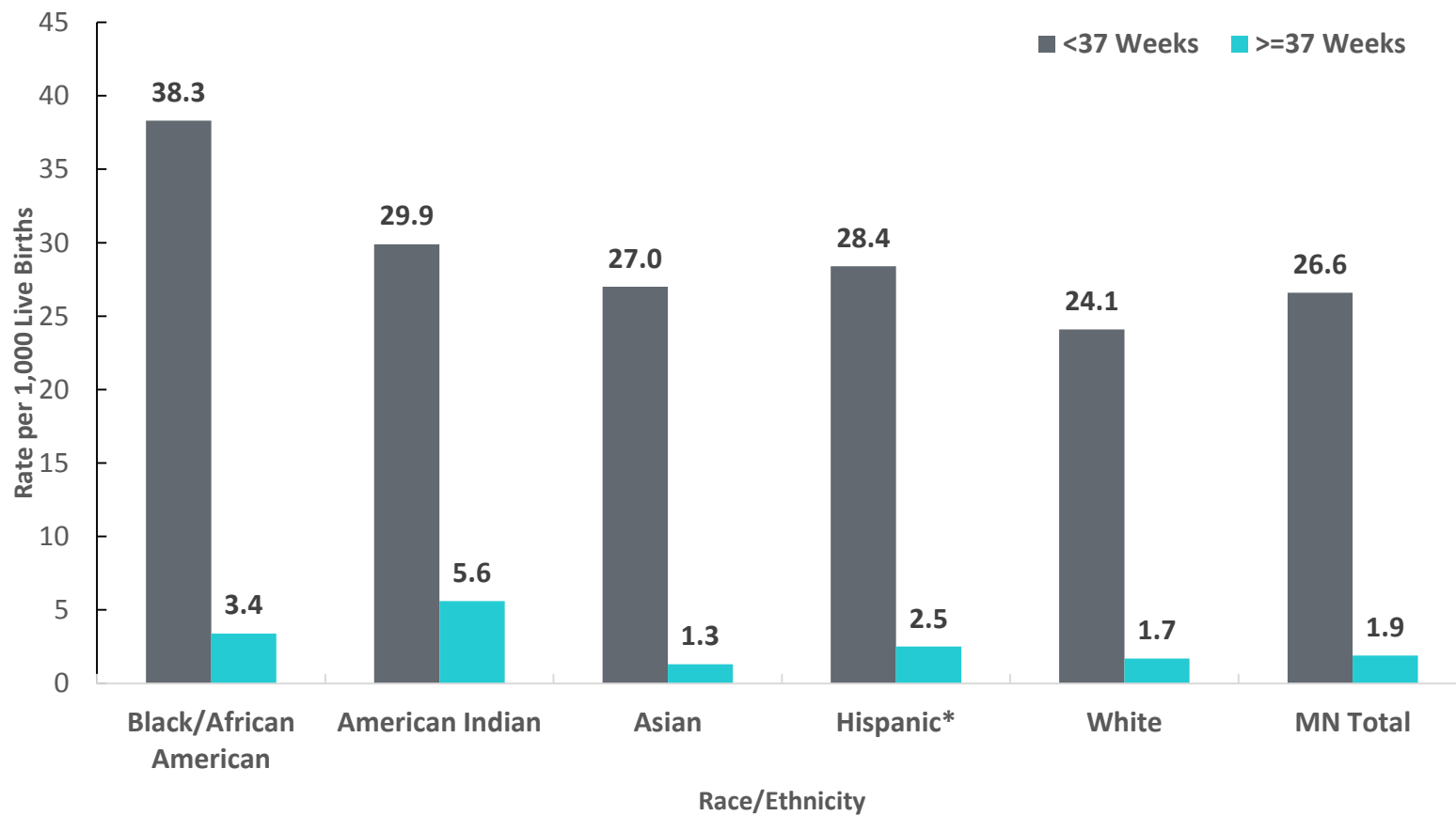
\*Percent of all births

Preterm is less than 37 weeks of completed gestation

Hispanic can be of any race

Source: Minnesota Center for Health Statistics, Minnesota Department of Health

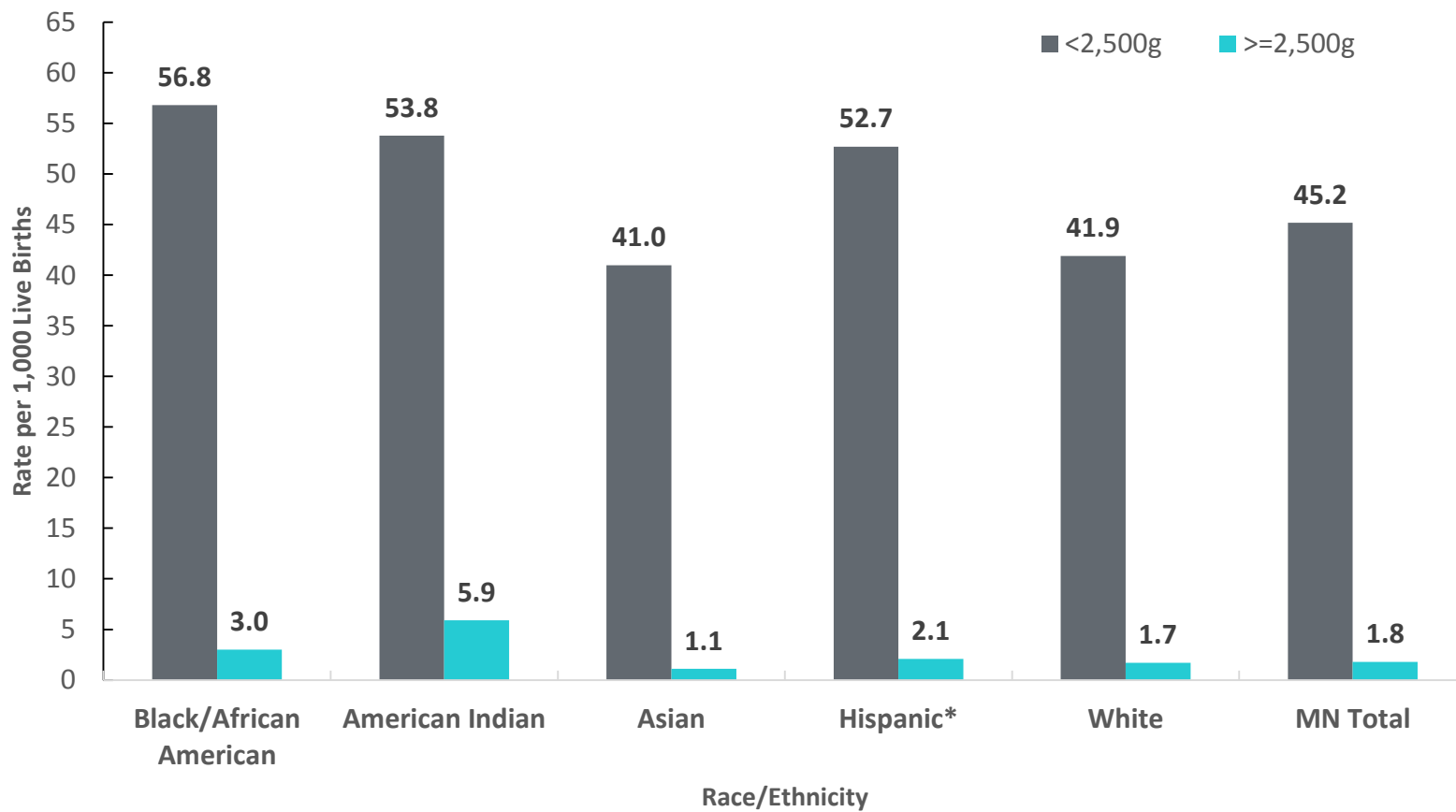
## Infant Mortality Rates by Gestational Age and Race/Ethnicity, Minnesota, 2009-2013



\*Can be of any race

Source: Minnesota Department of Health, Center for Health Statistics

## Infant Mortality Rates by Birth Weight and Race/Ethnicity, Minnesota, 2009-2013

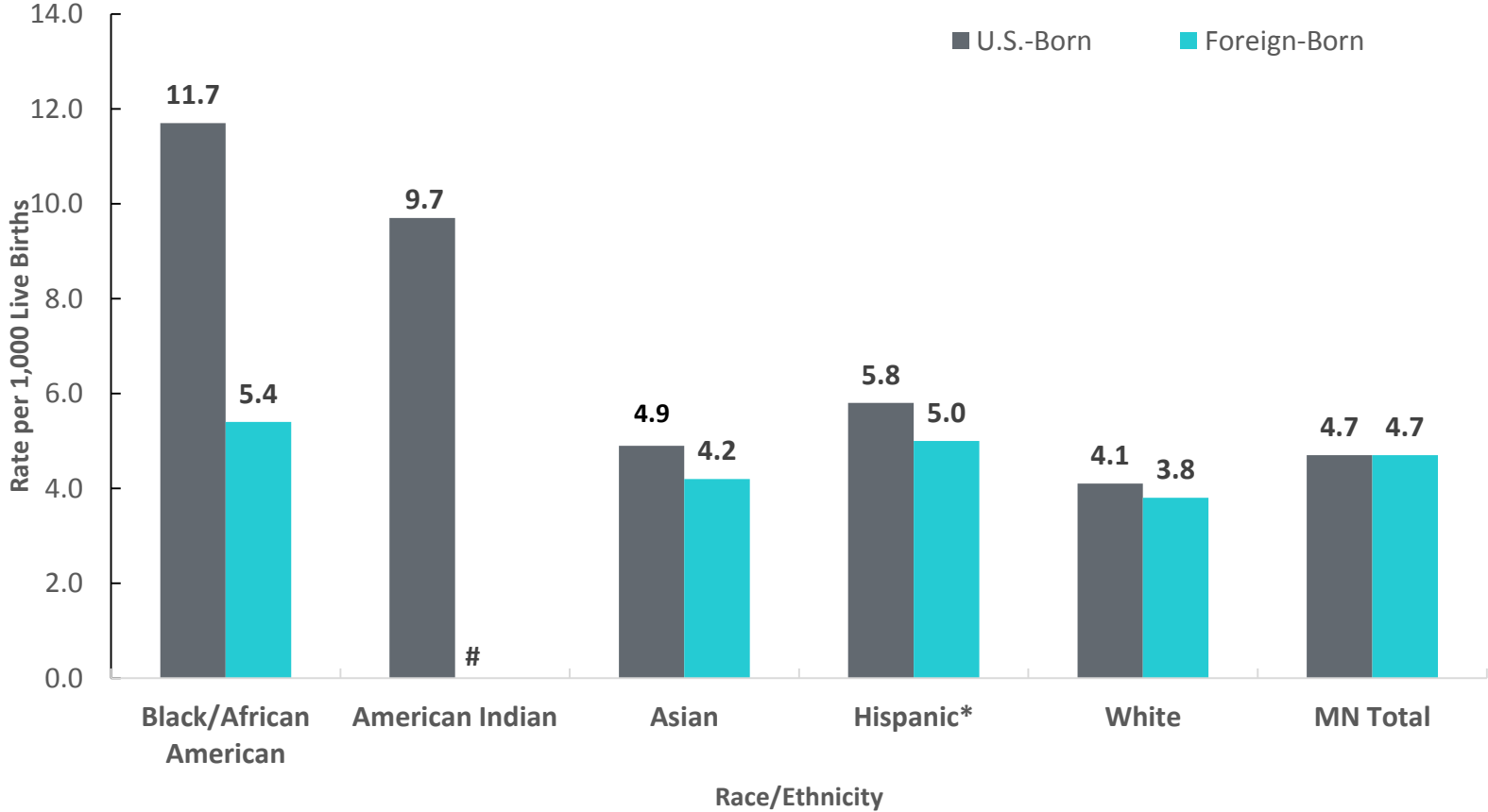


\*Can be of any race

Source: Minnesota Department of Health, Center for Health Statistics

# **Maternal Characteristics**

# Infant Mortality Rates by Maternal Nativity and Race/Ethnicity of Mother, Minnesota, 2009-2013



\*Can be of any race

#Indicates unstable rates; fewer than 20 cases

Source: Minnesota Department of Health, Center for Health Statistics

## Infant Mortality Rates by Maternal Age and Race/Ethnicity of Mother, Minnesota, 2009-2013

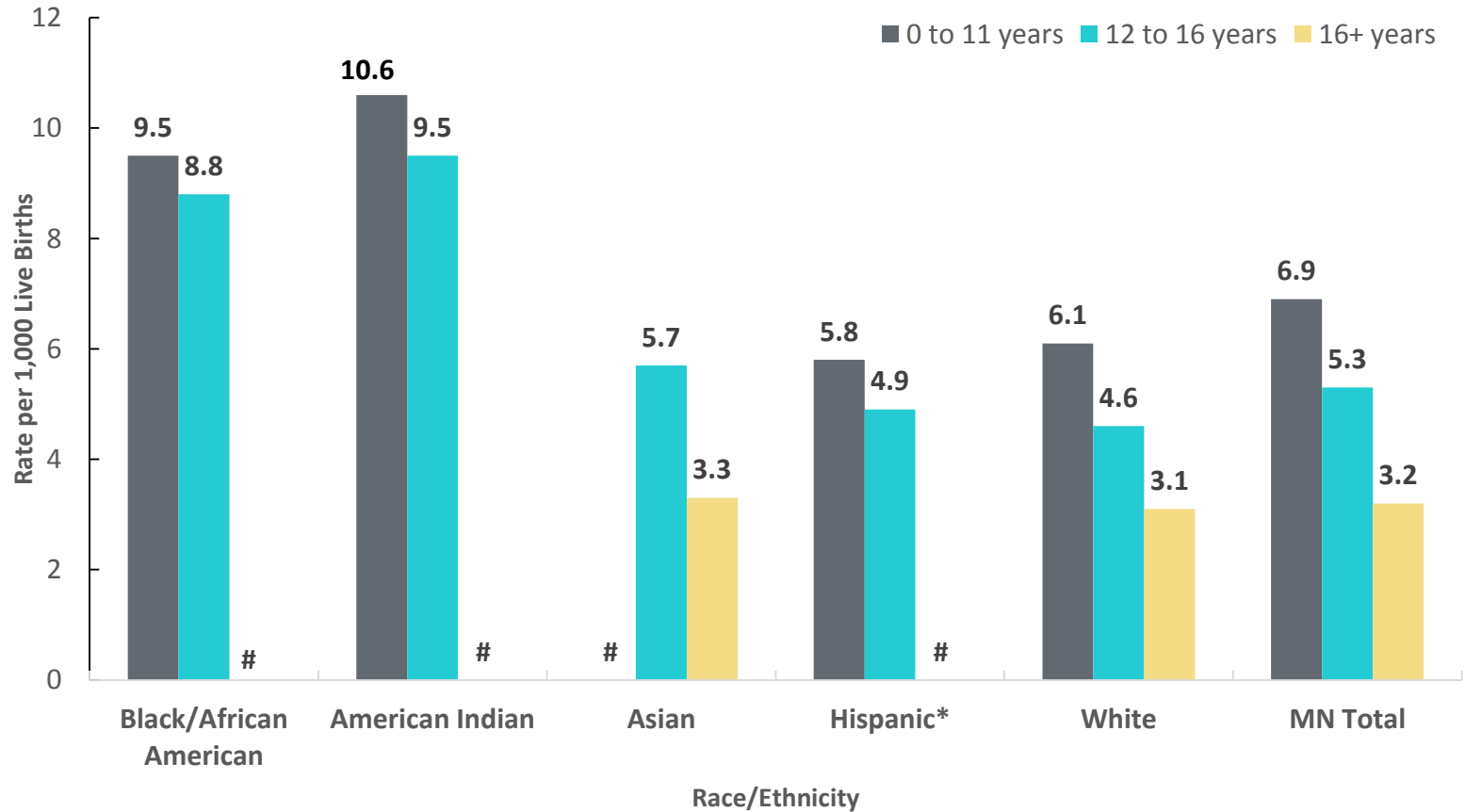


\*Can be of any race

#Indicates unstable rates; fewer than 20 cases

Source: Minnesota Department of Health, Center for Health Statistics

## Infant Mortality Rates by Maternal Education and Race/Ethnicity of Mother, Minnesota, 2009-2013



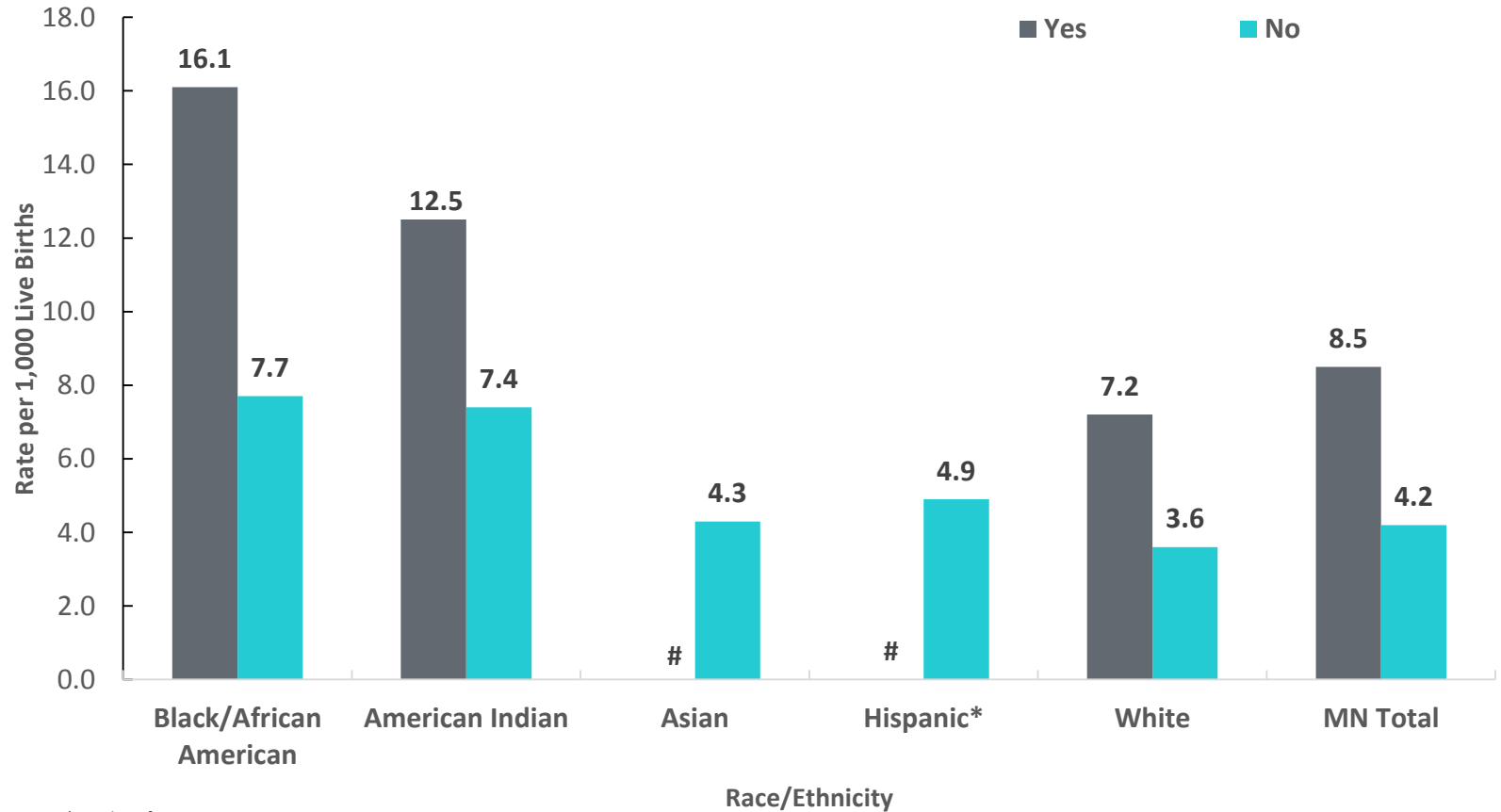
\*Can be of any race

#Indicates unstable rates; fewer than 20 cases

Source: Minnesota Department of Health, Center for Health Statistics



## Infant Mortality Rates by Maternal Smoking Status and Race/Ethnicity of Mother, Minnesota, 2009-2013

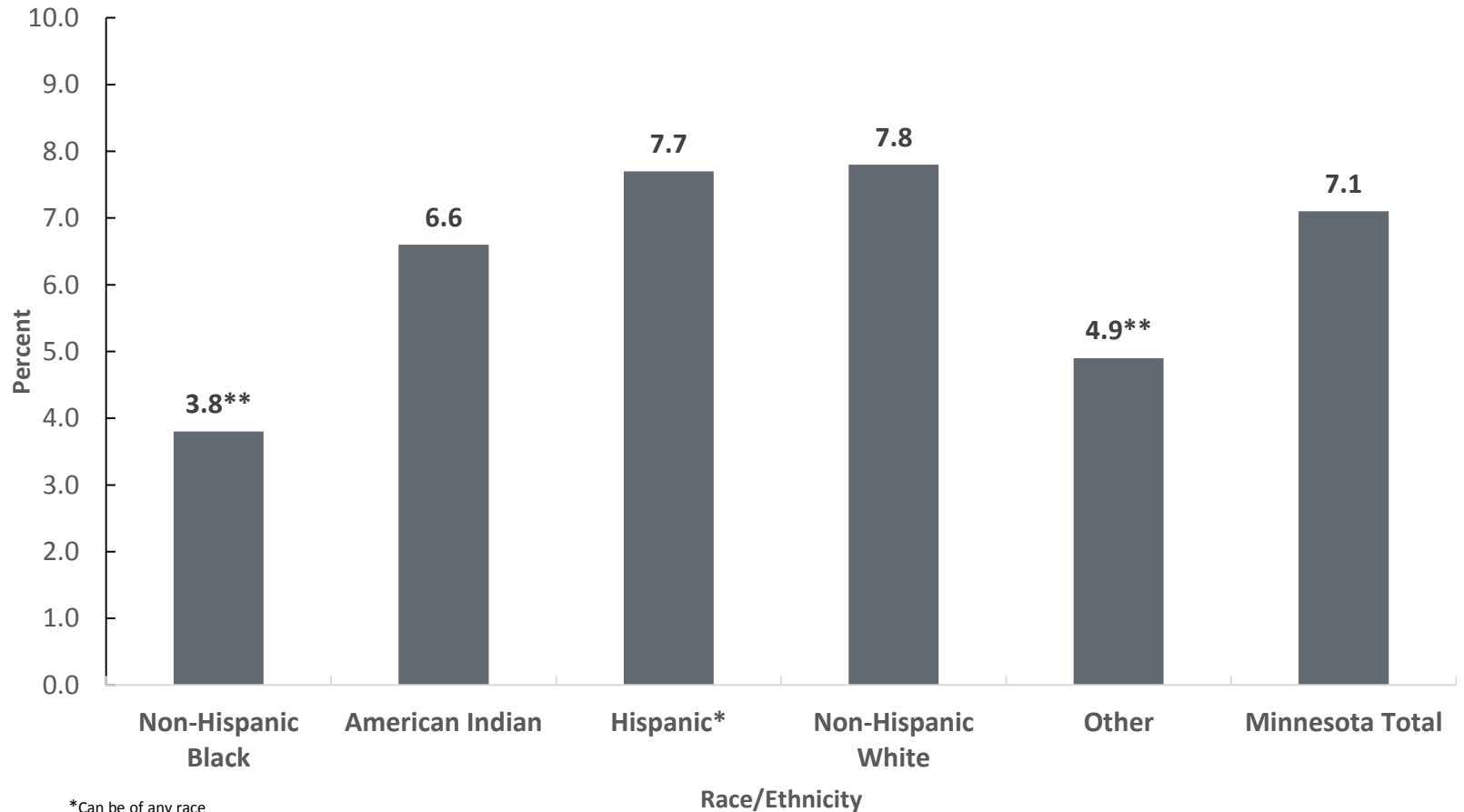


\*Can be of any race

#Indicates unstable rates; fewer than 20 cases

Source: Minnesota Department of Health, Center for Health Statistics

## Percent of Women Who Consumed Alcohol During the Last 3 Months of Pregnancy by Race/Ethnicity, 2009-2013



\*Can be of any race

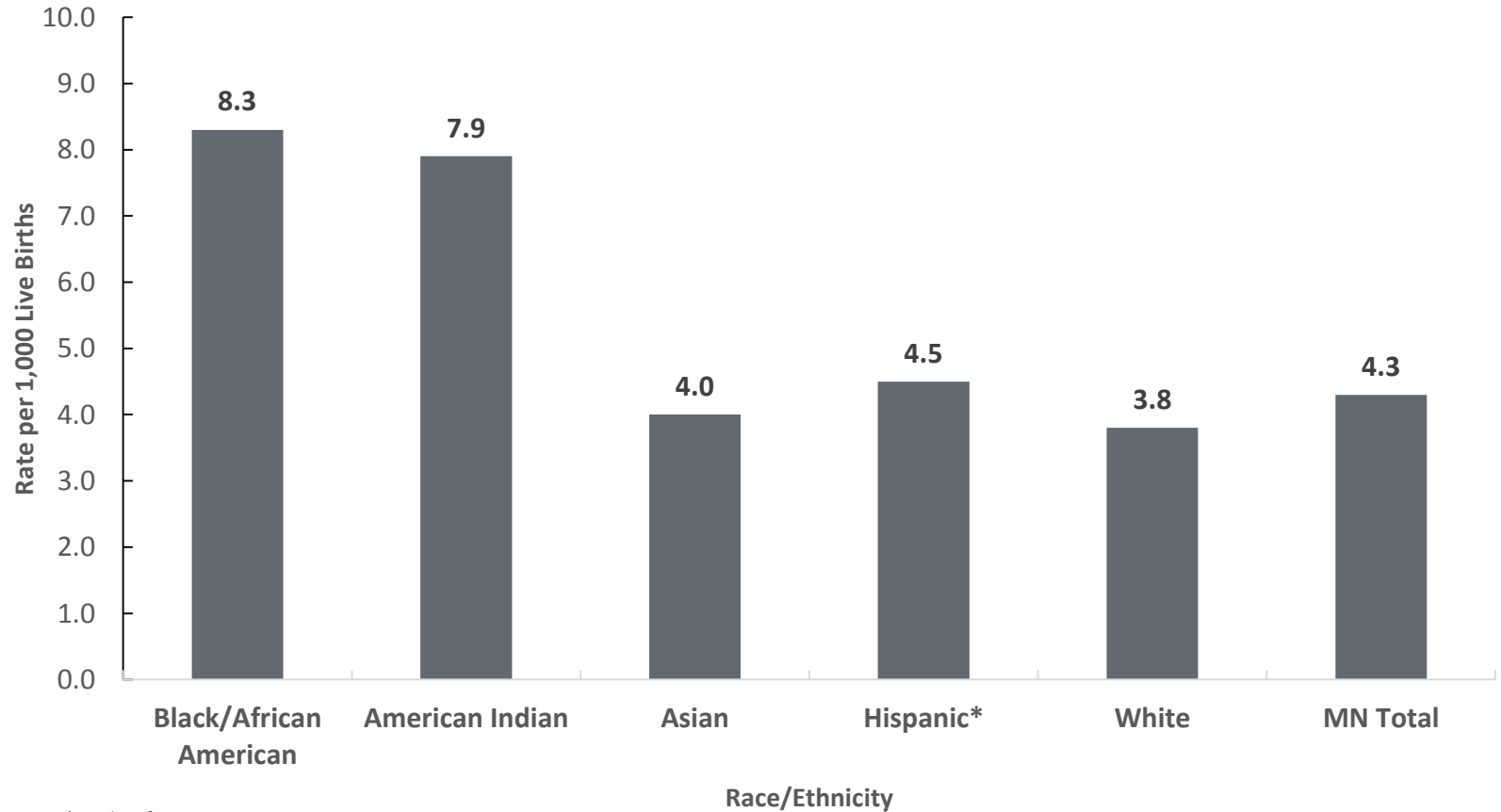
\*\*Significantly different from Non-Hispanic Whites ( $p < .05$ )

Consumed any amount of alcohol during pregnancy among those who drank any alcoholic beverages in the previous two years.

Other includes Asians, Foreign-born, Mixed Race, and data for which the race of the respondent is unknown.

Source: Minnesota Pregnancy Risk Assessment Monitoring System (PRAMS), Minnesota Department of Health, Division of Community and Family Health, Maternal and Child Health.

## Infant Mortality Rates by First Trimester Prenatal Care Initiation and Race/Ethnicity of Mother, Minnesota, 2009-2013



\*Can be of any race

#Indicates unstable rates; fewer than 20 cases

Source: Minnesota Department of Health, Center for Health Statistics

# **Plans To Reduce Infant Mortality in MN!**

# **Examples of Past or Ongoing Evidence-Based Infant Mortality Activities/Programs in Minnesota**

- Healthy Babies are Worth the Wait Campaign
- MN Prematurity Coalition
- Minneapolis Healthy Start
- Eliminating Health Disparities Community Grants
- 2015 Breastfeeding Summit
- DHS Elective Induction Coverage Policy
- MN Medicaid Family Planning Waiver
- MDH Preconception Health Work Group
- Infant Mortality Reduction Plan
- Low Birth Weight Initiative
- MDH Health Equity Efforts
- Women's Children and Infant's Nutrition Program (WIC) Special Supplementation Nutrition Program
- MN SID Center Grant (SUID reduction)
- Family Planning Special Projects Grants Programs
- MCH Title V Black Grant

# **New Efforts and Partnerships**

## **New Clinical/Hospital-based Efforts**

- **Reduce the incidence of Sleep-Related Infant Deaths**
  - Modeling safe sleep in hospitals via the National Safe Sleep Certification Program
- **Reduce Prematurity**
  - MN 17P clinical quality improvement initiative to reduce subsequent preterm births in the African American and American Indian populations

## **Place-based**

- MDH State Partnership Initiative to Improve Minority Health Grant \*

# Next Steps

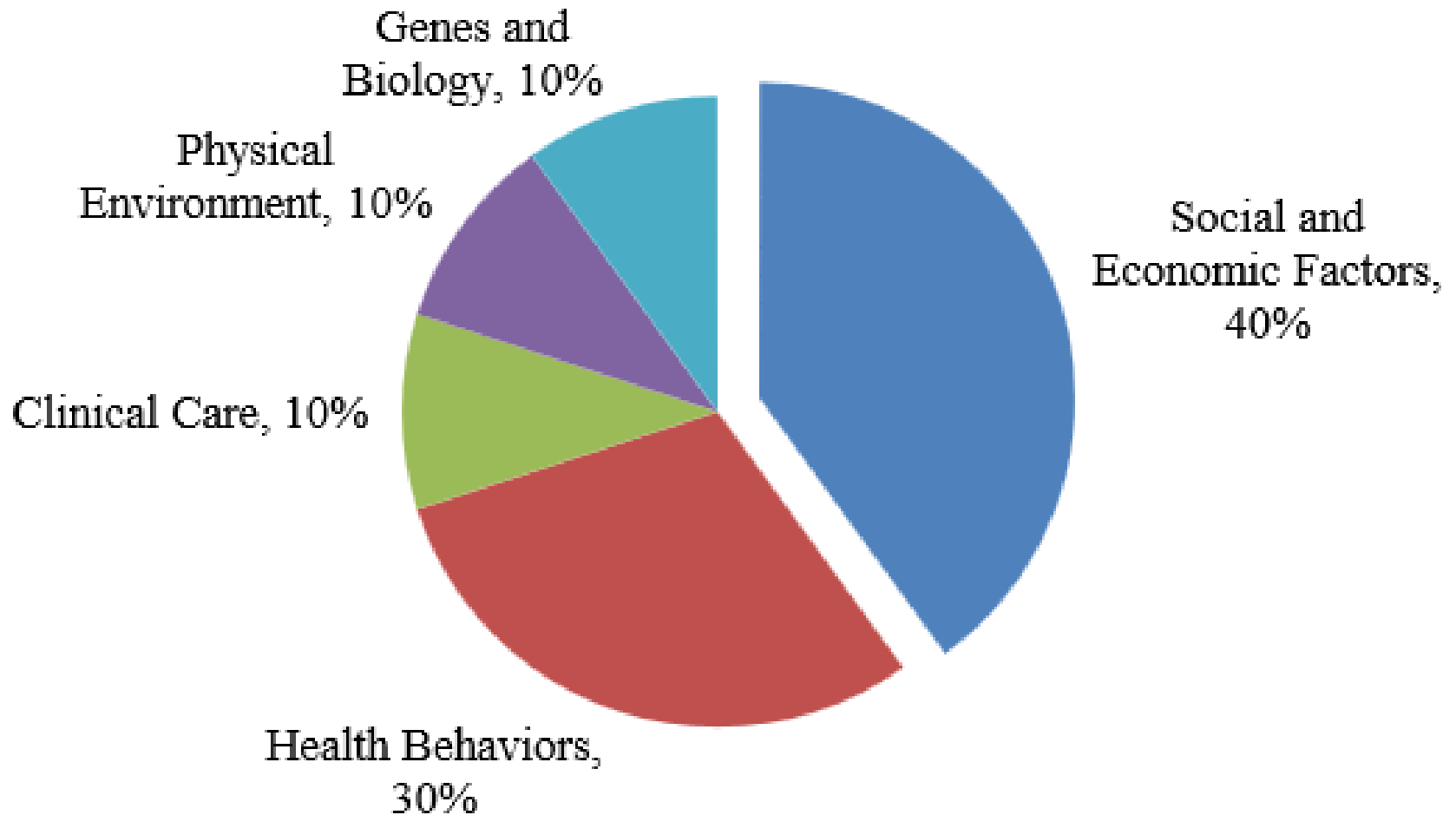
## **Advance Health Equity**

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

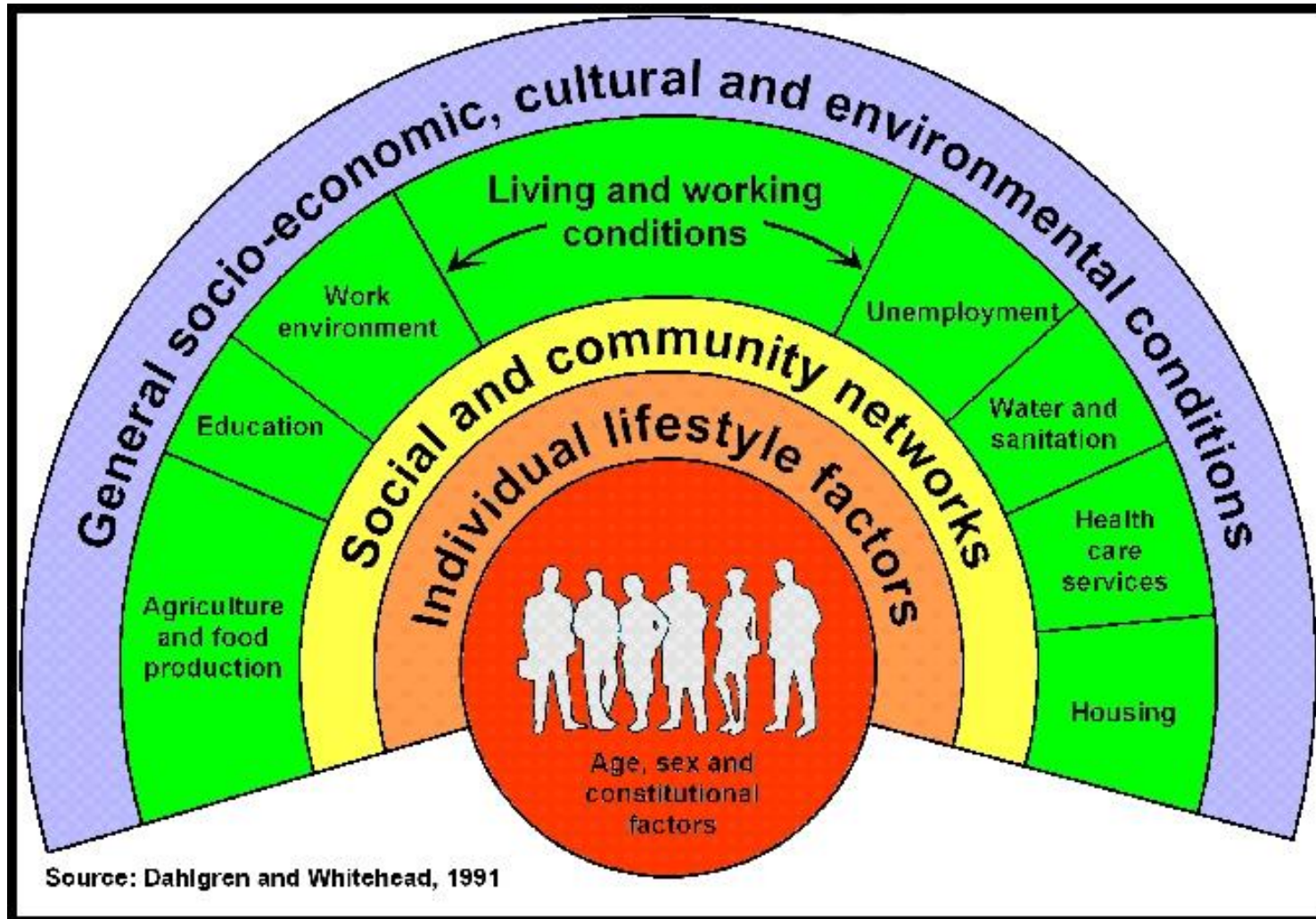
MDH Advancing Health Equity  
Report to the Legislature  
February 2014



# The Determinants of Health

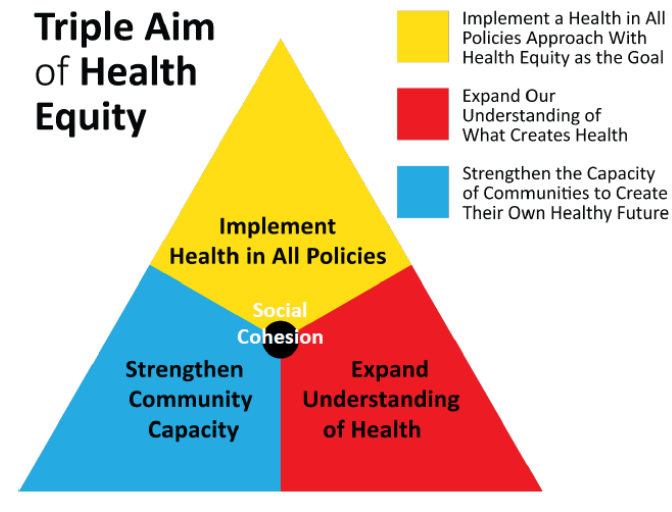


# Layers of Influence on Health



# Advance Health Equity

- Change the narrative about what creates health
- Change our approach to improving health for all
- Focus on the Triple Aim of Health Equity



- Advance health equity across the life course!

# Questions and Discussion

# Infant Mortality Reduction Plan

The Infant Mortality Reduction Plan (Part One) may be found here:



Infant Mortality Reduction Plan  
for Minnesota

PART ONE

<http://www.health.state.mn.us/divs/cfh/program/infantmortality/>

**Thank You!**

# Contact

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