

Western Michigan University, Diversity and Inclusion Conference, Infant Mortality Presentation: February 2012

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Introduction





- Infant mortality refers to the death of an infant during the first year of life
 - Number of deaths among infants under one year old per 1,000 live births in a given year
- Worldwide, approximately 10 million infants die each year
- Only a small proportion occur in the U.S.
 - 2007 - 6.4 per 1,000;
 - 2004 - 6.8 per 1,000;
 - 2002 - 7.0 per 1,000;
 - 28,000 infant deaths and 4,059,000 live births in the U.S.



Infant Mortality Reflects the Health Status of a Population

- Late 1800s through the early part of this century, infants and children were viewed as victims of an unhealthy and unsafe environment
- IMR became a sentinel index for the health status of the population
- Infant mortality is our best indicator of how well we do as a nation and as a community in caring for our most vulnerable populations including mothers and babies.

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- The human and economic toll exacted by poor pregnancy outcome is enormous and in general in countries where mothers do well, children do well.
 - As a whole, the United States does not measure up to other industrialized nations, mainly because our poor communities have such high infant mortality rates.
 - American babies are three times more likely to die in their first month as children born in Japan, and newborn mortality is 2.5 times higher in the United States than in Finland, Iceland or Norway.

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- Infant mortality rates in the U.S. are highest among minorities and disadvantaged groups.
 - For blacks, the national infant mortality rate is nearly double that of the United States as a whole, with 9.3 deaths per 1,000 births.
 - In Kalamazoo black infant mortality rates are more than three times those of white residents (babies born to black mothers are 3.25 times more likely to die before they reach one year of age than babies born to white mothers).



Birth Weight

- Birth weight is a powerful predictor of infant mortality
- LBW infants are 21 times more likely to die within the first year of life than normal weight infants
- VLBW infants are 87 times as likely to die as normal-weight infants

Infant Mortality in the U.S.

- U.S. ranked 34th among industrialized countries in 2003
 - Rate about 45% higher than the rate for Japan, Sweden, or Singapore
- Black infants continue to die at twice the rate of white infants—this is referred to as “the gap”



Causes of Infant Mortality in U.S.

- Leading causes of infant death
 - Congenital anomalies
 - Pre-Term Birth/Low Birth Weight
 - Sudden Infant Death Syndrome
 - Problems related to maternal complications of pregnancy
 - Problems related to complications of placenta, cord, membranes
 - Respiratory Distress Syndrome

Infant Mortality is a Personal Tragedy

- In 1990, 1,428 infants were buried in mass graves in Potter's Field on Hart Island in New York City, just as paupers were buried in this same location at the end of the Nineteenth Century
- The infants died in New York hospitals but either their bodies were not claimed for burial or their families could not afford a private burial

Infant Mortality is a Personal Tragedy



Infant Mortality Rates per 1,000 Live Births by Country, 2007

Deaths

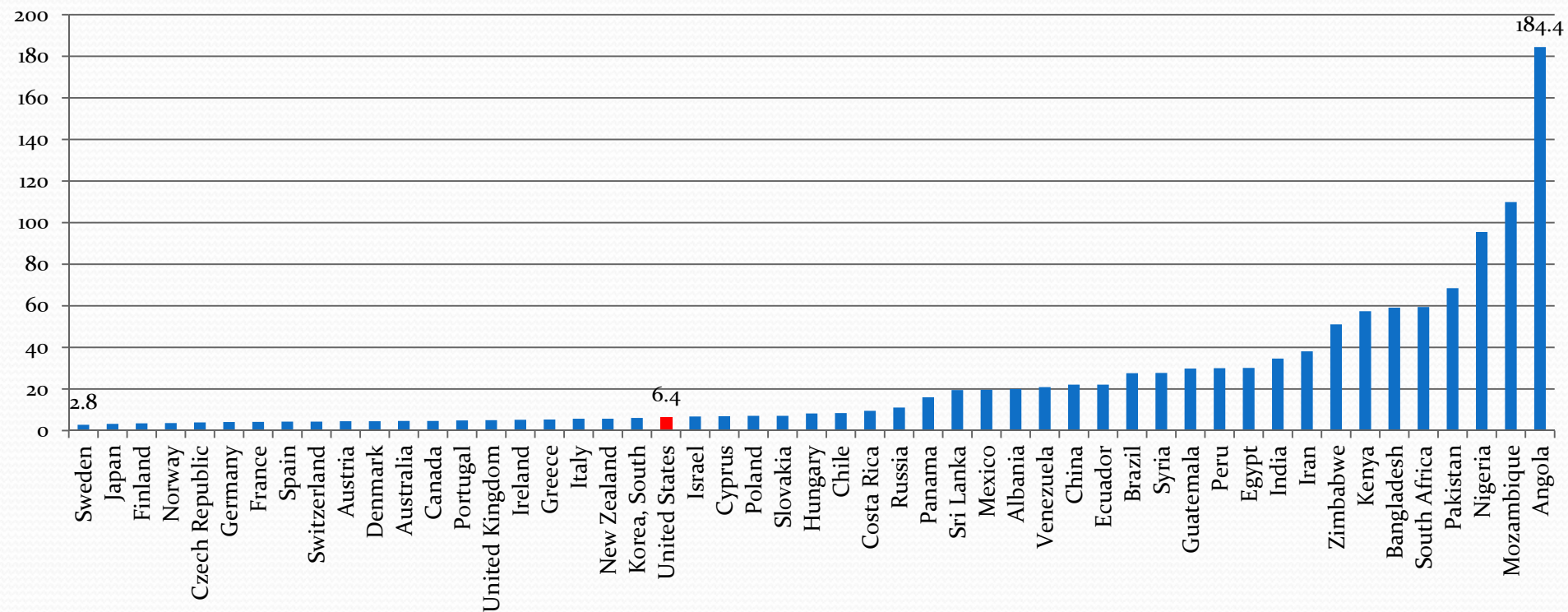
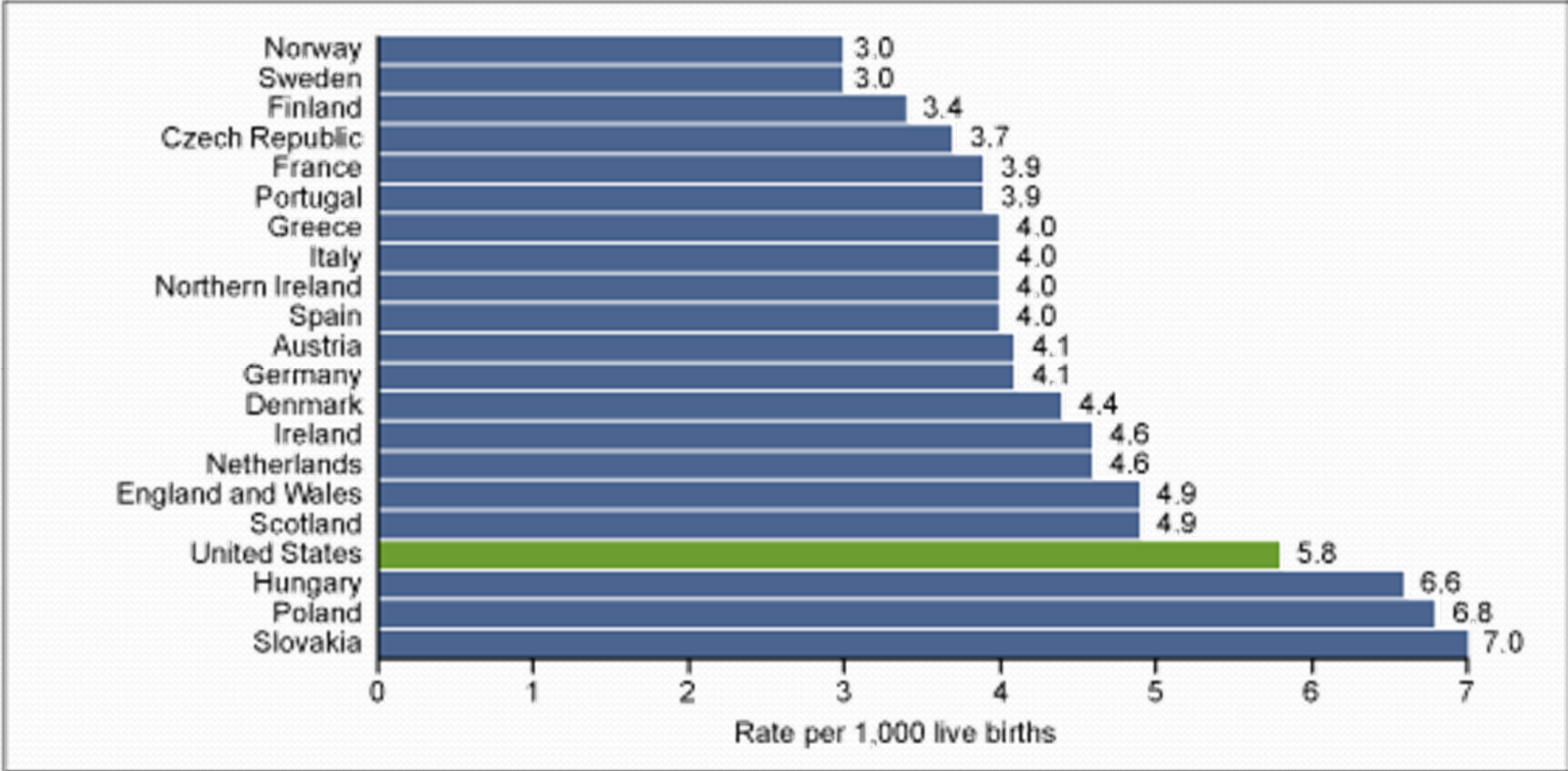
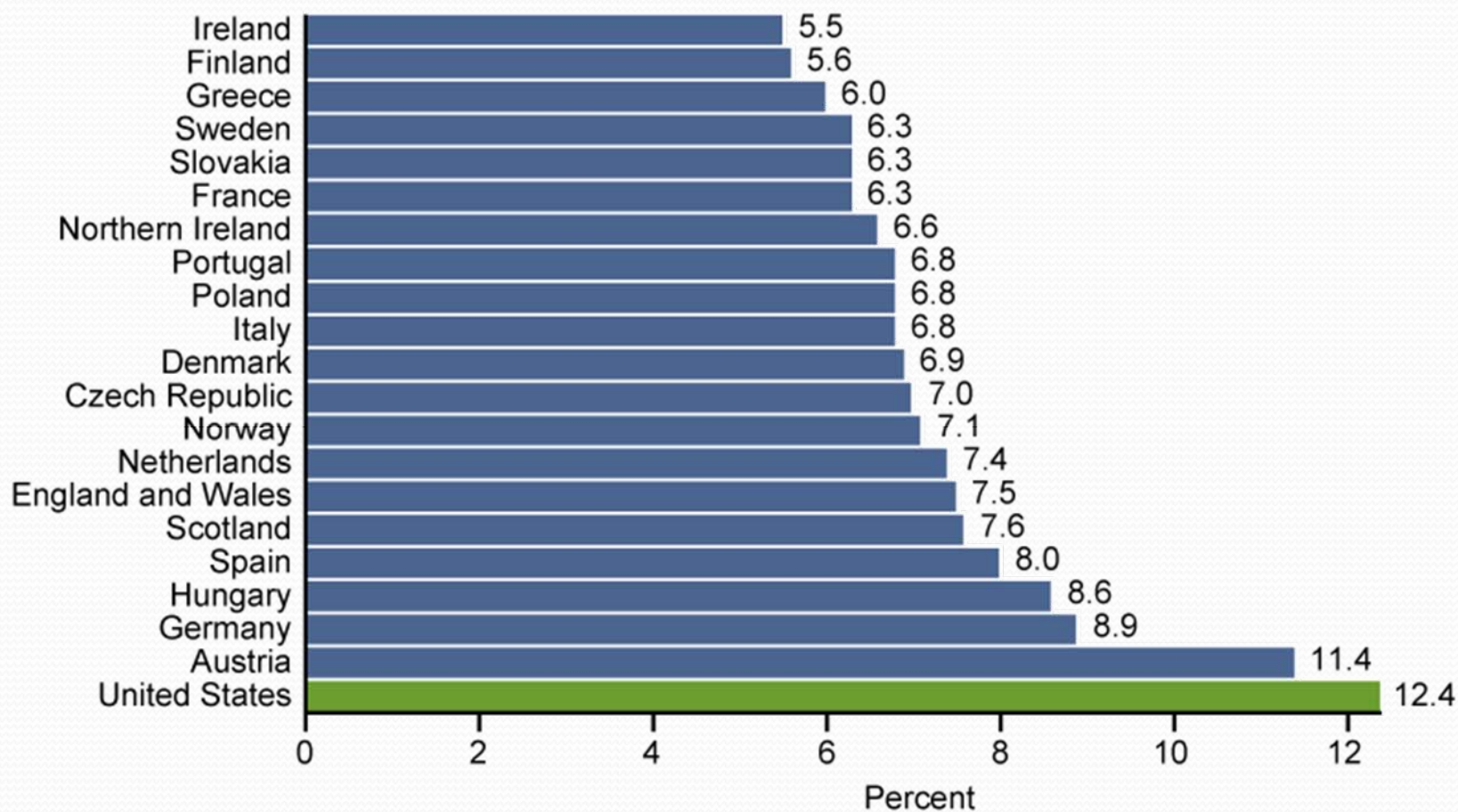


Figure 2. Infant mortality rates, excluding births at less than 22 weeks of gestation, United States and selected European countries, 2004



SOURCE: NCHS linked birth/infant death data set (for U.S. data) and *European Perinatal Health Report* (for European data).

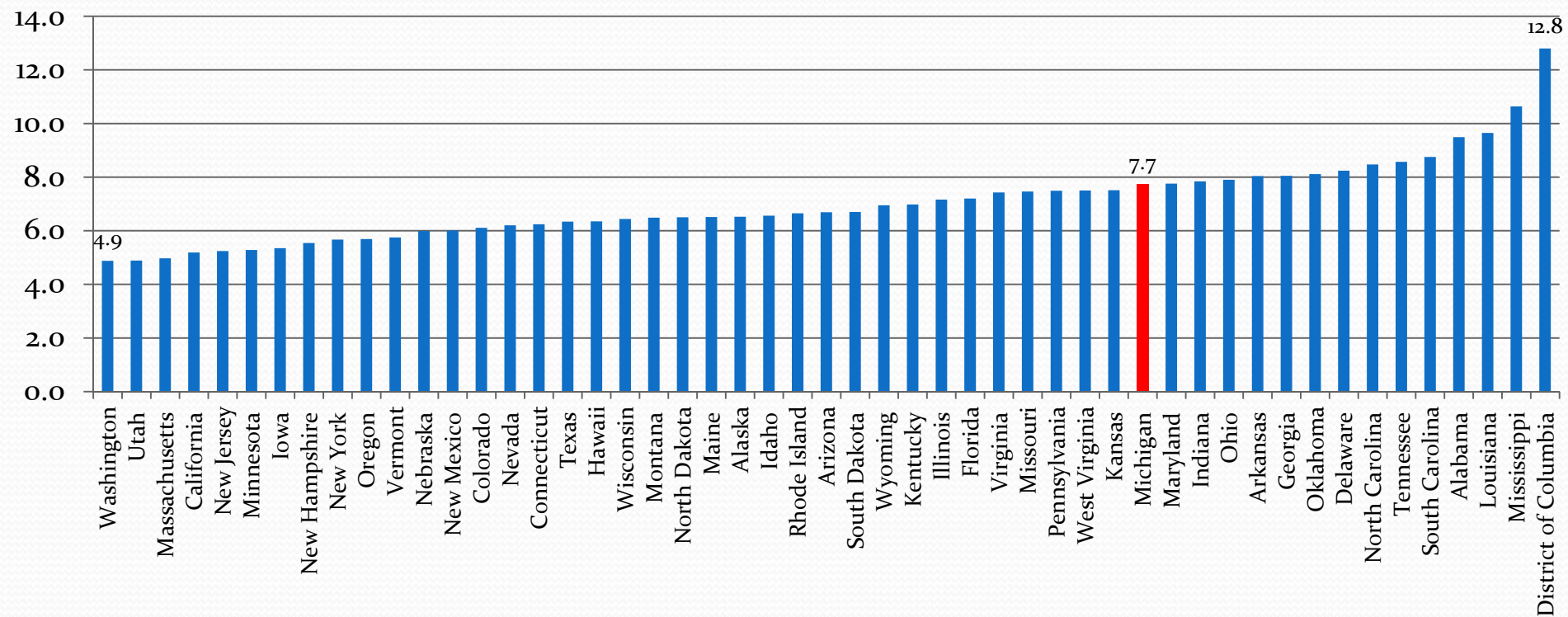
Figure 3. Percentage of preterm births, United States and selected European countries, 2004



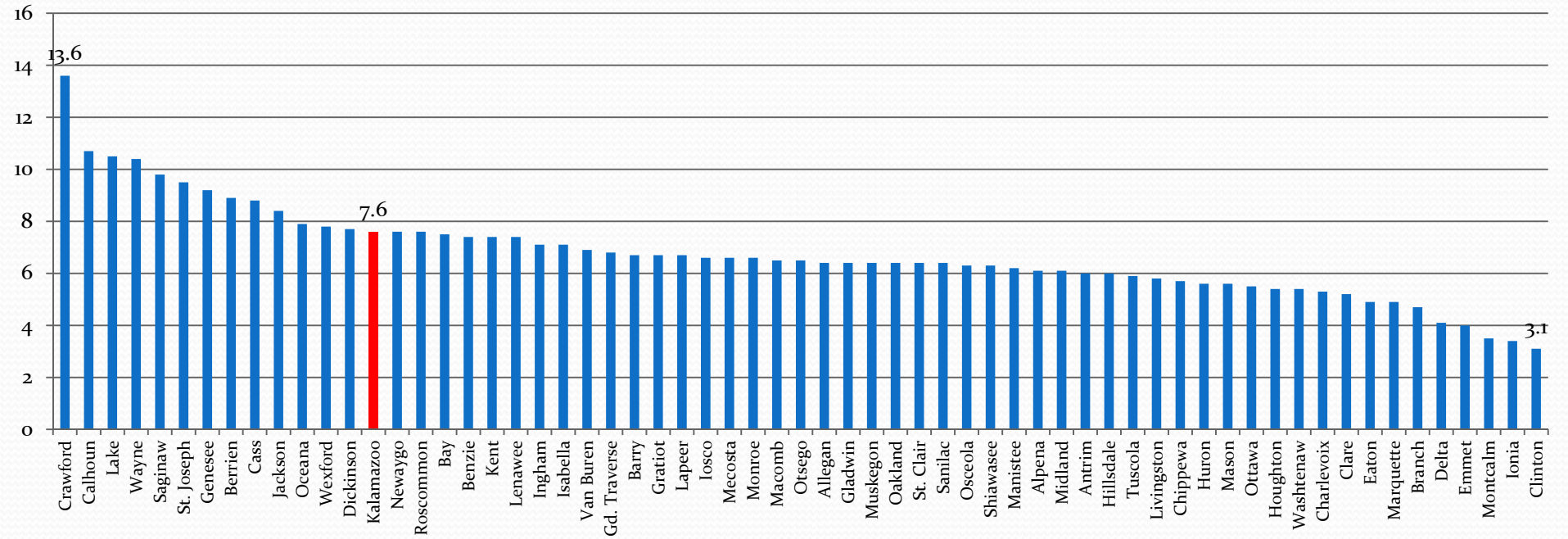
NOTE: Excludes births at less than 22 weeks of gestation to promote comparability between countries. Preterm births are those from 22 to 36 weeks of gestation.

SOURCE: NCHS linked birth/infant death data set (for U.S. data) and *European Perinatal Health Report* (for European data).

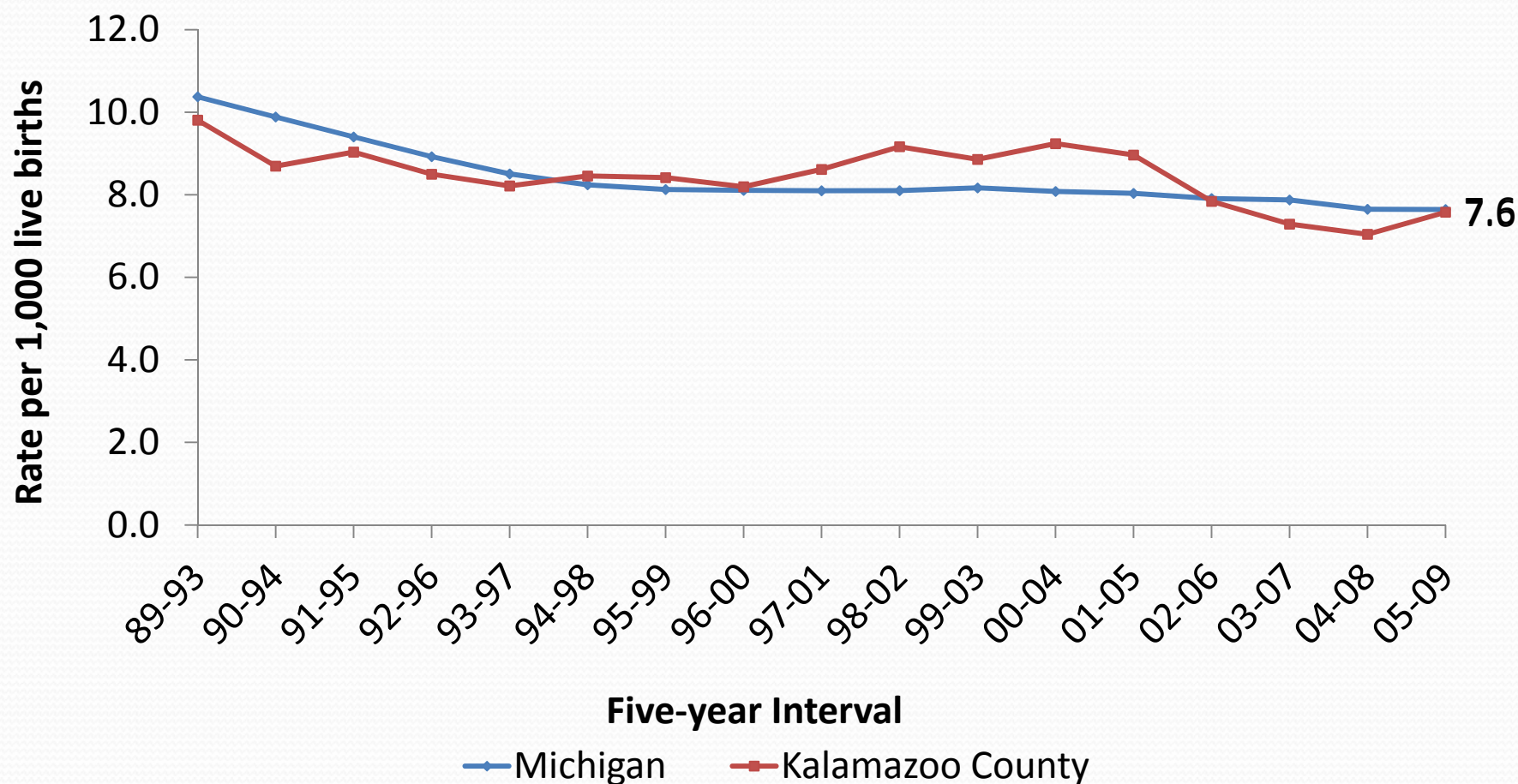
Infant Mortality per 1,000 Births, U.S. States 2005-2007



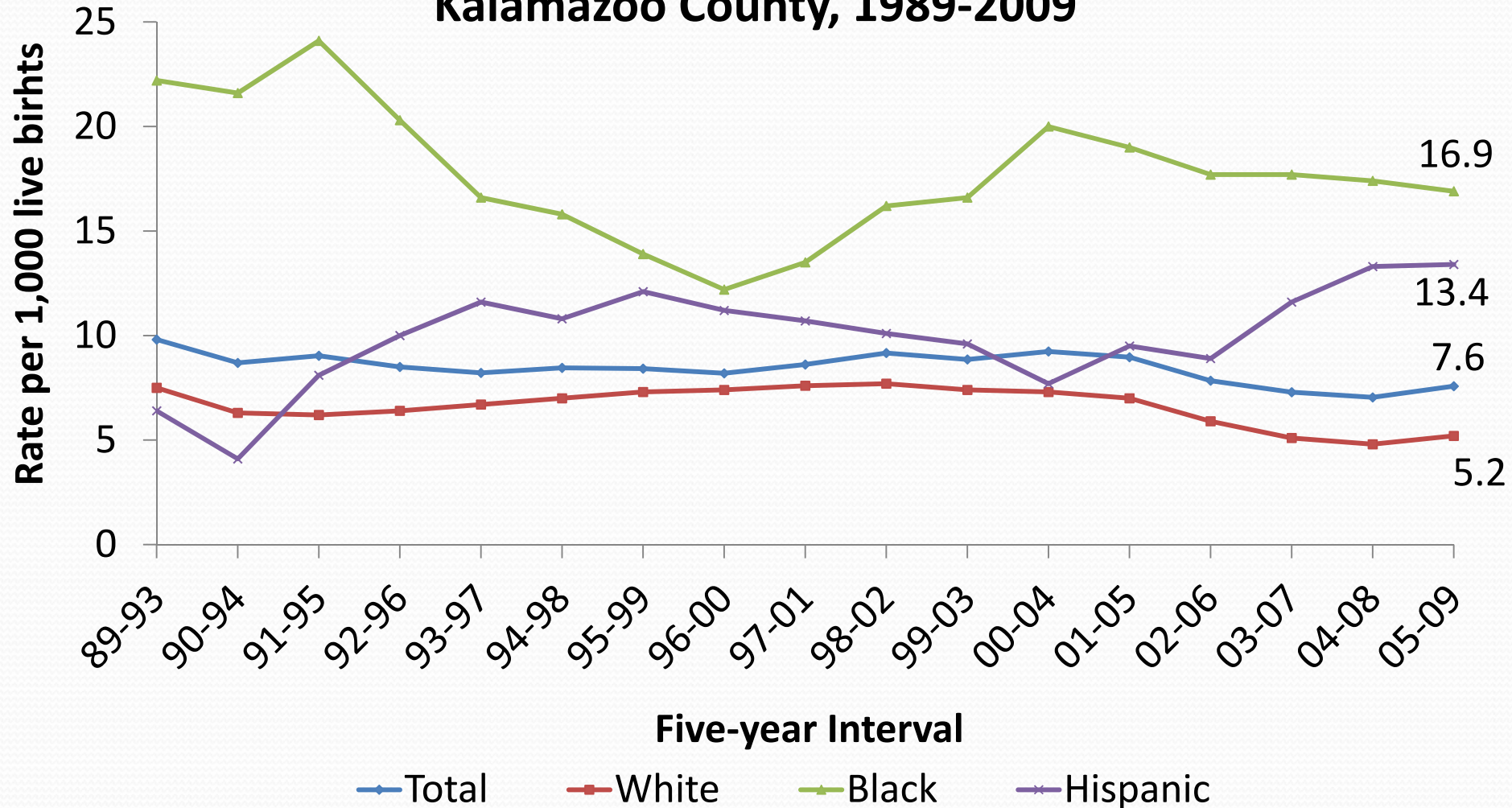
Infant Mortality per 1,000 Live Births, Michigan Counties 2005-2009



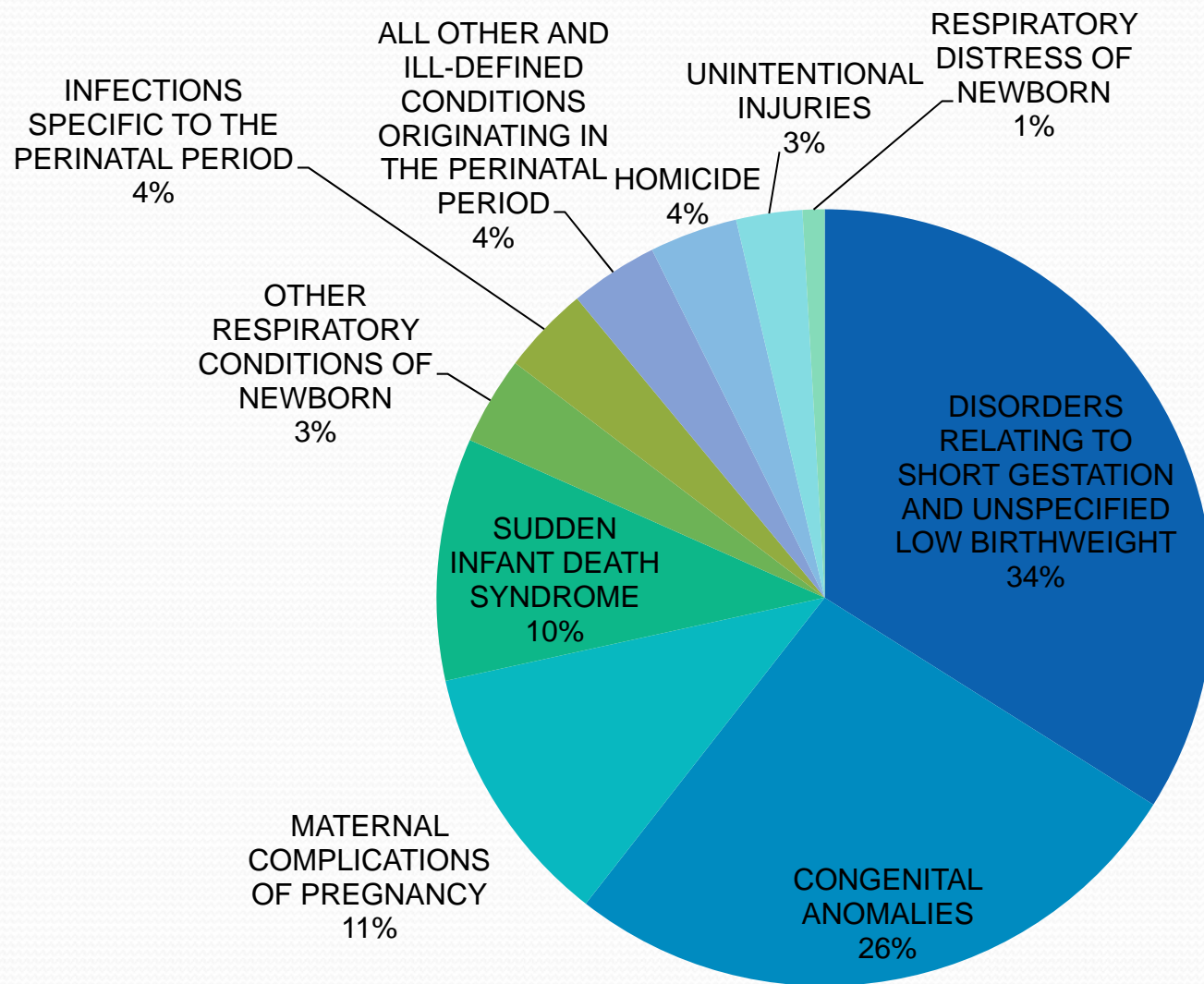
Five-Year Moving Average Infant Mortality Rates per 1,000 Live Births, Kalamazoo County and Michigan, 1989-2009



Five-Year Moving Average Infant Mortality Rates per 1,000 Live Births by Race and Hispanic Ethnicity, Kalamazoo County, 1989-2009



Causes of Infant Death 05-09



Infant Mortality Among Medicaid Births

Kalamazoo County 2004-2008

paysource for births:	births	deaths	rate per 1,000 births
Medicaid	7,080	63	8.9
Not Medicaid	8,630	44	5.1

95% CI Range

(6.7 - 11.1 deaths per 1,000 births)

(3.6 - 6.6 deaths per 1,000 births)

Ratio, Medicaid rate : Non-Medicaid rate

1.7 times more likely to die if Medicaid paid

Cost of Preterm Birth

Healthy Baby - \$3,640

Infant Condition	Number of Infants	Average Cost	Total Cost
Late Preterm	4,546	\$ 8,032	\$ 36,515,327
Preterm	6,686	\$19,781	\$132,255,522
Very Preterm	1,332	\$59,320	\$ 79,013,727
Very Low Birthweight	1,217	\$63,877	\$ 77,738,693
Birth Defect	1,622	\$34,713	\$ 56,304,736
Infant Death	485	\$35,327	\$17,133,818
Neonatal Death (< 28 days of life)	263	\$ 16,581	\$ 4,360,854
At Risk Birth	3,523	\$36,976	\$130,268,583

- Source 2005-2007 Infant Linked files by state. CDC, NCHS.http://www.cdc.gov/nchs/data/nvsr/nvsr59/nvsr59_06.pdf
- Source: U.S. Census Bureau, International Database.
<http://www.infoplease.com/ipa/A0004393.html>
- Lu, MC, Halfon, N. Racial and Ethnic Disparities in Birth Outcomes: A Life-Course Perspective. *Maternal and Child Health Journal*. 2003;7(1):13-30.
- Singh, GP, van Dyck, PC. *Infant Mortality in the United States, 1935-2007*. A 75th Anniversary Publication. Health Resources and Services Administration, Maternal and Child Health Bureau. Rockville, Maryland. U.S. Department of Health and Human Services; 2010.