

Health Disparities Among American Indians in North Dakota Begin Prenatally: Risk Factors and Birth Outcomes

Background

American Indians (AI) are North Dakota's largest minority population. In 2012, 5.5 percent of the population (8.8 percent of children 0-17) was AI "of one race only."¹ From 2007-2012 in ND, due to severe health disparities, the average age at death of a white person (77.4 years) was 20 years older than that of an American Indian (57.4 years).² Nationally, AI health disparities include infant mortality, injuries, alcohol and tobacco use, chronic disease, and mental health.³

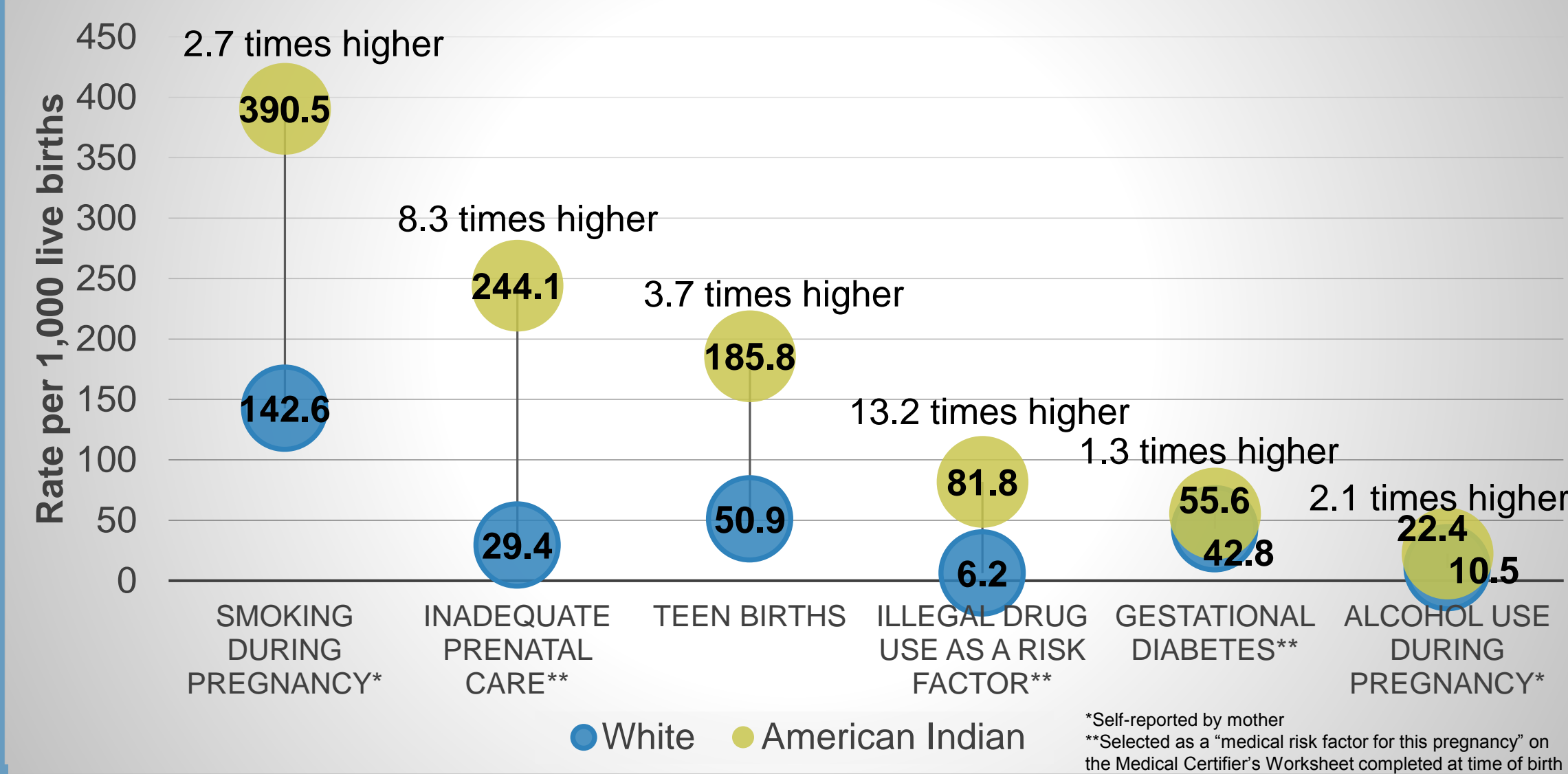
Health disparities are caused by an assortment of factors. Individual behavior is very important, but the social determinants of health framework recognizes that our social and physical environments also profoundly impact our ability to experience good health. The federal Healthy People 2020 initiative for improving population health examines social determinants of health in five key areas: economic stability, education, social and community context, health and health care, and neighborhood and built environment.⁴

Traumatic events during infancy and childhood, termed adverse childhood experiences, also contribute to health problems as an adult.⁵ Additionally, inter-generational impacts of historical trauma and disruption of cultural practices significantly influence the health of American Indians.

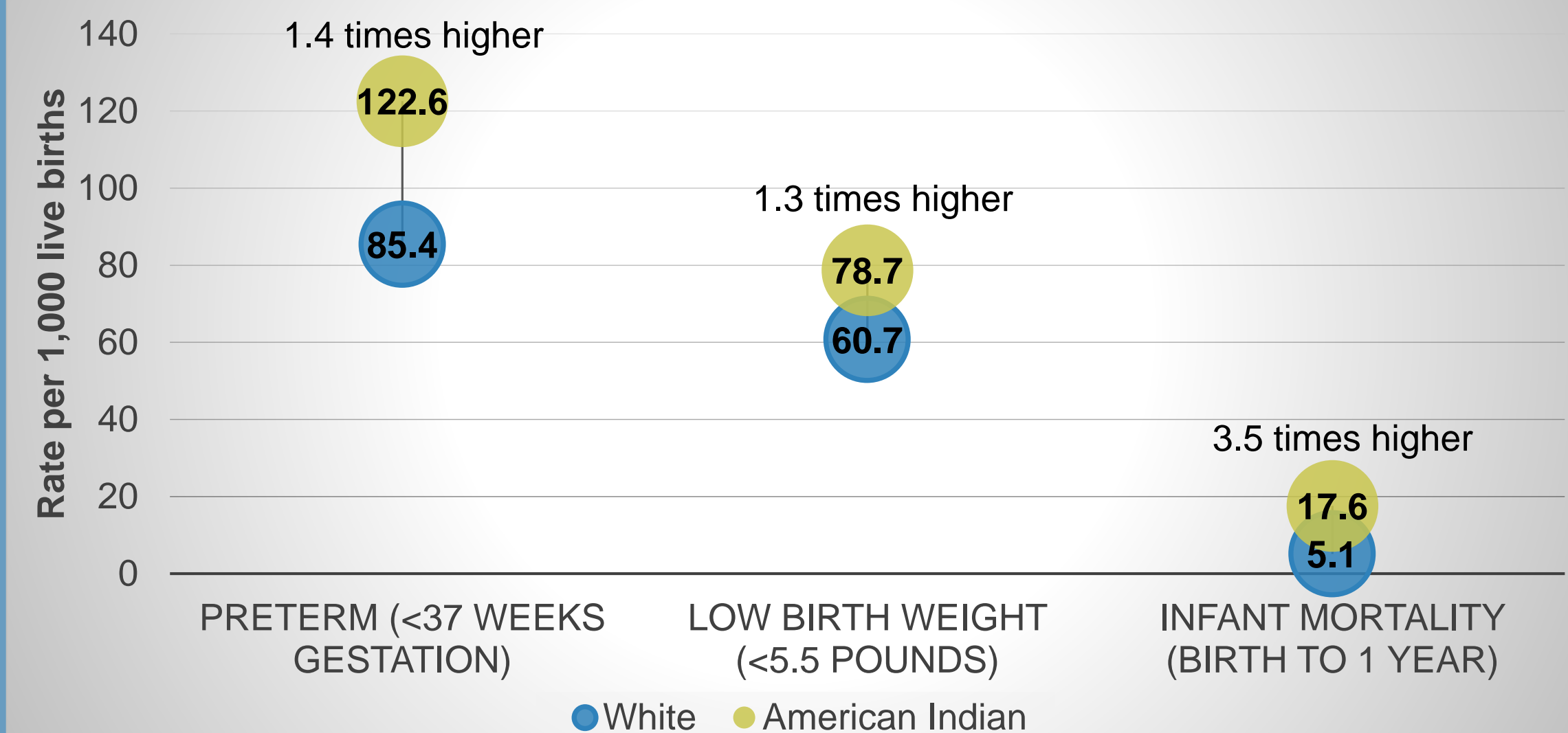
While disparities can occur at every stage of the life course, health disparities for many American Indians begin prenatally and, among the vast majority of infants who live past their first year, can have long-lasting implications.⁶

Risk Factors and Birth Outcomes

Risk Factors for Poor Birth Outcomes by Race of Mother, North Dakota: 2010-2012²



Birth Outcomes by Race of Mother, North Dakota: 2010-2012²



Discussion

Several risk factors have been identified which can increase the chances of infant mortality, including birth defects, preterm births, low birth weight, maternal complications during pregnancy, and injuries.⁶ Risk factors associated with poor birth outcomes include inadequate prenatal care; being a young mother; smoking, alcohol, and drug use during pregnancy; and gestational diabetes.⁷

From 2010-2012, there were 28,394 births in North Dakota, of which 10.2 percent were to AI mothers of one or more races (2,896 births). Infants born to AI mothers in North Dakota are at much higher risk of experiencing poor birth outcomes than infants born to white mothers.²

Compared to infants born to white mothers, infants born to AI mothers are:

- 8.3 times more likely to be born to a mother who had inadequate prenatal care – 1 in 4 births to American Indian mothers compared to 1 in 33 births to white mothers.
- 3.7 times more likely to be born to a mother who was a teenager.
- 2.7 times more likely to be born to a mother who smoked during pregnancy.
- 2.1 times more likely to be born to a mother who reported drinking alcohol during pregnancy and 13.2 times more likely to be born to a mother with illegal drug use identified as a risk factor on the Medical Certifier's Worksheet at time of birth.
- 1.3 times more likely to be born to a mother who had gestational diabetes.
- 1.4 times more likely more likely to be born preterm (less than 37 weeks gestation).
- 1.3 times more likely to be born at a low birth weight (less than 5.5 pounds).
- 3.5 times more likely to die in the first year of life – 17.6 infant deaths per 1,000 live births to AI mothers compared to 5.1 deaths to white mothers.
- 2.0 times more likely to die neonatally (less than 8 days), 1.7 times more likely to die perinatally (8 to 28 days), and 7.9 times more likely to die postnatally (29 days to 1 year).
- 7.6 times more likely to succumb to Sudden Infant Death Syndrome (SIDS).
- 6.1 times more likely to die of deaths due to injuries (from 2007-2012, 1.2 per 1,000 live births to AI mothers compared to 0.2 to white mothers).

The majority of deaths among infants born to AI mothers occurred postnatally (63.8 percent). The majority of deaths among infants born to white mothers occurred neonatally (57.4 percent). Neonatal deaths are more commonly attributable to issues like prematurity and birth defects, while Sudden Infant Death Syndrome (SIDS) and injuries are common contributors to postnatal-period deaths.⁸

North Dakota's overall infant mortality rate was 6.2 from 2007-2012; 13 of 53 counties had rates of 10.0 or higher, many of which have an AI reservation within county limits.

Promoting Positive Birth Outcomes

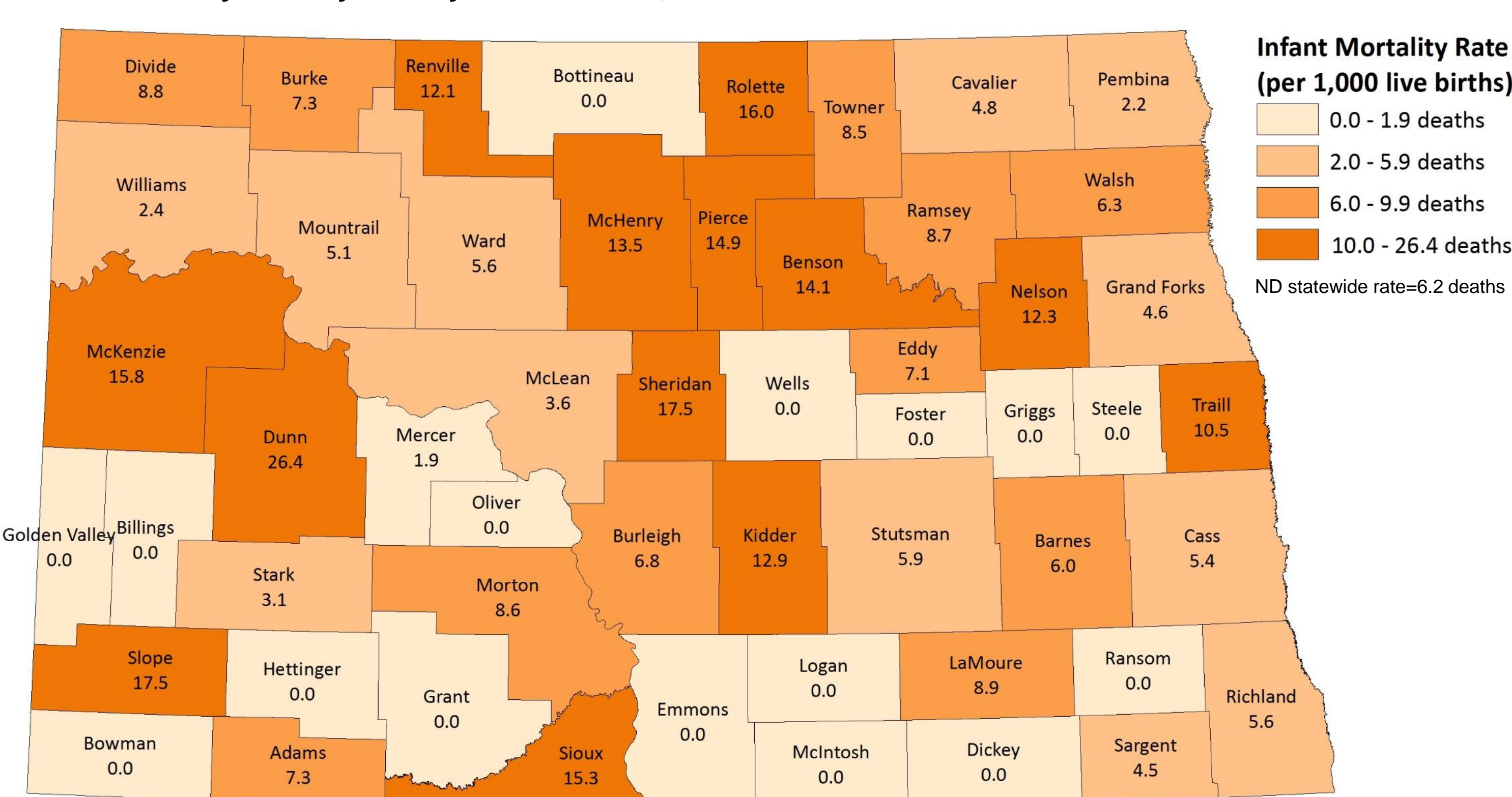
Maternal, infant, and child health today impacts the outcomes seen in future generations and the public health challenges that citizens of North Dakota will face.⁹ Implementing multifaceted projects and programs aimed at reducing poor birth outcomes continues to be a strong focus of public health efforts. Prevention of poor birth outcomes involves addressing several maternal factors including good preconception health, receiving adequate prenatal care, good nutrition and maintaining a healthy weight during pregnancy, quitting tobacco use, and abstaining from use of alcohol and illegal use of drugs.⁷ Prevention of infant mortality also includes protective factors such as parent education on safe sleeping environments and normal infant development as well as assisting families to have healthier and more responsive relationships with their children in order to promote bonding and attachment.¹⁰

Many programs and projects available to North Dakota families seek to impact health disparities, including poor birth outcomes, often by addressing underlying social determinants of health. These include income assistance (TANF), support for working families (EITC, child care assistance), nutrition programs (WIC, SNAP), affordable health care (Medicaid), home visiting services (Healthy Families, Parents as Teachers), parent education (NDSU Extension Parent Resource Centers), tobacco cessation assistance (NDQuits), family planning services, mental health and substance abuse services, county social services, foster care services, early childhood tracking, and programs that create awareness of normal child development (Prevent Child Abuse ND's Period of PURPLE Crying). Innovative projects seeking to address American Indian health need to strive to be culturally sensitive (1,000 Grandmothers Program).

Resources

1. ND Compass, <http://www.ndcompass.org/>. Note: "Of one race only" does not include people who consider themselves as being multiple races, and thus underestimates the true proportion of the population that is American Indian.
2. 2005-2012 birth record and death data from ND Department of Health, Division of Vital Records, by special request. Note: "inadequate prenatal care" has been calculated using the Kessler index of number of visits recommended for length of gestation.
3. American Indian and Alaska Native Populations, <http://www.cdc.gov/minorityhealth/populations/REMP/ain.html>
4. Social Determinants of Health, <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=39>
5. Adverse Childhood Experiences (ACE) Study: Major Findings, <http://www.cdc.gov/ace/findings.htm>
6. Health Disparities and Inequalities, <http://www.cdc.gov/mmwr/pdf/other/su6001.pdf>
7. Infant Mortality, <http://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm>
8. Issue Brief: Healthy Babies, <http://www.nursefamilypartnership.org/assets/PDF/Journals-and-Reports/NGAHealthyBabiesBrief>
9. Maternal, Infant, and Child Health, <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=26>
10. Types of Child Deaths and Preventing Child Deaths, <http://www.childdeathreview.org>

Infant Mortality Rate by County of Residence, North Dakota: 2007-2012²



Death Rates by Type, North Dakota: 2010-2012²

Deaths by Type	Deaths per 1,000 live births			
	Ratio AI to White	American Indian (AI)	White	Overall
Fetal deaths (20 or more weeks gestation)	1.5x higher	9.0	5.8	6.6
Infant mortality (birth to 1 year)	3.5x higher	17.6	5.1	6.1
Neonatal (less than 8 days)	2.0x higher	5.5	2.8	3.2
Perinatal (8 to 28 days)	1.7x higher	1.0	0.6	0.6
Postnatal (29 days to 1 year)	7.9x higher	11.0	1.4	2.3
Infant mortality due to Sudden Infant Death Syndrome (SIDS)	7.6x higher	3.8	0.5	0.8