

Appendix L: Background Information on Perinatal and Infant Health

Category 1: Perinatal Health Innovations

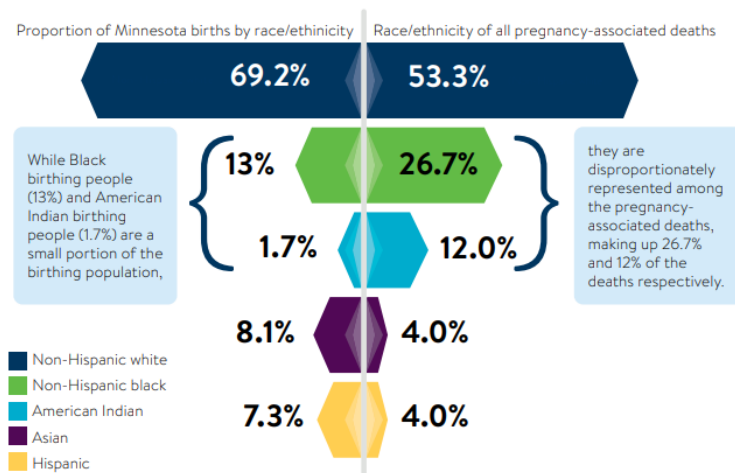
Key indicators of perinatal health outcomes include but are not limited to preterm birth, low birthweight, insurance status, maternal mortality and severe maternal morbidity. Many of Minnesota’s perinatal health indicators are better than national averages, but this summary information masks deep disparities between the white majority population and Black, American Indian, Latine, Asian/Pacific Islander (PI), and other communities such as rural and new immigrants.

- Preliminary data from the Maternal Mortality Review Committee shows that Black and American Indian birthing people have much higher rates of maternal death compared to white birthing people in the state (figure 1).
- In 2018, the overall Severe Maternal Morbidity (SMM) rate was 160.7 per 10,000 delivery hospitalizations and is higher than any time since 2011. The highest rates of overall SMM are among our populations of color, including US-born Black, African, foreign-born Asian, and Hispanic populations (figure 2).
- The percent of Minnesotans without health insurance in 2021 dropped to tie with lowest-measured level in 2015, at 4.0%. However, the racial coverage gap widened as the uninsured rate among people of color and American Indians rose to 10.2% (figure 3).

Sources: Minnesota Maternal Mortality Report 2017-2018; MDH Maternal and Child Health Section, analysis of linked Birth Record/Hospital Discharge Data; MDH Minnesota Health Access Survey

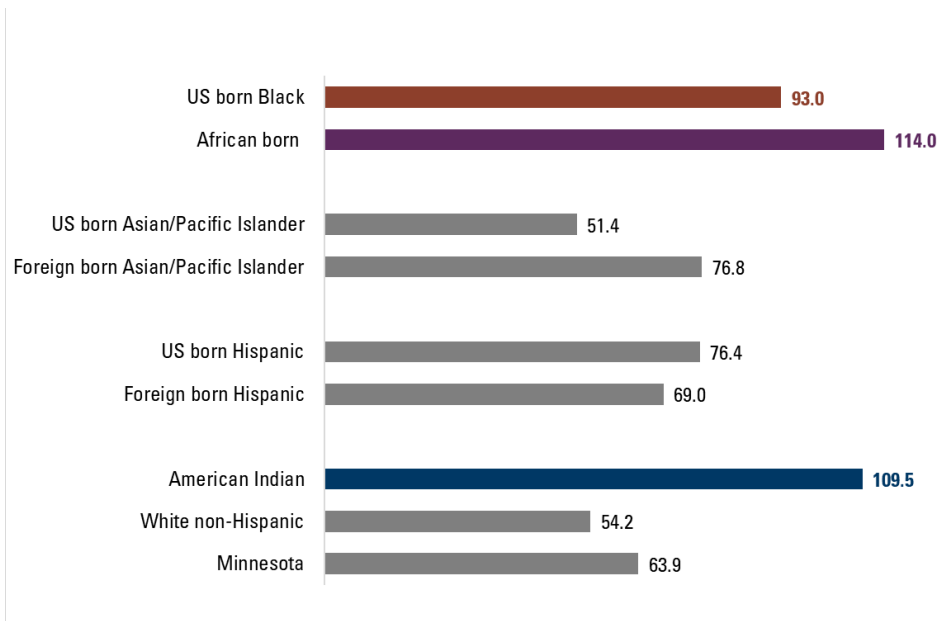
Below are figures illustrating some of the data points described above.

Figure 1: Black and American Indian birthing people are disproportionately represented more among pregnancy-associated deaths than they are in the birthing population.



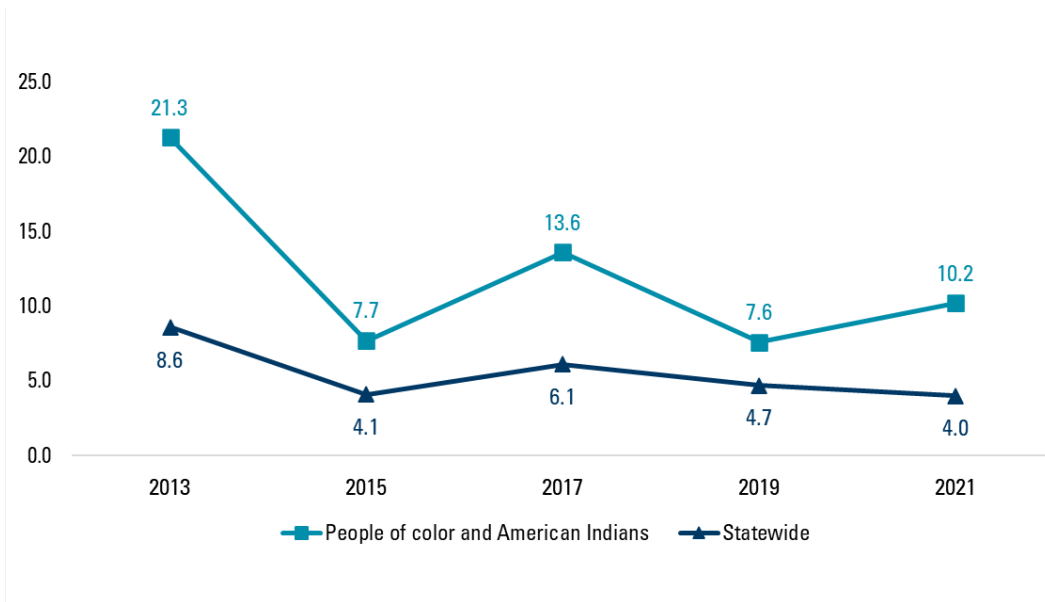
Source: Minnesota Maternal Mortality Brief, 2017-2019

Figure 2: The highest rates of severe maternal morbidity (SMM), excluding transfusions, from 2011-2018 were among birthing people who were African born, American Indian, and US born Black.



Source: Minnesota linked birth record and hospital discharge data, 2011-2018. Rate is per 10,000 delivery hospitalizations.

Figure 3: The percent of Minnesotans with no health insurance decreased to 4.0% in 2021, but the racial gap widened, and more people of color and American Indians had no insurance.



Source: Minnesota Health Access Survey, 2013-2021

Category 2: Infant Health Innovations

Minnesota’s infant mortality rate in 2021 declined by 32.4 percent compared to the 1990 rate, from a high of 7.3 deaths per 1,000 live births to 4.8 deaths per 1,000 live births. Not only is the 2021 rate well below the national Healthy People target of 5.0 deaths per 1,000 live births by 2030, but it is also below the nation’s rate overall of 5.4 per 1,000 live births in 2021. But this seemingly sound status of infant mortality for the state overall masks longstanding disparities in infant mortality.

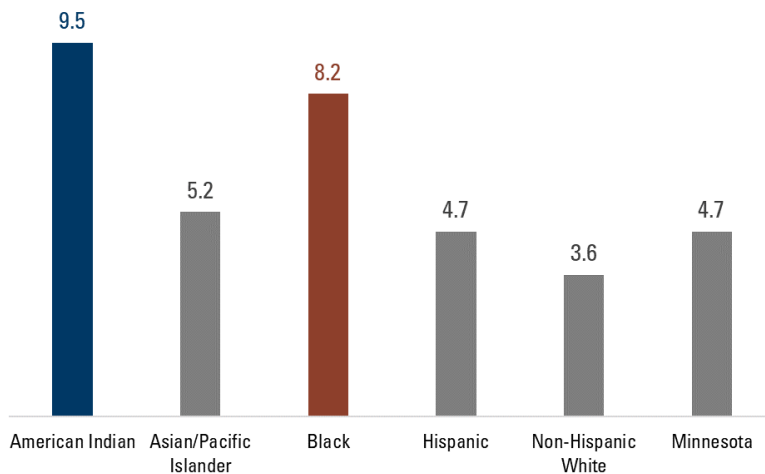
There are racial and ethnic disparities in infant mortality in Minnesota.

- Infants born to Black/African American and American Indian birthing people die at more than twice the rate of infants born to Non-Hispanic White birthing people (figure 4).
- While the five-year average mortality rate for infants born to Non-Hispanic White birthing people born in Minnesota during the 2017-2021 period was 3.6 per 1,000 live births, the rate for black/African American infants was more than twice as high at 8.2 deaths per 1,000 births. For American Indians, the rate from 2017-2021 was 9.5 per 1,000 infants, approximately three times the Non-Hispanic White rate (figure 5).

Disparities also exist in the timing of infant deaths. These differences in timing help determine the types of interventions that are effective in reducing disparities. At 5.9 deaths per 1,000 live births, American Indians’ post-neonatal (between 28 days and 1 year) infant mortality rate from 2017-2021 was higher than that of any other group and was more than five times the rate for Non-Hispanic Whites (1.1 per 1,000 births). Sudden unexpected infant deaths (SUID), which includes sudden infant death syndrome (SIDS) and deaths from accidental suffocation and strangulation in bed, is the leading cause of post-neonatal deaths in this population.

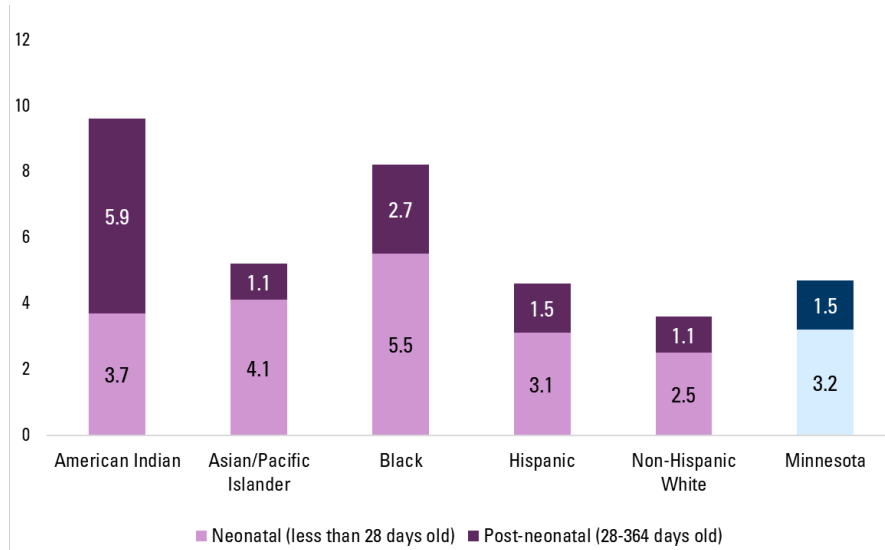
Below are figures illustrating some of the data points described above.

Figure 4: The mortality rates of infants born to American Indian and Black birthing people were more than 2x the mortality rate of infants born to white birthing people.



Source: Minnesota linked birth-infant period cohort 2017-2021. Rate is per 1,000 live births.

Figure 5: The rate of neonatal deaths was highest for Blacks, while the rate of post-neonatal deaths was highest for American Indians at 4x the state rate.



Source: Minnesota linked birth-infant period cohort, 2017-2021. Rate is per 1,000 live births.

Selected Infant Mortality Data

Table 1: % Distribution of Leading Causes of Infant Mortality: Minnesota, 2017-2021

| Cause of Death | # of Infant Deaths | Percentage (%) |
|----------------------------|--------------------|----------------|
| Prematurity | 492 | 31.8 |
| Congenital Anomalies | 408 | 26.4 |
| Other Perinatal Conditions | 238 | 15.4 |
| SUID/SIDS | 173 | 11.2 |
| Infections | 67 | 4.3 |
| Injury | 48 | 3.1 |
| All Other | 119 | 7.7 |

Sudden infant death syndrome (SIDS) and other sleep-related infant deaths.

Source: Minnesota Department of Health. Linked birth/death file.

Table 2: Infant Mortality Rates by Selected Maternal Characteristics: Minnesota, 2017-2021

| Characteristic | # of Infant Deaths | Number of Births | Infant Mortality Rate (Per 1,000 live births) |
|-----------------|--------------------|------------------|---|
| Minnesota Total | 1,545 | 329,917 | 4.7 |

APPENDIX L: BACKGROUND INFORMATION ON PERINATAL AND INFANT HEALTH

| Characteristic | # of Infant Deaths | Number of Births | Infant Mortality Rate (Per 1,000 live births) |
|--------------------------------|--------------------|------------------|---|
| Age at Death | | | |
| Neonatal Death | 1,052 | -- | 3.2 |
| Postneonatal Death | 493 | | 1.5 |
| Gestational Age | | | |
| Preterm (<37 weeks) | 865 | 30,071 | 28.8 |
| Term Births (>=37 weeks) | 525 | 299,247 | 1.8 |
| Birthweight | | | |
| Low Birthweight (<2,500g) | 912 | 22,691 | 40.2 |
| Normal Birthweight (>=2,500g) | 532 | 307,011 | 1.7 |
| Maternal Age | | | |
| Under 20 | 72 | 8,959 | 8.0 |
| 20-34 | 1,113 | 255,640 | 4.4 |
| 35+ | 325 | 65,274 | 5.0 |
| Maternal Race/Ethnicity | | | |
| Black/African American | 357 | 43,274 | 8.2 |
| American Indian | 52 | 5,449 | 9.5 |
| Asian/Pacific Islander | 137 | 26,593 | 5.2 |
| Hispanic* | 105 | 22,555 | 4.7 |
| Non-Hispanic White | 817 | 226,725 | 3.6 |
| Other & Unknown | 43 | 5,321 | 8.1 |
| Nativity Status | | | |
| Foreign Born | 339 | 63,715 | 5.3 |
| US Born | 1,151 | 264,974 | 4.3 |
| Maternal Education | | | |
| Less than high school | 233 | 33,170 | 7.0 |
| High school/GED | 339 | 55,417 | 6.1 |
| More than high school | 897 | 239,217 | 3.7 |
| Geographic Location | | | |
| Urban/Metro Total | 835 | 187,356 | 4.5 |
| Hennepin | 349 | 77,155 | 4.5 |
| Ramsey | 206 | 35,933 | 5.7 |
| Suburbs** | 280 | 74,268 | 3.8 |
| Greater MN/Rural*** | 674 | 142,499 | 4.7 |
| Central | 209 | 45,028 | 4.6 |
| Northeast | 76 | 14,930 | 5.1 |
| Northwest | 58 | 10,276 | 5.6 |
| South Central | 69 | 15,865 | 4.3 |
| Southeast | 145 | 29,114 | 5.0 |
| Southwest | 71 | 13,804 | 5.1 |
| West Central | 46 | 13,482 | 3.4 |
| Tobacco Smoker | | | |
| Smoker | 224 | 30,111 | 7.4 |
| Non-Smoker | 1,264 | 298,895 | 4.2 |

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| Characteristic | # of Infant Deaths | Number of Births | Infant Mortality Rate (Per 1,000 live births) |
|---------------------------------|--------------------|------------------|---|
| Medicaid Status | | | |
| Birth Medicaid Financed | 673 | 106,230 | 6.3 |
| Non-Medicaid Financed Birth | 824 | 222,879 | 3.7 |
| Prenatal Care Initiation | | | |
| 1 st Trimester | 998 | 258,802 | 3.9 |
| 2 nd Trimester | 297 | 45,534 | 6.5 |
| 3 rd Trimester | 116 | 10,214 | 11.4 |
| Adequacy Prenatal Care | | | |
| Inadequate, No Care | 286 | 31,711 | 9.0 |
| Intermediate | 94 | 34,418 | 2.7 |
| Intensive, Adequate | 1,022 | 247,773 | 4.1 |

* Hispanic can be of any race. **Suburbs include the following metro counties: Anoka, Carver, Dakota, Scott, and Washington. Source: Minnesota Department of Health. Linked Birth/Death File ***Greater MN/Rural locations are based on the State Community Health Services Advisory Committee (SCHSAC) geographic configurations of Minnesota counties into seven regions: Central, Metro, Northeast, Northwest, South Central, Southeast, Southwest, and West Central.