



Maternal and Infant Health Statistics

Prosperity Regions 2 & 3

Michigan

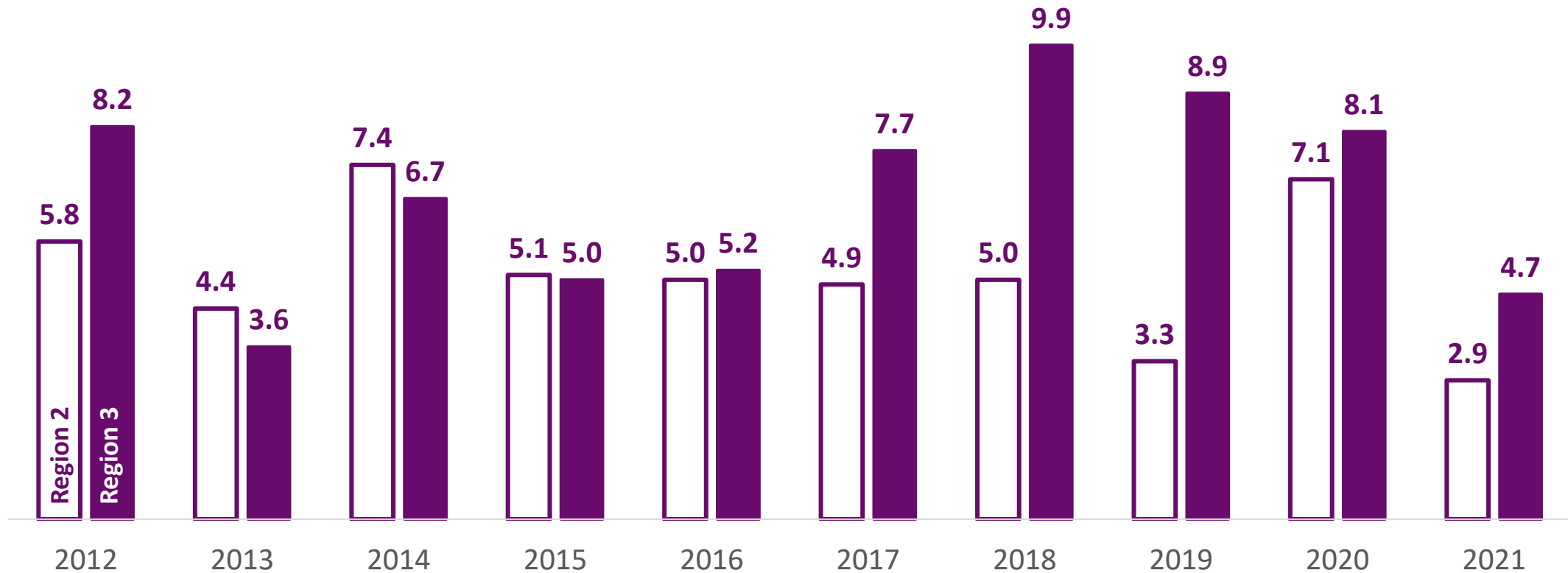
Prepared by Maternal and Child Health (MCH) Epidemiology Section,
Michigan Department of Health and Human Services (MDHHS)
Data source: Michigan resident live birth files (10/06/22) and infant mortality files (11/03/22),
Division for Vital Records and Health Statistics, MDHHS
July 2023

Infant Mortality Rate (IMR) Prosperity Regions 2 & 3 2012-2021

Infant Mortality Rate Prosperity Regions 2 & 3, 2012-2021

Infant mortality is defined as a death of a baby before his or her first birthday and is expressed as a rate per 1,000 live births.

2021 Michigan Rate = 6.2



Infant Mortality Rates by Maternal Race/Ethnicity Prosperity Regions 2 & 3, 2017-2021

Infant mortality is defined as a death of a baby before his or her first birthday and is expressed as a rate per 1,000 live births.

| Maternal Race | Infant Mortality Rate (per 1,000 Live Births) | MI |
|------------------------|---|------|
| White Non-Hispanic | <div> <div>Region 2</div> <div>Region 3</div> </div> <div> <div>4.7</div> <div>7.6</div> </div> | 4.8 |
| Black Non-Hispanic | Region 2: 0.0 Region 3: Data Not Sufficient (0 <N<6) | 13.6 |
| Hispanic | Region 2: Data Not Sufficient (0 <N<6) Region 3: Data Not Sufficient (0 <N<6) | 5.6 |
| American Indian | Region 2: Data Not Sufficient (0 <N<6) Region 3: 0.0 | 5.5 |
| Asian/Pacific Islander | Region 2: 0.0 Region 3: 0.0 | 4.5 |

Birth Outcomes by Race/Ethnicity Prosperity Region 2, 2017-2021

Infant mortality is defined as a death of a baby before his or her first birthday and is expressed as a rate per 1,000 live births.

| Comparison of methods used to measure cases among Native Americans | # Live Births | # Infant Deaths | # Low Birthweight | # Preterm | IMR per 1,000 Live Births | % Low Birthweight | % Preterm |
|--|---------------|-----------------|-------------------|-----------|---------------------------|-------------------|-----------|
| #1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic | 180 | 0<N<6 | 12 | 17 | Do Not Sufficient | 6.7% | 9.4% |
| #2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native). | 274 | 0<N<6 | 16 | 21 | Do Not Sufficient | 5.8% | 7.7% |
| #3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) OR the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native) | 468 | 0<N<6 | 28 | 42 | Do Not Sufficient | 6.0% | 9.0% |

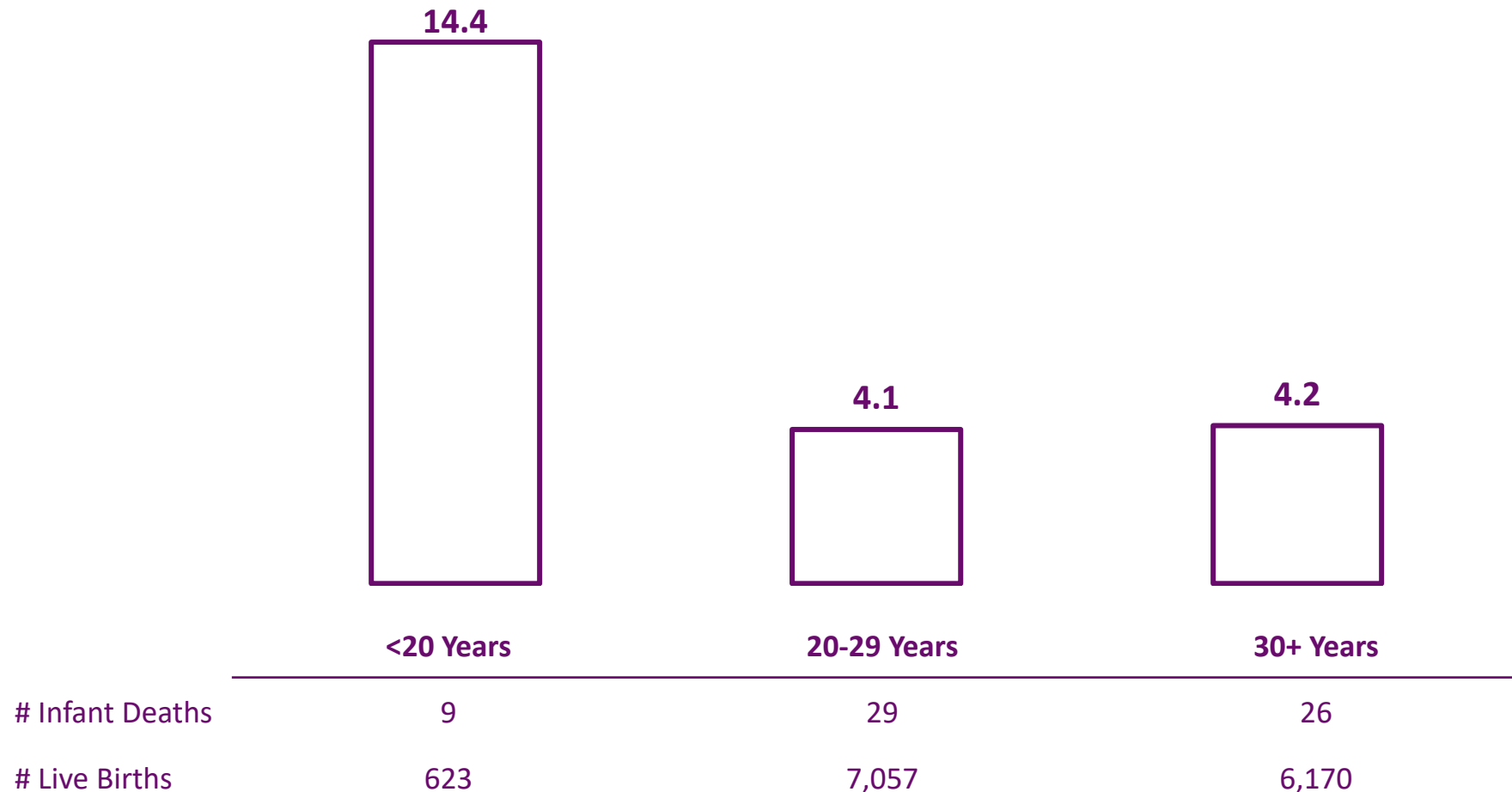
Birth Outcomes by Race/Ethnicity Prosperity Region 3, 2017-2021

Infant mortality is defined as a death of a baby before his or her first birthday and is expressed as a rate per 1,000 live births.

| Comparison of methods used to measure cases among Native Americans | # Live Births | # Infant Deaths | # Low Birthweight | # Preterm | IMR per 1,000 Live Births | % Low Birthweight | % Preterm |
|--|---------------|-----------------|-------------------|-----------|---------------------------|-------------------|-----------|
| #1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic | 63 | 0 | 6 | 7 | 0.0 | 9.5% | 11.1% |
| #2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native). | 95 | 0<N<6 | 9 | 9 | Data Not Sufficient | 9.5% | 9.5% |
| #3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) OR the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native) | 172 | 0<N<6 | 16 | 16 | Data Not Sufficient | 9.3% | 9.3% |

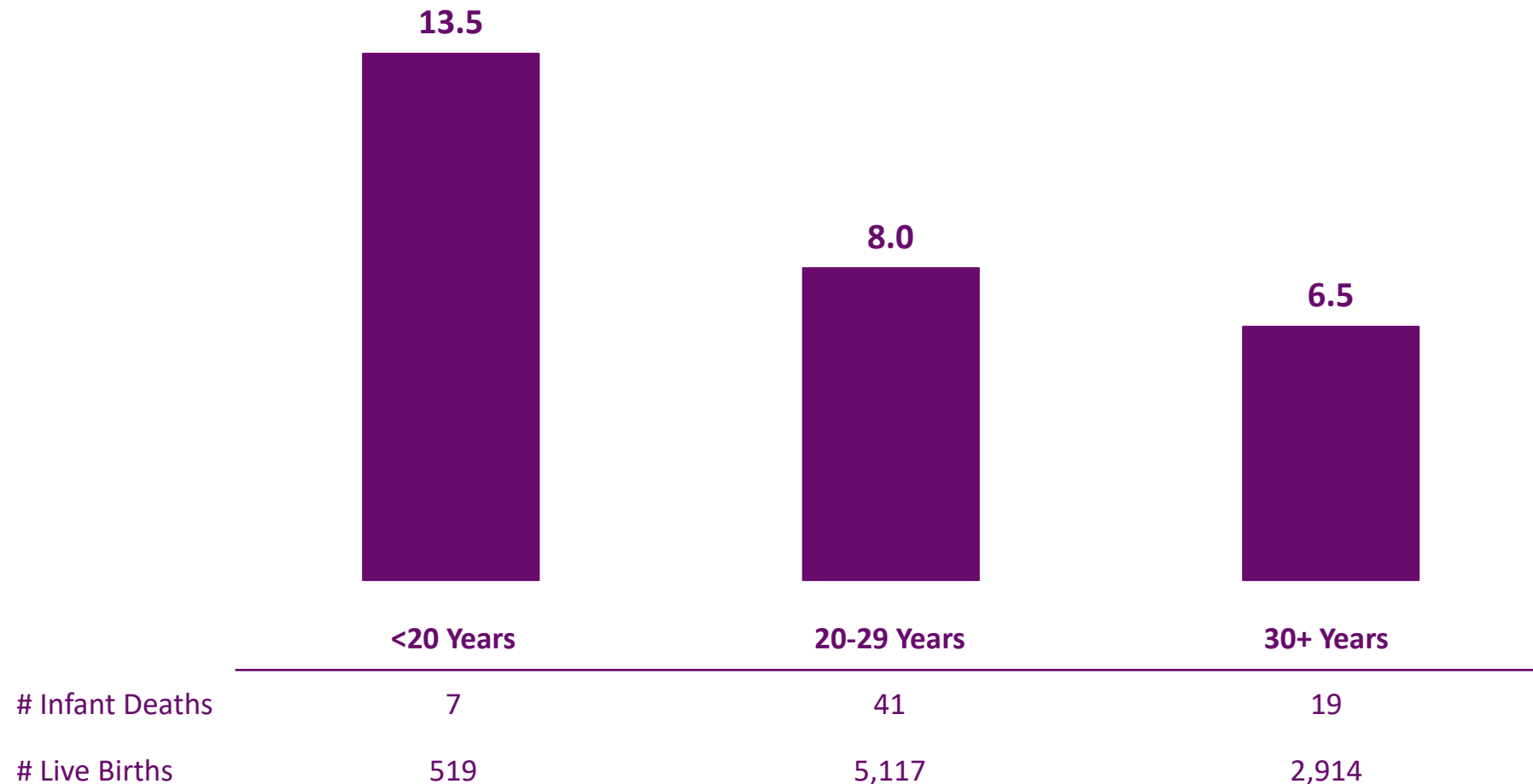
Infant Mortality Rate by Maternal Age Prosperity Region 2, 2017-2021

Infant mortality is defined as a death of a baby before his or her first birthday and is expressed as a rate per 1,000 live births.



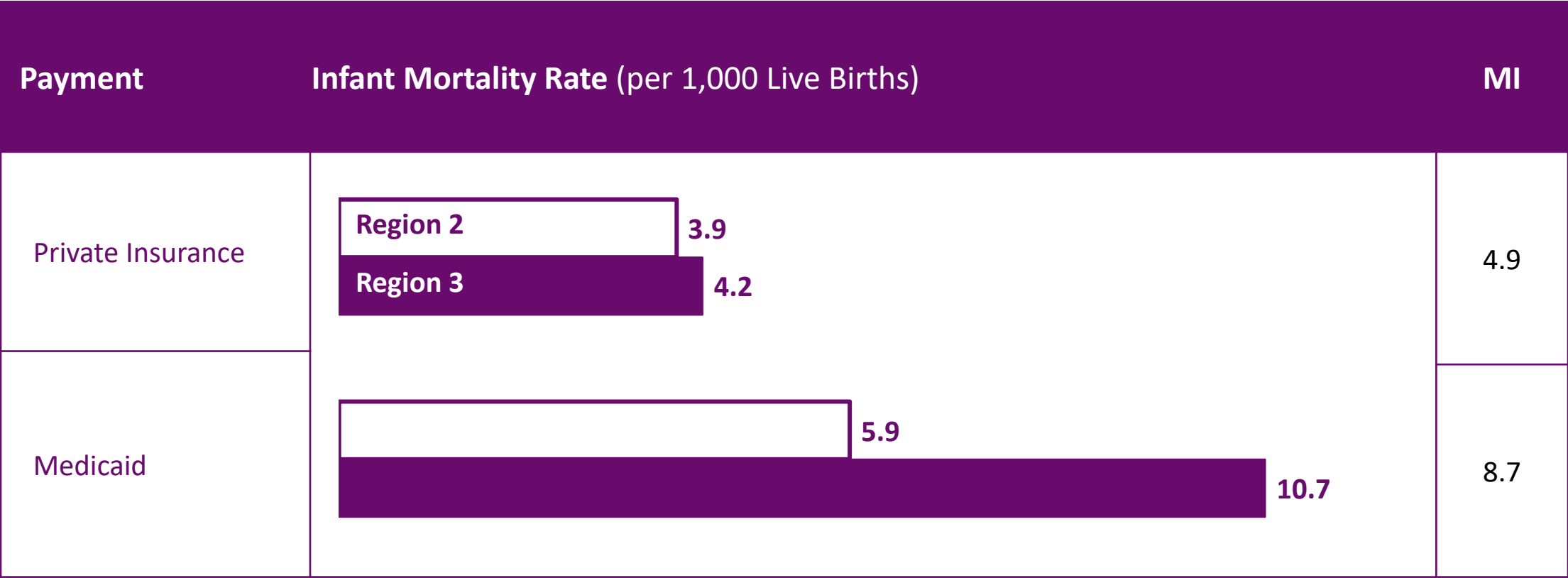
Infant Mortality Rate by Maternal Age Prosperity Region 3, 2017-2021

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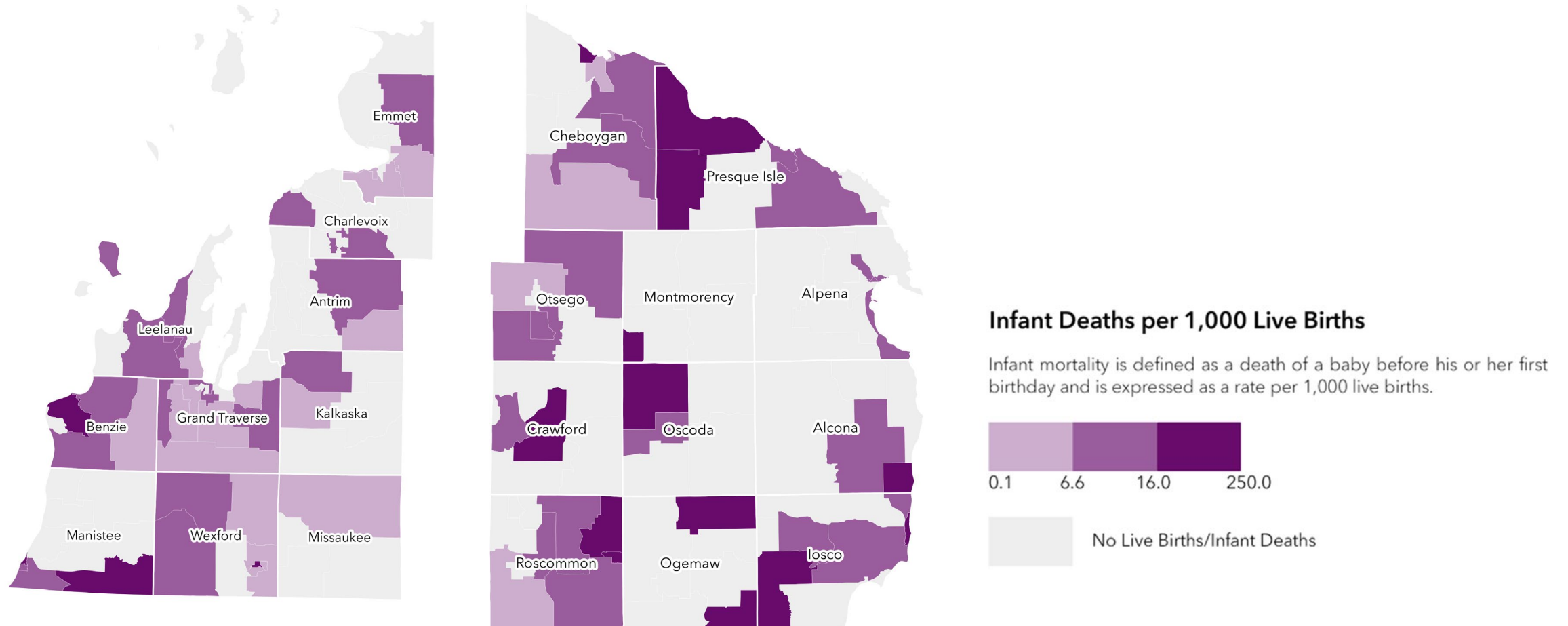
Infant Mortality Rates by Intended Payment Source Prosperity Regions 2 & 3, 2017-2021

Infant mortality is defined as a death of a baby before his or her first birthday and is expressed as a rate per 1,000 live births.



Infant Mortality Rates by Census Tract Prosperity Regions 2 & 3, 2016-2020

Infant mortality is defined as a death of a baby before his or her first birthday and is expressed as a rate per 1,000 live births.

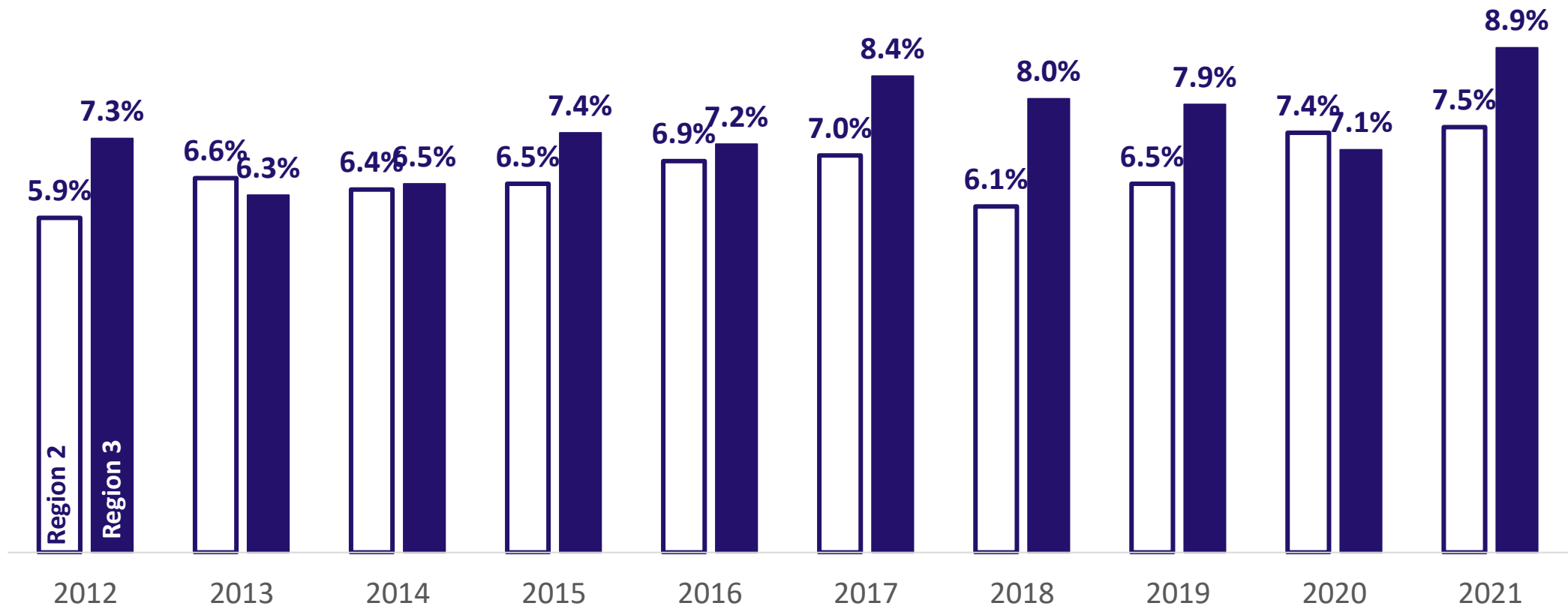


Low Birthweight (LBW) Prosperity Regions 2 & 3 2012-2021

Low Birthweight Prosperity Regions 2 & 3, 2012-2021

Low birthweight rate is defined as number of births with baby birthweight <2,500 grams per 100 live births.

2021 Michigan = 9.2%



Low Birthweight by Maternal Race/Ethnicity Prosperity Regions 2 & 3, 2017-2021

Low birthweight rate is defined as number of births with baby birthweight <2,500 grams per 100 live births.

| Maternal Race | Percent (%) Low Birthweight | MI |
|------------------------|---|-------|
| White non-Hispanic | <div> <div>Region 2</div> <div>Region 3</div> </div> <div> <div>6.8%</div> <div>8.0%</div> </div> | 7.2% |
| Black non-Hispanic | <div> <div>12.0%</div> </div> <div>Region 3: Data Not Sufficient (0 <N<6)</div> | 15.2% |
| Hispanic | <div> <div>8.6%</div> <div>9.0%</div> </div> | 7.7% |
| American Indian | <div> <div>6.7%</div> <div>9.5%</div> </div> | 8.4% |
| Asian/Pacific Islander | <div> <div>5.8%</div> </div> <div>Region 3: Data Not Sufficient (DNS): 0<N<6</div> | 9.0% |

Birth Outcomes by Race/Ethnicity Prosperity Region 2, 2017-2021

Low birthweight rate is defined as number of births with baby birthweight <2,500 grams per 100 live births.

| Comparison of methods used to measure cases among Native Americans | # Live Births | # Infant Deaths | # Low Birthweight | # Preterm | IMR per 1,000 Live Births | % Low Birthweight | % Preterm |
|--|---------------|-----------------|-------------------|-----------|---------------------------|-------------------|-----------|
| #1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic | 180 | 0<N<6 | 12 | 17 | Do Not Sufficient | 6.7% | 9.4% |
| #2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native). | 274 | 0<N<6 | 16 | 21 | Do Not Sufficient | 5.8% | 7.7% |
| #3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) OR the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native) | 468 | 0<N<6 | 28 | 42 | Do Not Sufficient | 6.0% | 9.0% |

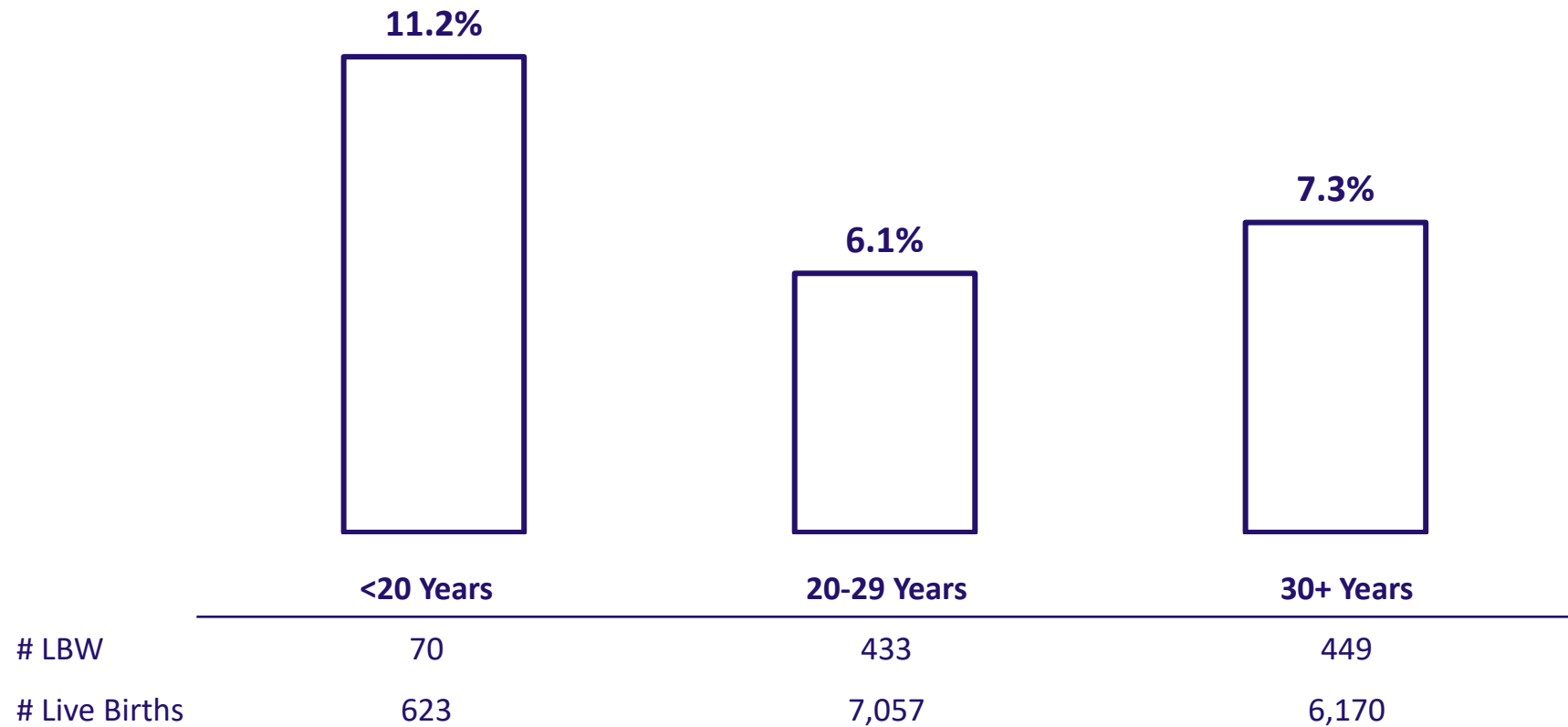
Birth Outcomes by Race/Ethnicity Prosperity Region 3, 2017-2021

Low birthweight rate is defined as number of births with baby birthweight <2,500 grams per 100 live births.

| Comparison of methods used to measure cases among Native Americans | # Live Births | # Infant Deaths | # Low Birthweight | # Preterm | IMR per 1,000 Live Births | % Low Birthweight | % Preterm |
|--|---------------|-----------------|-------------------|-----------|---------------------------|-------------------|-----------|
| #1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic | 63 | 0 | 6 | 7 | 0.0 | 9.5% | 11.1% |
| #2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native). | 95 | 0<N<6 | 9 | 9 | Data Not Sufficient | 9.5% | 9.5% |
| #3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) OR the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native) | 172 | 0<N<6 | 16 | 16 | Data Not Sufficient | 9.3% | 9.3% |

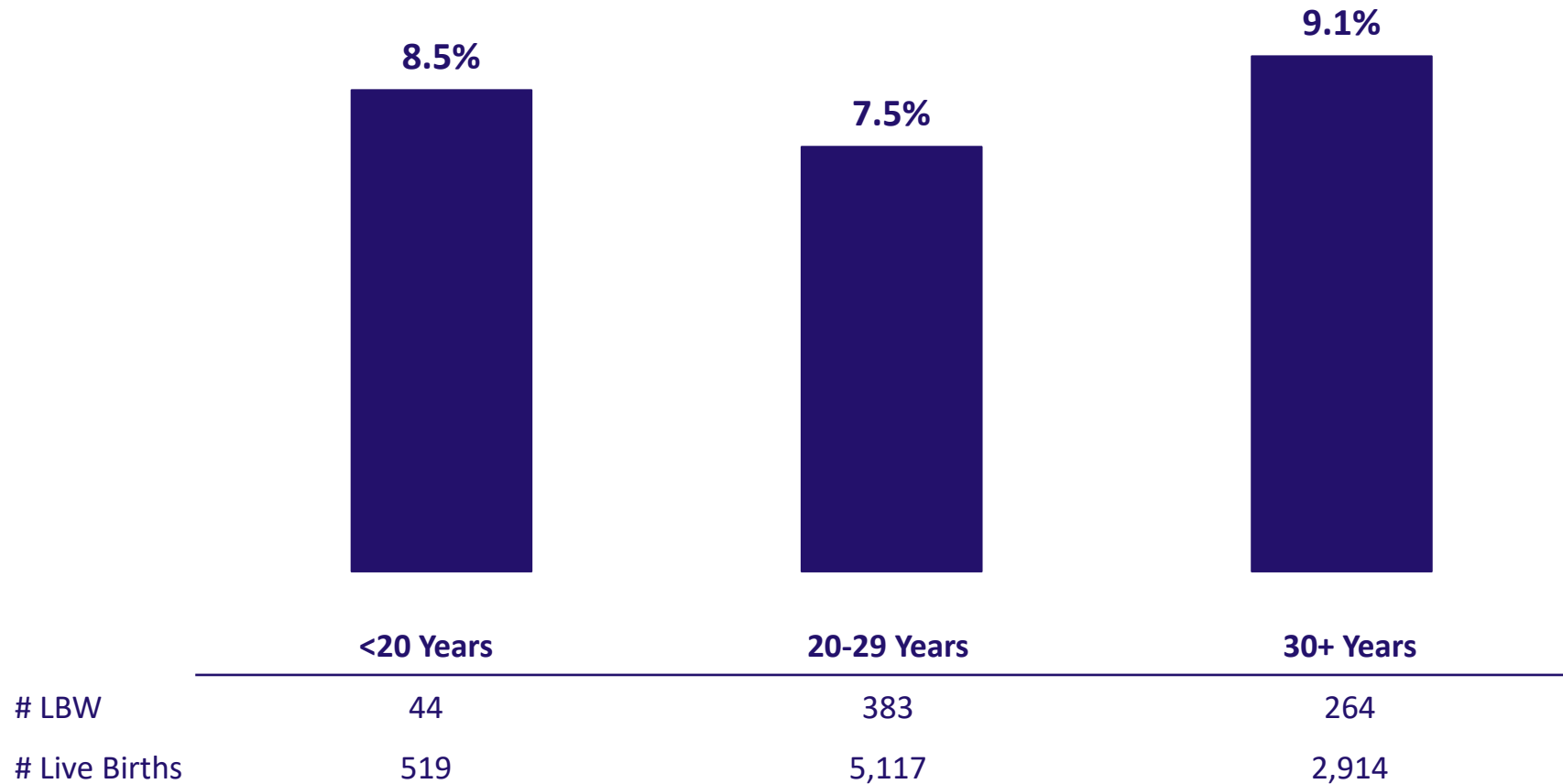
Low Birthweight by Maternal Age Prosperity Region 2, 2017-2021

Low birthweight rate is defined as number of births with baby birthweight <2,500 grams per 100 live births.



Low Birthweight by Maternal Age Prosperity Region 3, 2017-2021

Low birthweight rate is defined as number of births with baby birthweight <2,500 grams per 100 live births.



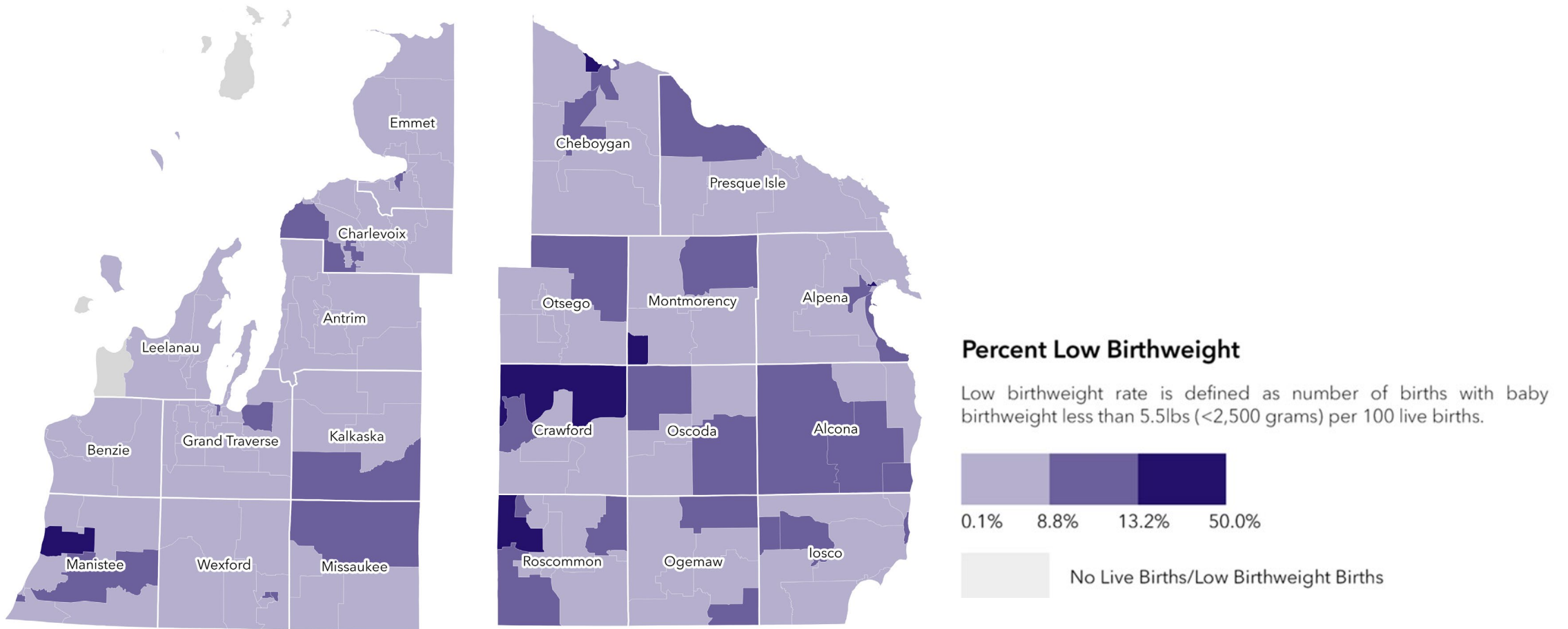
Low Birthweight by Intended Payment Source Prosperity Regions 2 & 3, 2017-2021

Low birthweight rate is defined as number of births with baby birthweight <2,500 grams per 100 live births.

| Payment | Percent (%) Low Birthweight | MI |
|-------------------|--|-------|
| Private Insurance | <div> <div>Region 26.2%</div> <div>Region 36.0%</div> </div> | 7.5% |
| Medicaid | <div> <div>8.1%</div> <div>9.7%</div> </div> | 10.9% |

Low Birthweight by Census Tract Prosperity Regions 2 & 3, 2016-2020

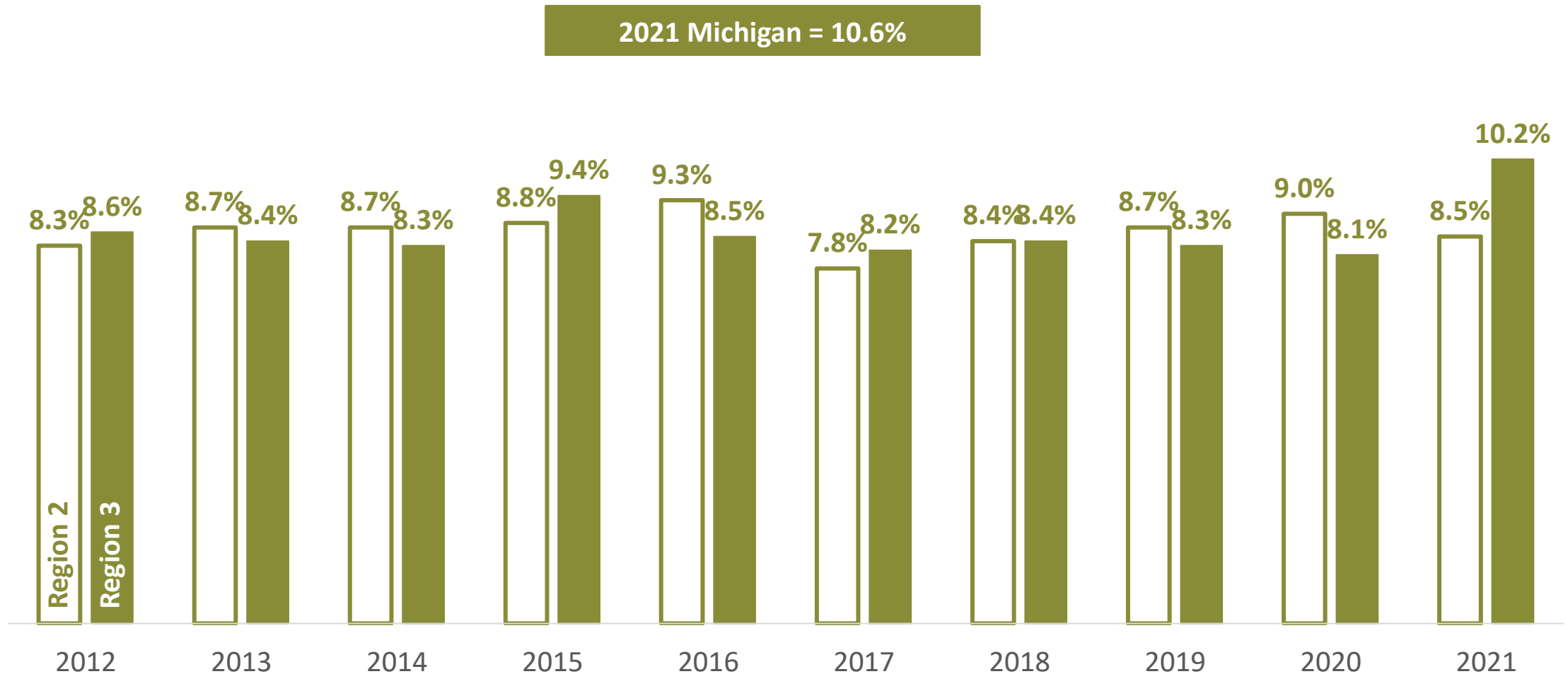
Low birthweight rate is defined as number of births with baby birthweight <2,500 grams per 100 live births.



**Preterm Birth
Prosperity Regions 2 & 3
2012-2021**

Preterm Birth Prosperity Regions 2 & 3, 2012-2021

Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births. Gestational age is based on the obstetric estimate of gestation.



Preterm Birth by Maternal Race/Ethnicity Prosperity Regions 2 & 3, 2017-2021

Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births. Gestational age is based on the obstetric estimate of gestation.

| Maternal Race | Percent (%) Preterm | MI |
|------------------------|---|-------|
| White non-Hispanic | <div> <div>Region 2</div> <div>Region 3</div> </div> <div> <div>8.4%</div> <div>8.6%</div> </div> | 9.2% |
| Black non-Hispanic | <div> <div>12.0%</div> <div>Region 3: Data Not Sufficient (0 <N<6)</div> </div> | 14.9% |
| Hispanic | <div> <div>9.4%</div> <div>10.9%</div> </div> | 9.8% |
| American Indian | <div> <div>9.4%</div> <div>11.1%</div> </div> | 10.1% |
| Asian/Pacific Islander | <div> <div>7.7%</div> <div>Region 3: Data Not Sufficient (0 <N<6)</div> </div> | 8.2% |

Birth Outcomes by Race/Ethnicity Prosperity Region 2, 2017-2021

Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births. Gestational age is based on the obstetric estimate of gestation.

| Comparison of methods used to measure cases among Native Americans | # Live Births | # Infant Deaths | # Low Birthweight | # Preterm | IMR per 1,000 Live Births | % Low Birthweight | % Preterm |
|--|---------------|-----------------|-------------------|-----------|---------------------------|-------------------|-----------|
| #1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic | 180 | 0<N<6 | 12 | 17 | Do Not Sufficient | 6.7% | 9.4% |
| #2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native). | 274 | 0<N<6 | 16 | 21 | Do Not Sufficient | 5.8% | 7.7% |
| #3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) OR the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native) | 468 | 0<N<6 | 28 | 42 | Do Not Sufficient | 6.0% | 9.0% |

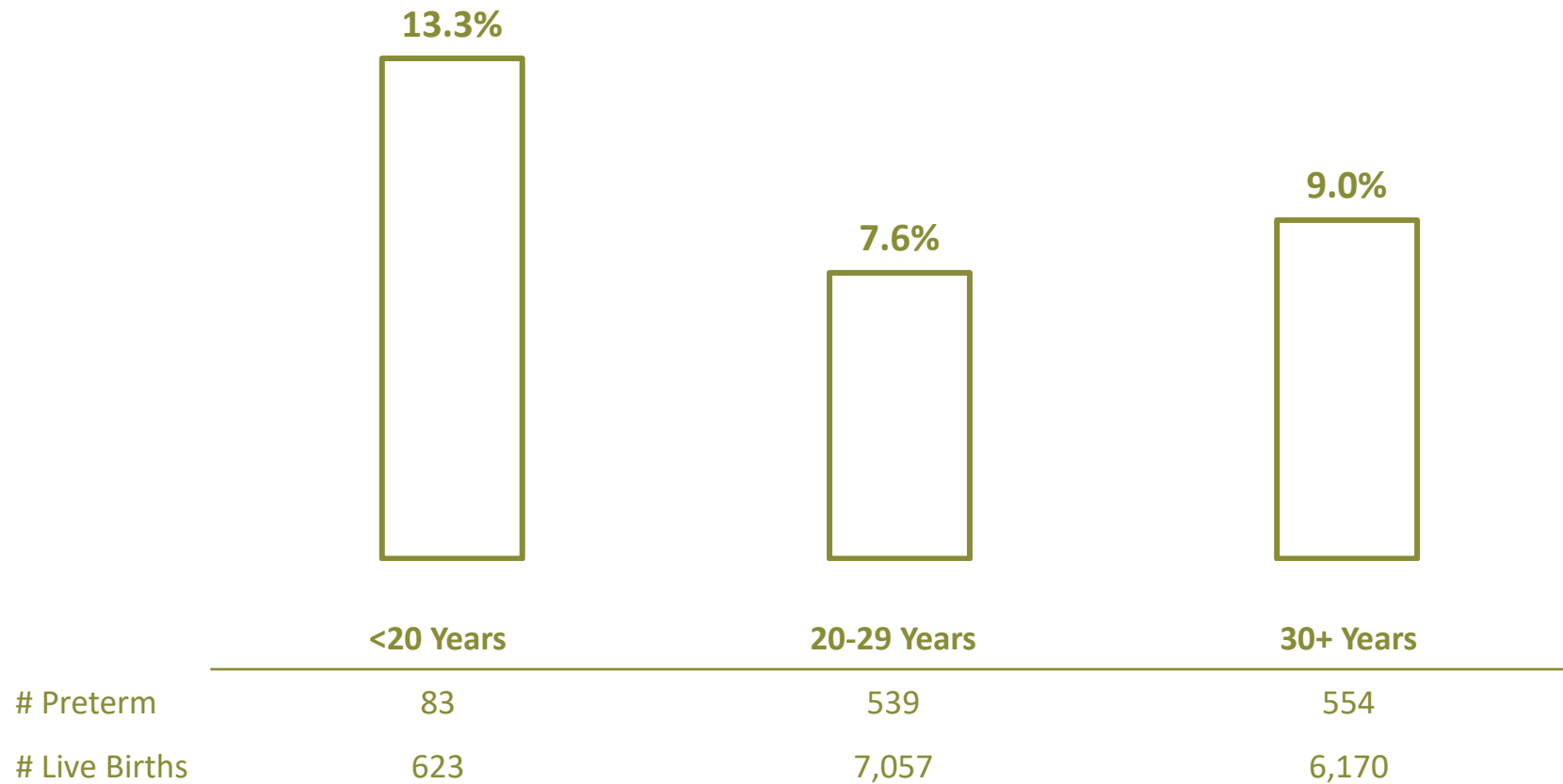
Birth Outcomes by Race/Ethnicity Prosperity Region 3, 2017-2021

Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births. Gestational age is based on the obstetric estimate of gestation.

| | # Live Births | # Infant Deaths | # Low Birthweight | # Preterm | IMR per 1,000 Live Births | % Low Birthweight | % Preterm |
|--|---------------|-----------------|-------------------|-----------|---------------------------|-------------------|-----------|
| #1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic | 63 | 0 | 6 | 7 | 0.0 | 9.5% | 11.1% |
| #2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native). | 95 | 0<N<6 | 9 | 9 | Do Not Sufficient | 9.5% | 9.5% |
| #3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) OR the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native) | 172 | 0<N<6 | 16 | 16 | Do Not Sufficient | 9.3% | 9.3% |

Preterm Birth by Maternal Age Prosperity Region 2, 2017-2021

Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births. Gestational age is based on the obstetric estimate of gestation.



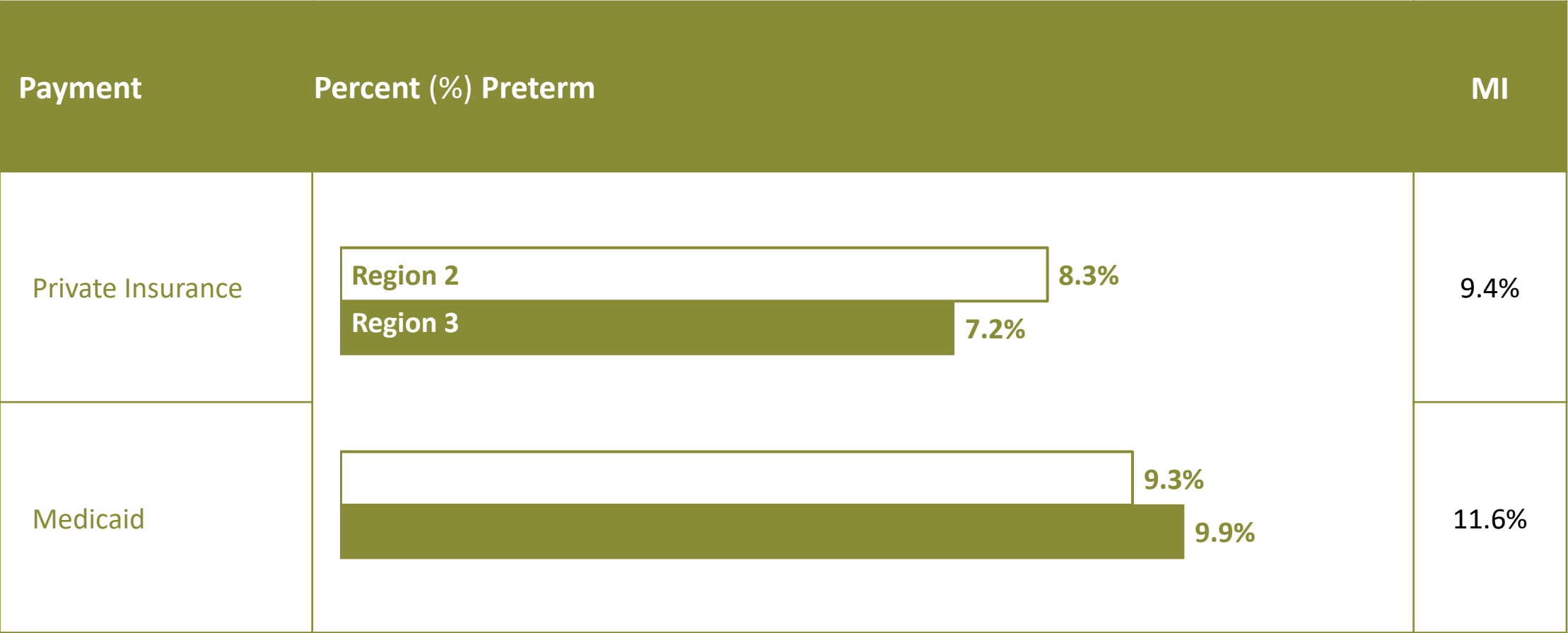
Preterm Birth by Maternal Age Prosperity Region 3, 2017-2021

Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births. Gestational age is based on the obstetric estimate of gestation.



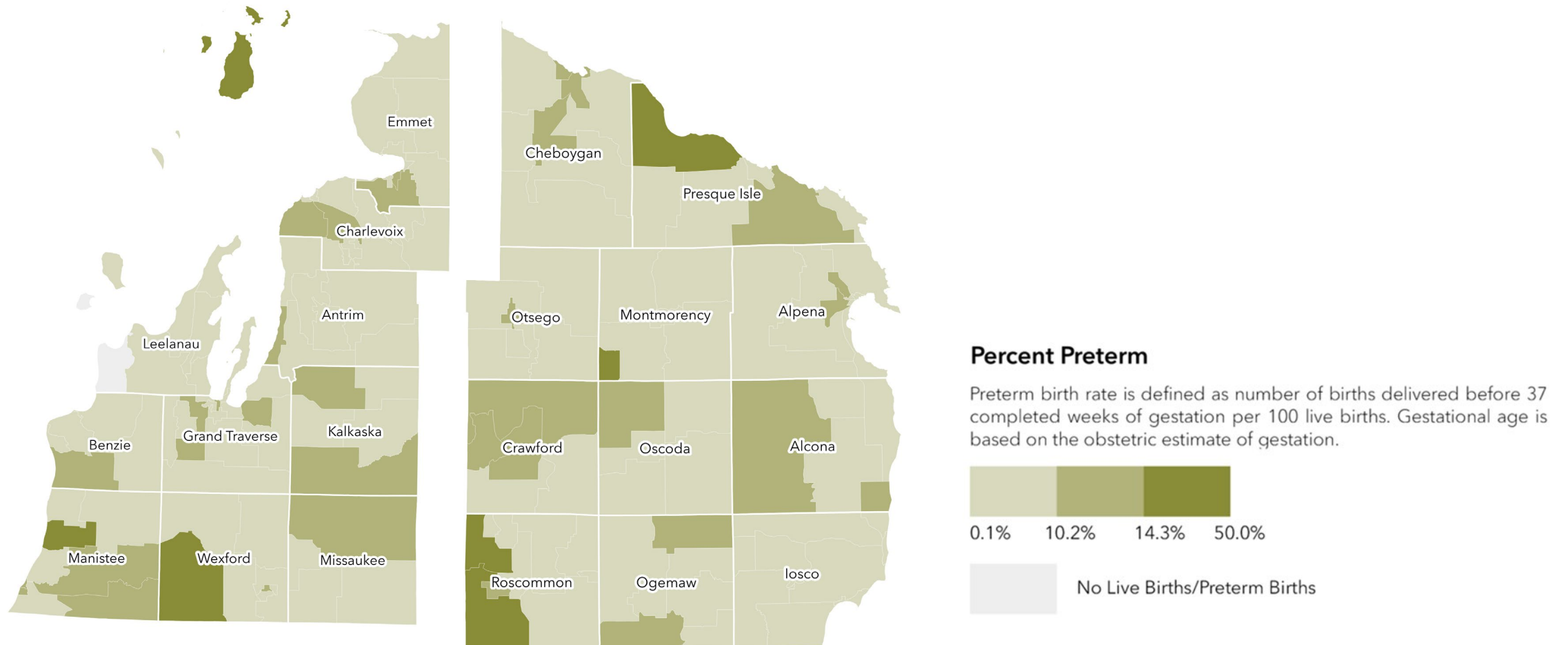
Preterm Birth by Intended Payment Source Prosperity Regions 2 & 3, 2017-2021

Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births. Gestational age is based on the obstetric estimate of gestation.



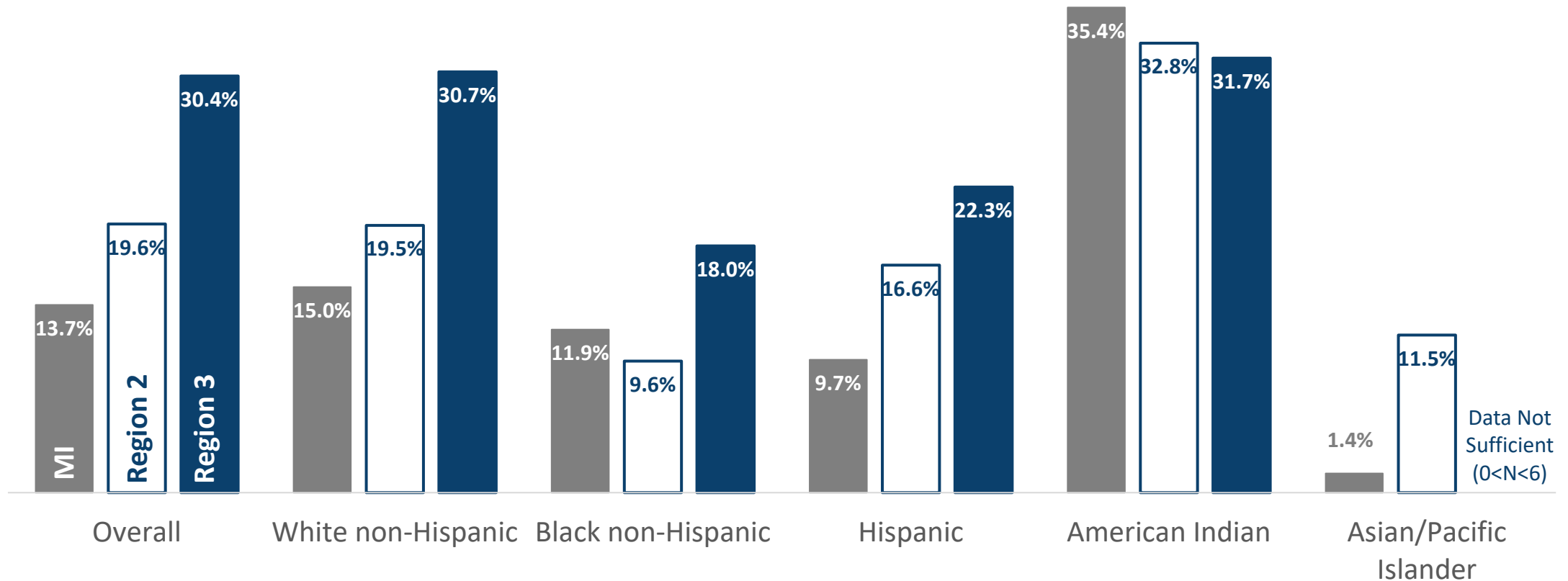
Preterm Birth by Census Tract Prosperity Regions 2 & 3, 2016-2020

Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births. Gestational age is based on the obstetric estimate of gestation.



Smoking During Pregnancy Prosperity Regions 2 & 3 2017-2021

Smoking During Pregnancy by Maternal Race/Ethnicity, 2017-2021



Smoking During Pregnancy by Race/Ethnicity Prosperity Region 2, 2017-2021

| Comparison of methods used to measure cases among Native Americans | # Smoke during Pregnancy | # Live Births | Percent (%) Smoke during Pregnancy |
|--|--------------------------|---------------|------------------------------------|
| #1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic | 59 | 180 | 32.8% |
| #2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native). | 95 | 274 | 34.7% |
| #3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) OR the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native) | 150 | 468 | 32.1% |

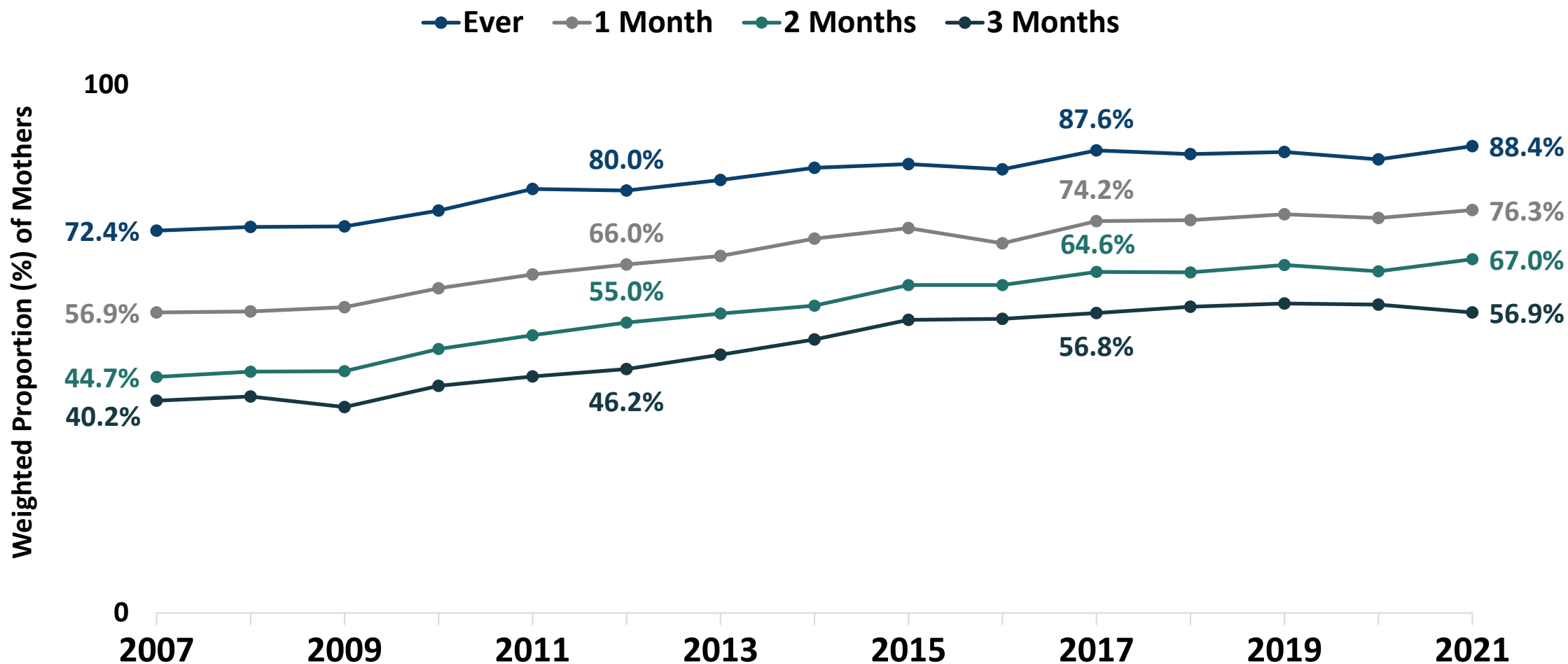
Smoking During Pregnancy by Race/Ethnicity Prosperity Region 3, 2017-2021

| Comparison of methods used to measure cases among Native Americans | # Smoke during Pregnancy | # Live Births | Percent (%) Smoke during Pregnancy |
|--|--------------------------|---------------|------------------------------------|
| #1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic | 20 | 63 | 31.7% |
| #2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native). | 29 | 95 | 30.5% |
| #3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) OR the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native) | 61 | 172 | 35.5% |

Breastfeeding Initiation and Duration Michigan 2007-2021

Breastfeeding Initiation + Duration Michigan, 2007-2021

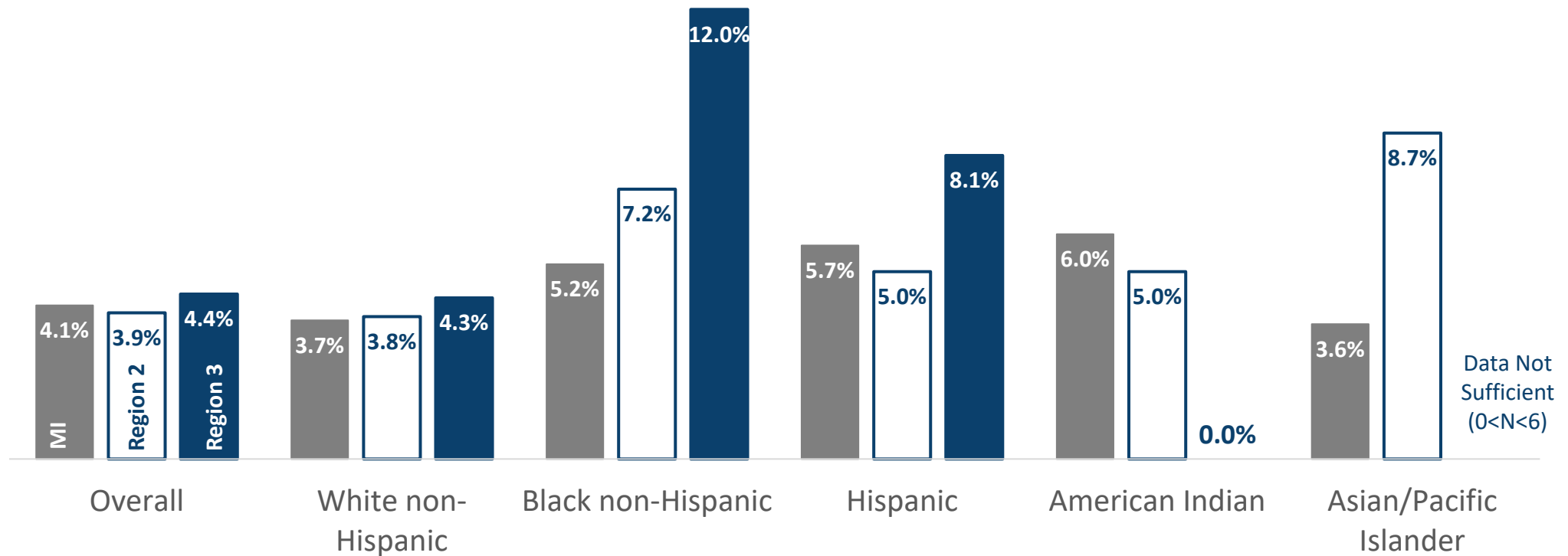
Significance test for all linear trends: $p < 0.0001$



Late Entry into Prenatal Care Prosperity Region 2 & 3 2017-2021

Late Entry Into Prenatal Care by Maternal Race/Ethnicity, 2017-2021

Late entry into prenatal care refers to begin prenatal care in the 7th – 9th month of gestation



Late Entry into Prenatal Care by Race/Ethnicity Prosperity Region 2, 2017-2021

Late entry into prenatal care refers to begin prenatal care in the 7th – 9th month of gestation

| Comparison of methods used to measure cases among Native Americans | # Late Prenatal Care | # Live Births | Percent (%) Late Prenatal Care |
|--|----------------------|---------------|--------------------------------|
| #1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic | 9 | 180 | 5.0% |
| #2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native). | 14 | 274 | 5.1% |
| #3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) OR the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native) | 24 | 468 | 5.1% |

Late Entry into Prenatal Care by Race/Ethnicity Prosperity Region 3, 2017-2021

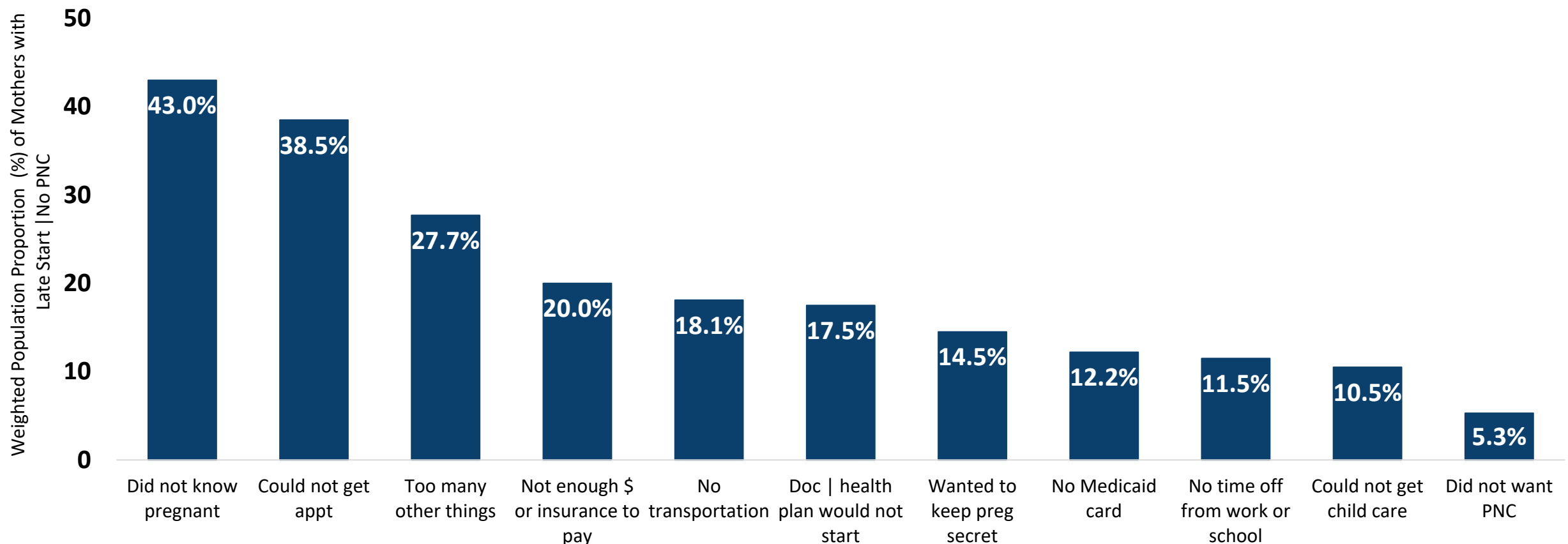
Late entry into prenatal care refers to begin prenatal care in the 7th – 9th month of gestation

| Comparison of methods used to measure cases among Native Americans | # Late Prenatal Care | # Live Births | Percent (%) Late Prenatal Care |
|--|----------------------|---------------|--------------------------------|
| #1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic | 0 | 63 | 0.0% |
| #2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native). | 0<N<6 | 95 | Data Not Sufficient |
| #3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) OR the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native) | 0<N<6 | 172 | Data Not Sufficient |

Barriers to Prenatal Care Michigan 2016-2021

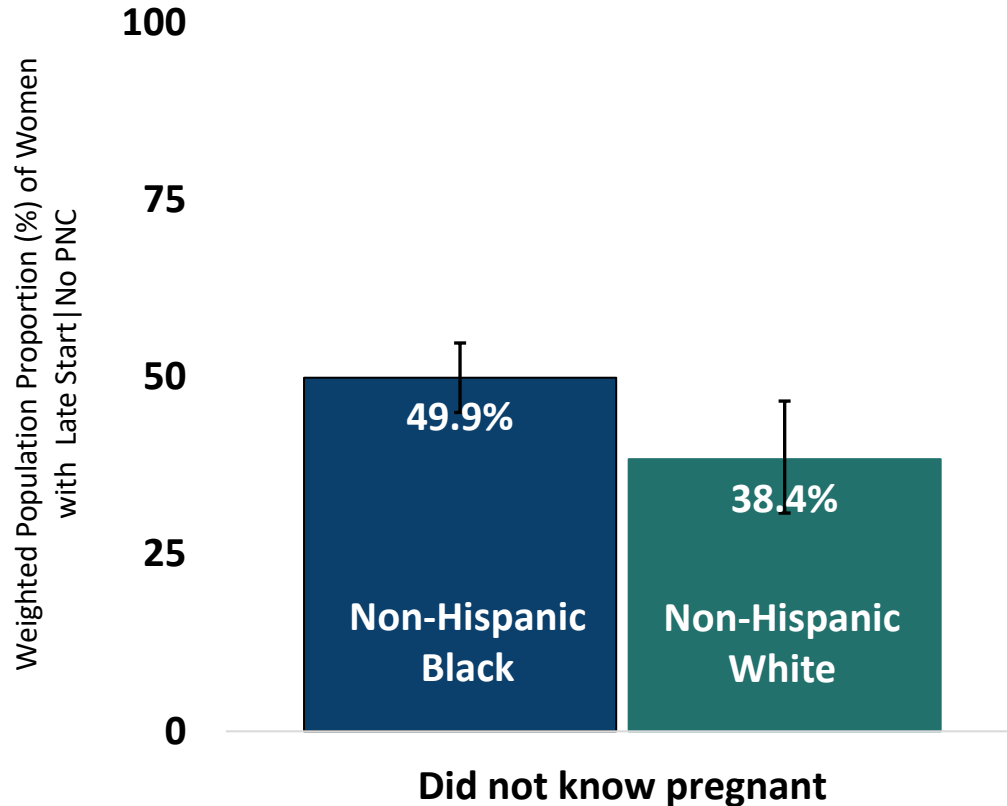
Barriers to Prenatal Care among Michigan Mothers who started PNC *after* 1st trimester and wanted to start sooner, 2016-2021

Around half (51.7%) of mothers who started PNC after the first trimester were okay with that timing.

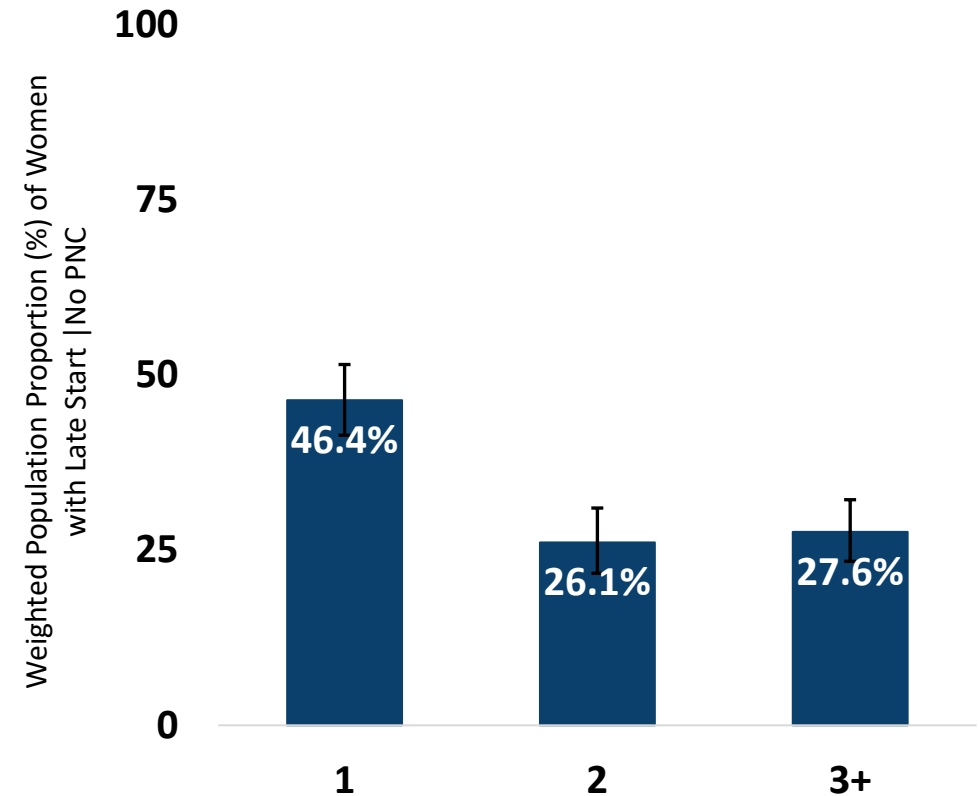


Barriers to Prenatal Care among Michigan Mothers who started PNC *after* 1st trimester and wanted to start sooner, 2016-2021

Selected Barriers with Significant Differences by Maternal Race/Ethnicity



Number of Barriers among Mothers with Late | No PNC



Neonatal Abstinence Syndrome Prosperity Regions 2 & 3 2012-2021

About the Data

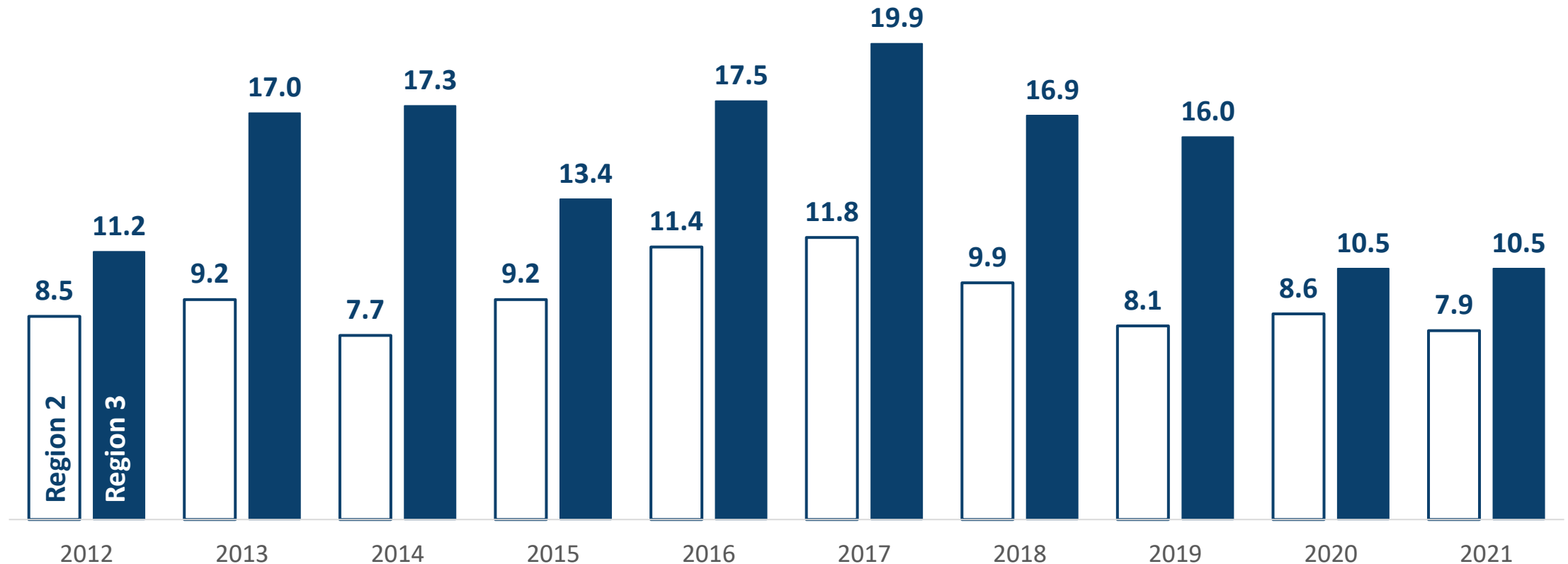
1. NAS cases are identified by diagnosis code (ICD-9 779.5 or ICD-10 P96.1) from the Michigan Inpatient Database. The transition from ICD-9 to ICD-10 started in Fall 2015. This may contribute to some fluctuation in the data.
2. NAS cases may be underreported with the increasing popularity of non-pharmacological interventions, which may not be consistently captured in the data.
3. The goal of NAS surveillance is *not* to reduce the number of cases to zero. This is due to limitations with current surveillance practices. They do not allow us to distinguish between a) women with untreated opioid use or other substance use disorder or b) women with opioid use disorder on medicated assisted therapy, or c) women on long term opioid, benzodiazepine or barbiturate therapy for a chronic disease condition.
4. NAS rates are calculated per 1,000 live births in order to be consistent with the CSTE case definition. Previous reports published by MDHHS include NAS rates per 100,000 live births.

Neonatal Abstinence Syndrome Prosperity Regions 2 & 3, 2012-2021

2010-2015: 779.5 (drug withdrawal syndrome in newborn) and 2016-current: P96.1 (neonatal withdrawal symptoms from maternal use of drugs of addiction)

NAS Rate per 1,000 Live Births

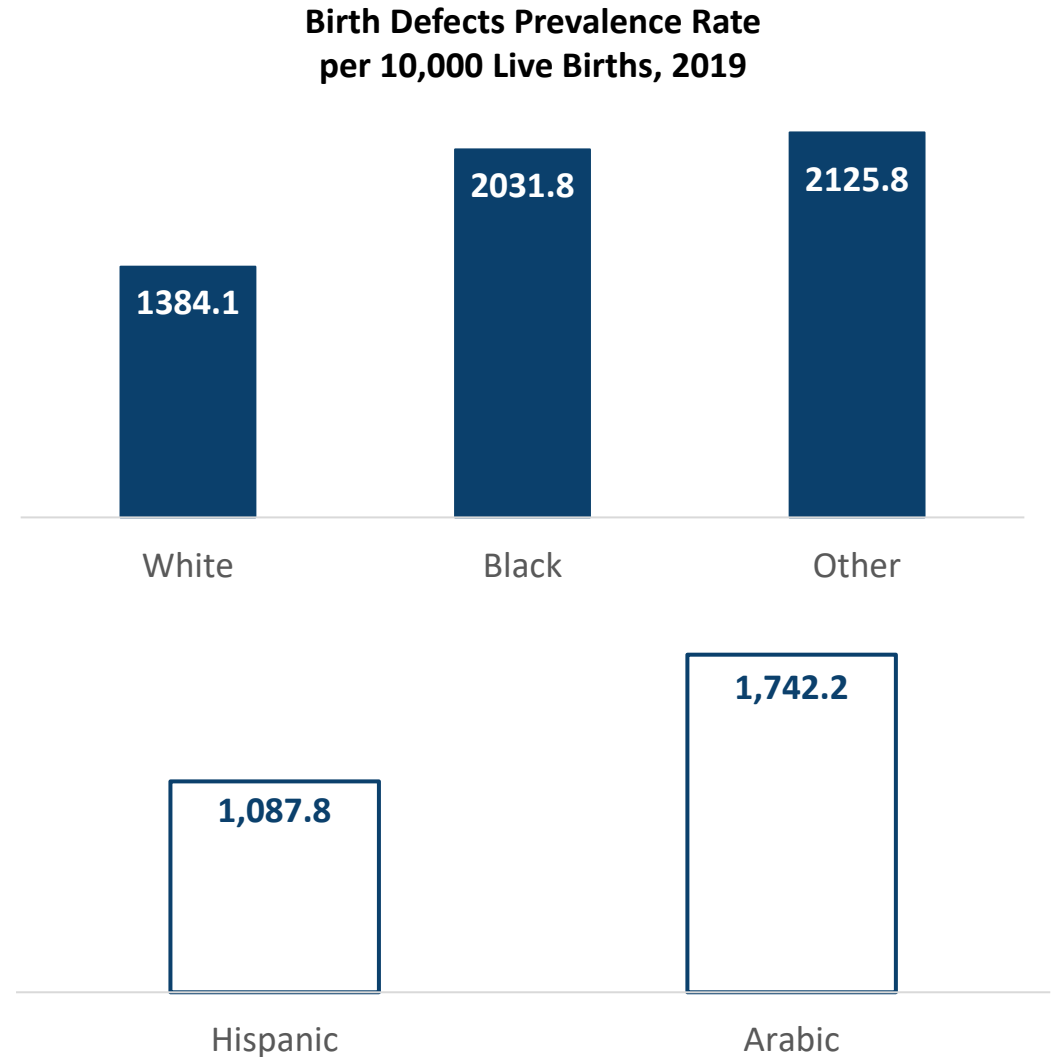
2021 Michigan Rate = 6.5



**Birth Defects
by Maternal Race/Ethnicity &
Prosperity Region
2019**

Birth Defect Prevalence by Maternal Race/ethnicity, 2019

- Throughout birth years 2013-2019, the birth defect prevalence rate for Michigan remained fairly steady at an average rate of 1,444.1 cases per 10,000 live births.
- In 2019, the race-specific birth defect prevalence rate for cases born to mothers of “other” races (2125.8 per 10,000 live births) exceeded that of cases born to black mothers (2031.8 cases per 10,000 live births) and cases born to white mothers (1,384.1 cases per 10,000 live births).
- In 2019, the ethnicity-specific birth defect prevalence rate for cases born to a mother reporting Arabic ethnicity (1,742.2 cases per 10,000 live births) was greater than that of cases born to a mother reporting Hispanic ethnicity (1,087.8 cases per 10,000 live births).

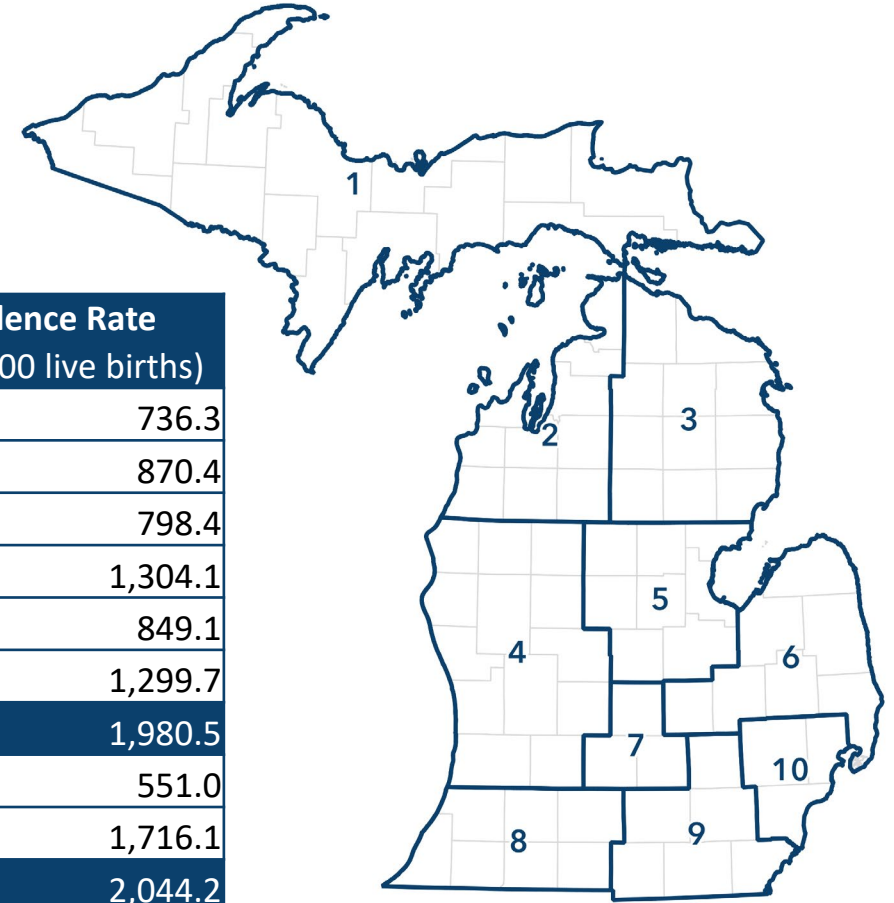


Birth Defect Prevalence Rates by Prosperity Region, 2019

Prevalence rates are based on births to mothers living in Michigan at the time of delivery. Regions approximate prosperity region boundaries

- The State of Michigan is broken up into 10 prosperity regions based on shared geographic, demographic, and economic interests.
- In 2019, Michigan prosperity regions 7 and 10 reported the highest birth defect prevalence rates of 1,980.5 and 2,044.2.5 cases per 10,000 live births respectively.
- The prosperity region that reported the lowest birth defect prevalence was region 8 with a prevalence rate of 551.0 cases per 10,000 live births.

| Region | # Cases | Prevalence Rate (per 10,000 live births) |
|--------|---------|---|
| 1 | 184 | 736.3 |
| 2 | 235 | 870.4 |
| 3 | 135 | 798.4 |
| 4 | 2,400 | 1,304.1 |
| 5 | 480 | 849.1 |
| 6 | 1,145 | 1,299.7 |
| 7 | 976 | 1,980.5 |
| 8 | 480 | 551.0 |
| 9 | 1,707 | 1,716.1 |
| 10 | 9,112 | 2,044.2 |
| Total | 16,854 | 1,561.8 |



Low Risk Cesarean Prosperity Regions 2 & 3 2017-2021

Low Risk Cesarean by Maternal Race/Ethnicity Prosperity Region 2, 2017-2021

Low risk cesarean is a ratio of the number of first births delivered by cesarean section to low risk females (full-term, singleton births, vertex presentation) to the number of first births to low-risk females (full-term, singleton births, vertex presentation)

| Maternal Race | # Low Risk Cesarean | # Low Risk Live Birth | | Percent (%) low-risk females with no prior birth had a cesarean |
|------------------------|---------------------|-----------------------|-------|---|
| Overall | 1,040 | 3,930 | 26.5% | <div><div>26.5%</div></div> |
| White non-Hispanic | 919 | 3,602 | 25.5% | <div><div>25.5%</div></div> |
| Black non-Hispanic | 14 | 32 | 43.8% | <div><div>43.8%</div></div> |
| Hispanic | 44 | 124 | 35.5% | <div><div>35.5%</div></div> |
| American Indian | 9 | 40 | 22.5% | <div><div>22.5%</div></div> |
| Asian/Pacific Islander | 17 | 33 | 51.5% | <div><div>51.5%</div></div> |

Low Risk Cesarean by Race/Ethnicity Prosperity Region 2, 2017-2021

Low risk cesarean is a ratio of the number of first births delivered by cesarean section to low risk females (full-term, singleton births, vertex presentation) to the number of first births to low-risk females (full-term, singleton births, vertex presentation)

| Comparison of methods used to measure cases among Native Americans | # Low Risk Cesarean | # Low Risk Live Births | Percent (%) cesarean among low-risk females with no prior birth |
|--|---------------------|------------------------|---|
| #1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic | 9 | 40 | 22.5% |
| #2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native). | 20 | 72 | 27.8% |
| #3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) OR the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native) | 35 | 134 | 26.1% |

Low Risk Cesarean by Maternal Race/Ethnicity Prosperity Region 3, 2017-2021

Low risk cesarean is a ratio of the number of first births delivered by cesarean section to low risk females (full-term, singleton births, vertex presentation) to the number of first births to low-risk females (full-term, singleton births, vertex presentation)

| Maternal Race | # Low Risk Cesarean | # Low Risk Live Birth | Percent (%) low-risk females with no prior birth had a cesarean |
|------------------------|---------------------|-----------------------|---|
| Overall | 626 | 2,280 | 27.5% |
| White non-Hispanic | 594 | 2,142 | 27.7% |
| Black non-Hispanic | 0<N<6 | 18 | Data Not Sufficient |
| Hispanic | 11 | 52 | 21.2% |
| American Indian | 0<N<6 | 16 | Data Not Sufficient |
| Asian/Pacific Islander | 0<N<6 | 12 | Data Not Sufficient |

Low Risk Cesarean by Race/Ethnicity Prosperity Region 3, 2017-2021

Low risk cesarean is a ratio of the number of first births delivered by cesarean section to low risk females (full-term, singleton births, vertex presentation) to the number of first births to low-risk females (full-term, singleton births, vertex presentation)

| Comparison of methods used to measure cases among Native Americans | # Low Risk Cesarean | # Low Risk Live Births | Percent (%) cesarean low-risk females with no prior birth |
|--|---------------------|------------------------|---|
| #1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic | 0<N<6 | 16 | Data Not Sufficient |
| #2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native). | 0<N<6 | 23 | Data Not Sufficient |
| #3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) OR the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native) | 15 | 55 | 27.3% |

Sleep-Related Infant Death Rate Prosperity Regions 2 & 3 2010-2020

Overview of Sleep-Related Infant Deaths Michigan, 2010-2020

- Between 2010 and 2020 there were **1,597** sleep-related infant deaths in Michigan.
- The rate of sleep-related infant deaths has fluctuated slightly but has not statistically significantly differed between years (Figure 1).
- Between 2010 and 2020 Black Infants were **3.8** times more likely to die of sleep-related causes as compared to white Infants. American Indian infants were **2.5** times more likely to die of sleep-related causes as compared to white infants (Figure 2).

Figure 1. Rate of Sleep-Related Infant Deaths
per 1,000 Live Births

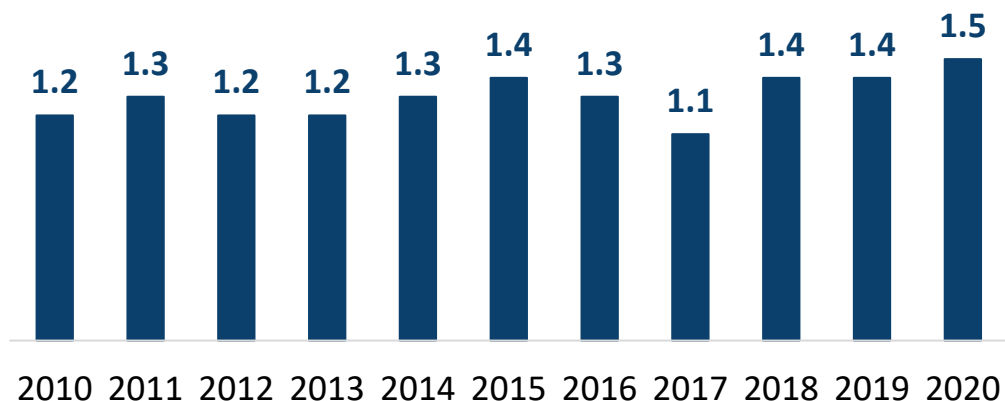
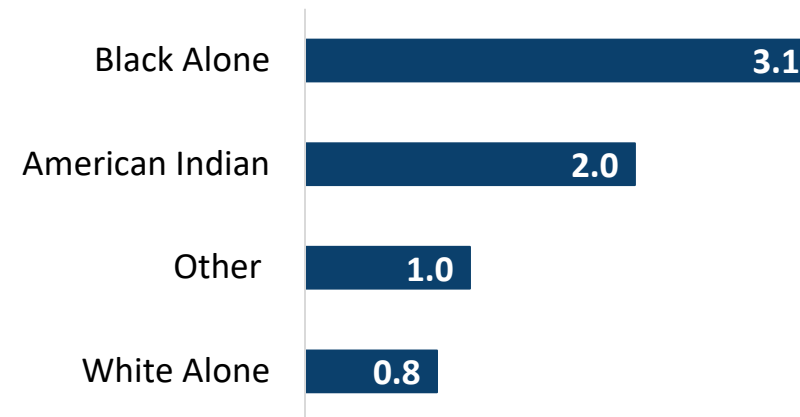


Figure 2. Rate of Sleep-Related Infant Deaths
per 1,000 Live Births

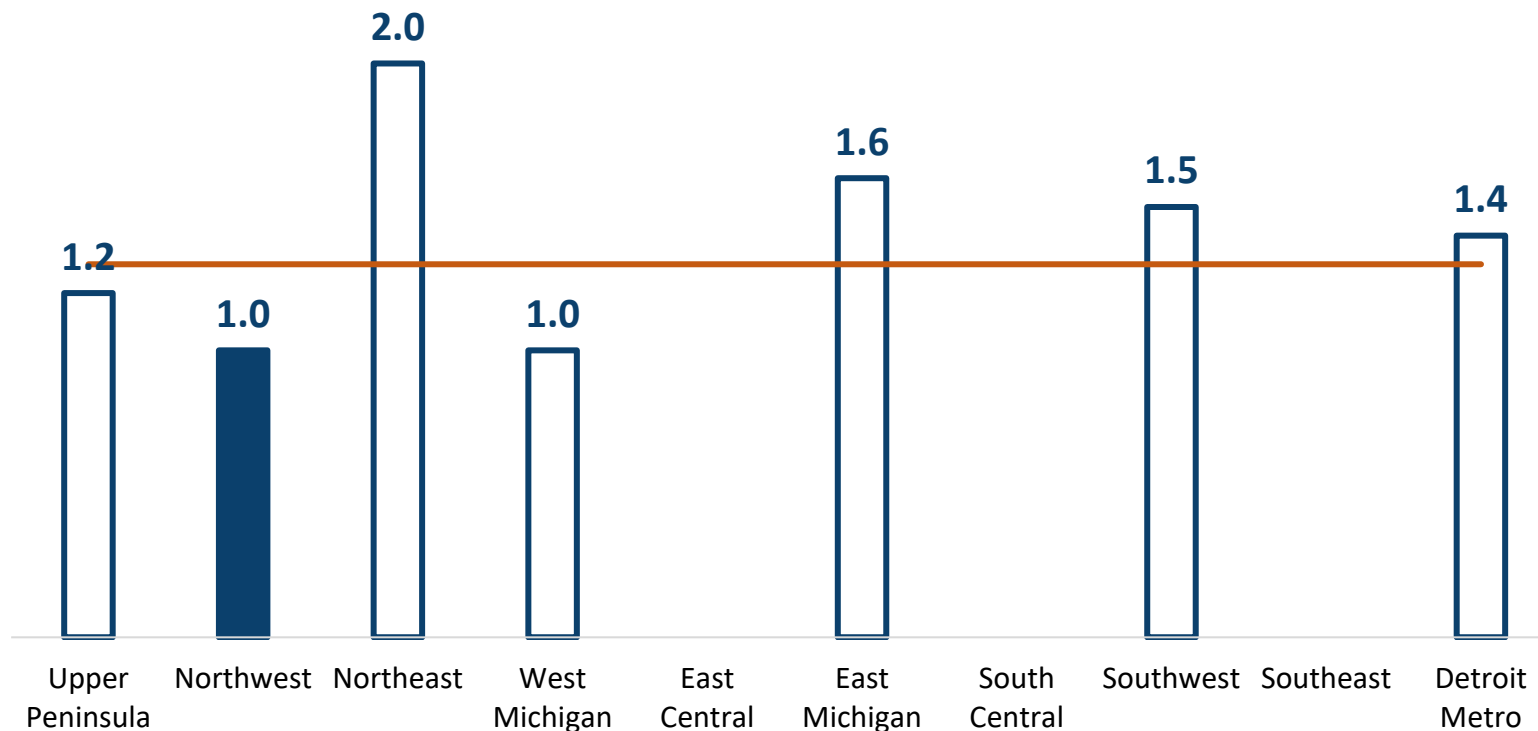


Sleep-Related Infant Death Rate by Prosperity Region 2, 2010-2020

Data for regions 5, 7, and 9 suppressed as to not inadvertently identify suppressed county level statistics.

Sleep-Related Infant Death Rate per 1,000 Live Births
2010-2020

Michigan: 1.3



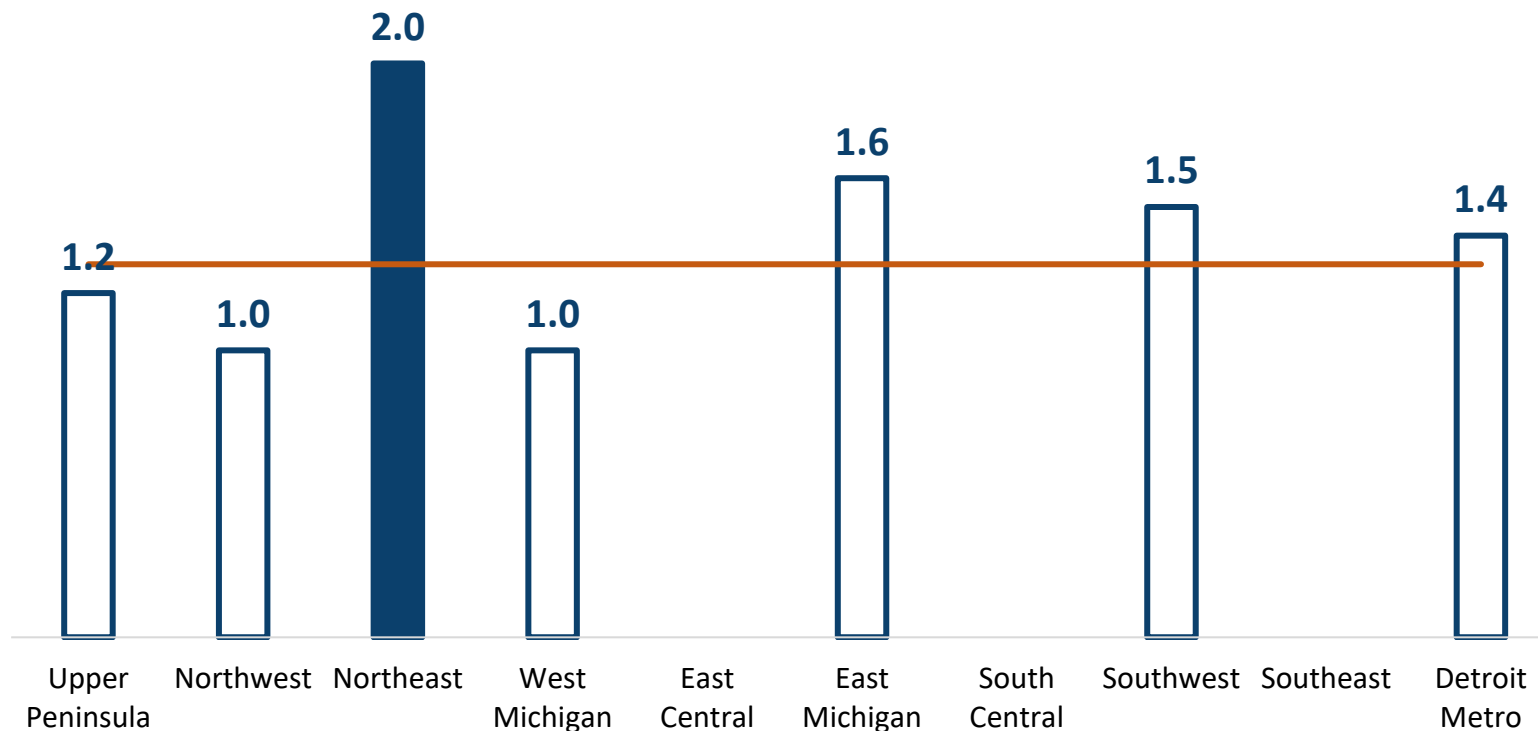
- Between 2010 and 2020 there were **31** sleep-related infant deaths in Region Two.
- The Region Two sleep-related infant death rate was *lower* than the Michigan sleep-related infant death rate, but the difference was not statistically significant.

Sleep-Related Infant Death Rate by Prosperity Region 3, 2010-2020

Data for regions 5, 7, and 9 suppressed as to not inadvertently identify suppressed county level statistics.

Sleep-Related Infant Death Rate per 1,000 Live Births
2010-2020

Michigan: 1.3



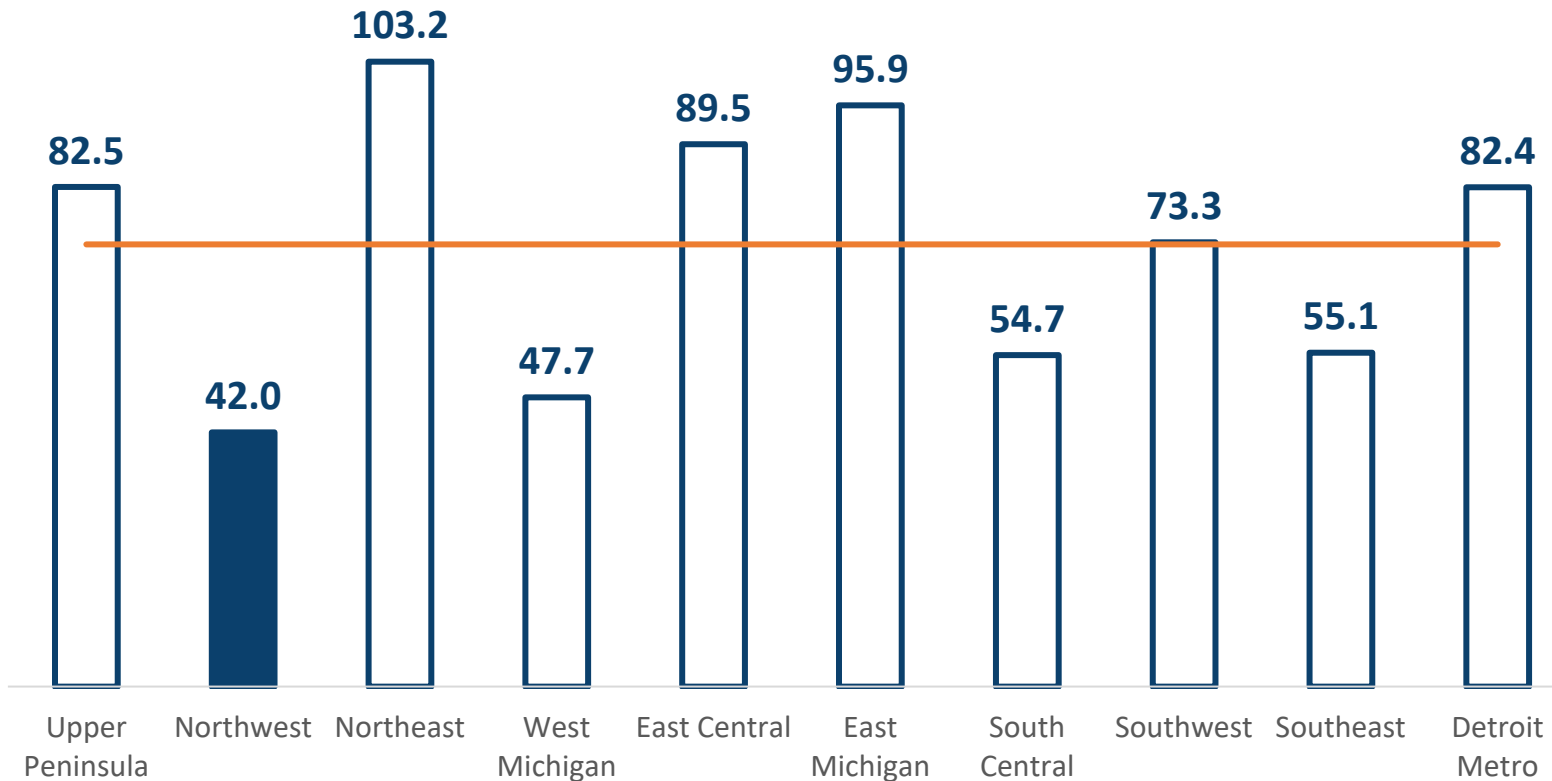
- Between 2010 and 2020 there were **38** sleep-related infant deaths in Region Three.
- The Region Three sleep-related infant death rate was statistically significantly *higher* to the Michigan sleep-related infant death rate.

Maternal Mortality Ratio Prosperity Regions 2 & 3 2015-2019

Maternal Mortality Ratio by Prosperity Region 2, 2015-2019

Total (Pregnancy Associated) Maternal Mortality Ratio
per 100,000 Live Births

Michigan Ratio : 73.0

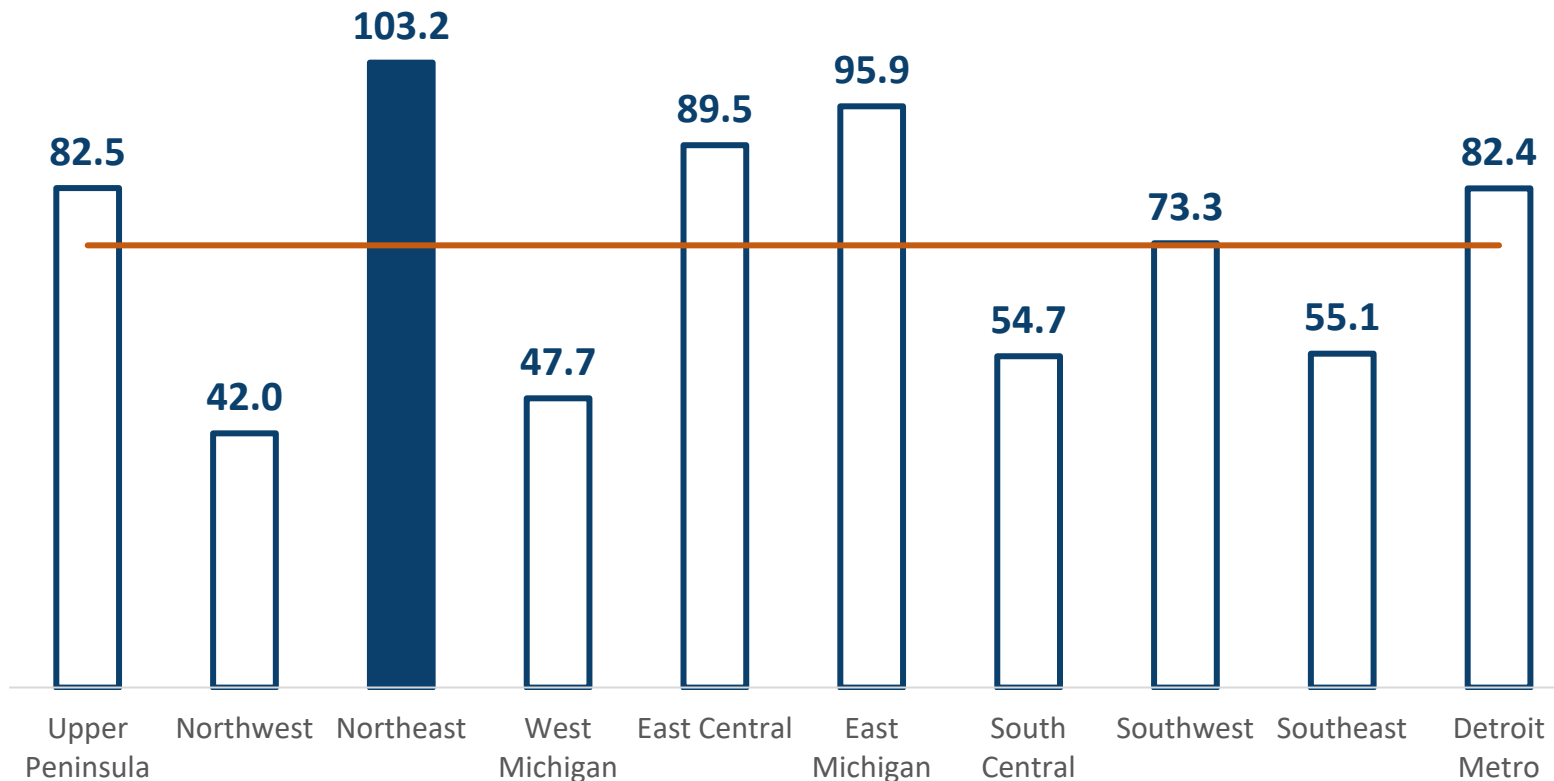


- Maternal deaths include deaths that occur during pregnancy, at delivery or within one year of pregnancy.
- Pregnancy associated (total) maternal mortality includes:
 - 1- pregnancy associated, not related mortality (*unrelated to the pregnancy*),
 - 2- pregnancy-related mortality (*related to or aggravated by the pregnancy*),
 - 3- deaths where pregnancy-relatedness is unable to be determined.
- In Region Two there were **6 maternal deaths** between 2015 and 2019.

Maternal Mortality Ratio by Prosperity Region 3, 2015-2019

Total (Pregnancy Associated) Maternal Mortality Ratio
per 100,000 Live Births

Michigan Ratio : 73.0



- Maternal deaths include deaths that occur during pregnancy, at delivery or within one year of pregnancy.
- Pregnancy associated (total) maternal mortality includes:
 - 1- pregnancy associated, not related mortality (*unrelated to the pregnancy*),
 - 2- pregnancy-related mortality (*related to or aggravated by the pregnancy*),
 - 3- deaths where pregnancy-relatedness is unable to be determined.
- In Region Three there were **9 maternal deaths** between 2015 and 2019.