



Maternal and Infant Health Statistics Prosperity Region 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 (03/17/22) and infant mortality files (12/16/21),
Division for Vital Records and Health Statistics, MDHHS
July 2022

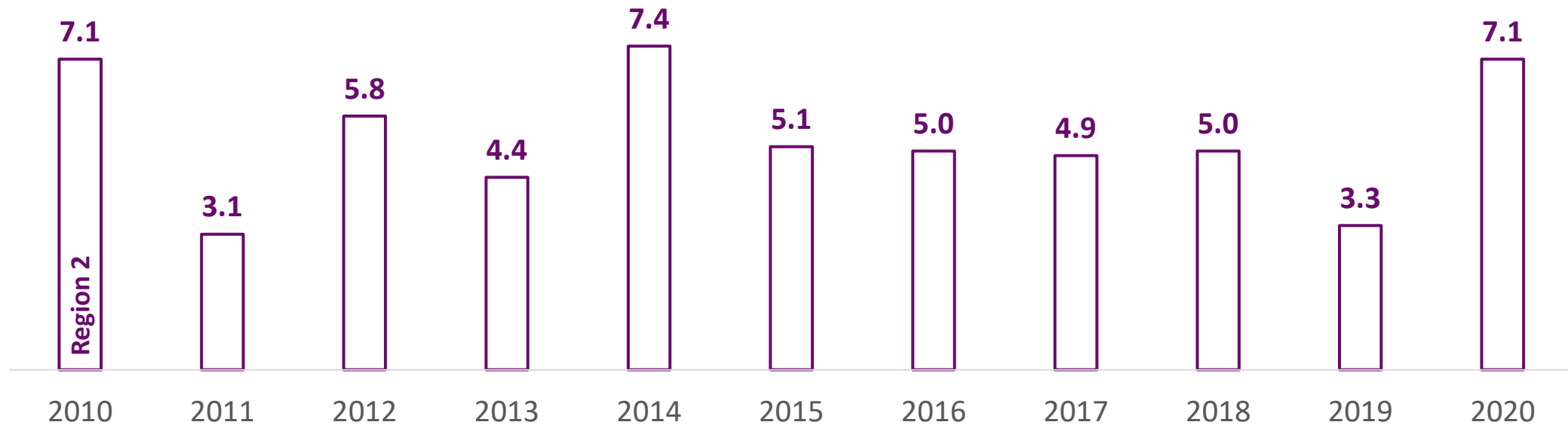
Infant Mortality Rate (IMR) Prosperity Region 2 & 3 2010-2020

Infant Mortality Rate, Prosperity Region 2 & 3, 2010-2020

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.

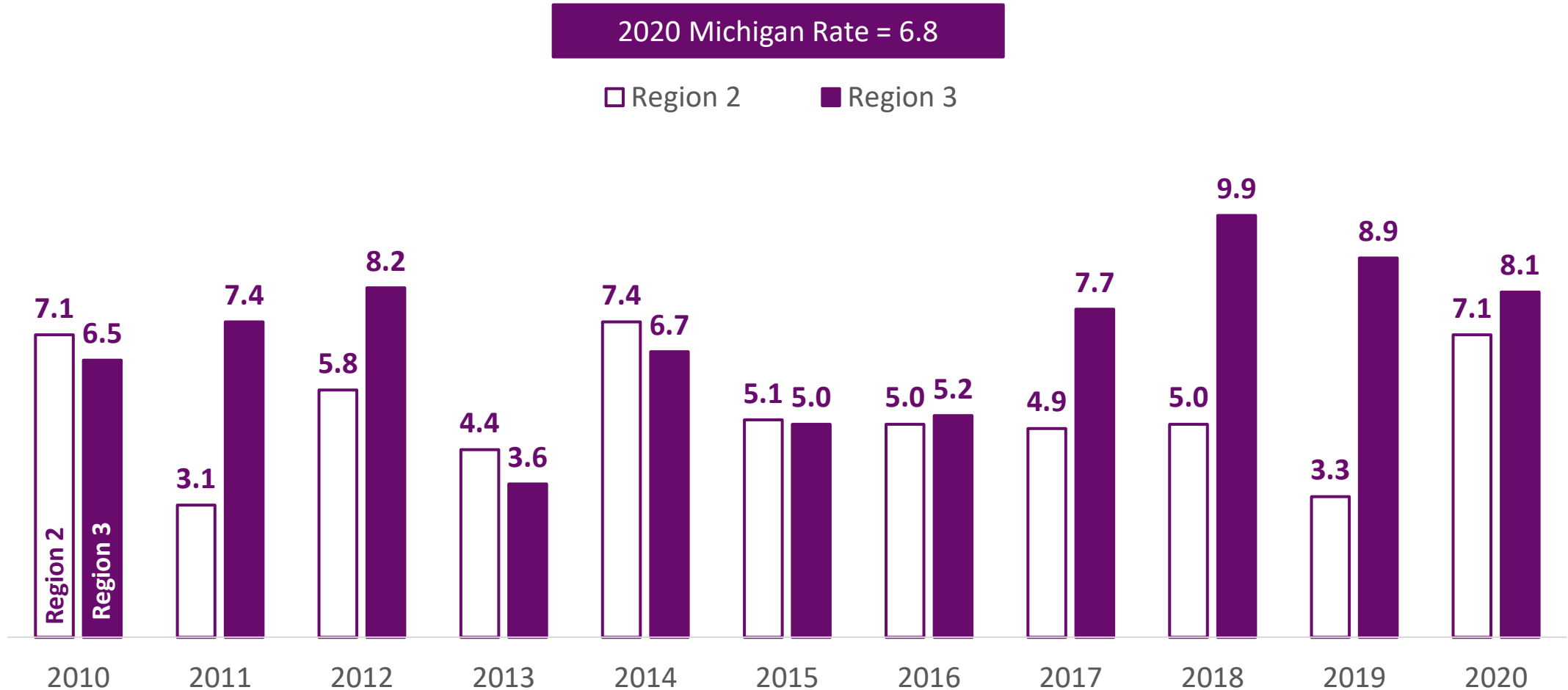
2020 Michigan Rate = 6.8

□ Region 2



Infant Mortality Rate, Prosperity Region 2 & 3, 2010-2020

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.



Infant Mortality Rates by Maternal Race/Ethnicity, Prosperity Region 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.

Maternal Race	Infant Mortality Rate (per 1,000 Live Births)	MI
White Non-Hispanic	Region 2: 5.2	4.9
	Region 3: 7.7	
Black Non-Hispanic	Region 2: 0.0 Region 3: Data Not Sufficient (DNS): 0<N<6	13.6
Hispanic	Region 2: 5.6 Region 3: Data Not Sufficient (DNS): 0<N<6	5.6
American Indian	Region 2: Data Not Sufficient (DNS): 0<N<6 Region 3: 0.0	5.0
Asian/Pacific Islander	Region 2: 0.0 Region 3: 0.0	4.1

Infant Mortality Rates by Maternal Race/Ethnicity, Prosperity Region 2 & 3, 2016-2020

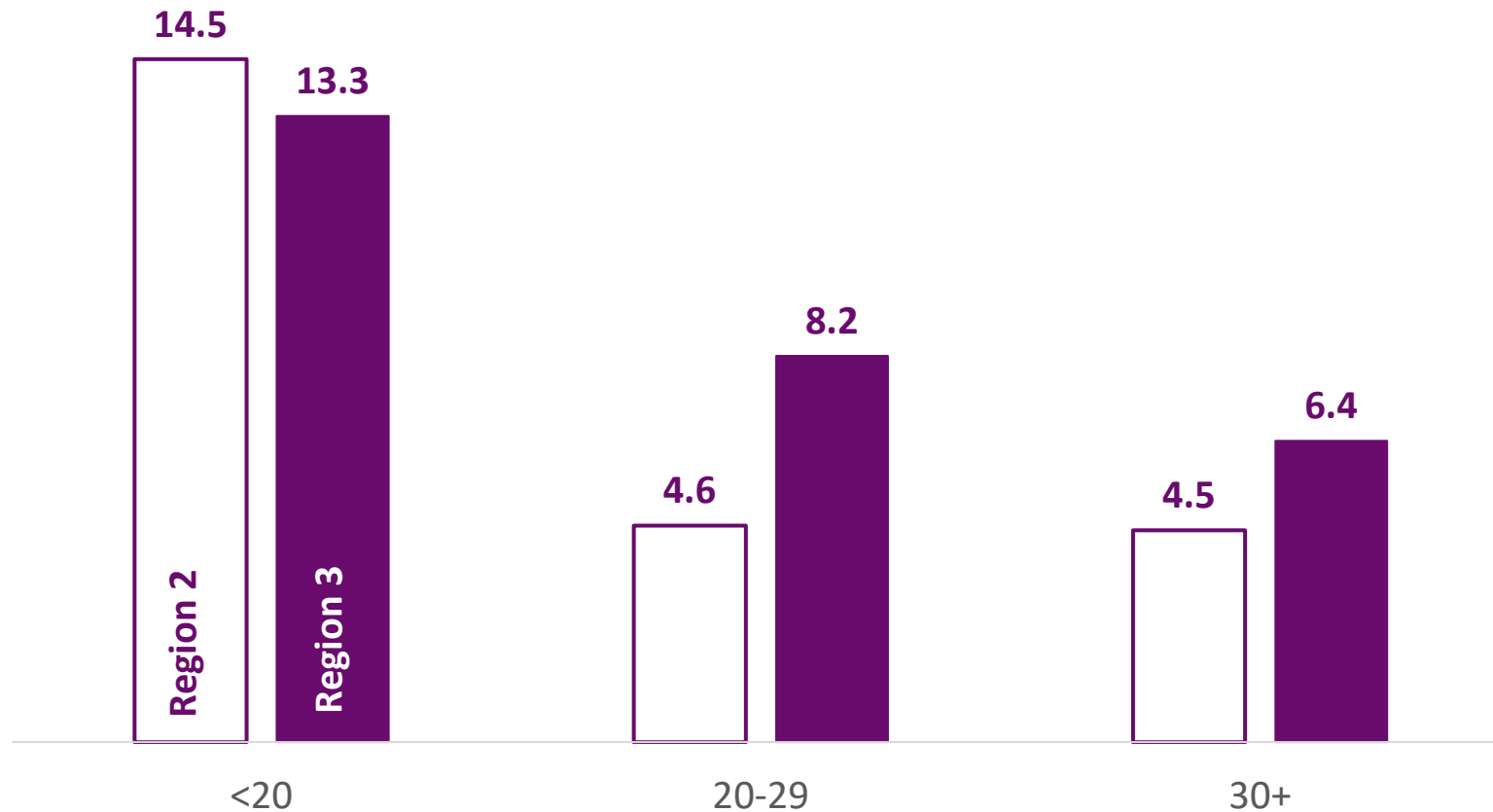
Infant mortality is defined as a death of a baby before his or her first birthday and is expressed as a rate per 1,000 live births.

Data Not Sufficient (DNS): 0<N<6

		# Infant Deaths	# Live Births	Infant Mortality Rate (per 1,000 Live Births)
Maternal Race: American Indian	Region 2	DNS	167	DNS
	Region 3	0	57	0
Maternal Race: American Indian or Mixed Race: American Indian or Alaskan Native	Region 2	DNS	278	DNS
	Region 3	DNS	85	DNS
Maternal Race: American Indian or Paternal Race: American Indian or Mixed Race: American Indian or Alaskan Native	Region 2	DNS	482	DNS
	Region 3	DNS	166	DNS

Infant Mortality Rates by Maternal Age, Prosperity Region 2 & 3, 2016-2020

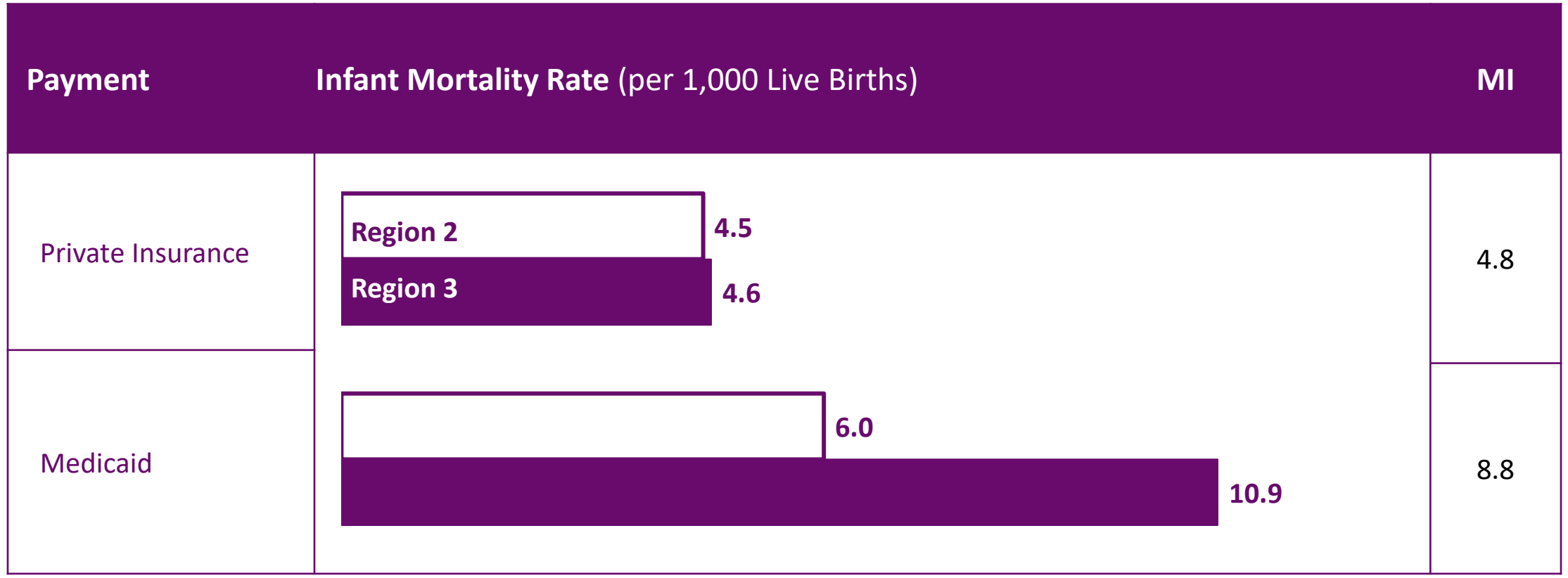
Infant mortality is defined as a death of a baby before his or her first birthday and is expressed as a rate per 1,000 live births.



Maternal Age	Region 2	Region 3	MI
<20 years	14.5	13.3	10.1
20-29 years	4.6	8.2	7.1
30+ years	4.5	6.4	5.6

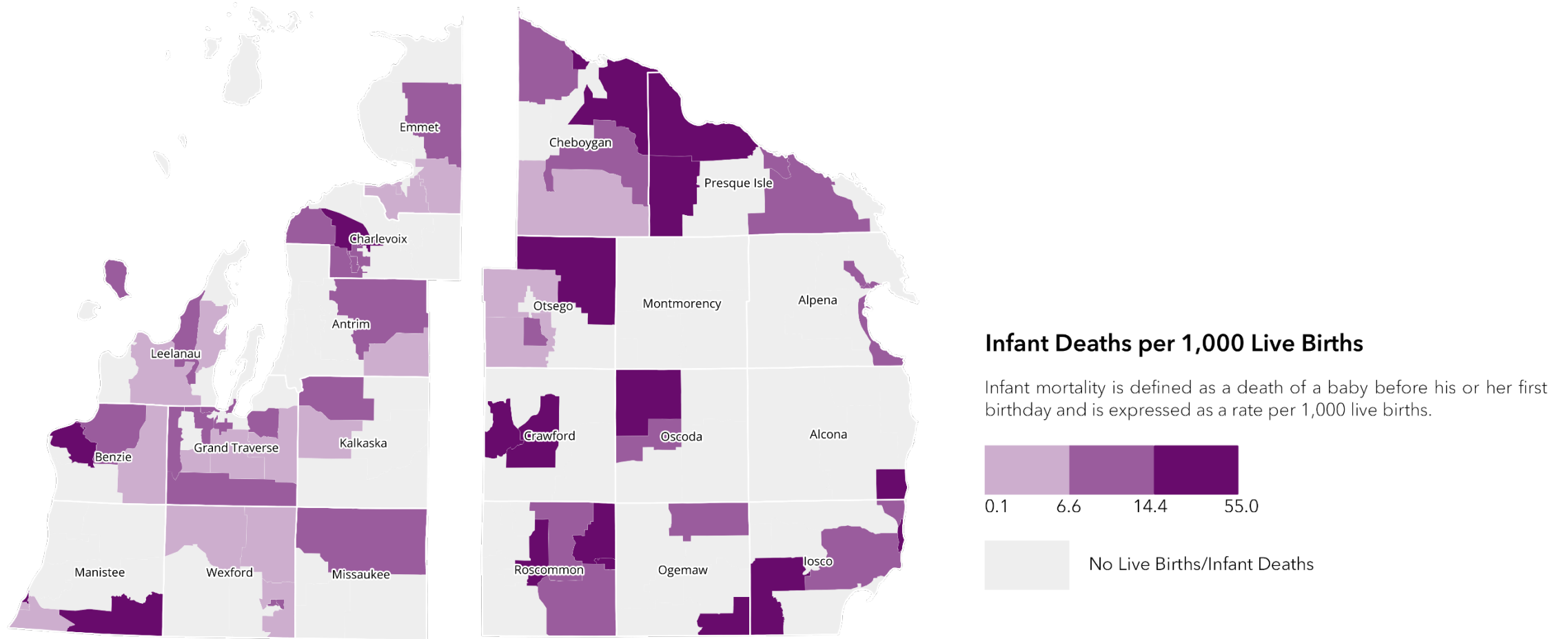
Infant Mortality Rates by Intended Payment Source, Prosperity Region 2 & 3, 2016-2020

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.



Infant Mortality Rates by Census Tract, Prosperity Region 2 & 3, 2015-2019

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.



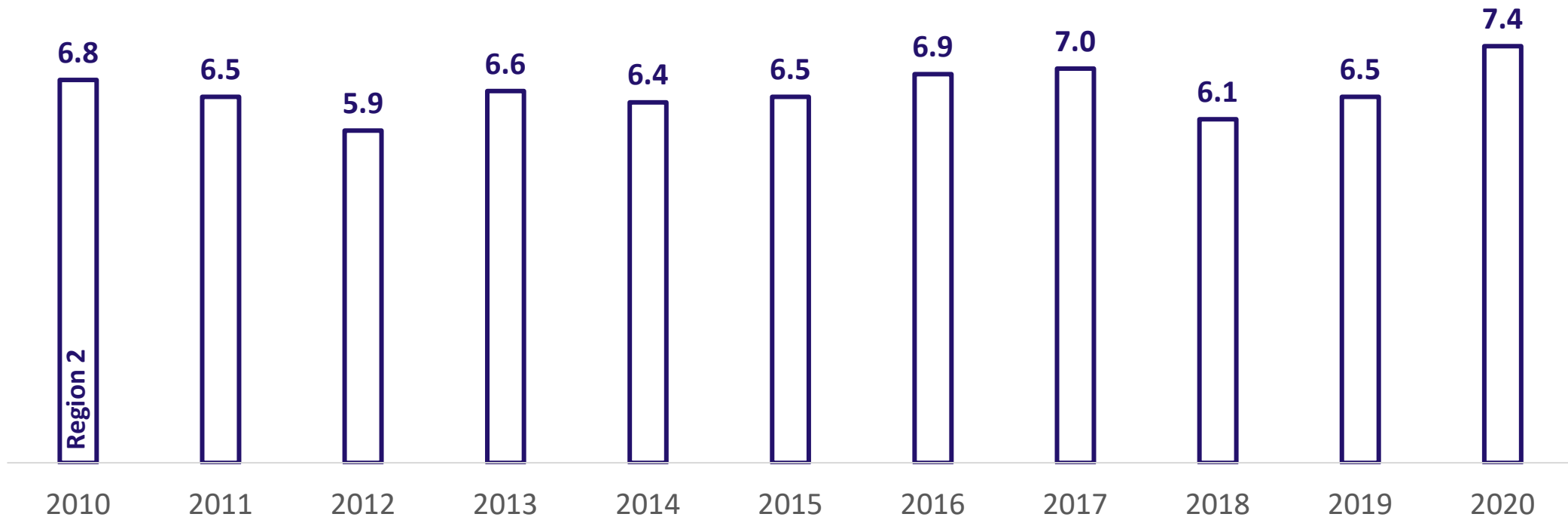
Low Birthweight (LBW) Prosperity Region 2 & 3 2010-2020

Low Birthweight, Prosperity Region 2 & 3, 2010-2020

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

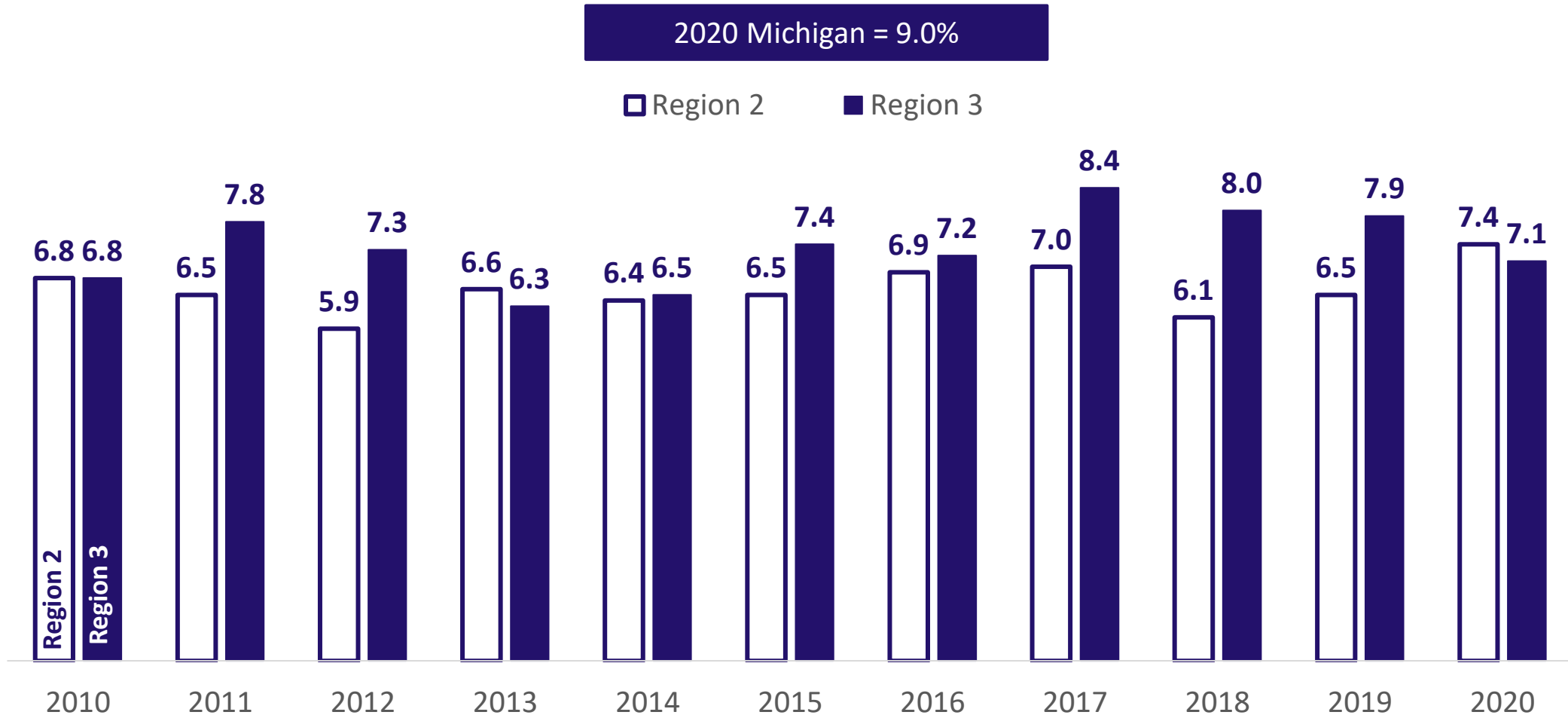
2020 Michigan = 9.0%

Region 2



Low Birthweight, Prosperity Region 2 & 3, 2010-2020

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



Low Birthweight by Maternal Race/Ethnicity, Prosperity Region 2 & 3, 2016-2020

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	Region 2: 6.7	7.1%
	Region 3: 7.6	
Black non-Hispanic	Region 2: 9.5	14.9%
	Region 3: Data Not Sufficient (0 <N<6)	
Hispanic	Region 2: 8.0	7.5%
	Region 3: 9.0	
American Indian	Region 2: 7.2	8.4%
	Region 3: 10.5	
Asian/Pacific Islander	Data Not Sufficient (DNS): 0<N<6	8.9%

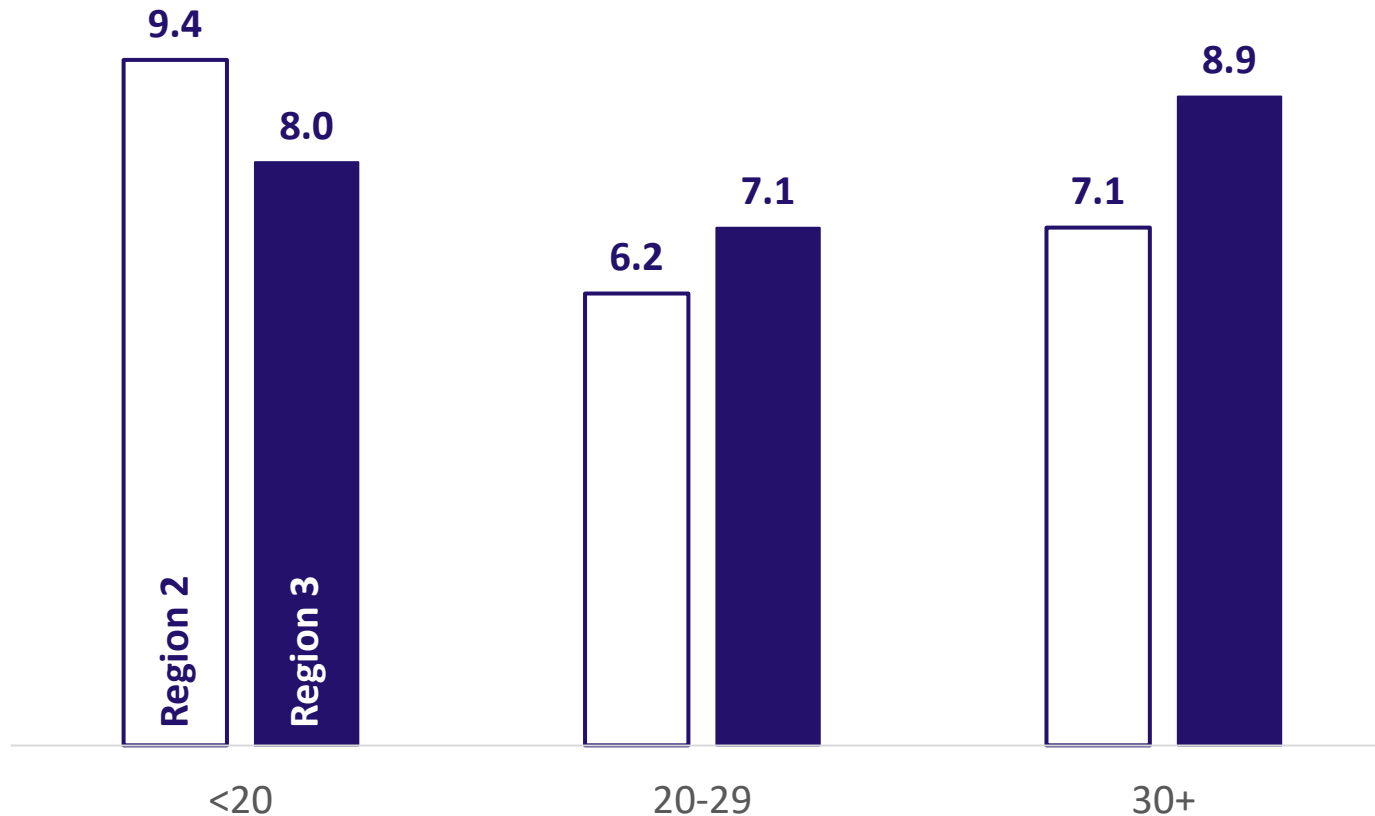
Low Birthweight by Maternal Race/Ethnicity, Prosperity Region 2 & 3, 2016-2020

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

		# LBW Births	# Live Births	Percent (%) Low Birthweight
Maternal Race: American Indian	Region 2	12	167	7.2%
	Region 3	6	57	10.5%
Maternal Race: American Indian or Mixed Race: American Indian or Alaskan Native	Region 2	18	278	6.5%
	Region 3	11	85	12.9%
Maternal Race: American Indian or Paternal Race: American Indian or Mixed Race: American Indian or Alaskan Native	Region 2	30	482	6.2%
	Region 3	18	166	10.8%

Low Birthweight by Maternal Age, Prosperity Region 2 & 3, 2016-2020

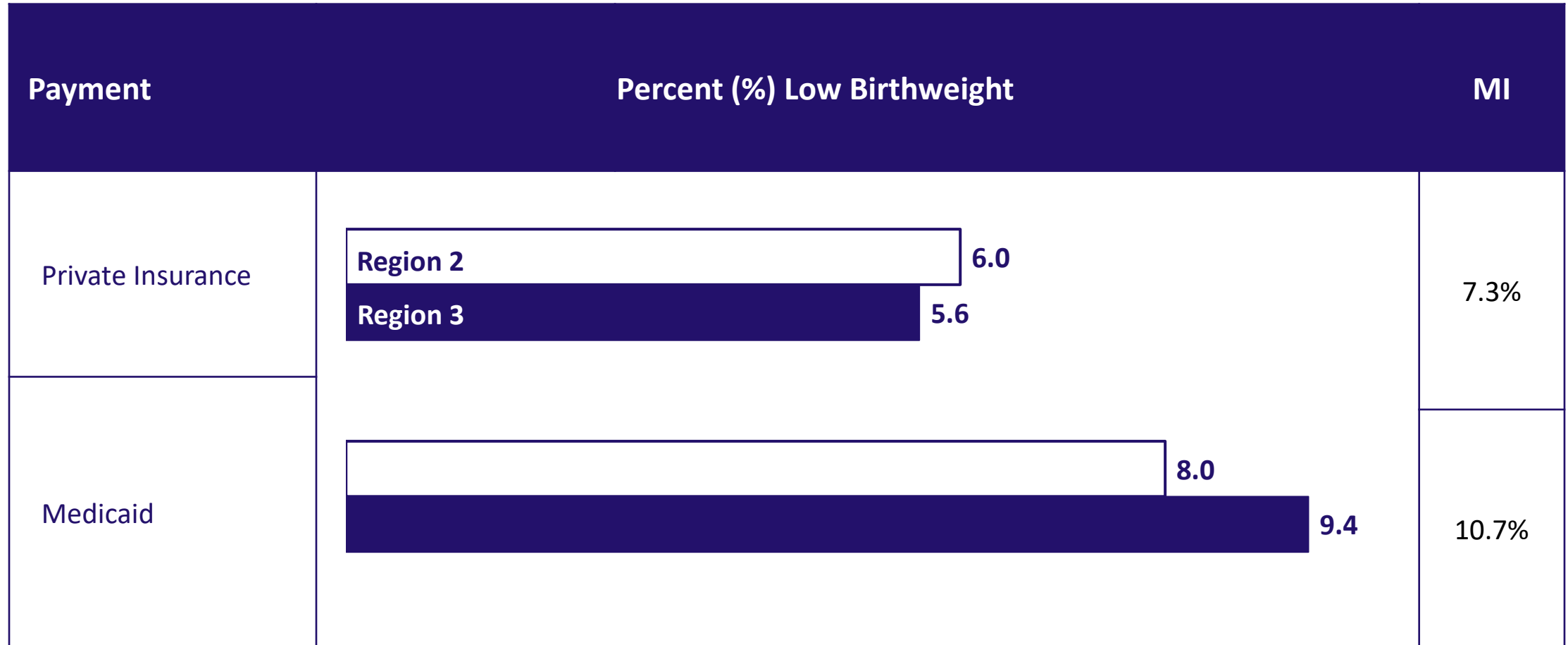
Low birthweight rate is defined as number of births with baby birthweight <2,500 grams per 100 live births.



Maternal Age	Region 2	Region 3	MI
< 20 years	9.4%	8.0%	11.0%
20-29 years	6.2%	7.1%	8.6%
≥30 years	7.1%	8.9%	8.6%

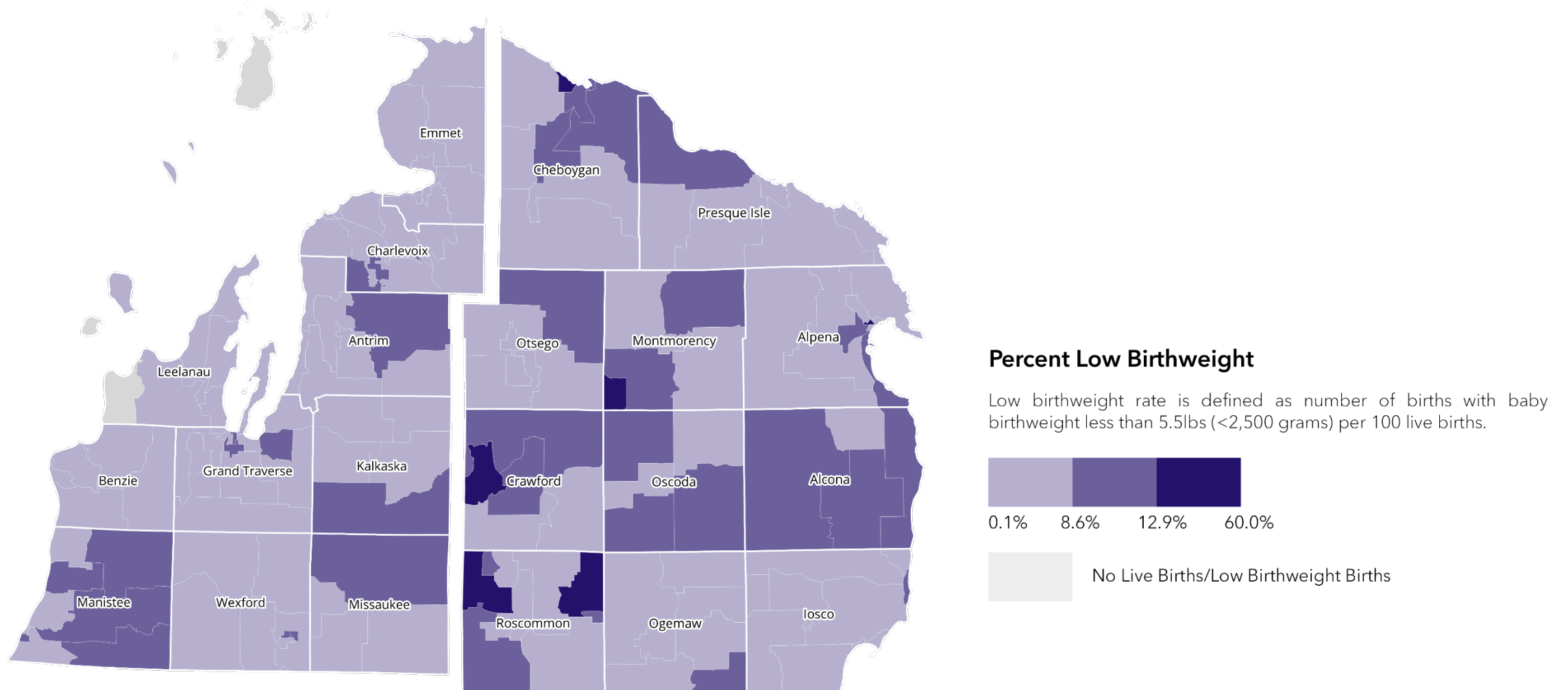
Low Birthweight by Intended Payment Source, Prosperity Region 2 & 3, 2016-2020

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



Low Birthweight by Census Tract, Prosperity Region 2 & 3, 2015-2019

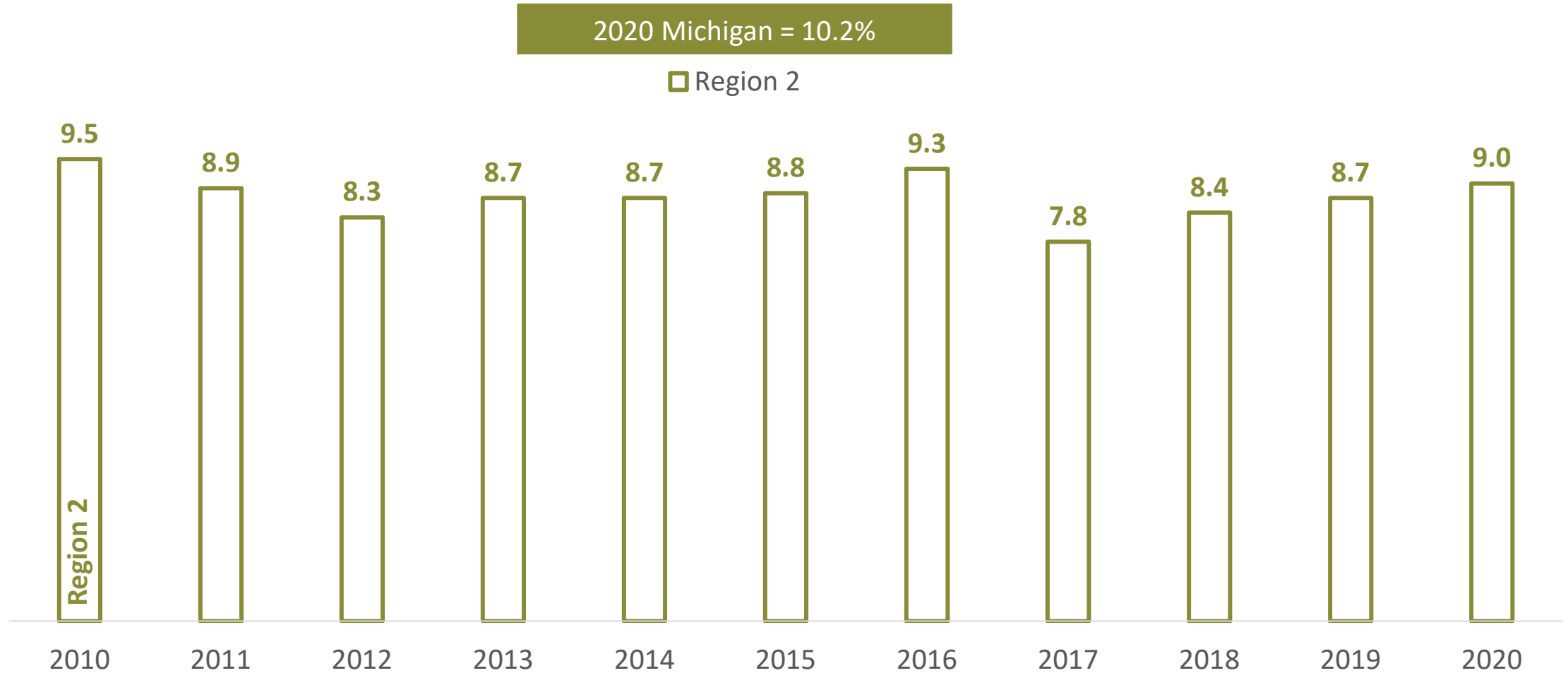
Low birthweight rate is defined as number of births with baby birthweight <2,500 grams per 100 live births.



Preterm Birth Prosperity Region 2 & 3 2010-2020

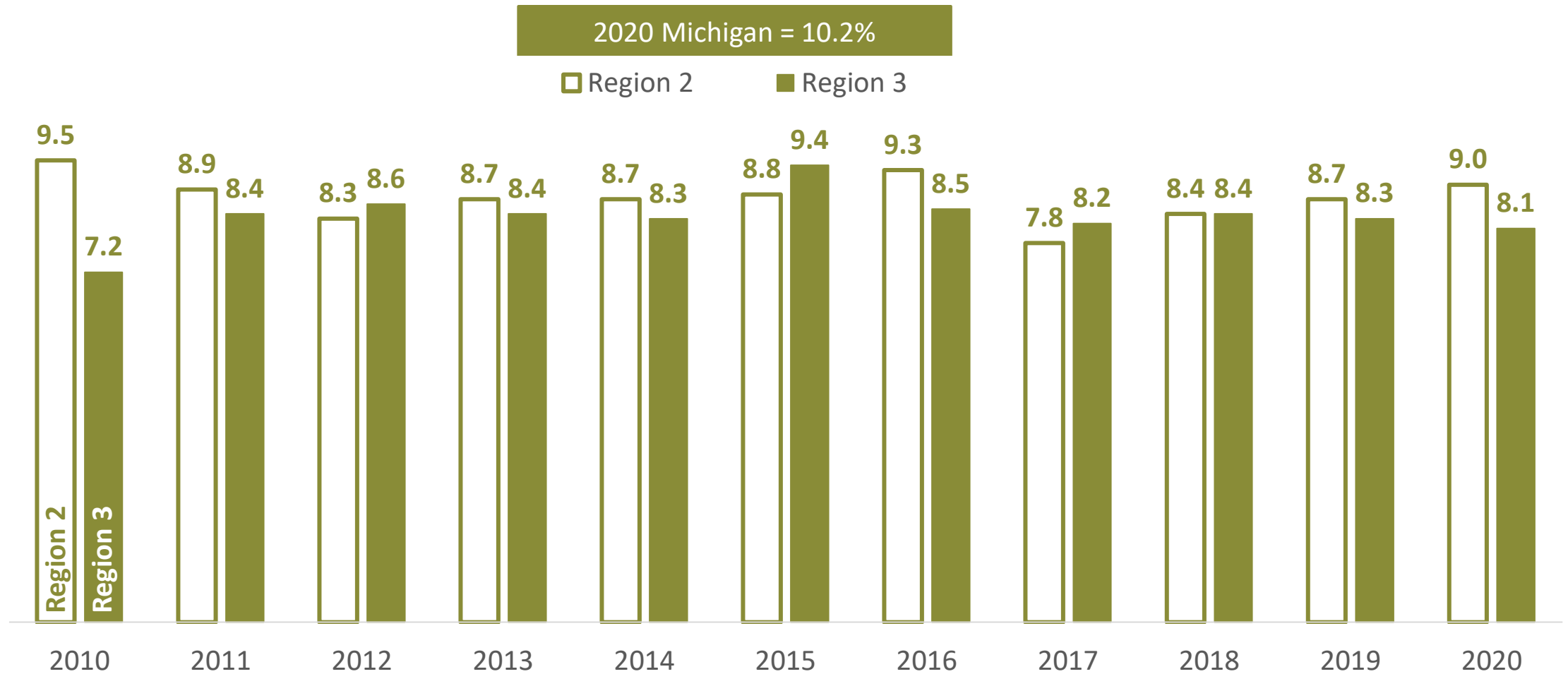
Preterm Birth, Prosperity Region 2 & 3, 2010-2020

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.



Preterm Birth, Prosperity Region 2 & 3, 2010-2020

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.



Preterm Birth by Maternal Race/Ethnicity, Prosperity Region 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.

Maternal Race	Percent (%) Preterm	MI
White non-Hispanic	Region 2 8.6	9.0%
	Region 3 8.2	
Black non-Hispanic	12.2	14.8%
	Region 3: Data Not Sufficient (0 <N<6)	
Hispanic	8.0	9.6%
	10.4	
American Indian	9.0	9.8%
	Region 3: Data Not Sufficient (0 <N<6)	
Asian/Pacific Islander	10.4	8.2%
	Region 3: Data Not Sufficient (0 <N<6)	

Preterm Birth by Maternal Race/Ethnicity, Prosperity Region 2 & 3, 2016-2020

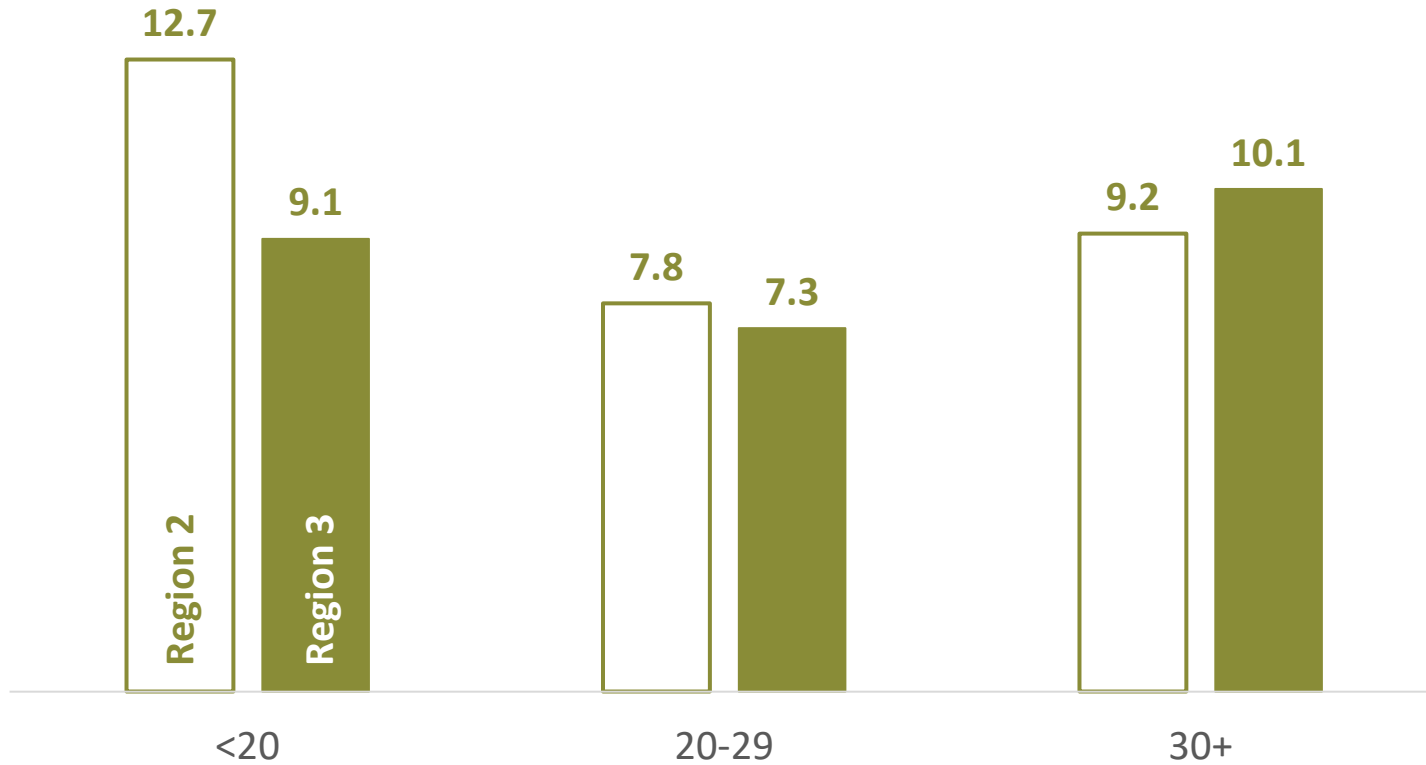
Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births.
Gestational age is based on the obstetric estimate of gestation.

Data Not Sufficient (DNS): 0<N<6

		# Preterm Births	# Live Births	Percent (%) Preterm
Maternal Race: American Indian	Region 2	15	167	9.0%
	Region 3	DNS	57	DNS
Maternal Race: American Indian or Mixed Race: American Indian or Alaskan Native	Region 2	20	278	7.2%
	Region 3	12	85	14.1%
Maternal Race: American Indian or Paternal Race: American Indian or Mixed Race: American Indian or Alaskan Native	Region 2	45	482	9.3%
	Region 3	18	166	10.8%

Preterm Birth by Maternal Age, Prosperity Region 2 & 3, 2016-2020

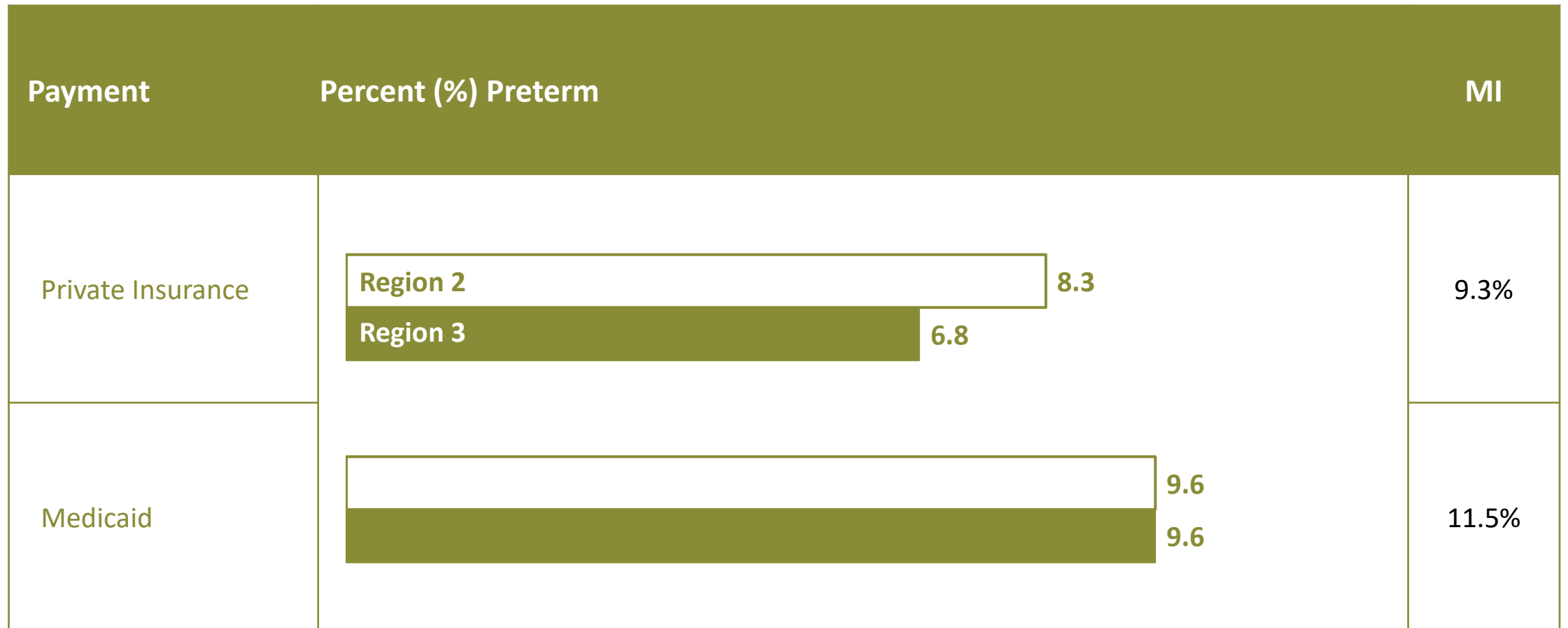
Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births. Gestational age is based on the obstetric estimate of gestation.



Maternal Age	Region 2	Region 3	MI
< 20 years	12.7%	9.1%	10.9%
20-29 years	7.8%	7.3%	9.7%
≥30 years	9.2%	10.1%	10.7%

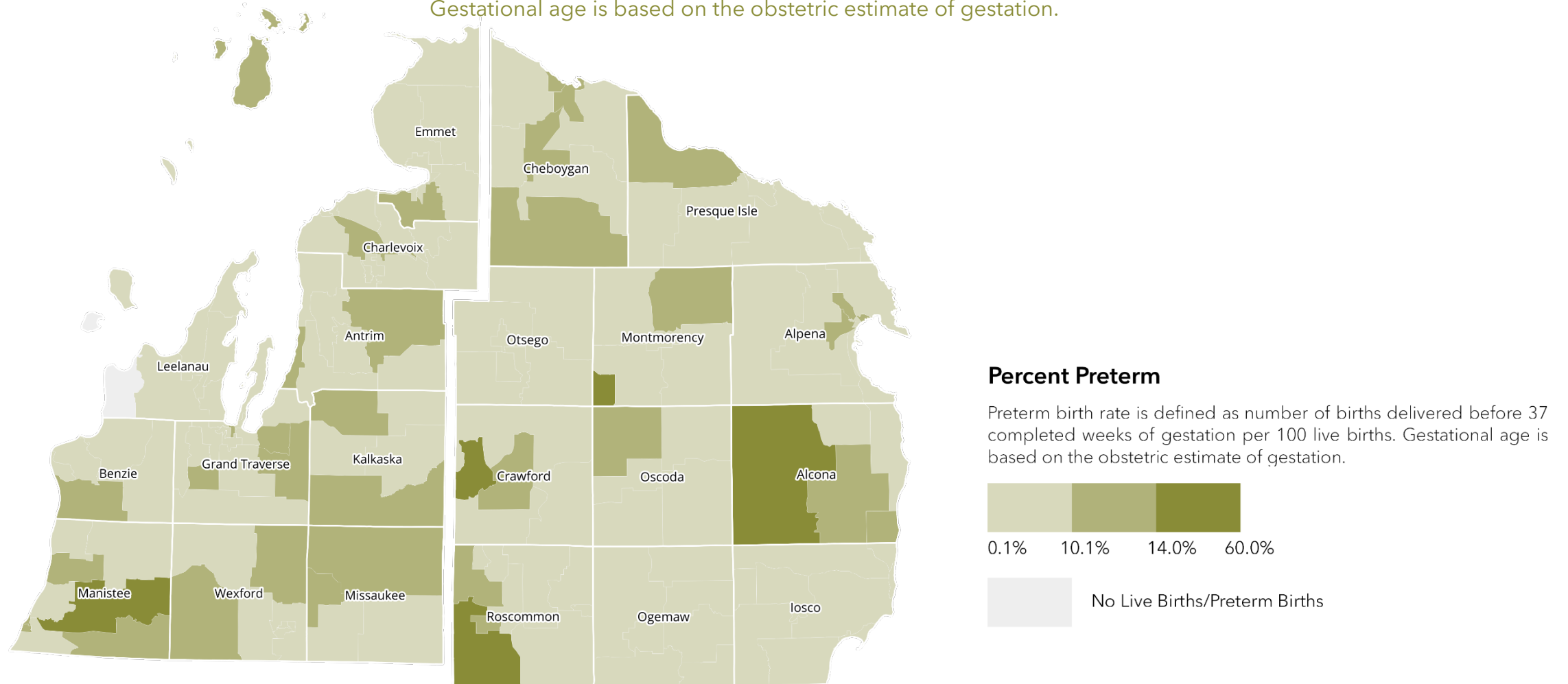
Preterm Birth by Intended Payment Source, Prosperity Region 2 & 3, 2016-2020

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.



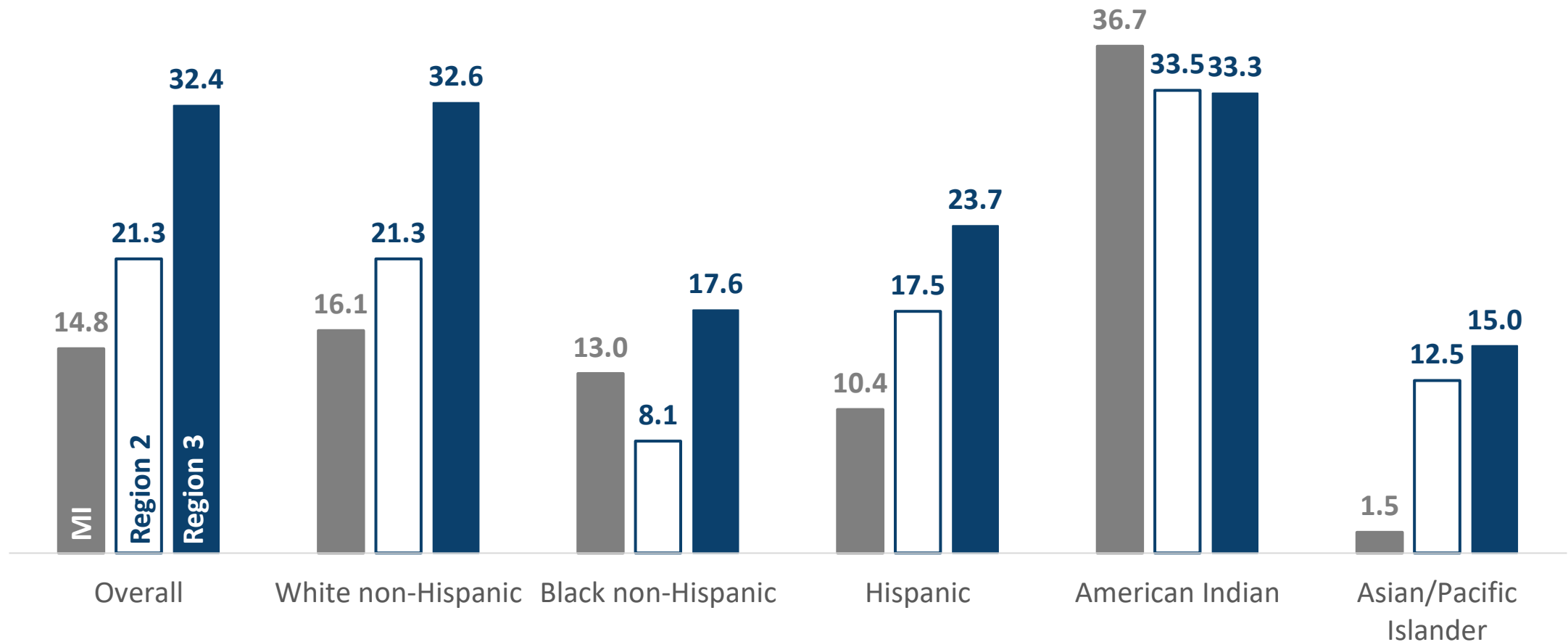
Preterm Birth by Census Tract, Prosperity Region 2 & 3, 2015-2019

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 Region 2 & 3 2016-2020

Smoking During Pregnancy by Maternal Race/Ethnicity, 2016-2020

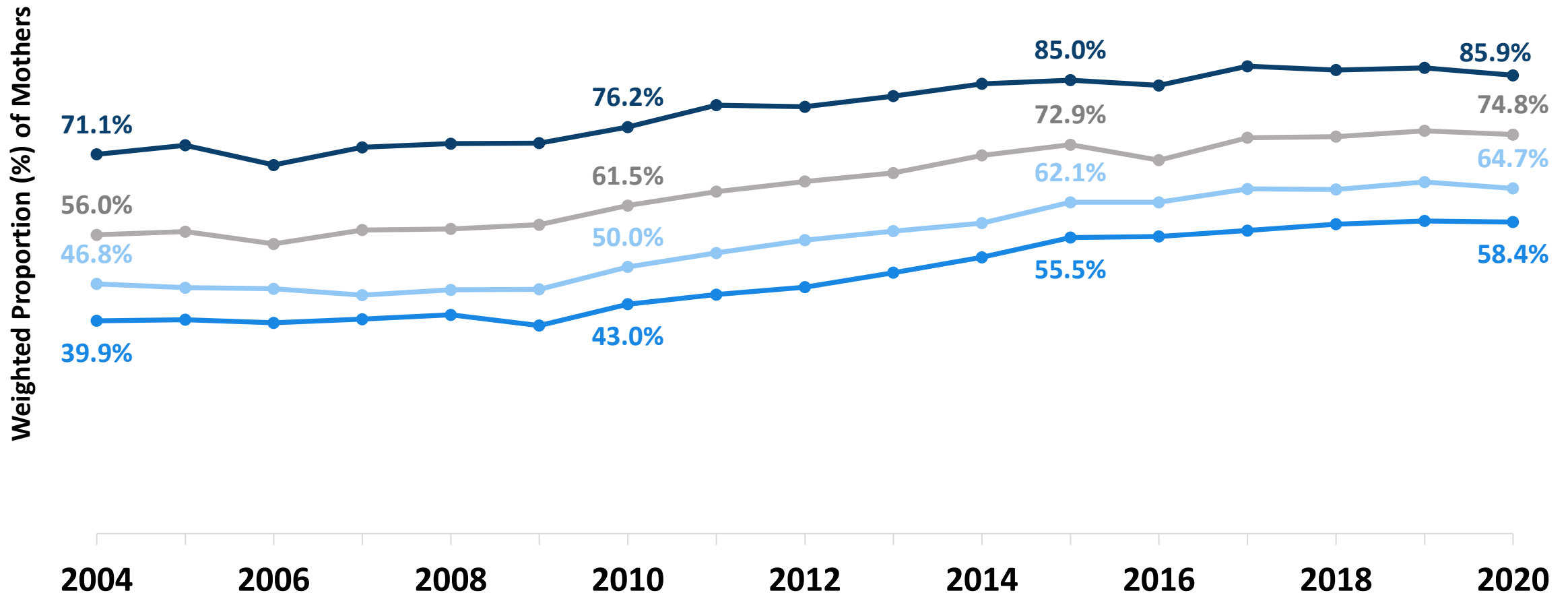


Breastfeeding Initiation and Duration Michigan, 2004-2020

Breastfeeding Initiation + Duration, Michigan 2004-2020

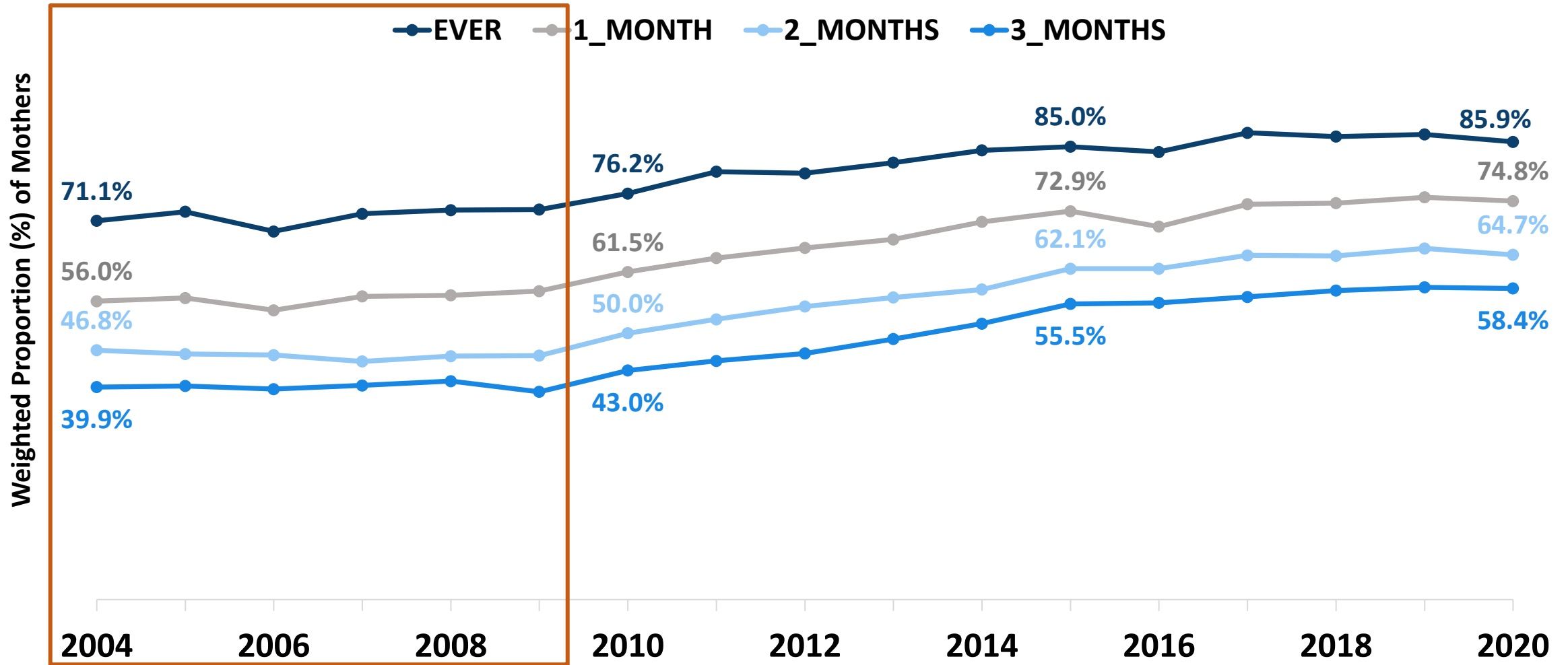
Significance test for all linear trends: $p < 0.0001$

—●— EVER —●— 1_MONTH —●— 2_MONTHS —●— 3_MONTHS



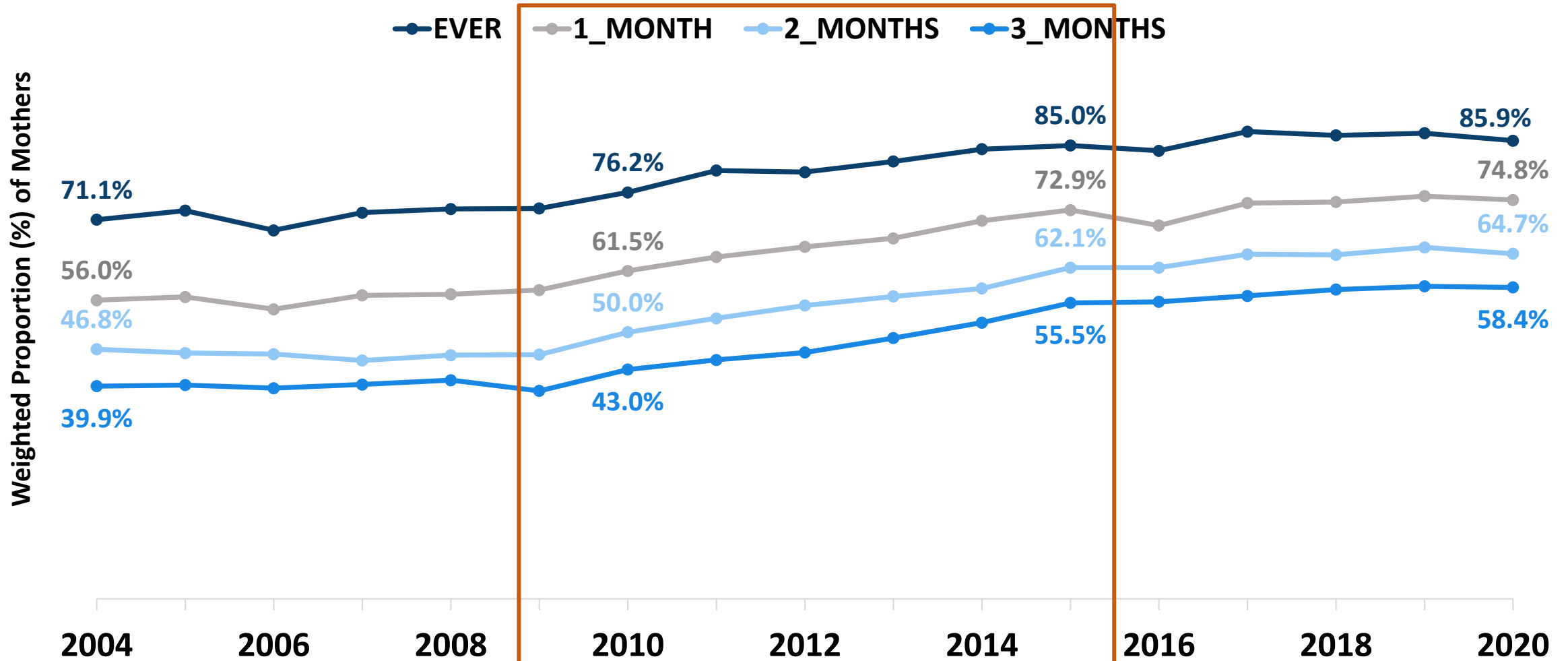
Breastfeeding Initiation + Duration, Michigan 2004-2020

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



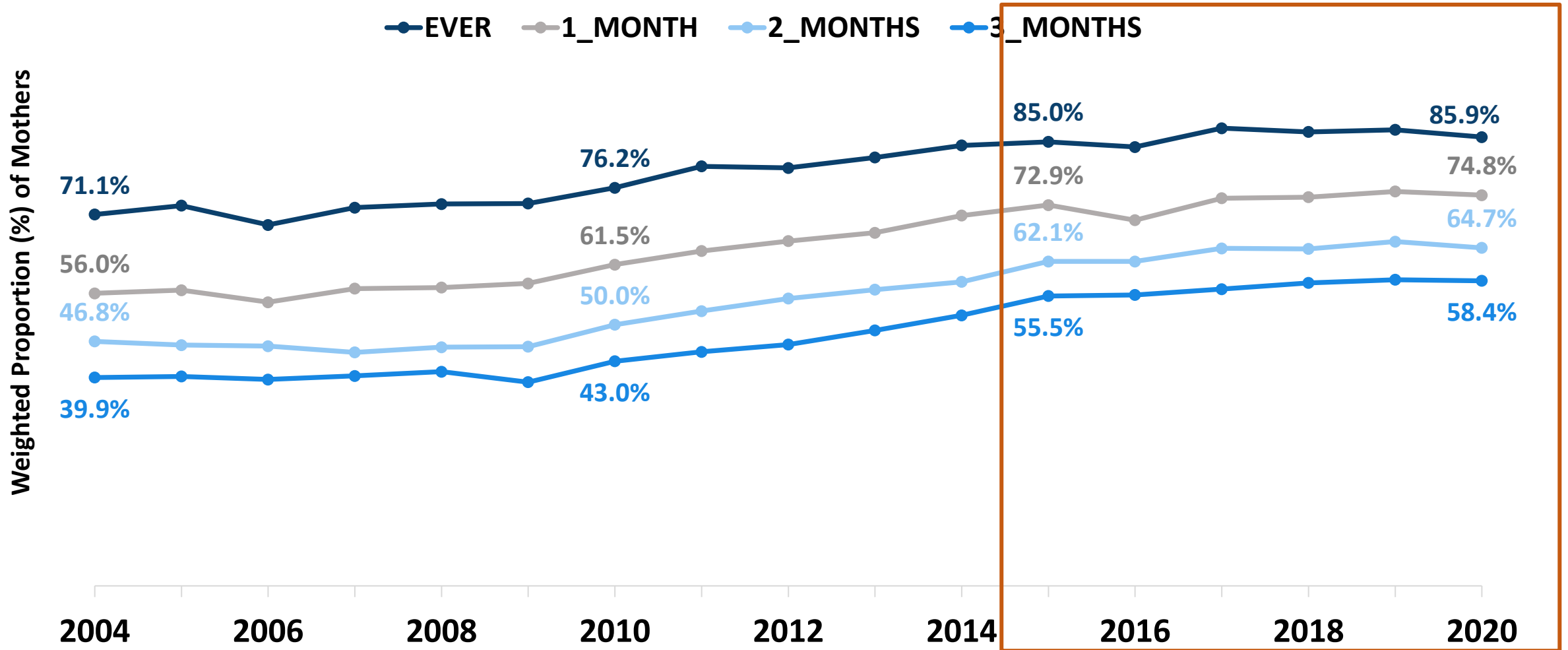
Breastfeeding Initiation + Duration, Michigan 2004-2020

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



Breastfeeding Initiation + Duration, Michigan 2004-2020

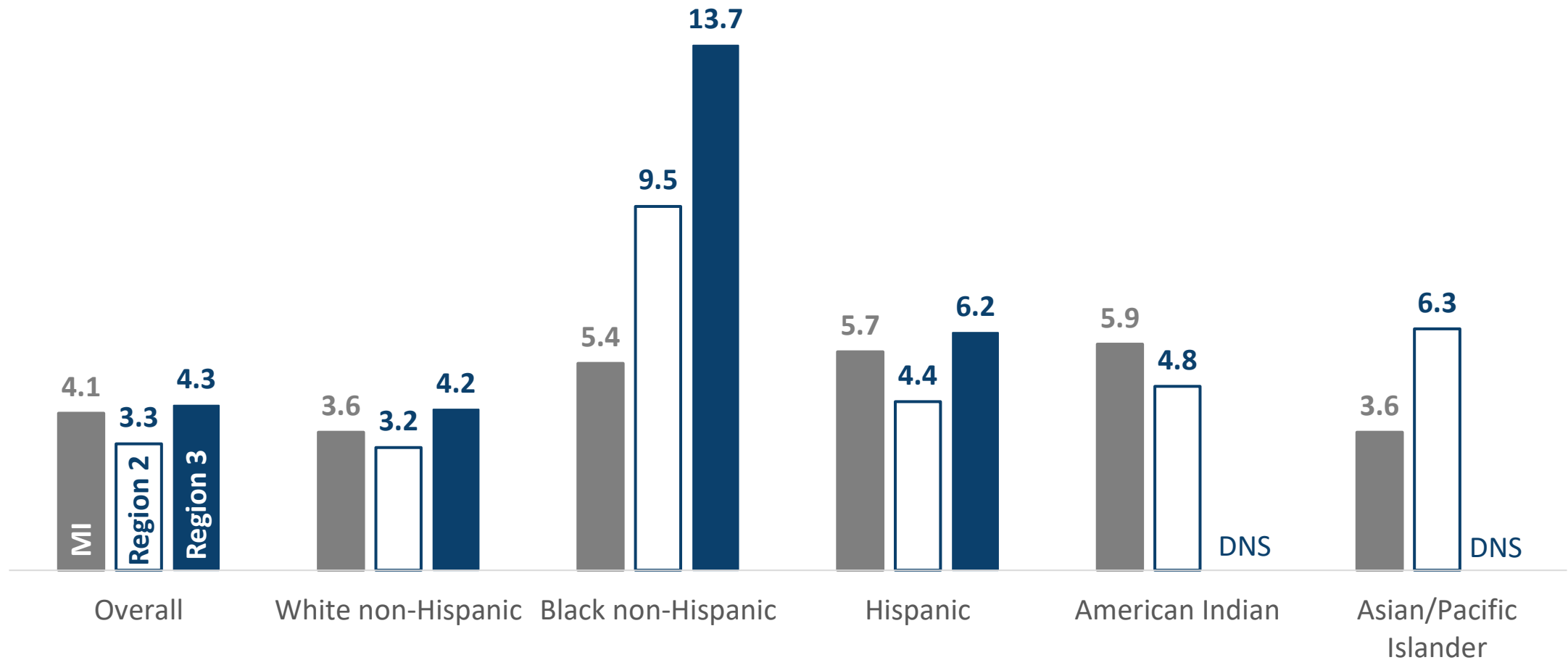
Significance test for all linear trends: $p < 0.0001$



Late Entry into Prenatal Care Prosperity Region 2 & 3 2016-2020

Late Entry Into Prenatal Care by Maternal Race/Ethnicity, 2016-2020

Late entry into prenatal care refers to begin prenatal care in the 7th - 9th month of gestation
Data Not Sufficient (DNS): 0<N<6



Neonatal Abstinence Syndrome Prosperity Region 2 & 3 2010-2020

About the Data

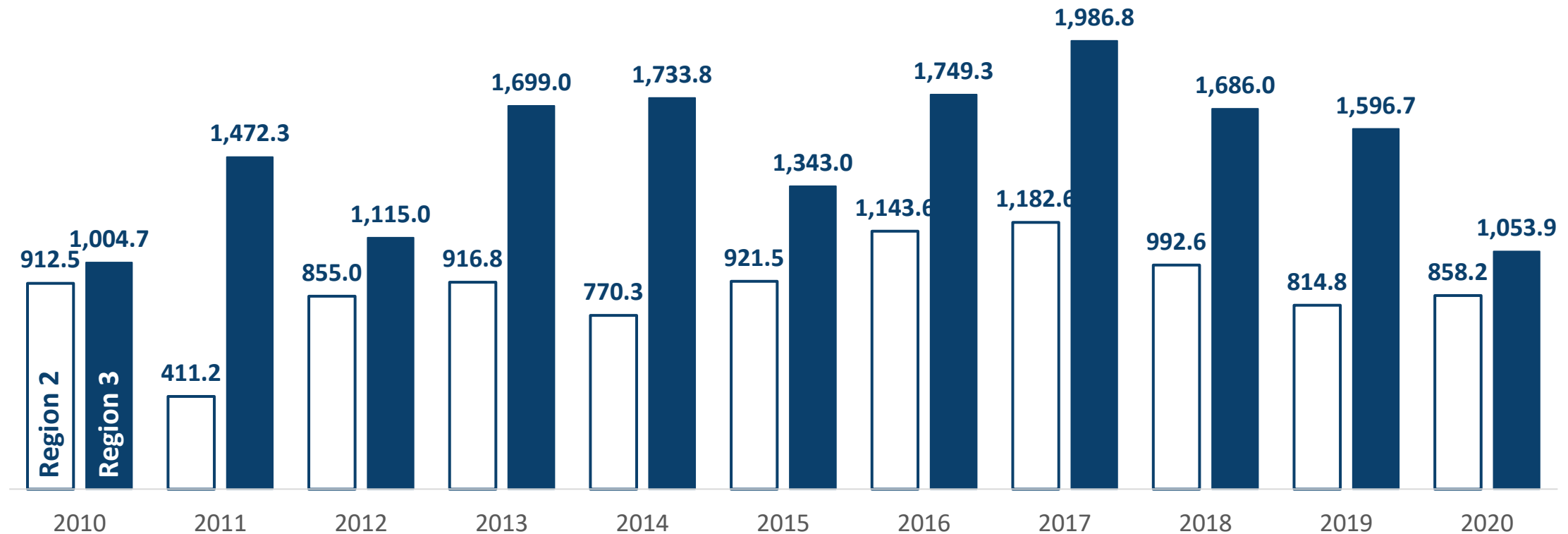
1. NAS cases are identified by diagnosis code (ICD-9 779.5 or ICD-10 P96.1) from the Michigan Inpatient Database. The transition from ICD-9 to ICD-10 started in Fall 2015. This may contribute to some fluctuation in the data.
2. NAS cases may be underreported with the increasing popularity of non-pharmacological interventions, which may not be consistently captured in the data.

Neonatal Abstinence Syndrome*, Prosperity Region 2 & 3, 2010-2020

Note: 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 Incidence Rate per 100,000 Live Births

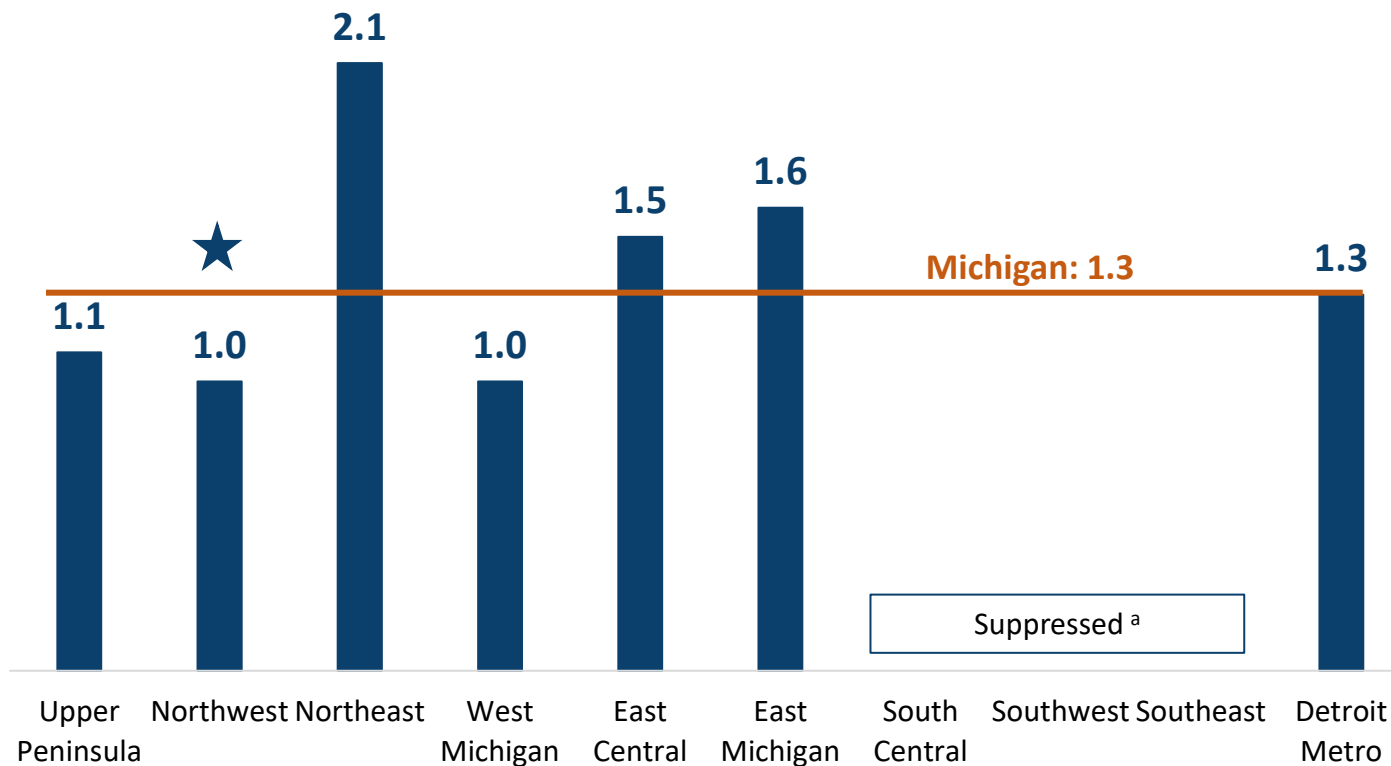
2020 Michigan Rate = 624.1



Sleep-Related Infant Death Rate Prosperity Region 2 & 3 2010-2019

Sleep-Related Infant Death Rate Region 2, 2010-2019

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

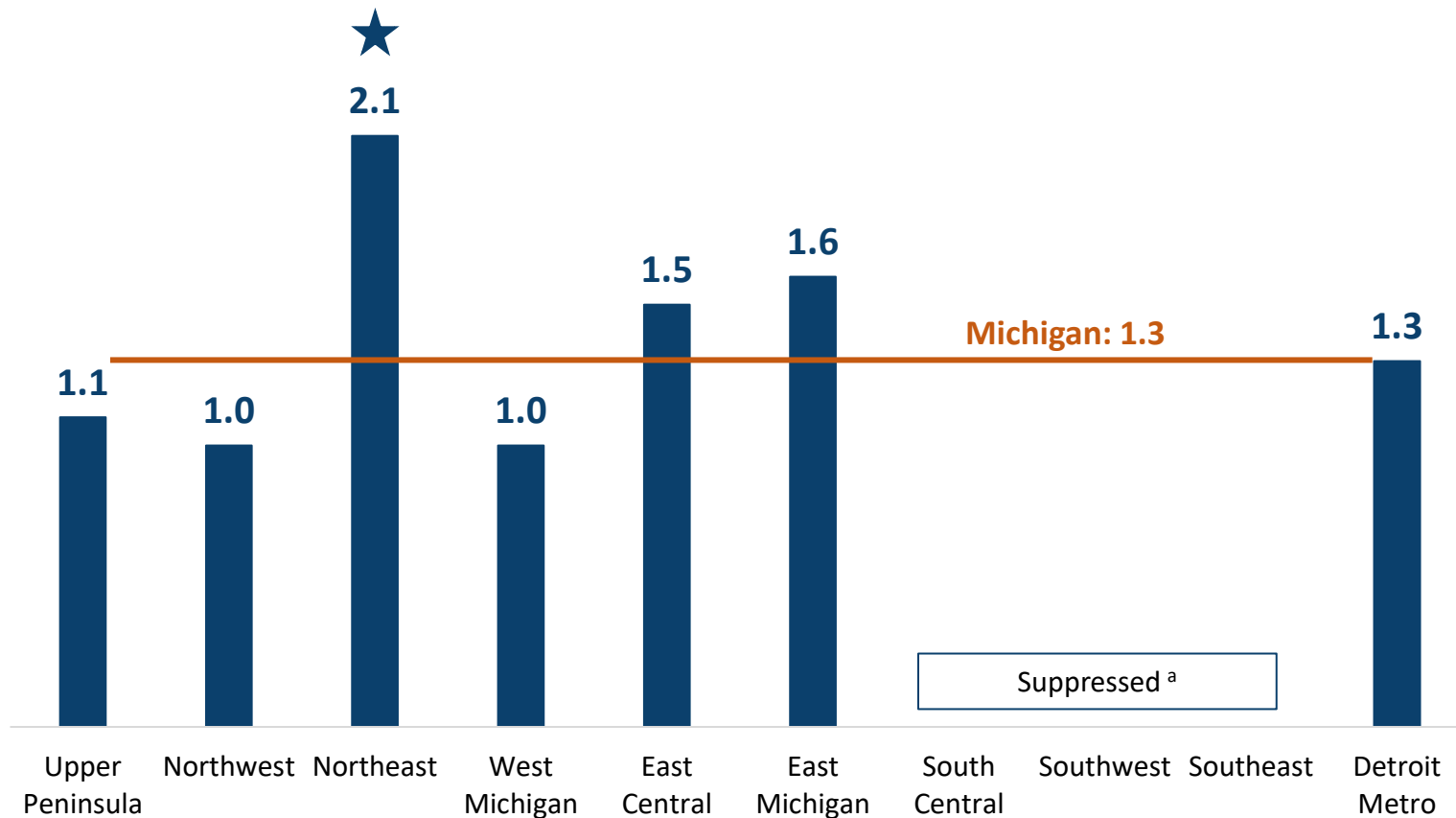


- Between 2010 and 2019 there were **30** sleep-related infant deaths in Region Two.
- The Region Two sleep-related infant death rate of 1.0 per 1,000 live births was **lower** than the Michigan sleep-related death rate (Michigan rate: 1.3 per 1,000 live births), although the difference was not statistically significant.

^a Data for Regions 7, 8 and 9 suppressed as to not inadvertently identify a suppressed county level statistics. County level data can be found at https://www.keepingkidsalive.org/wp-content/uploads/Sleep-Related-Infant-Deaths-in-Michigan_2010-to-2018.pdf

Sleep-Related Infant Death Rate Region 3, 2010-2019

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



- Between 2010 and 2019 there were **36** sleep-related infant deaths in Region Three.
- The Region Three sleep-related infant death rate of 2.1 per 1,000 live births was **significantly higher** than the Michigan sleep-related death rate (Michigan rate: 1.3 per 1,000 live births).

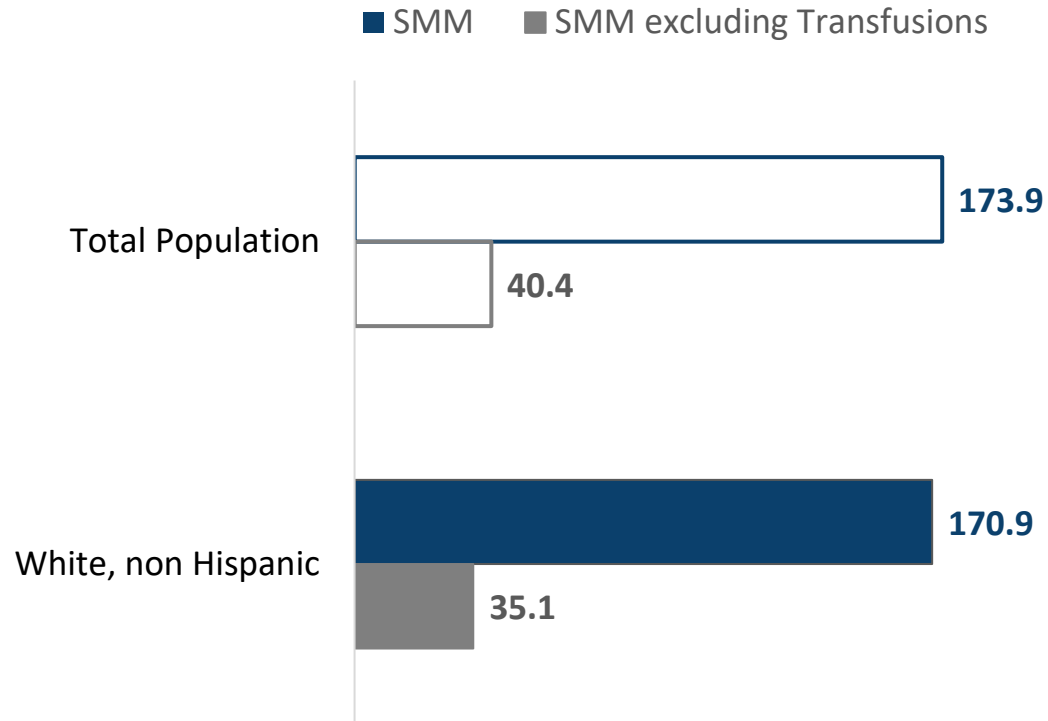
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Severe Maternal Morbidity Rate Prosperity Region 2 & 3 2020

Rate of Severe Maternal Morbidity (SMM) + SMM Excluding Transfusions, Region 2, 2020

Region 2

Maternal Morbidity Rate per 10,000 Delivery Hospitalizations



Michigan

SMM Rate per 10,000 inpatient delivery hospitalizations:

- Total Population: 211.3
- White, NH: 170.9
- Black, NH: 346.7
- Asian/ Pacific Islander, NH: 240.1
- American Indian/ Alaska Native: 286.5
- Hispanic: 188.7

SMM excluding transfusion rate per 10,000 inpatient delivery hospitalizations:

- Total Population: 89.2
- White, NH: 71.5
- Black, NH: 151.9
- Asian/ Pacific Islander, NH: 85.2
- American Indian/ Alaska Native: 143.2
- Hispanic: 86.3

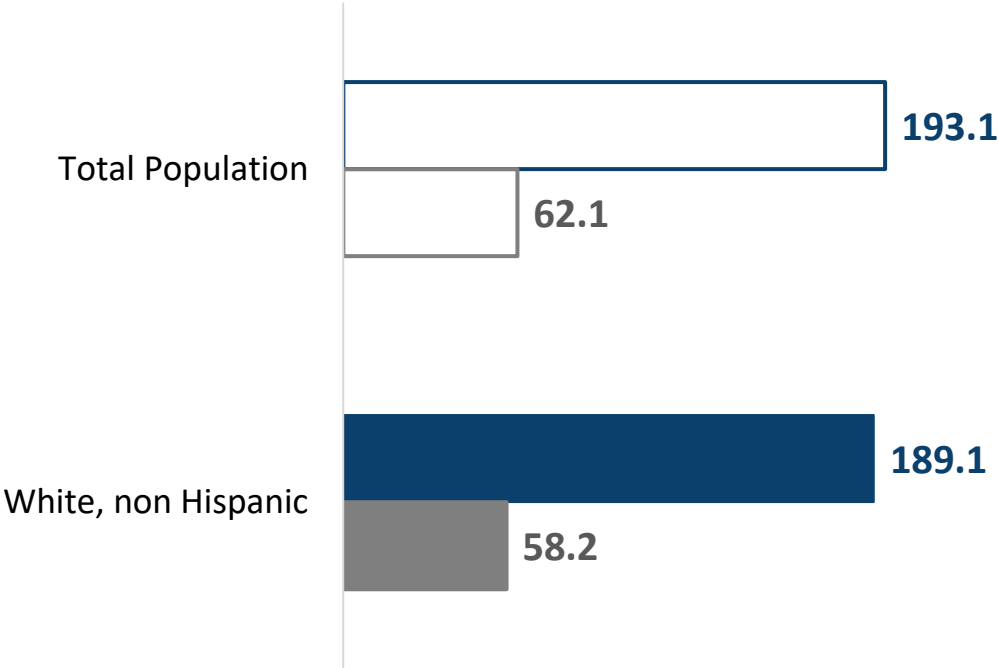
* Statistics for other race suppressed due to insufficient sample size.

Rate of Severe Maternal Morbidity (SMM) + SMM Excluding Transfusions, Region 3, 2020

Region 3

Maternal Morbidity Rate per 10,000 Delivery Hospitalizations

■ SMM ■ SMM excluding Transfusions



Michigan

SMM Rate per 10,000 inpatient delivery hospitalizations:

- Total Population: 211.3
- White, NH: 170.9
- Black, NH: 346.7
- Asian/ Pacific Islander, NH: 240.1
- American Indian/ Alaska Native: 286.5
- Hispanic: 188.7

SMM excluding transfusion rate per 10,000 inpatient delivery hospitalizations:

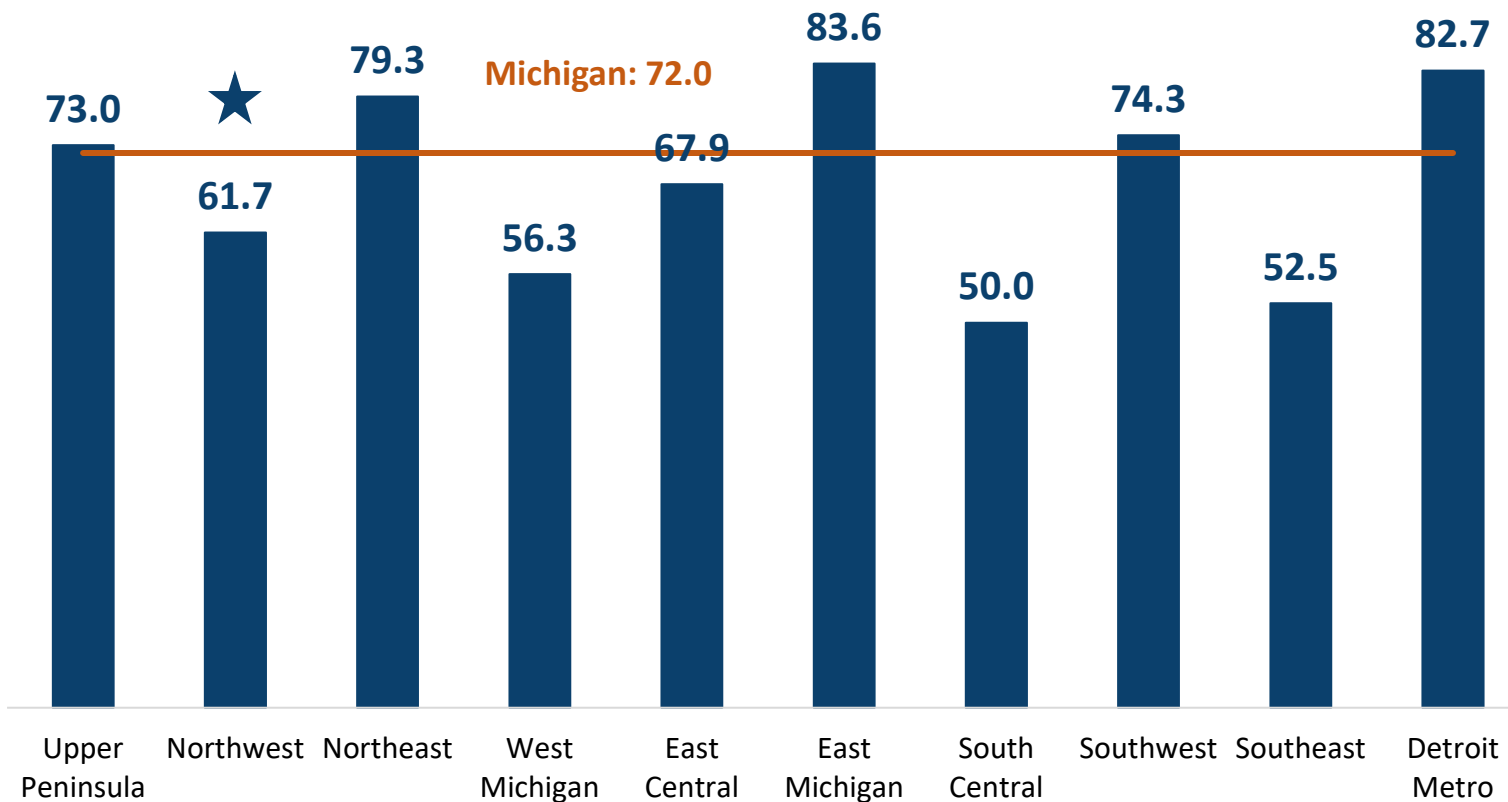
- Total Population: 89.2
- White, NH: 71.5
- Black, NH: 151.9
- Asian/ Pacific Islander, NH: 85.2
- American Indian/ Alaska Native: 143.2
- Hispanic: 86.3

* Statistics for other race suppressed due to insufficient sample size.

Maternal Mortality Ratio Prosperity Region 2 & 3 2014-2018

Maternal Mortality Ratio, Region 2, 2014-2018

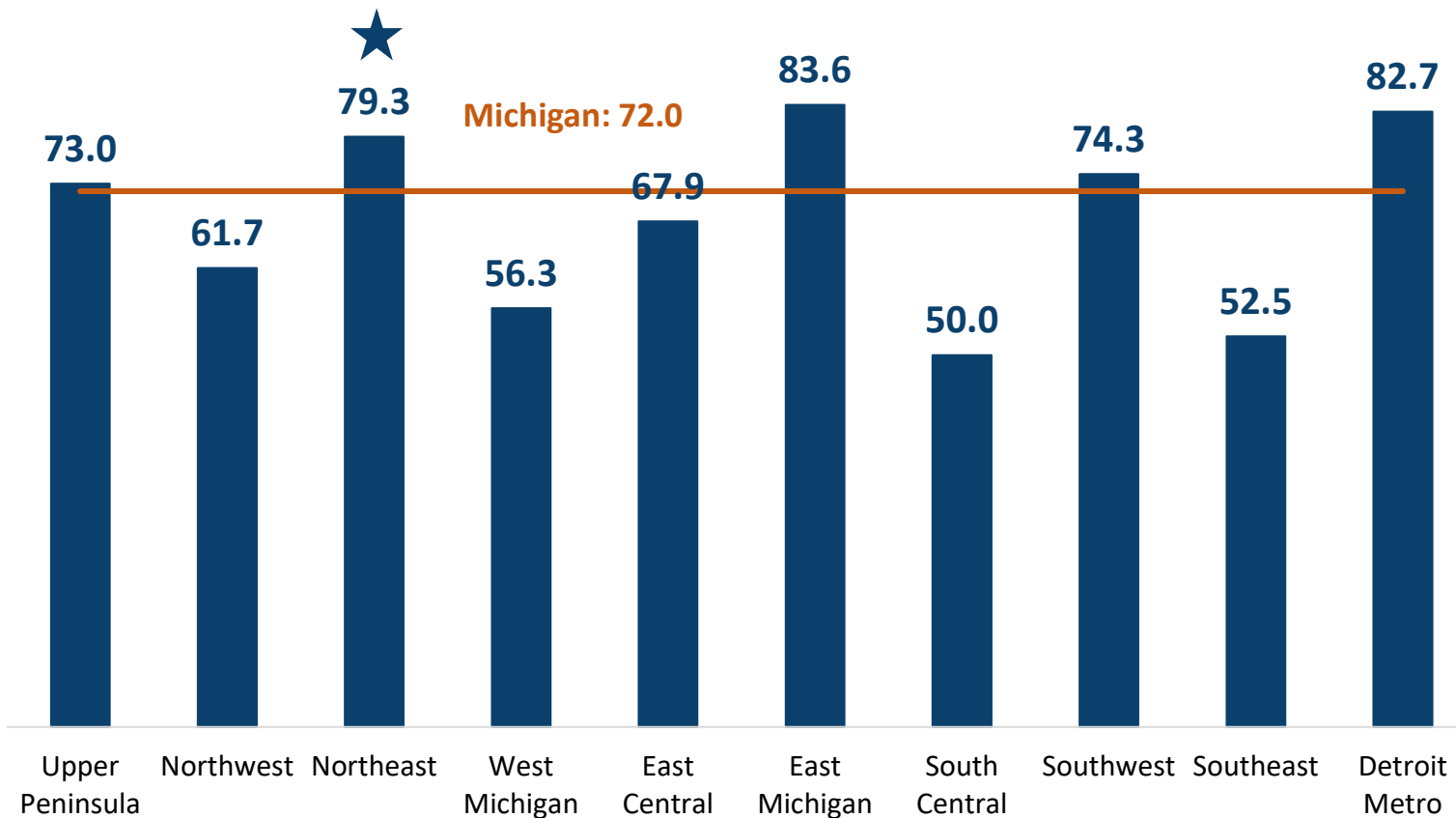
Total (Pregnancy Associated) Maternal Mortality Ratio per 100,000 Live Births
2014-2018



- Maternal deaths include deaths that occur during pregnancy, at delivery or within one year of pregnancy.
- Pregnancy associated (total) maternal mortality includes both pregnancy associated, not related mortality (unrelated to the pregnancy), pregnancy-related mortality (related to or aggravated by the pregnancy), and deaths where pregnancy-relatedness is unable to be determined.
- In Region Two there were **9** maternal deaths between 2014 and 2018.

Maternal Mortality Ratio, Region 3, 2014-2018

Total (Pregnancy Associated) Maternal Mortality Ratio per 100,000 Live Births
2014-2018



- Maternal deaths include deaths that occur during pregnancy, at delivery or within one year of pregnancy.
- Pregnancy associated (total) maternal mortality includes both pregnancy associated, not related mortality (unrelated to the pregnancy), pregnancy-related mortality (related to or aggravated by the pregnancy), and deaths where pregnancy-relatedness is unable to be determined.
- In Region Three there were **7** maternal deaths between 2014 and 2018.