



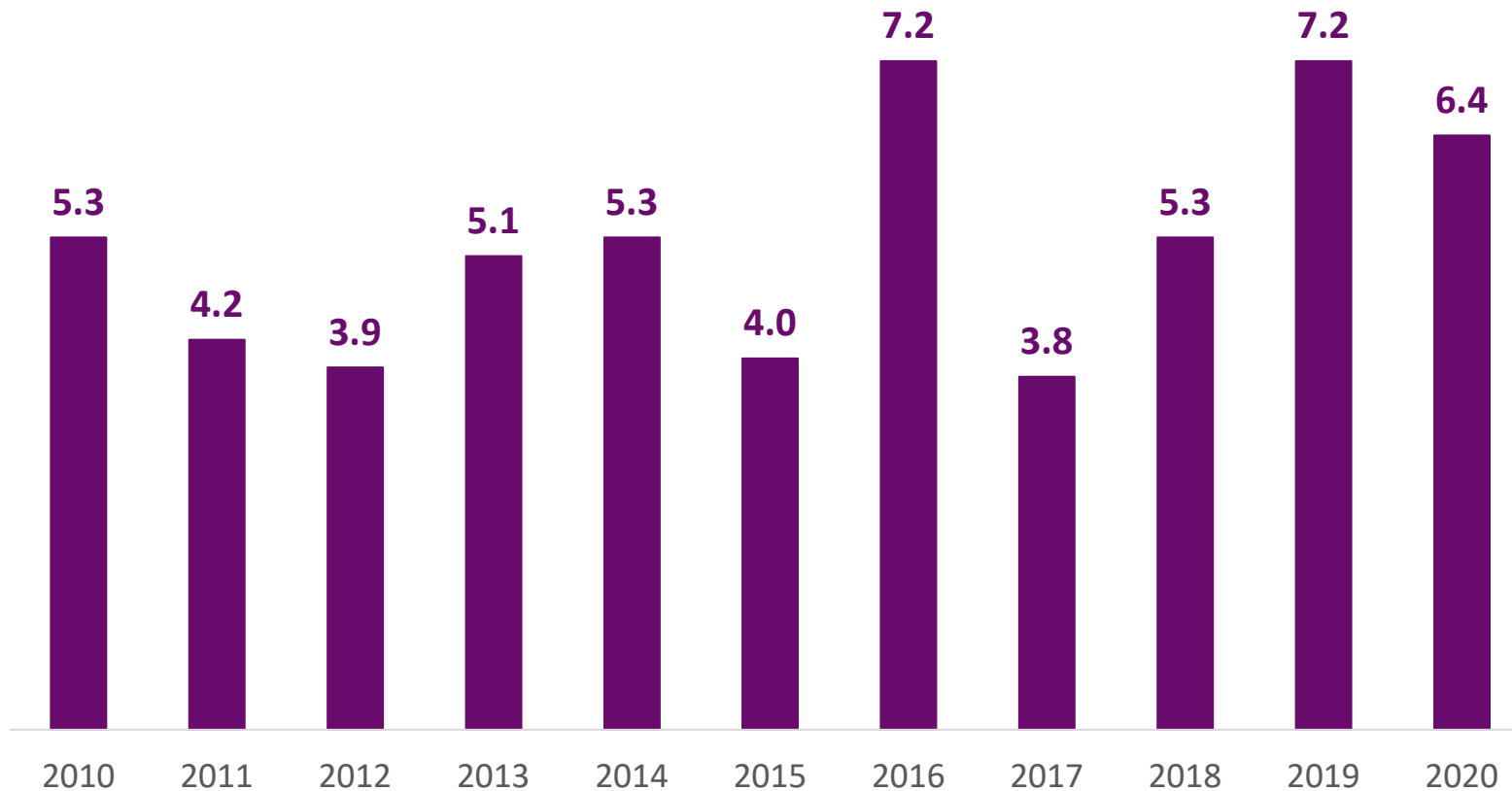
# Maternal and Infant Health Statistics Prosperity Region 1, Michigan

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 1 2010-2020

# Infant Mortality Rate, Prosperity Region 1, 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

Year	# Infant Deaths	# Births	Rate
2010	15	2,807	5.3
2011	12	2,835	4.2
2012	11	2,829	3.9
2013	14	2,763	5.1
2014	15	2,856	5.3
2015	11	2,723	4.0
2016	20	2,786	7.2
2017	10	2,665	3.8
2018	14	2,666	5.3
2019	18	2,499	7.2
2020	16	2,489	6.4

# Infant Mortality Rates by Maternal Race/Ethnicity, Prosperity Region 1, 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 Deaths	# Live Births	Infant Mortality Rate (per 1,000 Live Births)	MI
White Non-Hispanic	67	11,187	6.0	4.9
Black Non-Hispanic	0	68	0	13.6
Hispanic	DNS	263	DNS	5.6
American Indian	DNS	854	DNS	5.0
Asian/Pacific Islander	DNS	148	DNS	4.1



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

# Infant Mortality Rates by Maternal Race/Ethnicity, Prosperity Region 1, 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.

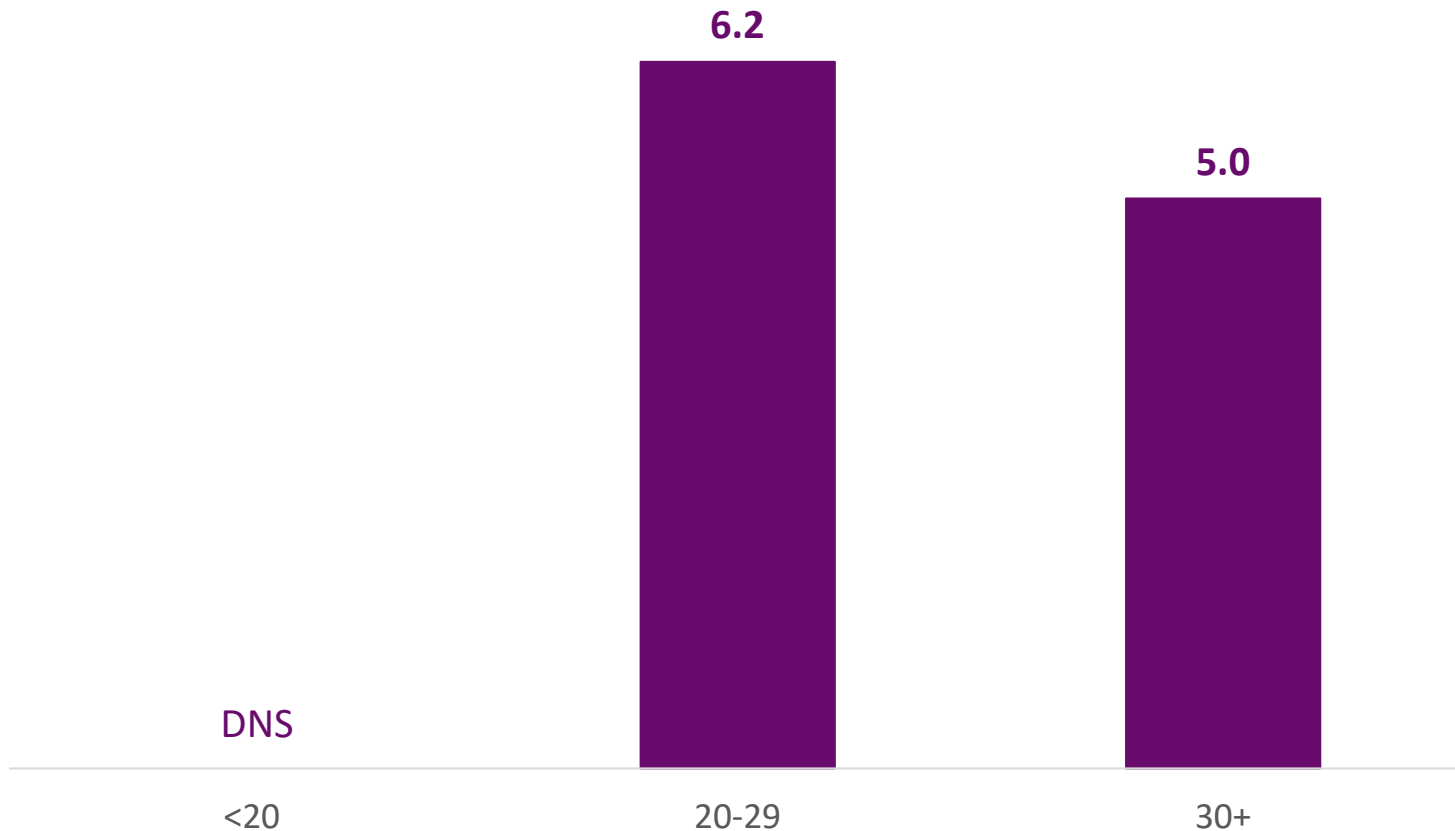
Data Not Sufficient (DNS): 0<N<6

	# Infant Deaths	# Live Births	Infant Mortality Rate (per 1,000 Live Births)
Maternal Race: American Indian	DNS	854	DNS
Maternal Race: American Indian or Mixed Race: American Indian or Alaskan Native	DNS	1,079	DNS
Maternal Race: American Indian or Paternal Race: American Indian or Mixed Race: American Indian or Alaskan Native	7	1,631	4.3

# Infant Mortality Rates by Maternal Age, Prosperity Region 1, 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



Maternal Age	REGION 1			MI
	# Infant Deaths	# Births	Rate	Rate
<20 years	DNS	632	DNS	10.1
20-29 years	44	7,088	6.2	7.1
30+ years	27	5,384	5.0	5.6

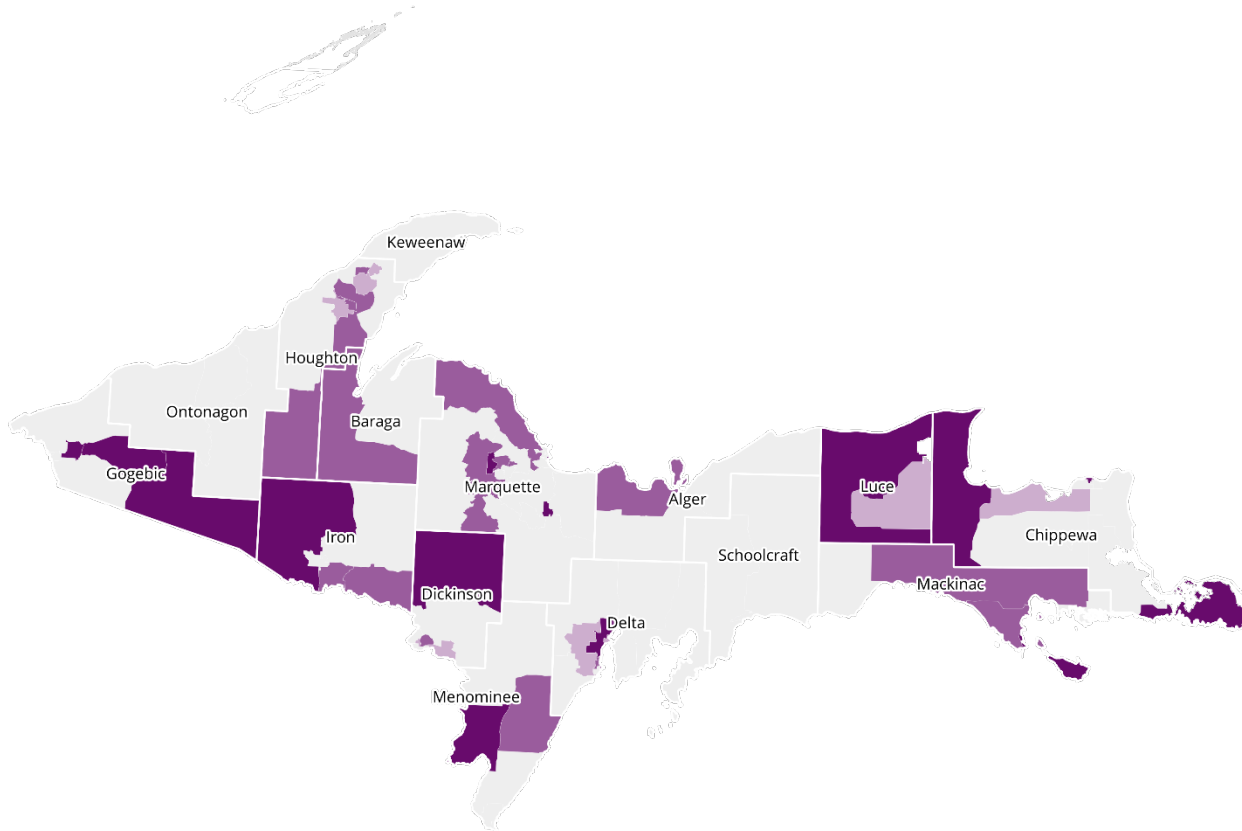
# Infant Mortality Rates by Intended Payment Source, Prosperity Region 1, 2016-2020

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.

Payment	# Infant Deaths	# Live Births	Infant Mortality Rate (per 1,000 Live Births)	MI
Private Insurance	30	6,340	4.7	4.8
Medicaid	40	6,015	6.7	8.8

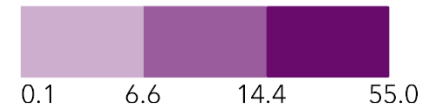
# Infant Mortality Rates by Census Tract, Prosperity Region 1, 2015-2019

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.



## Infant Deaths per 1,000 Live Births

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.



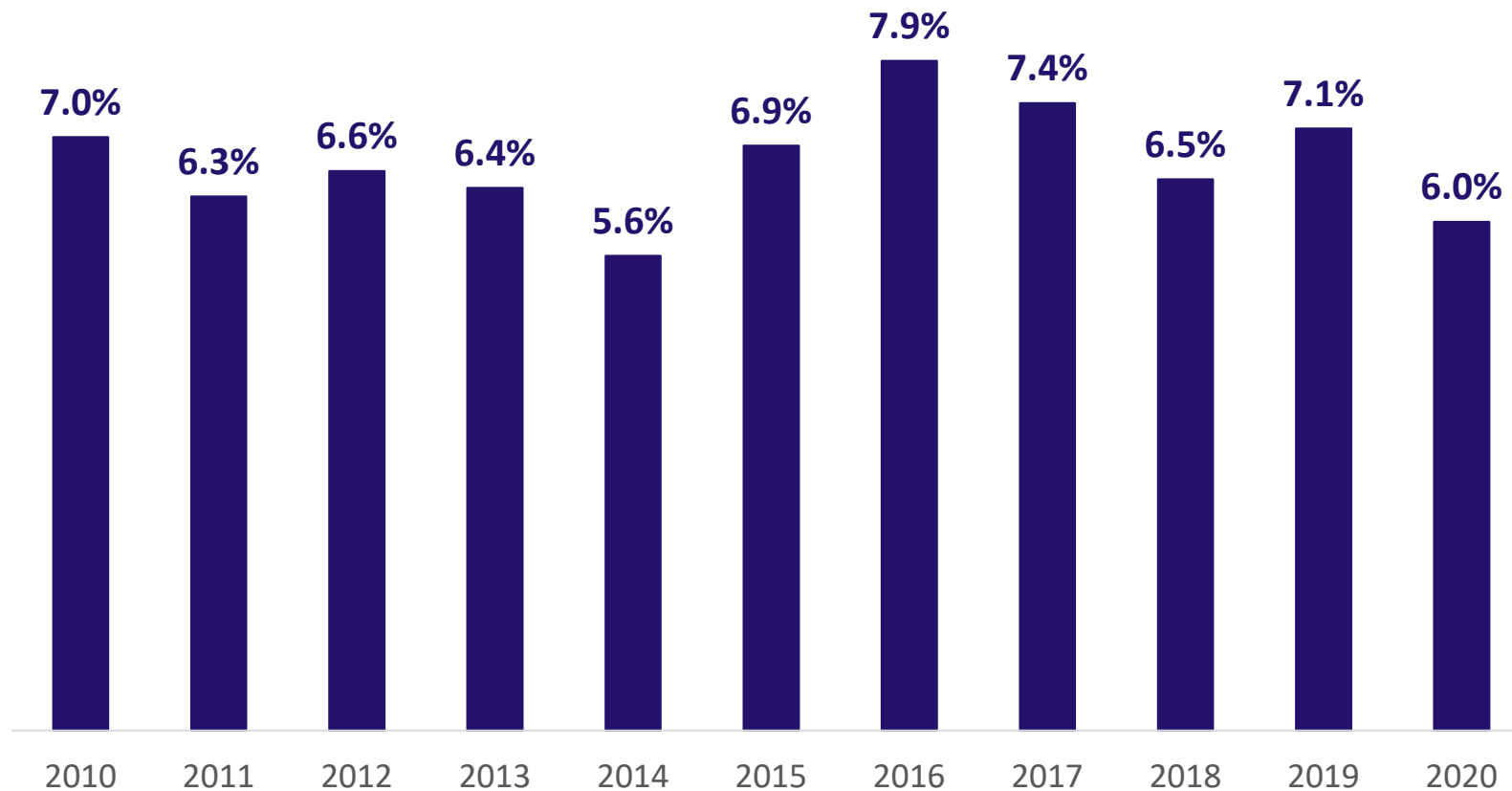
No Live Births/Infant Deaths



# Low Birthweight (LBW) Prosperity Region 1 2010-2020

# Low Birthweight, Prosperity Region 1, 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%**

Year	# LBW	# Births	% LBW
2010	196	2,807	7.0
2011	179	2,835	6.3
2012	186	2,829	6.6
2013	176	2,763	6.4
2014	161	2,856	5.6
2015	189	2,723	6.9
2016	219	2,786	7.9
2017	196	2,665	7.4
2018	173	2,666	6.5
2019	178	2,499	7.1
2020	149	2,489	6.0

# Low Birthweight by Maternal Race/Ethnicity, Prosperity Region 1, 2016-2020

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

Maternal Race	# LBW	# Live Births	Percent (%) Low Birthweight	MI
White non-Hispanic	758	11,187	6.8%	7.1%
Black non-Hispanic	7	68	10.3%	14.9%
Hispanic	23	263	8.7%	7.5%
American Indian	59	854	6.9%	8.4%
Asian/Pacific Islander	12	148	8.1%	8.9%

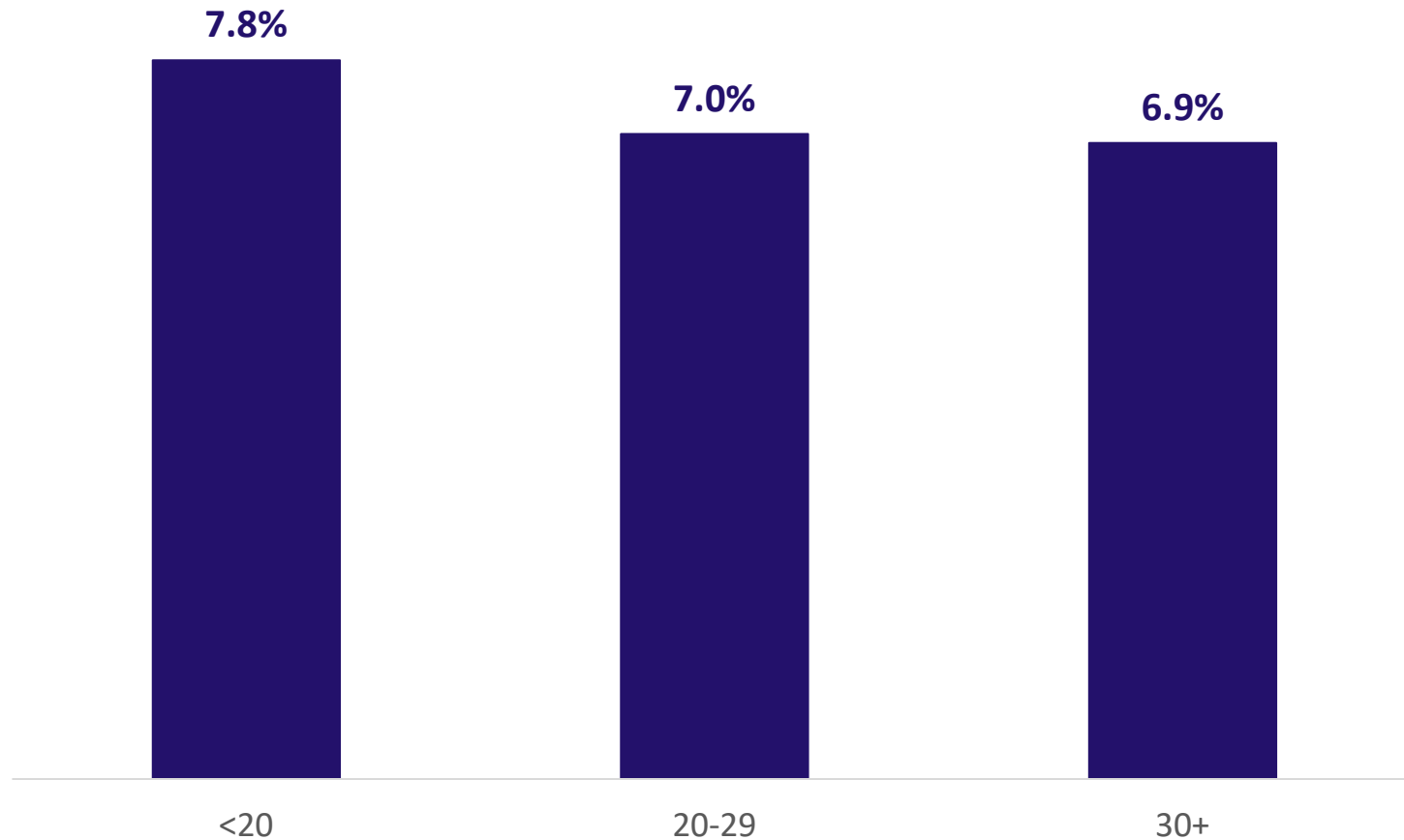
# Low Birthweight by Maternal Race/Ethnicity, Prosperity Region 1, 2016-2020

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

	# LBW	# Live Births	Percent (%) Low Birthweight
Maternal Race: American Indian	59	854	6.9%
Maternal Race: American Indian or Mixed Race: American Indian or Alaskan Native	80	1,079	7.4%
Maternal Race: American Indian or Paternal Race: American Indian or Mixed Race: American Indian or Alaskan Native	116	1,631	7.1%

# Low Birthweight by Maternal Age, Prosperity Region 1, 2016-2020

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



Maternal Age	REGION 1			MI
	# LBW	# Births	% LBW	% LBW
< 20 years	49	632	7.8	11.0
20-29 years	493	7,088	7.0	8.6
≥30 years	373	5,384	6.9	8.6

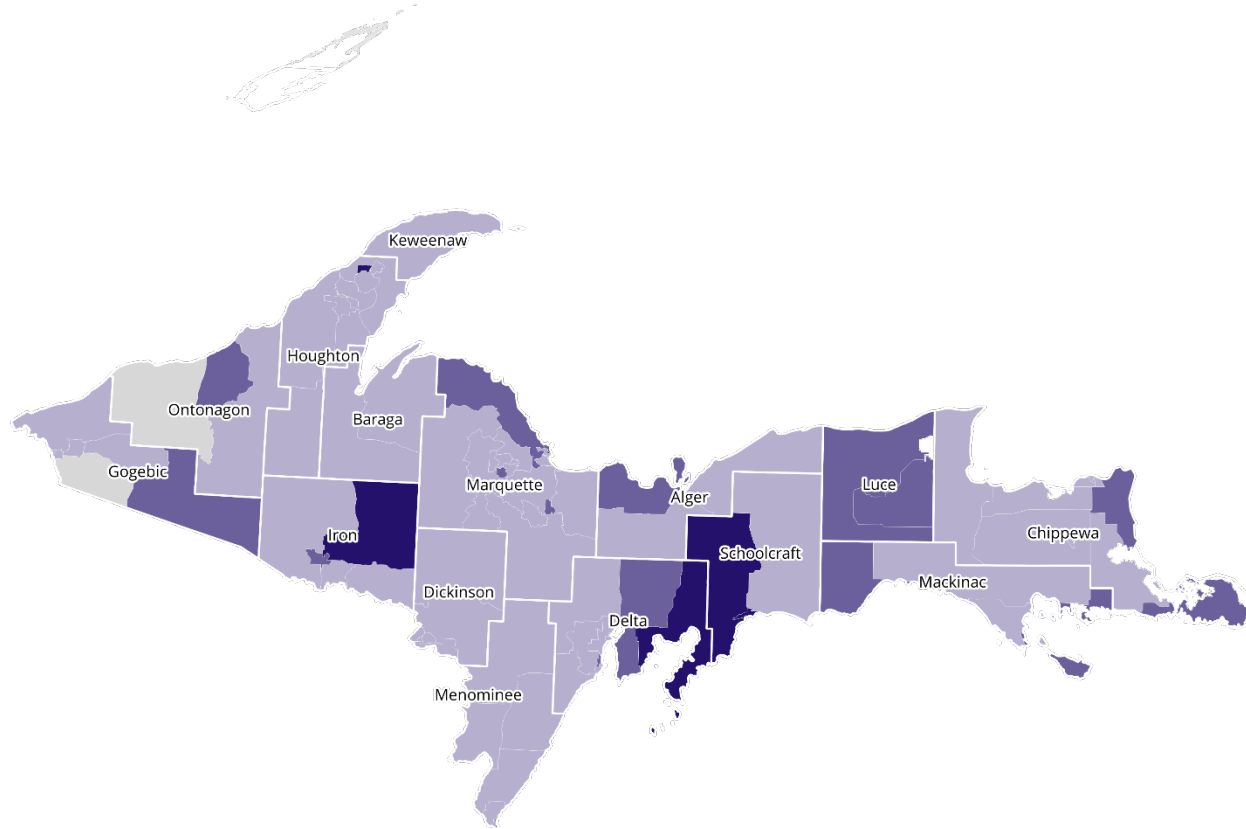
# Low Birthweight by Intended Payment Source, Prosperity Region 1, 2016-2020

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

Payment	# LBW	# Live Births	Percent (%) Low Birthweight	MI
Private Insurance	351	6,340	5.5%	7.3%
Medicaid	499	6,015	8.3%	10.7%

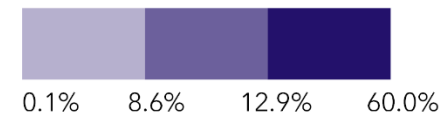
# Low Birthweight by Census Tract, Prosperity Region 1, 2015-2019

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



## Percent Low Birthweight

Low birthweight rate is defined as number of births with baby birthweight less than 5.5lbs (<2,500 grams) per 100 live births.



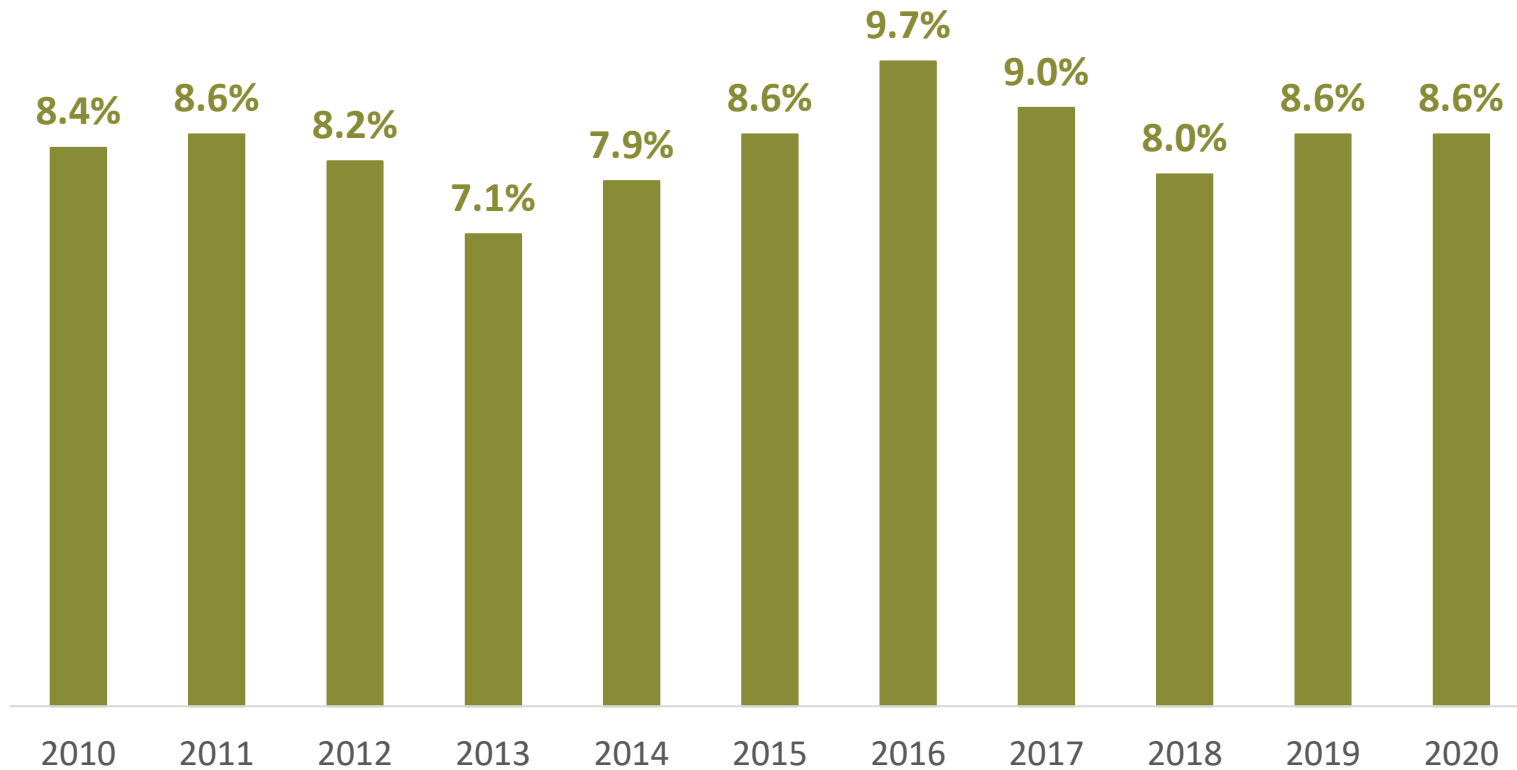
No Live Births/Low Birthweight Births

# Preterm Birth Prosperity Region 1 2010-2020



# Preterm Birth, Prosperity Region 1, 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.



2020 Michigan = 10.2%

Year	# Preterm	# Births	% Preterm
2010	237	2,807	8.4
2011	245	2,835	8.6
2012	233	2,829	8.2
2013	195	2,763	7.1
2014	227	2,856	7.9
2015	234	2,723	8.6
2016	271	2,786	9.7
2017	240	2,665	9.0
2018	212	2,666	8.0
2019	216	2,499	8.6
2020	214	2,489	8.6

# Preterm Birth by Maternal Race/Ethnicity, Prosperity Region 1, 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	# Preterm	# Live Births	Percent (%) Preterm	MI
White non-Hispanic	972	11,187	8.7%	9.0%
Black non-Hispanic	7	68	10.3%	14.8%
Hispanic	29	263	11.0%	9.6%
American Indian	58	854	6.8%	9.8%
Asian/Pacific Islander	13	148	8.8%	8.2%

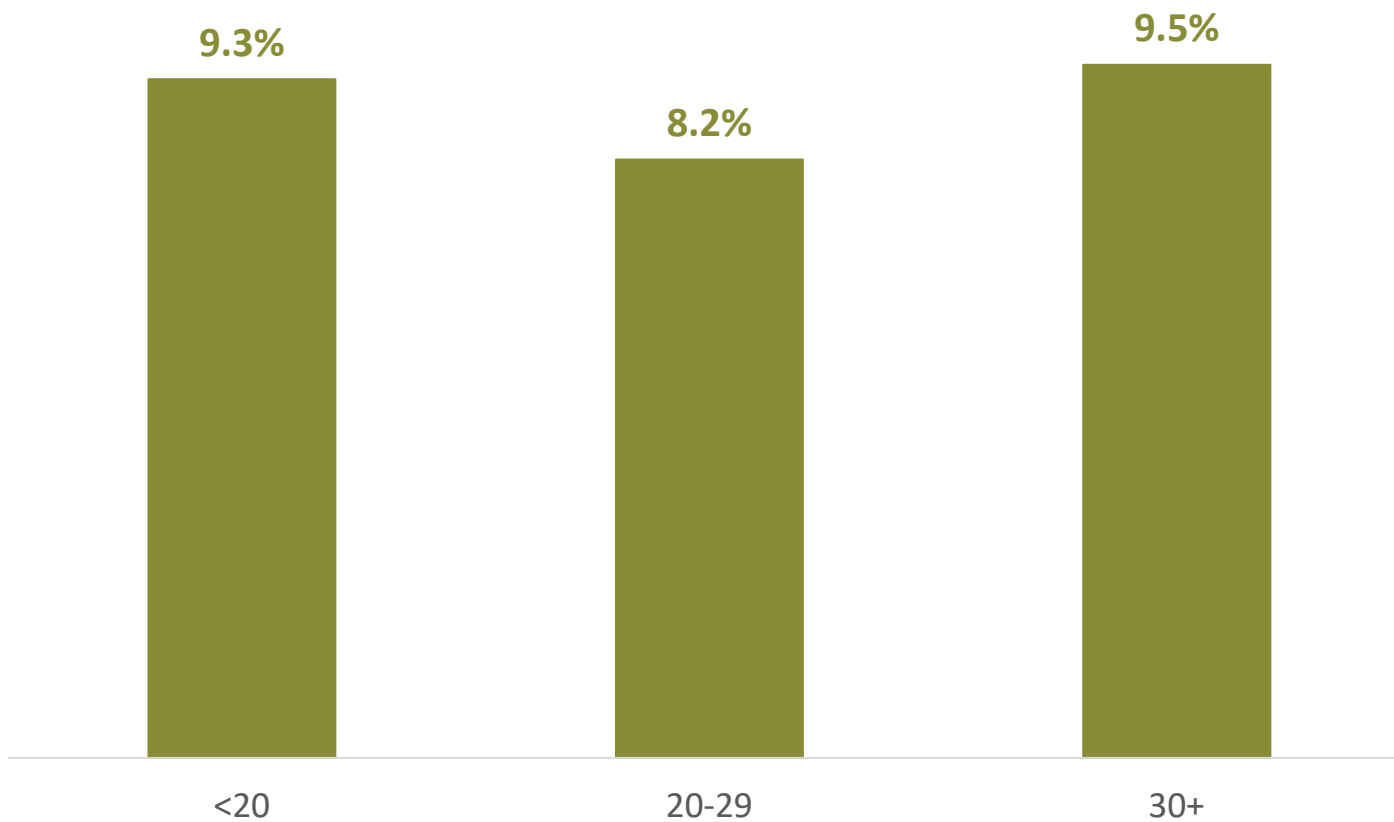
# Preterm Birth by Maternal Race/Ethnicity, Prosperity Region 1, 2016-2020

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	# Live Births	Percent (%) Preterm
Maternal Race: American Indian	58	854	6.8%
Maternal Race: American Indian or Mixed Race: American Indian or Alaskan Native	84	1,079	7.8%
Maternal Race: American Indian or Paternal Race: American Indian or Mixed Race: American Indian or Alaskan Native	124	1,631	7.6%

# Preterm Birth by Maternal Age, Prosperity Region 1, 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 1		MI
	# Preterm	# Births	% Preterm
< 20 years	59	632	9.3
20-29 years	583	7,088	8.2
≥30 years	511	5,384	9.5

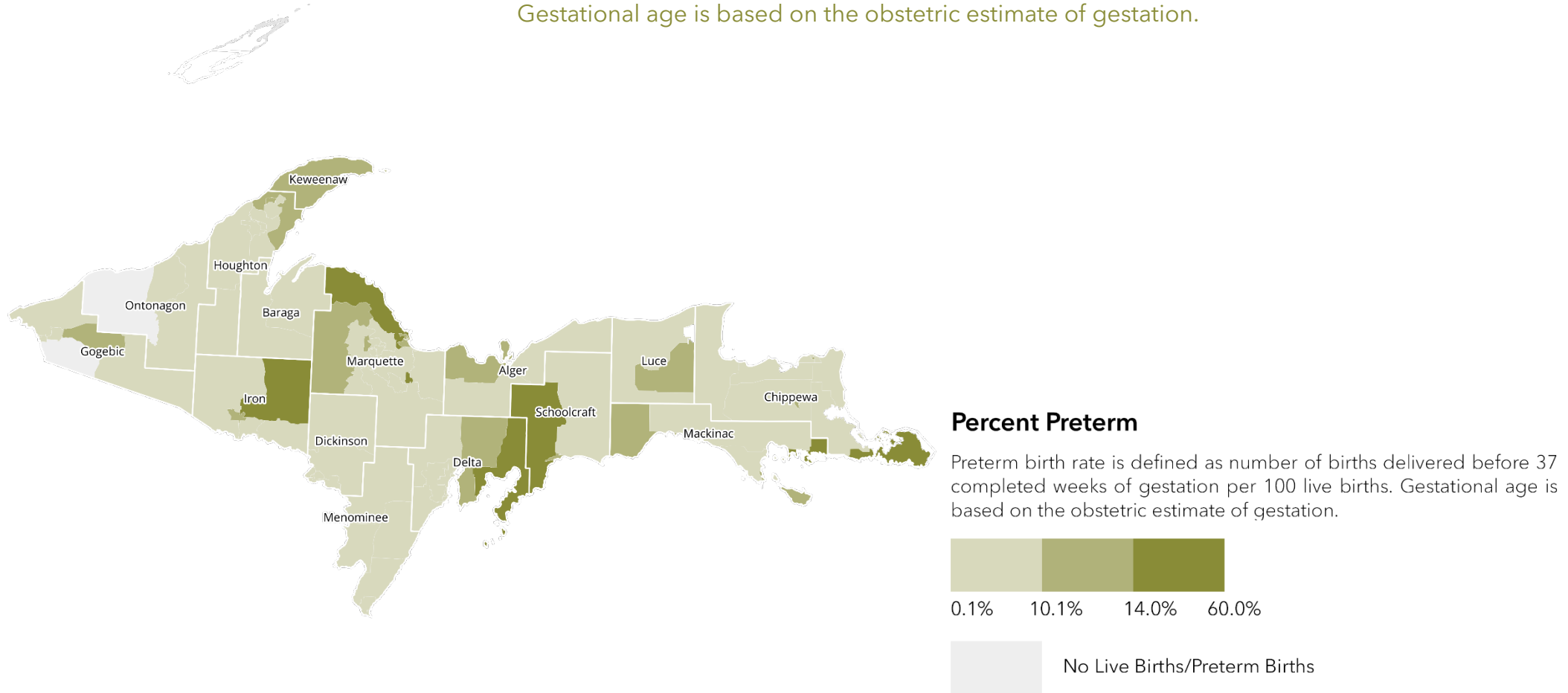
# Preterm Birth by Intended Payment Source, Prosperity Region 1, 2016-2020

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.

Payment	# Preterm	# Live Births	Percent (%) Preterm	MI
Private Insurance	500	6,340	7.9%	9.3%
Medicaid	571	6,015	9.5%	11.5%

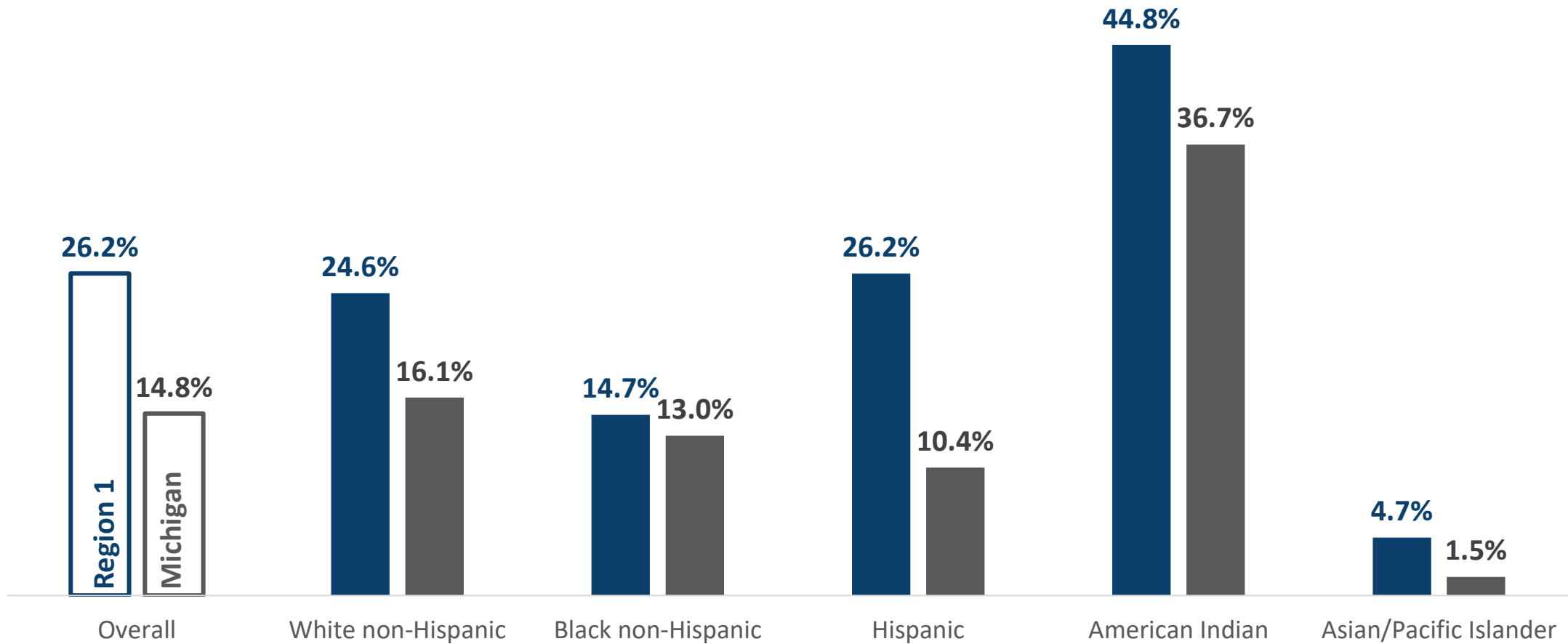
# Preterm Birth by Census Tract, Prosperity Region 1, 2015-2019

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 1 2015-2019

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



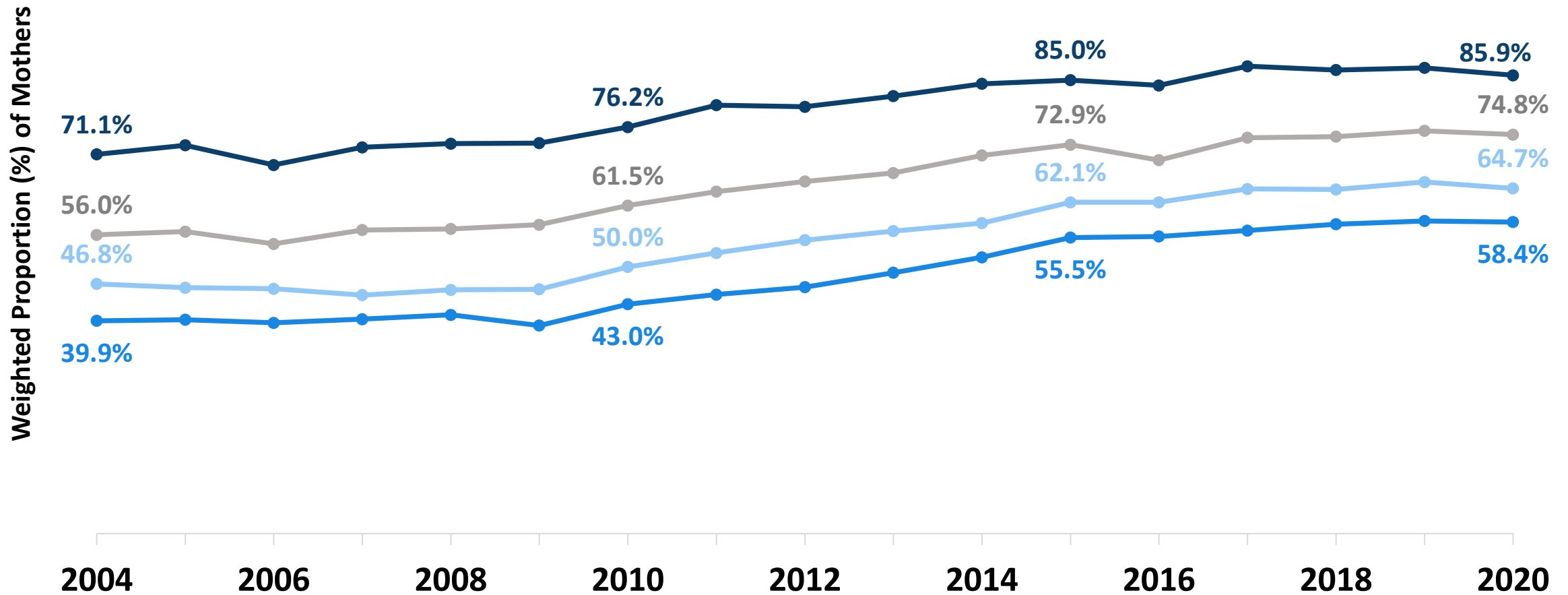


# Breastfeeding Initiation and Duration Michigan, 2004-2020

# Breastfeeding Initiation + Duration, Michigan 2004-2020

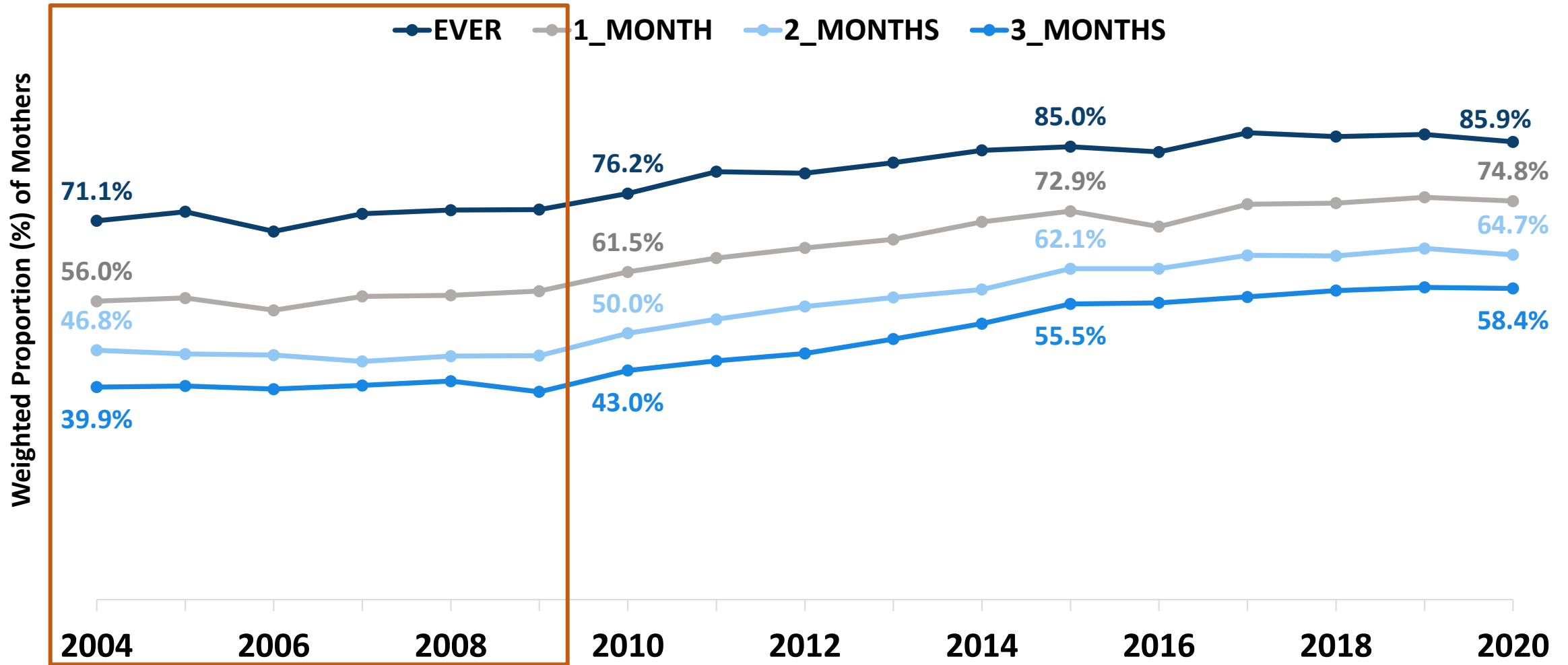
Significance test for all linear trends:  $p < 0.0001$

● EVER ● 1\_MONTH ● 2\_MONTHS ● 3\_MONTHS



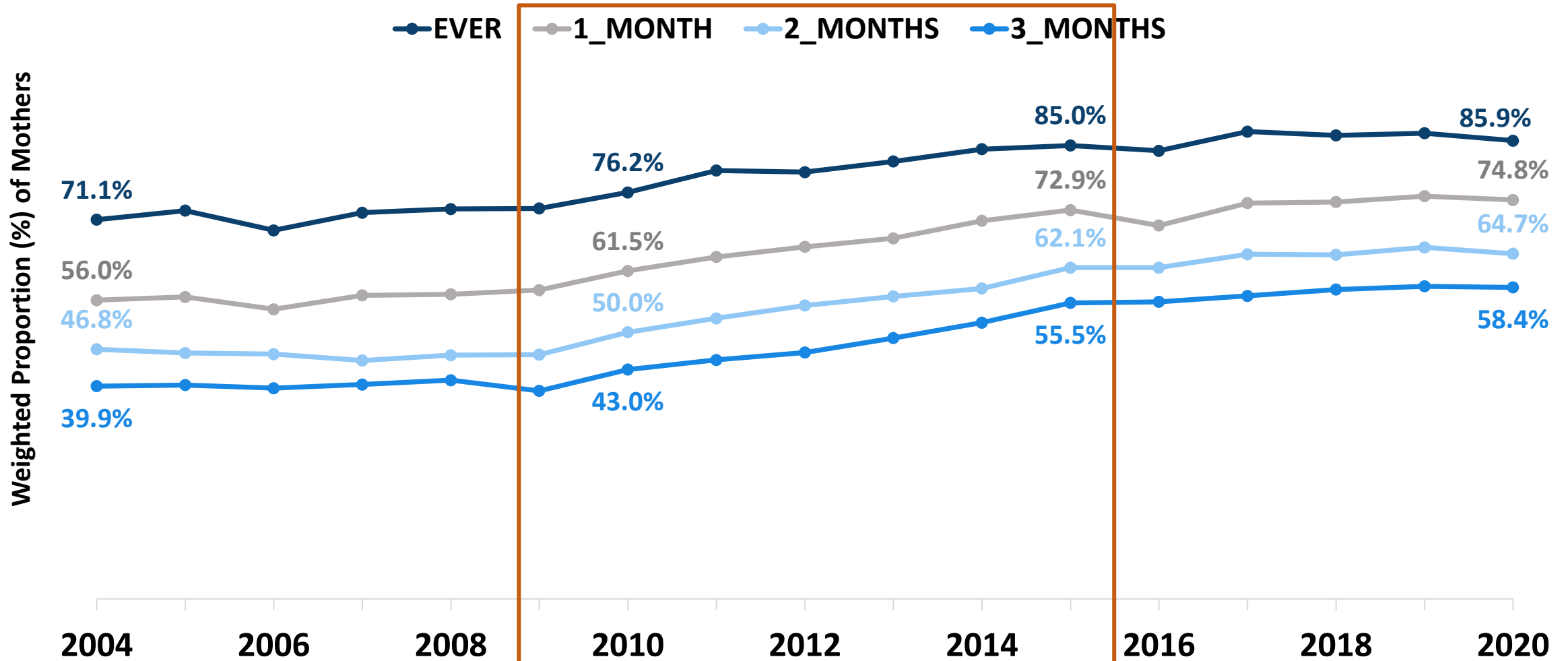
# Breastfeeding Initiation + Duration, Michigan 2004-2020

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



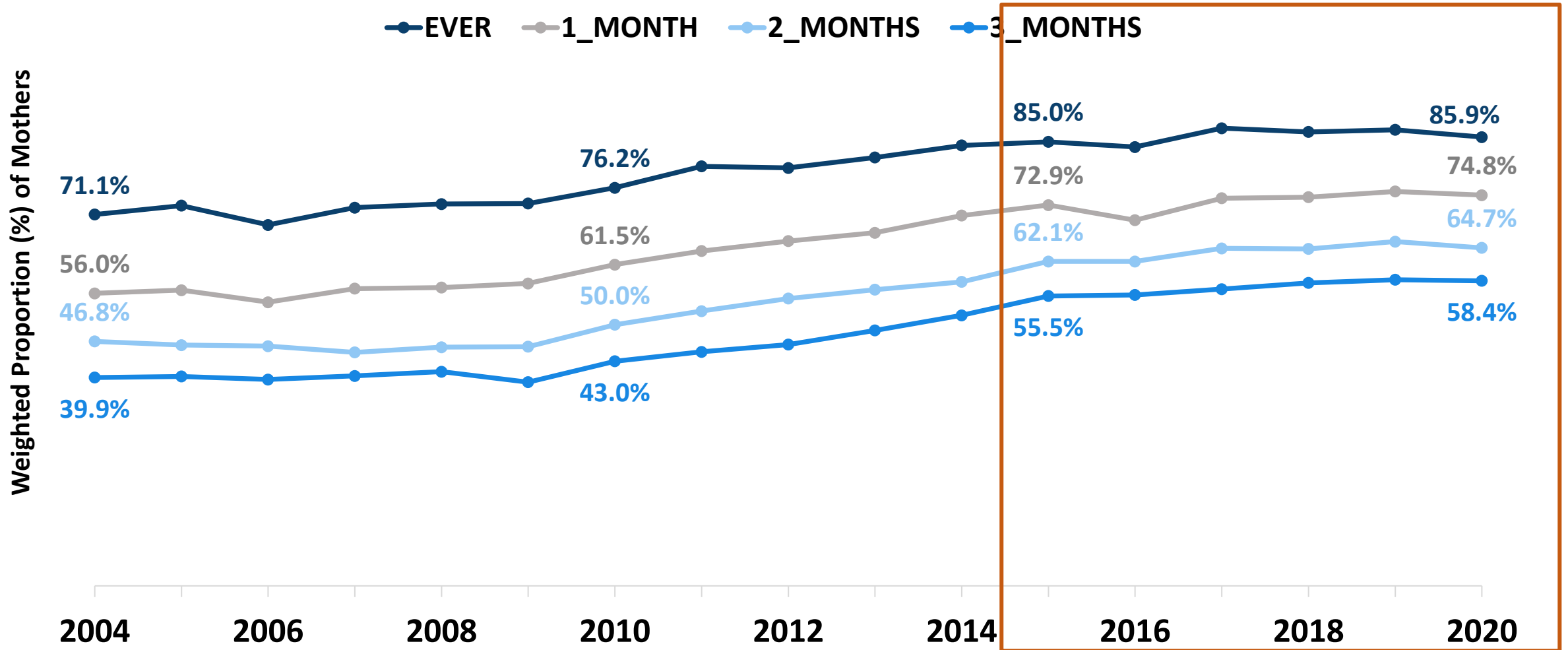
# Breastfeeding Initiation + Duration, Michigan 2004-2020

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



# Breastfeeding Initiation + Duration, Michigan 2004-2020

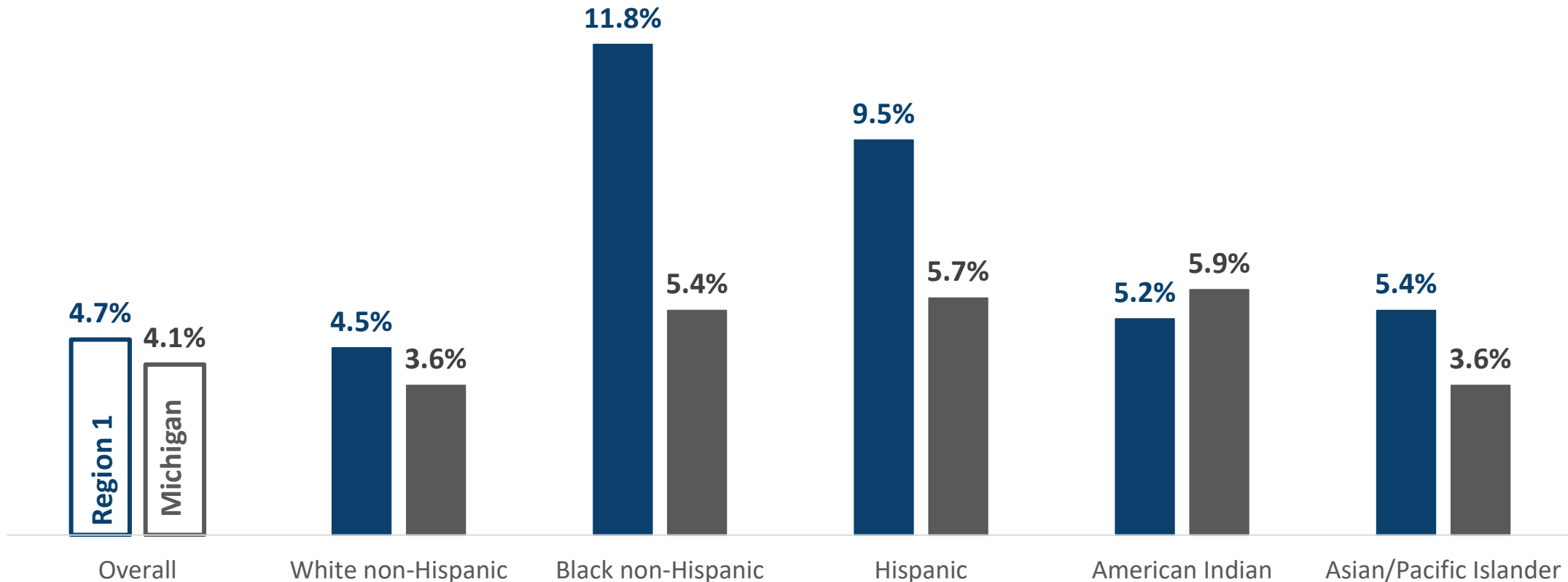
Significance test for all linear trends:  $p < 0.0001$



# Late Entry into Prenatal Care Prosperity Region 1 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



# Neonatal Abstinence Syndrome Prosperity Region 1 2010-2020



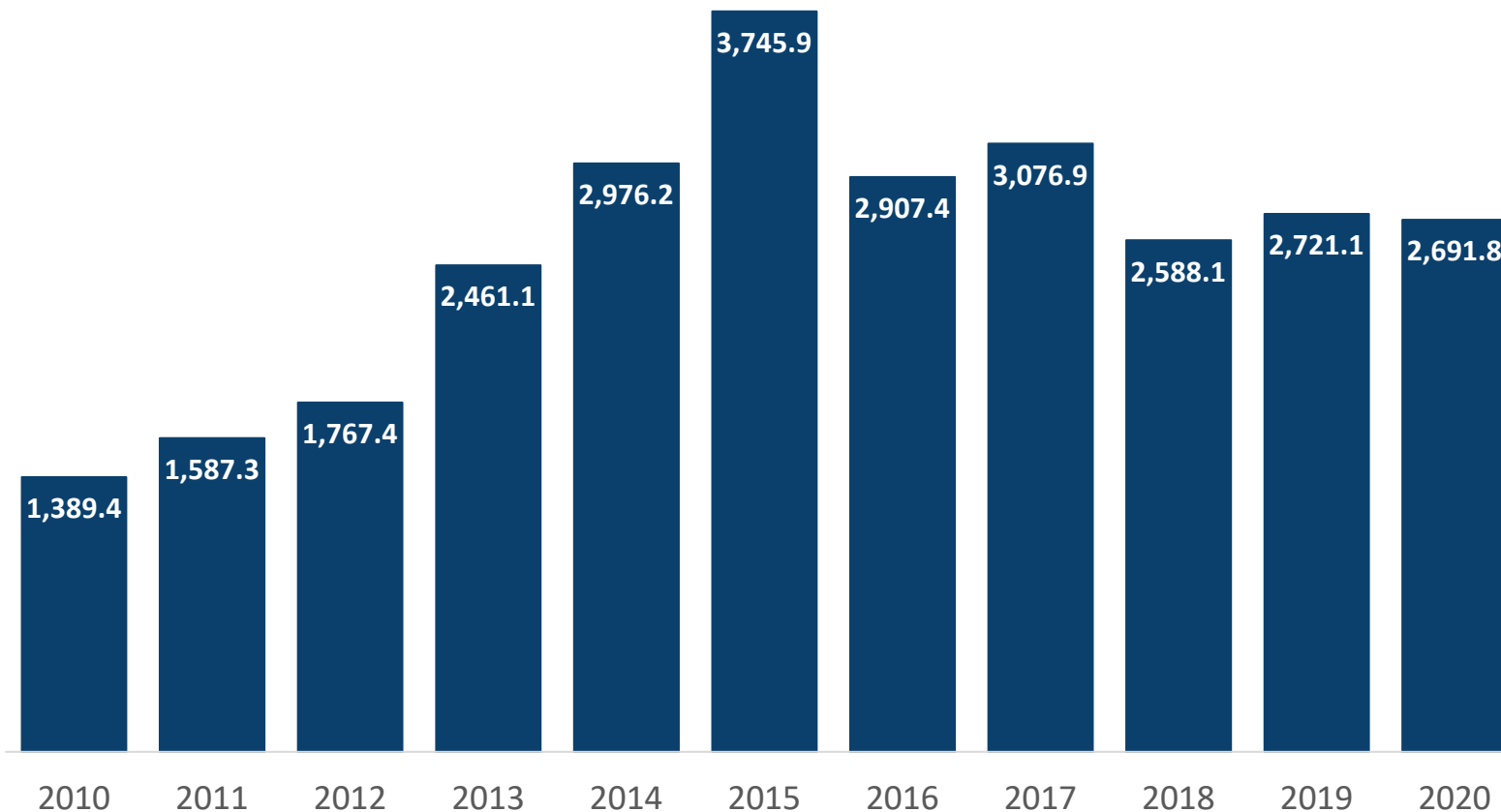
# About the Data

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 1, 2010-2019

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

Year	# Cases	# Births	Rate
2010	39	2,807	1,389.4
2011	45	2,835	1,587.3
2012	50	2,829	1,767.4
2013	68	2,763	2,461.1
2014	85	2,856	2,976.2
2015	102	2,723	3,745.9
2016	81	2,786	2,907.4
2017	82	2,665	3,076.9
2018	69	2,666	2,588.1
2019	68	2,499	2,721.1
2020	67	2,489	2,691.8

# NAS by Maternal Race/Ethnicity, Prosperity Region 1, 2016-2020

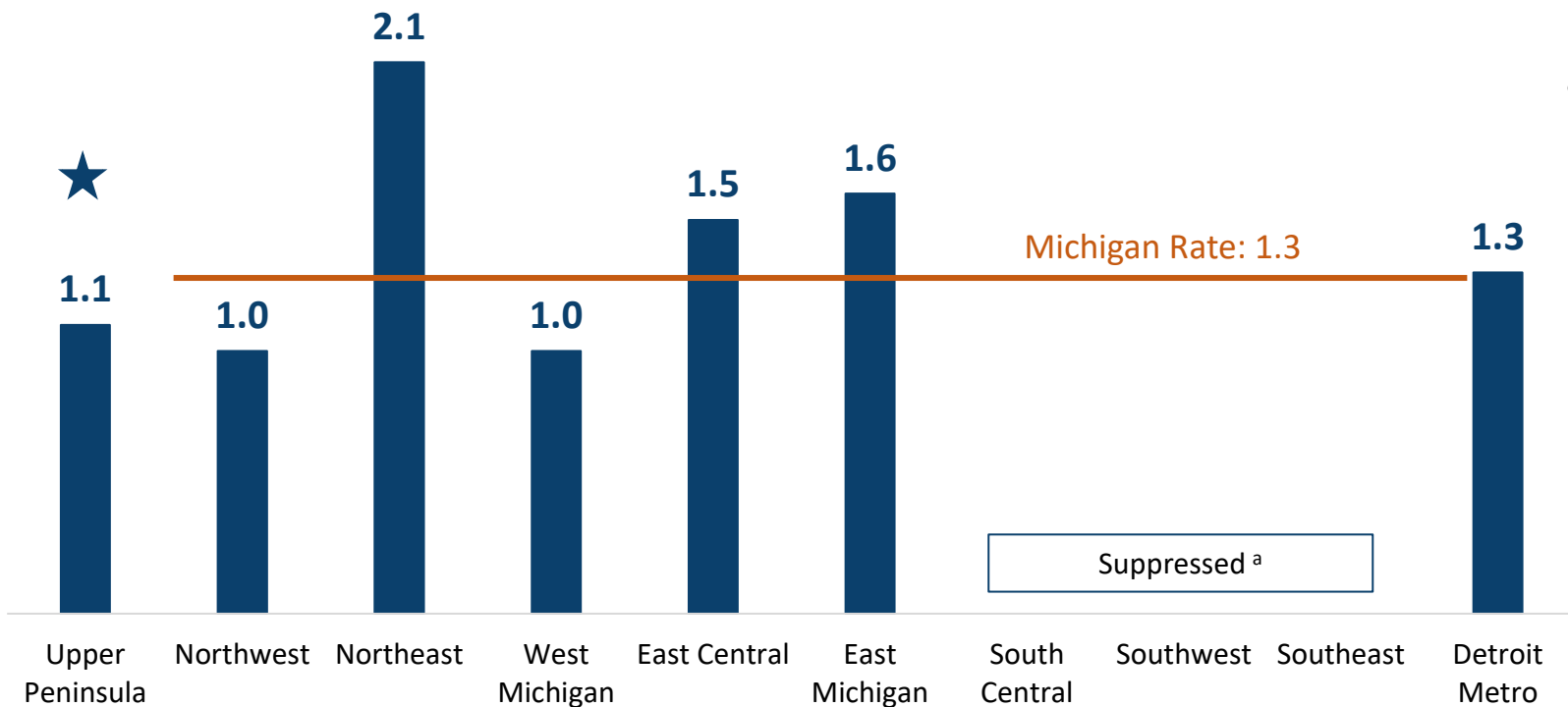
2010-2015: 779.5 (drug withdrawal syndrome in newborn) and  
2016-current: P96.1 (neonatal withdrawal symptoms from maternal use of drugs of addiction)

Maternal Race	# Cases	# Live Births	NAS Rate per 100,000 Live Births	MI
White non-Hispanic	273	11,187	2,440.3	851.5
Black non-Hispanic	0	68	0	376.6
Hispanic	DNS	263	DNS	519.5
American Indian	65	854	7,611.2	4,582.1
Asian/Pacific Islander	0	148	0	27.6

# Sleep-Related Infant Death Rate Prosperity Region 1 2010-2019

# Sleep-Related Infant Death Rate by Prosperity Region, 2010-2019

Sleep-Related Infant Death Rate per 1,000 Live Births  
2010-2019



- Between 2010 and 2019 there were **31** sleep-related infant deaths in Region One.
- The Region One sleep-related infant death rate of 1.1 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.

<sup>a</sup> 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](https://www.keepingkidsalive.org/wp-content/uploads/Sleep-Related-Infant-Deaths-in-Michigan_2010-to-2018.pdf)

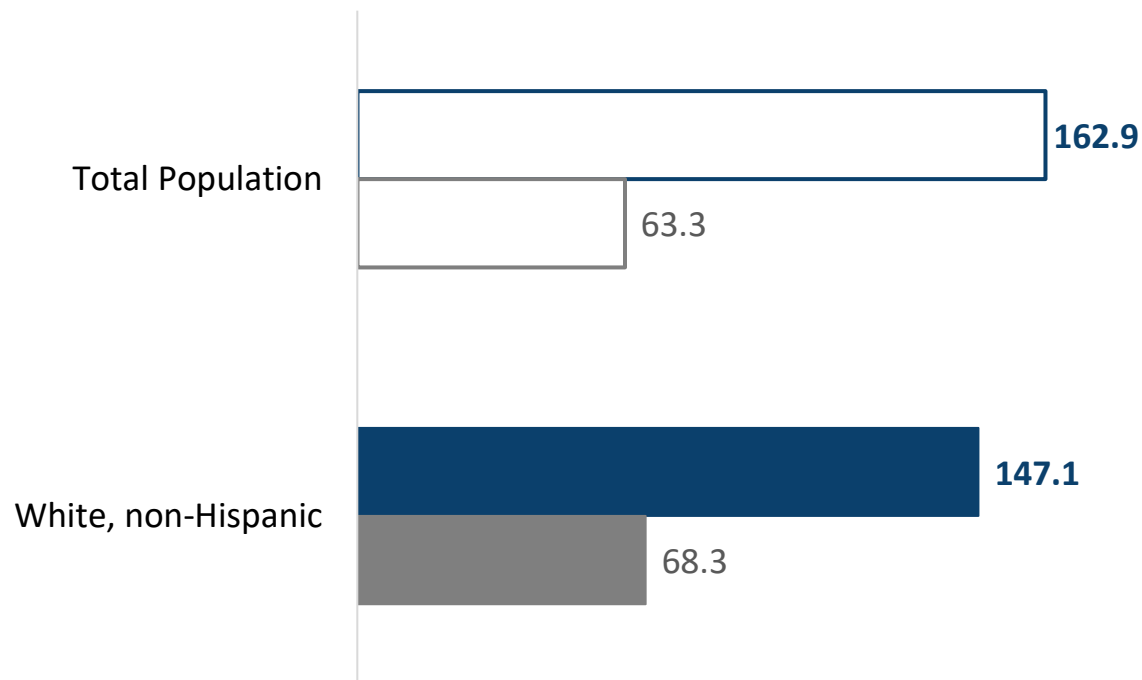
# Severe Maternal Morbidity Rate Prosperity Region 1 2020

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

## Region 1

Maternal Morbidity Rate per 10,000 Delivery Hospitalizations

■ SMM ■ SMM excluding Transfusions



Statistics for other race suppressed due to insufficient sample size.

## 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 Rate excluding transfusion per 10,000 inpatient delivery hospitalizations:

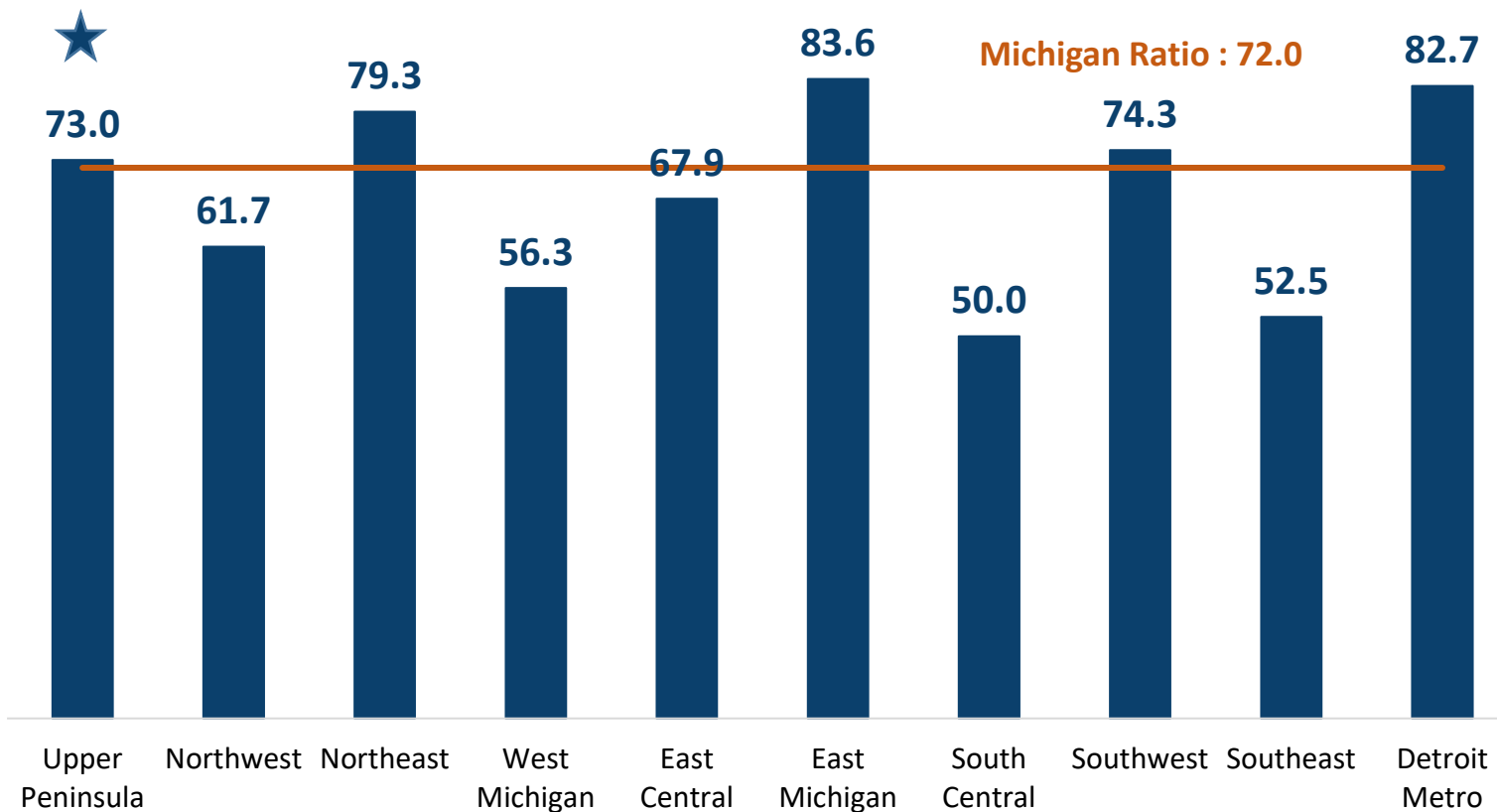
- Total Population: 89.2
- White, NH: 71.5
- Black, NH: 151.9
- Asian/ Pacific Islander, NH: 85.2
- American Indian/ Alaska Native: 143.2
- Hispanic: 86.3

# Maternal Mortality Ratio Prosperity Region 1 2014-2018



# Maternal Mortality Ratio by Prosperity Region, 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 One there were **10** maternal deaths between 2014 and 2018.