

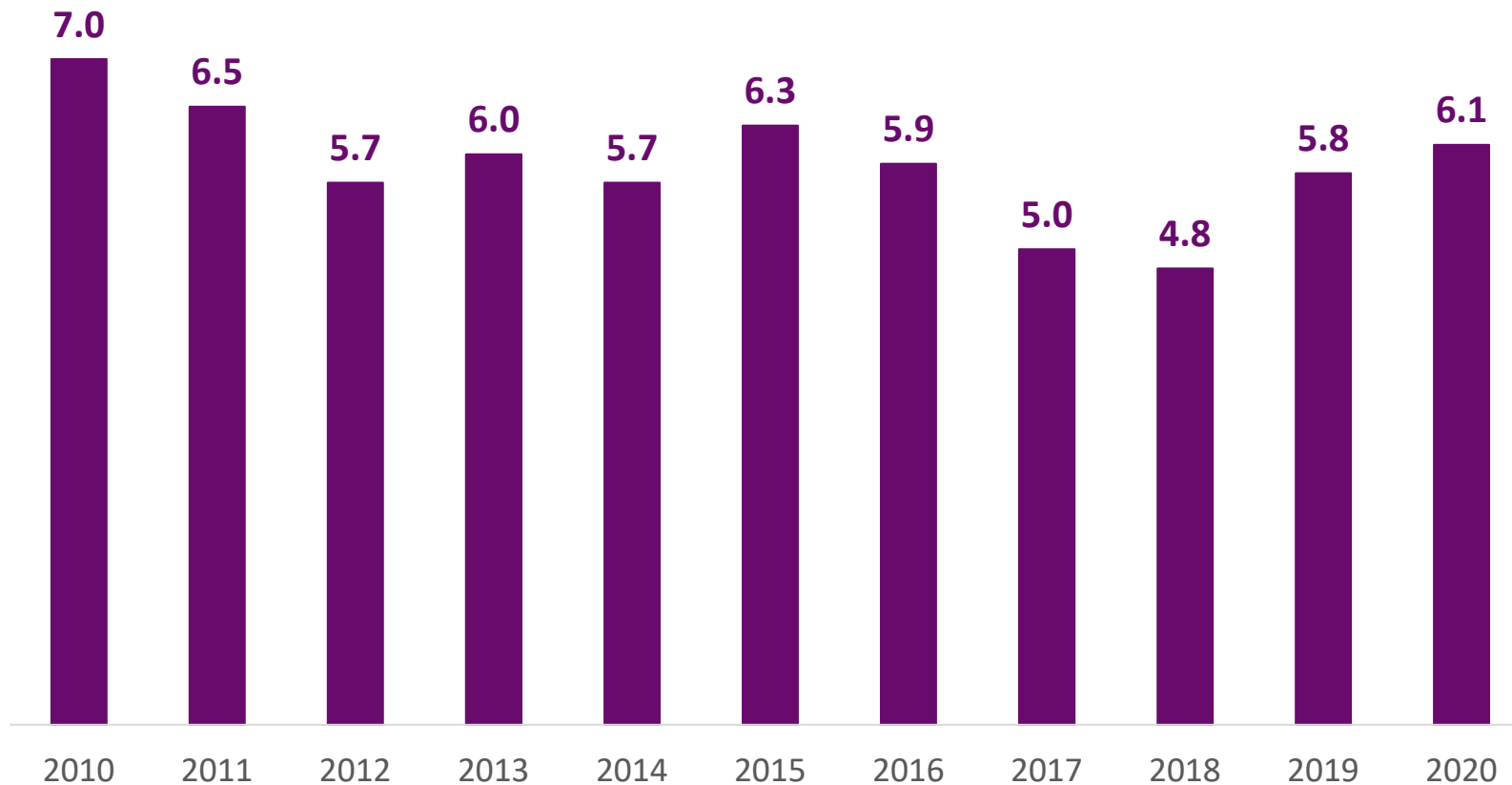
# Maternal and Infant Health Statistics Prosperity Region 4, Michigan

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 4 2010-2020

# Infant Mortality Rate, Prosperity Region 4, 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	138	19,665	7.0
2011	127	19,681	6.5
2012	112	19,811	5.7
2013	117	19,591	6.0
2014	113	19,802	5.7
2015	124	19,625	6.3
2016	116	19,709	5.9
2017	96	19,387	5.0
2018	93	19,218	4.8
2019	107	18,404	5.8
2020	110	18,104	6.1

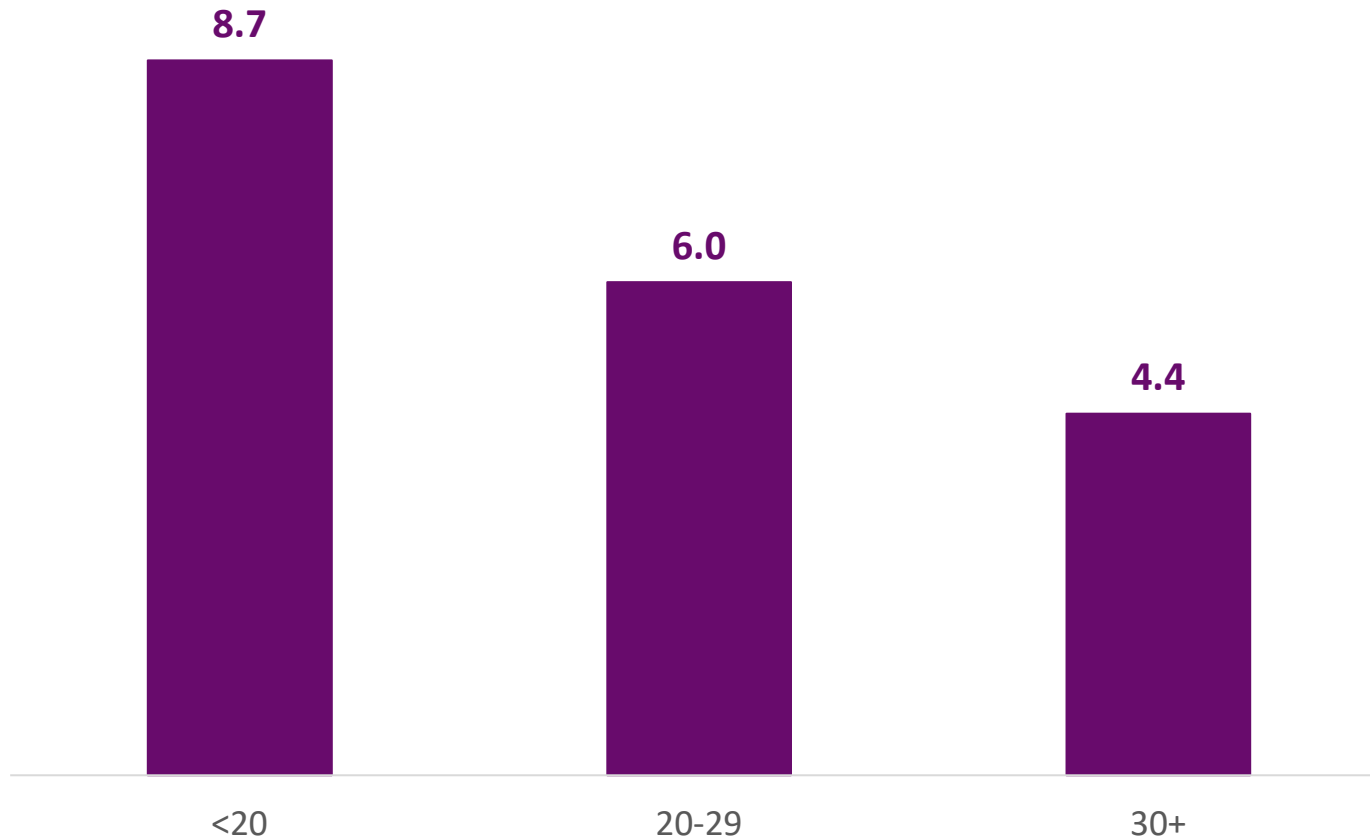
# Infant Mortality Rates by Maternal Race/Ethnicity, Prosperity Region 4, 2016-2020

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	319	69,924	4.6	4.9
Black Non-Hispanic	103	8,639	11.9	13.6
Hispanic	59	10,905	5.4	5.6
American Indian	DNS	181	DNS	5.0
Asian/Pacific Islander	14	2,205	6.3	4.1

# Infant Mortality Rates by Maternal Age, Prosperity Region 4, 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 4			MI
	# Infant Deaths	# Births	Rate	Rate
<20 years	40	4,597	8.7	10.1
20-29 years	302	50,022	6.0	7.1
30+ years	178	40,183	4.4	5.6

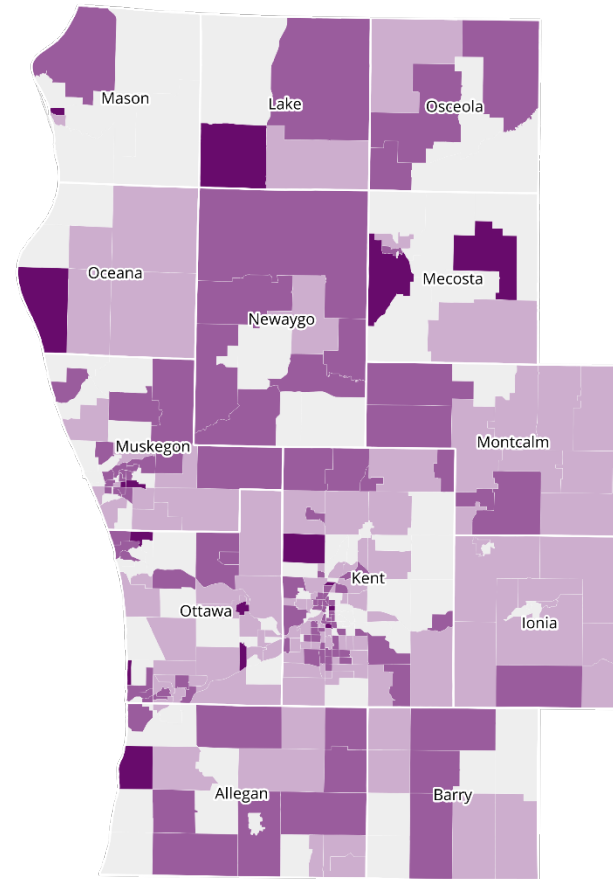
# Infant Mortality Rates by Intended Payment Source, Prosperity Region 4, 2016-2020

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	250	57,618	4.3	4.8
Medicaid	244	34,127	7.1	8.8

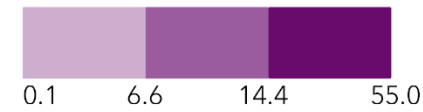
# Infant Mortality Rates by Census Tract, Prosperity Region 4, 2015-2019

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.



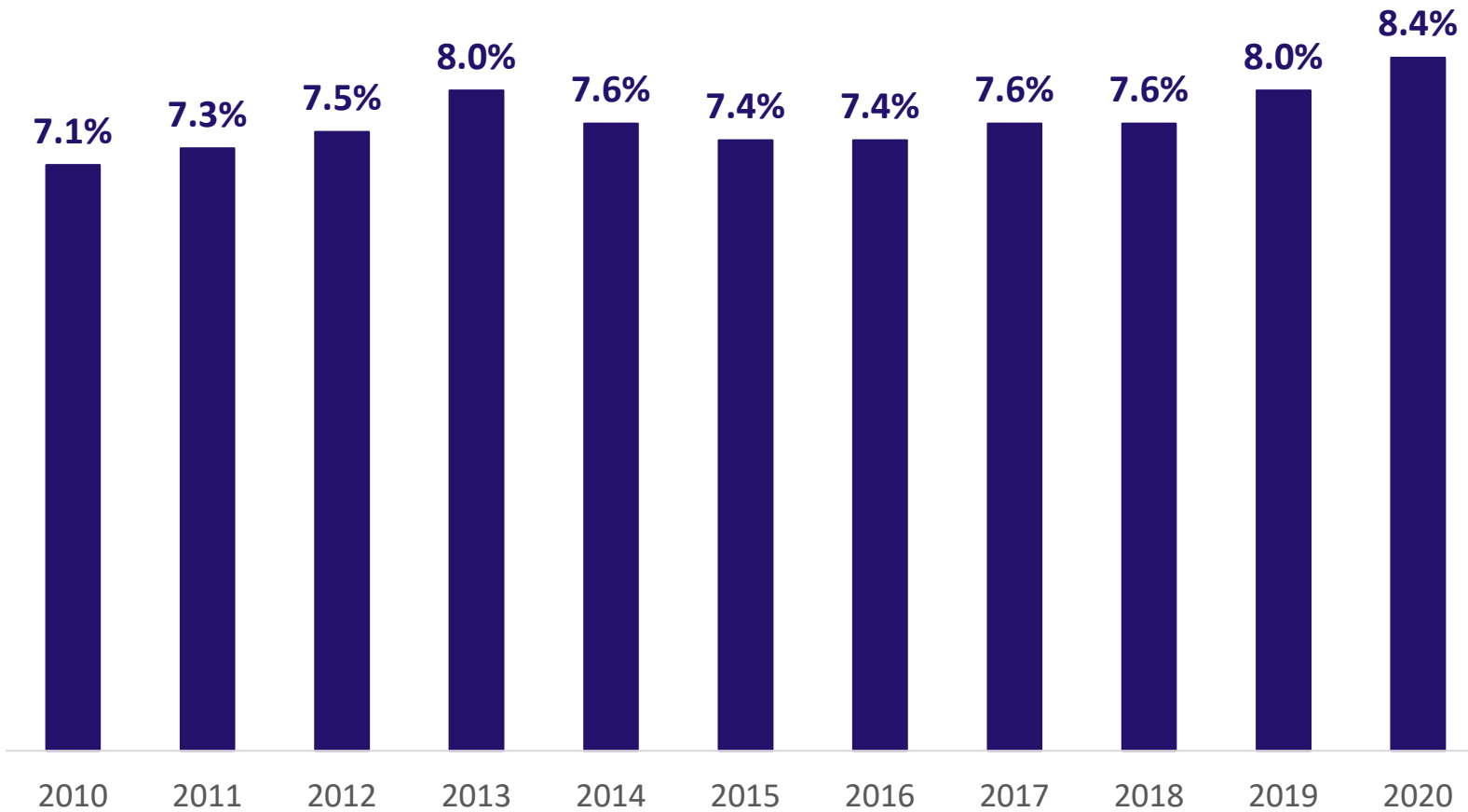
Grey box: No Live Births/Infant Deaths

# Low Birthweight (LBW) Prosperity Region 4 2010-2020



# Low Birthweight, Prosperity Region 4, 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	1,396	19,665	7.1
2011	1,436	19,681	7.3
2012	1,487	19,811	7.5
2013	1,564	19,591	8.0
2014	1,502	19,802	7.6
2015	1,456	19,625	7.4
2016	1,455	19,709	7.4
2017	1,478	19,387	7.6
2018	1,468	19,218	7.6
2019	1,477	18,404	8.0
2020	1,518	18,104	8.4

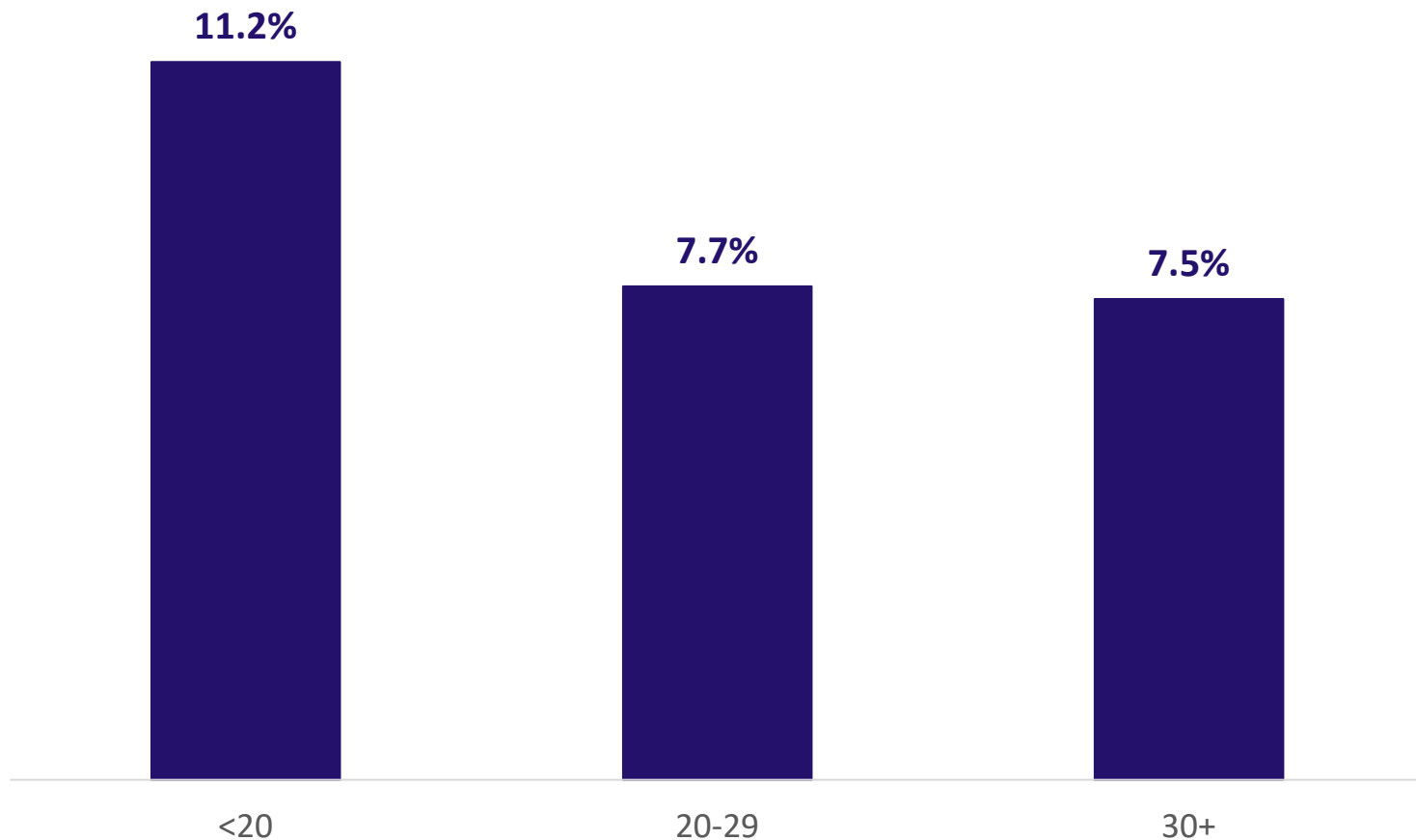
# Low Birthweight by Maternal Race/Ethnicity, Prosperity Region 4, 2016-2020

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	4,729	69,924	6.8%	7.1%
Black non-Hispanic	1,351	8,639	15.6%	14.9%
Hispanic	809	10,905	7.4%	7.5%
American Indian	19	181	10.5%	8.4%
Asian/Pacific Islander	205	2,205	9.3%	8.9%

# Low Birthweight by Maternal Age, Prosperity Region 4, 2016-2020

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



Maternal Age	REGION 4			MI
	# LBW	# Births	% LBW	% LBW
< 20 years	516	4,597	11.2	11.0
20-29 years	3,850	50,022	7.7	8.6
≥30 years	3,028	40,183	7.5	8.6

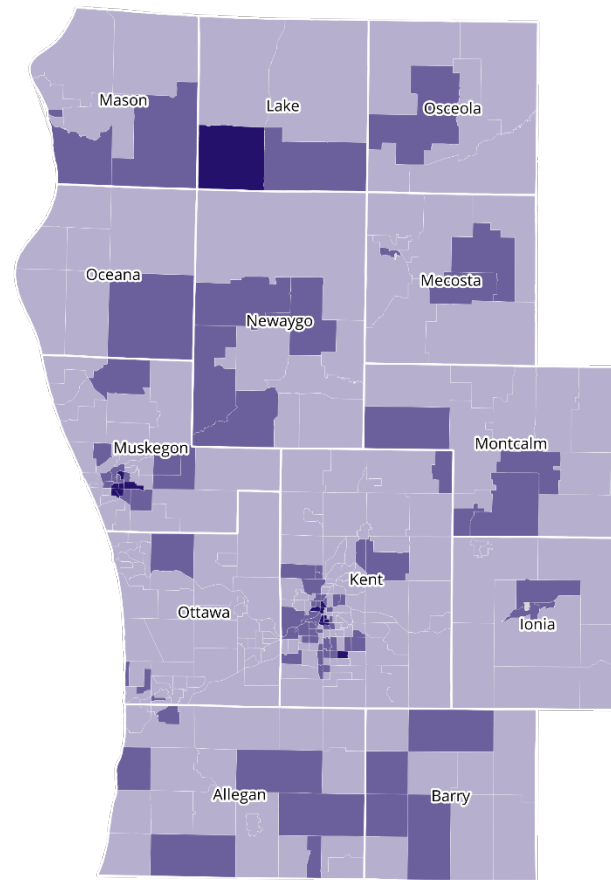
# Low Birthweight by Intended Payment Source, Prosperity Region 4, 2016-2020

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	3,831	57,618	6.6%	7.3%
Medicaid	3,390	34,127	9.9%	10.7%

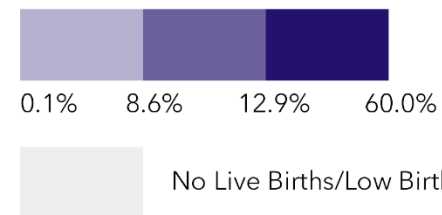
# Low Birthweight by Census Tract, Prosperity Region 4, 2015-2019

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



## Percent Low Birthweight

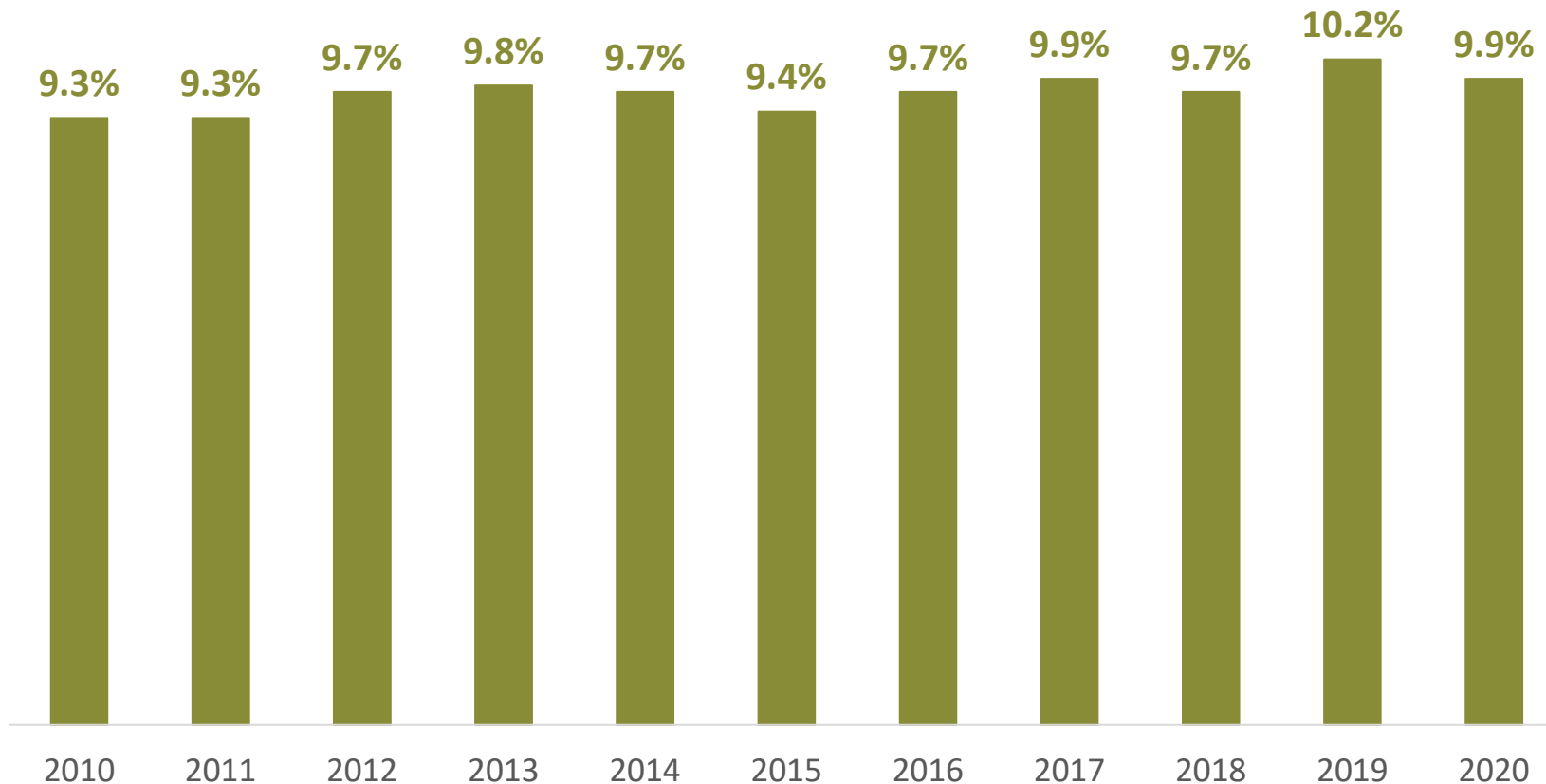
Low birthweight rate is defined as number of births with baby birthweight less than 5.5lbs (<2,500 grams) per 100 live births.



# Preterm Birth Prosperity Region 4 2010-2020

# Preterm Birth, Prosperity Region 4, 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	1,825	19,665	9.3
2011	1,832	19,681	9.3
2012	1,920	19,811	9.7
2013	1,911	19,591	9.8
2014	1,915	19,802	9.7
2015	1,841	19,625	9.4
2016	1,920	19,709	9.7
2017	1,923	19,387	9.9
2018	1,870	19,218	9.7
2019	1,886	18,404	10.2
2020	1,791	18,104	9.9

# Preterm Birth by Maternal Race/Ethnicity, Prosperity Region 4, 2016-2020

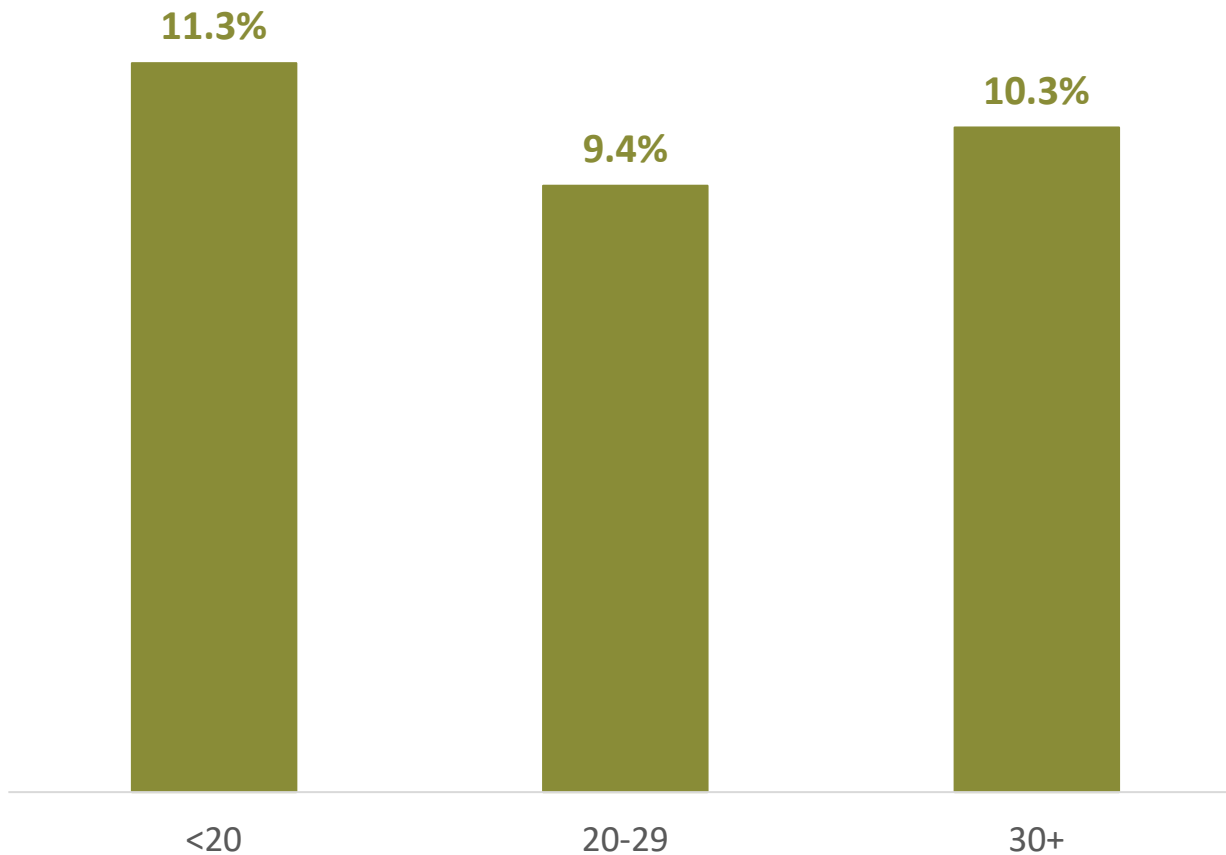
Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births. Gestational age is based on the obstetric estimate of gestation.

Maternal Race	# Preterm	# Live Births		Percent (%) Preterm	MI
White non-Hispanic	6,374	69,924	9.1%	 9.1%	9.0%
Black non-Hispanic	1,313	8,639	15.2%	 15.2%	14.8%
Hispanic	1,100	10,905	10.1%	 10.1%	9.6%
American Indian	36	181	19.9%	 19.9%	9.8%
Asian/Pacific Islander	221	2,205	10.0%	 10.0%	8.2%



# Preterm Birth by Maternal Age, Prosperity Region 4, 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 4		MI
	# Preterm	# Births	% Preterm
< 20 years	520	4,597	11.3
20-29 years	4,721	50,022	9.4
≥30 years	4,146	40,183	10.3

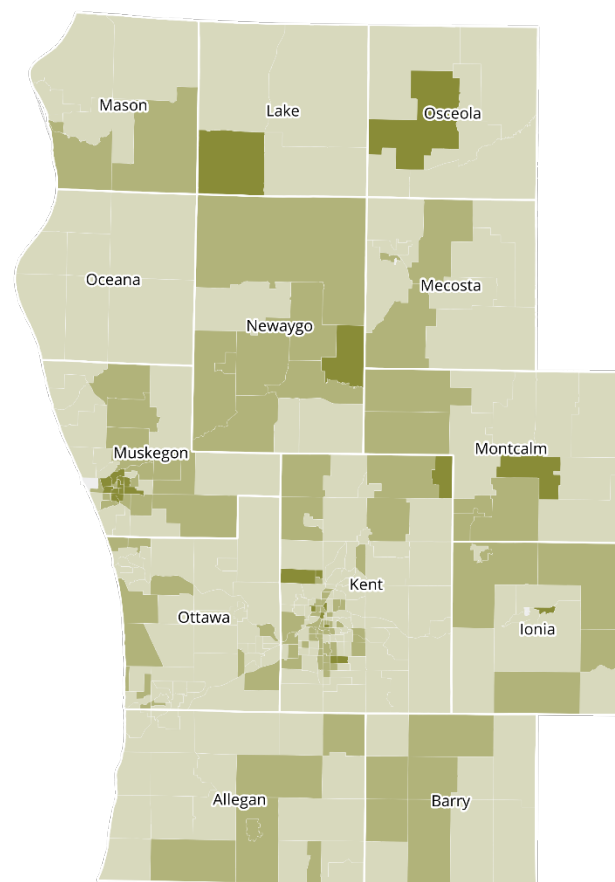
# Preterm Birth by Intended Payment Source, Prosperity Region 4, 2016-2020

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	5,267	57,618	9.1%	9.3%
Medicaid	3,926	34,127	11.5%	11.5%

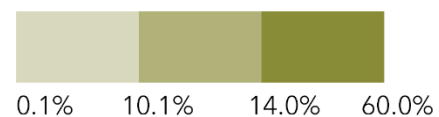
# Preterm Birth by Census Tract, Prosperity Region 4, 2015-2019

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.



## Percent Preterm

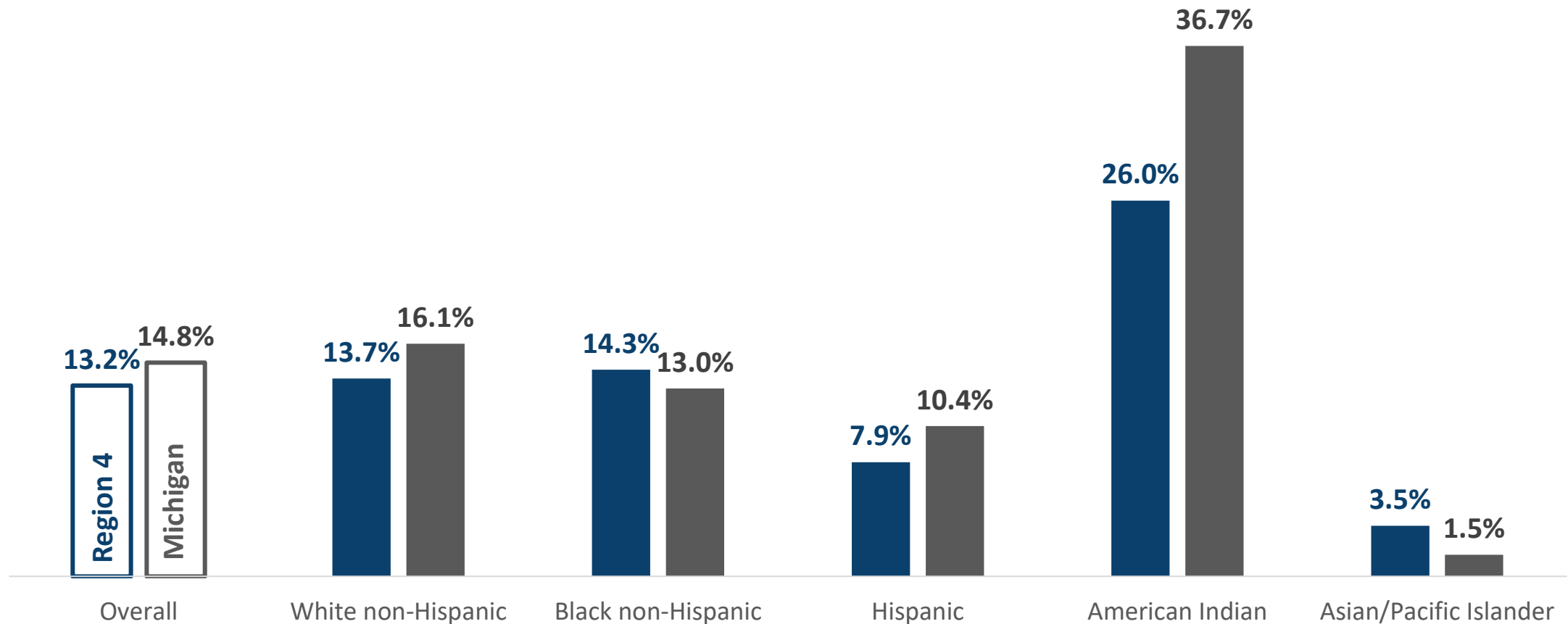
Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births. Gestational age is based on the obstetric estimate of gestation.



Grey box: No Live Births/Preterm Births

# Smoking During Pregnancy Prosperity Region 4 2016-2020

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

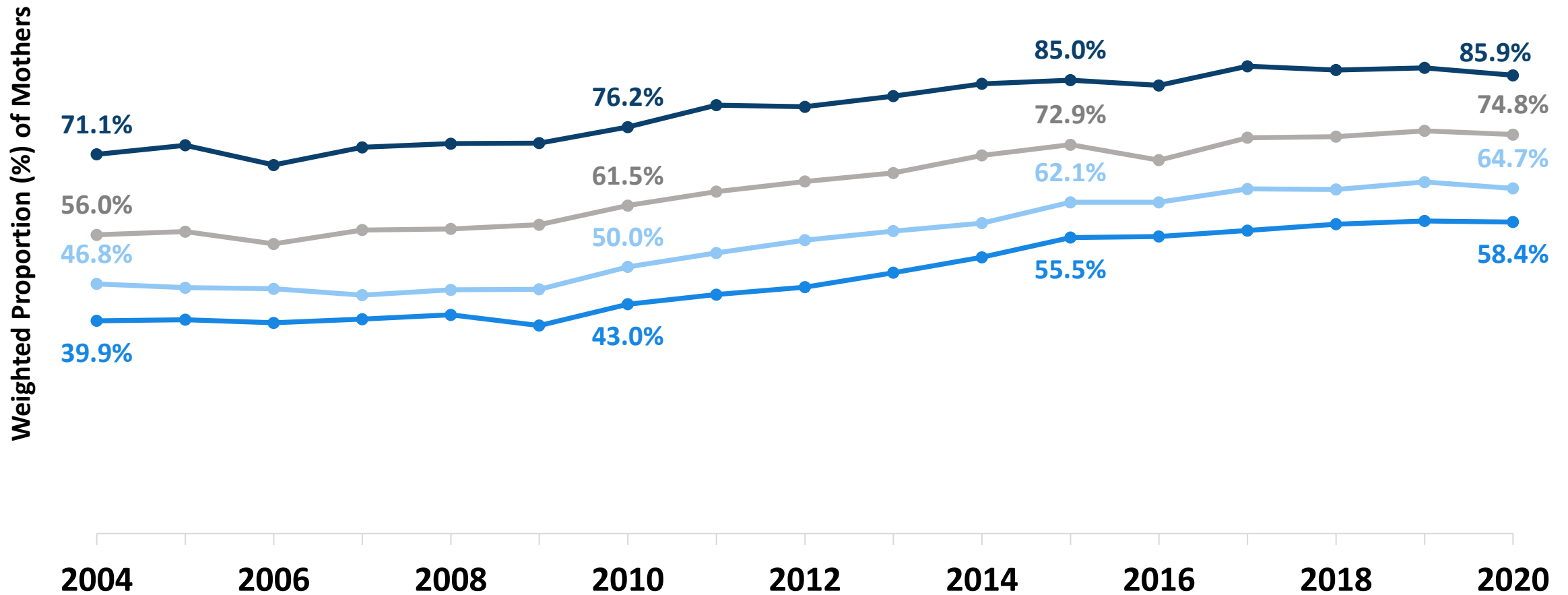


# Breastfeeding Initiation and Duration Michigan, 2004-2020

# Breastfeeding Initiation + Duration, Michigan 2004-2020

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

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

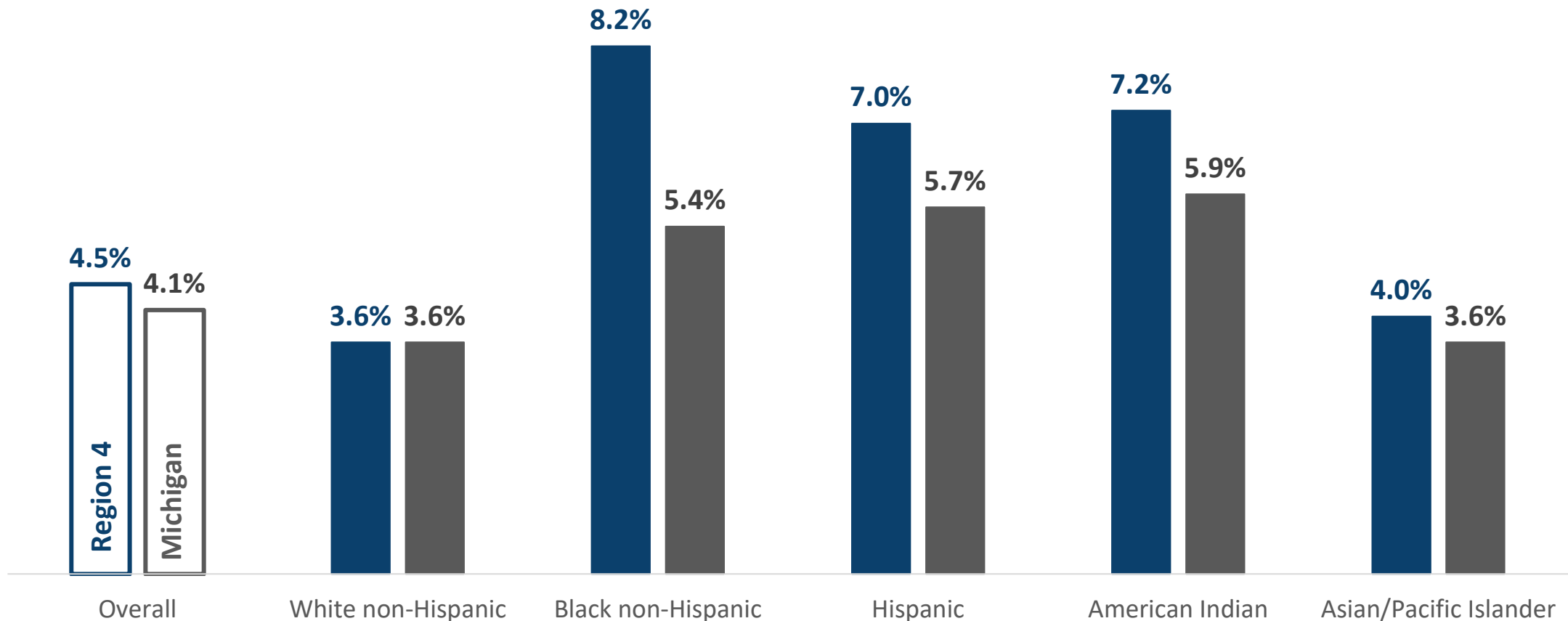


# Late Entry into Prenatal Care Prosperity Region 4 2016-2020



# 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 4 2010-2020

# About the Data

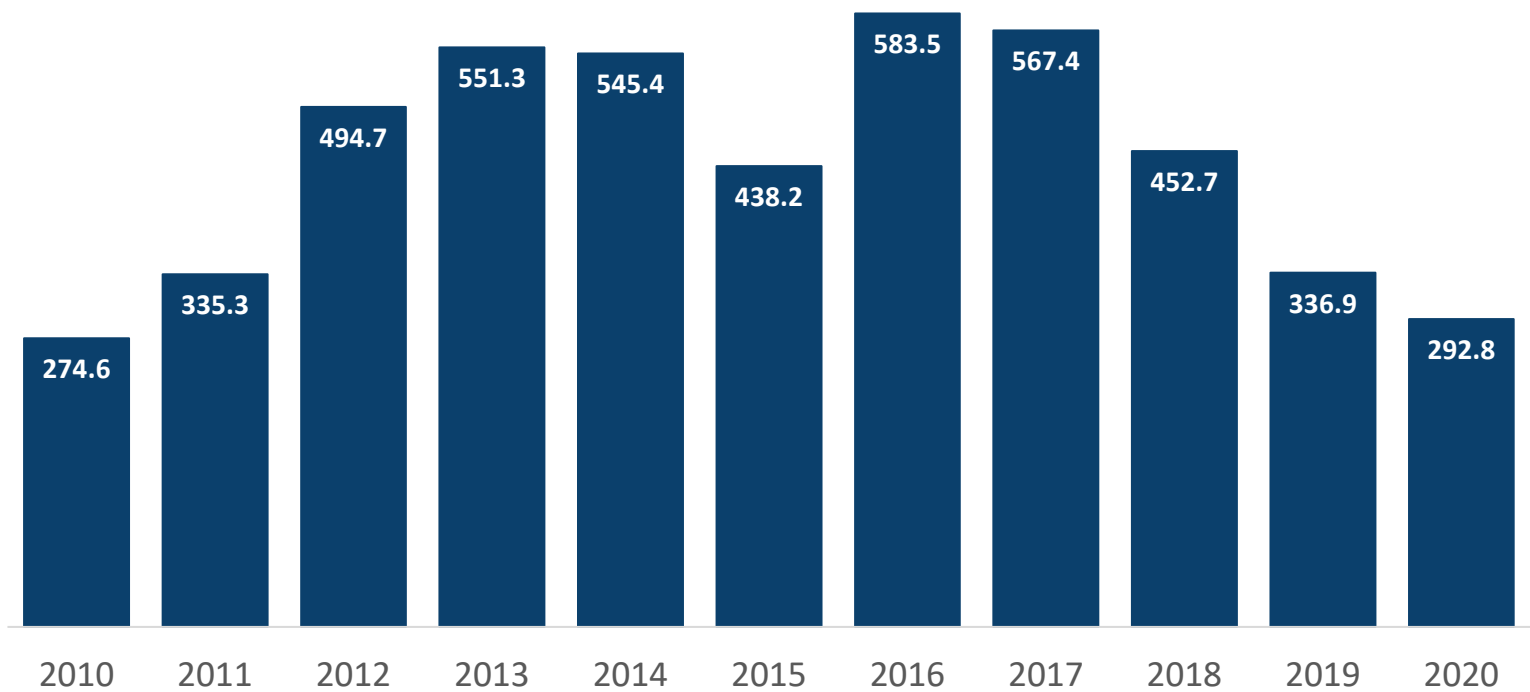
1. NAS cases are identified by diagnosis code (ICD-9 779.5 or ICD-10 P96.1) from the Michigan Inpatient Database. The transition from ICD-9 to ICD-10 started in Fall 2015. This may contribute to some fluctuation in the data.
2. NAS cases may be underreported with the increasing popularity of non-pharmacological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

# Neonatal Abstinence Syndrome, Prosperity Region 4, 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



Year	# Cases	# Births	Rate
2010	54	19,665	274.6
2011	66	19,681	335.3
2012	98	19,811	494.7
2013	108	19,591	551.3
2014	108	19,802	545.4
2015	86	19,625	438.2
2016	115	19,709	583.5
2017	110	19,387	567.4
2018	87	19,218	452.7
2019	62	18,404	336.9
2020	53	18,104	292.8

# NAS by Maternal Race/Ethnicity, Prosperity Region 4, 2016-2020

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)

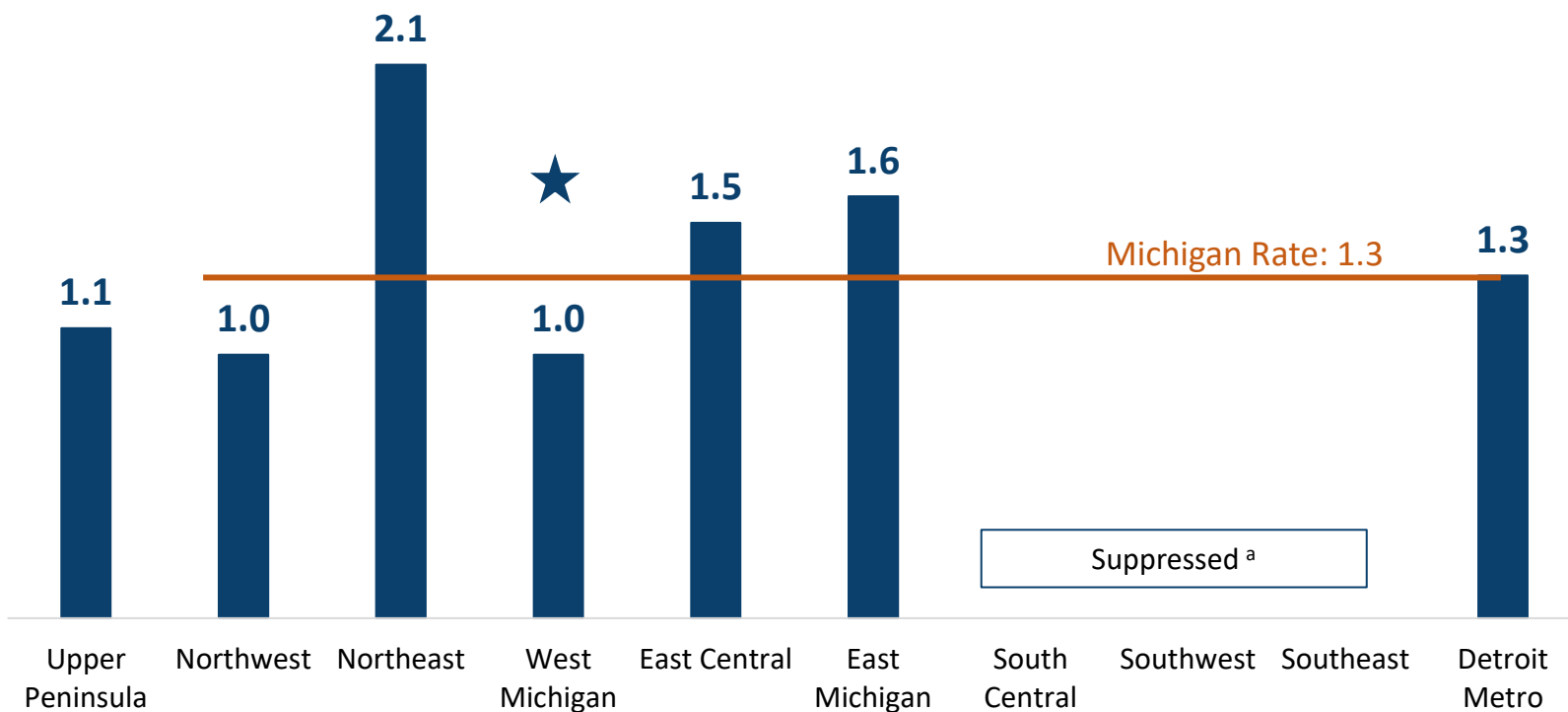
Maternal Race	# Cases	# Live Births	NAS Rate per 100,000 Live Births	MI
White non-Hispanic	318	69,924	454.8	851.5
Black non-Hispanic	29	8,639	335.7	376.6
Hispanic	31	10,905	284.3	519.5
American Indian	DNS	181	DNS	4,582.1
Asian/Pacific Islander	DNS	2,205	DNS	27.6

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

# Sleep-Related Infant Death Rate Prosperity Region 4 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 **196** sleep-related infant deaths in Region Four.
- The Region Four sleep-related infant death rate of 1.0 per 1,000 live births was **significantly lower** than the Michigan sleep-related death rate (Michigan rate: 1.3 per 1,000 live births).

<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)

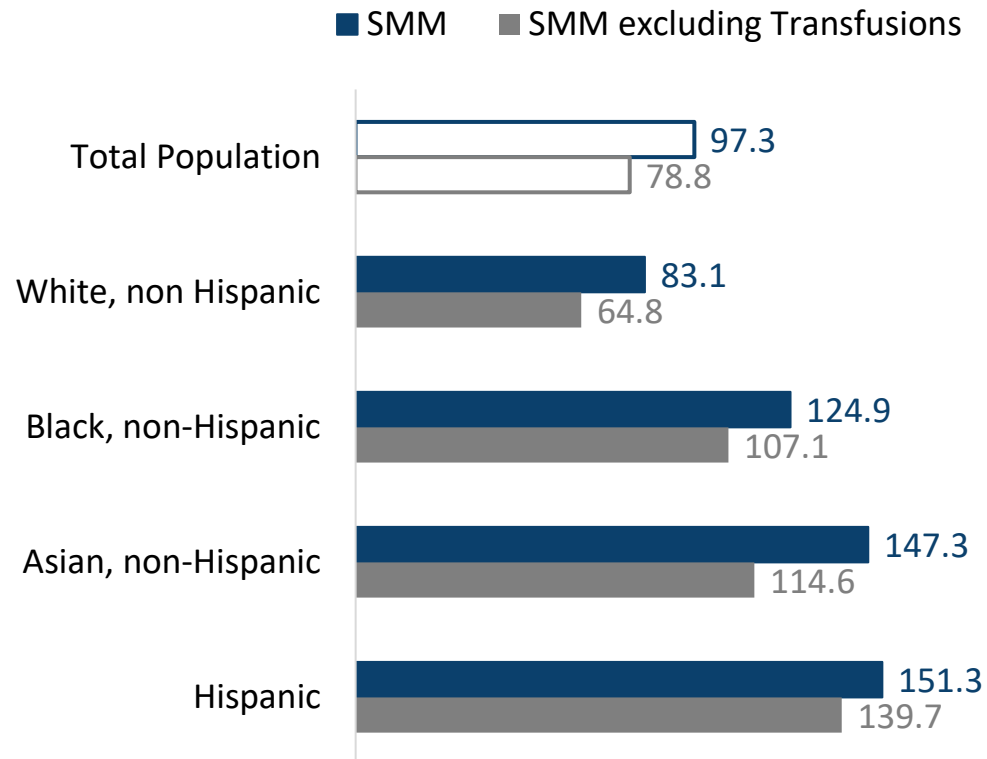
# Severe Maternal Morbidity Rate Prosperity Region 4, 2020



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

## Region 4

Maternal Morbidity Rate per 10,000 Delivery Hospitalizations



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

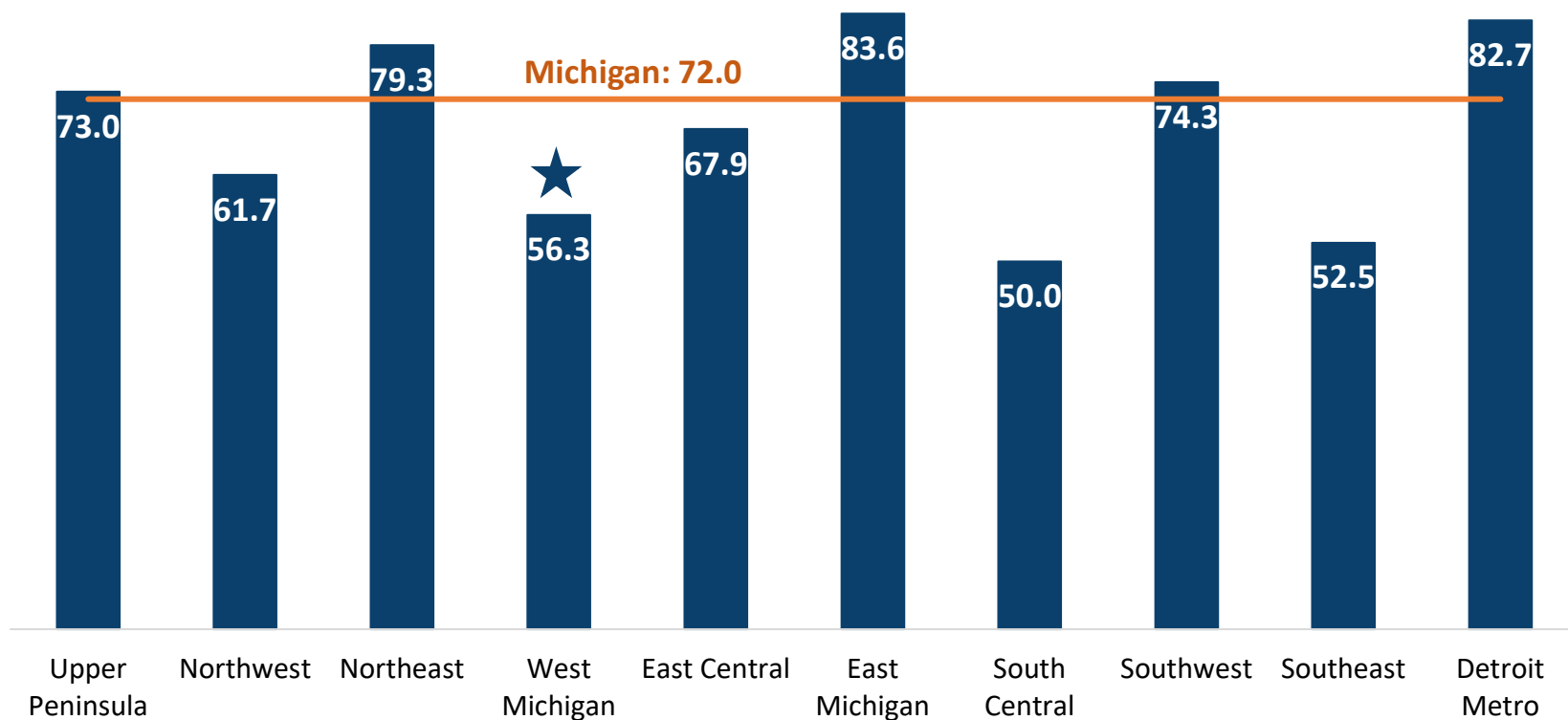
SMM Rate excluding transfusion per 10,000 inpatient delivery hospitalizations:

- 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 4 2014-2018

# Maternal Mortality Ratio by Prosperity Region, 2014-2018

Total (Pregnancy Associated) Maternal Mortality Ratio by Prosperity Region,  
2014-2018

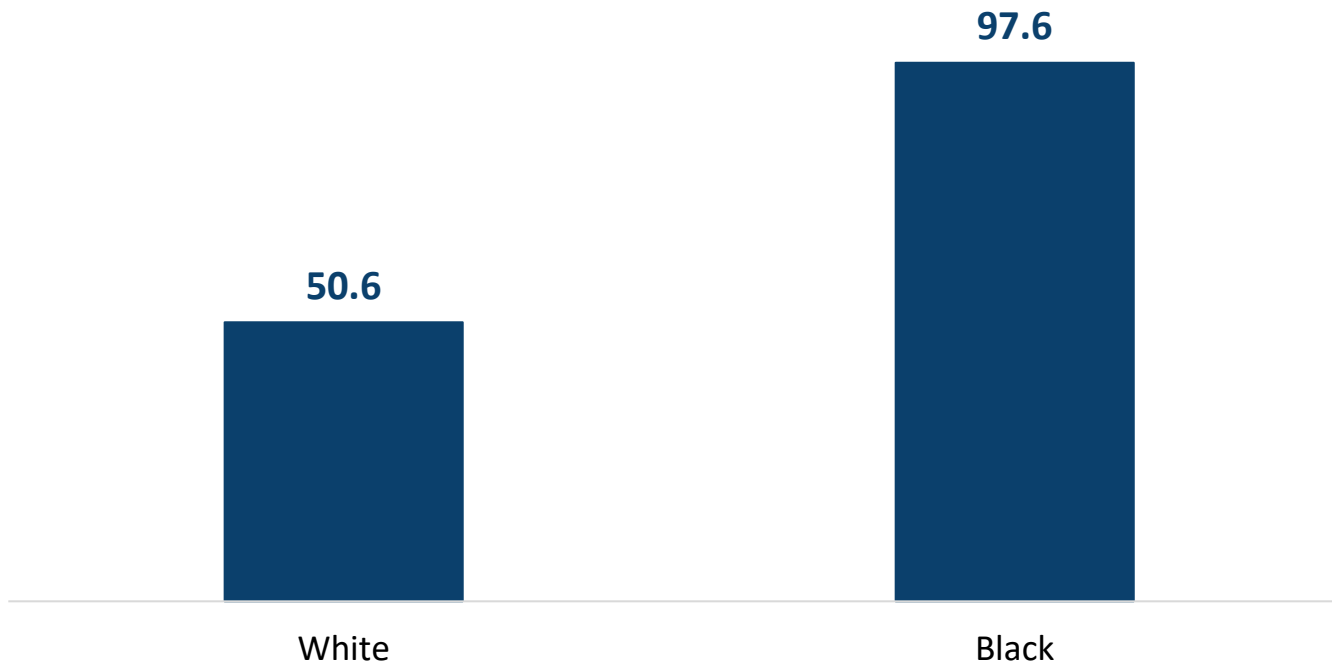


- Maternal deaths include deaths that occur during pregnancy, at delivery or within one year of pregnancy.
- Pregnancy associated (total) maternal mortality includes both pregnancy associated, not related mortality (unrelated to the pregnancy), pregnancy-related mortality (related to or aggravated by the pregnancy), and deaths where pregnancy-relatedness is unable to be determined.
- In Region Four there were **55** maternal deaths between 2014 and 2018.

# Maternal Mortality Ratio by Race, Prosperity Region 4, 2014-2018

Other race and ethnicities suppressed due to sample size.

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



Between 2014 and 2018, Black mothers in Prosperity Region Four experienced **1.9** times higher maternal mortality as compared to white mothers.

There were **42** white maternal deaths and **9** Black maternal deaths in Prosperity Region Four between 2014 and 2018.