



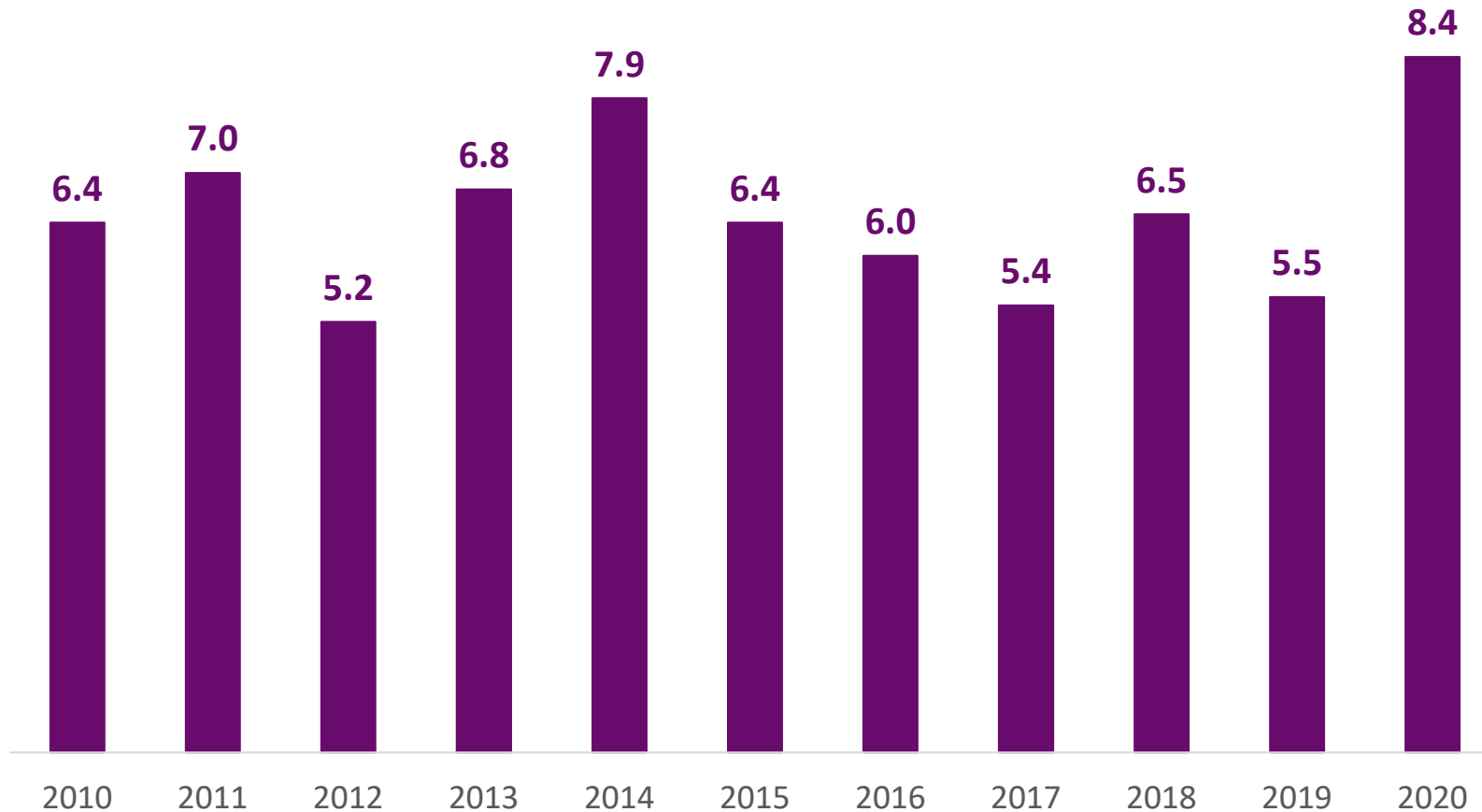
# Maternal and Infant Health Statistics Prosperity Region 5, Michigan

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 5 2010-2020

# Infant Mortality Rate, Prosperity Region 5, 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	39	6,117	6.4
2011	43	6,139	7.0
2012	31	5,915	5.2
2013	40	5,883	6.8
2014	48	6,050	7.9
2015	38	5,952	6.4
2016	35	5,829	6.0
2017	32	5,885	5.4
2018	37	5,720	6.5
2019	31	5,653	5.5
2020	45	5,333	8.4

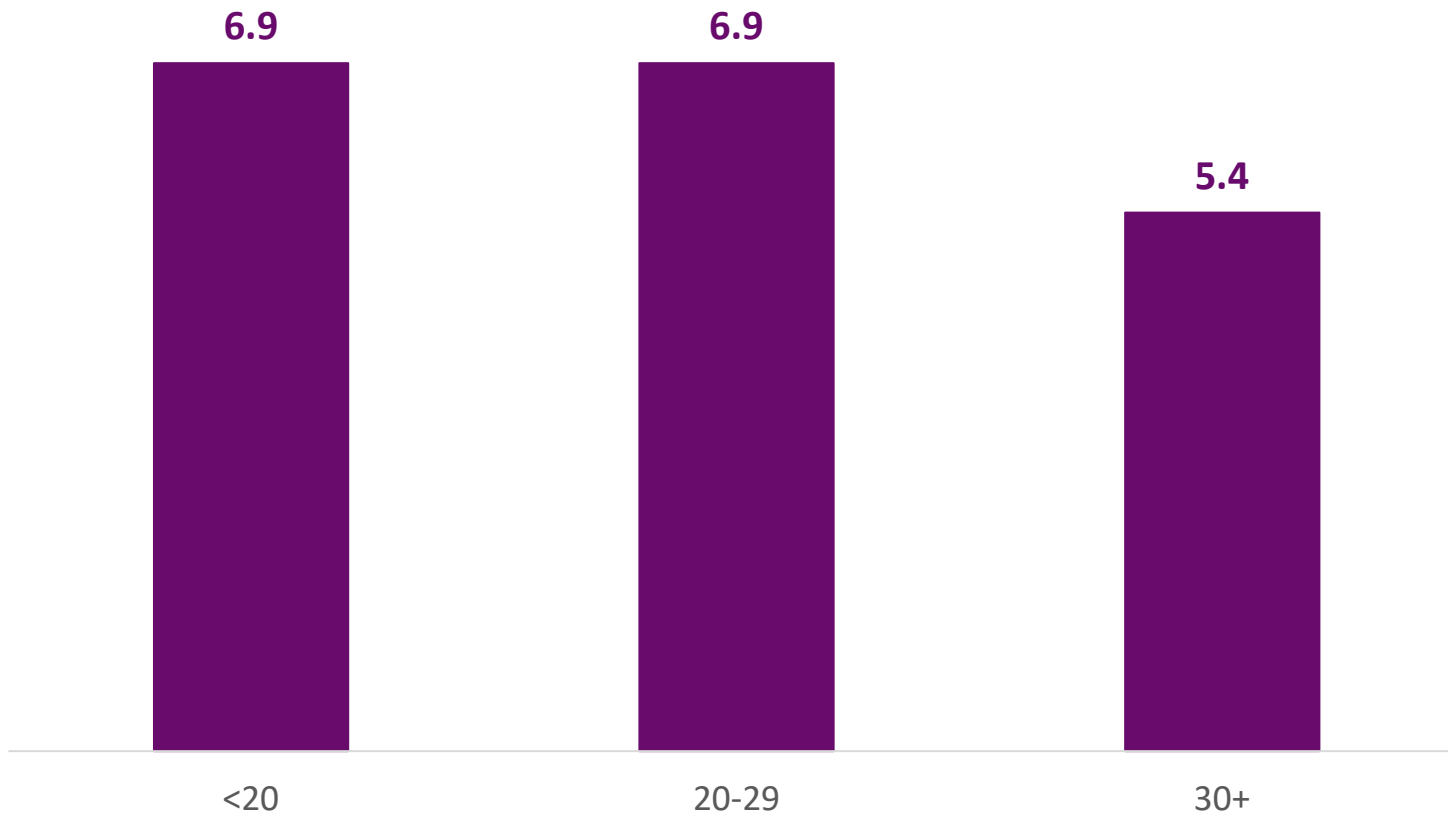
# Infant Mortality Rates by Maternal Race/Ethnicity, Prosperity Region 5, 2016-2020

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	106	21,398	5.0	 5.0	4.9
Black Non-Hispanic	48	3,229	14.9	 14.9	13.6
Hispanic	18	2,104	8.6	 8.6	5.6
American Indian	DNS	187	DNS	Data Not Sufficient (DNS): 0<N<6	5.0
Asian/Pacific Islander	0	428	0		4.1

# Infant Mortality Rates by Maternal Age, Prosperity Region 5, 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 5			MI
	# Infant Deaths	# Births	Rate	Rate
<20 years	11	1,586	6.9	10.1
20-29 years	112	16,333	6.9	7.1
30+ years	57	10,491	5.4	5.6

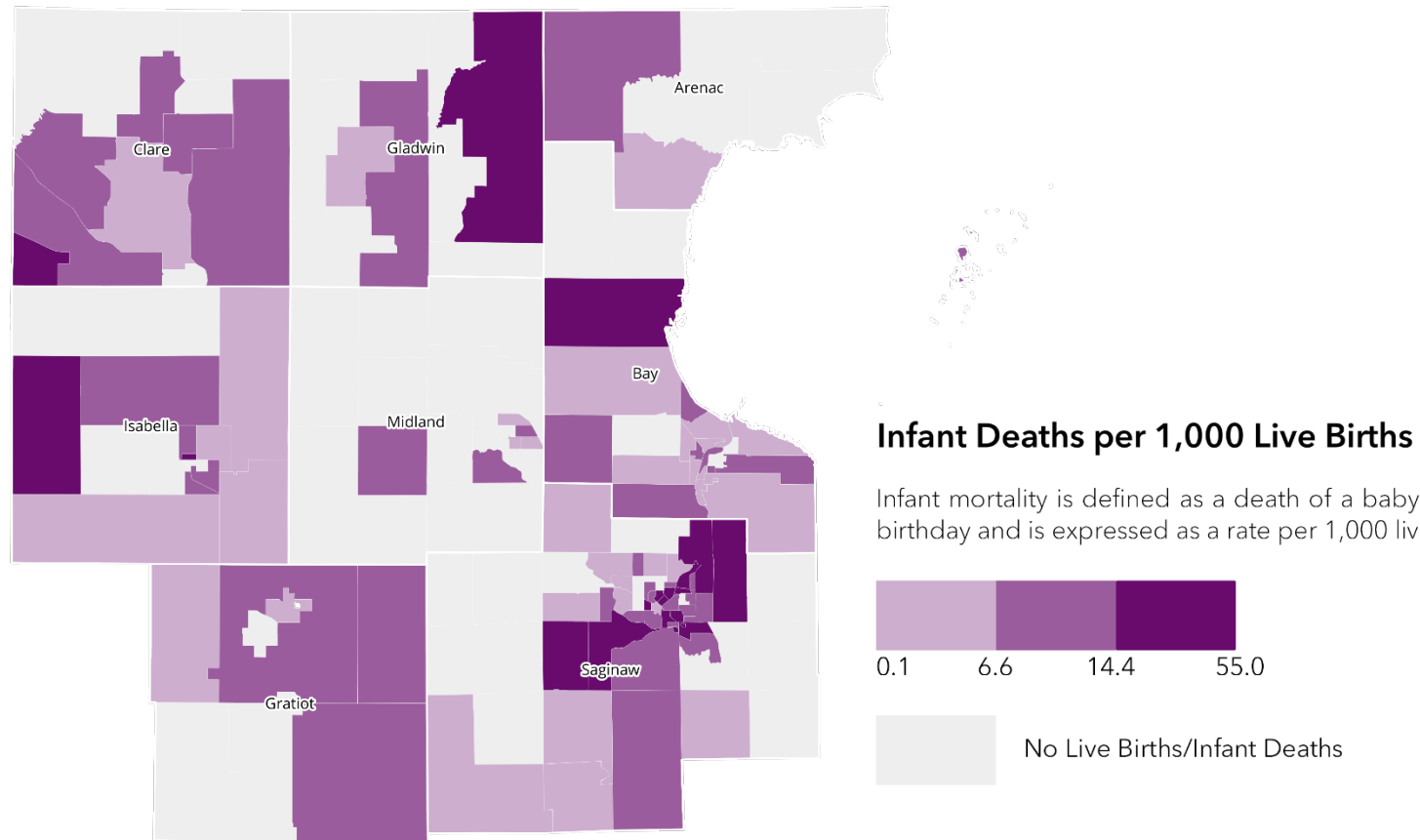
# Infant Mortality Rates by Intended Payment Source, Prosperity Region 5, 2016-2020

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	46	14,007	3.3	4.8
Medicaid	124	13,657	9.1	8.8

# Infant Mortality Rates by Census Tract, Prosperity Region 5, 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.

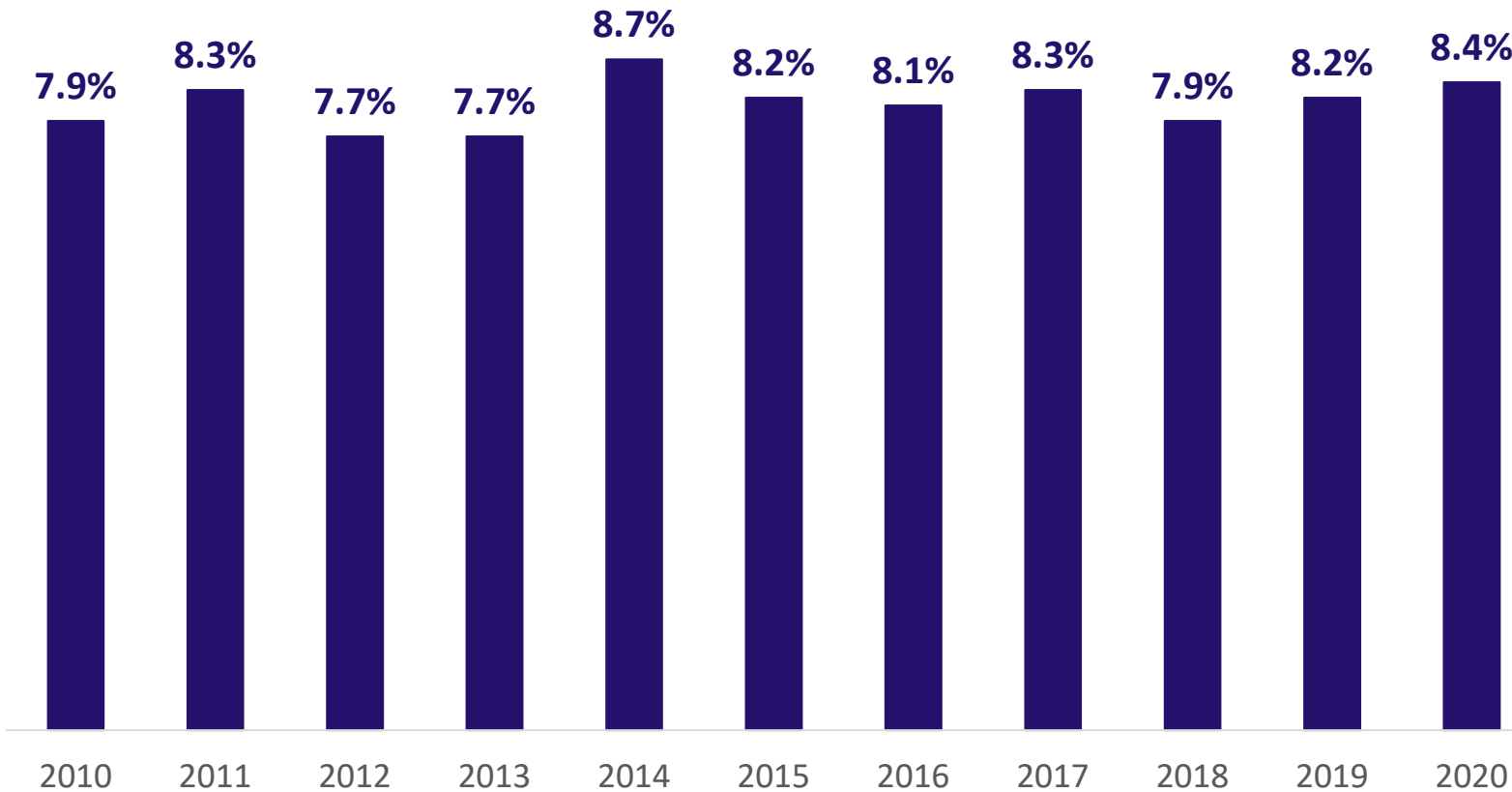


# Low Birthweight (LBW) Prosperity Region 5 2010-2020



# Low Birthweight, Prosperity Region 5, 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	483	6,117	7.9
2011	512	6,139	8.3
2012	457	5,915	7.7
2013	451	5,883	7.7
2014	526	6,050	8.7
2015	489	5,952	8.2
2016	472	5,829	8.1
2017	488	5,885	8.3
2018	451	5,720	7.9
2019	461	5,653	8.2
2020	448	5,333	8.4

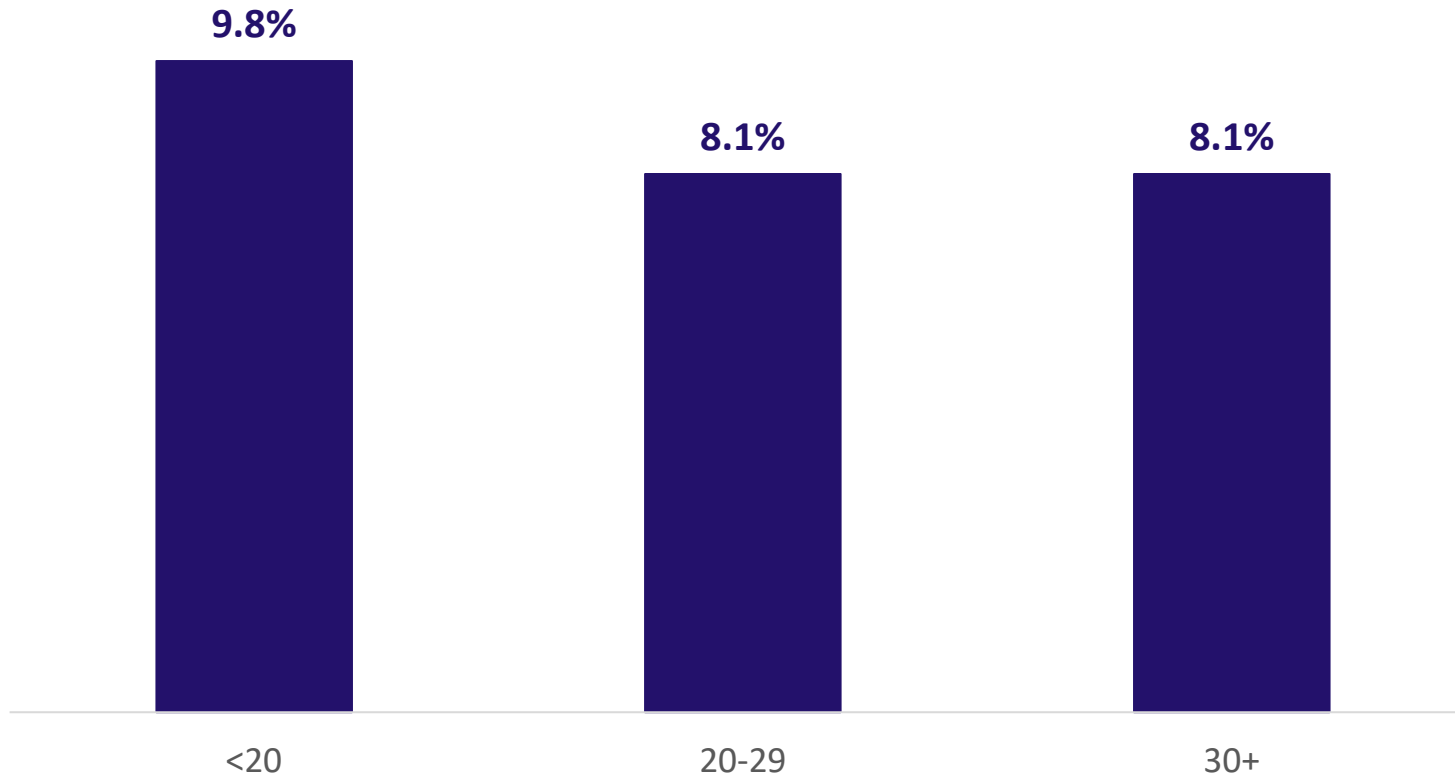
# Low Birthweight by Maternal Race/Ethnicity, Prosperity Region 5, 2016-2020

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	1,500	21,398	7.0%	7.1%
Black non-Hispanic	463	3,229	14.3%	14.9%
Hispanic	176	2,104	8.4%	7.5%
American Indian	31	187	16.6%	8.4%
Asian/Pacific Islander	37	428	8.6%	8.9%

# Low Birthweight by Maternal Age, Prosperity Region 5, 2016-2020

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



Maternal Age	REGION 5			MI
	# LBW	# Births	% LBW	% LBW
< 20 years	156	1,586	9.8	11.0
20-29 years	1,318	16,333	8.1	8.6
≥30 years	845	10,491	8.1	8.6

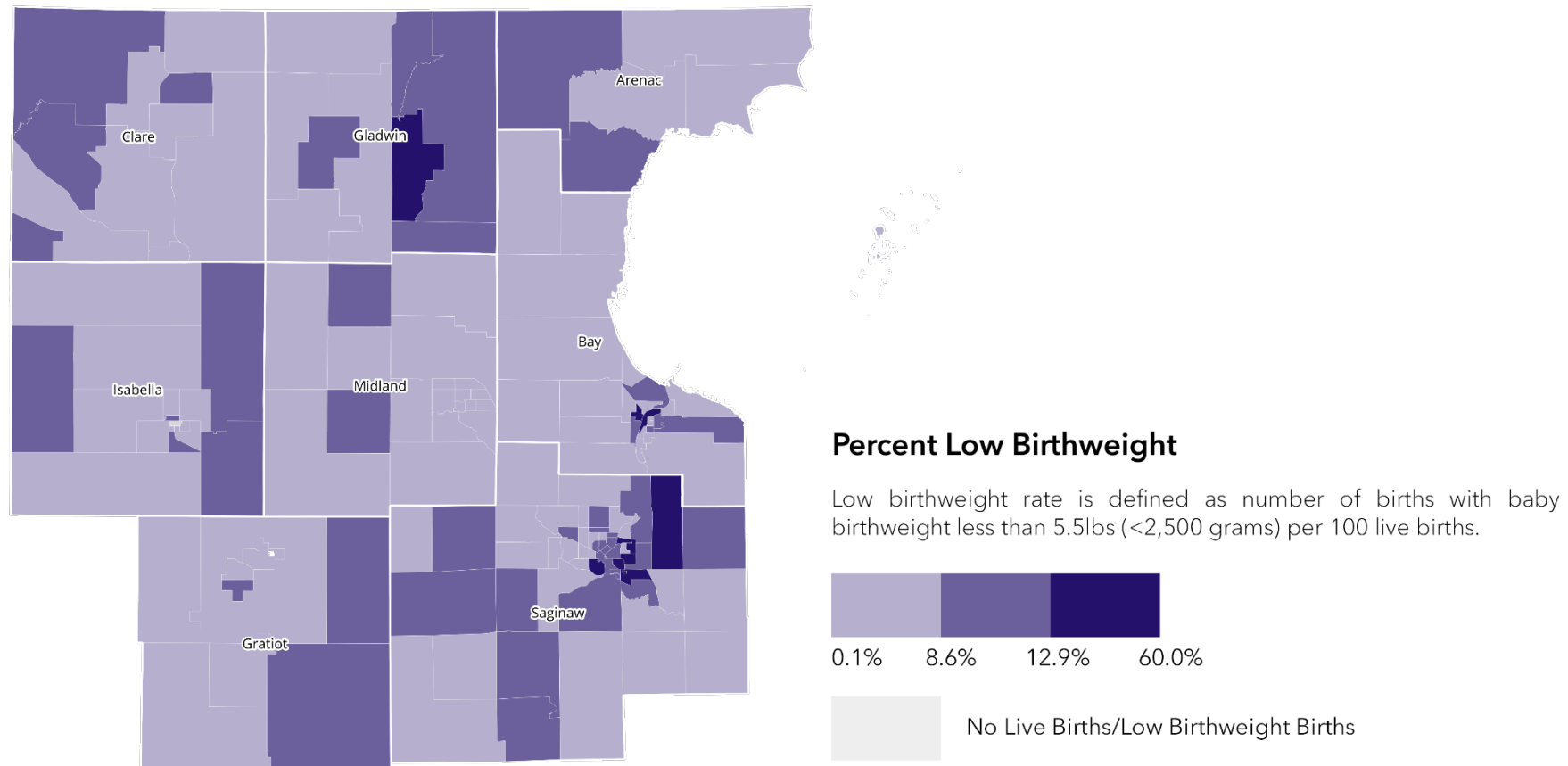
# Low Birthweight by Intended Payment Source, Prosperity Region 5, 2016-2020

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	842	14,007	6.0%	7.3%
Medicaid	1,431	13,657	10.5%	10.7%

# Low Birthweight by Census Tract, Prosperity Region 5, 2015-2019

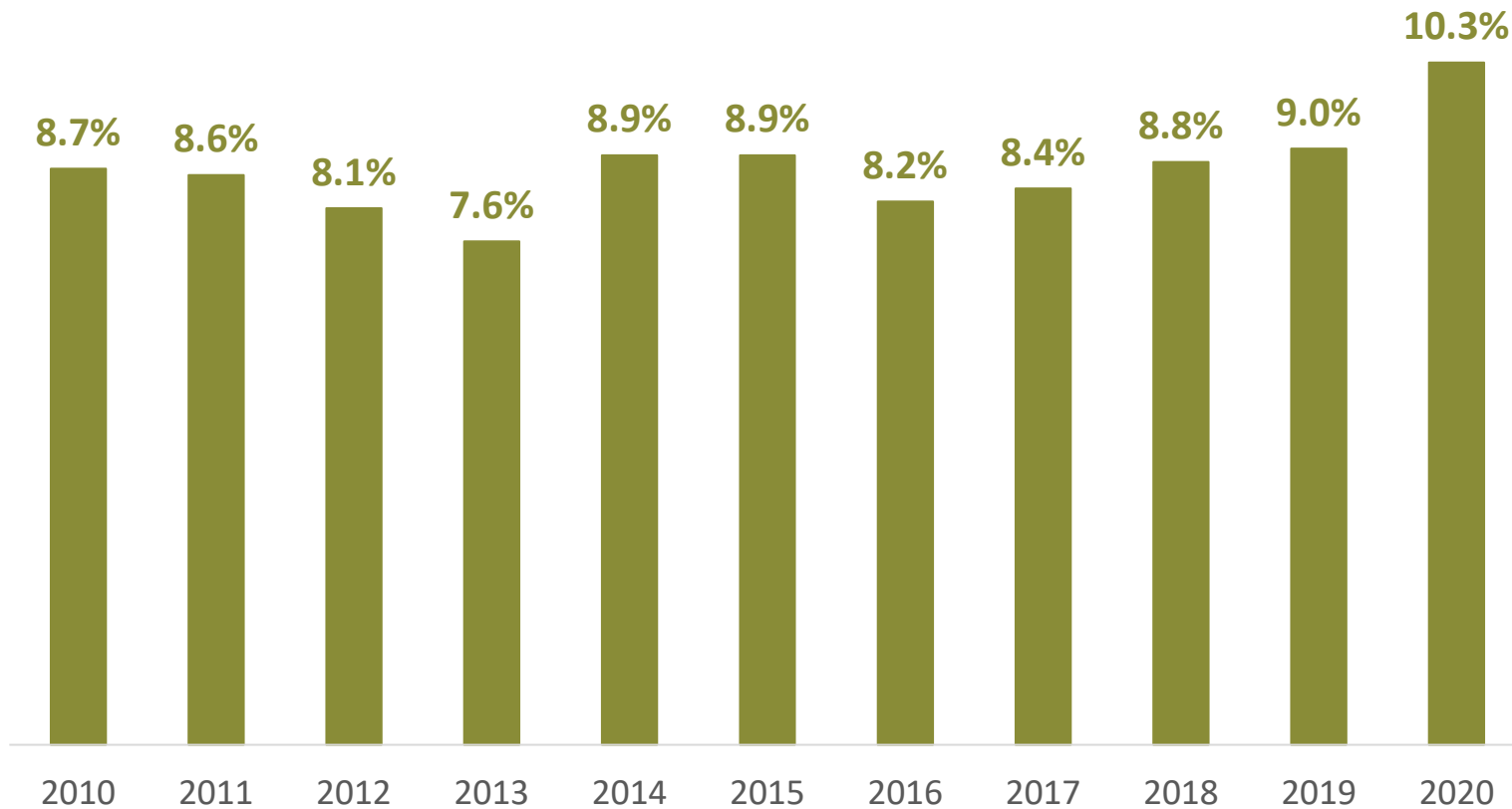
Low birthweight rate is defined as number of births with baby birthweight <2,500 grams per 100 live births.



# Preterm Birth Prosperity Region 5 2010-2020

# Preterm Birth, Prosperity Region 5, 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	531	6,117	8.7
2011	528	6,139	8.6
2012	482	5,915	8.1
2013	449	5,883	7.6
2014	541	6,050	8.9
2015	528	5,952	8.9
2016	476	5,829	8.2
2017	494	5,885	8.4
2018	506	5,720	8.8
2019	507	5,653	9.0
2020	549	5,333	10.3

# Preterm Birth by Maternal Race/Ethnicity, Prosperity Region 5, 2016-2020

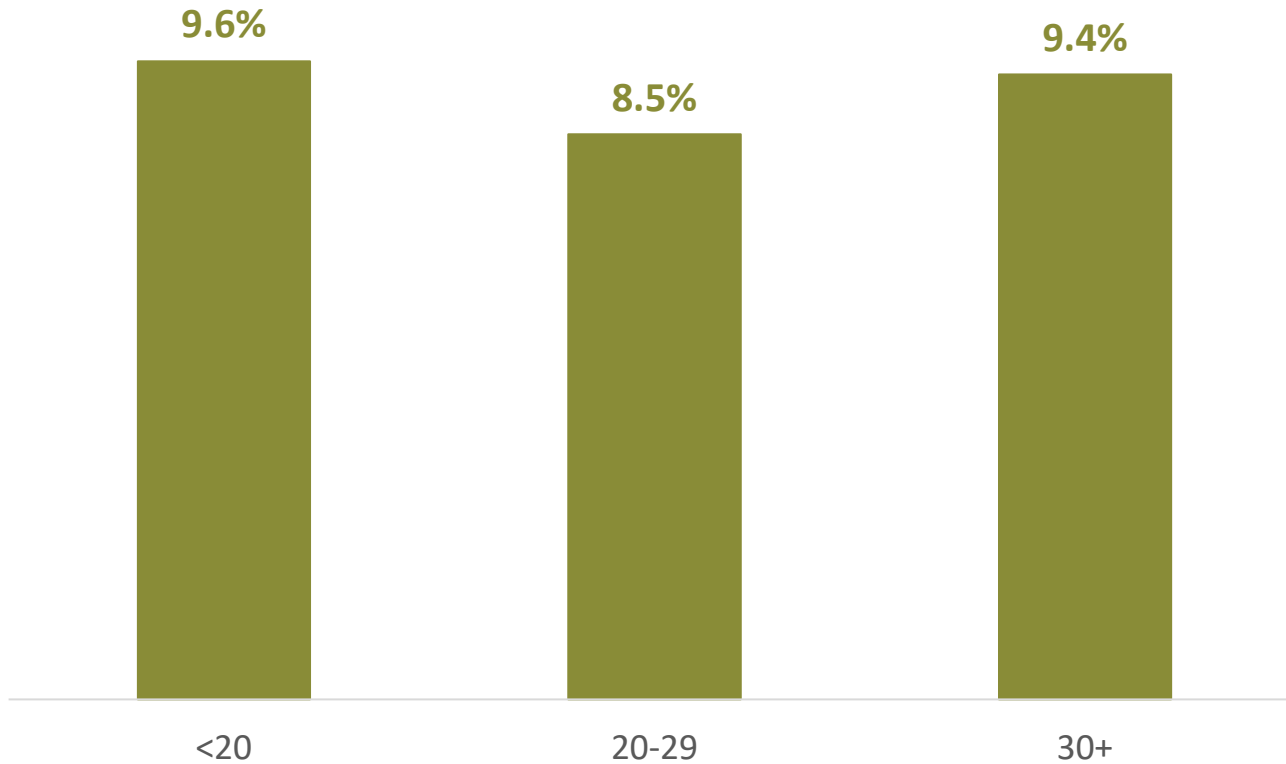
Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births. Gestational age is based on the obstetric estimate of gestation.

Maternal Race	# Preterm	# Live Births		Percent (%) Preterm	MI
White non-Hispanic	1,772	21,398	8.3%	 8.3%	9.0%
Black non-Hispanic	371	3,229	11.5%	 11.5%	14.8%
Hispanic	196	2,104	9.3%	 9.3%	9.6%
American Indian	25	187	13.4%	 13.4%	9.8%
Asian/Pacific Islander	43	428	10.0%	 10.0%	8.2%



# Preterm Birth by Maternal Age, Prosperity Region 5, 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 5		MI
	# Preterm	# Births	% Preterm
< 20 years	152	1,586	9.6
20-29 years	1,392	16,333	8.5
≥30 years	983	10,491	9.4

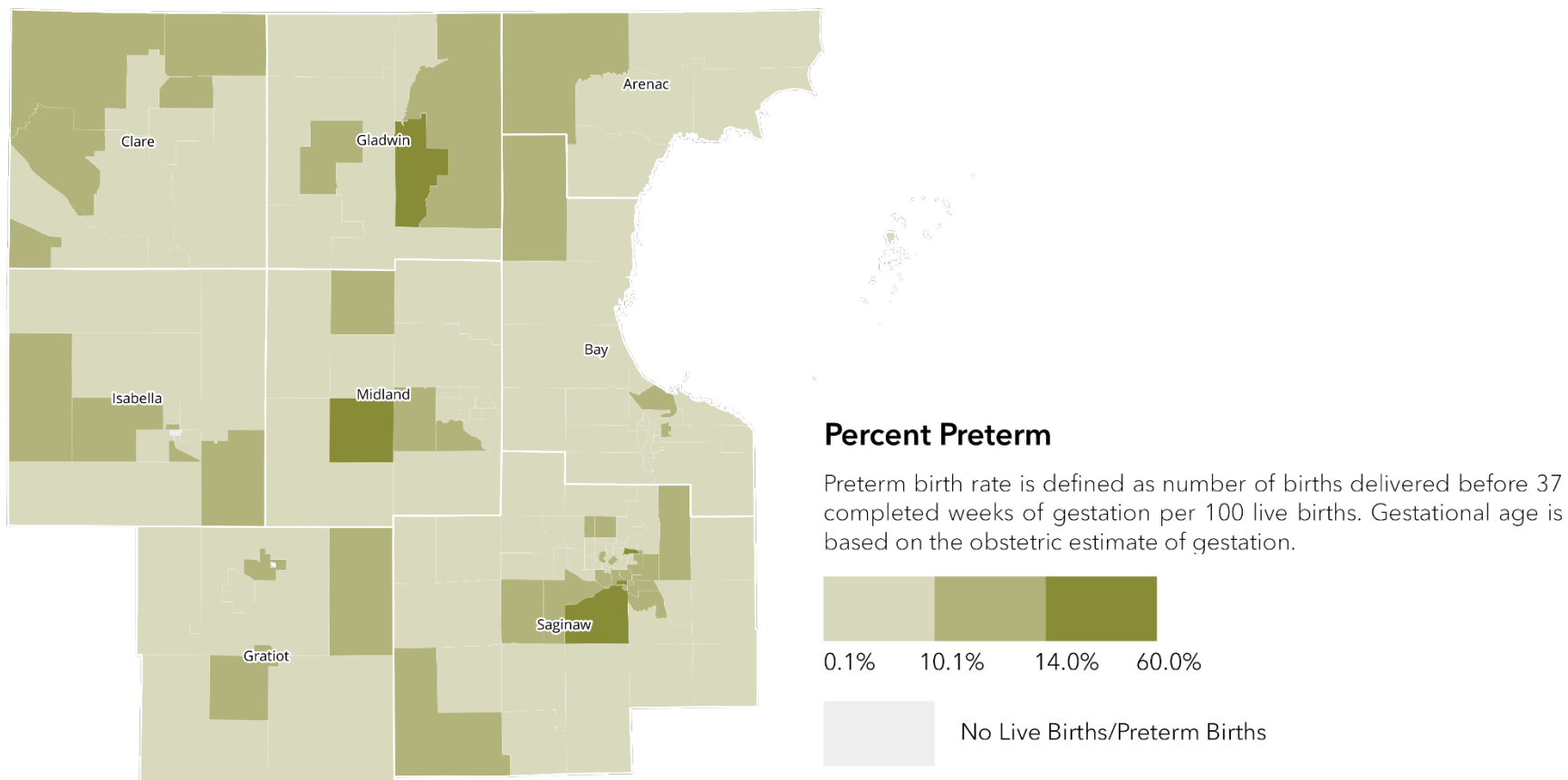
# Preterm Birth by Intended Payment Source, Prosperity Region 5, 2016-2020

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	1,070	14,007	7.6%	9.3%
Medicaid	1,405	13,657	10.3%	11.5%

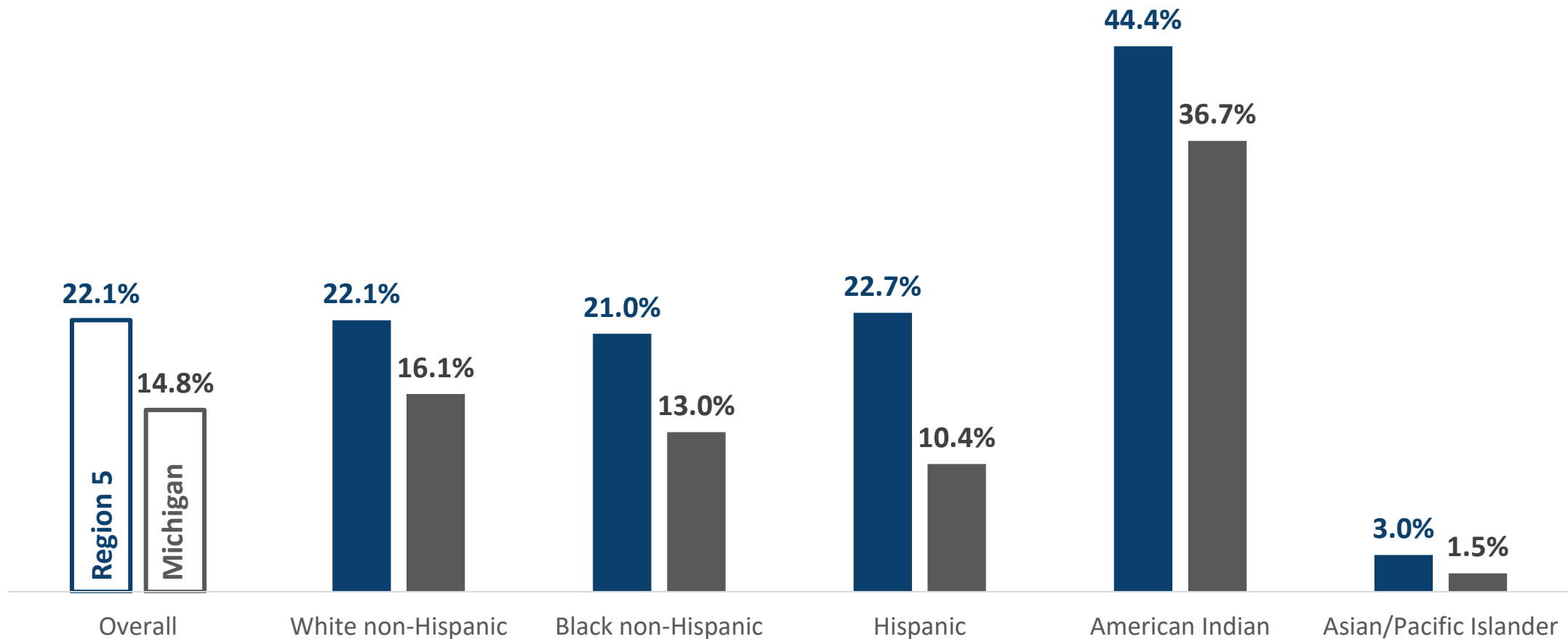
# Preterm Birth by Census Tract, Prosperity Region 5, 2015-2019

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 5 2016-2020

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

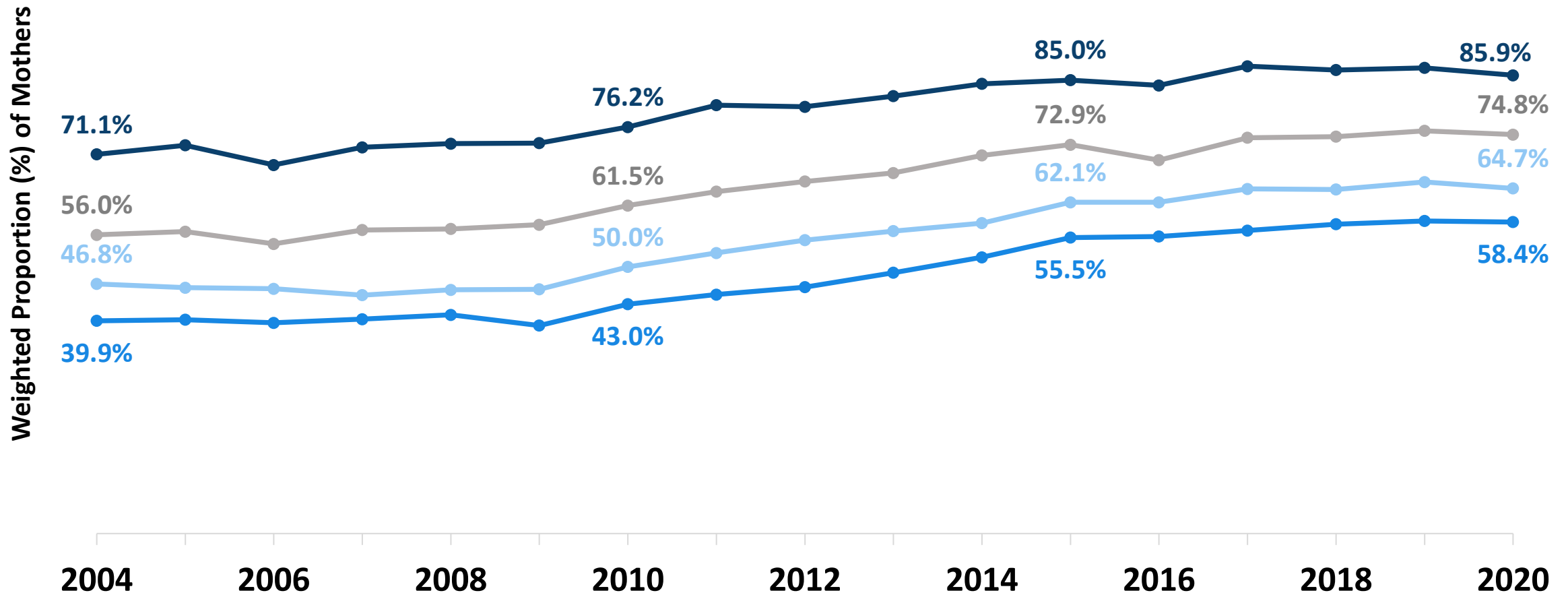


# Breastfeeding Initiation and Duration Michigan, 2004-2020

# Breastfeeding Initiation + Duration, Michigan 2004-2020

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

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

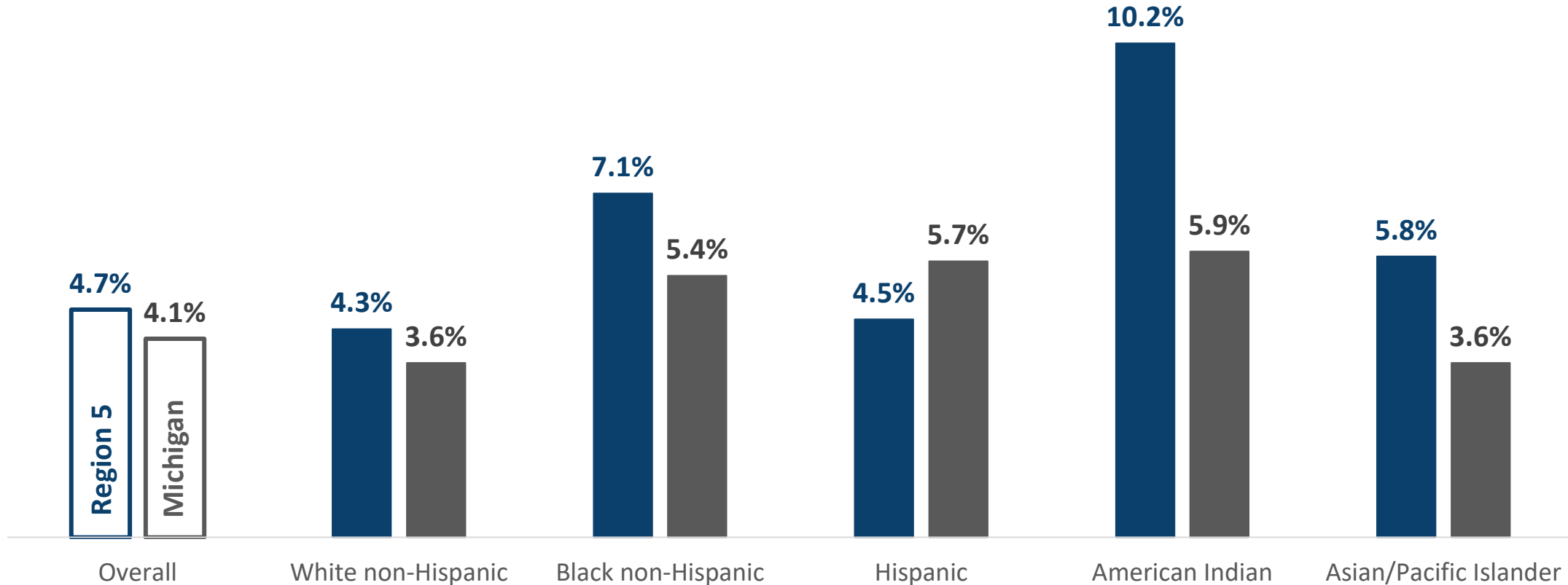


# Late Entry into Prenatal Care Prosperity Region 5 2016-2020



# 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 5 2010-2020

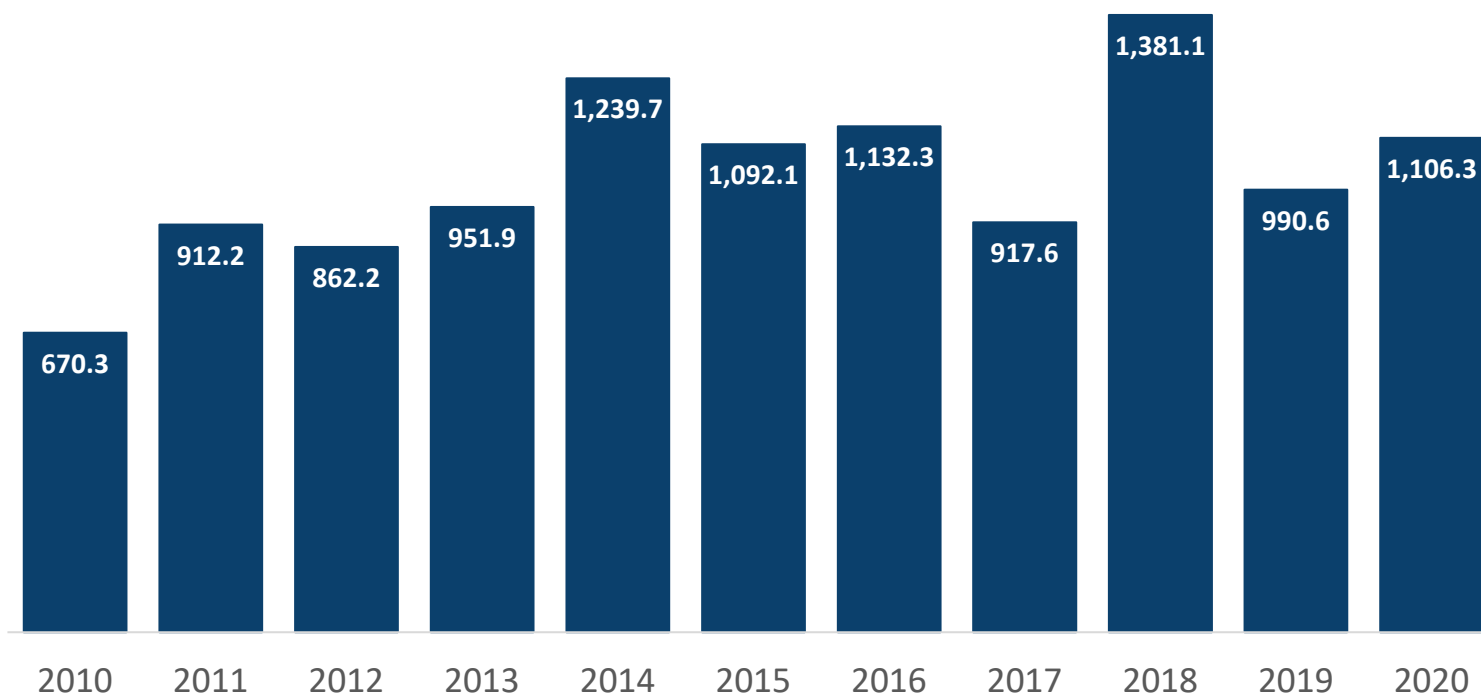
# About the Data

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 5, 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	41	6,117	670.3
2011	56	6,139	912.2
2012	51	5,915	862.2
2013	56	5,883	951.9
2014	75	6,050	1,239.7
2015	65	5,952	1,092.1
2016	66	5,829	1,132.3
2017	54	5,885	917.6
2018	79	5,720	1,381.1
2019	56	5,653	990.6
2020	59	5,333	1,106.3

# Neonatal Abstinence Syndrome by Maternal Race/Ethnicity, Prosperity Region 5, 2016-2020

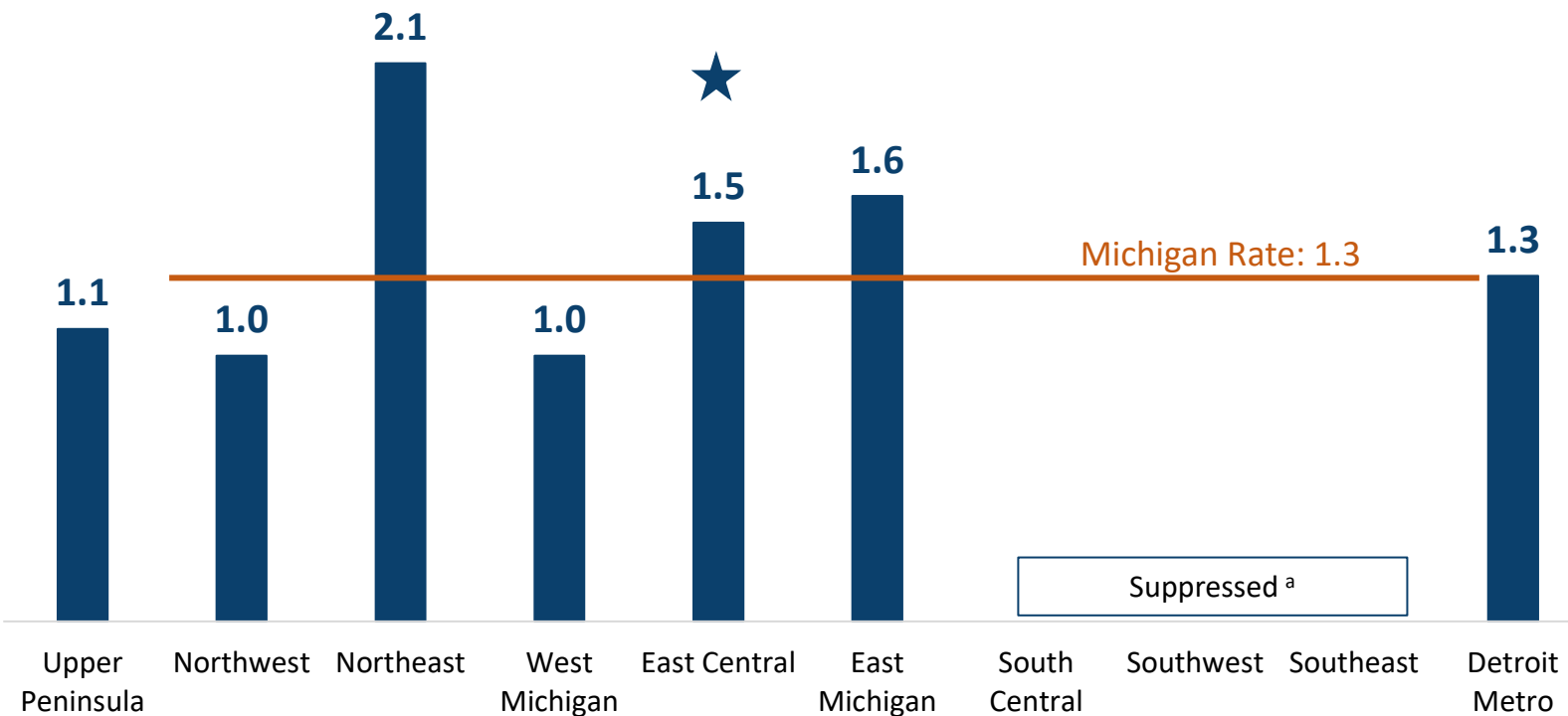
2010-2015: 779.5 (drug withdrawal syndrome in newborn) and  
2016-current: P96.1 (neonatal withdrawal symptoms from maternal use of drugs of addiction)

Maternal Race	# Cases	# Live Births	NAS Rate per 100,000 Live Births	MI
White non-Hispanic	225	21,398	1,051.5	851.5
Black non-Hispanic	18	3,229	557.4	376.6
Hispanic	35	2,104	1,663.5	519.5
American Indian	8	187	4,278.1	4,582.1
Asian/Pacific Islander	DNS	428	DNS	27.6

# Sleep-Related Infant Death Rate Prosperity Region 5 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 **87** sleep-related infant deaths in Region Five.
- The Region Five sleep-related infant death rate of 1.5 per 1,000 live births was **higher** 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)

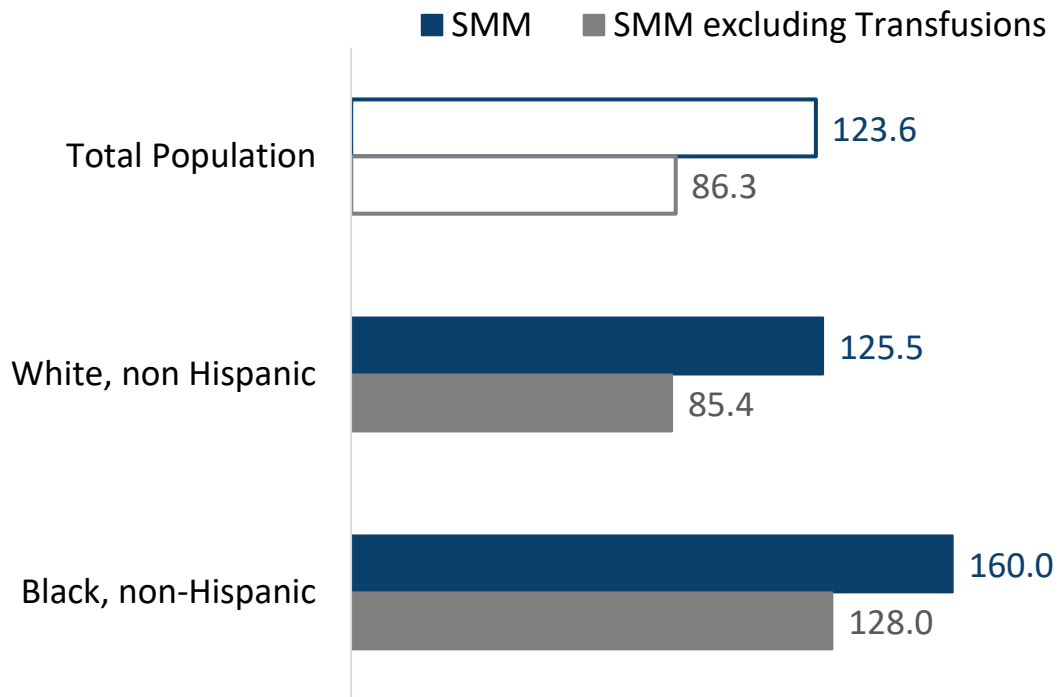
# Severe Maternal Morbidity Rate Prosperity Region 5 2020



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

## Region 5

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 Rate excluding transfusion per 10,000 inpatient delivery hospitalizations:

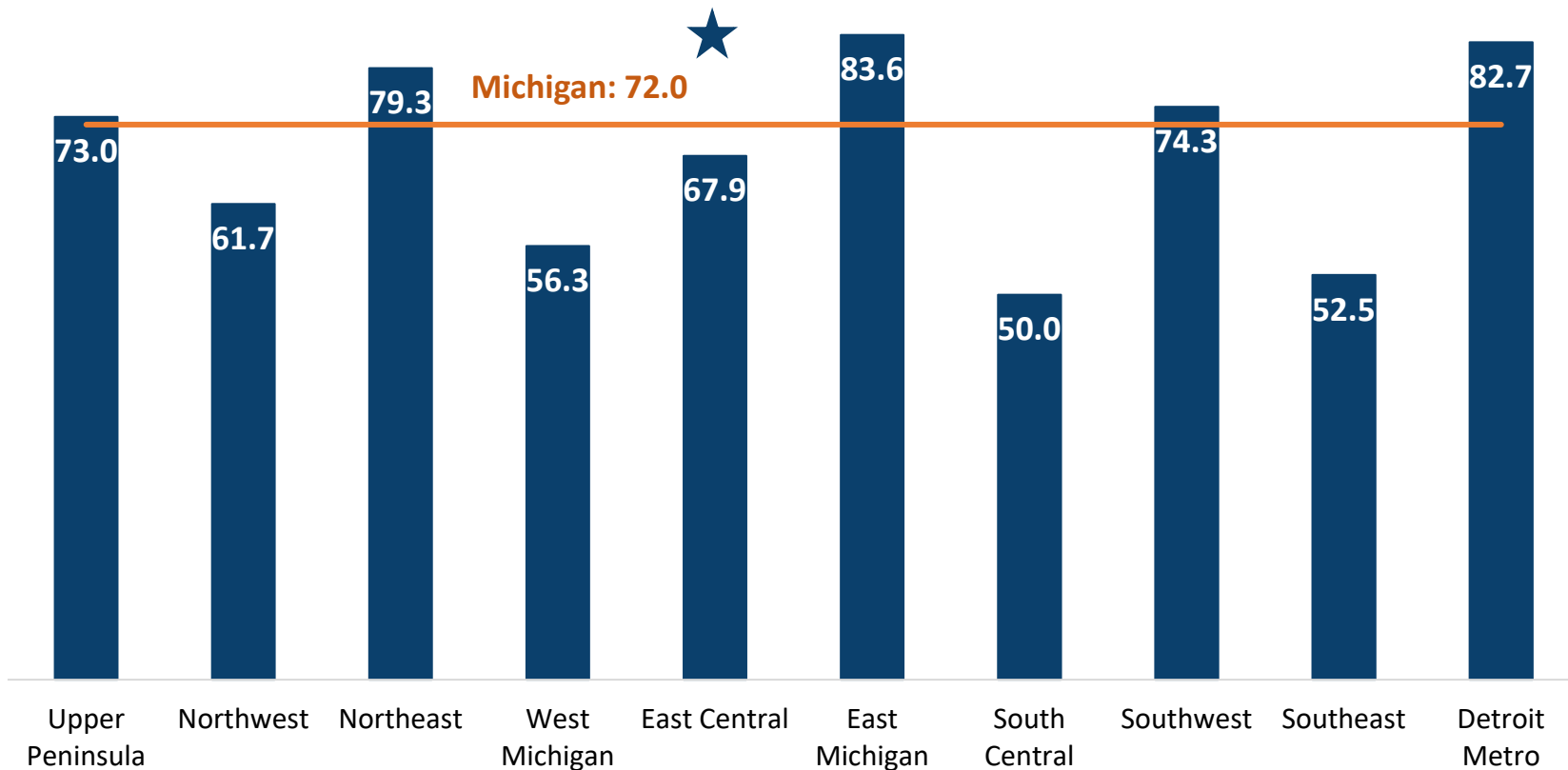
- Total Population: 89.2
- White, NH: 71.5
- Black, NH: 151.9
- Asian/ Pacific Islander, NH: 85.2
- American Indian/ Alaska Native: 143.2
- Hispanic: 86.3

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

# Maternal Mortality Ratio Prosperity Region 5 2014-2018

# Maternal Mortality Ratio by Prosperity Region, 2014-2018

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

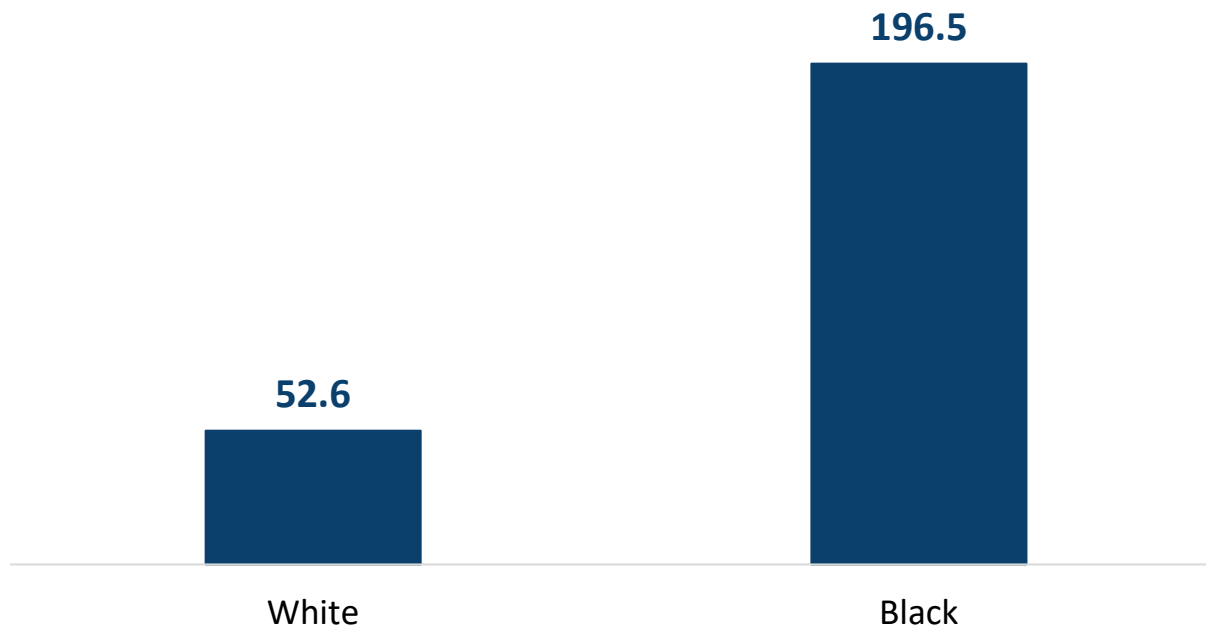


- Maternal deaths include deaths that occur during pregnancy, at delivery or within one year of pregnancy.
- Pregnancy associated (total) maternal mortality includes both pregnancy associated, not related mortality (unrelated to the pregnancy), pregnancy-related mortality (related to or aggravated by the pregnancy), and deaths where pregnancy-relatedness is unable to be determined.
- In Region Five there were **20** maternal deaths between 2014 and 2018.

# Maternal Mortality Ratio by Race, Prosperity Region 5, 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 Five experienced **3.7** times higher maternal mortality as compared to white mothers.

There were **13** white maternal deaths and **7** Black maternal deaths in Prosperity Region Five between 2014 and 2018.