



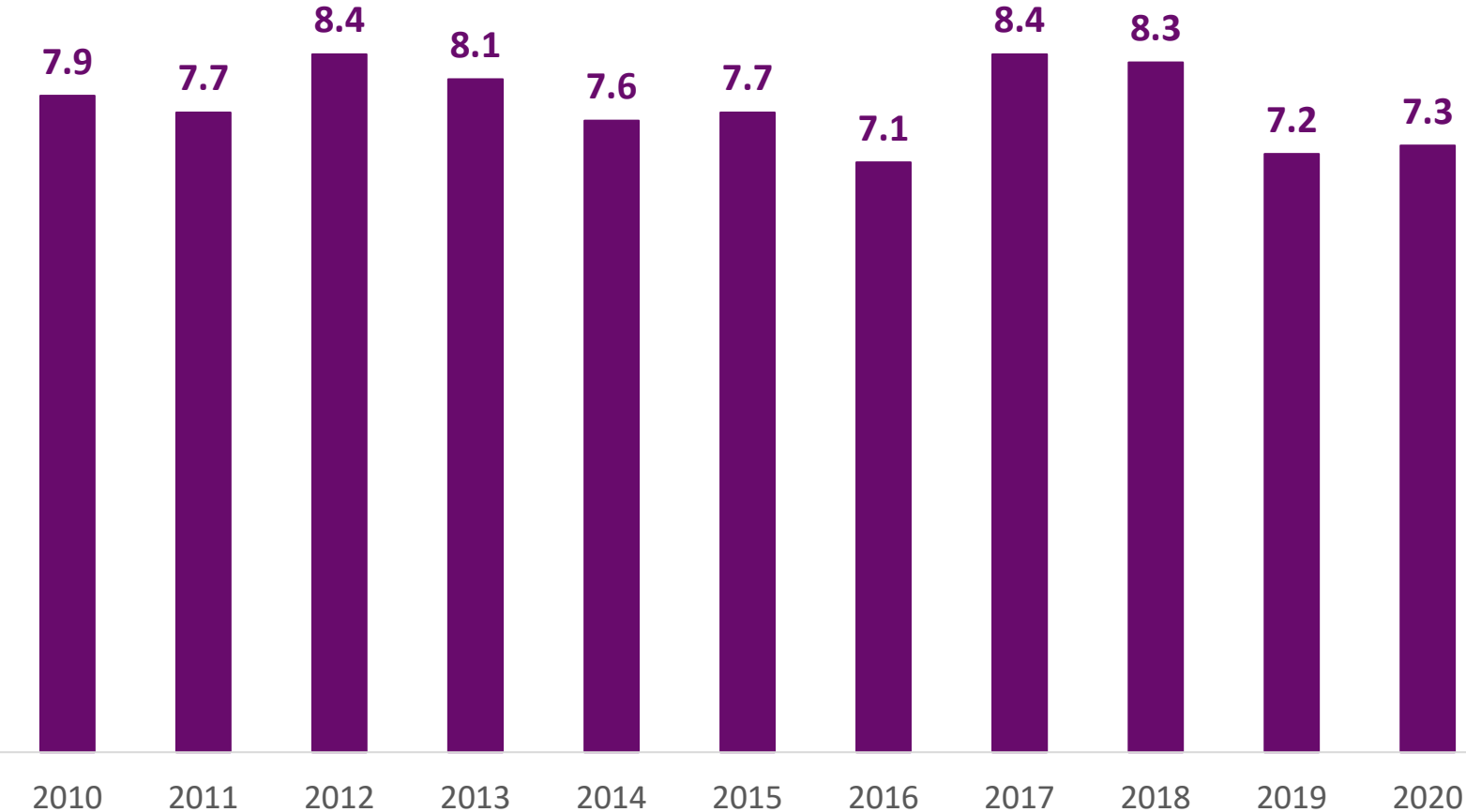
# Maternal and Infant Health Statistics Prosperity Region 10, Michigan

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  
June 2022

# Infant Mortality Rate (IMR) Prosperity Region 10 2010-2020

# Infant Mortality Rate, Prosperity Region 10, 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	365	46,364	7.9
2011	353	46,124	7.7
2012	383	45,505	8.4
2013	374	46,451	8.1
2014	349	46,152	7.6
2015	356	46,444	7.7
2016	330	46,185	7.1
2017	384	45,693	8.4
2018	374	45,233	8.3
2019	321	44,570	7.2
2020	313	42,878	7.3

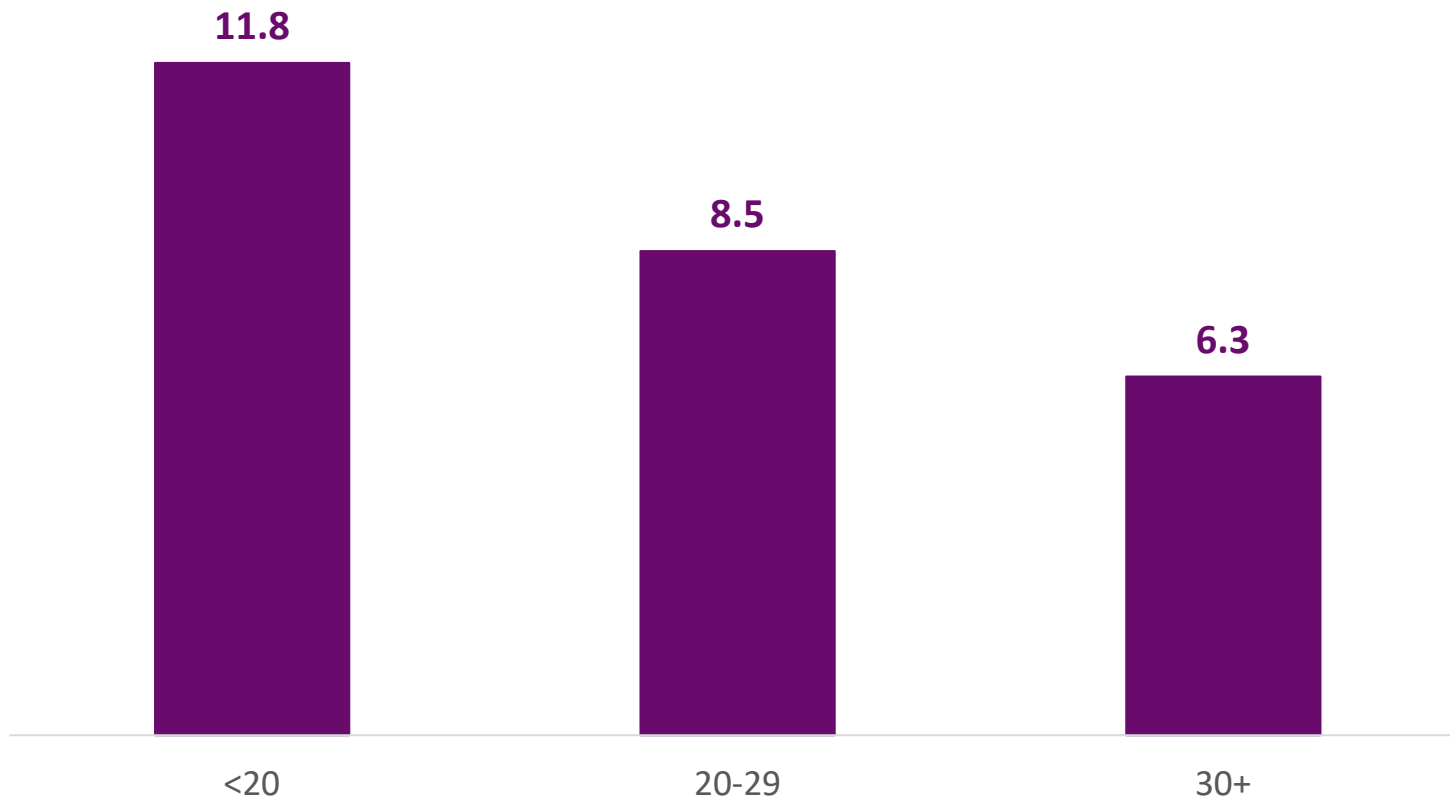
# Infant Mortality Rates by Maternal Race/Ethnicity, Prosperity Region 10, 2016-2020

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	573	122,817	4.7	4.9
Black Non-Hispanic	959	68,609	14.0	13.6
Hispanic	73	13,564	5.4	5.6
American Indian	0	252	0.0	5.0
Asian/Pacific Islander	62	13,996	4.4	4.1

# Infant Mortality Rates by Maternal Age, Prosperity Region 10, 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.



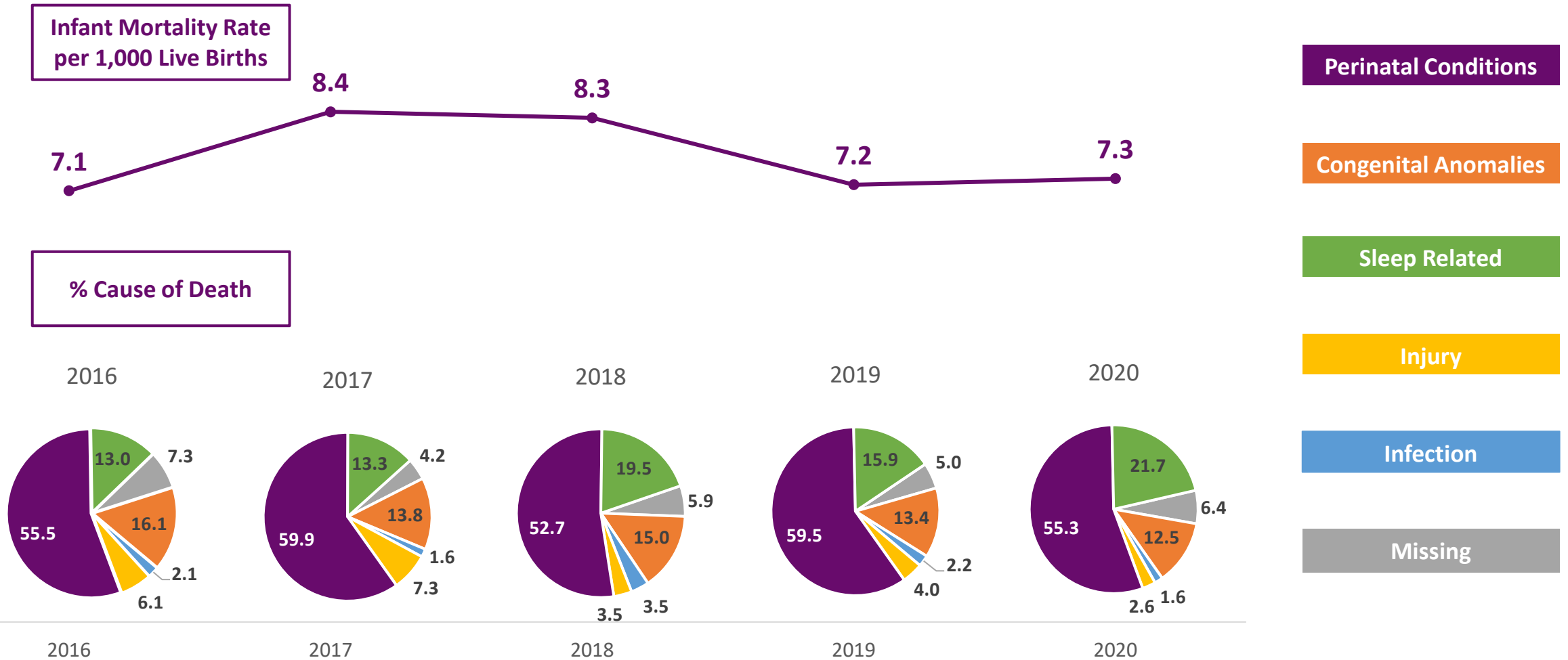
Maternal Age	REGION 10			MI
	# Infant Deaths	# Births	Rate	Rate
<20 years	106	8,948	11.8	10.1
20-29 years	929	108,946	8.5	7.1
30+ years	674	106,628	6.3	5.6

# Infant Mortality Rates by Intended Payment Source, Prosperity Region 10, 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.

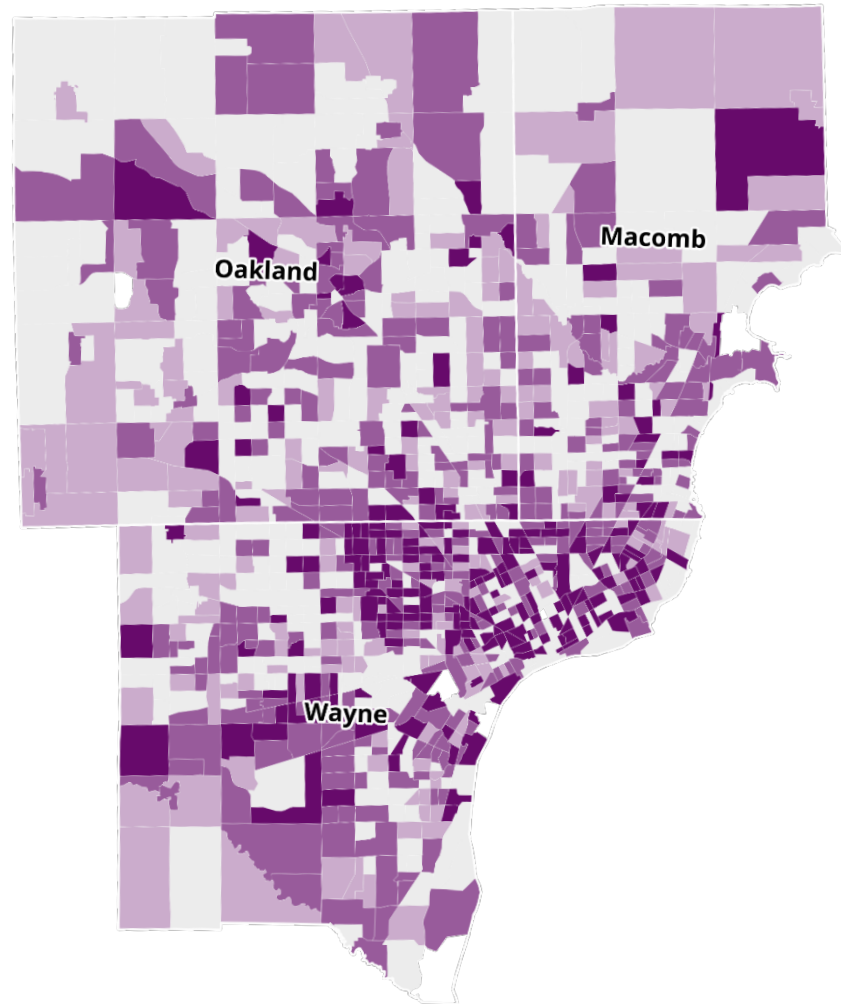
Payment	# Infant Deaths	# Live Births	Infant Mortality Rate (per 1,000 Live Births)	MI
Private Insurance	710	126,020	5.6	4.8
Medicaid	943	94,532	10.0	8.8

# Infant Mortality Rate + Percent Cause of Death Region 10, 2016-2020



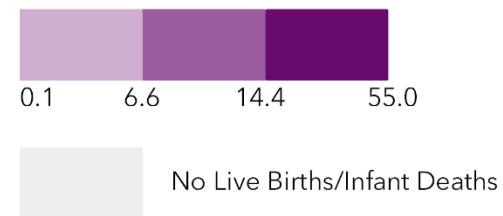
# Infant Mortality Rates by Census Tract, Prosperity Region 10, 2015-2019

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

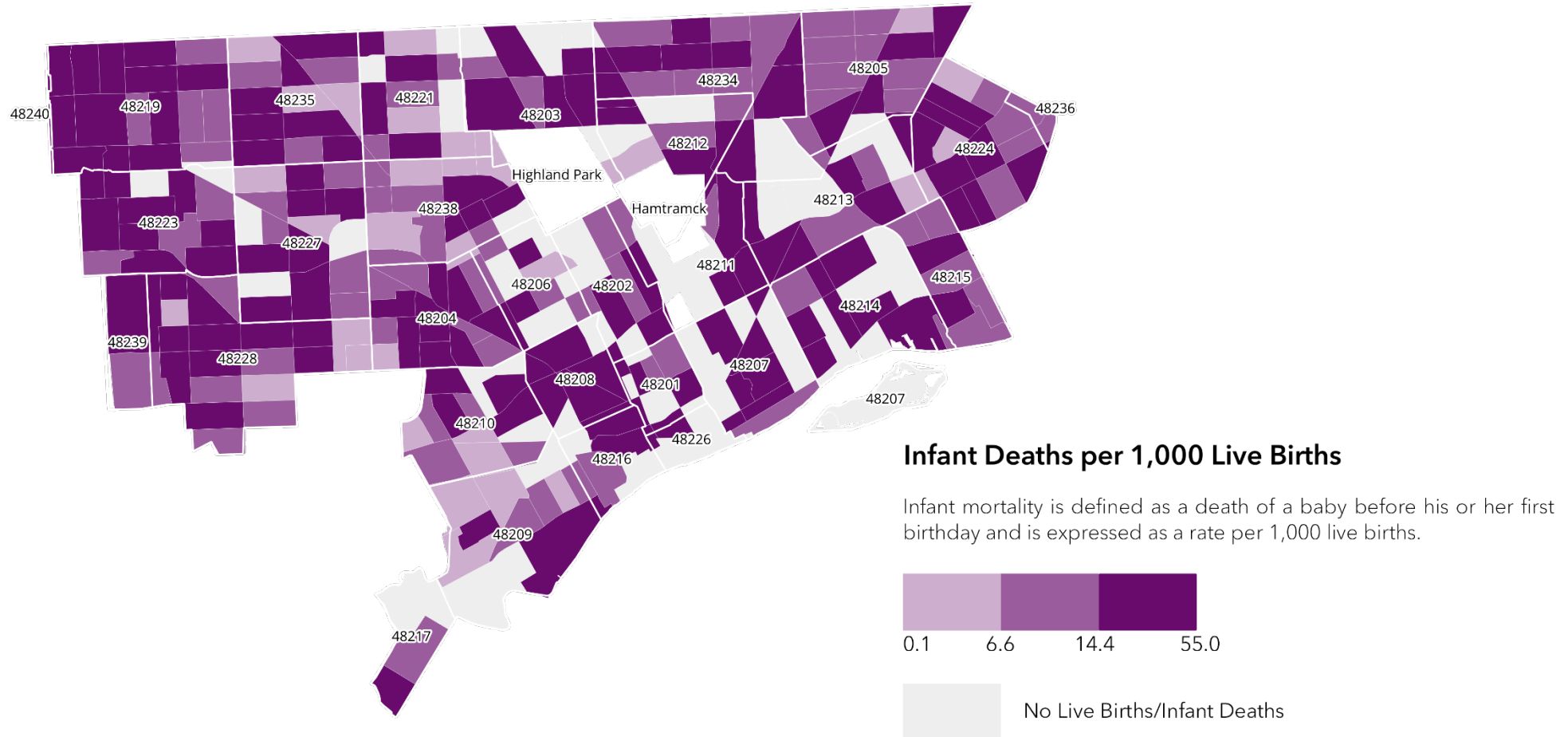
Infant mortality is defined as a death of a baby before his or her first birthday and is expressed as a rate per 1,000 live births.





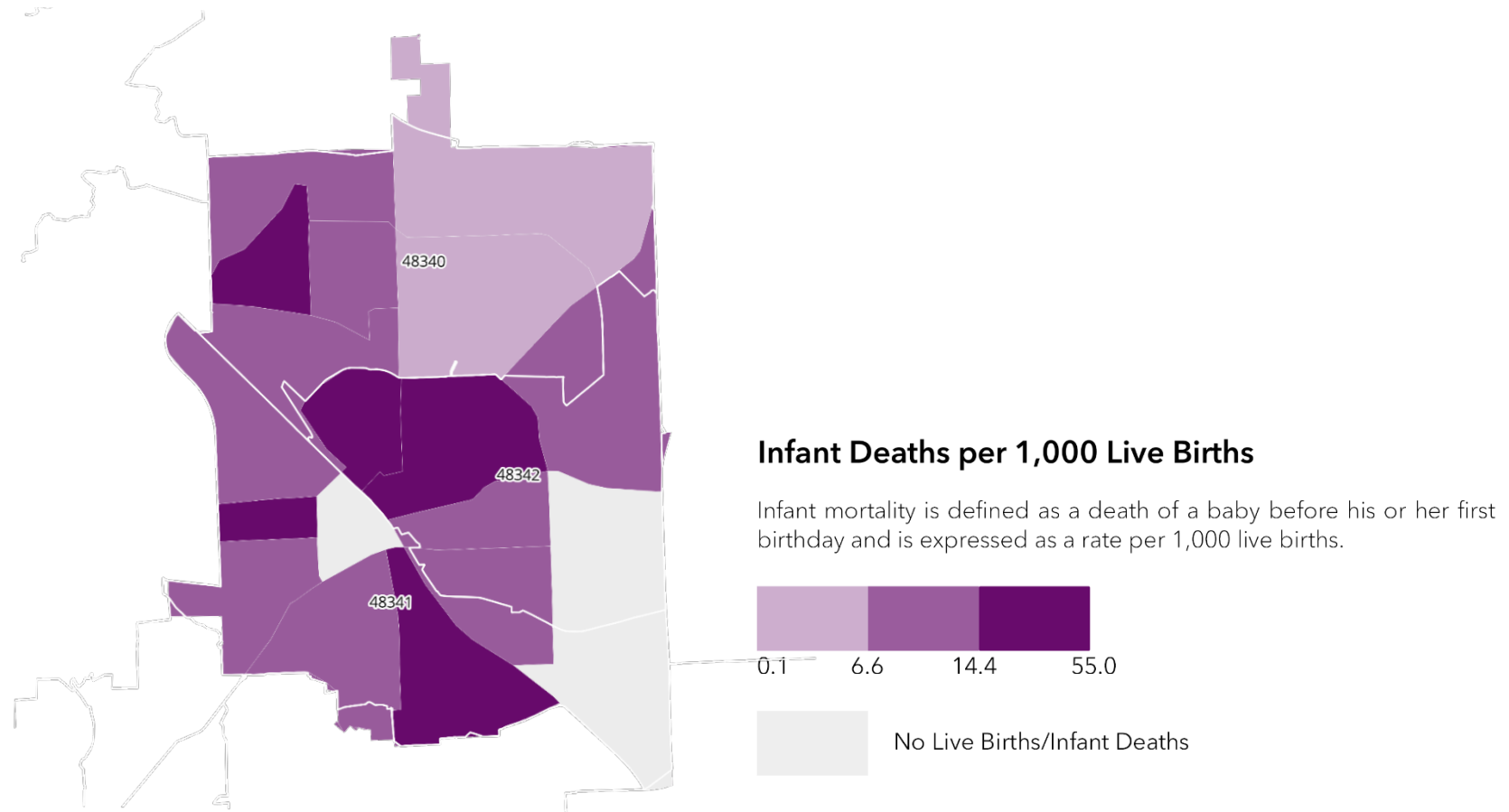
# Infant Mortality Rates by Census Tract, City of Detroit, 2015-2019

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.



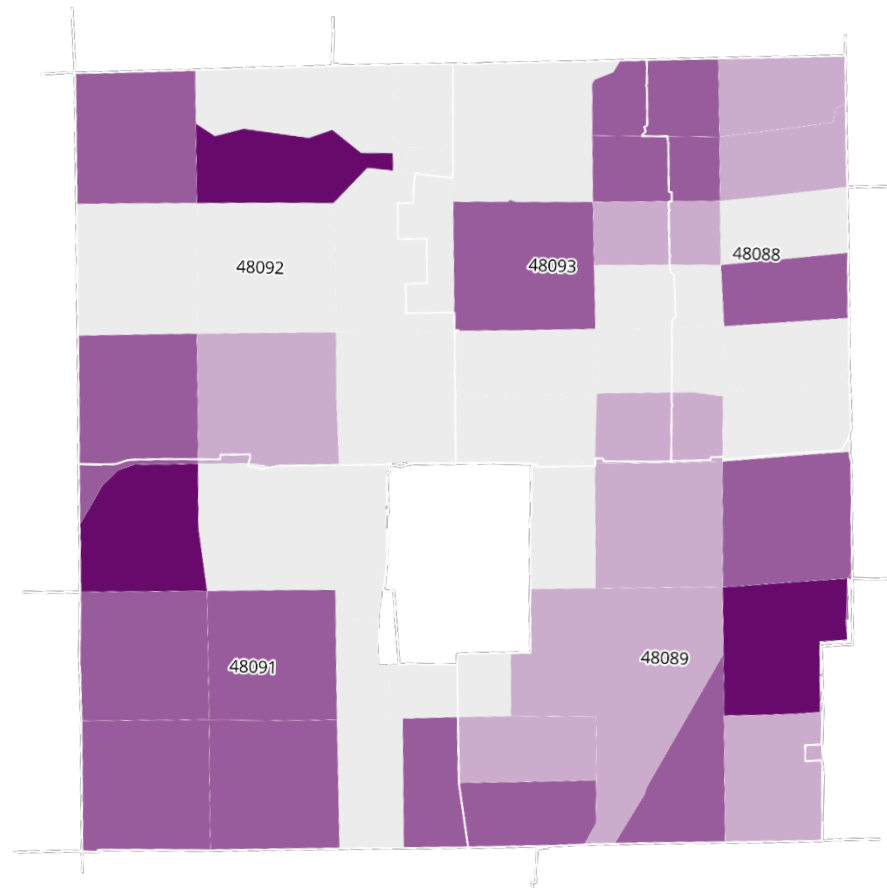
# Infant Mortality Rates by Census Tract, City of Pontiac, 2015-2019

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.



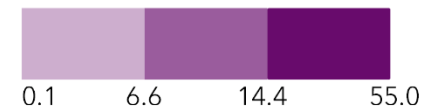
# Infant Mortality Rates by Census Tract, City of Warren, 2015-2019

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.

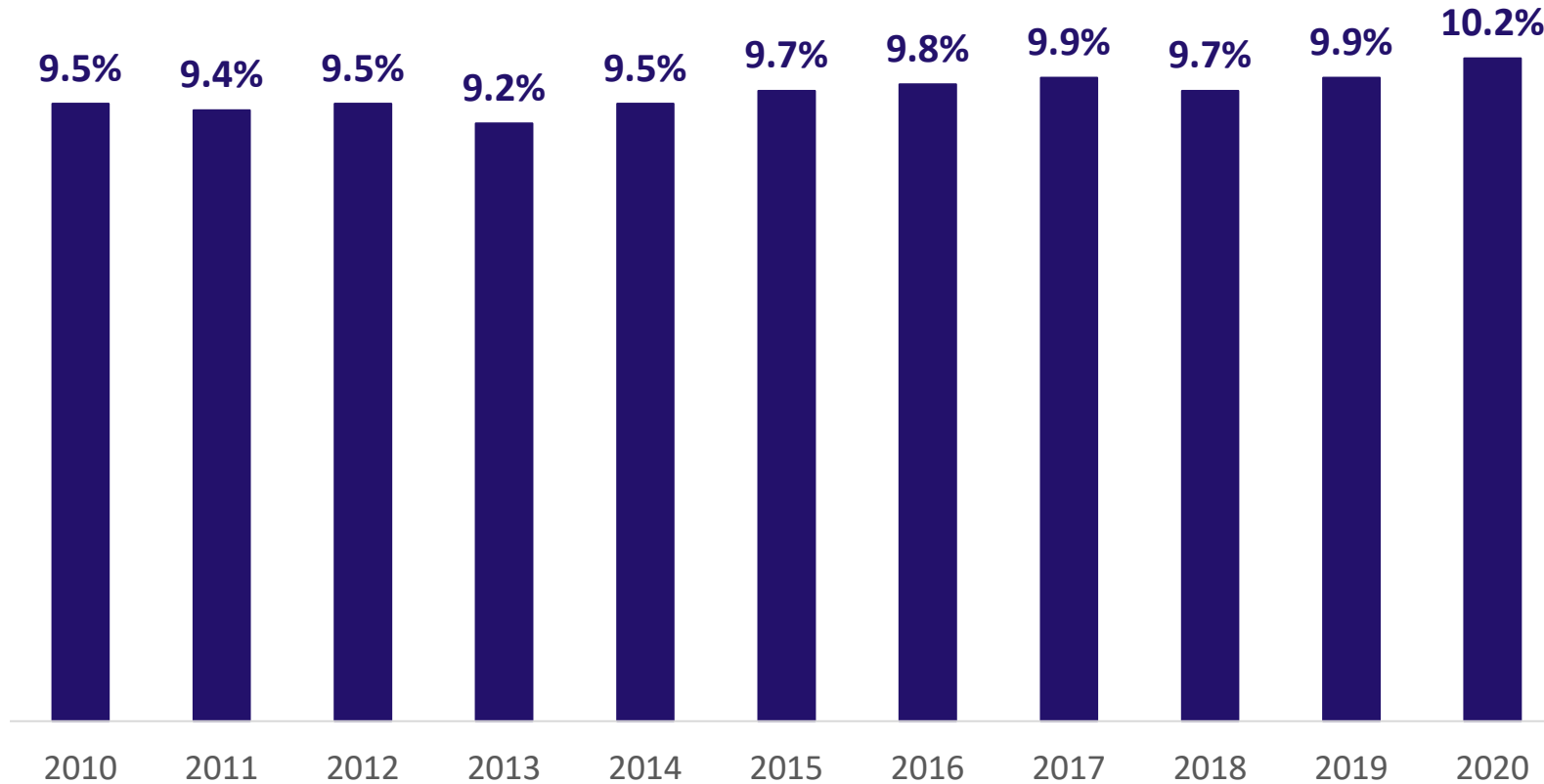


No Live Births/Infant Deaths

# Low Birthweight (LBW) Prosperity Region 10 2010-2020

# Low Birthweight, Prosperity Region 10, 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	4,420	46,364	9.5
2011	4,349	46,124	9.4
2012	4,327	45,505	9.5
2013	4,279	46,451	9.2
2014	4,398	46,152	9.5
2015	4,497	46,444	9.7
2016	4,525	46,185	9.8
2017	4,542	45,693	9.9
2018	4,381	45,233	9.7
2019	4,394	44,570	9.9
2020	4,361	42,878	10.2

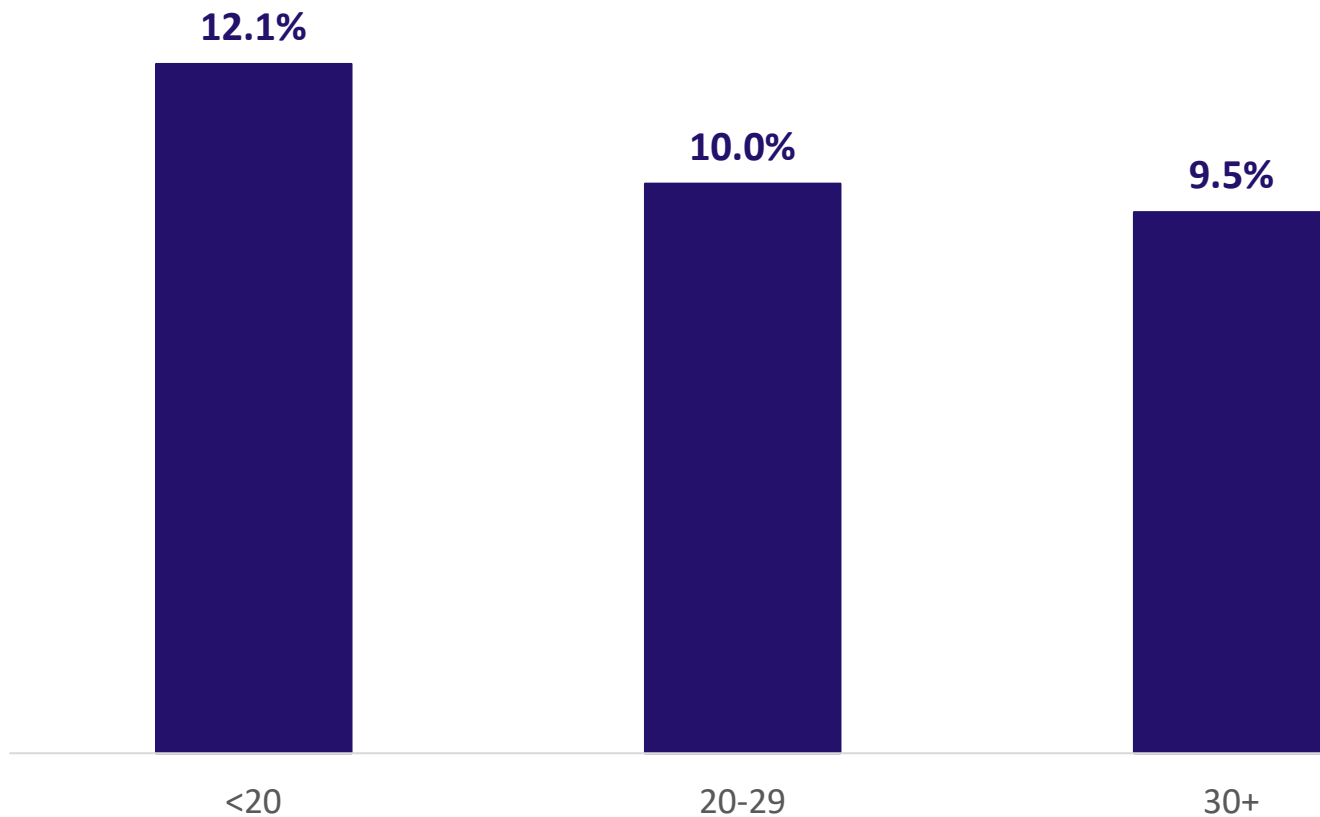
# Low Birthweight by Maternal Race/Ethnicity, Prosperity Region 10, 2016-2020

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	8,982	122,817	7.3%	7.1%
Black non-Hispanic	10,316	68,609	15.0%	14.9%
Hispanic	1,035	13,564	7.6%	7.5%
American Indian	14	252	5.6%	8.4%
Asian/Pacific Islander	1,304	13,996	9.3%	8.9%

# Low Birthweight by Maternal Age, Prosperity Region 10, 2016-2020

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



Maternal Age	REGION 10			MI
	# LBW	# Births	% LBW	% LBW
< 20 years	1,086	8,948	12.1	11.0
20-29 years	10,948	108,946	10.0	8.6
≥30 years	10,162	106,628	9.5	8.6

# Low Birthweight by Intended Payment Source, Prosperity Region 10, 2016-2020

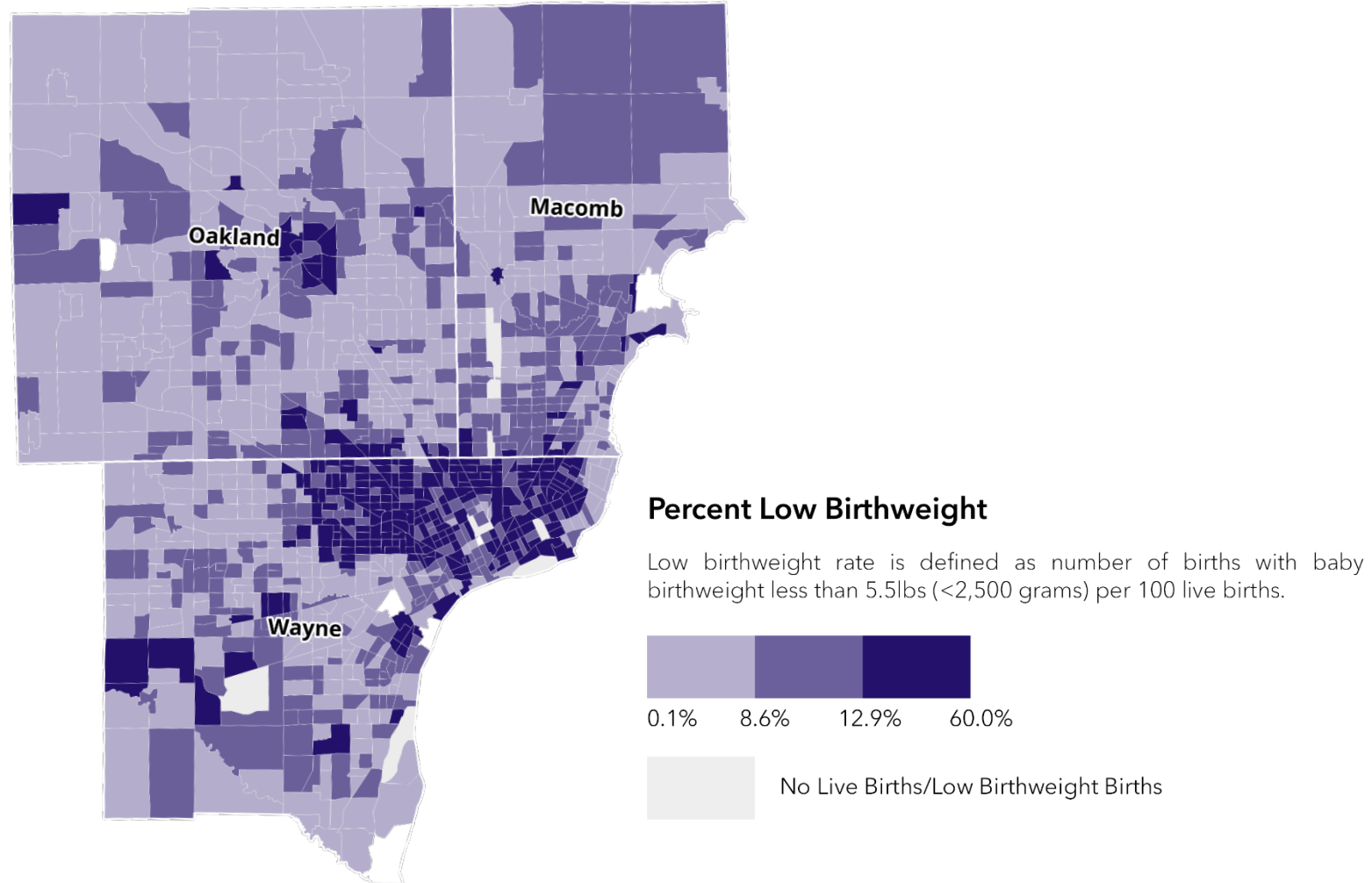
Low birthweight rate is defined as number of births with baby birthweight <2,500 grams per 100 live births.

Payment	# LBW	# Live Births	Percent (%) Low Birthweight	MI
Private Insurance	10,564	126,020	8.4%	7.3%
Medicaid	11,161	94,532	11.8%	10.7%



# Low Birthweight by Census Tract, Prosperity Region 10, 2015-2019

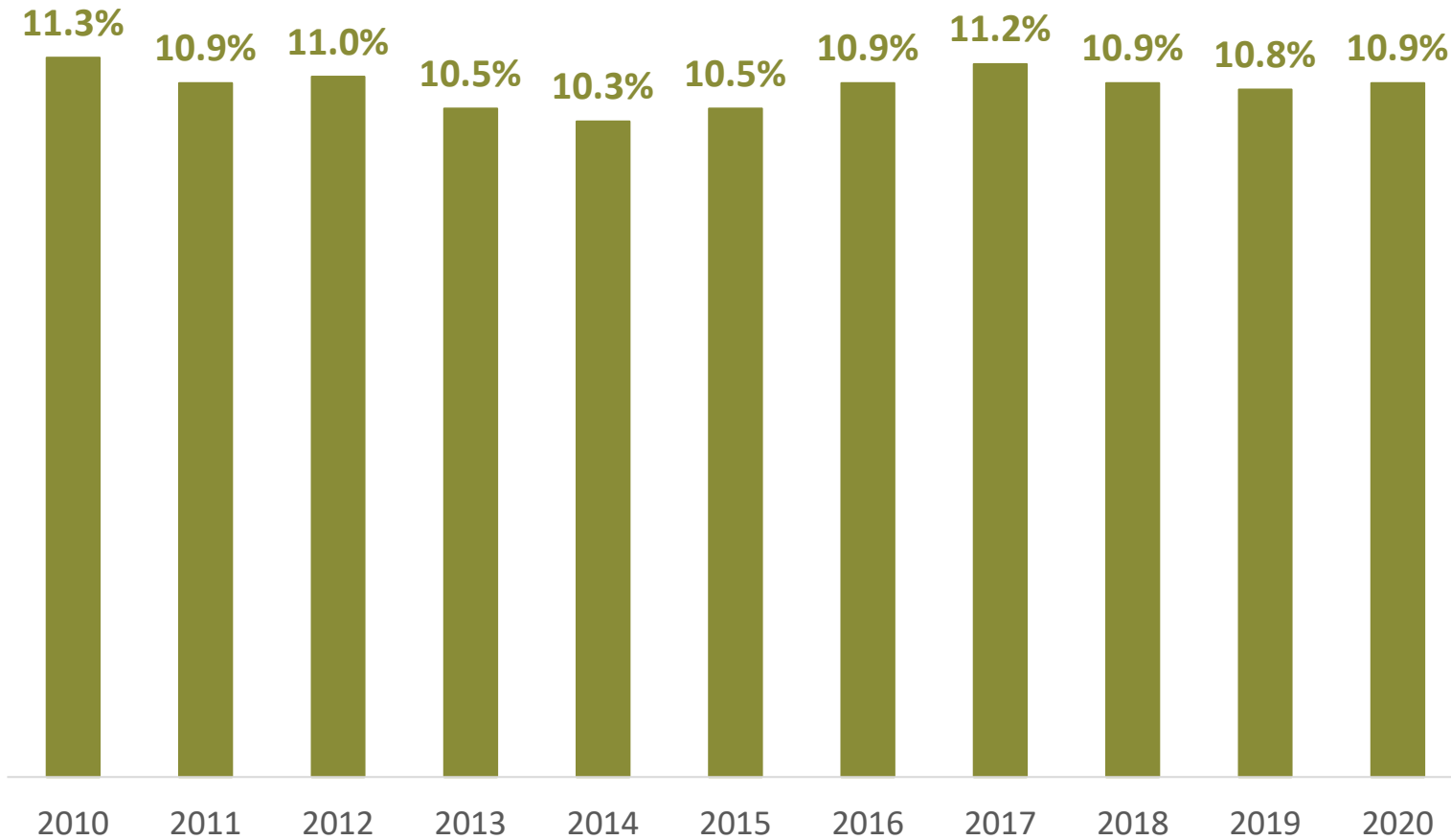
Low birthweight rate is defined as number of births with baby birthweight <2,500 grams per 100 live births.



# Preterm Birth (PTB) Prosperity Region 10 2010-2020

# Preterm Birth, Prosperity Region 10, 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	5,255	46,364	11.3
2011	5,007	46,124	10.9
2012	5,021	45,505	11.0
2013	4,895	46,451	10.5
2014	4,750	46,152	10.3
2015	4,873	46,444	10.5
2016	5,036	46,185	10.9
2017	5,105	45,693	11.2
2018	4,946	45,233	10.9
2019	4,805	44,570	10.8
2020	4,690	42,878	10.9

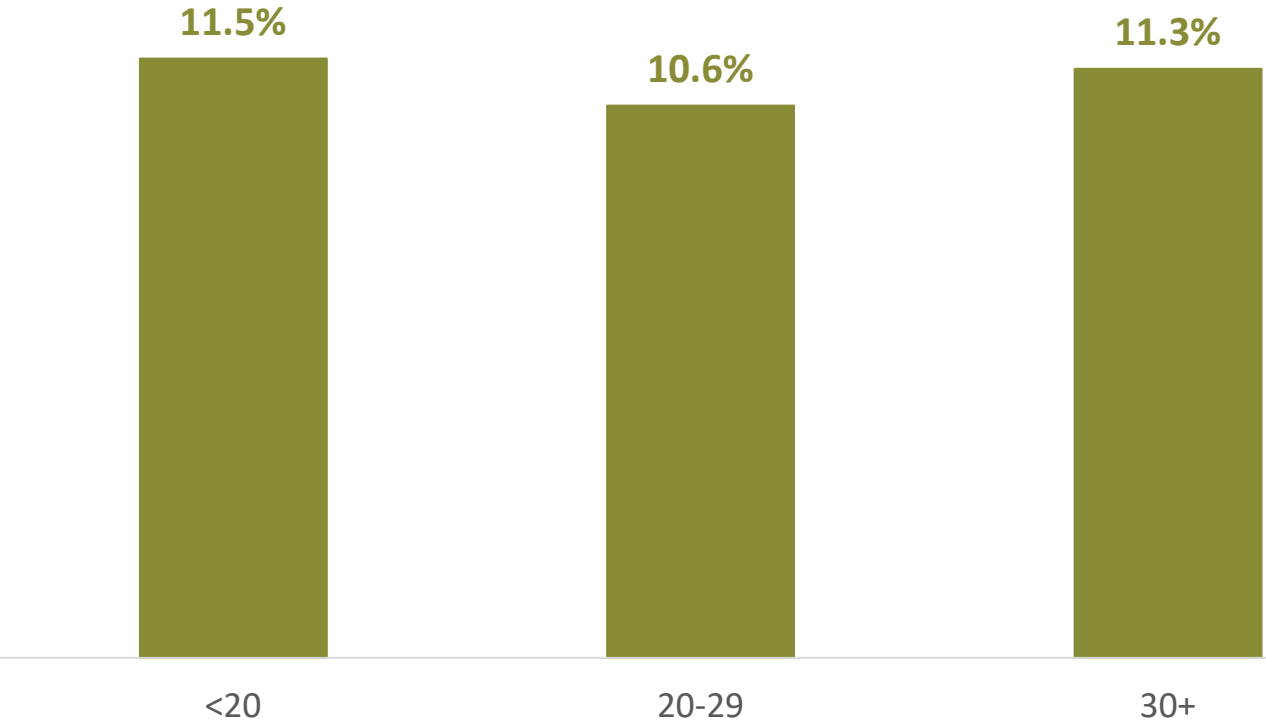
# Preterm Birth by Maternal Race/Ethnicity, Prosperity Region 10, 2016-2020

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	11,158	122,817	9.1%	9.0%
Black non-Hispanic	10,376	68,609	15.1%	14.8%
Hispanic	1,301	13,564	9.6%	9.6%
American Indian	26	252	10.3%	9.8%
Asian/Pacific Islander	1,137	13,996	8.1%	8.2%

# Preterm Birth by Maternal Age, Prosperity Region 10, 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 10			MI
	# Preterm	# Births	% Preterm	% Preterm
< 20 years	1,026	8,948	11.5	10.9
20-29 years	11,550	108,946	10.6	9.7
≥30 years	12,000	106,628	11.3	10.7

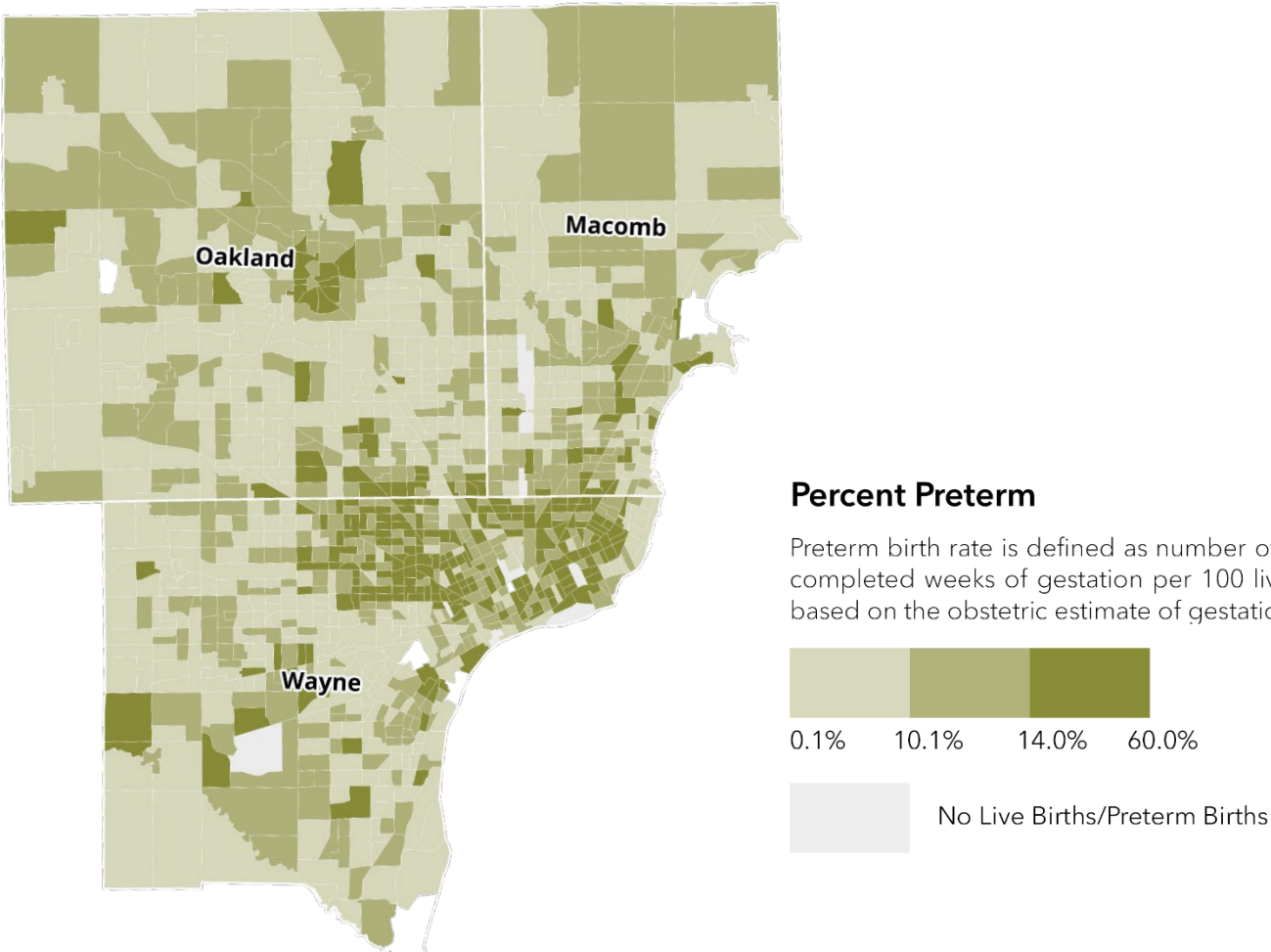
# Preterm Birth by Intended Payment Source, Prosperity Region 10, 2016-2020

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	12,576	126,020	10.0%	9.3%
Medicaid	11,511	94,532	12.2%	11.5%

# Preterm Birth by Census Tract, Prosperity Region 10, 2015-2019

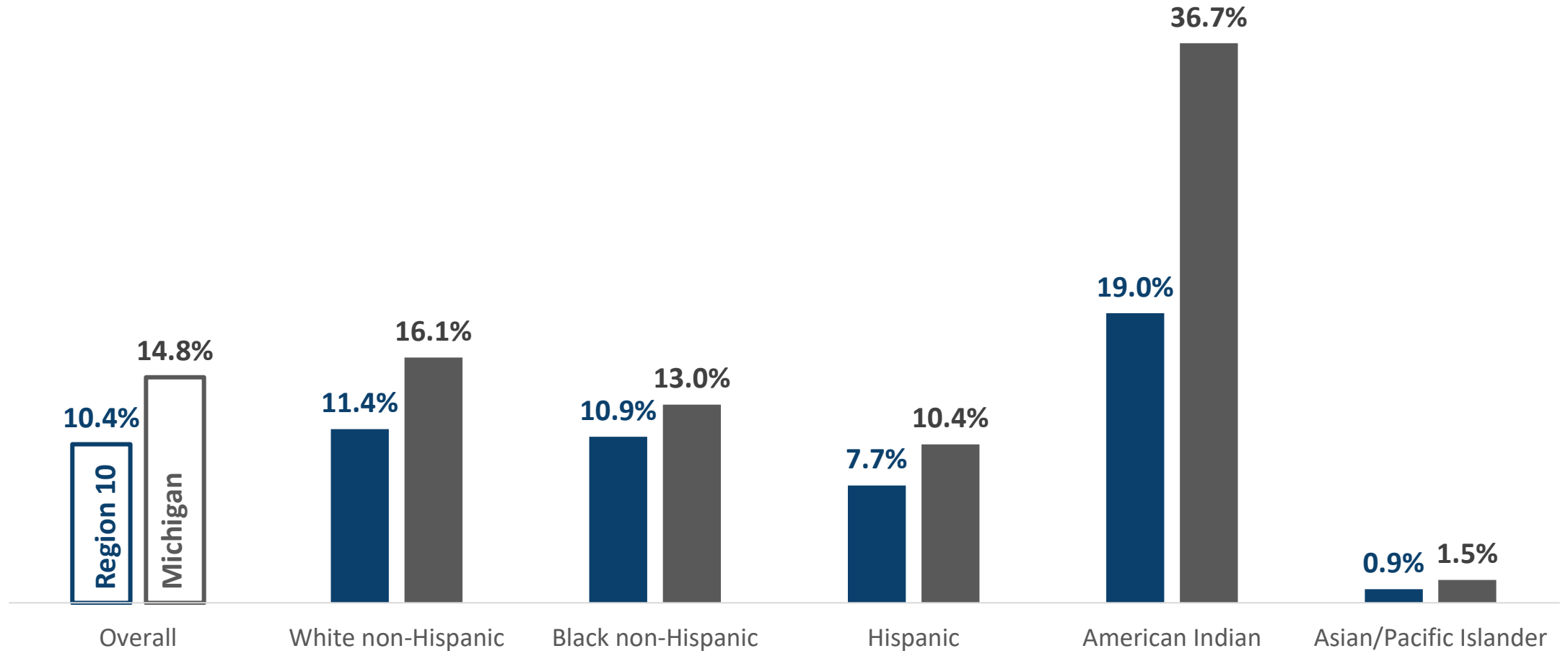
Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births. Gestational age is based on the obstetric estimate of gestation.



# Smoking During Pregnancy Prosperity Region 10 2016-2020



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

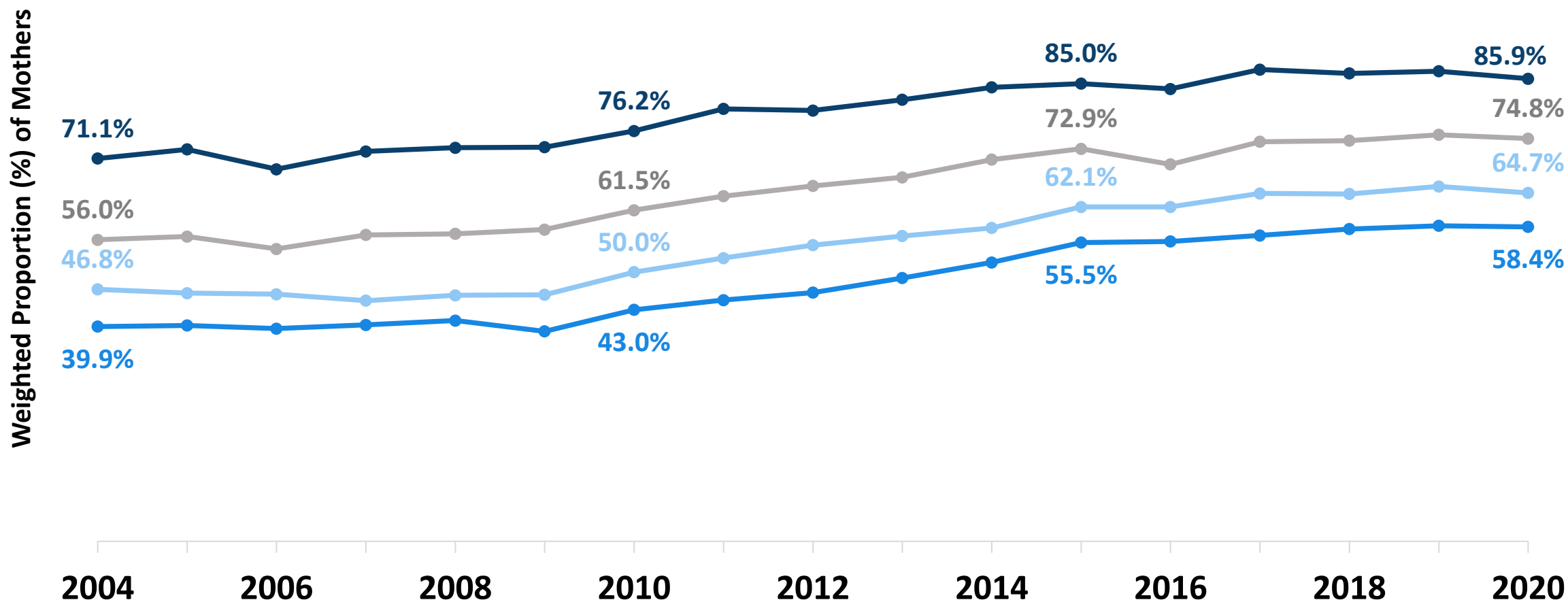


# Breastfeeding Initiation and Duration, Michigan, 2004-2020

# Breastfeeding Initiation + Duration, Michigan 2004-2020

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

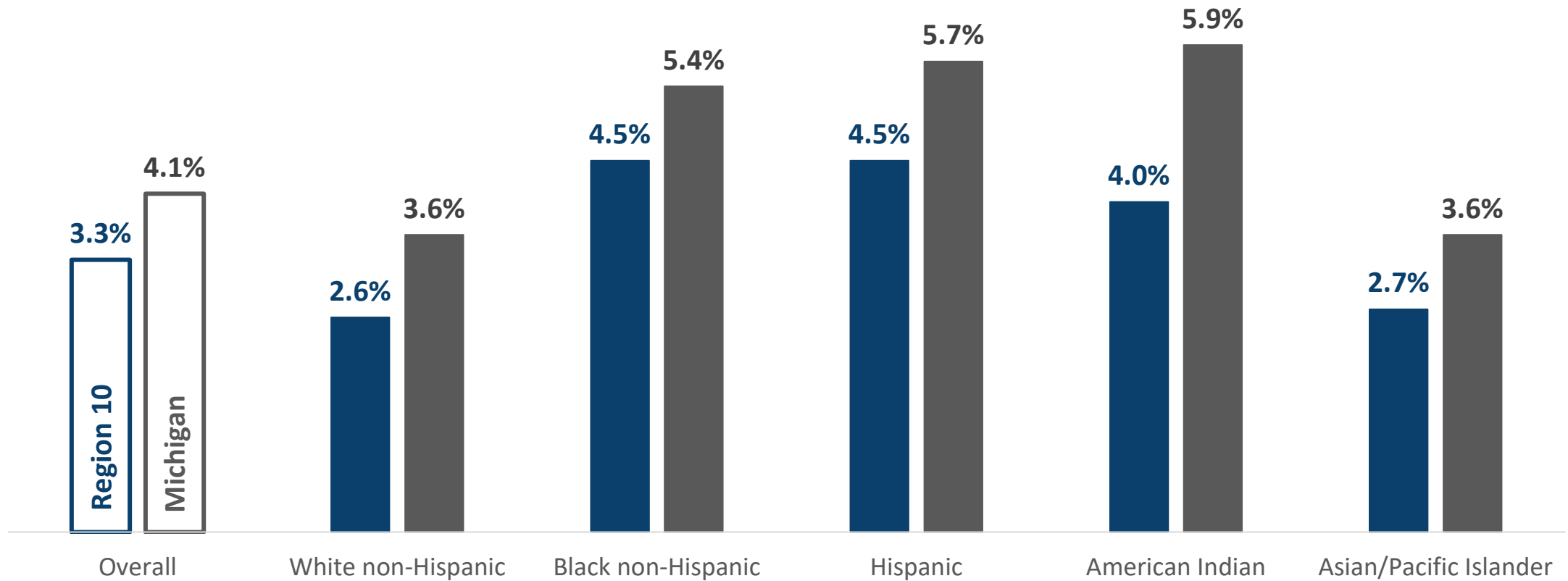
—●— EVER    —●— 1\_MONTH    —●— 2\_MONTHS    —●— 3\_MONTHS



# Late Entry into Prenatal Care Prosperity Region 10 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 10 2010-2020

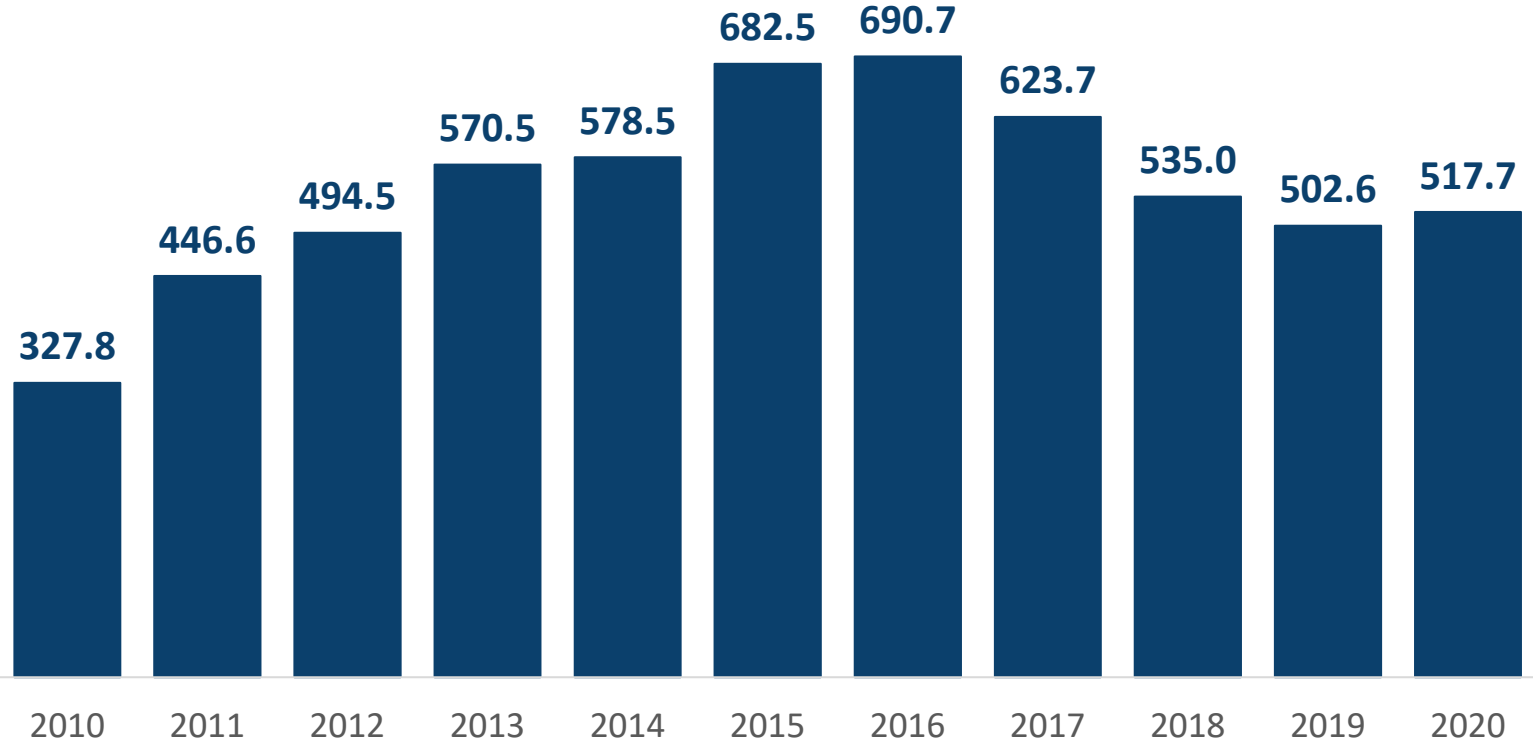
# About the Data

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 10, 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	152	46,364	327.8
2011	206	46,124	446.6
2012	225	45,505	494.5
2013	265	46,451	570.5
2014	267	46,152	578.5
2015	317	46,444	682.5
2016	319	46,185	690.7
2017	285	45,693	623.7
2018	242	45,233	535.0
2019	224	44,570	502.6
2020	222	42,878	517.7



# Neonatal Abstinence Syndrome by Maternal Race/Ethnicity, Prosperity Region 10, 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)

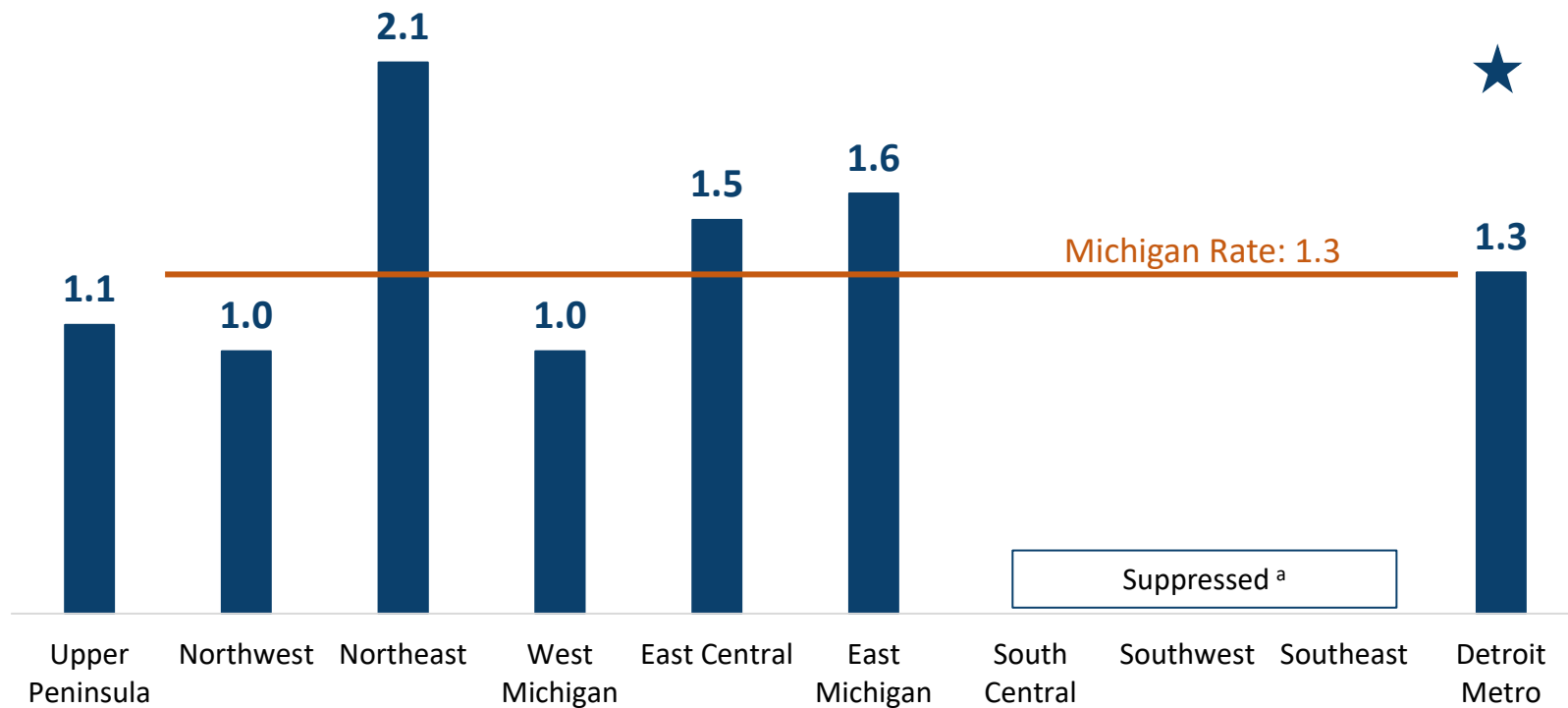
Maternal Race	# Cases	# Live Births	NAS Rate per 100,000 Live Births	MI
White non-Hispanic	985	122,817	802.0	851.5
Black non-Hispanic	204	68,609	297.3	376.6
Hispanic	62	13,564	457.1	519.5
American Indian	DNS	252	DNS	4,582.1
Asian/Pacific Islander	DNS	13,996	DNS	27.6

Data Not Sufficient: 0<N<6

# Sleep-Related Infant Death Rate Prosperity Region 10 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 **610** sleep-related infant deaths in Region Ten.
- The Region Ten sleep-related infant death rate of 1.3 per 1,000 live births was comparable to the Michigan sleep-related death rate, 1.3 per 1,000 live births.

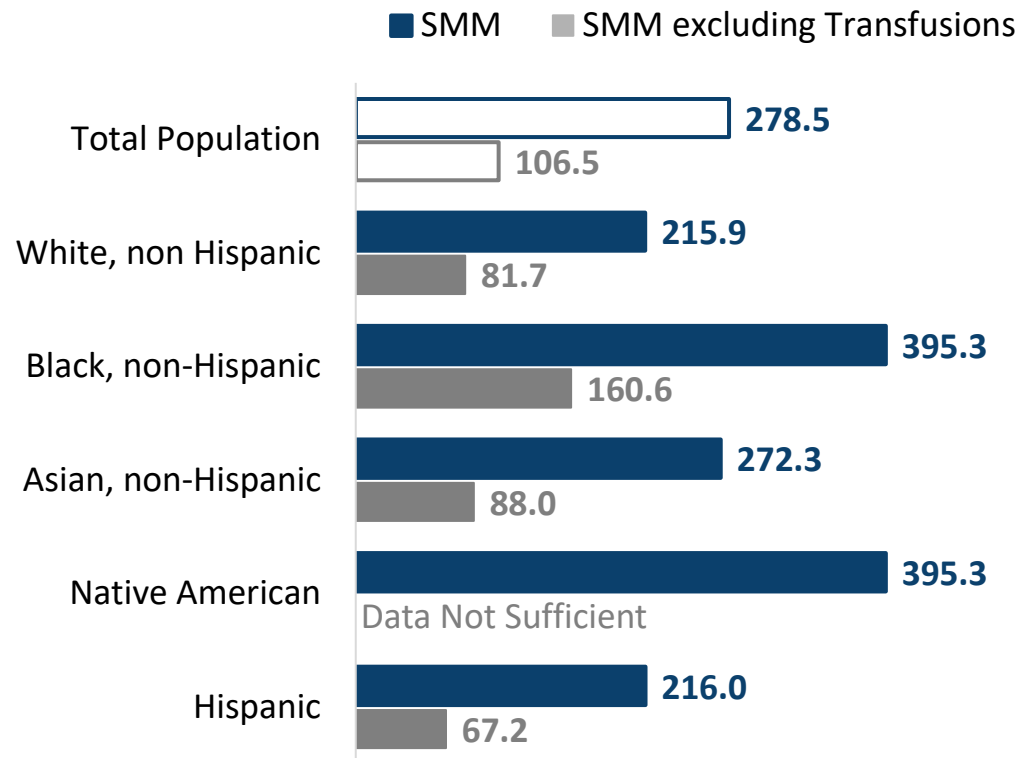
<sup>a</sup> Data for Regions 7, 8 and 9 suppressed as to not inadvertently identify a suppressed county level statistics. County level data can be found at [https://www.keepingkidsalive.org/wp-content/uploads/Sleep-Related-Infant-Deaths-in-Michigan\\_2010-to-2018.pdf](https://www.keepingkidsalive.org/wp-content/uploads/Sleep-Related-Infant-Deaths-in-Michigan_2010-to-2018.pdf)

# Severe Maternal Morbidity Rate Prosperity Region 10 2020

# Rate of Severe Maternal Morbidity (SMM) + SMM Excluding Transfusions, Region 10, 2020

## Region 10

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

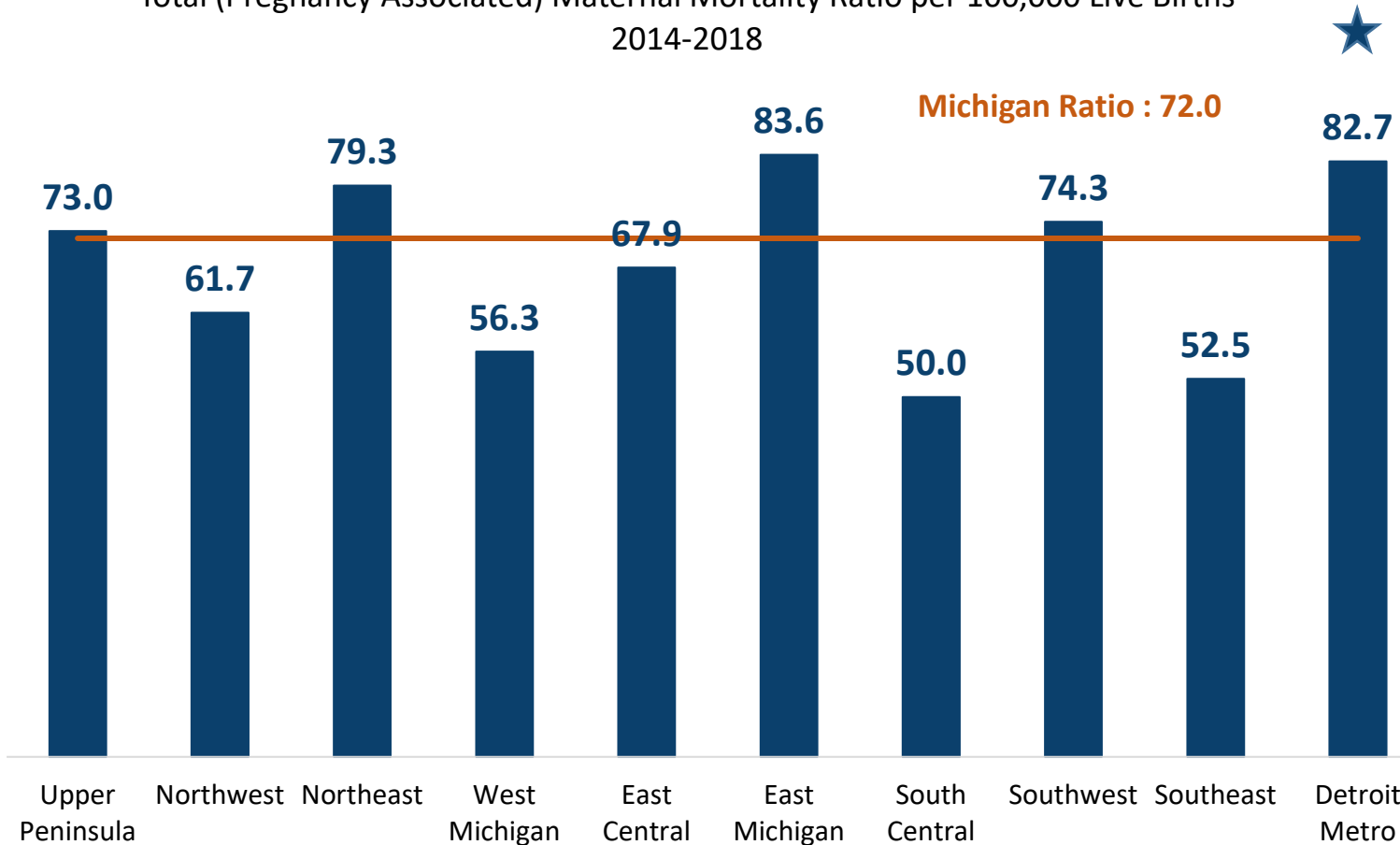
SMM Rate excluding transfusion per 10,000 inpatient delivery hospitalizations:

- 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

# Maternal Mortality Ratio Prosperity Region 10 2014-2018

# Maternal Mortality Ratio by Prosperity Region, 2014-2018

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

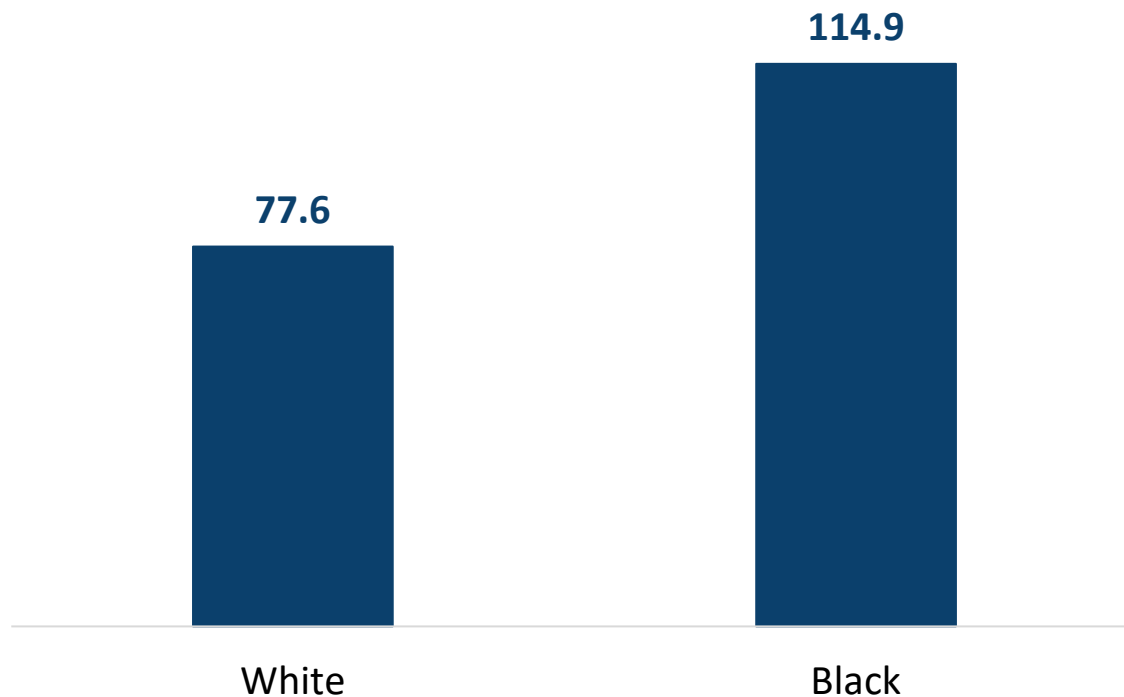


- Maternal deaths include deaths that occur during pregnancy, at delivery or within one year of pregnancy.
- Pregnancy associated (total) maternal mortality includes both pregnancy associated, not related mortality (unrelated to the pregnancy), pregnancy-related mortality (related to or aggravated by the pregnancy), and deaths where pregnancy-relatedness is unable to be determined.
- In Region Ten there were **190** maternal deaths between 2014 and 2018.

# Maternal Mortality Ratio by Race, Prosperity Region 10, 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 Ten experienced **1.5** times higher maternal mortality as compared to white mothers.

There were **104** White maternal deaths and **83** Black maternal deaths in Prosperity Region Ten between 2014 and 2018.