Maternal and Infant Health Statistics
Prosperity Region 10 Michigan
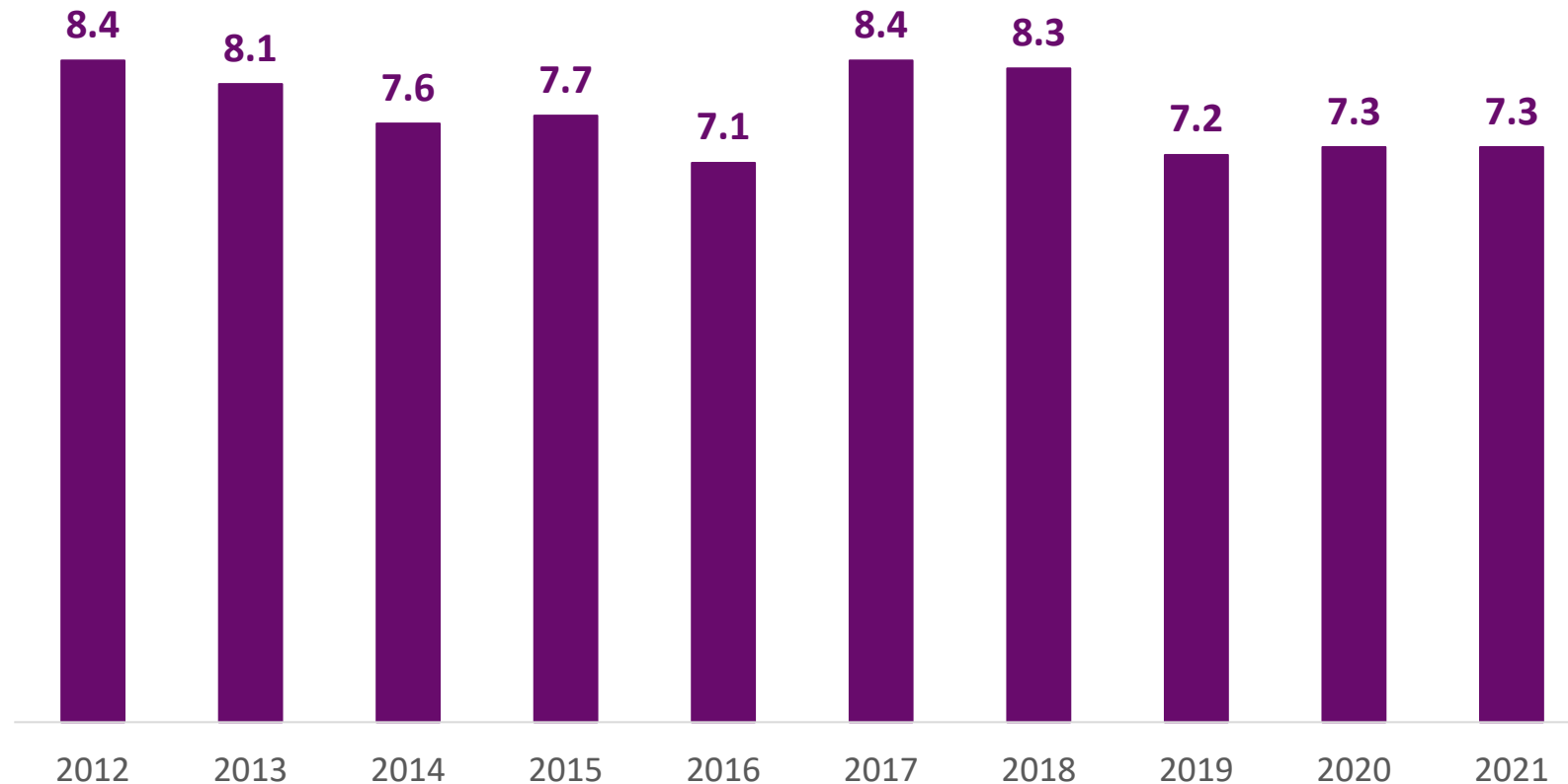
Infant Mortality Rate Prosperity Region 10 2012-2021

Infant Mortality Rate
Prosperity Region 10, 2012-2021

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.

	2021 Michigan Rate = 6.2		
Year	# Infant Deaths	# Births	Rate per 1,000 Live Births
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
2021	315	43,025	7.3

Infant Mortality Rates by Maternal Race/Ethnicity Prosperity Region 10, 2017-2021

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.

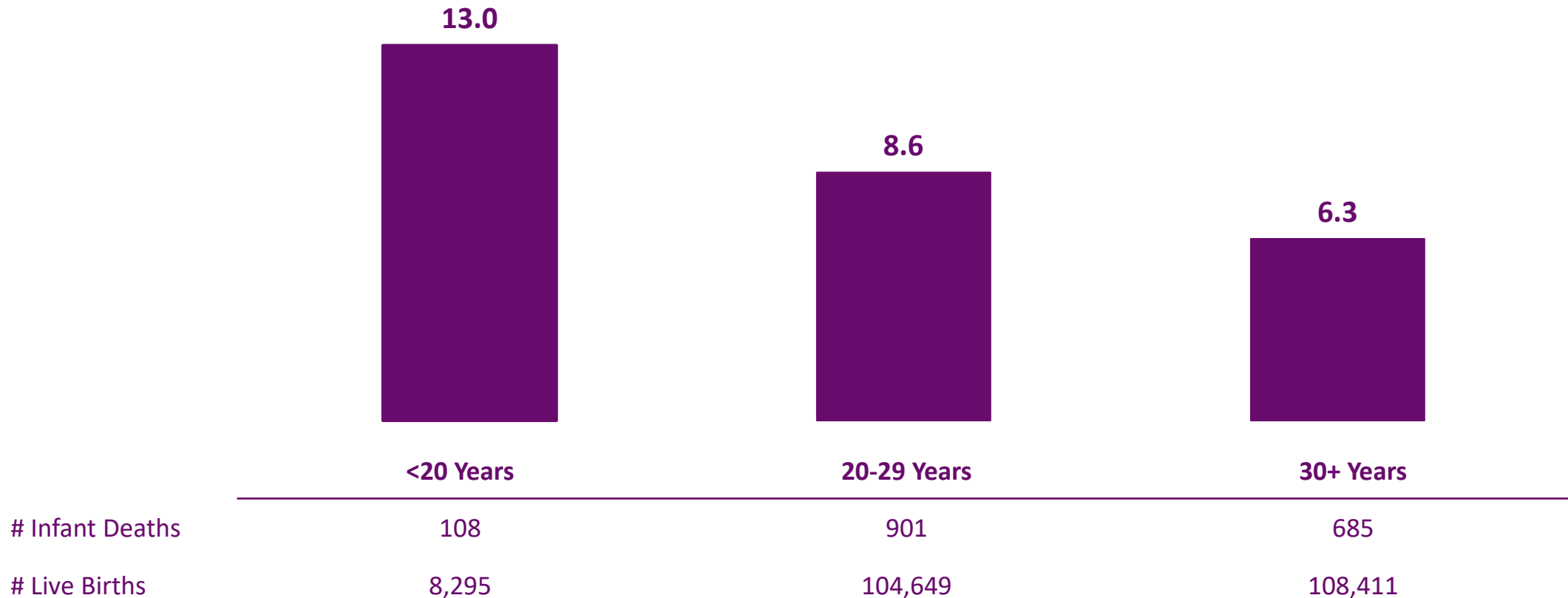| Maternal Race	# Infant Deaths	# Live Births		Infant Mortality Rate (per 1,000 Live Births)	MI
White Non-Hispanic	543	120,040	4.5	4.5	4.8
Black Non-Hispanic	961	67,027	14.3	14.3	13.6
Hispanic	84	13,444	6.2	6.2	5.6
American Indian	0	258	0		5.5
Asian/Pacific Islander	58	13,628	4.3	4.3	4.5

Birth Outcomes by Race/Ethnicity Prosperity Region 10, 2017-2021

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.

Comparison of methods used to measure cases among Native Americans	# Live Births	# Infant Deaths	# Low Birthweight	# Preterm	IMR per 1,000 Live Births	% Low Birthweight	% Preterm
#1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic	**258**	**0**	19	29	**0.0**	7.4%	11.2%
#2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native).	**655**	**0<N<6**	64	72	**Data Not Sufficient**	9.8%	11.0%
#3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) **OR** the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native)	**1,015**	**6**	90	94	**5.9**	8.9%	9.3%

Infant Mortality Rate by Maternal Age Prosperity Region 10, 2017-2021

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.

	<20 Years	20-29 Years	30+ Years
# Infant Deaths	108	901	685
# Live Births	8,295	104,649	108,411

Chart values: <20 Years: 13.0; 20-29 Years: 8.6; 30+ Years: 6.3

Infant Mortality Rates by Intended Payment Source Prosperity Region 10, 2017-2021

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	717	125,080	5.7	5.7	4.9
Medicaid	924	91,903	10.1	10.1	8.7

Infant Mortality Rate + Percent Cause of Death Prosperity Region 10, 2017-2021

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.
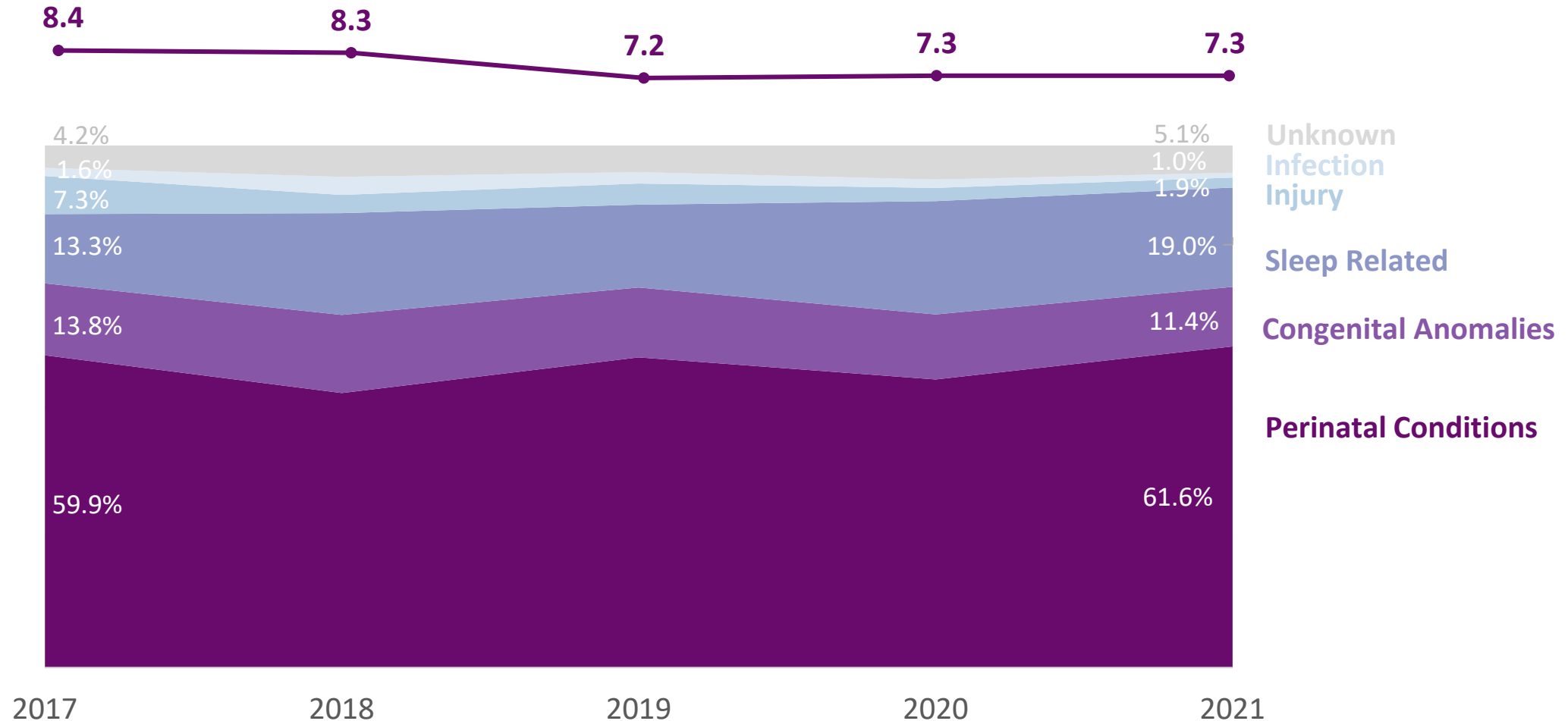

8.4   8.3   7.2   7.3   7.3

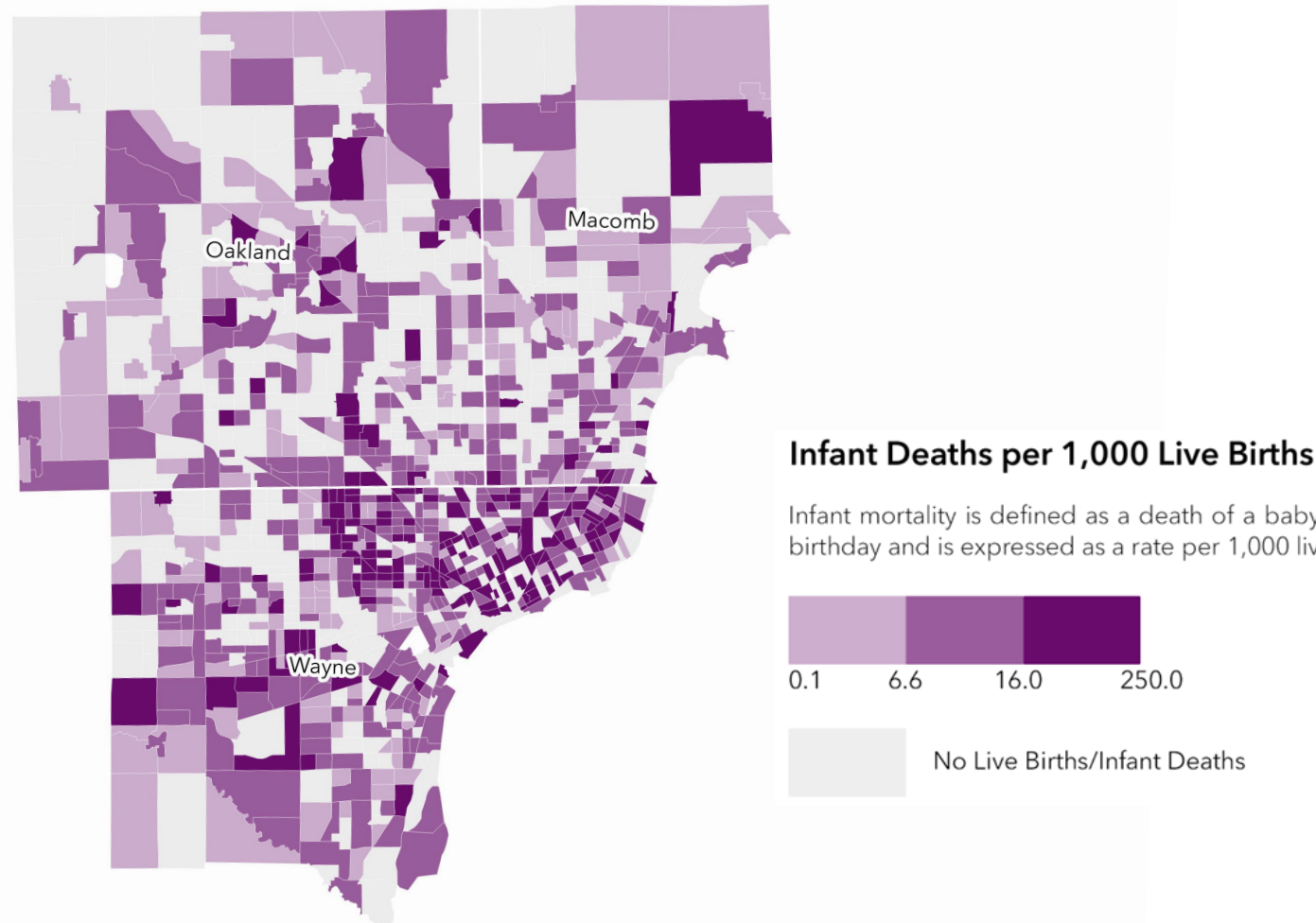|				
4.2%				5.1%	Unknown
1.6%				1.0%	Infection
7.3%				1.9%	Injury
13.3%				19.0%	Sleep Related
13.8%				11.4%	Congenital Anomalies
59.9%				61.6%	Perinatal Conditions

2017   2018   2019   2020   2021

Infant Mortality Rates by Census Tract 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.

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.

0.1 6.6 16.0 250.0

No Live Births/Infant Deaths

Infant Mortality Rates by Census Tract
City of Detroit, 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.
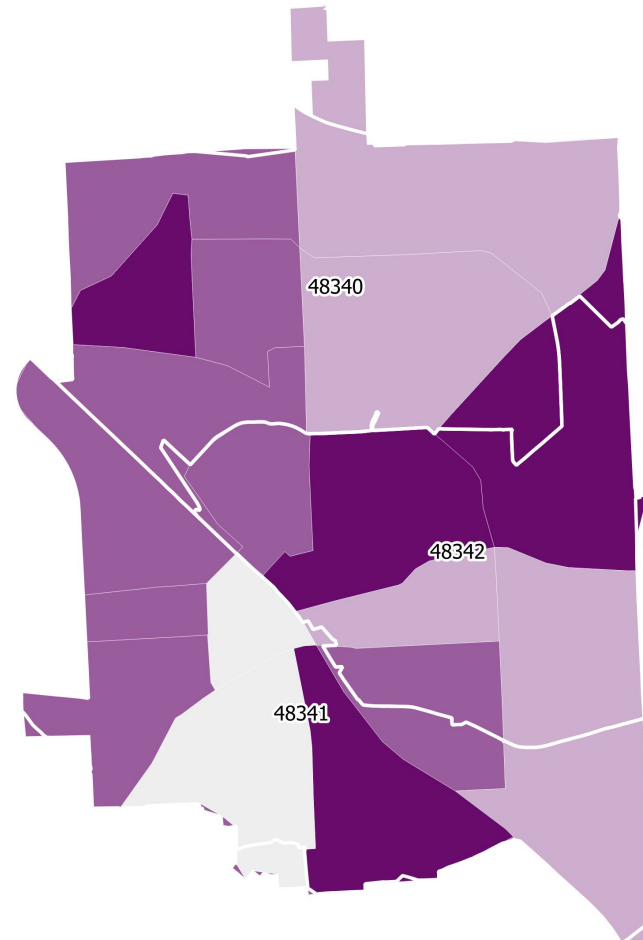
Infant Deaths per 1,000 Live Births

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.

| 0.1 | 6.6 | 16.0 | 250.0 |

No Live Births/Infant Deaths

Infant Mortality Rates by Census Tract
City of Pontiac, 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 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.
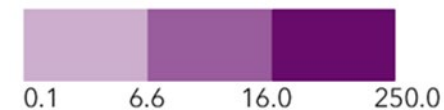
0.1   6.6   16.0   250.0

No Live Births/Infant Deaths

Infant Mortality Rates by Census Tract
City of Warren, 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.
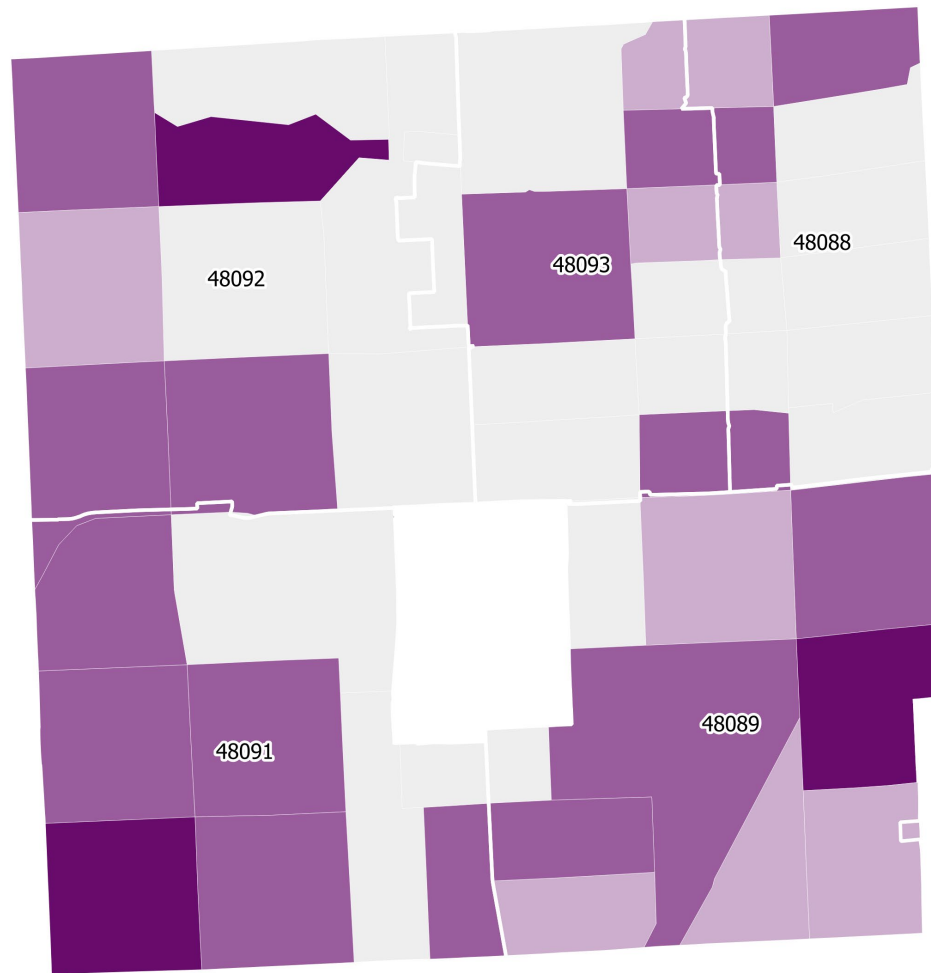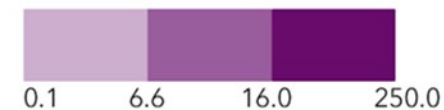

Infant Deaths per 1,000 Live Births

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.
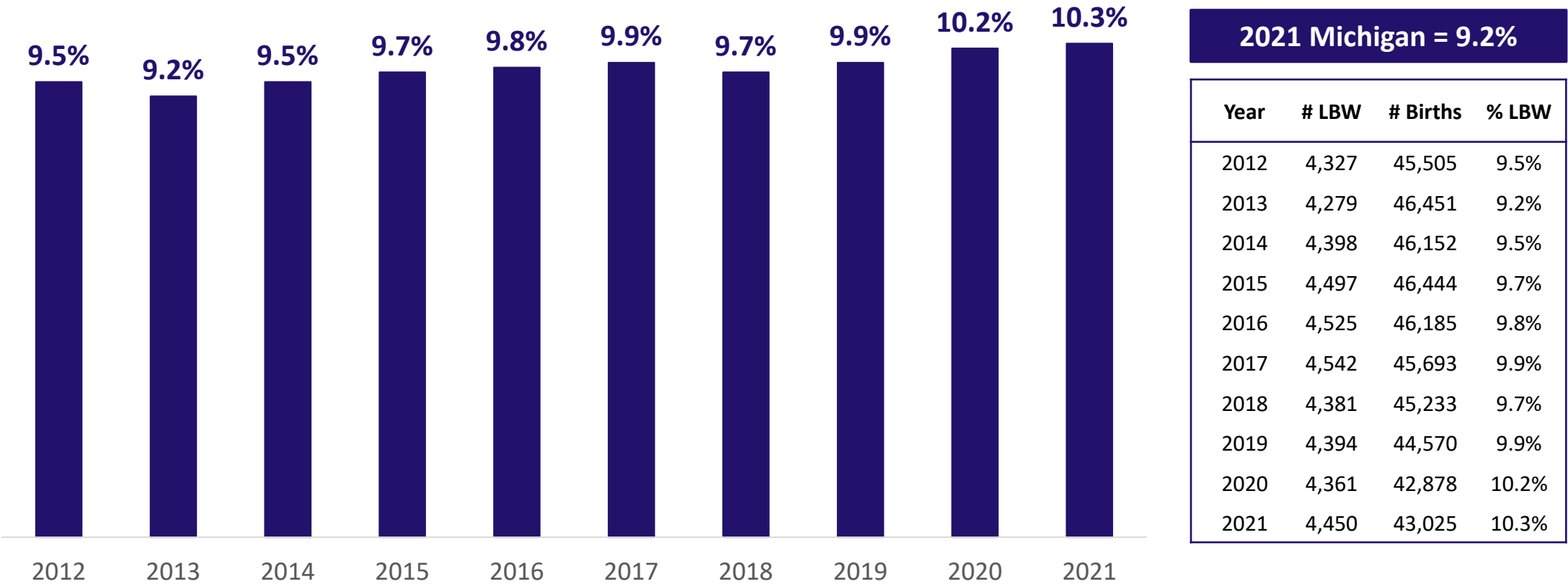
0.1   6.6   16.0   250.0

No Live Births/Infant Deaths

Low Birthweight (LBW) Prosperity Region 10 2012-2021

Low Birthweight
Prosperity Region 10, 2012-2021

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

Bar chart values by year:
- 2012: 9.5%
- 2013: 9.2%
- 2014: 9.5%
- 2015: 9.7%
- 2016: 9.8%
- 2017: 9.9%
- 2018: 9.7%
- 2019: 9.9%
- 2020: 10.2%
- 2021: 10.3%

2021 Michigan = 9.2%

Year	# LBW	# Births	% LBW
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%
2021	4,450	43,025	10.3%

Low Birthweight by Maternal Race/Ethnicity Prosperity Region 10, 2017-2021

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

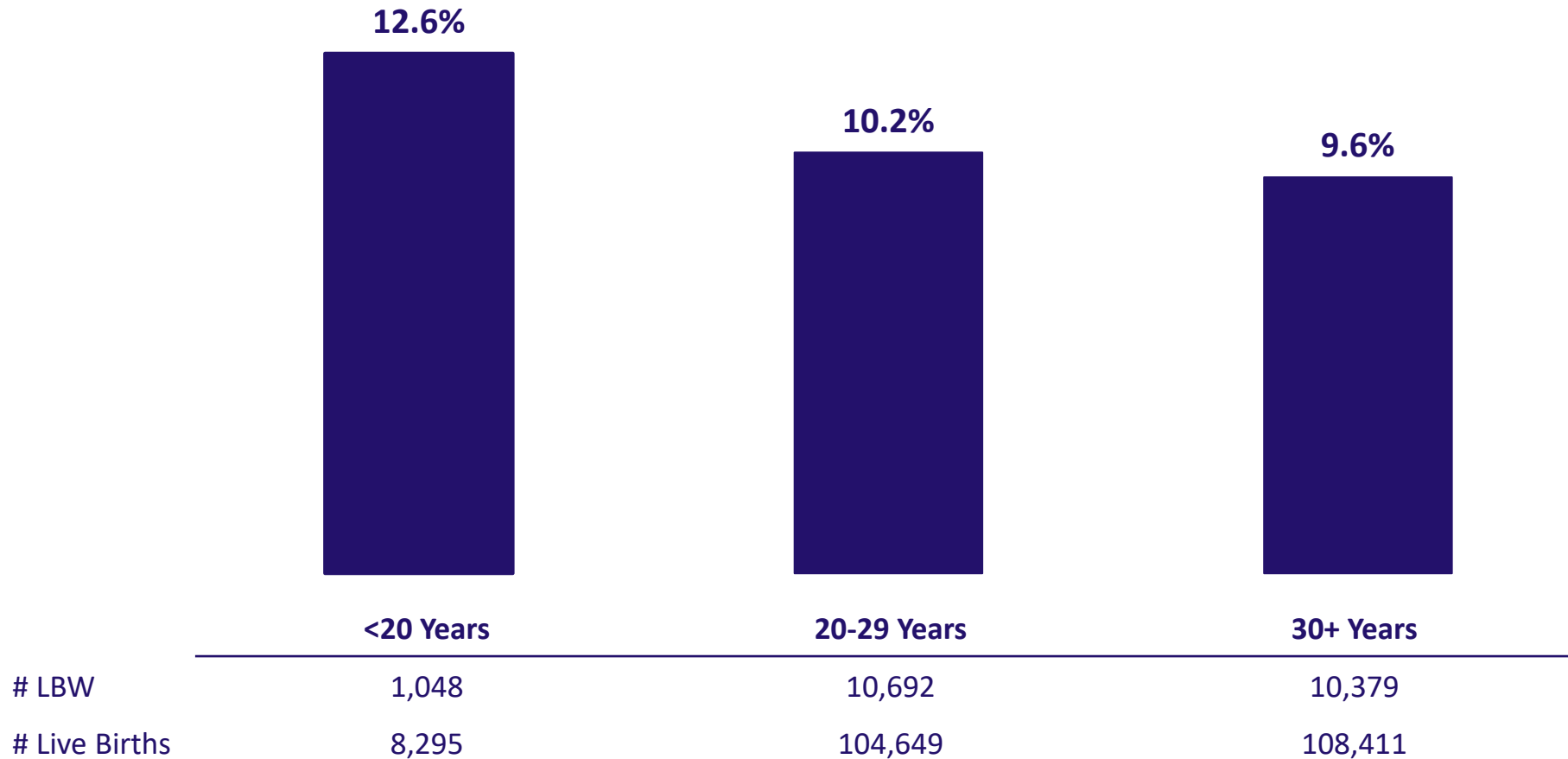| Maternal Race	# LBW	# Live Births		Percent (%) Low Birthweight	MI
White non-Hispanic	8,837	120,040	7.4%	7.4%	7.2
Black non-Hispanic	10,273	67,027	15.3%	15.3%	15.2
Hispanic	1,050	13,444	7.8%	7.8%	7.7
American Indian	19	258	7.4%	7.4%	8.4
Asian/Pacific Islander	1,264	13,628	9.3%	9.3%	9.0

Birth Outcomes by Race/Ethnicity Prosperity Region 10, 2017-2021

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

Comparison of methods used to measure cases among Native Americans	# Live Births	# Infant Deaths	# Low Birthweight	# Preterm	IMR per 1,000 Live Births	% Low Birthweight	% Preterm
#1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic	258	0	19	29	0.0	7.4%	11.2%
#2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native).	655	0<N<6	64	72	Data Not Sufficient	9.8%	11.0%
#3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) OR the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native)	1,015	6	90	94	5.9	8.9%	9.3%

Low Birthweight by Maternal Age Prosperity Region 10, 2017-2021

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

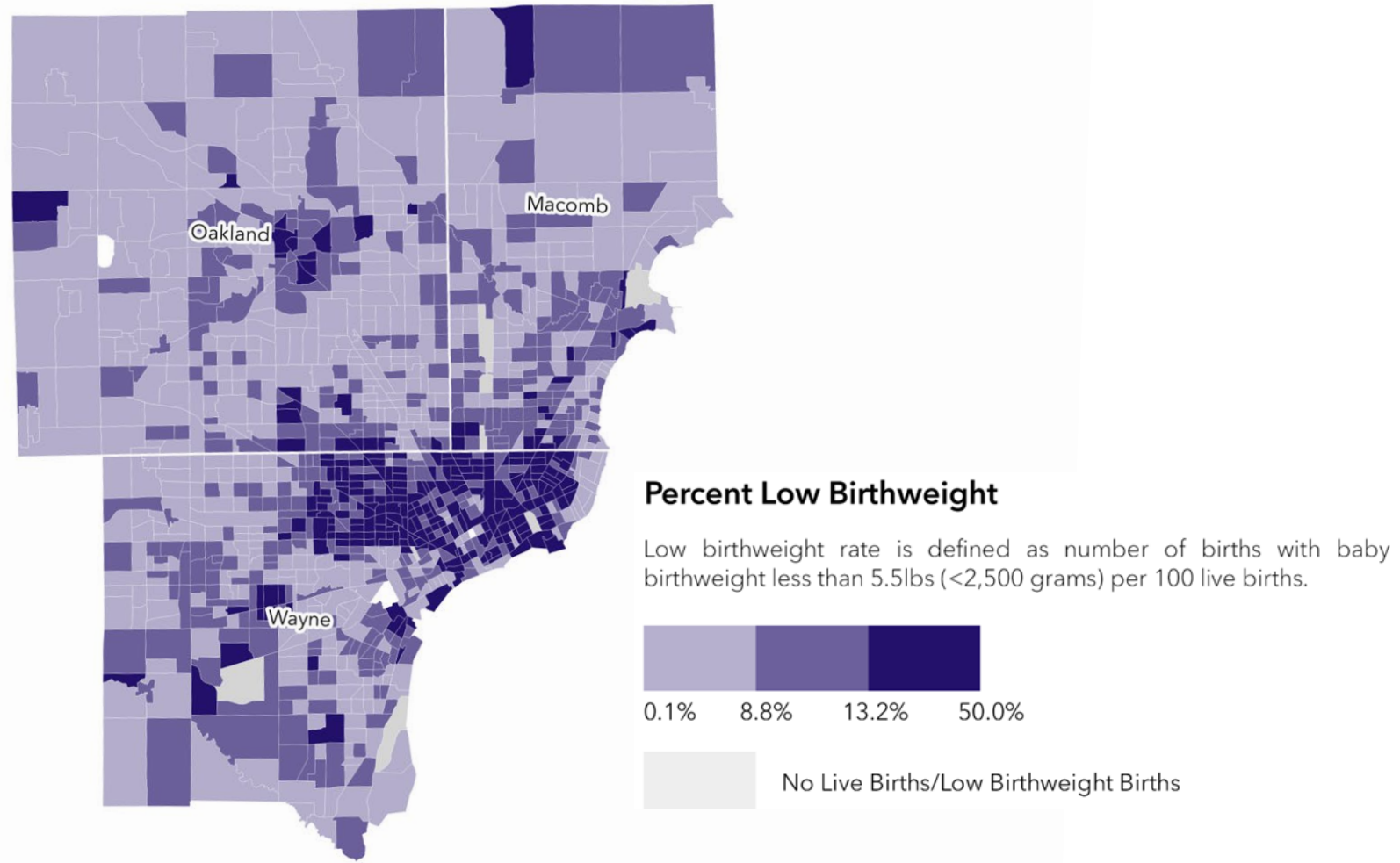|	<20 Years	20-29 Years	30+ Years
	12.6%	10.2%	9.6%
# LBW	1,048	10,692	10,379
# Live Births	8,295	104,649	108,411

Low Birthweight by Intended Payment Source Prosperity Region 10, 2017-2021

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

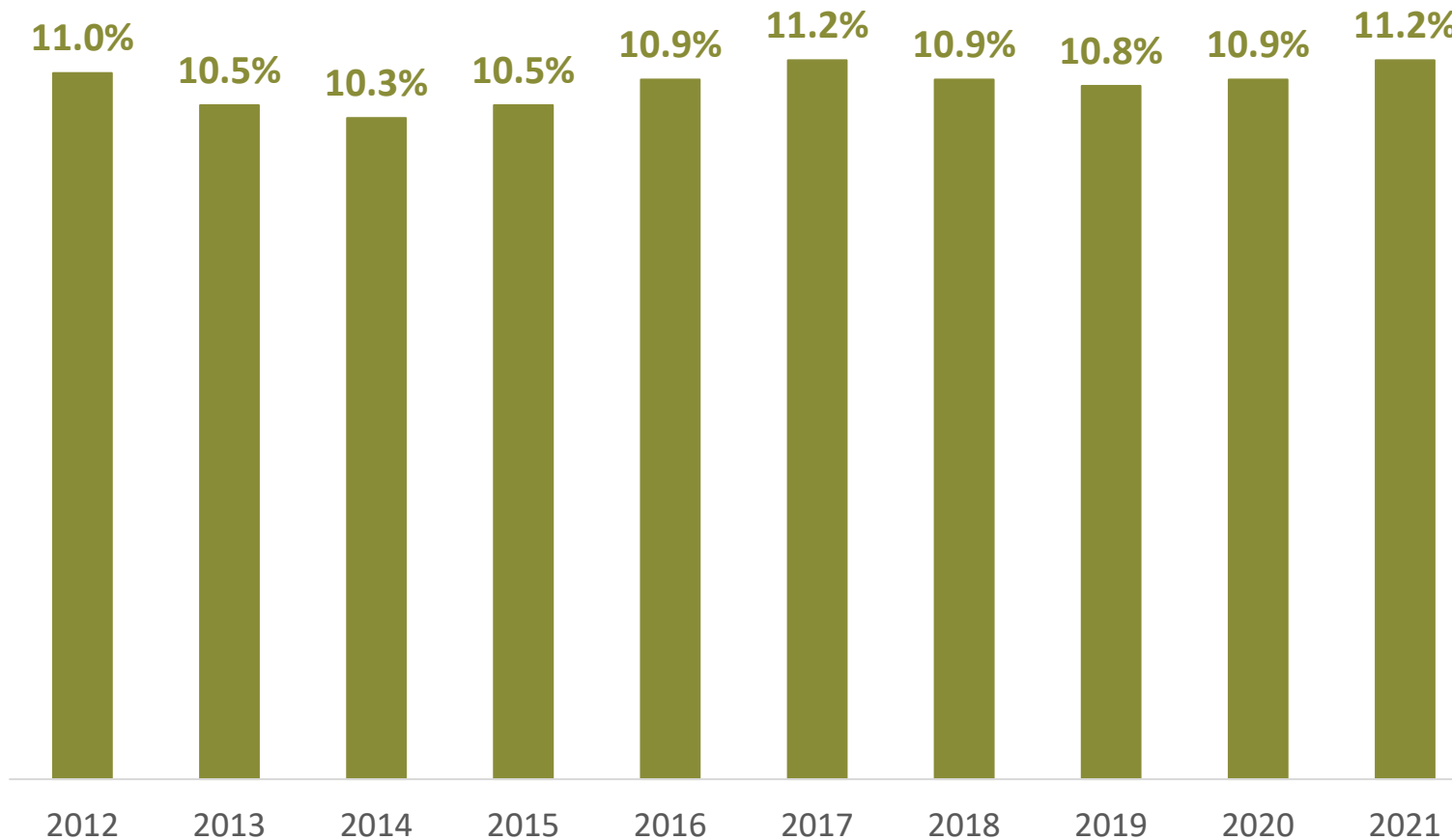| Payment	# LBW	# Live Births	Percent (%) Low Birthweight		MI
Private Insurance	10,650	125,080	8.5%	8.5%	7.5%
Medicaid	10,993	91,903	12.0%	12.0%	10.9%

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.

| 0.1% | 8.8% | 13.2% | 50.0% |

No Live Births/Low Birthweight Births

Preterm Birth
Prosperity Region 10
2012-2021

Preterm Birth
Prosperity Region 10, 2012-2021

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.

11.0% 10.5% 10.3% 10.5% 10.9% 11.2% 10.9% 10.8% 10.9% 11.2%

2012 2013 2014 2015 2016 2017 2018 2019 2020 2021

2021 Michigan = 10.6%

Year	# Preterm	# Births	% Preterm
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%
2021	4,803	43,025	11.2%

Data source: Michigan resident live birth files, Division for Vital Records and Health Statistics, MDHHS

Preterm Birth by Maternal Race/Ethnicity Prosperity Region 10, 2017-2021

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.

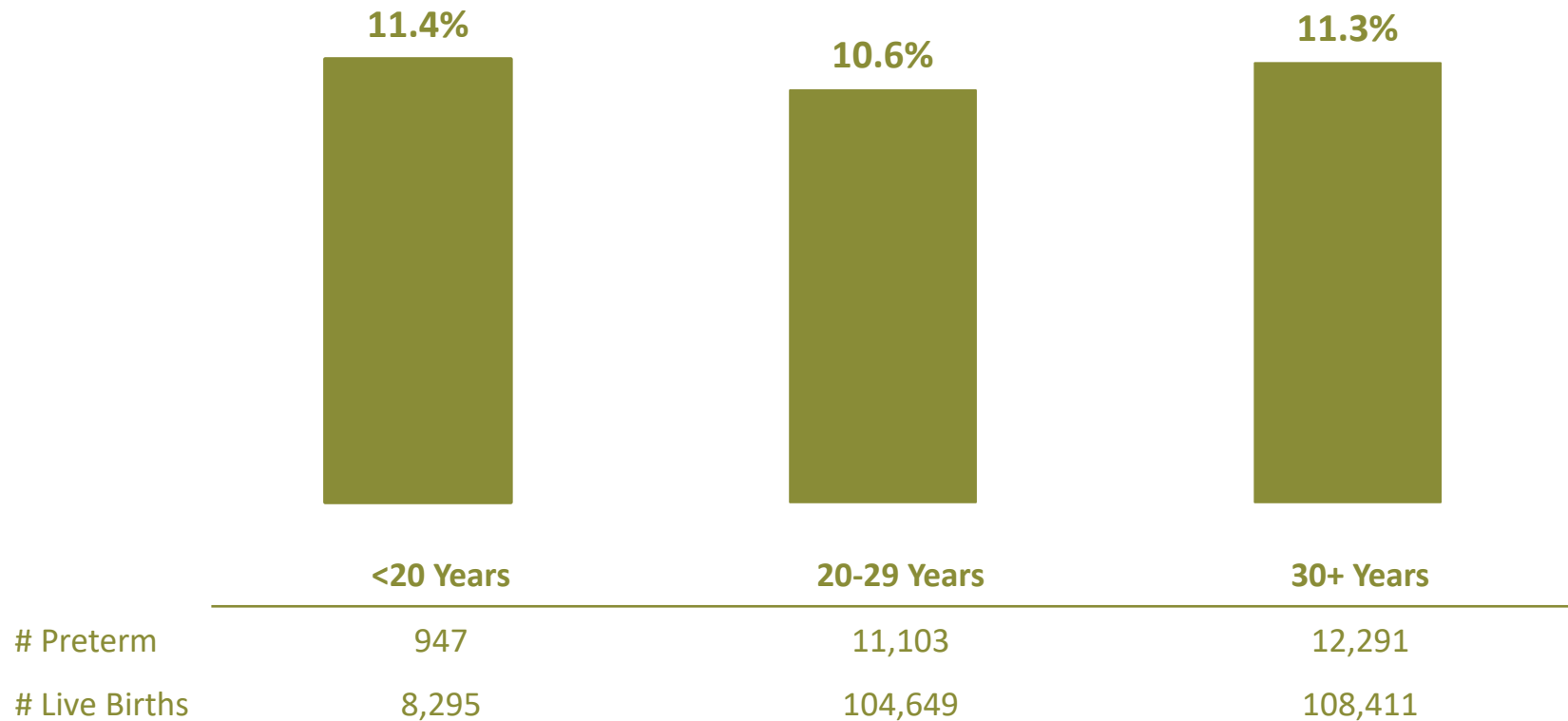| Maternal Race	# Preterm	# Live Births		Percent (%) Preterm	MI
White non-Hispanic	11,055	120,040	9.2%	9.2%	9.2%
Black non-Hispanic	10,174	67,027	15.2%	15.2%	14.9%
Hispanic	1,305	13,444	9.7%	9.7%	9.8%
American Indian	29	258	11.2%	11.2%	10.1%
Asian/Pacific Islander	1,088	13,628	8.0%	8.0%	8.2%

Birth Outcomes by Race/Ethnicity Prosperity Region 10, 2017-2021

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.

Comparison of methods used to measure cases among Native Americans	# Live Births	# Infant Deaths	# Low Birthweight	# Preterm	IMR per 1,000 Live Births	% Low Birthweight	% Preterm
#1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic	258	0	19	29	0.0	7.4%	11.2%
#2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native).	655	0<N<6	64	72	Data Not Sufficient	9.8%	11.0%
#3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) **OR** the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native)	1,015	6	90	94	5.9	8.9%	9.3%

Preterm Birth by Maternal Age Prosperity Region 10, 2017-2021

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.

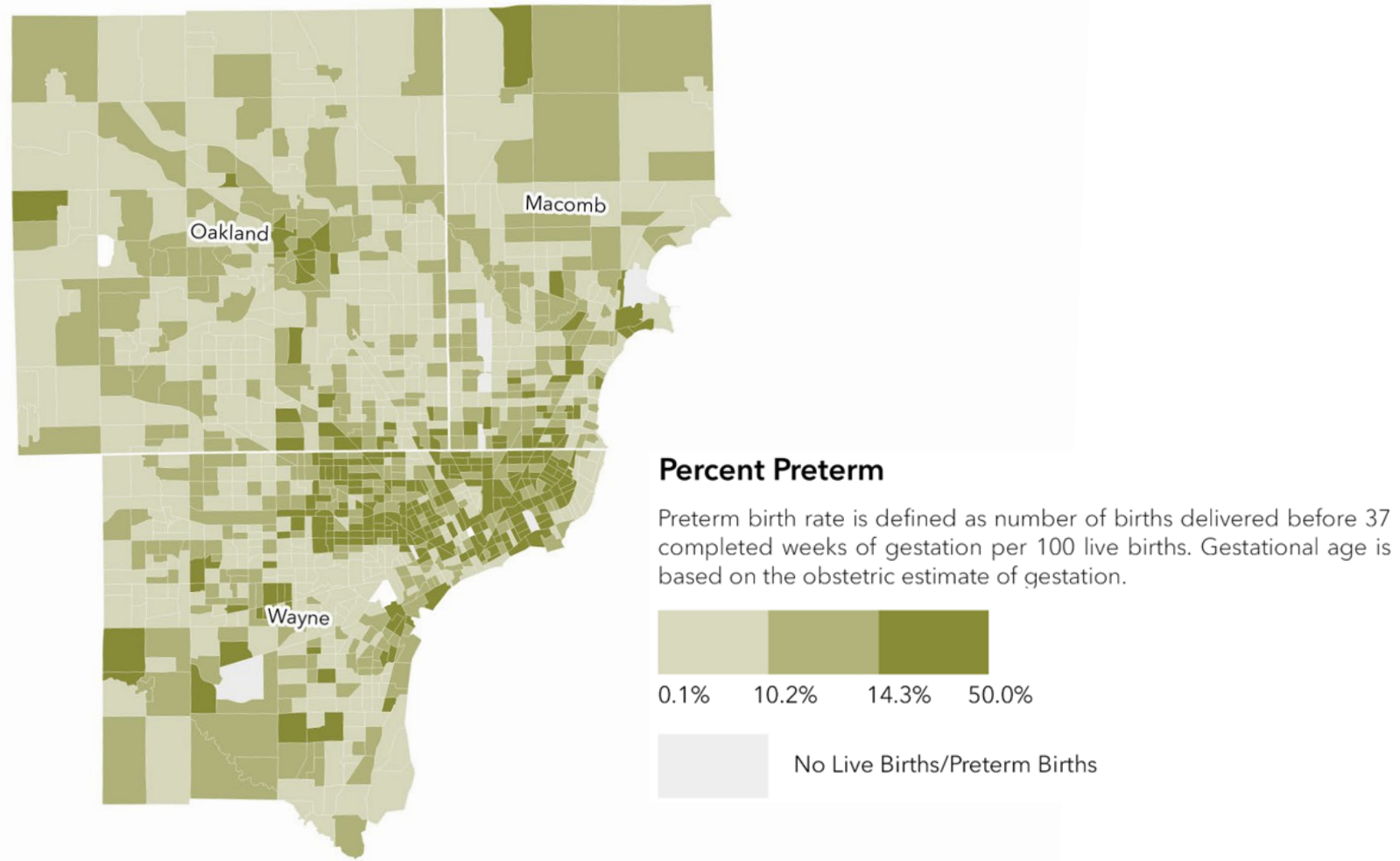|	<20 Years	20-29 Years	30+ Years
	11.4%	**10.6%**	**11.3%**
# Preterm	947	11,103	12,291
# Live Births	8,295	104,649	108,411

Preterm Birth by Intended Payment Source Prosperity Region 10, 2017-2021

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.

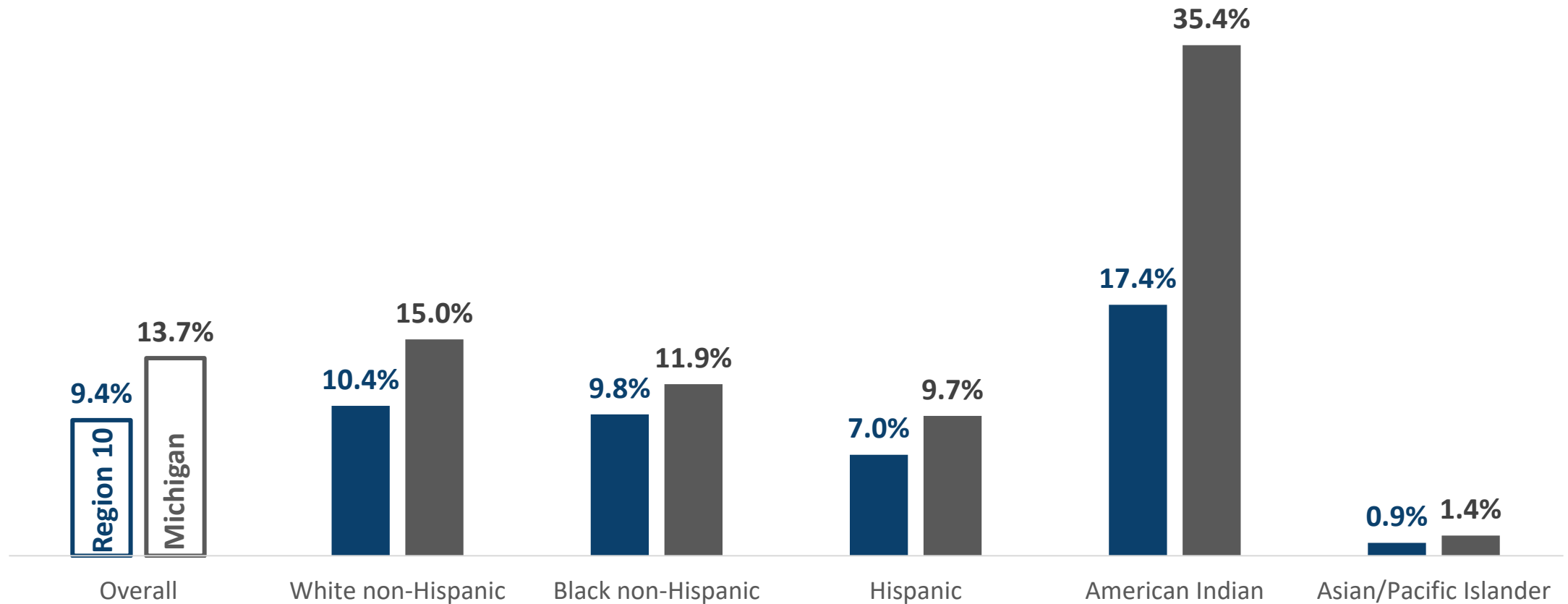| Payment	# Preterm	# Live Births		Percent (%) Preterm	MI
Private Insurance	12,643	125,080	10.1%	10.1%	9.4%
Medicaid	11,209	91,903	12.2%	12.2%	11.6%

Preterm Birth by Census Tract 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.

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.

0.1%   10.2%   14.3%   50.0%

No Live Births/Preterm Births

Smoking During Pregnancy Prosperity Region 10 2017-2021

Smoking During Pregnancy by Maternal Race/Ethnicity, 2017-2021

Region 10 — Overall: 9.4%; Michigan — Overall: 13.7%

White non-Hispanic: 10.4% / 15.0%
Black non-Hispanic: 9.8% / 11.9%
Hispanic: 7.0% / 9.7%
American Indian: 17.4% / 35.4%
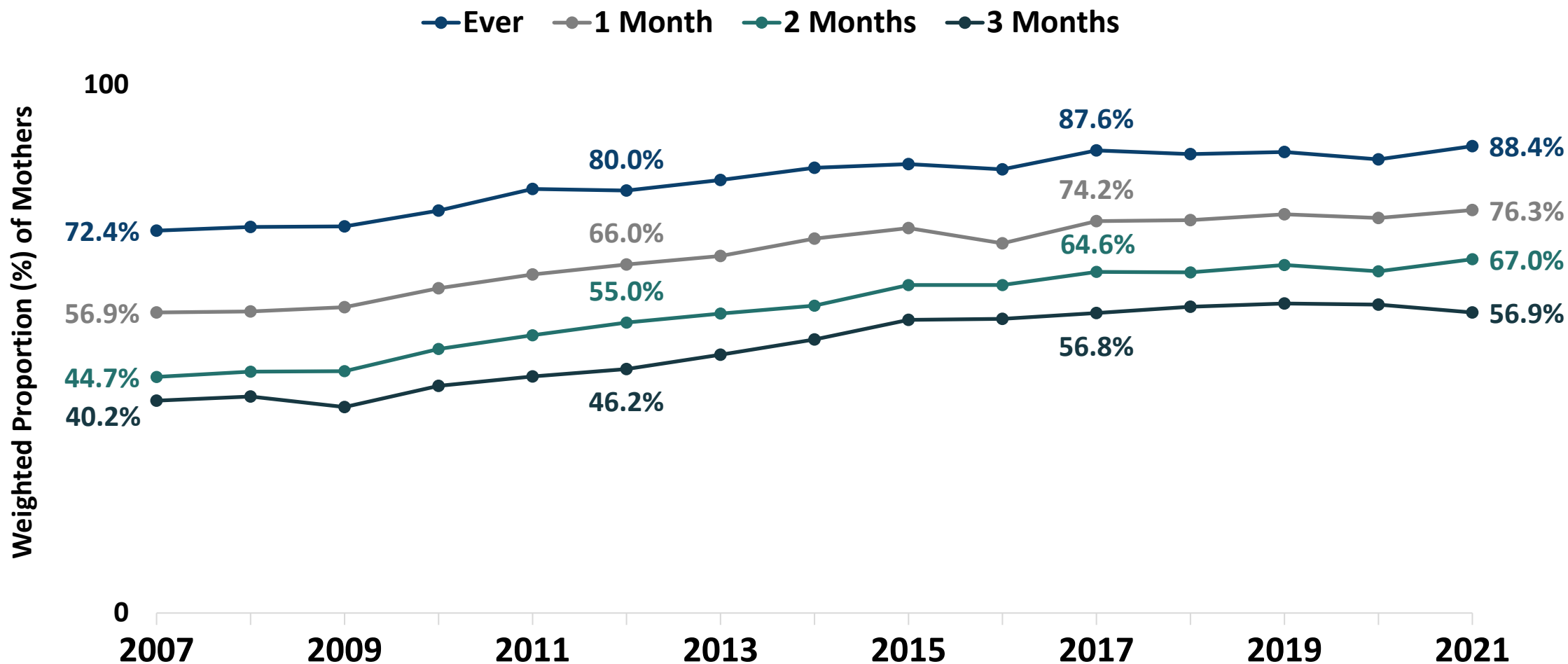Asian/Pacific Islander: 0.9% / 1.4%

Smoking During Pregnancy by Race/Ethnicity Prosperity Region 10, 2017-2021

Comparison of methods used to measure cases among Native Americans	# Smoke during Pregnancy	# Live Births	Percent (%) Smoke during Pregnancy
#1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic	45	258	17.4%
#2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native).	108	655	16.5%
#3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) **OR** the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native)	186	1,015	18.3%

Breastfeeding Initiation and Duration Michigan
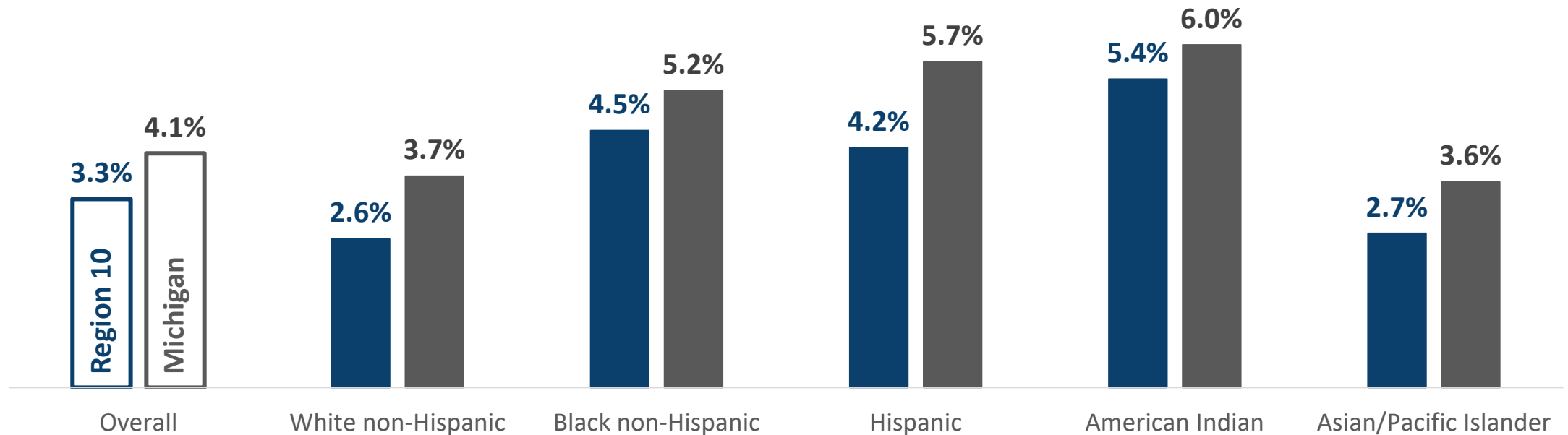# 2007-2021

Breastfeeding Initiation + Duration Michigan, 2007-2021

Significance test for all linear trends: p < 0.0001

Legend: Ever · 1 Month · 2 Months · 3 Months

Ever: 72.4% ... 80.0% ... 87.6% ... 88.4%
1 Month: 56.9% ... 66.0% ... 74.2% ... 76.3%
2 Months: 44.7% ... 55.0% ... 64.6% ... 67.0%
3 Months: 40.2% ... 46.2% ... 56.8% ... 56.9%

Y-axis: Weighted Proportion (%) of Mothers (0 to 100)
X-axis: 2007, 2009, 2011, 2013, 2015, 2017, 2019, 2021

Late Entry into Prenatal Care
Prosperity Region 10
2017-2021

Late Entry Into Prenatal Care by Maternal Race/Ethnicity, 2017-2021

Late entry into prenatal care refers to begin prenatal care in the 7th – 9th month of gestation

	Region 10	Michigan
Overall	3.3%	4.1%
White non-Hispanic	2.6%	3.7%
Black non-Hispanic	4.5%	5.2%
Hispanic	4.2%	5.7%
American Indian	5.4%	6.0%
Asian/Pacific Islander	2.7%	3.6%

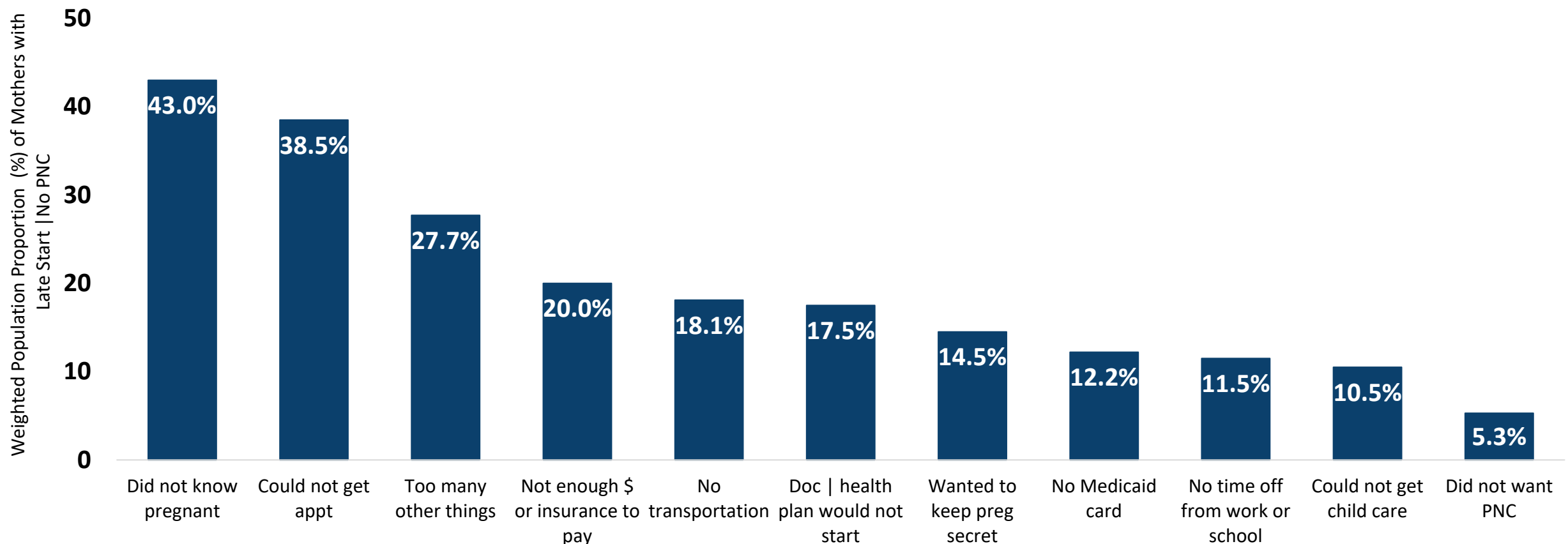# Late Entry into Prenatal Care by Race/Ethnicity Prosperity Region 10, 2017-2021

Late entry into prenatal care refers to begin prenatal care in the 7th – 9th month of gestation

Comparison of methods used to measure cases among Native Americans	# Late Prenatal Care	# Live Births	Percent (%) Late Prenatal Care
#1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic	14	258	5.4%
#2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native).	27	655	4.1%
#3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) **OR** the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native)	42	1,015	4.1%

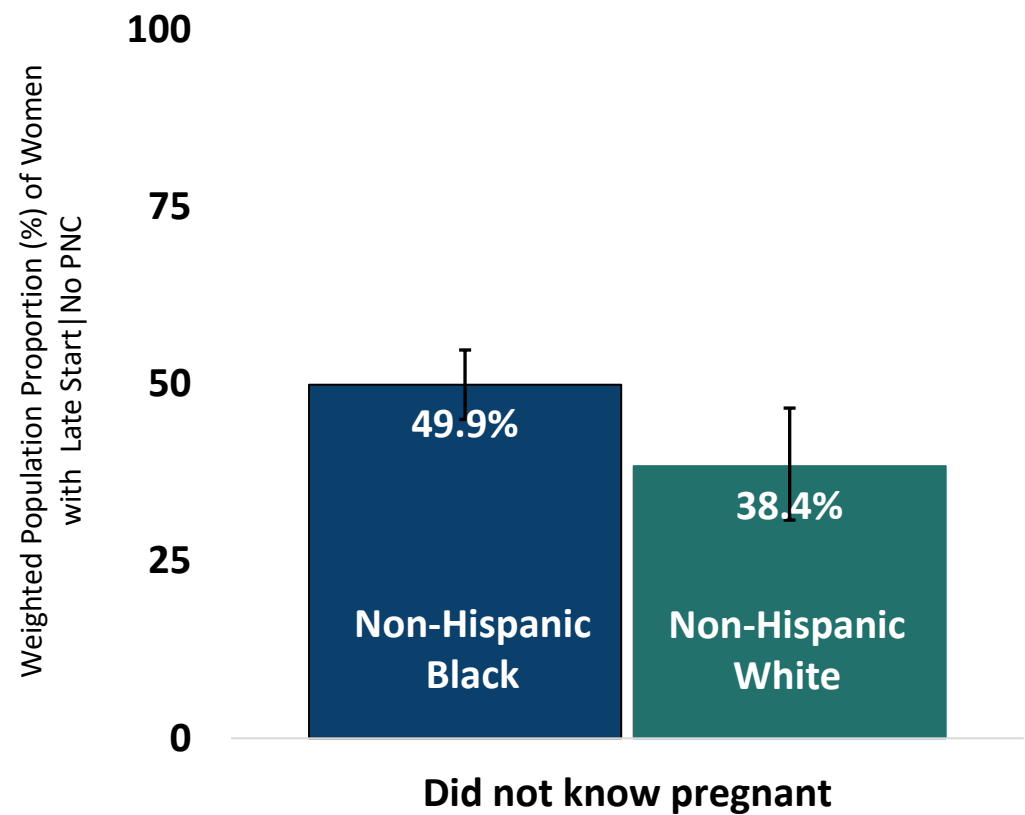34

Barriers to Prenatal Care
Michigan
2016-2021

Around <u>half</u> (51.7%) of mothers who started PNC after the first trimester were okay with that timing.

Chart — Weighted Population Proportion (%) of Mothers with Late Start | No PNC:

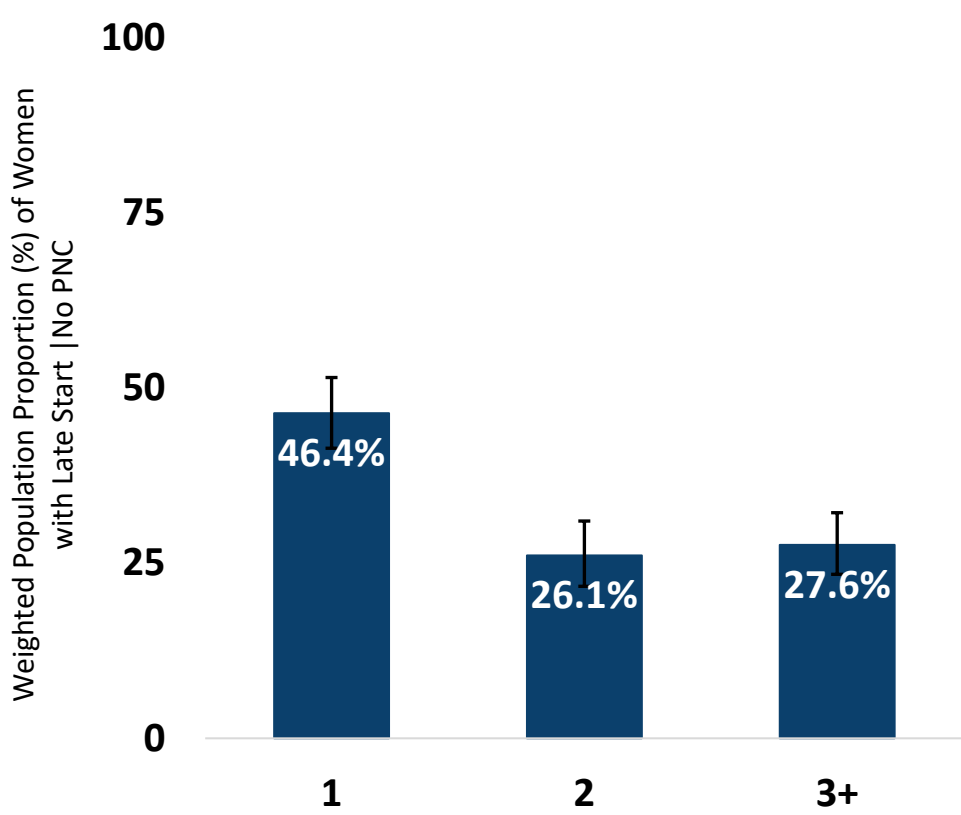| Barrier	Percentage
Did not know pregnant	43.0%
Could not get appt	38.5%
Too many other things	27.7%
Not enough $ or insurance to pay	20.0%
No transportation	18.1%
Doc | health plan would not start	17.5%
Wanted to keep preg secret	14.5%
No Medicaid card	12.2%
No time off from work or school	11.5%
Could not get child care	10.5%
Did not want PNC	5.3%

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Barriers to Prenatal Care among Michigan Mothers who started PNC *after* 1st trimester and wanted to start sooner, 2016-2021

Selected Barriers with Significant Differences by Maternal Race/Ethnicity

Weighted Population Proportion (%) of Women with Late Start|No PNC

- Non-Hispanic Black: 49.9%
- Non-Hispanic White: 38.4%

Did not know pregnant

Number of Barriers among Mothers with Late|No PNC

Weighted Population Proportion (%) of Women with Late Start|No PNC
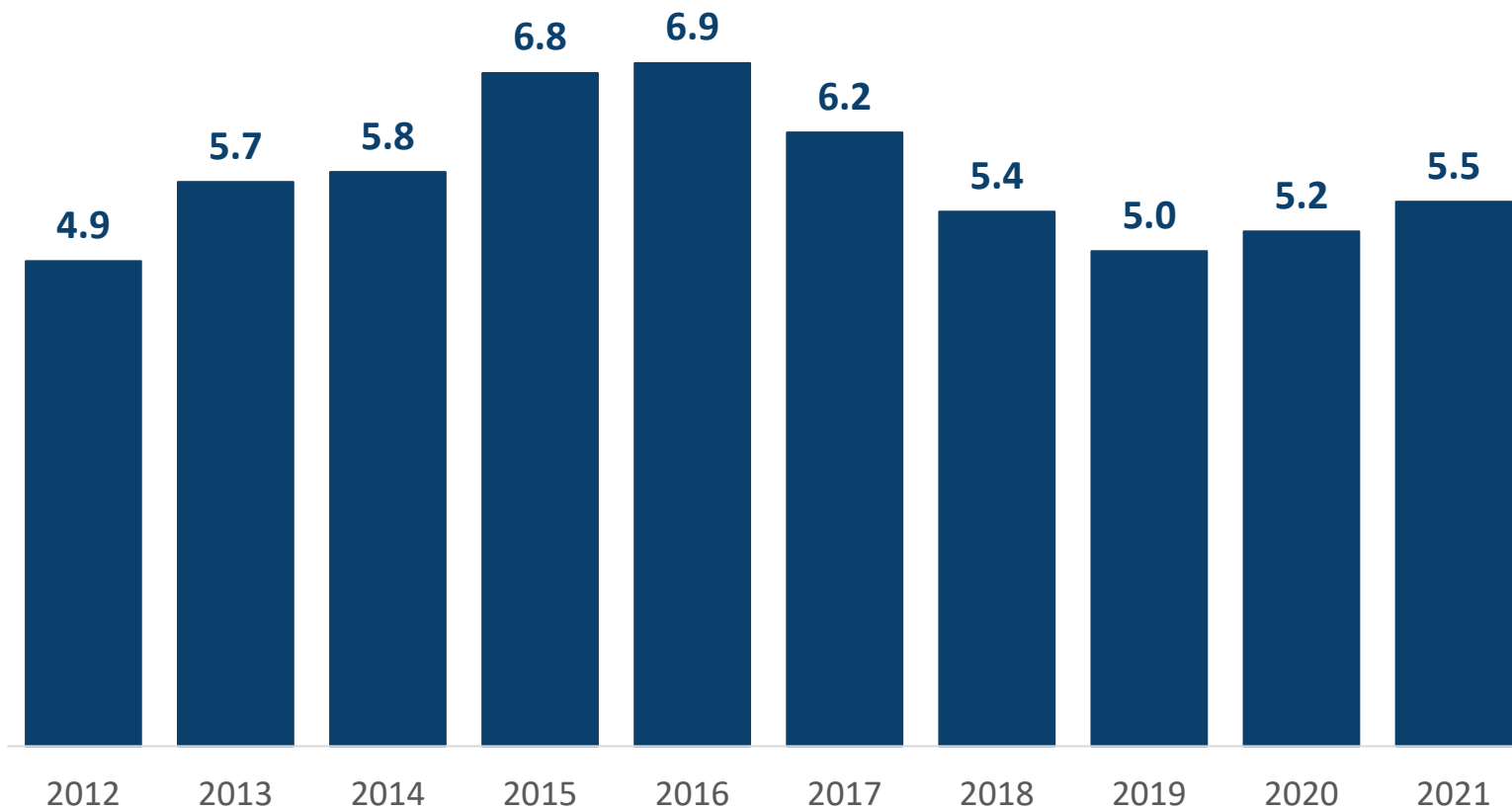
- 1: 46.4%
- 2: 26.1%
- 3+: 27.6%

Neonatal Abstinence Syndrome Prosperity Region 10 2012-2021

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.

3. The goal of NAS surveillance is *not* to reduce the number of cases to zero. This is due to limitations with current surveillance practices. They do not allow us to distinguish between a) women with untreated opioid use or other substance use disorder or b) women with opioid use disorder on medicated assisted therapy, or c) women on long term opioid, benzodiazepine or barbiturate therapy for a chronic disease condition.

4. NAS rates are calculated per 1,000 live births in order to be consistent with the CSTE case definition. Previous reports published by MDHHS include NAS rates per 100,000 live births.

Neonatal Abstinence Syndrome Prosperity Region 10, 2012-2021

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

2021 Michigan Rate = 6.5

Year	# NAS Cases	# Births	Rate per 1,000 Live Births
2012	225	45,505	4.9
2013	265	46,451	5.7
2014	267	46,152	5.8
2015	317	46,444	6.8
2016	319	46,185	6.9
2017	285	45,693	6.2
2018	242	45,233	5.4
2019	224	44,570	5.0
2020	222	42,878	5.2
2021	236	43,025	5.5

Neonatal Abstinence Syndrome by Maternal Race/Ethnicity, Prosperity Region 10, 2017-2021

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

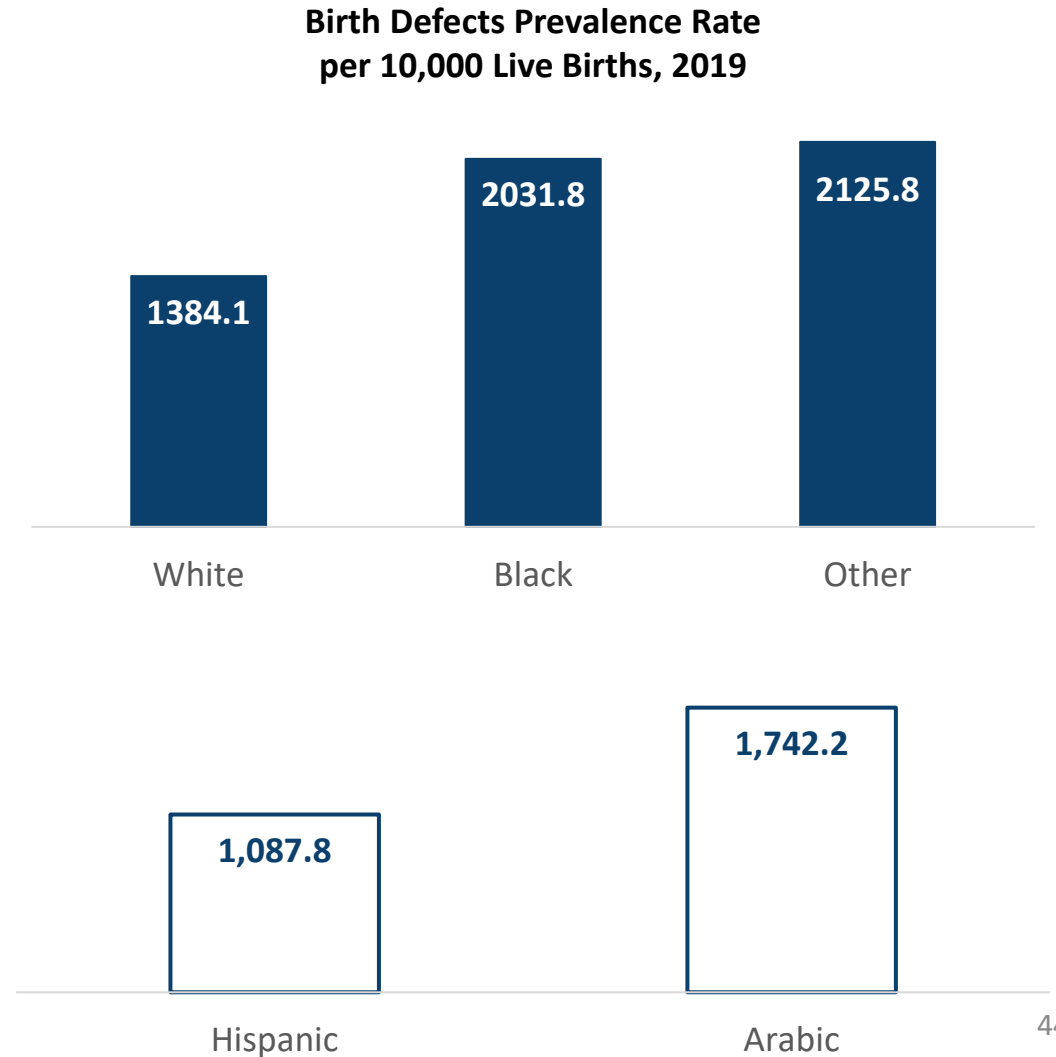| Maternal Race	# NAS Cases	# Live Births	Neonatal Abstinence Syndrome Rate (per 1,000 Live Births)		MI
White non-Hispanic	917	120,040	7.6	7.6	8.1
Black non-Hispanic	186	67,027	2.8	2.8	3.6
Hispanic	61	13,444	4.5	4.5	5.2
American Indian	0<N<6	258	Data Not Sufficient		46.9
Asian/Pacific Islander	0<N<6	13,628	Data Not Sufficient		0.3

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

Comparison of methods used to measure cases among Native Americans	# NAS Cases	# Live Births	NAS Rate (per 1,000 Live Births)
#1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic	0<N<6	258	Data Not Sufficient
#2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native).	11	655	16.8
#3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) **OR** the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native)	15	1,015	14.8

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Birth Defects
by Maternal Race/Ethnicity & Prosperity Region
2019

Birth Defect Prevalence by Maternal Race/ethnicity, 2019

- Throughout birth years 2013-2019, the birth defect prevalence rate for Michigan remained fairly steady at an average rate of 1,444.1 cases per 10,000 live births.

- In 2019, the race-specific birth defect prevalence rate for cases born to mothers of "other" races (2125.8 per 10,000 live births) exceeded that of cases born to black mothers (2031.8 cases per 10,000 live births) and cases born to white mothers (1,384.1 cases per 10,000 live births).

- In 2019, the ethnicity-specific birth defect prevalence rate for cases born to a mother reporting Arabic ethnicity (1,630.2 cases per 10,000 live births) was greater than that of cases born to a mother reporting Hispanic ethnicity (1,406.5 cases per 10,000 live births).

Birth Defects Prevalence Rate per 10,000 Live Births, 2019

White	Black	Other
1384.1	2031.8	2125.8

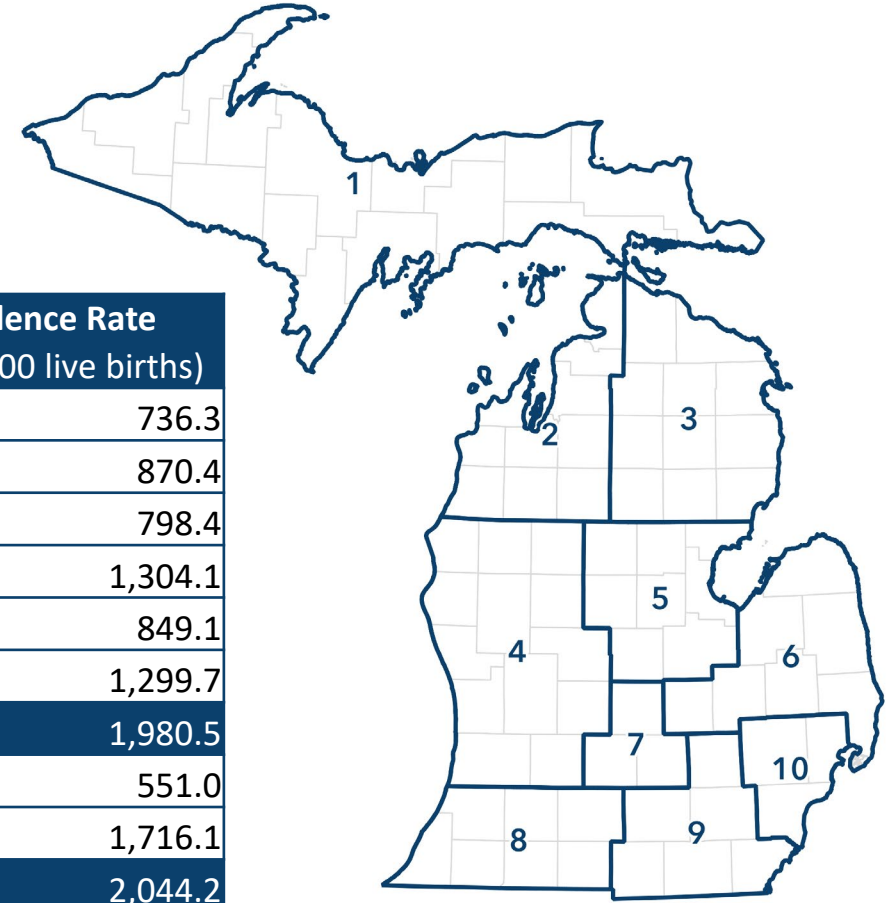| Hispanic	Arabic
1,087.8	1,742.2

Birth Defect Prevalence Rates by Prosperity Region, 2019

Prevalence rates are based on births to mothers living in Michigan at the time of delivery. Regions approximate prosperity region boundaries

- The State of Michigan is broken up into 10 prosperity regions based on shared geographic, demographic, and economic interests.

- In 2019, Michigan prosperity regions 7 and 10 reported the highest birth defect prevalence rates of 1,980.5 and 2,044.2.5 cases per 10,000 live births respectively.

- The prosperity region that reported the lowest birth defect prevalence was region 8 with a prevalence rate of 551.0 cases per 10,000 live births.

Region	# Cases	Prevalence Rate (per 10,000 live births)
1	184	736.3
2	235	870.4
3	135	798.4
4	2,400	1,304.1
5	480	849.1
6	1,145	1,299.7
7	976	1,980.5
8	480	551.0
9	1,707	1,716.1
10	9,112	2,044.2
Total	16,854	1,561.8

Low Risk Cesarean Prosperity Region 10 2017-2021

Low Risk Cesarean by Maternal Race/Ethnicity Prosperity Region 10, 2017-2021

Low risk cesarean is a ratio of the number of first births delivered by cesarean section to low risk females (full-term, singleton births, vertex presentation) to the number of first births to low-risk females (full-term, singleton births, vertex presentation)

Maternal Race	# Low Risk Cesarean	# Low Risk Live Birth		Percent (%) low-risk females with no prior birth had a cesarean
Overall	17,489	60,410	29.0%	29.0%
White non-Hispanic	9,731	35,098	27.7%	27.7%
Black non-Hispanic	4,600	14,825	31.0%	31.0%
Hispanic	996	3,615	27.6%	27.6%
American Indian	24	68	35.3%	35.3%
Asian/Pacific Islander	1,583	4,875	32.5%	32.5%

Low Risk Cesarean by Race/Ethnicity Prosperity Region 10, 2017-2021

Low risk cesarean is a ratio of the number of first births delivered by cesarean section to low risk females (full-term, singleton births, vertex presentation) to the number of first births to low-risk females (full-term, singleton births, vertex presentation)

Comparison of methods used to measure cases among Native Americans	# Low Risk Cesarean	# Low Risk Live Births	Percent (%) cesarean among low-risk females without a prior birth
#1: Birthing mother is identified on the birth certificate as American Indian and Non-Hispanic	24	68	35.3%
#2: Birthing mother is identified on the birth certificate as American Indian or Mixed Race (i.e., American Indian or Alaskan Native).	57	185	30.8%
#3: Birthing mother is identified on the birth certificate as American Indian or Mixed race (i.e., American Indian or Alaskan Native) **OR** the father is listed as American Indian or Mixed Race (i.e., American Indian or Alaskan Native)	88	308	28.6%

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Sleep-Related Infant Death Rate Prosperity Region 10 2010-2020

Overview of Sleep-Related Infant Deaths Michigan, 2010-2020

- Between 2010 and 2020 there were **1,597** sleep-related infant deaths in Michigan.

- The rate of sleep-related infant deaths has fluctuated slightly but has not statistically significantly differed between years (Figure 1).

- Between 2010 and 2020 Black Infants were **3.8** times more likely to die of sleep-related causes as compared to white Infants. American Indian infants were **2.5** times more likely to die of sleep-related causes as compared to white infants (Figure 2).

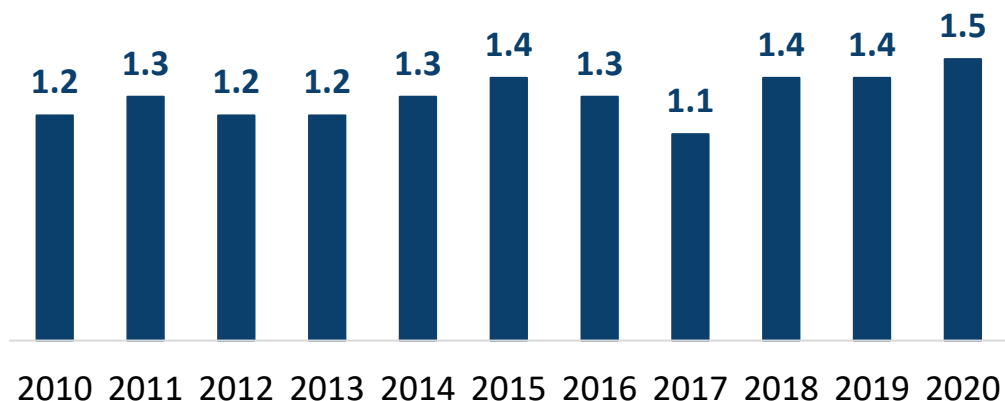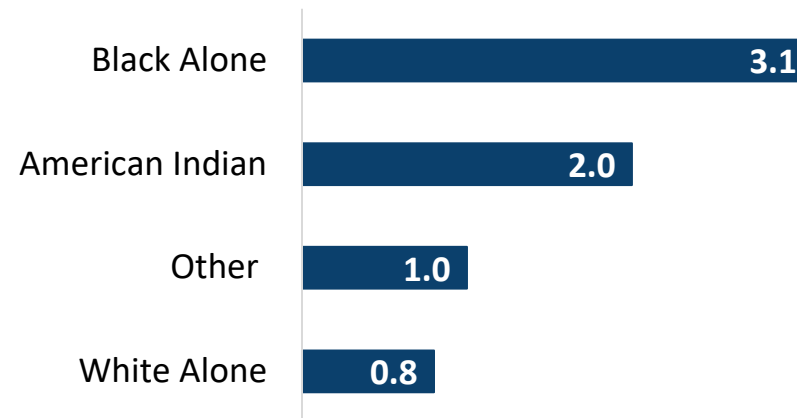Figure 1. Rate of Sleep-Related Infant Deaths per 1,000 Live Births

Year	Rate
2010	1.2
2011	1.3
2012	1.2
2013	1.2
2014	1.3
2015	1.4
2016	1.3
2017	1.1
2018	1.4
2019	1.4
2020	1.5

Figure 2. Rate of Sleep-Related Infant Deaths per 1,000 Live Births

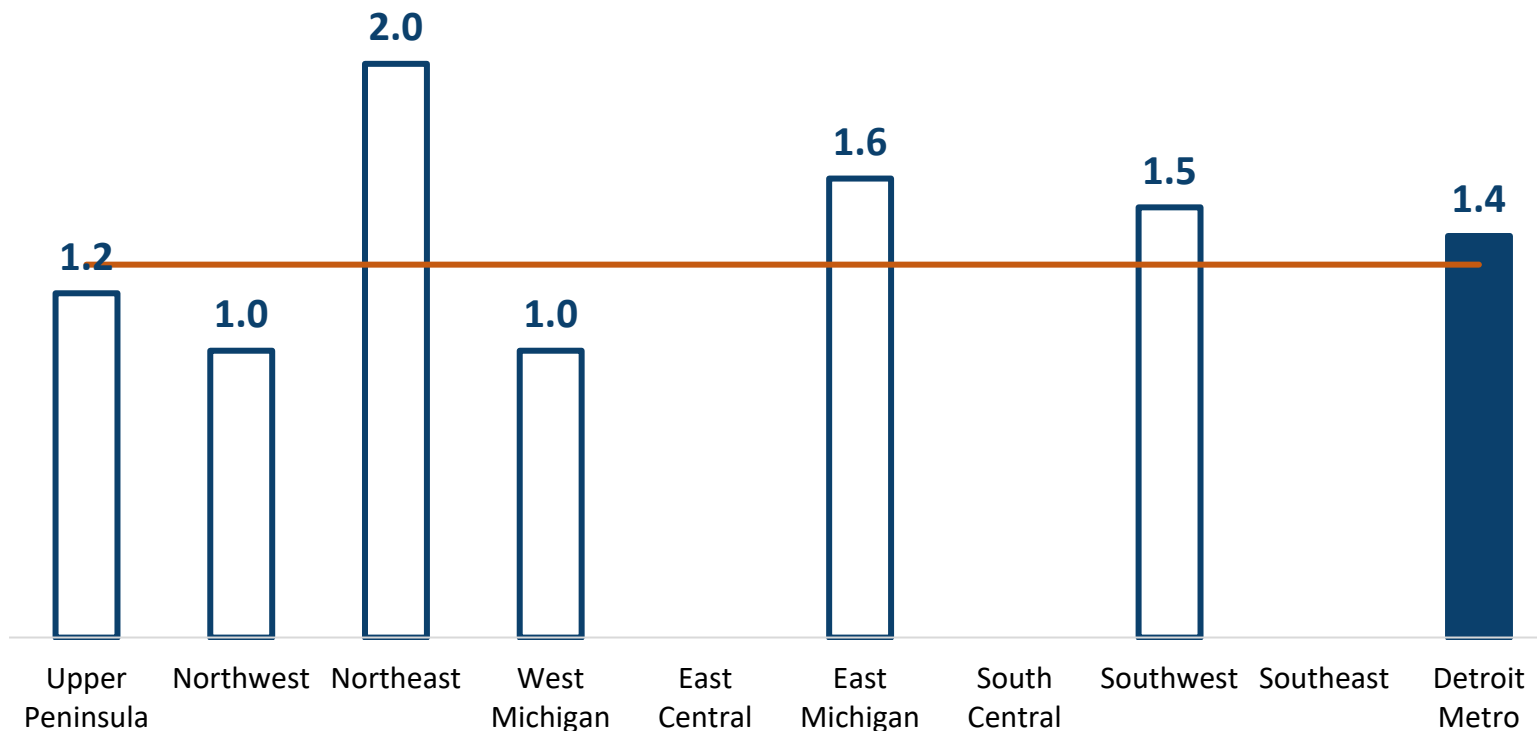| Group	Rate
Black Alone	3.1
American Indian	2.0
Other	1.0
White Alone	0.8

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Sleep-Related Infant Death Rate by Prosperity Region, 2010-2020

Data for regions 5, 7, and 9 suppressed as to not inadvertently identify suppressed county level statistics.

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

Michigan Rate : 1.3

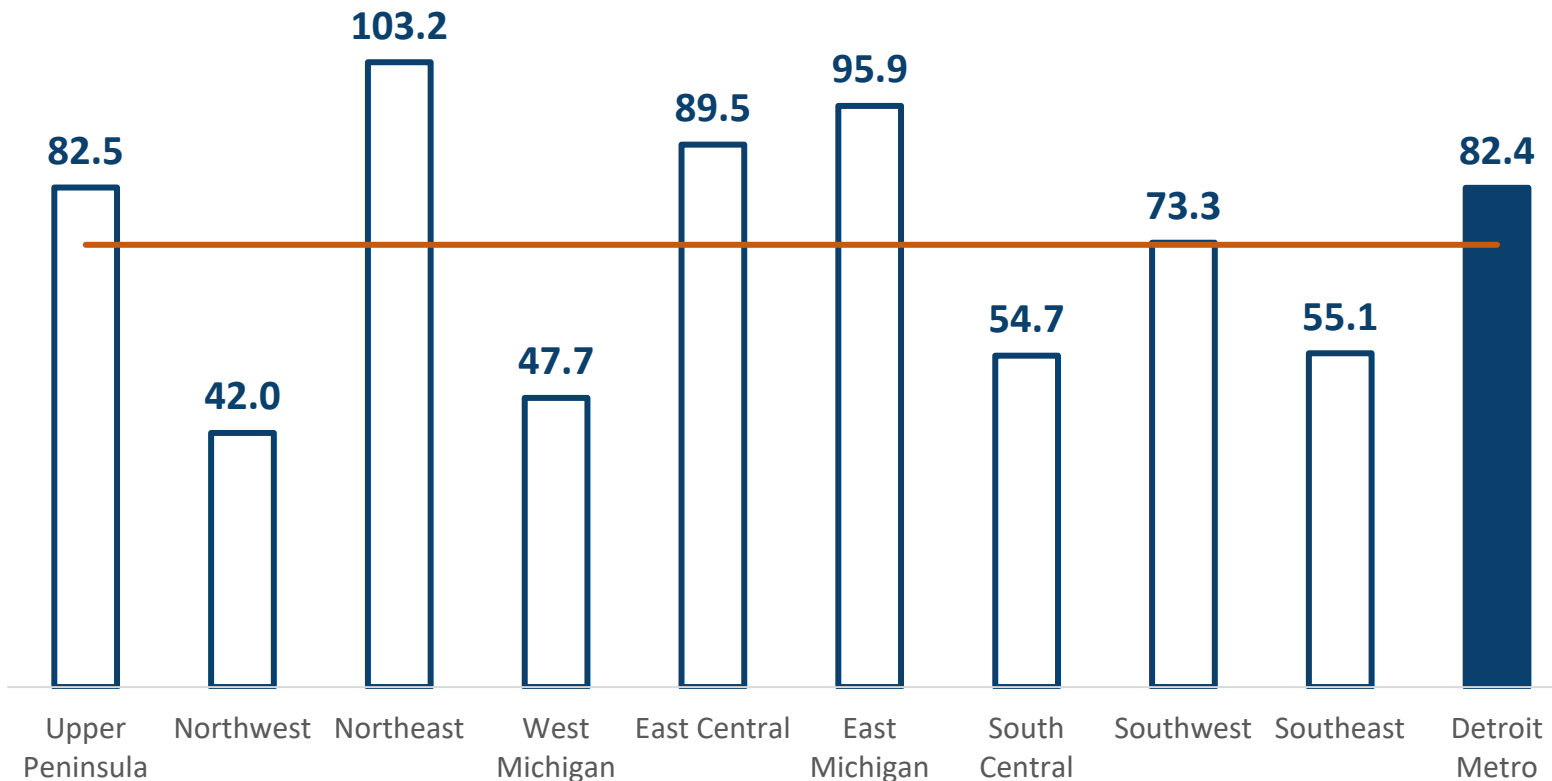| Upper Peninsula	Northwest	Northeast	West Michigan	East Central	East Michigan	South Central	Southwest	Southeast	Detroit Metro
1.2	1.0	2.0	1.0		1.6		1.5		1.4

- Between 2010 and 2020 there were **687** sleep-related infant deaths in Region Ten.

- The Region Ten sleep-related infant death rate was comparable to the Michigan sleep-related infant death rate.

Maternal Mortality Ratio Prosperity Region 10 2015-2019

Maternal Mortality Ratio by Prosperity Region, 2015-2019

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

Michigan Ratio : 73.0

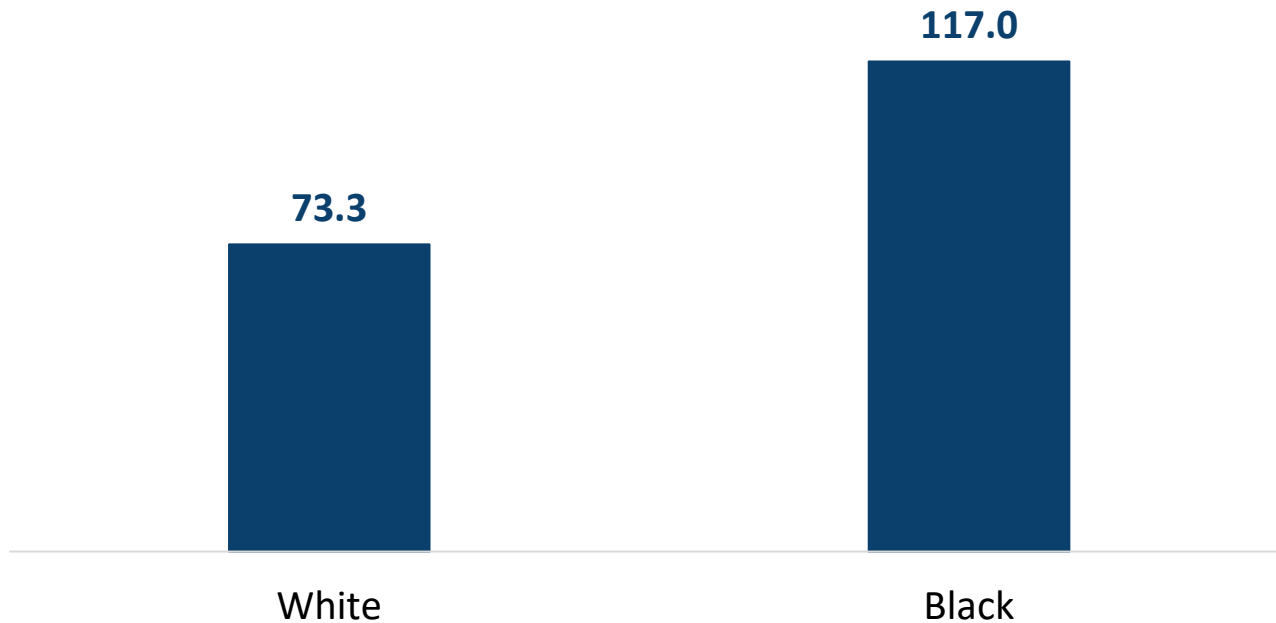| Region	Ratio
Upper Peninsula	82.5
Northwest	42.0
Northeast	103.2
West Michigan	47.7
East Central	89.5
East Michigan	95.9
South Central	54.7
Southwest	73.3
Southeast	55.1
Detroit Metro	82.4

- Maternal deaths include deaths that occur during pregnancy, at delivery or within one year of pregnancy.

- Pregnancy associated (total) maternal mortality includes:
  1- pregnancy associated, not related mortality *(unrelated to the pregnancy),*
  2- pregnancy-related mortality *(related to or aggravated by the pregnancy),*
  3- deaths where pregnancy-relatedness is unable to be determined.

- In Region Ten there were **188** maternal deaths between 2015 and 2019.

Other race and ethnicities suppressed due to sample size.

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

White	73.3
Black	117.0

Between 2015 and 2019, Black mothers in Prosperity Region Ten experienced **1.6** times higher maternal mortality as compared to white mothers.

There were **97** white maternal deaths and **84** Black maternal deaths in Prosperity Region Ten between 2015 and 2019.