

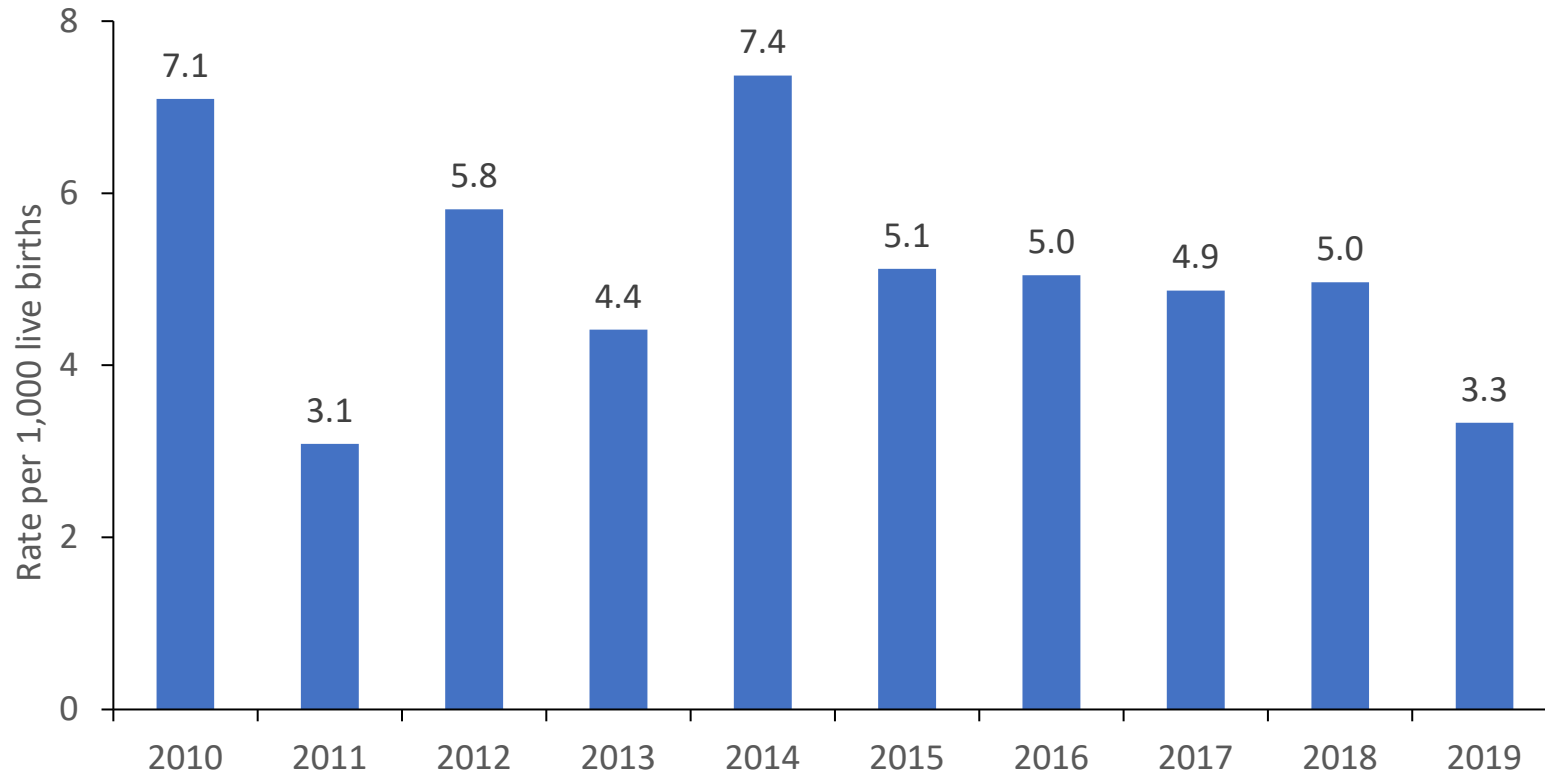
Maternal and Infant Health Statistics, Prosperity Region 2, Michigan

Prepared by Maternal and Child Health (MCH) Epidemiology Section,
Michigan Department of Health and Human Services (MDHHS)
Data source: Michigan resident live birth files (09/18/2020) and infant mortality files (02/18/2021),
Division for Vital Records and Health Statistics, MDHHS
March 2021

Infant Mortality Rate (IMR), Prosperity Region 2, 2010-2019

Infant Mortality Rate, Prosperity Region 2, 2010-2019

(rate per 1,000 live births)

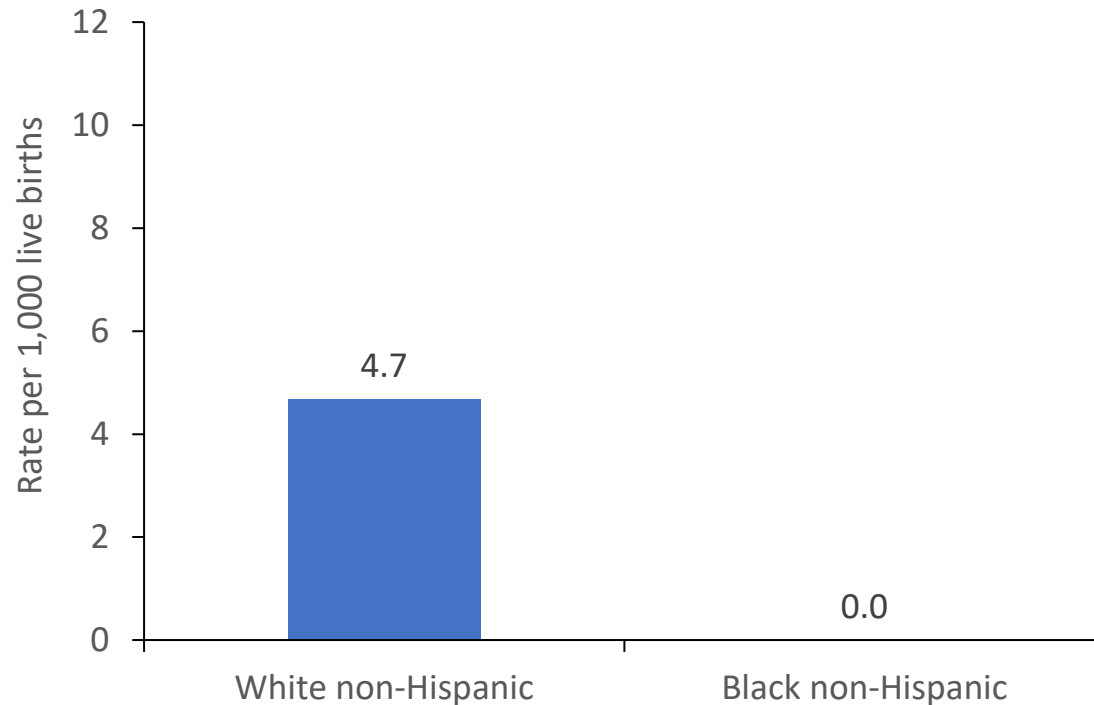


2019 Michigan Rate = 6.4

Year	# Live Births	# Infant Death	IMR
2010	2,959	21	7.1
2011	2,918	9	3.1
2012	2,924	17	5.8
2013	2,945	13	4.4
2014	2,986	22	7.4
2015	2,930	15	5.1
2016	2,973	15	5.0
2017	2,875	14	4.9
2018	2,821	14	5.0
2019	2,700	9	3.3

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 Maternal Race/Ethnicity, Prosperity Region 2, 2015-2019 (rate per 1,000 live births)



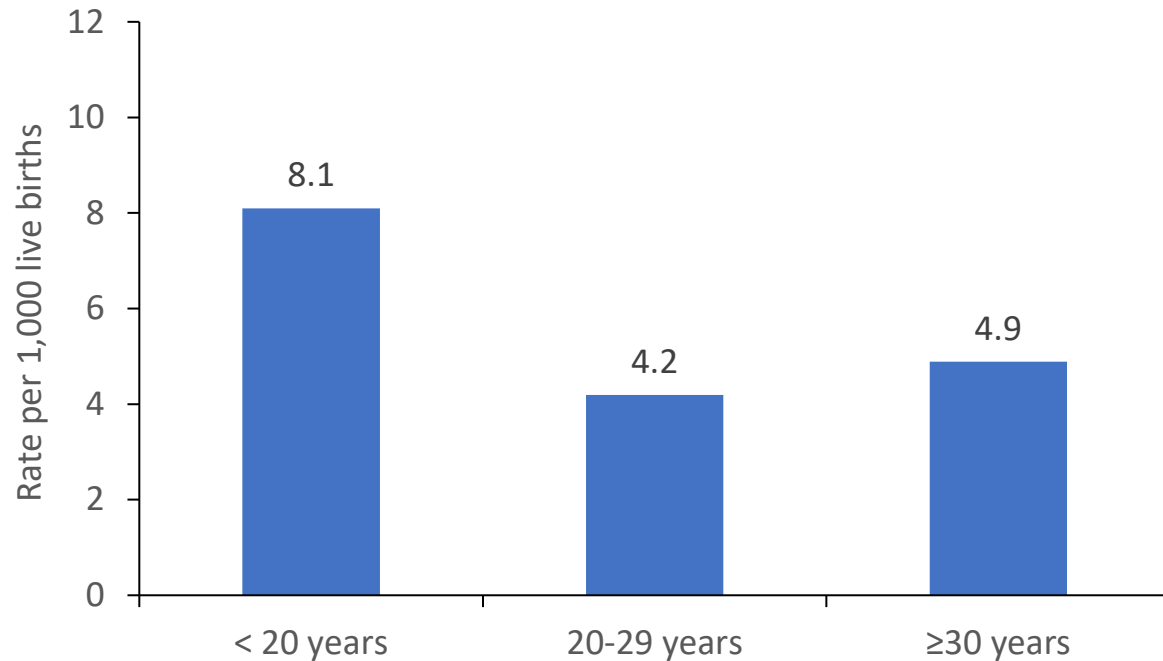
Maternal Race/Ethnicity	# Live Births	# Infant Death	IMR
White non-Hispanic	13,034	61	4.7
Black non-Hispanic	75	0	0.0
Hispanic	516	DNS	DNS
American Indian	183	DNS	DNS
Asian/Pacific Islander	100	DNS	DNS

DNS: data not sufficient (0<N<6).

2015-2019 Michigan Rates
 White, nH = 4.9
 Black, nH = 13.4

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 Maternal Age, Prosperity Region 2, 2015-2019 (rate per 1,000 live births)

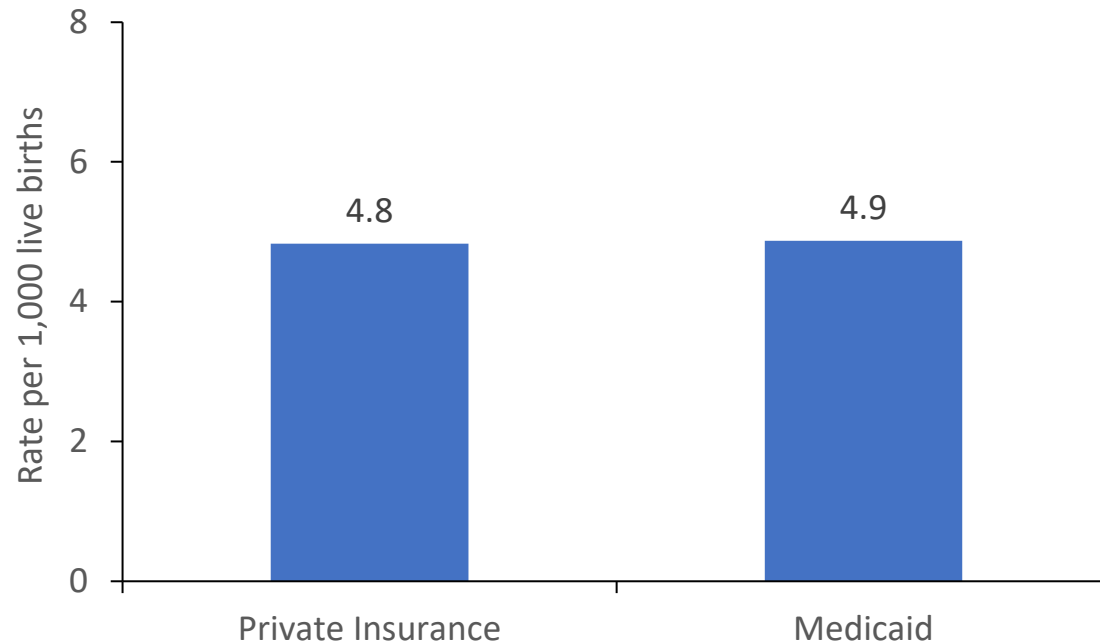


Maternal Age	# Live Births	# Infant Death	IMR
< 20 years	741	6	8.1
20-29 years	7,628	32	4.2
≥30 years	5,930	29	4.9

2015-2019 Michigan Rates
 < 20 years = 10.0
 20-29 years = 7.1
 ≥30 years = 5.6

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 Intended Payment Source, Prosperity Region 2, 2015-2019 (rate per 1,000 live births)



Payment Source	# Live Births	# Infant Death	IMR
Private Insurance	7,040	34	4.8
Medicaid	6,569	32	4.9

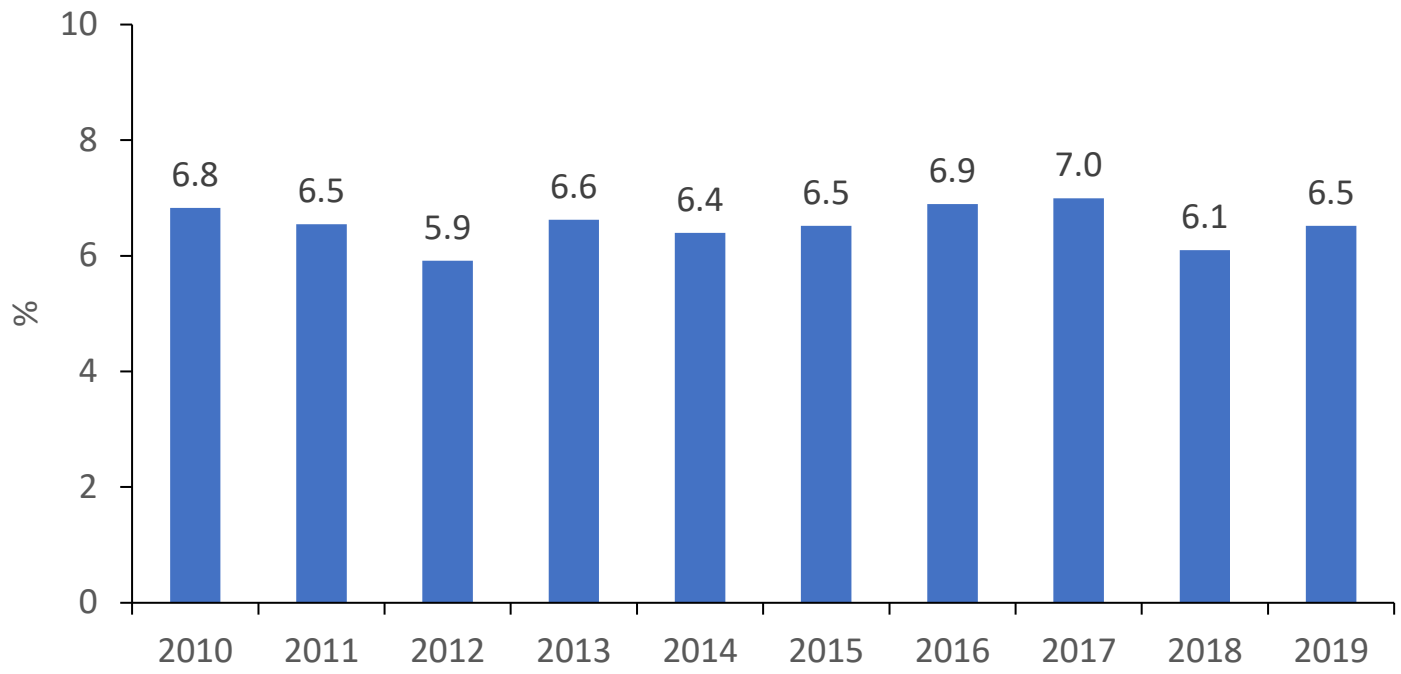
2015-2019 Michigan Rates
 Private Insurance = 4.8
 Medicaid = 8.8

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 2, 2010-2019

Low Birthweight (Birthweight <2,500 Grams), Prosperity Region 2, 2010-2019

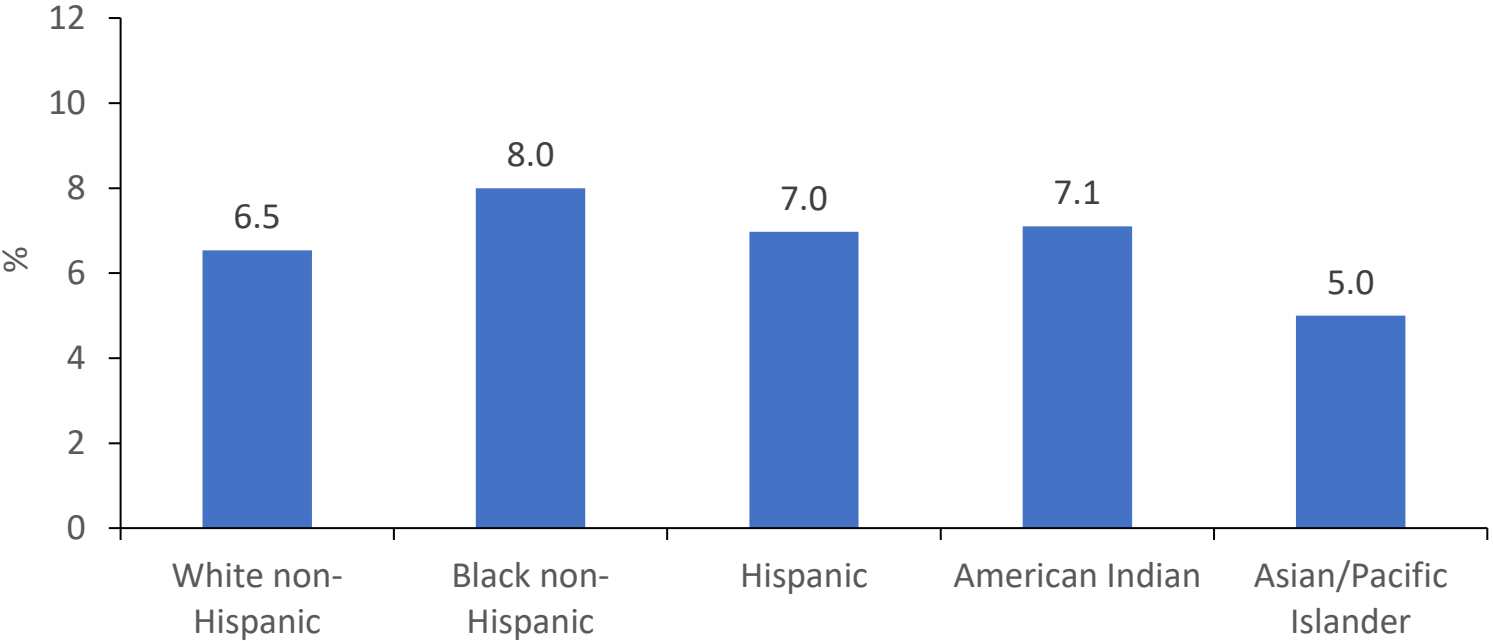
2019 Michigan Percent = 8.8



Year	# Live Births	# LBW	LBW %
2010	2,959	202	6.8
2011	2,918	191	6.5
2012	2,924	173	5.9
2013	2,945	195	6.6
2014	2,986	191	6.4
2015	2,930	191	6.5
2016	2,973	205	6.9
2017	2,875	201	7.0
2018	2,821	172	6.1
2019	2,700	176	6.5

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

Low Birthweight (Birthweight <2,500 Grams) by Maternal Race/Ethnicity, Prosperity Region 2, 2015-2019



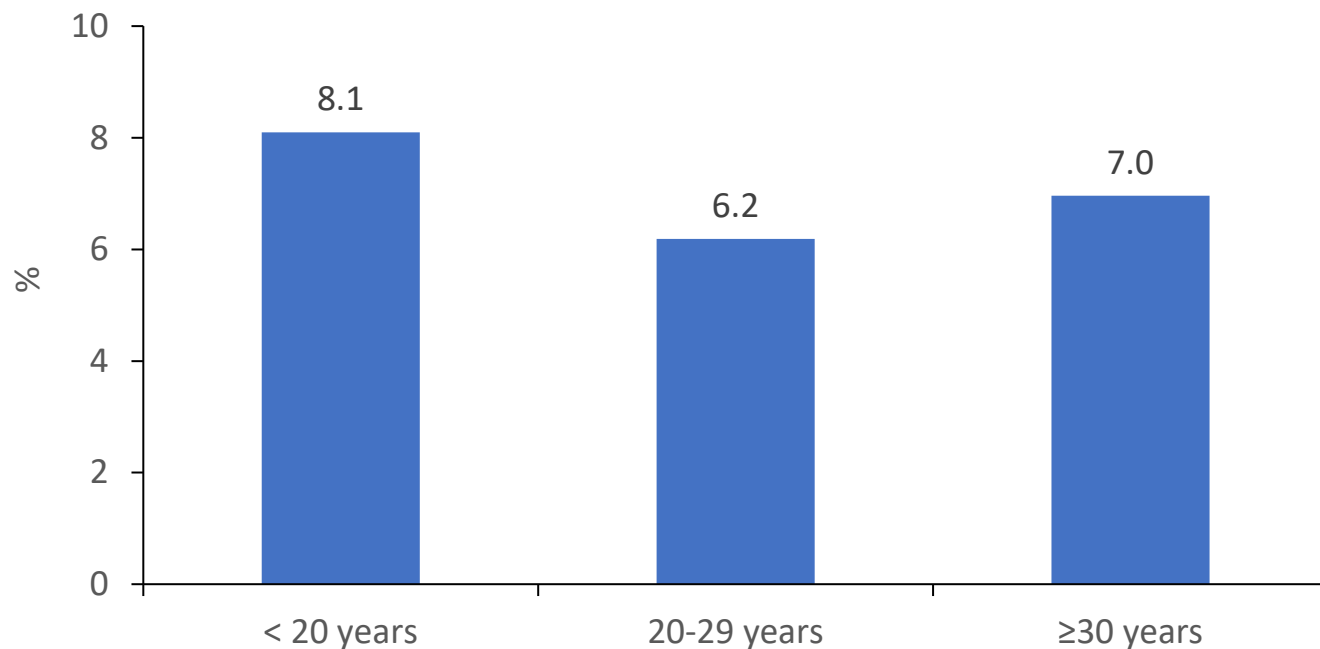
Maternal Race/Ethnicity	# Live Births	# LBW	LBW %
White non-Hispanic	13,034	852	6.5
Black non-Hispanic	75	6	8.0
Hispanic	516	36	7.0
American Indian	183	13	7.1
Asian/Pacific Islander	100	DNS	DNS

DNS: data not sufficient (0<N<6).

2015-2019 Michigan Percentages
 White, nH = 7.0
 Black, nH = 14.8
 Hispanic = 7.5
 American Indian = 8.8

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

Low Birthweight (Birthweight <2,500 Grams) by Maternal Age, Prosperity Region 2, 2015-2019

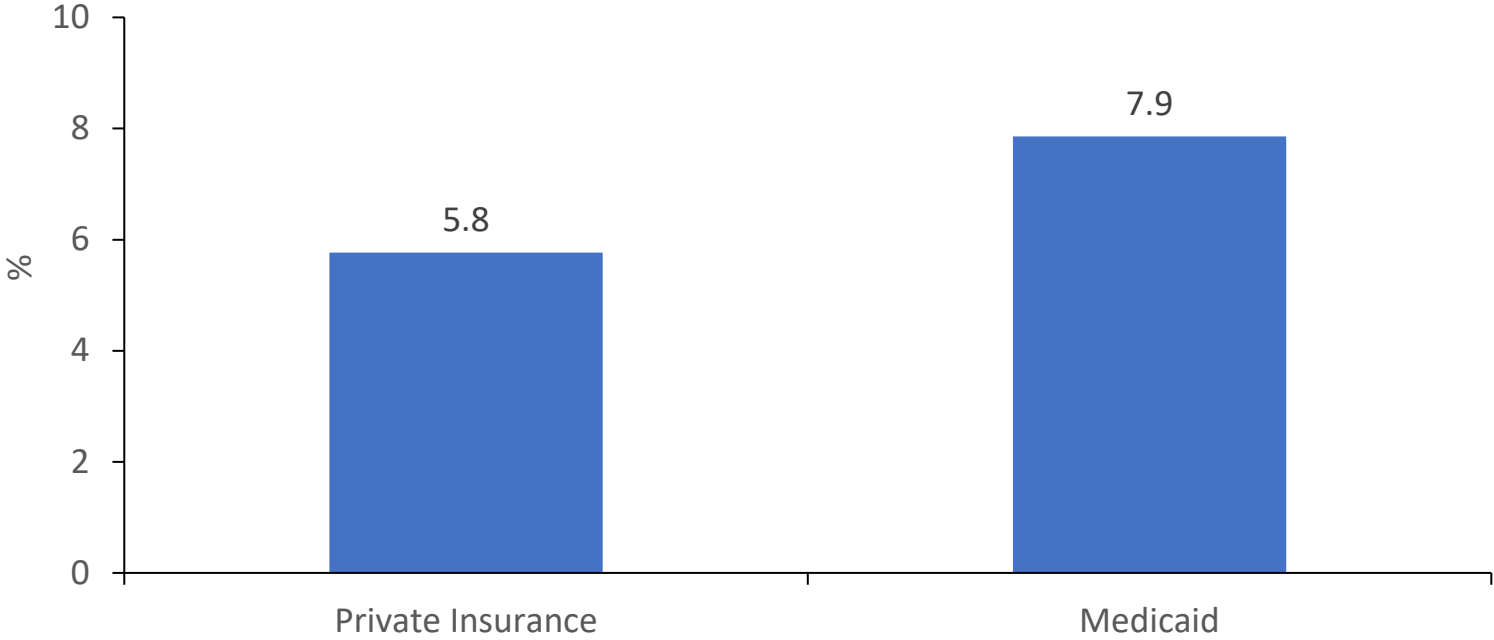


Maternal Age	# Live Births	# LBW	LBW %
< 20 years	741	60	8.1
20-29 years	7,628	472	6.2
≥30 years	5,930	413	7.0

2015-2019 Michigan Percentages
 < 20 years = 10.7
 20-29 years = 8.5
 ≥30 years = 8.5

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

Low Birthweight (Birthweight <2,500 Grams) by Intended Payment Source, Prosperity Region 2, 2015-2019



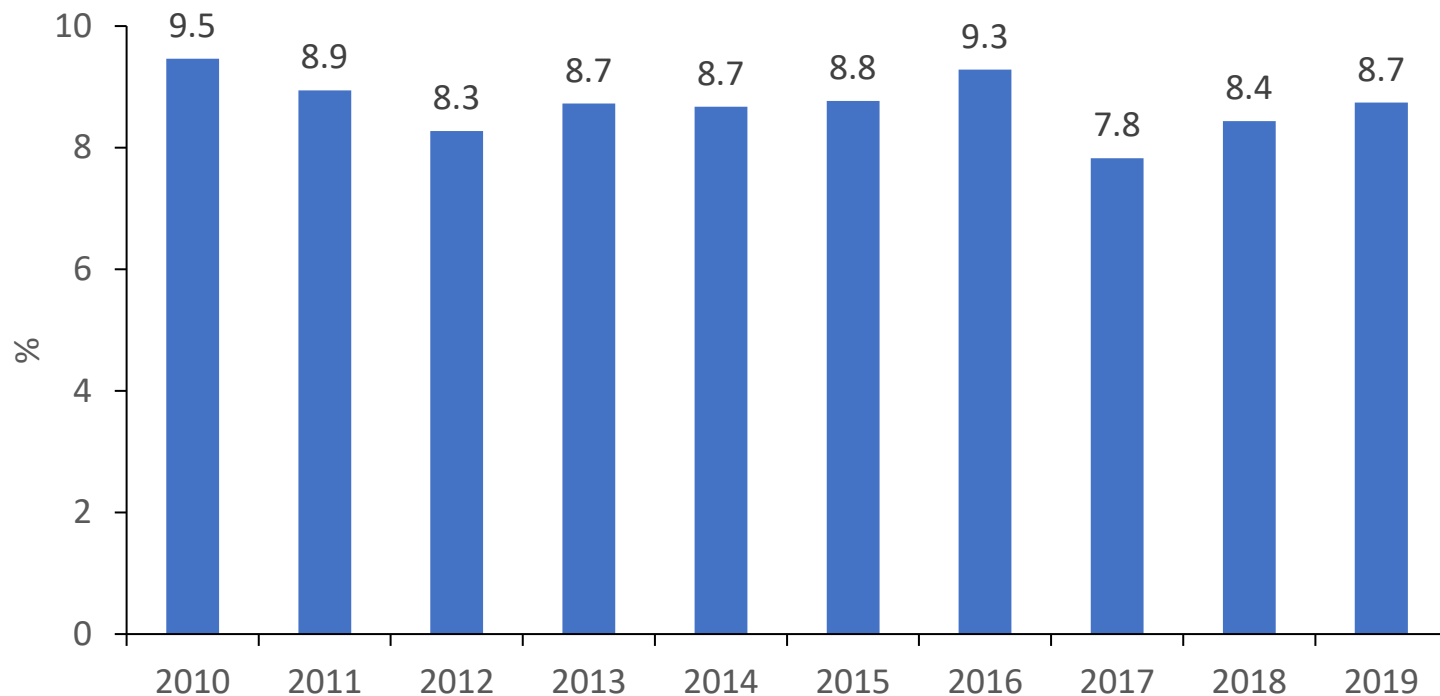
Payment Source	# Live Births	# LBW	LBW %
Private Insurance	7,040	406	5.8
Medicaid	6,569	516	7.9

2015-2019 Michigan Percentages
 Private Insurance = 7.2
 Medicaid = 10.5

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

Preterm Birth (PTB), Prosperity Region 2, 2010-2019

Preterm Birth (Estimated Gestational Age <37 Weeks), Prosperity Region 2, 2010-2019

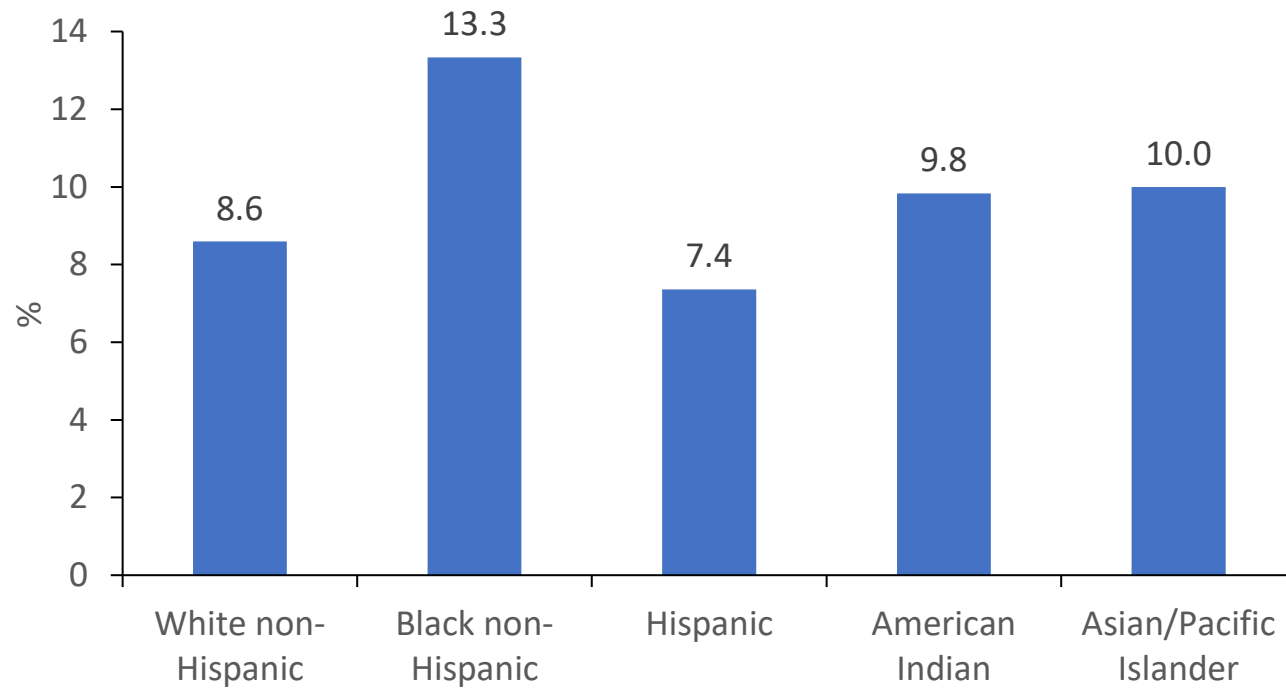


2019 Michigan Percent = 10.3

Year	# Live Births	# PTB	PTB %
2010	2,959	280	9.5
2011	2,918	261	8.9
2012	2,924	242	8.3
2013	2,945	257	8.7
2014	2,986	259	8.7
2015	2,930	257	8.8
2016	2,973	276	9.3
2017	2,875	225	7.8
2018	2,821	238	8.4
2019	2,700	236	8.7

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 Birth (Estimated Gestational Age <37 Weeks) by Maternal Race/Ethnicity, Prosperity Region 2, 2015-2019

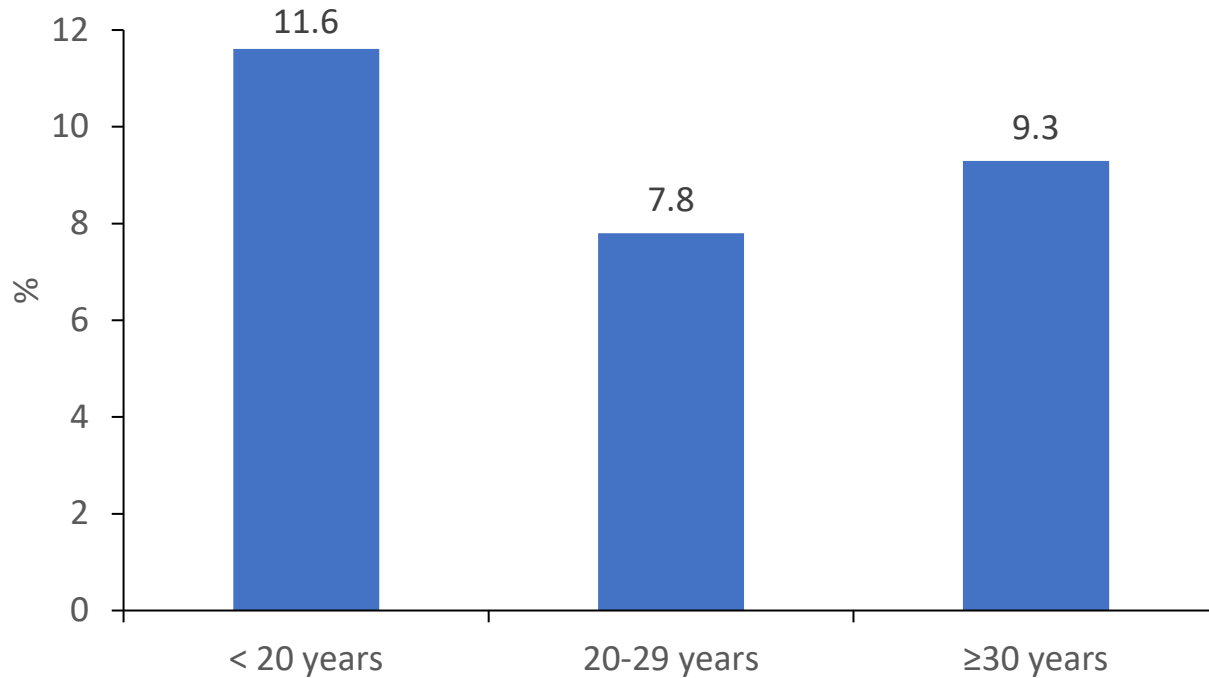


Maternal Race/Ethnicity	# Live Births	# PTB	PTB %
White non-Hispanic	13,034	1,120	8.6
Black non-Hispanic	75	10	13.3
Hispanic	516	38	7.4
American Indian	183	18	9.8
Asian/Pacific Islander	100	10	10.0

2015-2019 Michigan Percentages
 White, nH = 9.0
 Black, nH = 14.6
 Hispanic = 9.4
 American Indian = 8.2
 Asian/Pacific Islander = 10.2

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 Birth (Estimated Gestational Age <37 Weeks) by Maternal Age, Prosperity Region 10, 2015-2019

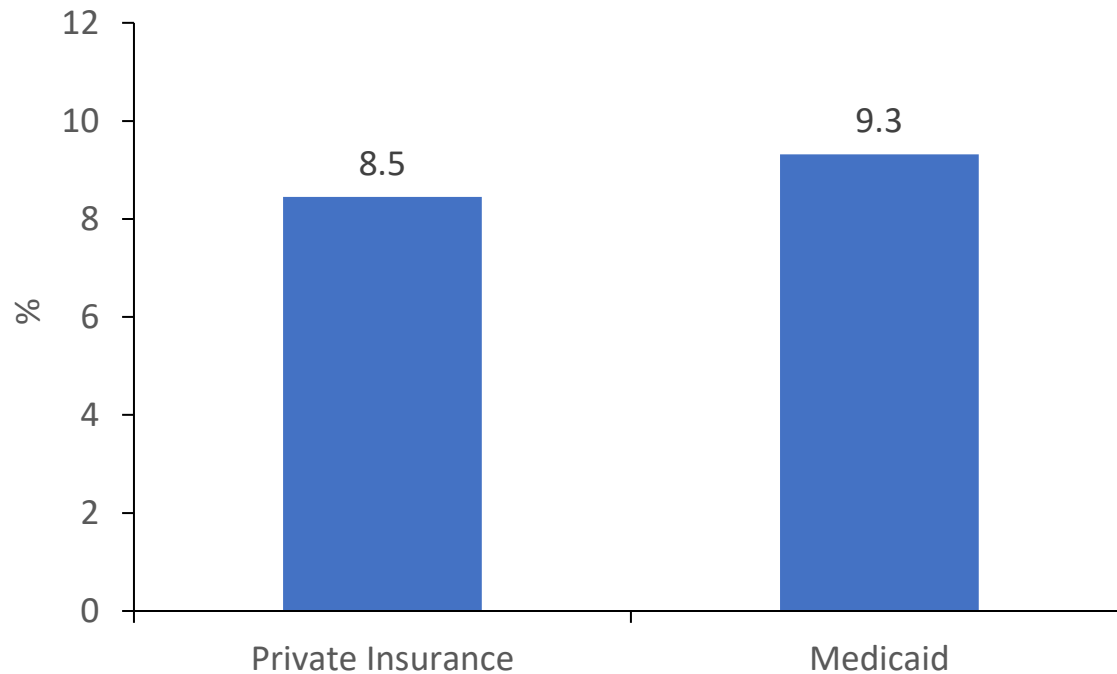


Maternal Age	# Live Births	# PTB	PTB %
< 20 years	741	86	11.6
20-29 years	7,628	595	7.8
≥30 years	5,930	551	9.3

2015-2019 Michigan Percentages
 < 20 years = 10.6
 20-29 years = 9.6
 ≥30 years = 10.6

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 Birth (Estimated Gestational Age <37 Weeks) by Intended Payment Source, Prosperity Region 2, 2015-2019



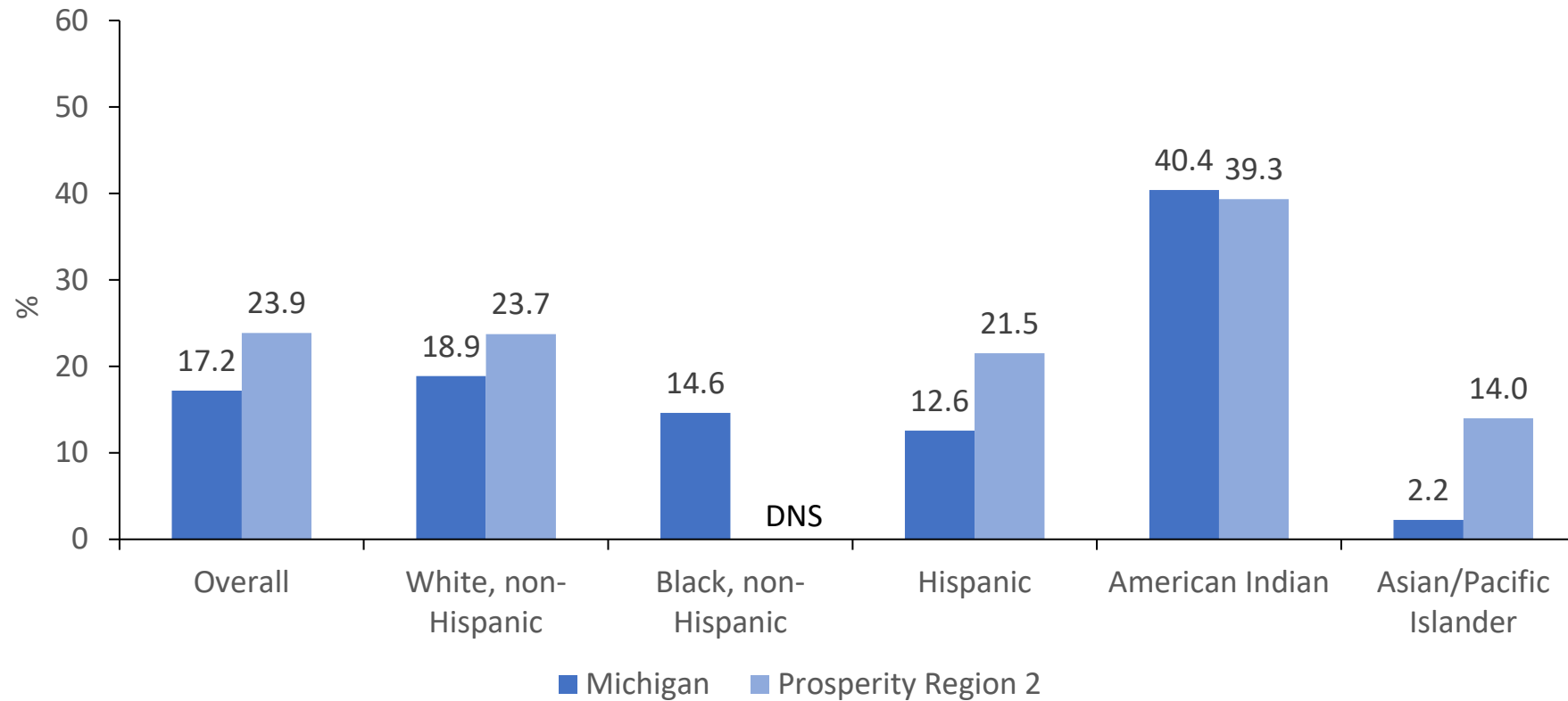
Payment Source	# Live Births	# PTB	PTB %
Private Insurance	7,040	595	8.5
Medicaid	6,569	612	9.3

2015-2019 Michigan Percentages
 Private Insurance = 9.2
 Medicaid = 11.3

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 2, 2015-2019

Smoking During Pregnancy by Maternal Race/Ethnicity, Michigan and Prosperity Region 2, 2015-2019

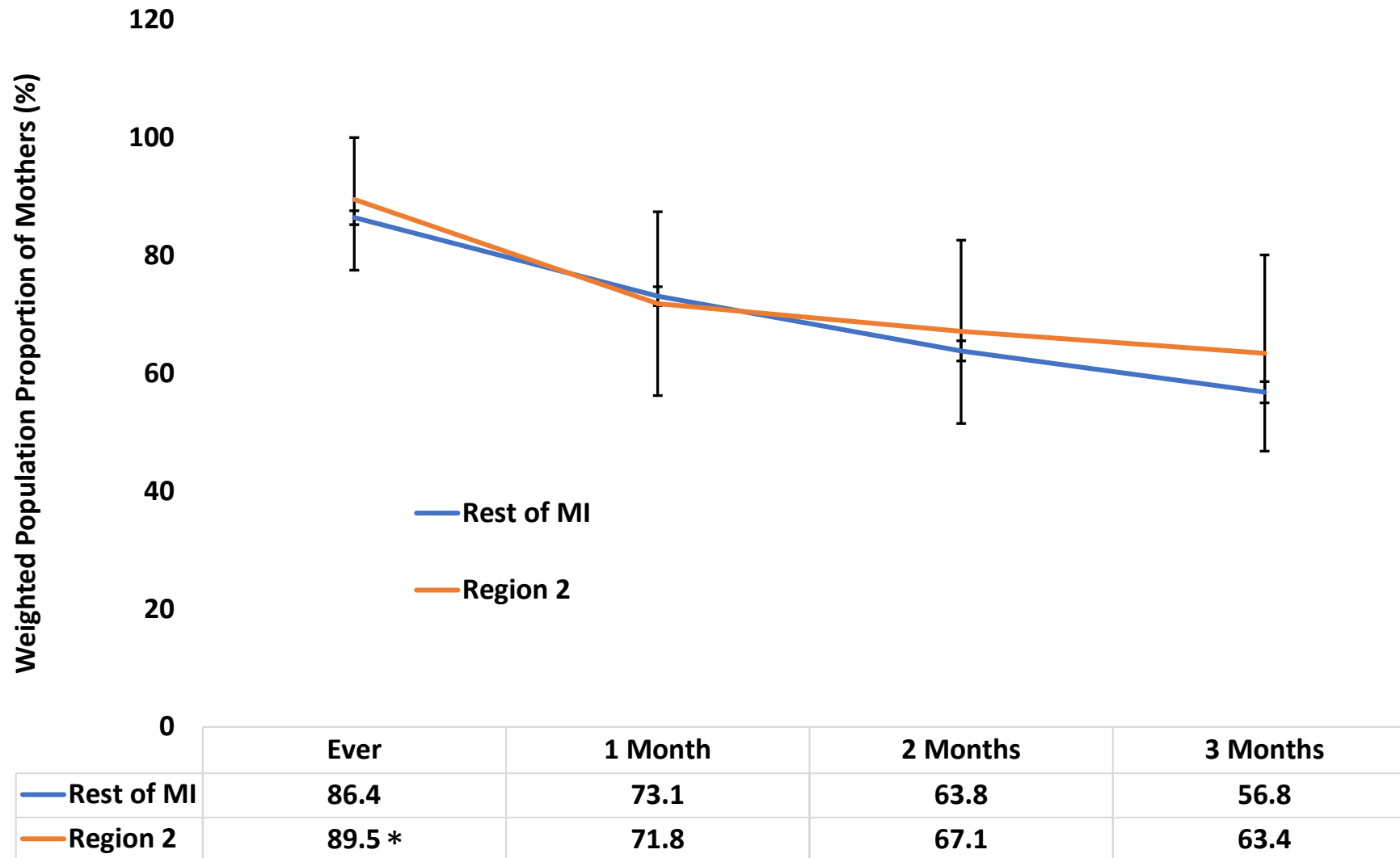


DNS = data not sufficient (0<n<6)

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

Breastfeeding Initiation and Duration, Prosperity Region 2

Breastfeeding Initiation and Duration, Region 2 v Rest of Michigan MI PRAMS 2016-2018

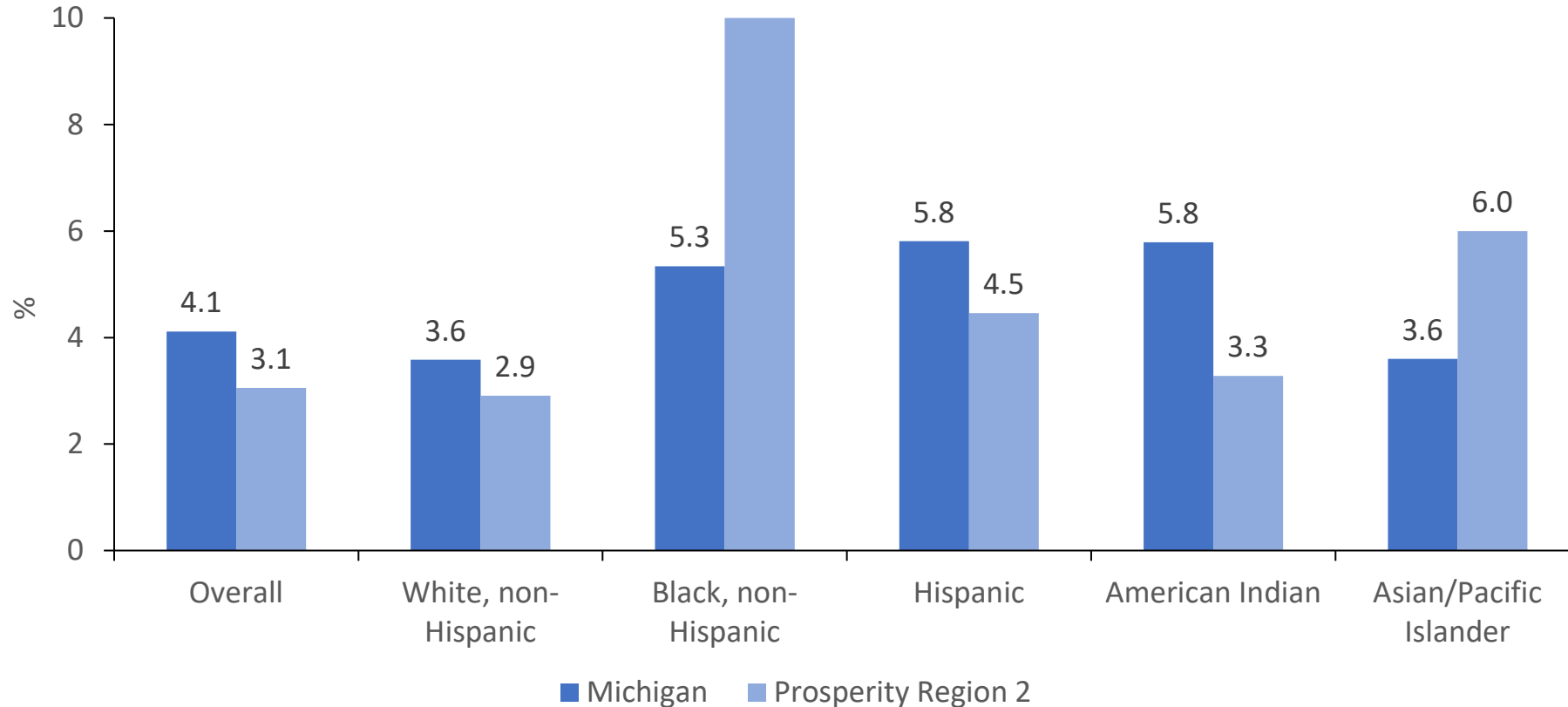


- Breastfeeding in Region 2 does not differ significantly from the remainder of the State for any of these time points

* Relative Standard Error exceeds 30%; Interpret with Caution

Late Entry into Prenatal Care, Prosperity Region 2, 2015-2019

Late Entry Into Prenatal Care by Maternal Race/Ethnicity, Michigan and Prosperity Region 2, 2015-2019

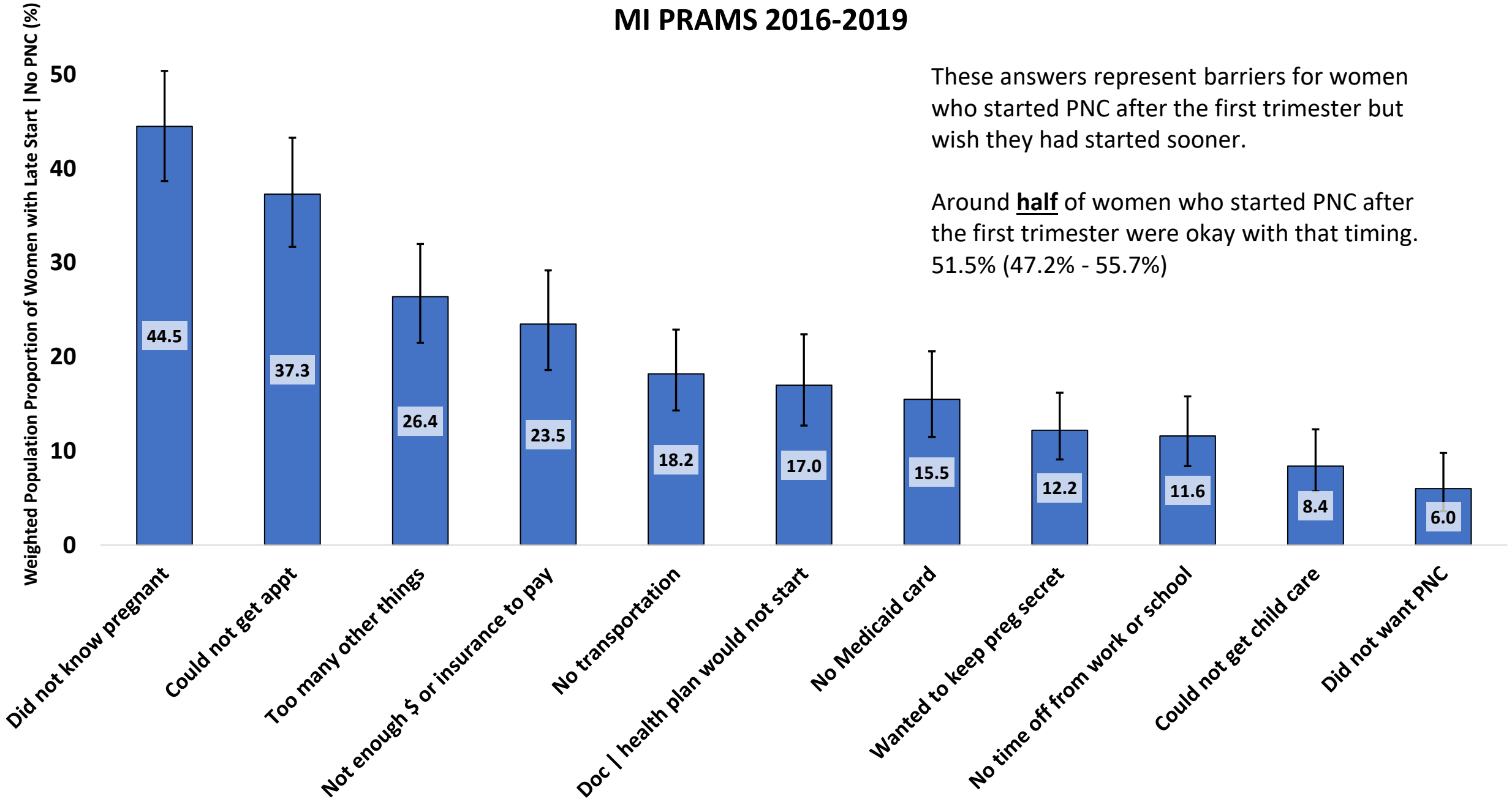


- Late entry into prenatal care refers to begin prenatal care in the 7th – 9th month of gestation

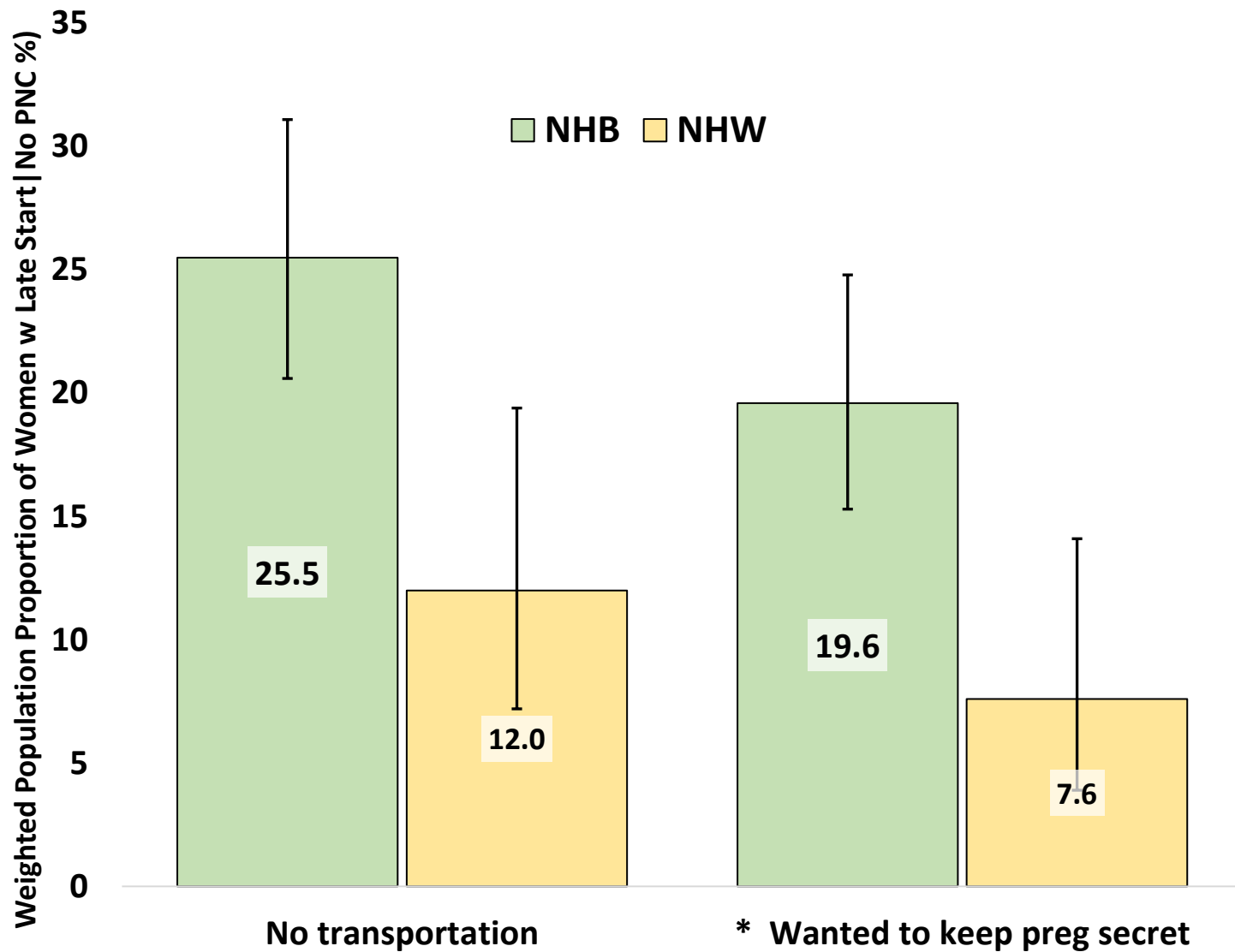
Barriers to Prenatal Care, Michigan, 2016-2019

PNC Barriers - mother started PNC AFTER 1st trimester and wanted to start sooner

MI PRAMS 2016-2019

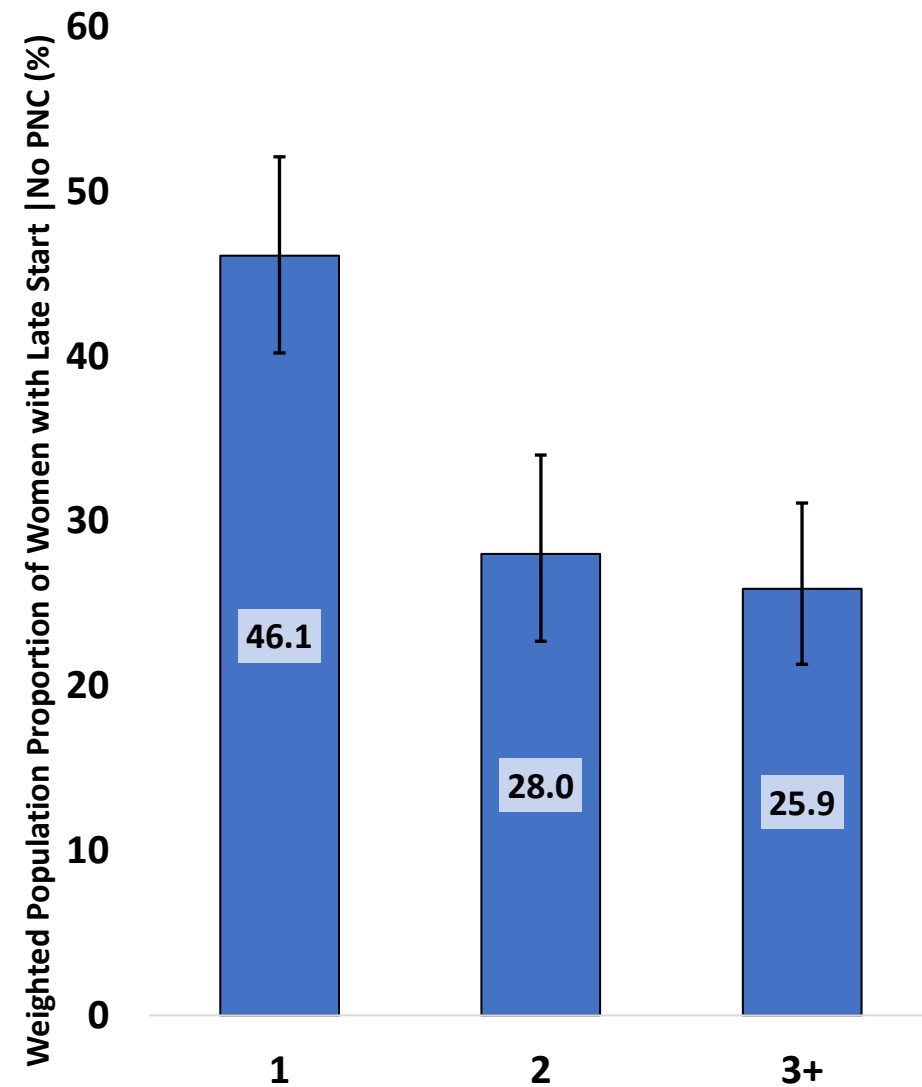


**Selected PNC Barriers with Significant Differences by Maternal Race/Ethnicity
MI PRAMS 2016-2019**



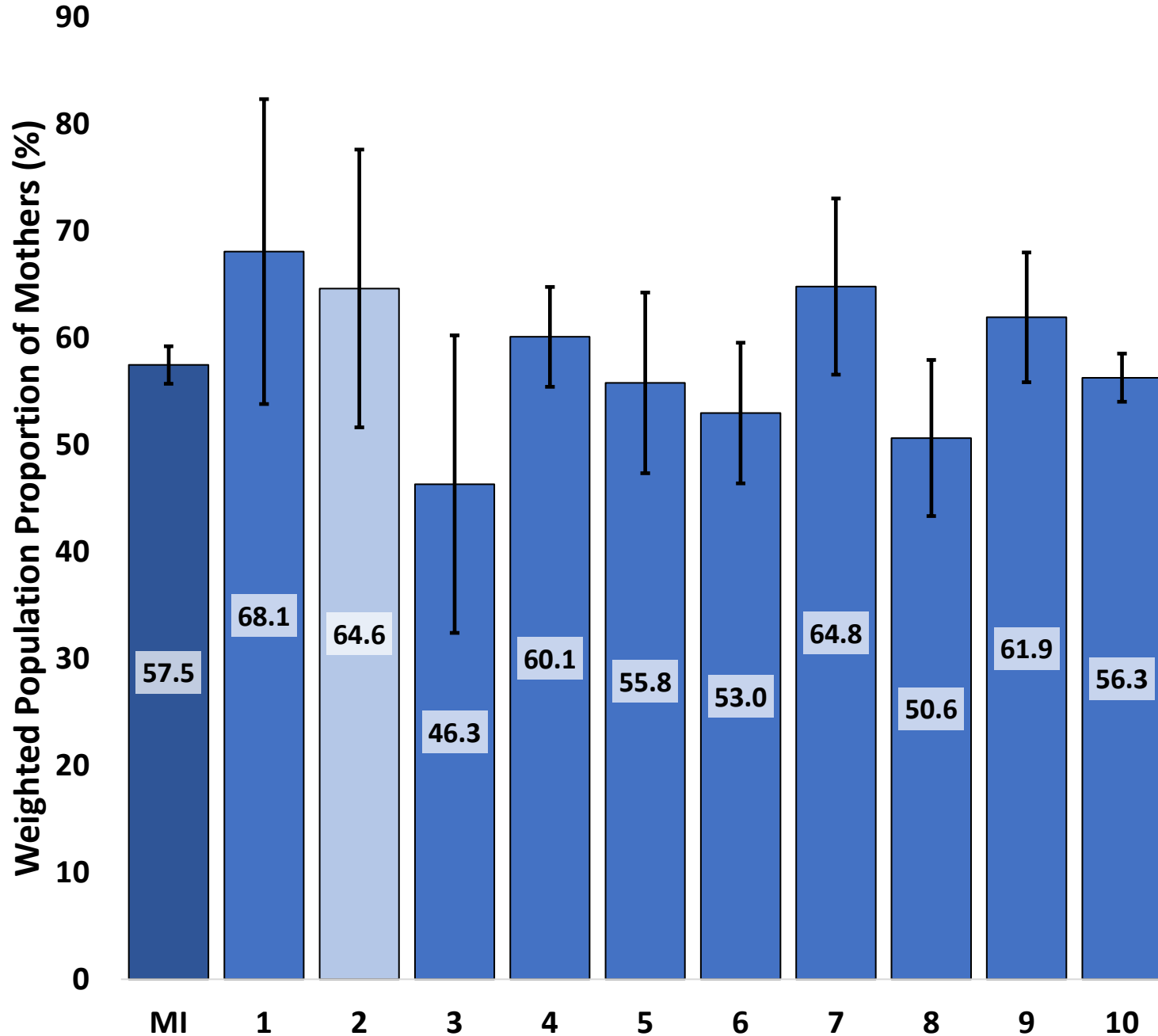
* Relative Standard Error between 30-50%; interpret estimate with caution

**Number of PNC Barriers - women with late | no PNC
MI PRAMS 2016-2019**



Pregnancy Intention, Prosperity Region 2, 2016-2018

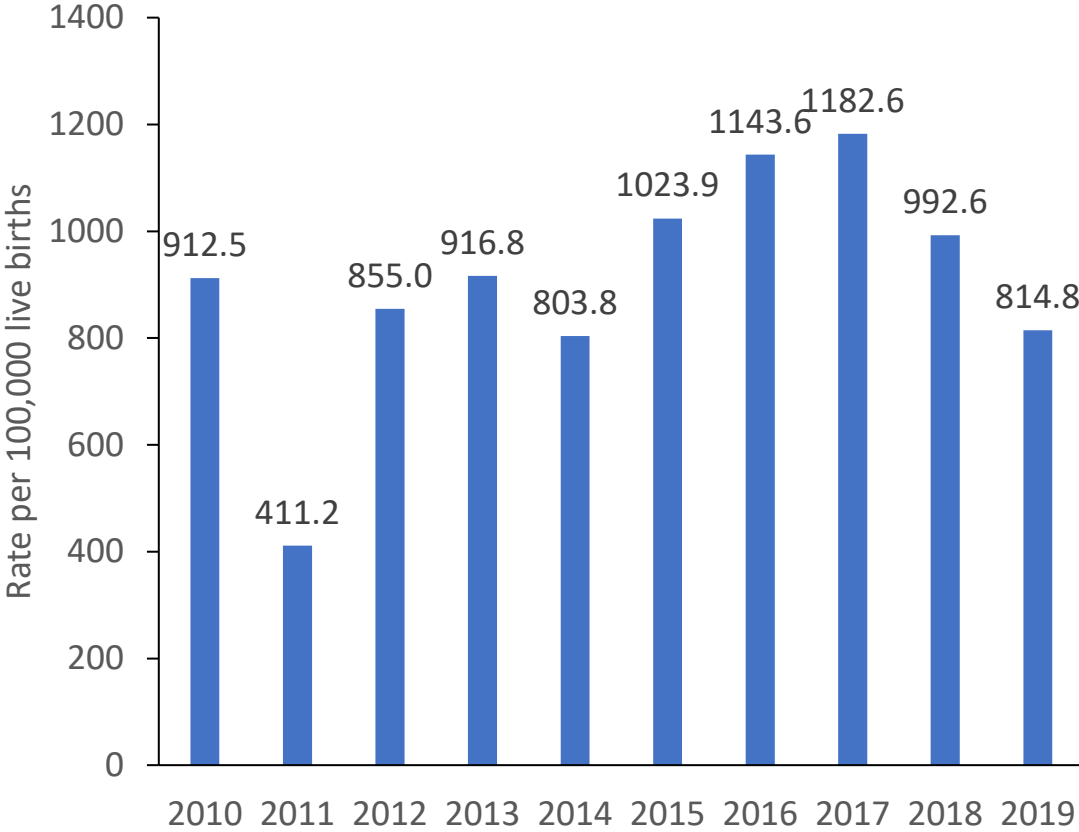
Intended Pregnancy; MI PRAMS 2016-2018



- Intended Pregnancy
- Derived from question about pregnancy timing
- Intended
 - Women who said they had wanted pregnancy for some time, or wanted to be pregnant right when they conceived
- Unintended
 - Women who wanted to be pregnant some time in the future, never again, or were unsure
- Although there is variation across the state, none of the differences are large enough to achieve statistical significance

Neonatal Abstinence Syndrome (NAS) Prosperity Region 2, 2010-2019

Neonatal Abstinence Syndrome*, Prosperity Region 2, 2010-2019 (Rate per 100,000 Live Births)

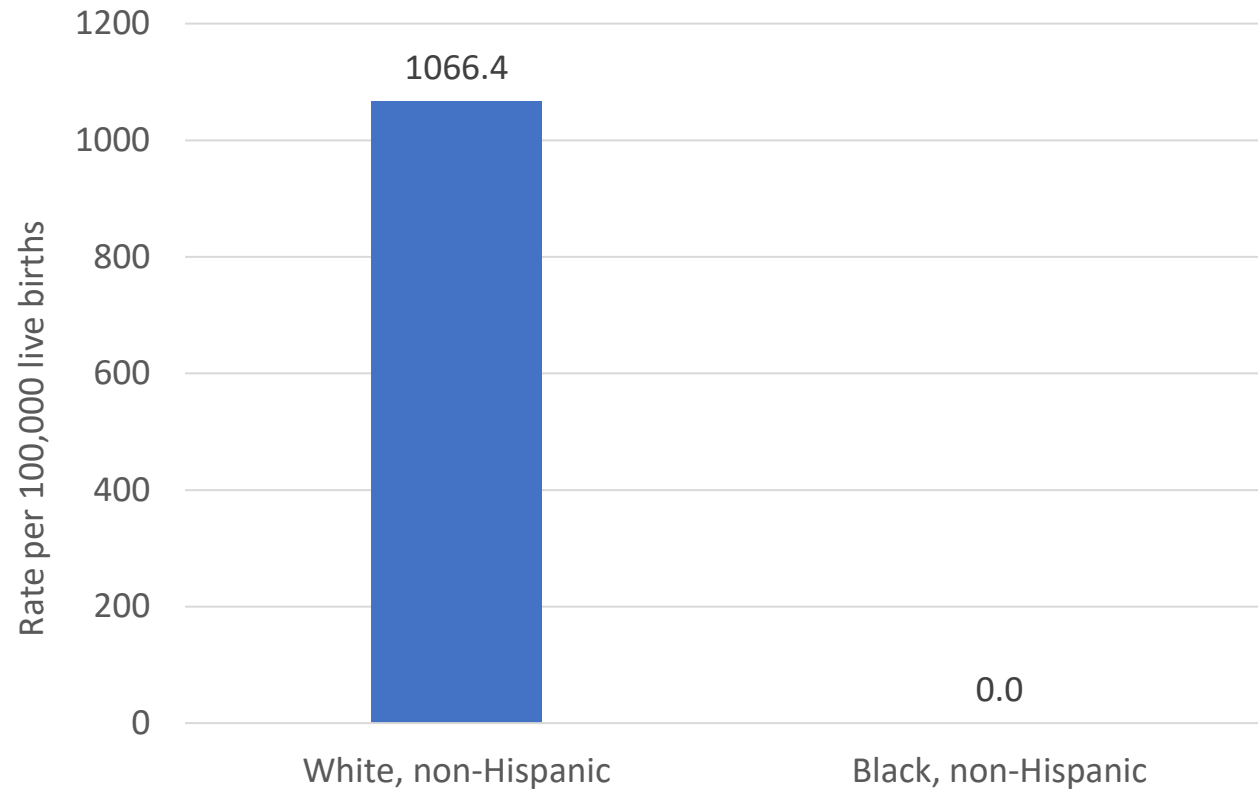


Year	# Live Births	# NAS	NAS Rate
2010	2,959	27	912.5
2011	2,918	13	445.5
2012	2,924	25	855.0
2013	2,945	27	916.8
2014	2,986	24	803.8
2015	2,930	30	1023.9
2016	2,973	34	1143.6
2017	2,875	34	1182.6
2018	2,821	28	992.6
2019	2,700	22	814.8

2019 Michigan Rate = 623.7

* = only includes pharmacologically treated neonatal abstinence syndrome

Neonatal Abstinence Syndrome* by Maternal Race/Ethnicity, Prosperity Region 2, 2015-2019



Maternal Race/Ethnicity	# Live Births	# NAS	NAS Rate
White non-Hispanic	13,034	139	1066.4
Black non-Hispanic	75	0	0.0
Hispanic	516	DNS	DNS
American Indian	183	DNS	DNS

DNS: data not sufficient (0<N<6).

2015-2019 Michigan Rates
 White, nH = 943.1
 Black, nH = 394.2

* = only includes pharmacologically treated neonatal abstinence syndrome

Birth Defects Prevalence, by Race/Ethnicity and Prosperity Region, 2017

Birth Defect Prevalence Rates by Race/ethnicity: MBDR, 2017

- Throughout birth years 2010-2017, the birth defect prevalence rate for Michigan remained fairly steady at an average rate of 1,374.2 cases per 10,000 live births.
- In 2017, the race-specific birth defect prevalence rate for cases born to black mothers (1,725.4 cases per 10,000 live births) exceeded that of cases born to white mothers (1,079.3 cases per 10,000 live births) and cases born to mothers of “other” races (1,654.5 cases per 10,000 live births).
- In 2017, the ethnicity-specific birth defect prevalence rate for cases born to a mother reporting Arabic ethnicity (1,742.2 cases per 10,000 live births) was greater than that of cases born to a mother reporting Hispanic ethnicity (1,087.8 cases per 10,000 live births).

* Total reported birth defect cases for all diagnostic groupings per 10,000 live births

**Maternal Race/ethnicity as reported on birth record

Figure 1. Statewide Maternal Race-Specific Birth Defect Prevalence Rates: MBDR, 2017

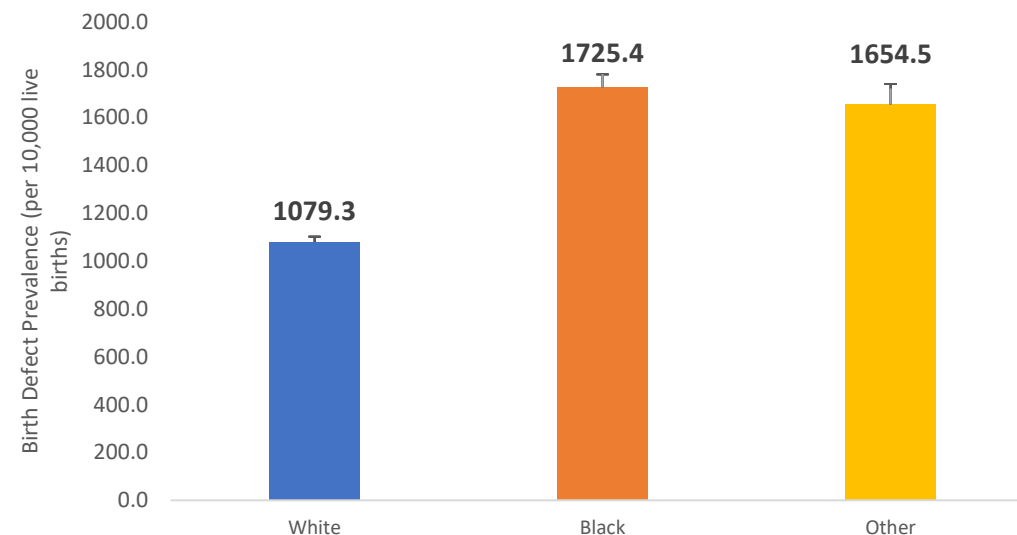
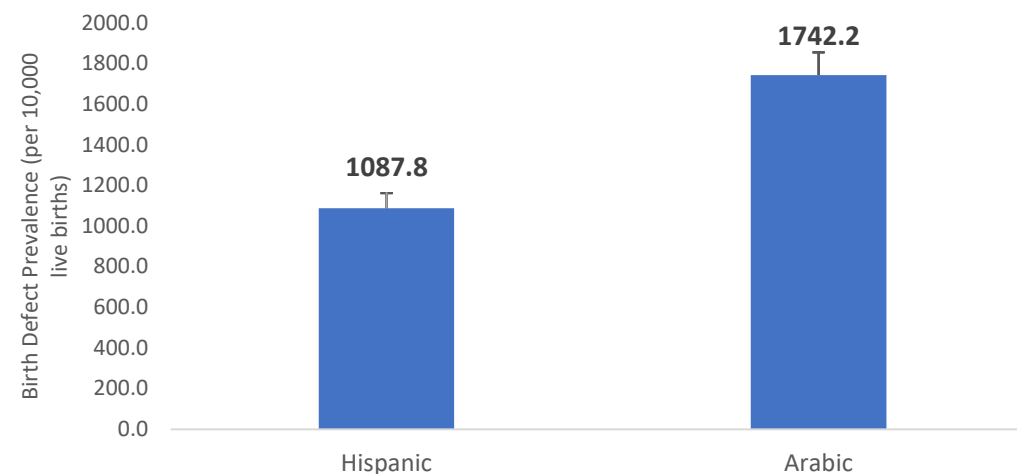
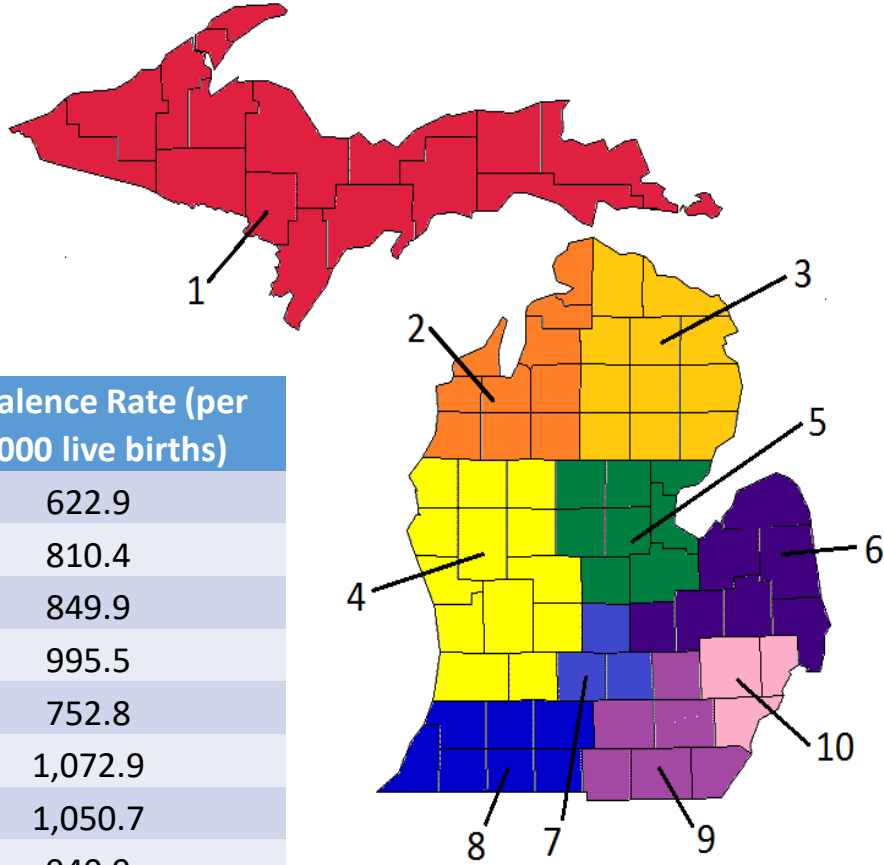


Figure 2. Statewide Maternal Ethnicity-Specific Birth Defect Prevalence Rates: MBDR, 2017



Birth Defect Prevalence Rates by Prosperity Region: MBDR, 2017

- The State of Michigan is broken up into 10 prosperity regions based on shared geographic, demographic, and economic interests.
- In 2017, Michigan prosperity regions 9 and 10 reported the highest birth defect prevalence rates of 1,619.9 and 1,872.5 cases per 10,000 live births.
- The prosperity region that reported the lowest birth defect prevalence was region 1 with a prevalence rate of 622.9 cases per 10,000 live births.



Region	Number of Cases	Prevalence Rate (per 10,000 live births)
1	166	622.9
2	233	810.4
3	154	849.9
4	1,930	995.5
5	443	752.8
6	959	1,072.9
7	539	1,050.7
8	844	940.9
9	1,644	1,619.9
10	8,556	1,872.5
Total	15,468	1,387.2

*All statewide data reported from the Michigan Birth Defects Registry (MBDR) for birth year 2017
 ** Total reported birth defect cases for all diagnostic groupings per 10,000 live births
 ***Prevalence rates are based on births to mothers living in Michigan at the time of delivery.
 ****Regions approximate prosperity region boundaries

Statewide Birth Defect Prevalence Rates by Prosperity Region with Prosperity Region Map: MBDR, 2017

Sleep-Related Infant Death Rate Prosperity Region 2, 2010-2018

Overview of Sleep-Related Infant Deaths in Michigan 2010-2018

- Between 2010 and 2018 there were **1,287** 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 2018 Black Infants were 3.5 times more likely to die of sleep-related causes as compared to white Infants. Infants of races Other than white and Black were 2.4 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

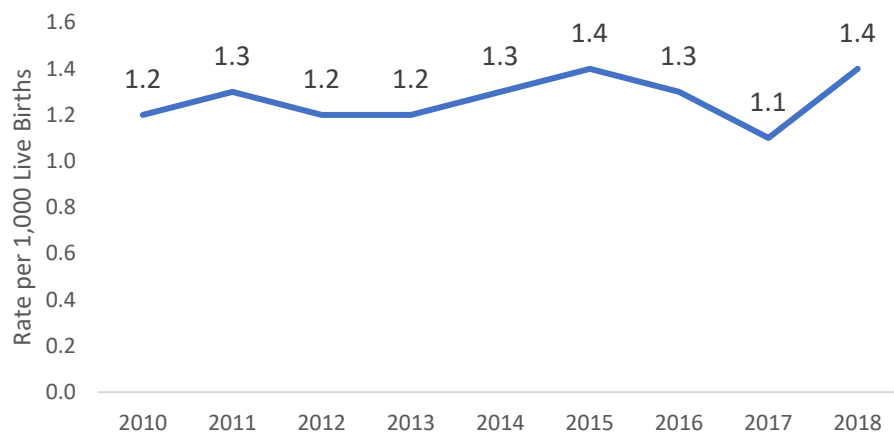
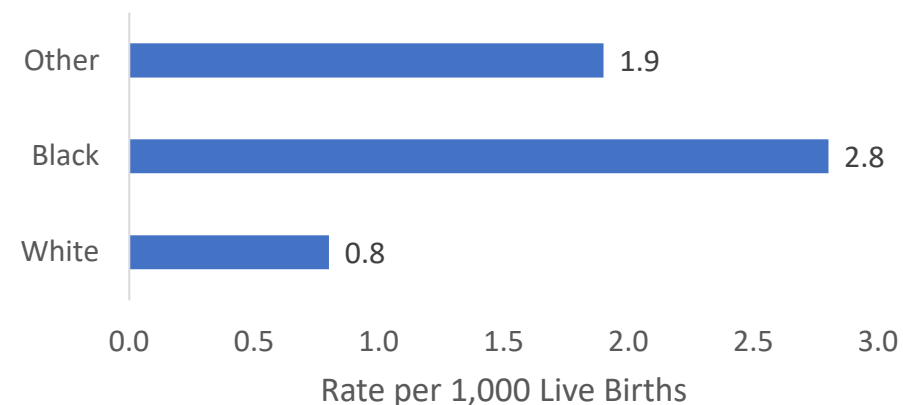
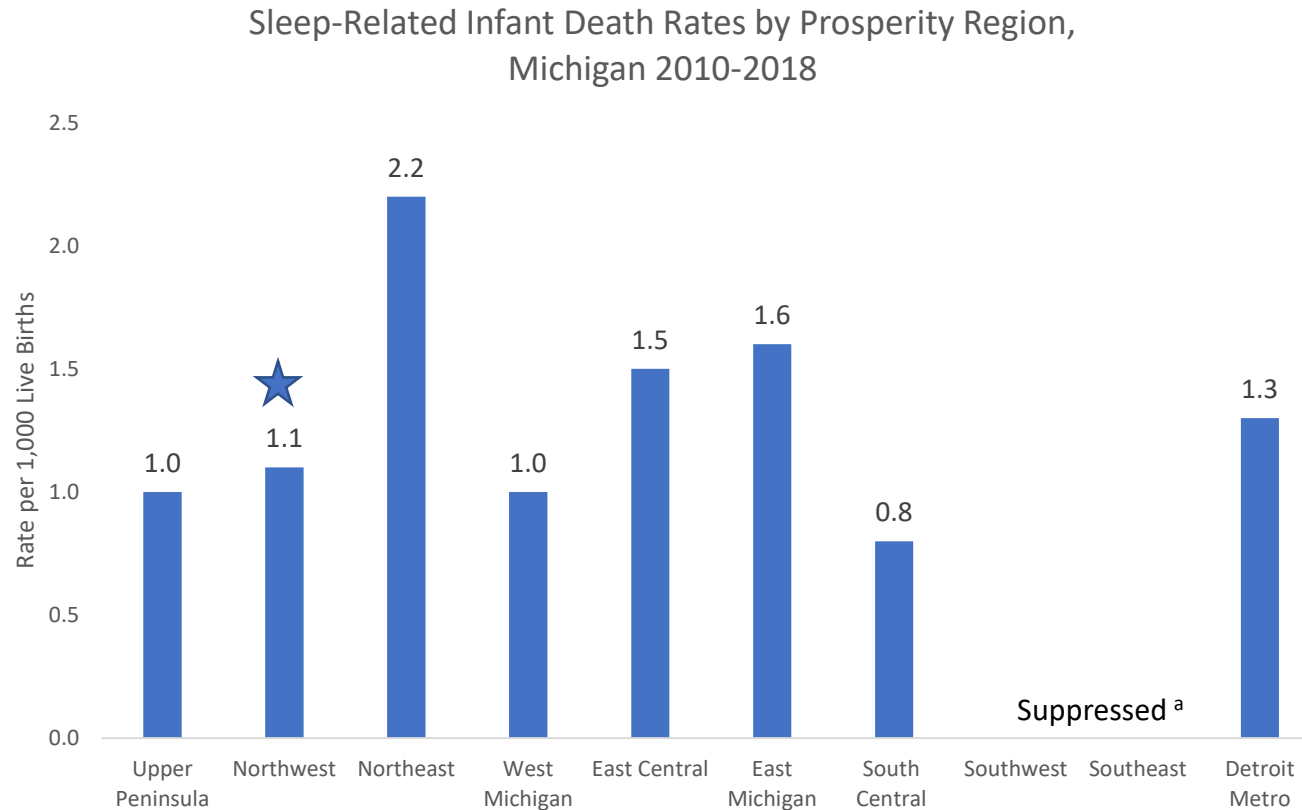


Figure 2. Rate of Sleep-Related Infant Deaths
per 1,000 Live Births, by Race



Sleep-Related Infant Death Rate, Prosperity Region 2, 2010-2018

(rate per 1,000 live births)

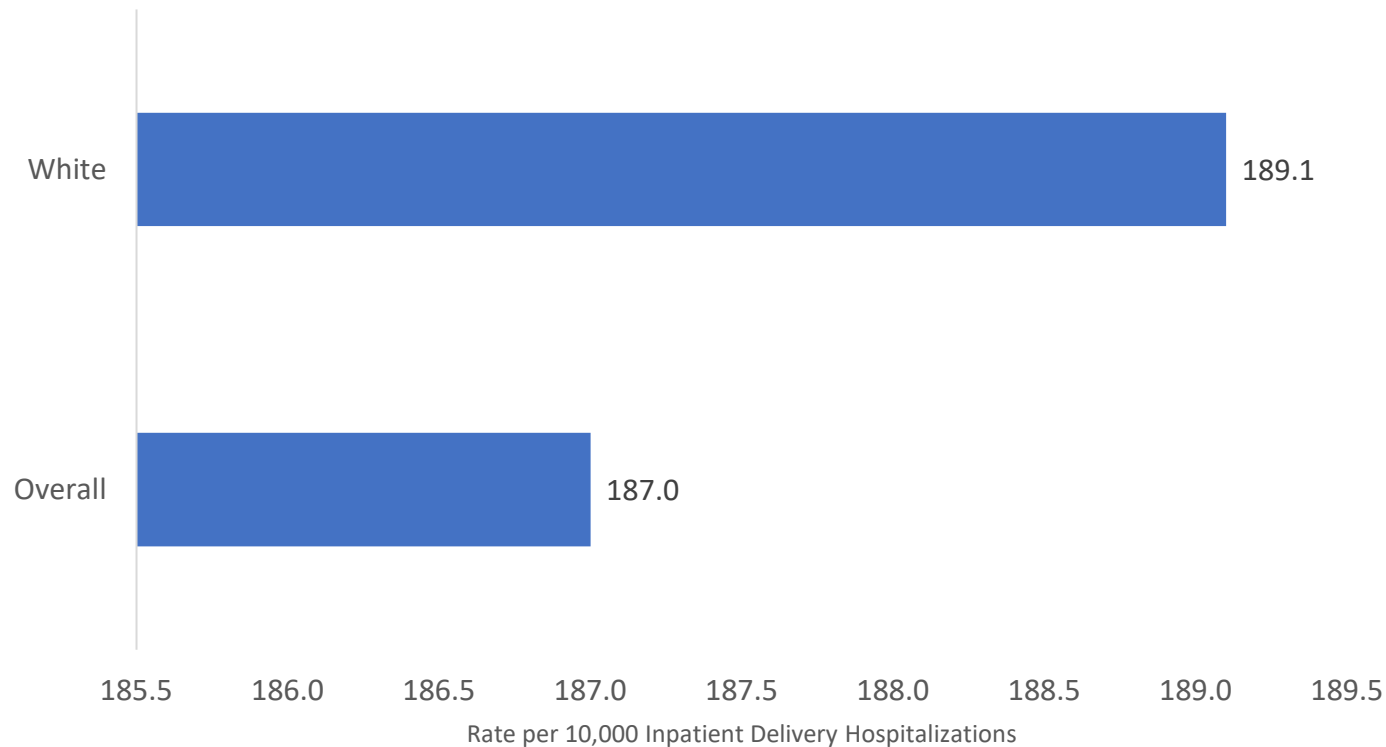


- Between 2010 and 2018 there were **29** sleep-related infant deaths in Region Two.
- The Region Two sleep-related infant death rate of 1.1 per 1,000 live births was **lower** than the Michigan sleep-related death rate (Michigan rate: 1.3 per 1,000 live births), although the difference was not statistically significant.

^a Data for Regions 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

Severe Maternal Morbidity Rate Prosperity Region 2, 2019

Severe Maternal Morbidity, Prosperity Region 2, 2019 (rate per 10,000 delivery hospitalizations)



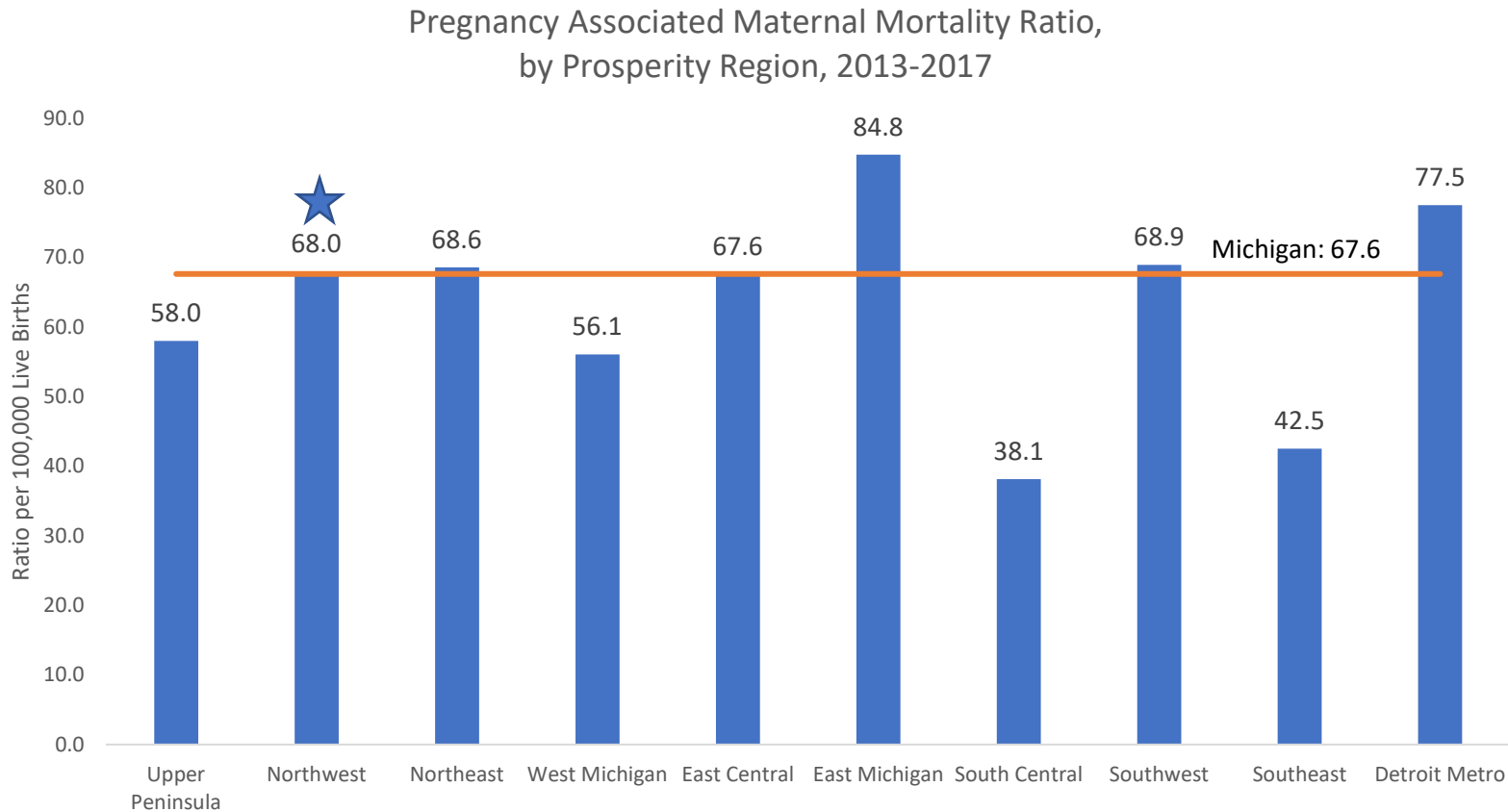
2019 Michigan Rates	
Overall:	194.3
White:	157.6
Black:	321.1
Asian:	192.1
Native American:	155.7
Hispanic:	205.7

* Statistics for other races are suppressed due to insufficient sample sizes.

Maternal Mortality Ratio Prosperity Region 2, 2013-2017

Maternal Mortality Ratio, Prosperity Region 2, 2013-2017

(ratio per 100,000 live births)



- Maternal deaths include deaths that occur during pregnancy, at delivery or within one year of pregnancy.
- Total maternal mortality includes both pregnancy associated 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 Two there were **10** maternal deaths between 2013 and 2017