

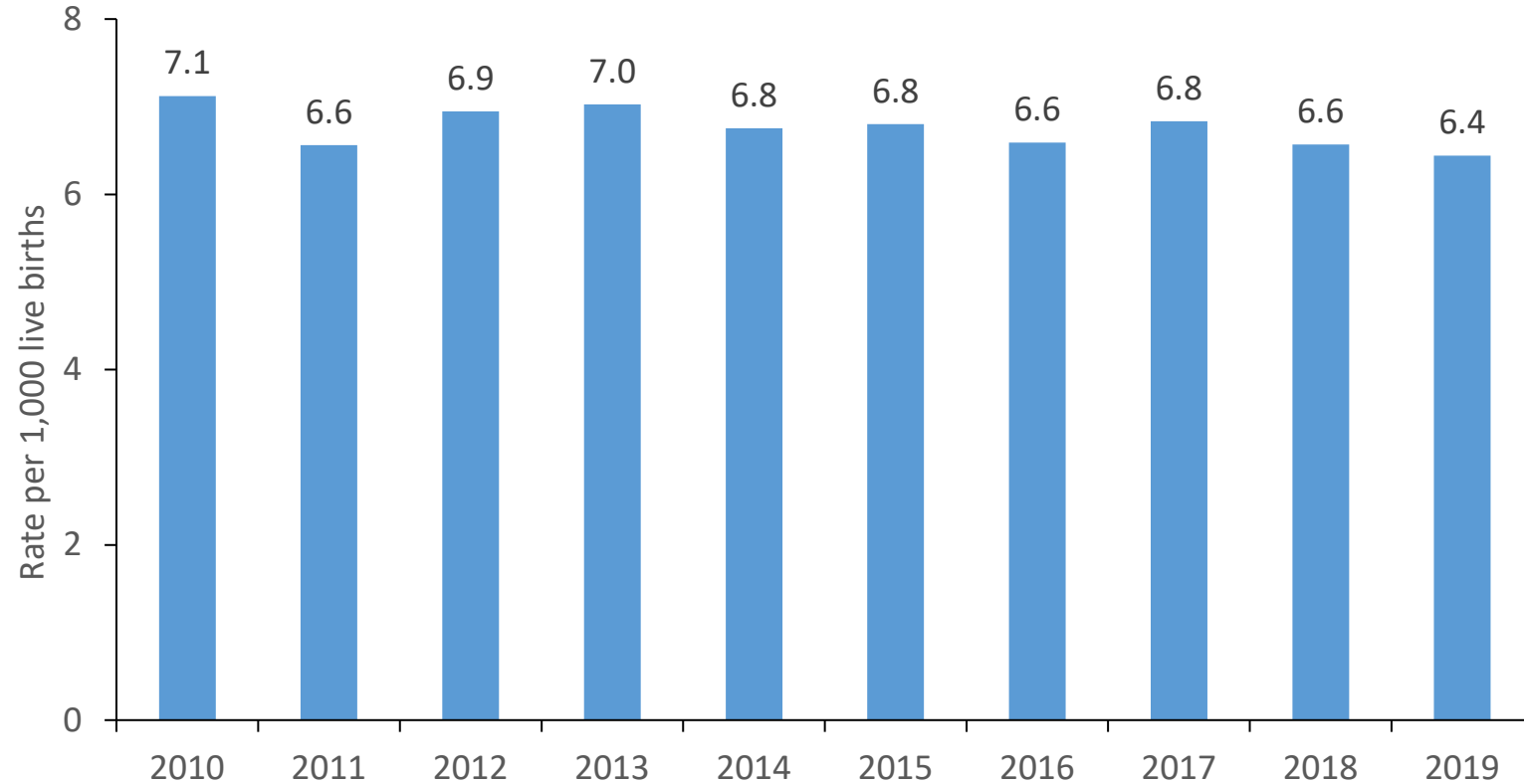
# Maternal and Infant Health Statistics, Michigan

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), Michigan, 2010-2019

# Infant Mortality Rate, Michigan, 2010-2019

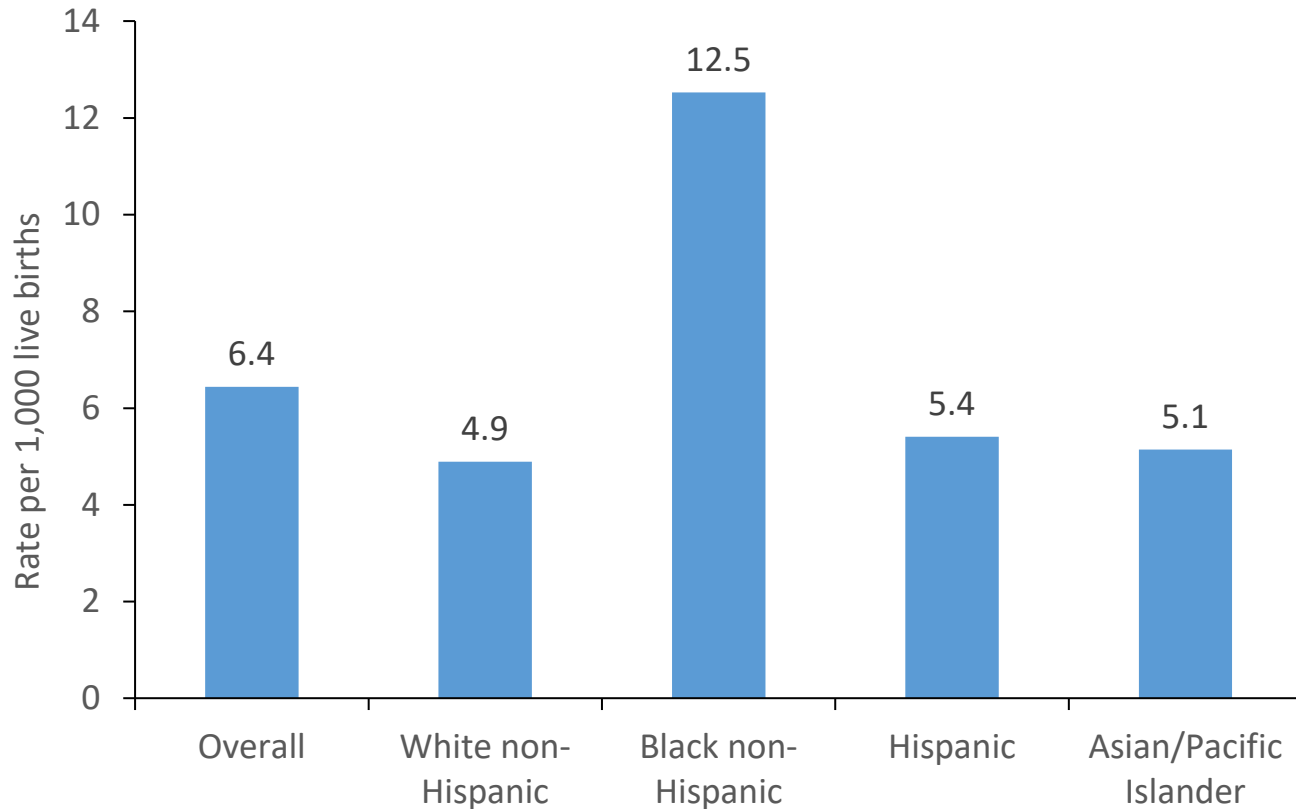
(rate per 1,000 live births)



Year	# Live Births	# Infant Death	IMR
2010	114,717	817	7.1
2011	114,159	749	6.6
2012	112,708	783	6.9
2013	113,732	799	7.0
2014	114,460	773	6.8
2015	113,211	770	6.8
2016	113,374	747	6.6
2017	111,507	762	6.8
2018	110,093	723	6.6
2019	107,917	695	6.4

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.

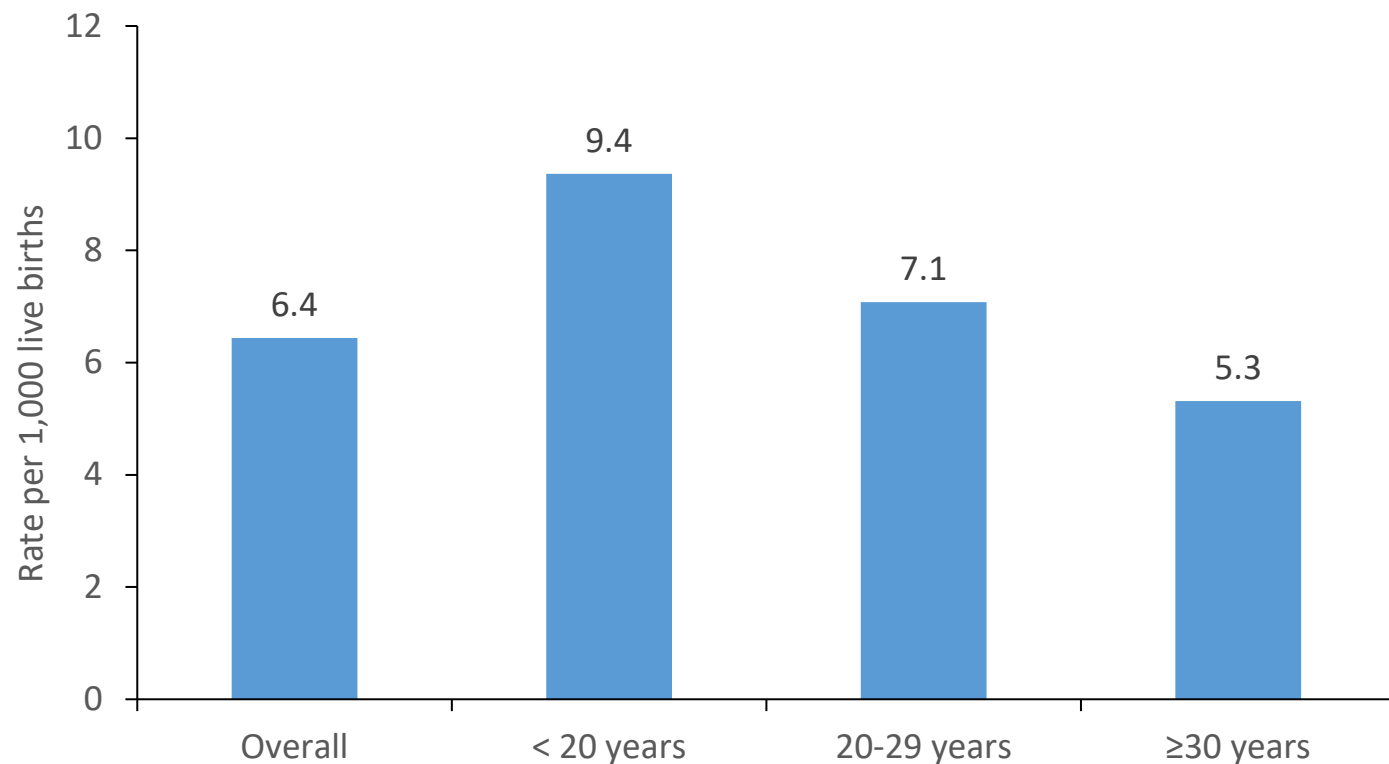
# Infant Mortality Rates by Maternal Race/Ethnicity, Michigan, 2019 (rate per 1,000 live births)



Maternal Race/Ethnicity	# Live Births	# Infant Death	IMR
Overall	107,917	695	6.4
White non-Hispanic	72,407	354	4.9
Black non-Hispanic	20,201	253	12.5
Hispanic	7,579	41	5.4
Asian/Pacific Islander	4,278	22	5.1

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.

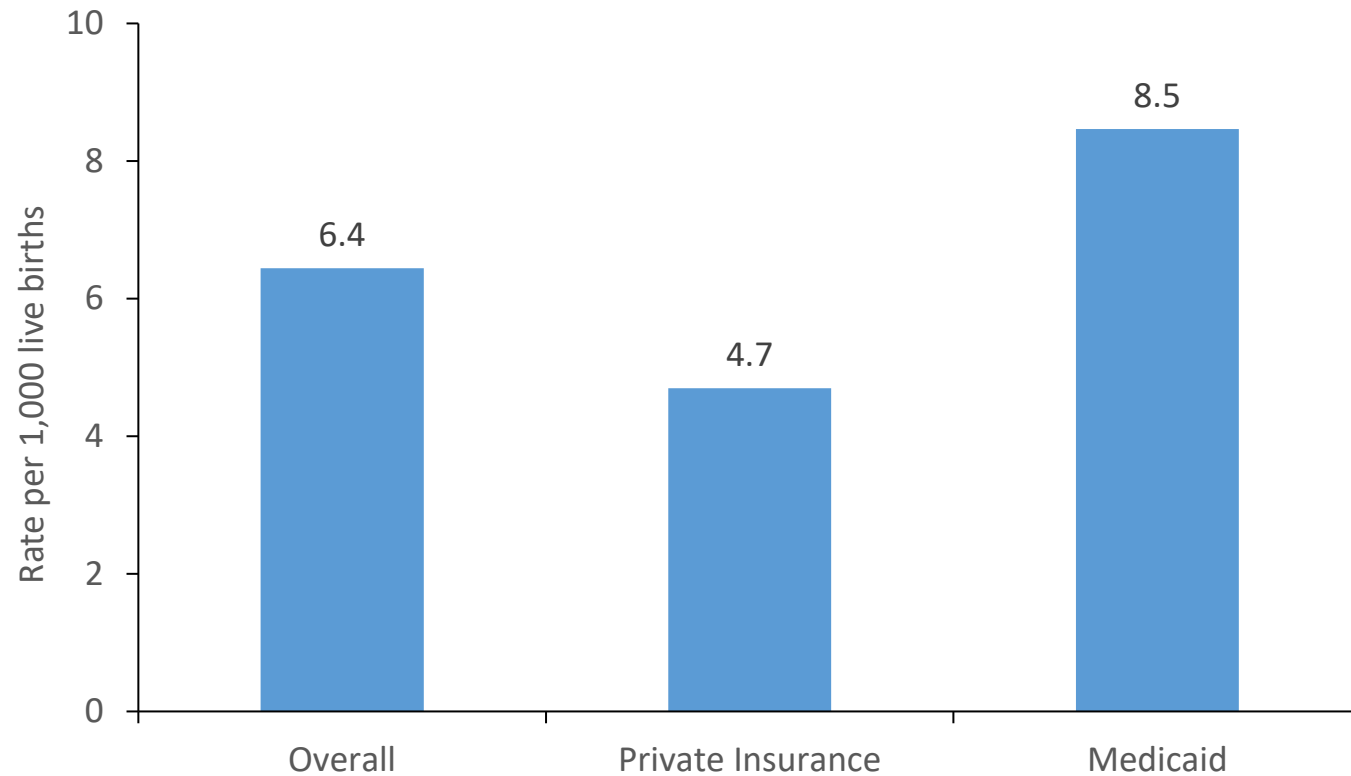
# Infant Mortality Rates by Maternal Age, Michigan, 2019 (rate per 1,000 live births)



Maternal Age	# Live Births	# Infant Death	IMR
Overall	107,917	695	6.4
< 20 years	4,807	45	9.4
20-29 years	54,542	386	7.1
≥30 years	48,539	258	5.3

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 Intended Payment Source, Michigan, 2019 (rate per 1,000 live births)

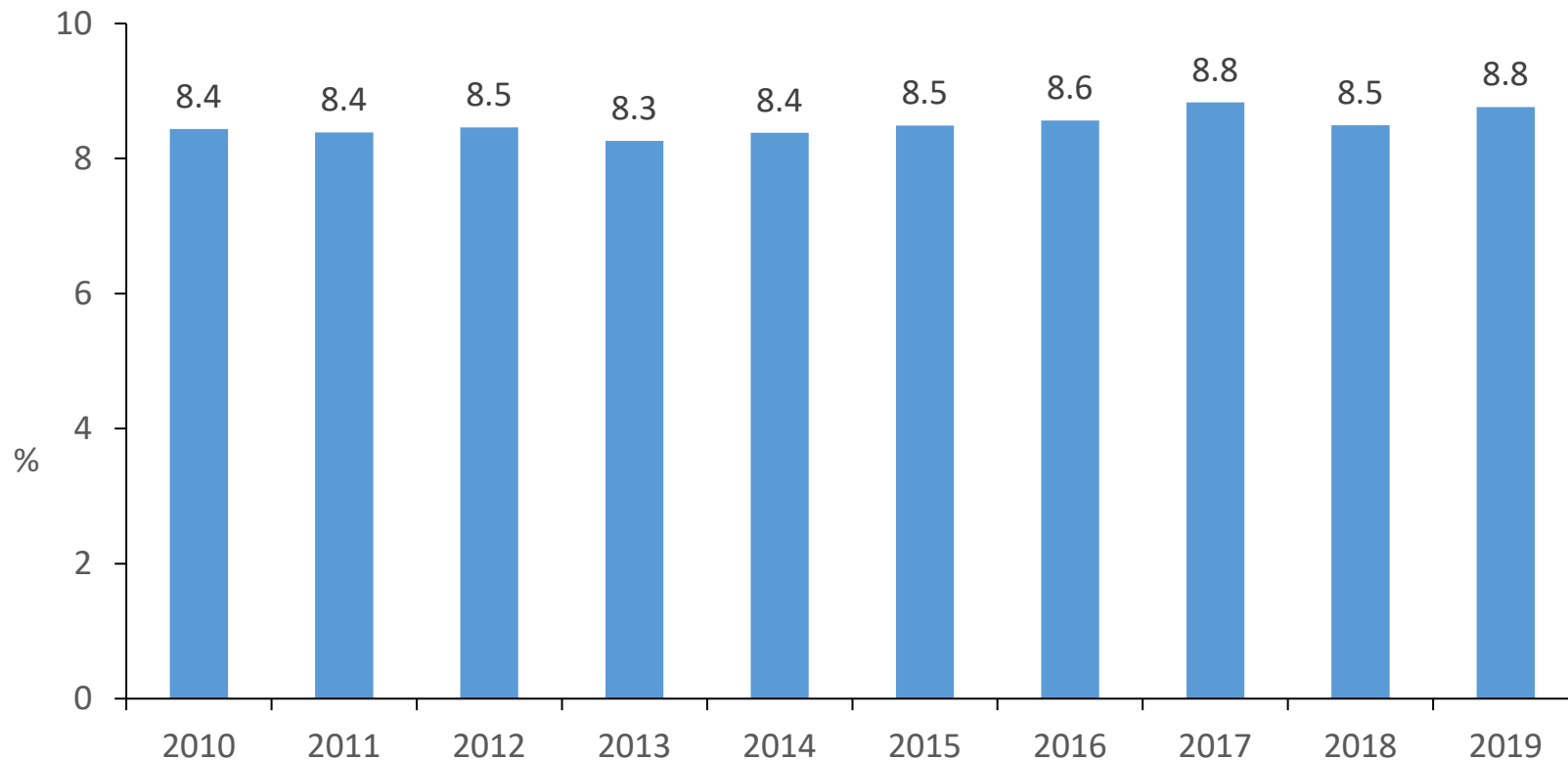


Payment Source	# Live Births	# Infant Death	IMR
Overall	107,917	695	6.4
Private Insurance	60,228	283	4.7
Medicaid	44,759	379	8.5

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), Michigan, 2010-2019

# Low Birthweight (Birthweight <2,500 Grams), Michigan, 2010-2019

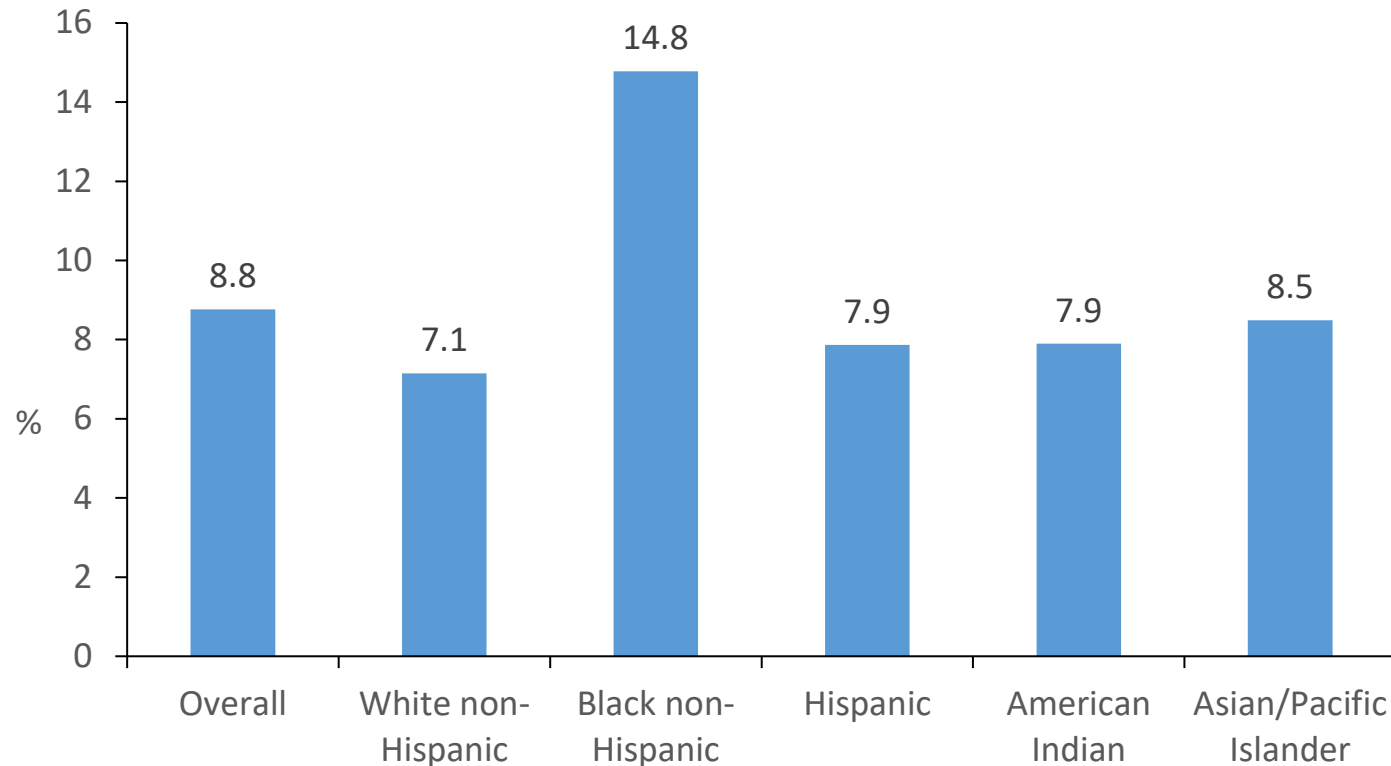


Year	# Live Births	# LBW	LBW %
2010	114,717	9,678	8.4
2011	114,159	9,576	8.4
2012	112,708	9,535	8.5
2013	113,732	9,397	8.3
2014	114,460	9,592	8.4
2015	113,211	9,611	8.5
2016	113,374	9,708	8.6
2017	111,507	9,846	8.8
2018	110,093	9,350	8.5
2019	107,917	9,458	8.8

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



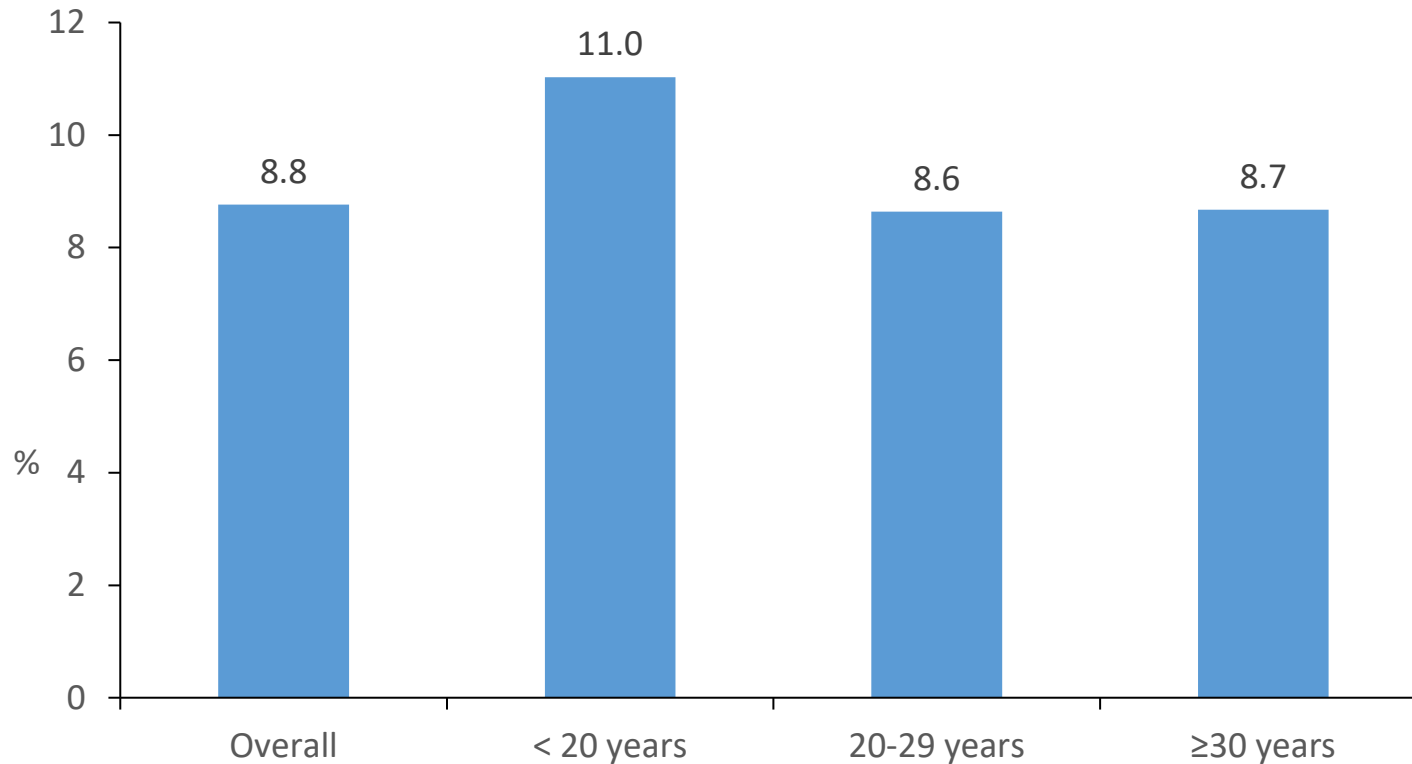
# Low Birthweight (Birthweight <2,500 Grams) by Maternal Race/Ethnicity, Michigan, 2019



Maternal Race/Ethnicity	# Live Births	# LBW	LBW %
Overall	107,917	9,458	8.8
White non-Hispanic	72,407	5,172	7.1
Black non-Hispanic	20,201	2,985	14.8
Hispanic	7,579	596	7.9
American Indian	380	30	7.9
Asian/Pacific Islander	4,278	363	8.5

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

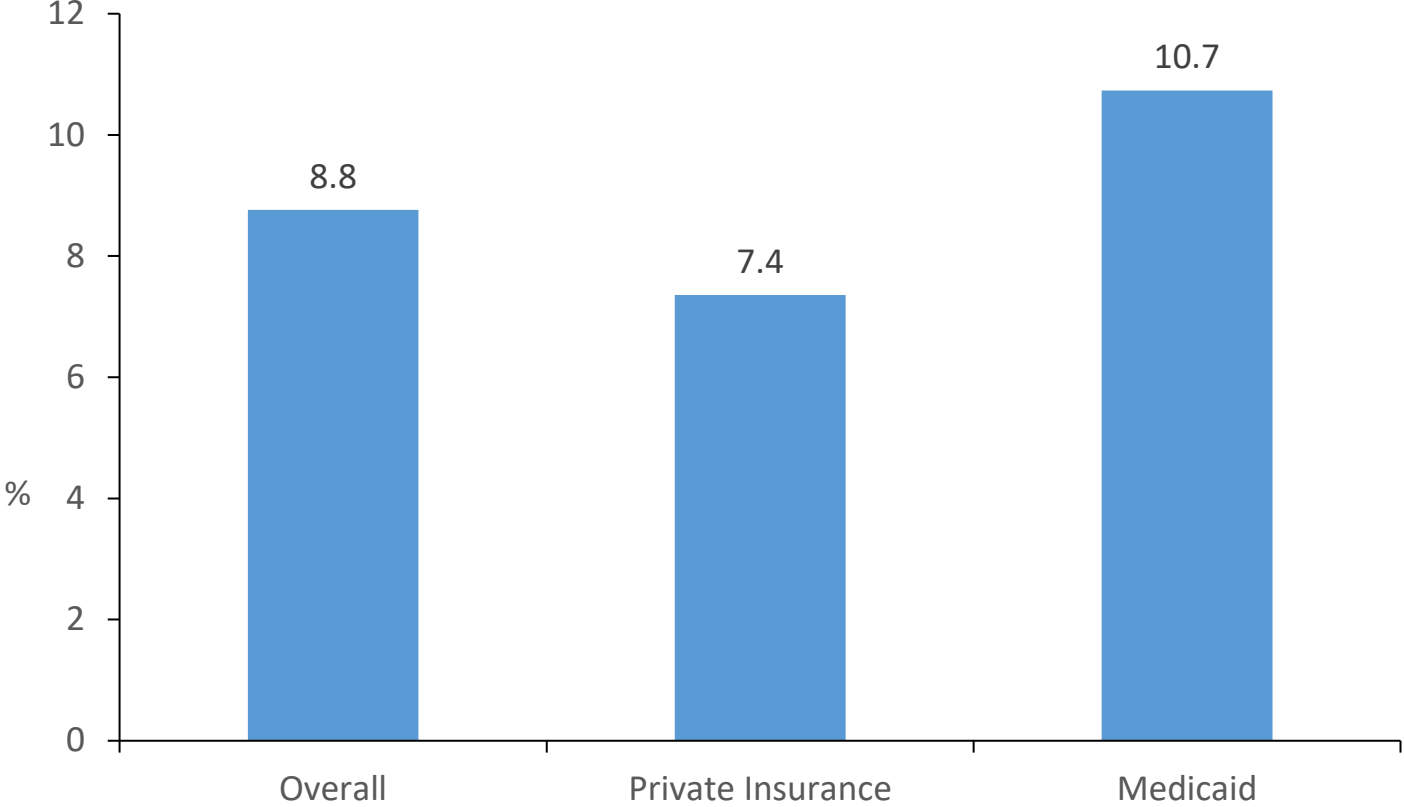
# Low Birthweight (Birthweight <2,500 Grams) by Maternal Age, Michigan, 2019



Maternal Age	# Live Births	# LBW	LBW %
Overall	107,917	9,458	8.8
< 20 years	4,807	530	11.0
20-29 years	54,542	4,712	8.6
≥30 years	48,539	4,210	8.7

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, Michigan, 2019

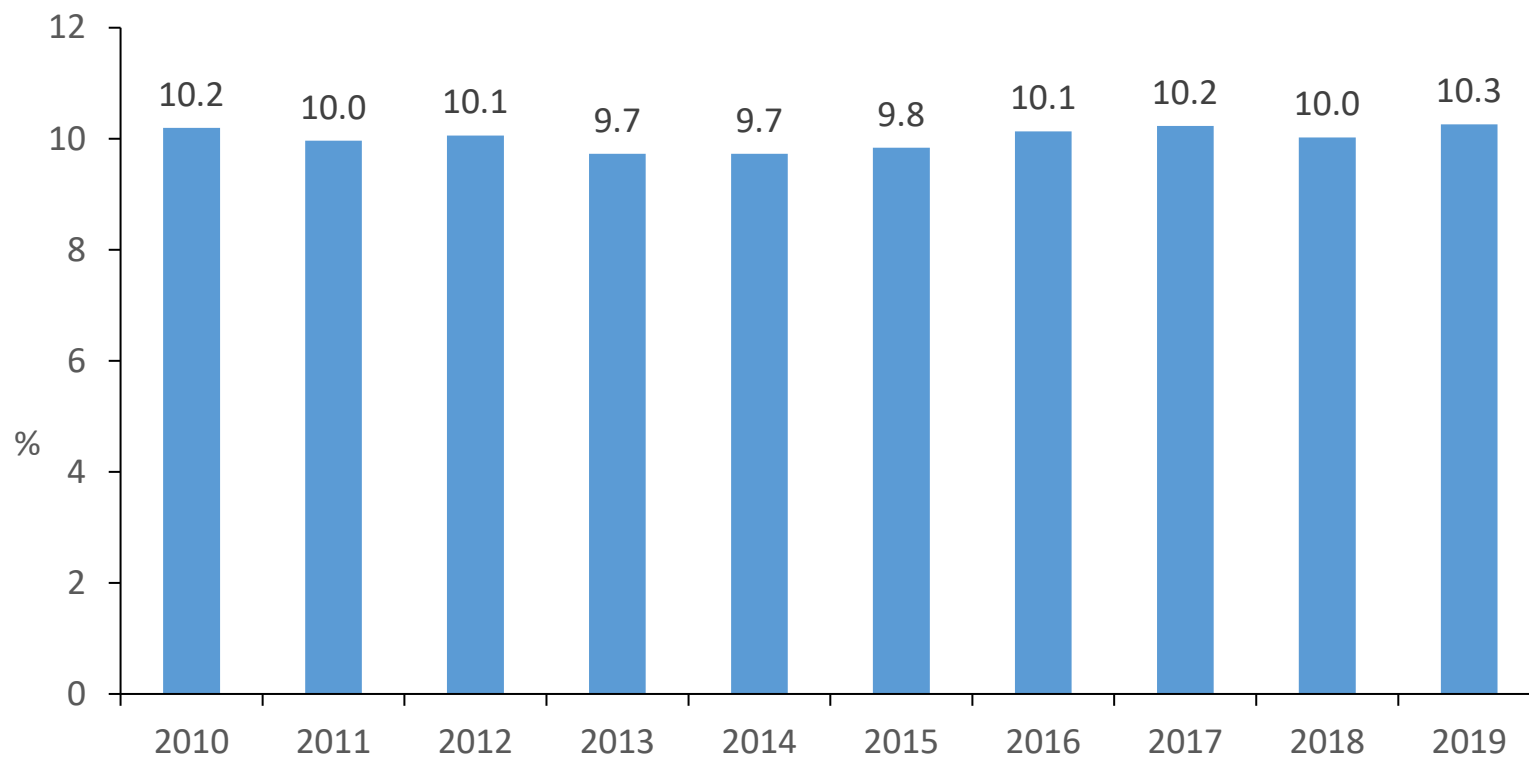


Payment Source	# Live Births	# LBW	LBW %
Overall	107,917	9,458	8.8
Private Insurance	60,228	4,430	7.4
Medicaid	44,759	4,804	10.7

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

# Preterm Birth (PTB), Michigan, 2010-2019

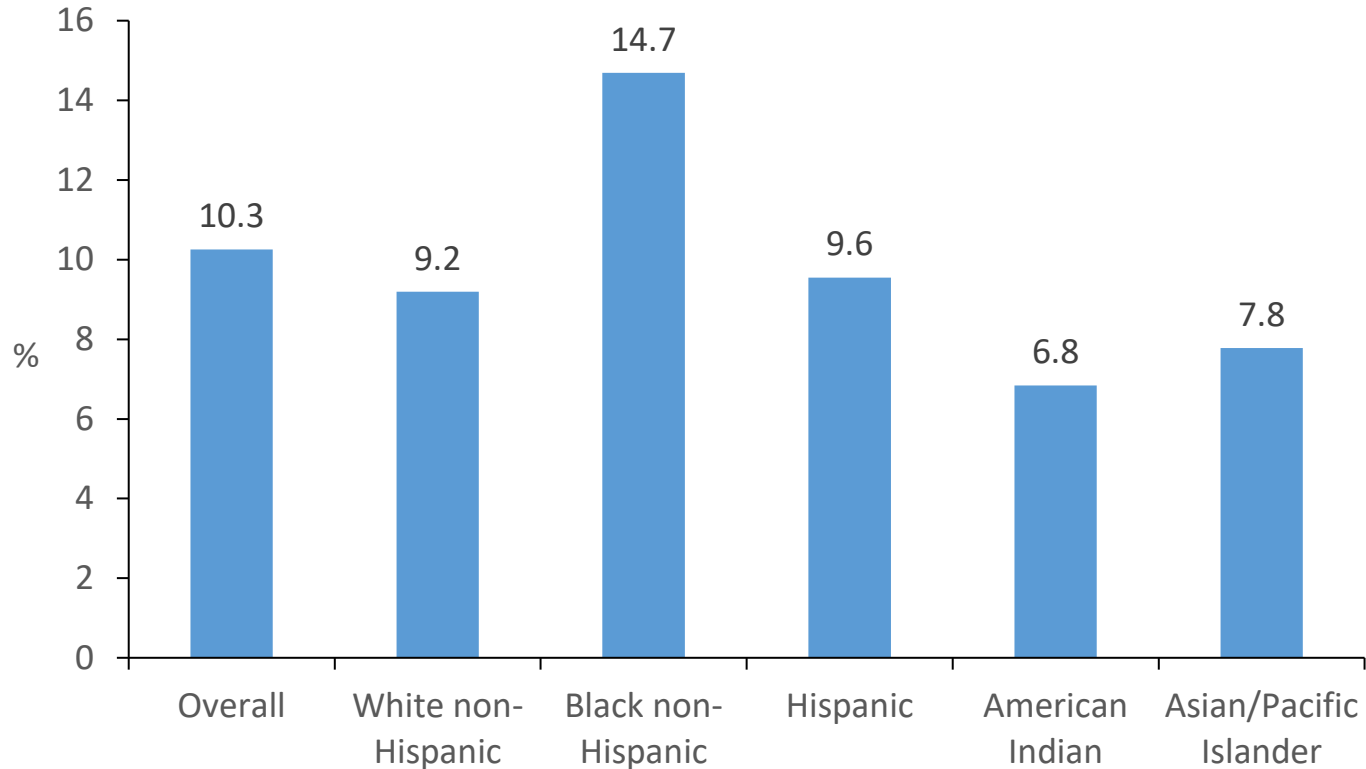
# Preterm Birth (Estimated Gestational Age <37 Weeks), Michigan, 2010-2019



Year	# Live Births	# PTB	PTB %
2010	114,717	11,696	10.2
2011	114,159	11,378	10.0
2012	112,708	11,338	10.1
2013	113,732	11,069	9.7
2014	114,460	11,136	9.7
2015	113,211	11,136	9.8
2016	113,374	11,490	10.1
2017	111,507	11,406	10.2
2018	110,093	11,038	10.0
2019	107,917	11,070	10.3

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.

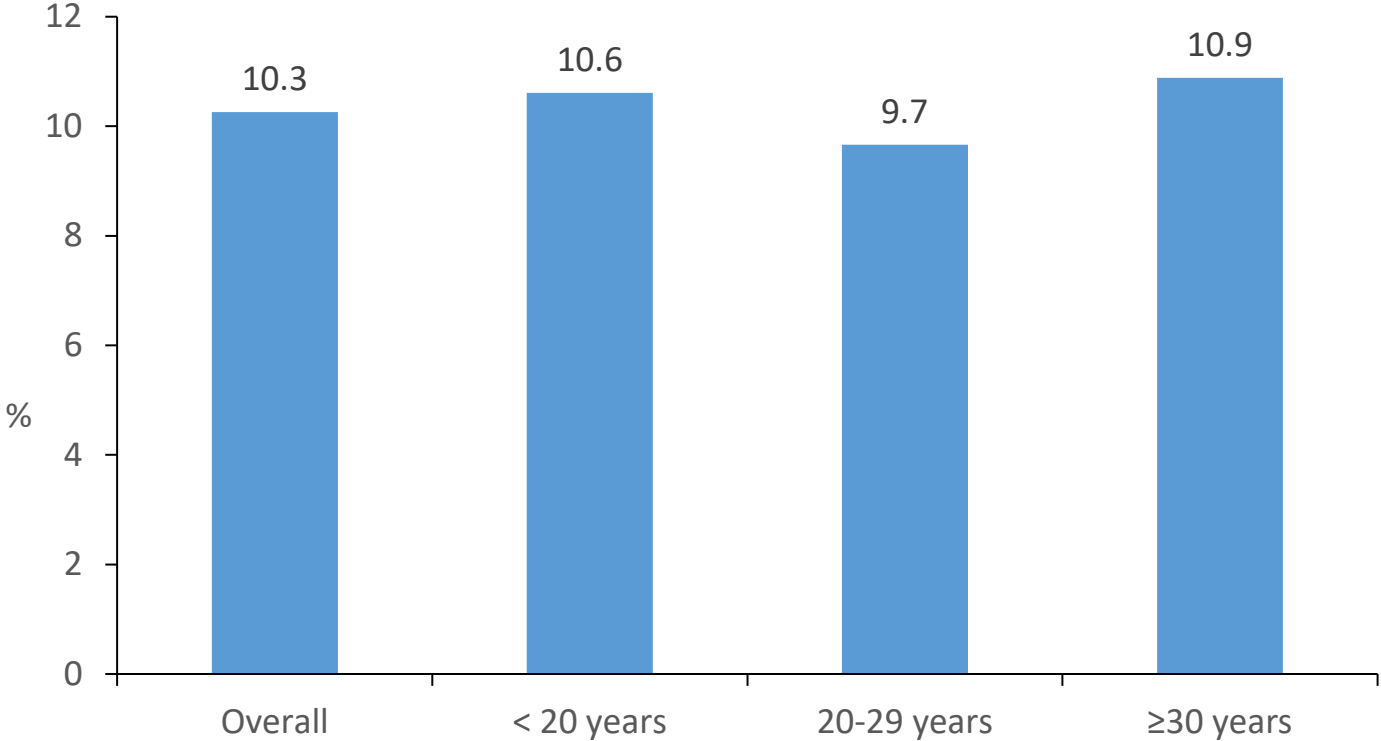
# Preterm Birth (Estimated Gestational Age <37 Weeks) by Maternal Race/Ethnicity, Michigan, 2019



Maternal Race/Ethnicity	# Live Births	# PTB	PTB %
Overall	107,917	11,070	10.3
White non-Hispanic	72,407	6,656	9.2
Black non-Hispanic	20,201	2,968	14.7
Hispanic	7,579	724	9.6
American Indian	380	26	6.8
Asian/Pacific Islander	4,278	333	7.8

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.

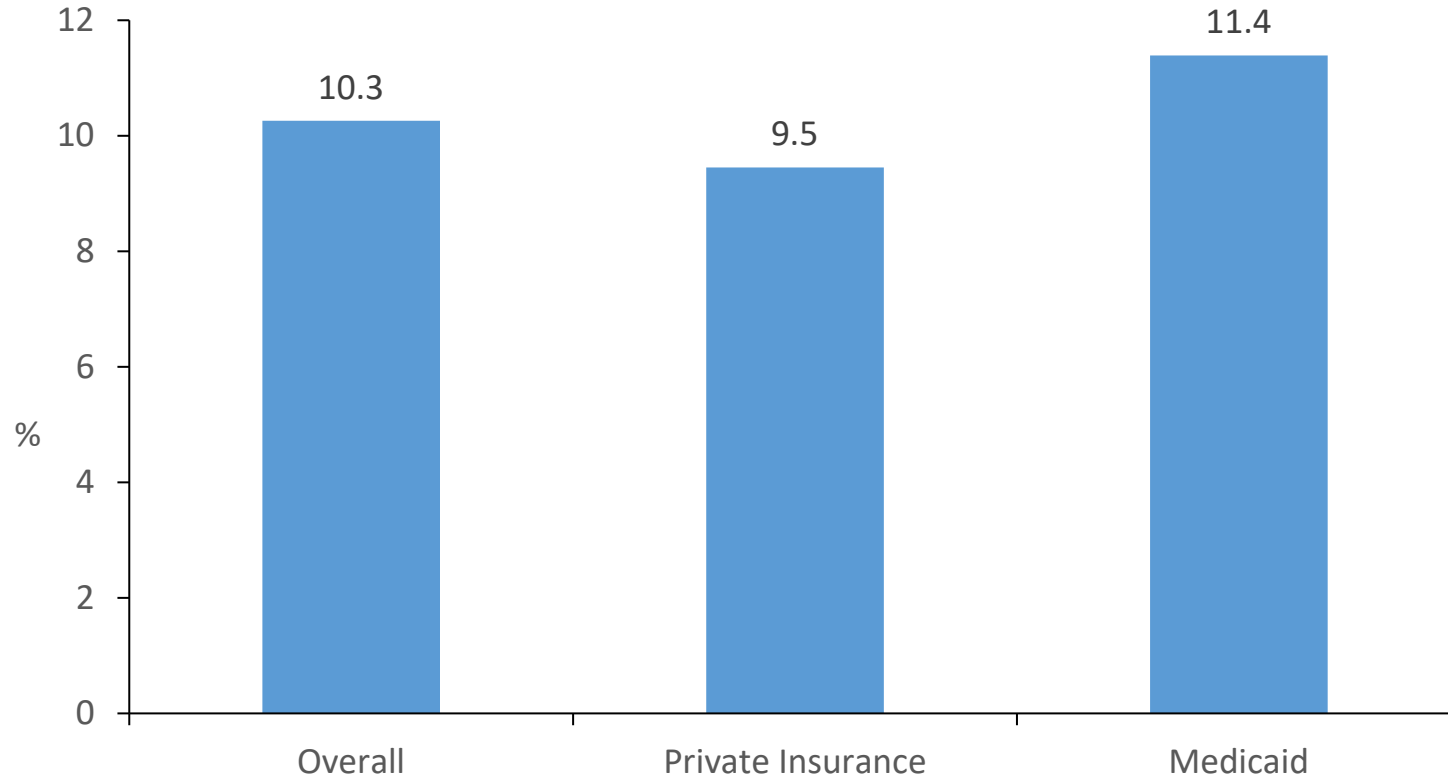
# Preterm Birth (Estimated Gestational Age <37 Weeks) by Maternal Age, Michigan, 2019



Maternal Age	# Live Births	# PTB	PTB %
Overall	107,917	11,070	10.3
< 20 years	4,807	510	10.6
20-29 years	54,542	5,271	9.7
≥30 years	48,539	5,283	10.9

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, Michigan, 2019



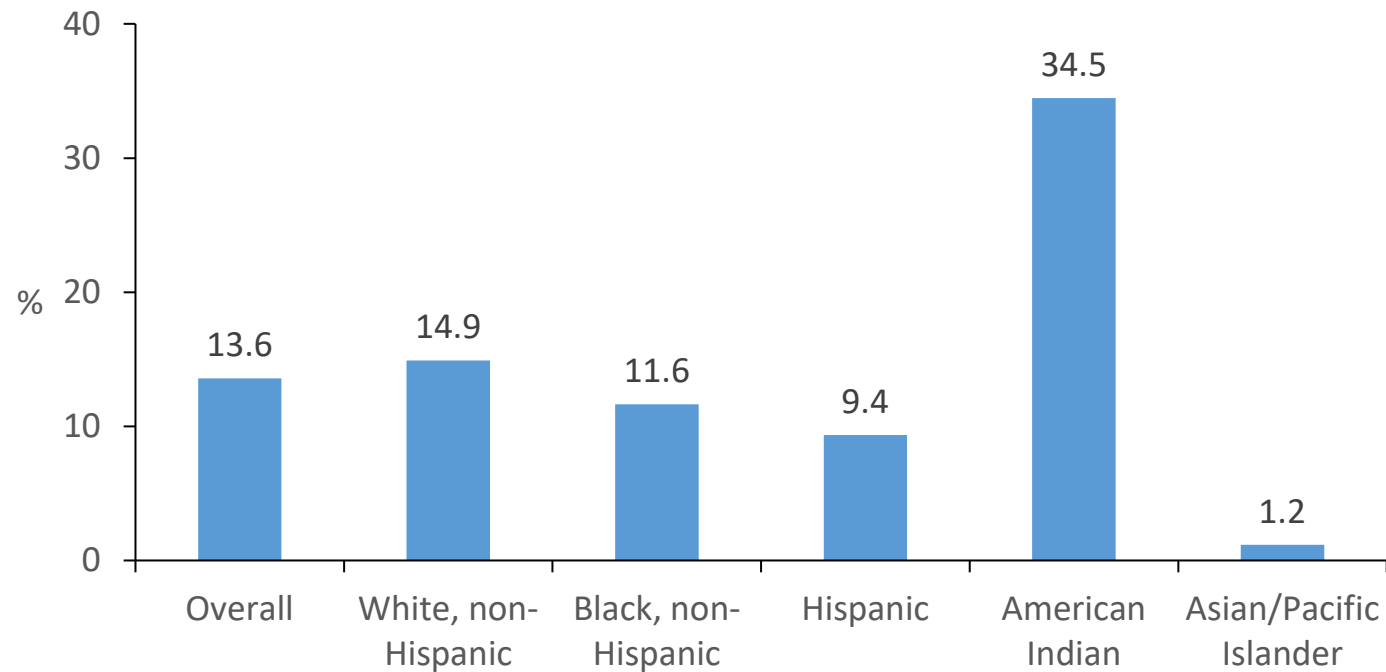
Payment Source	# Live Births	# PTB	PTB %
Overall	107,917	11,070	10.3
Private Insurance	60,228	5,693	9.5
Medicaid	44,759	5,098	11.4

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, Michigan, 2019

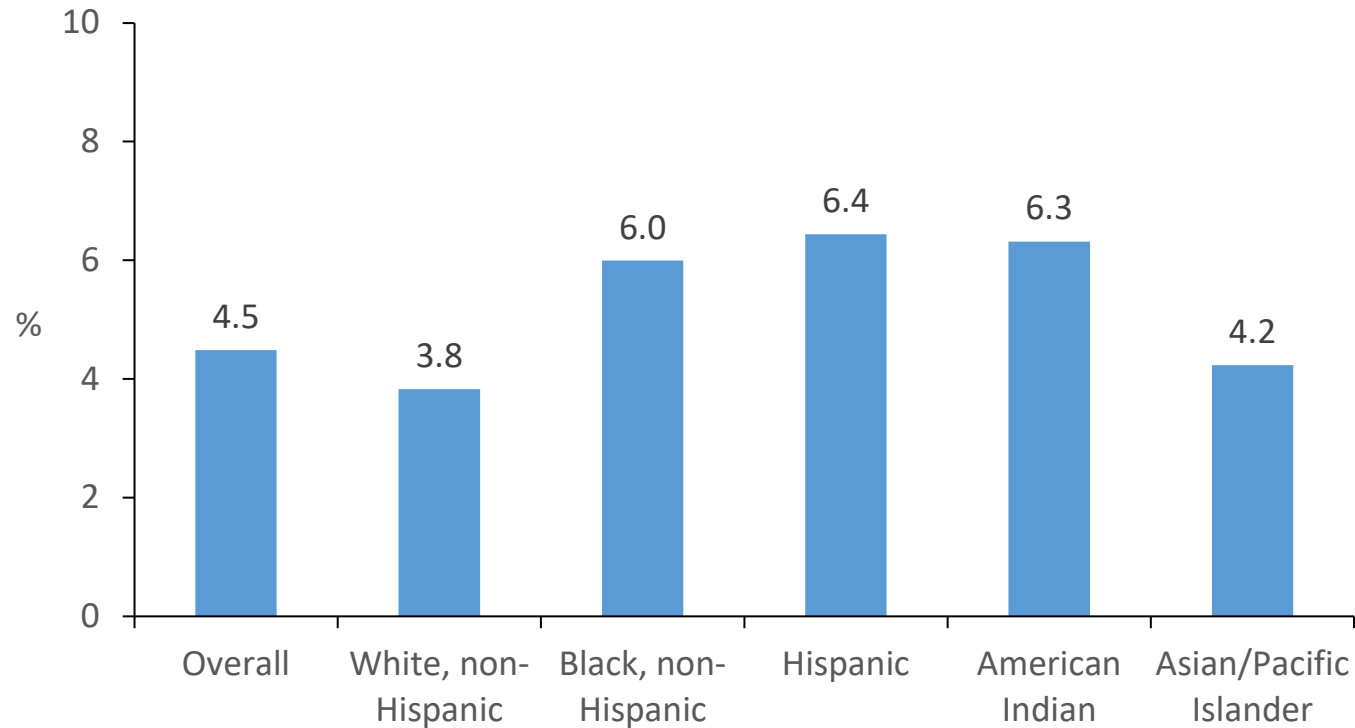
# Smoking During Pregnancy by Maternal Race/Ethnicity, Michigan, 2019



Maternal Race/Ethnicity	# Live Births	# Smoke Preg	Smoke Preg %
Overall	107,913	14,643	13.6
White non-Hispanic	72,586	10,822	14.9
Black non-Hispanic	20,200	2,352	11.6
Hispanic	7,578	709	9.4
American Indian	380	131	34.5
Asian/Pacific Islander	4,278	50	1.2

# Late Entry into Prenatal Care, Michigan, 2019

# Late Entry Into Prenatal Care by Maternal Race/Ethnicity, Michigan, 2019



Maternal Race/Ethnicity	# Live Births	# Late PNC	Late PNC %
Overall	107,913	4,839	4.5
White non-Hispanic	72,586	2,778	3.8
Black non-Hispanic	20,200	1,211	6.0
Hispanic	7,578	488	6.4
American Indian	380	24	6.3
Asian/Pacific Islander	4,278	181	4.2

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

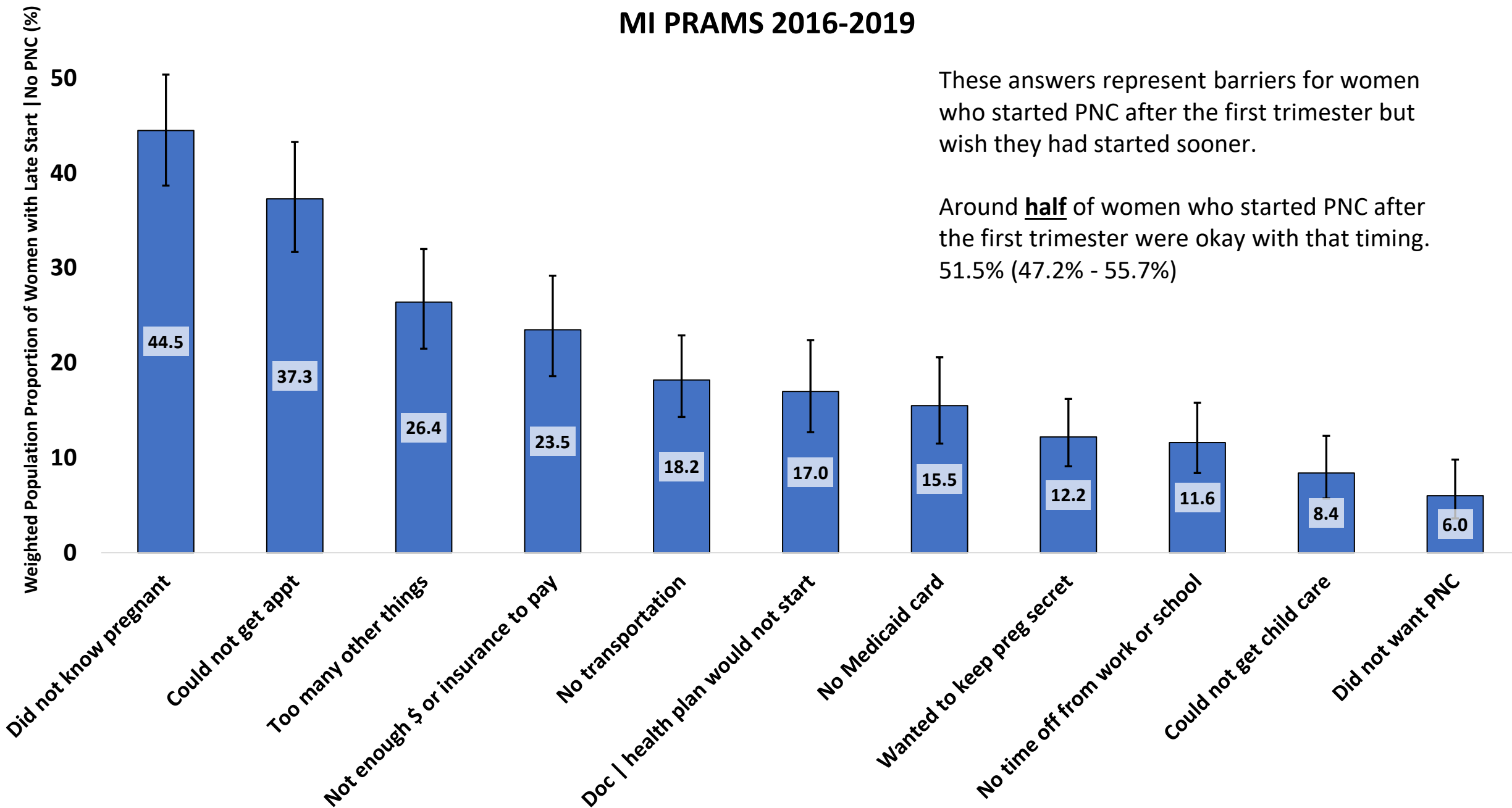
# Barriers to Prenatal Care, Michigan, 2016-2019

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

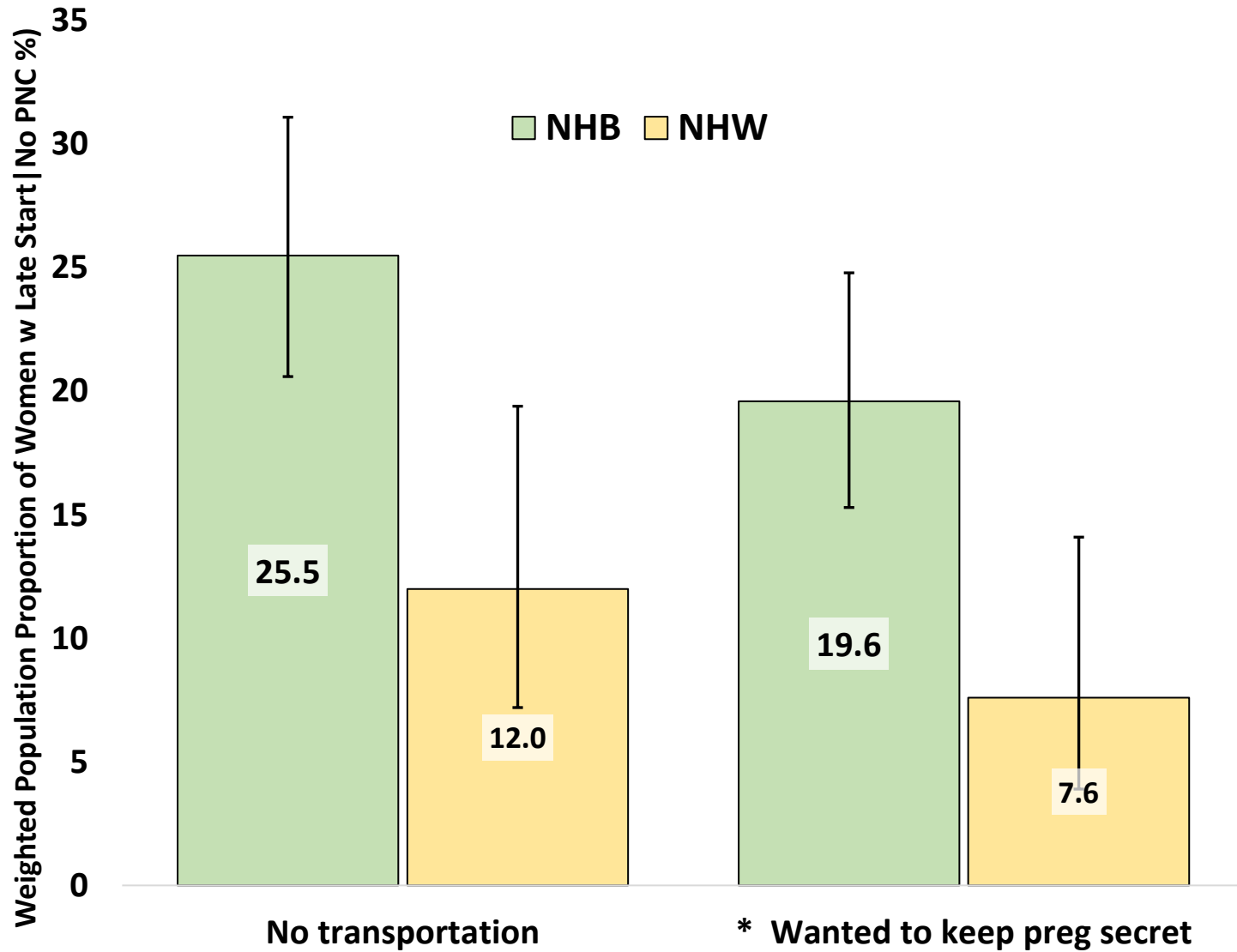
## MI PRAMS 2016-2019

These answers represent barriers for women who started PNC after the first trimester but wish they had started sooner.

Around **half** of women who started PNC after the first trimester were okay with that timing. 51.5% (47.2% - 55.7%)

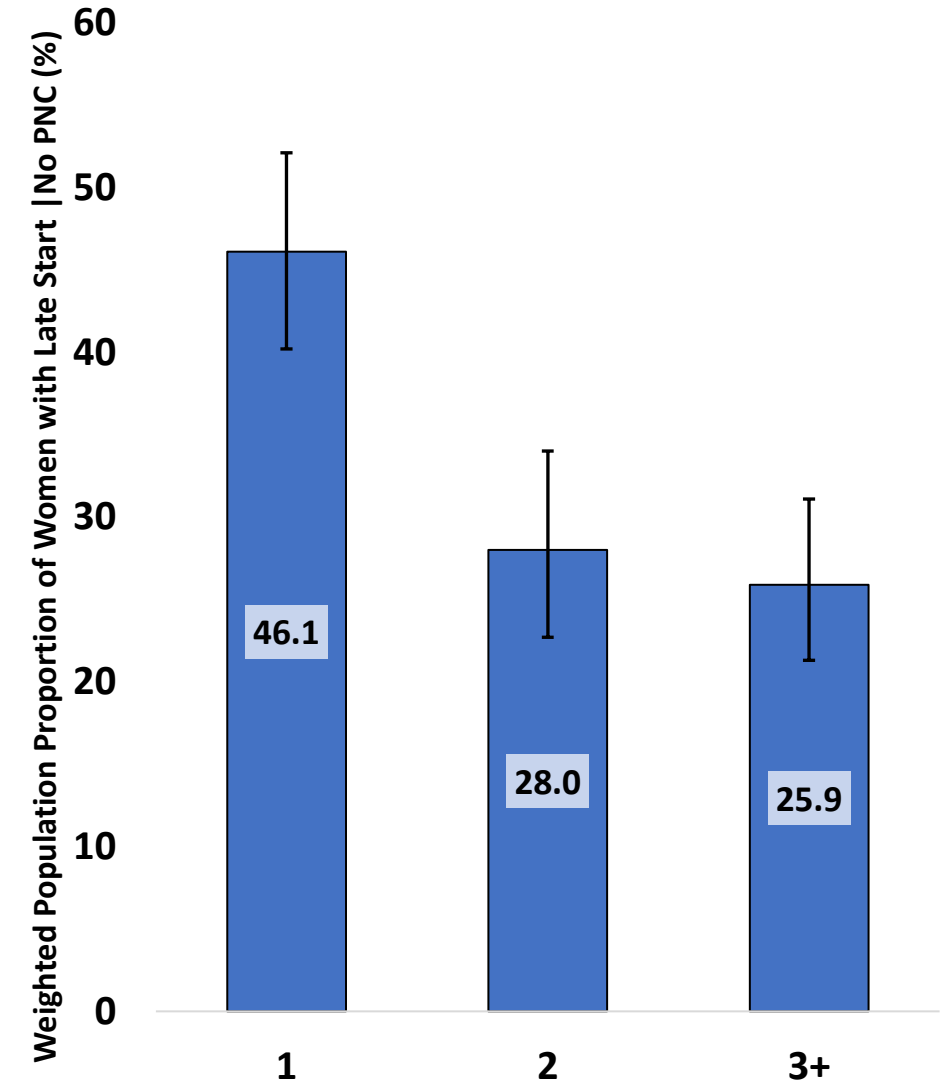


**Selected PNC Barriers with Significant Differences by Maternal Race/Ethnicity  
MI PRAMS 2016-2019**



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

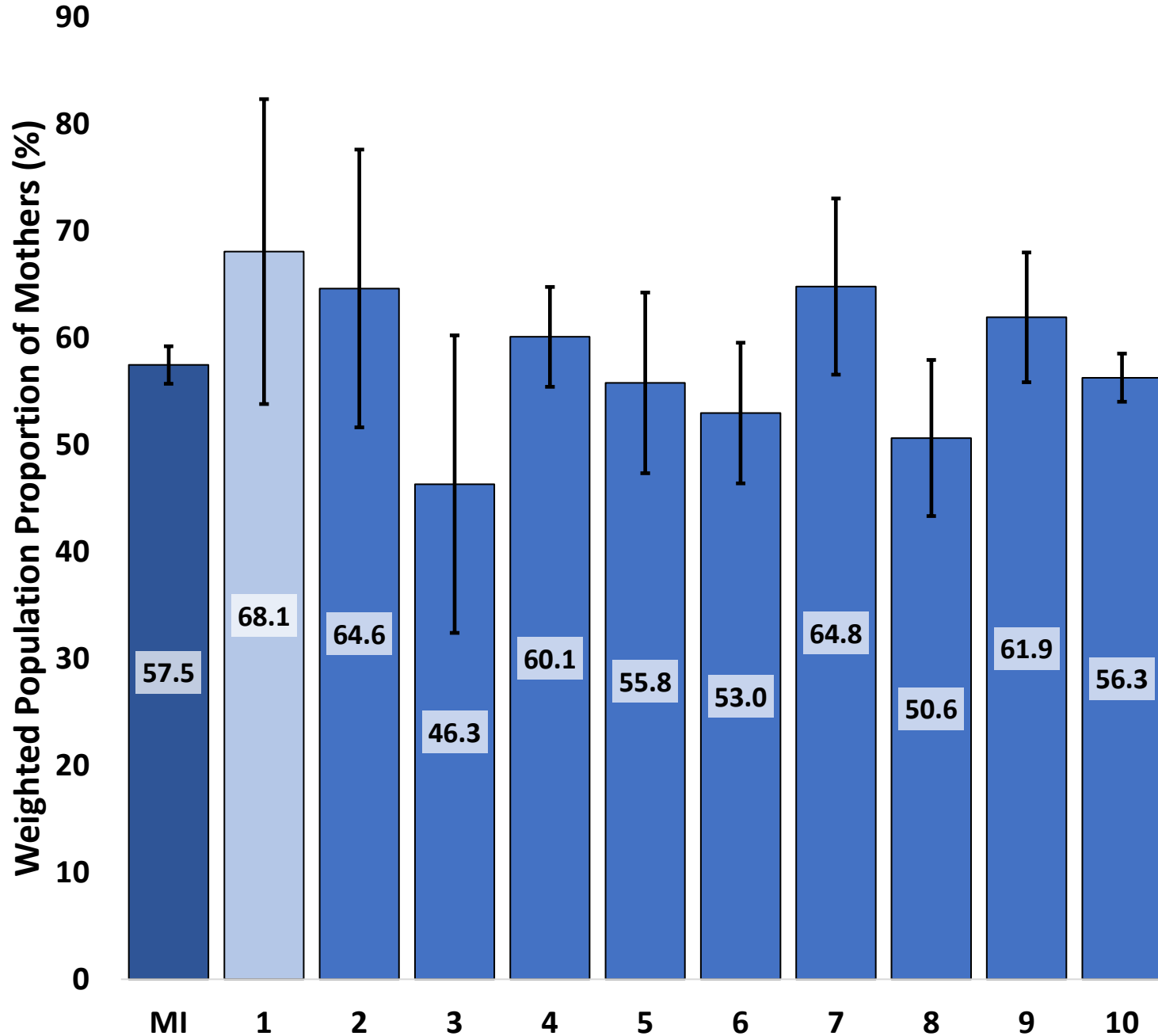
**Number of PNC Barriers - women with late | no PNC  
MI PRAMS 2016-2019**



# Pregnancy Intention, Michigan, 2016-2018



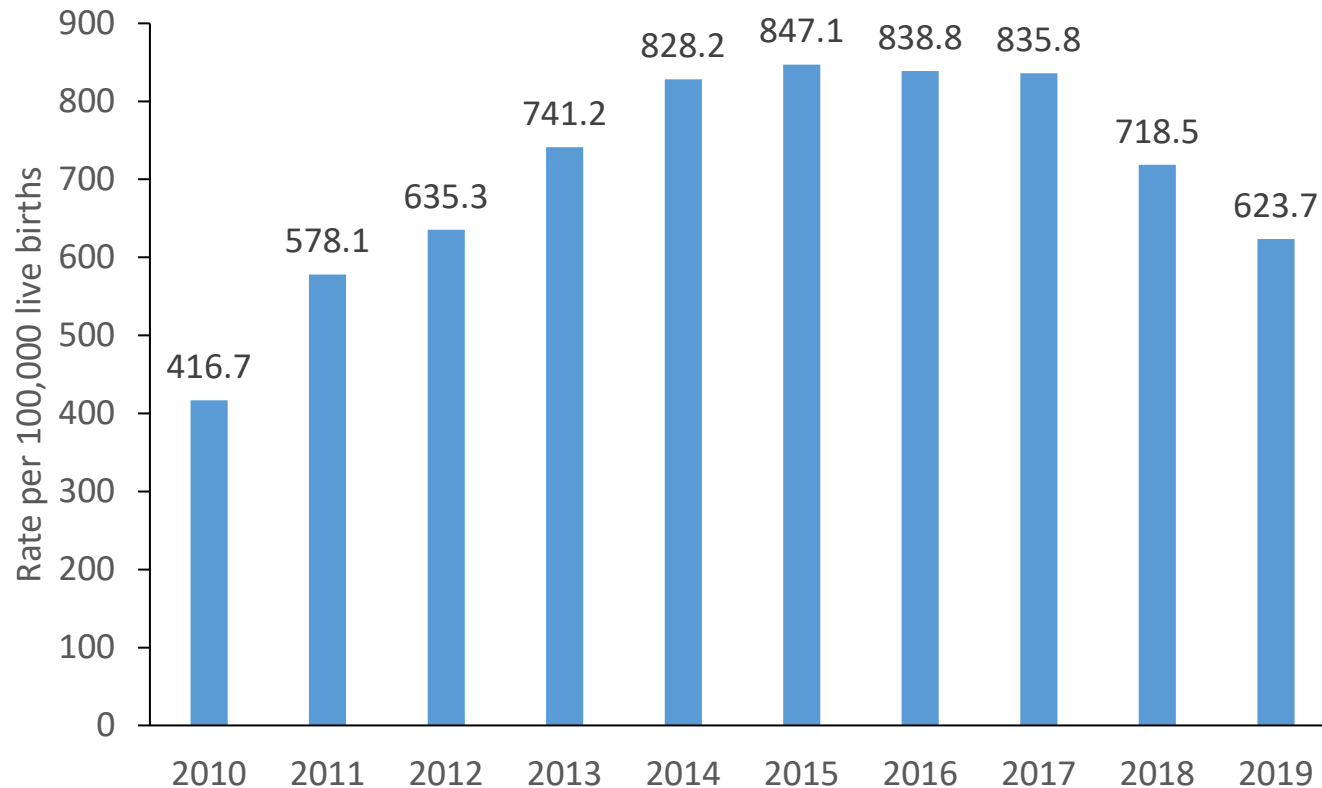
## Intended Pregnancy; MI PRAMS 2016-2018



- 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) Michigan, 2010-2019

# Neonatal Abstinence Syndrome\*, Michigan, 2010-2019 (Rate per 100,000 Live Births)

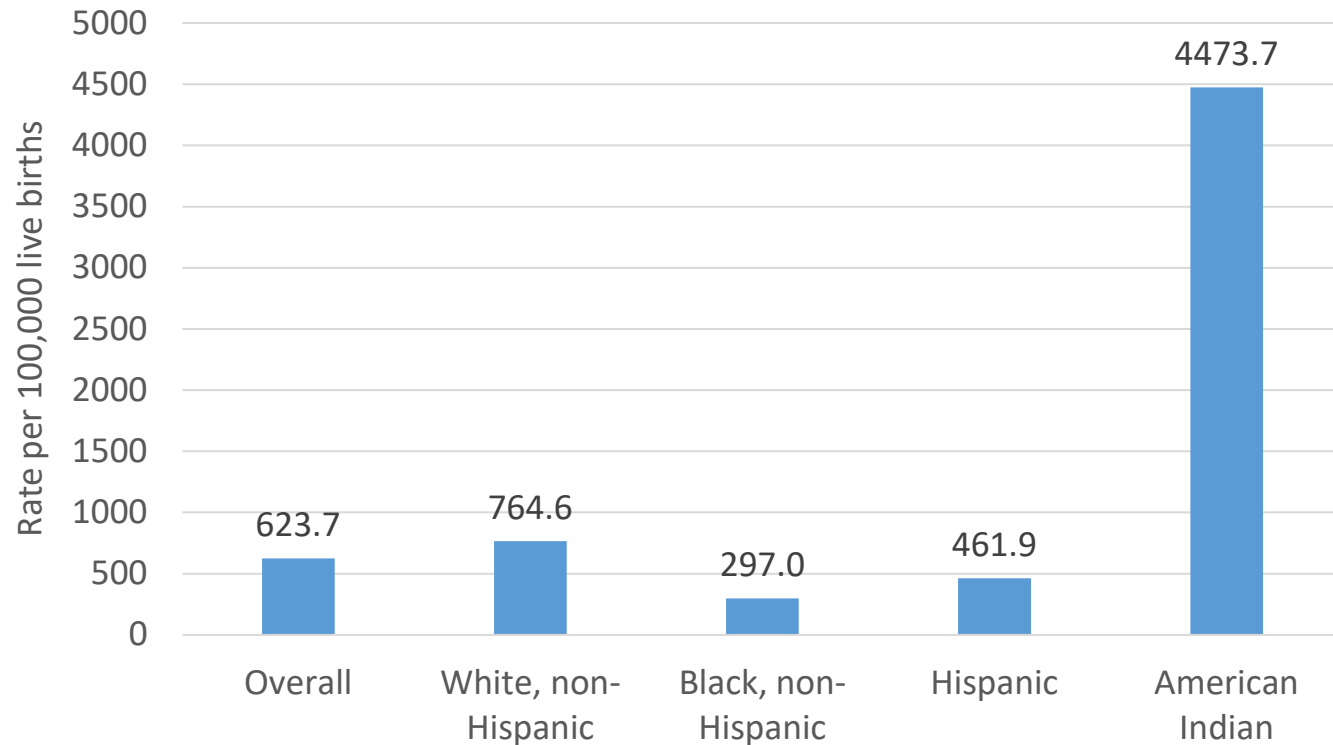


Year	# Live Births	# NAS	NAS Rate
2010	114,717	478	416.7
2011	114,159	660	578.1
2012	112,708	716	635.3
2013	113,732	843	741.2
2014	114,460	948	828.2
2015	113,211	959	847.1
2016	113,374	951	838.8
2017	111,507	932	835.8
2018	110,092	791	718.5
2019	107,913	673	623.7

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

Data source: MDHHS Division for Vital Records and Health Statistics. Michigan resident live birth file linked to the Michigan Inpatient Hospital Database.

# Neonatal Abstinence Syndrome\* by Maternal Race/Ethnicity, Michigan, 2019 (Rate per 100,000 Live Births)



Maternal Race/Ethnicity	# Live Births	# NAS	NAS Rate
Overall	107,913	673	623.7
White non-Hispanic	72,586	555	764.6
Black non-Hispanic	20,200	60	297.0
Hispanic	7,578	35	461.9
American Indian	380	17	4473.7

\* P96.1 (neonatal withdrawal symptoms from maternal use of drugs of addiction)

# Birth Defects Prevalence, by Race/Ethnicity, 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

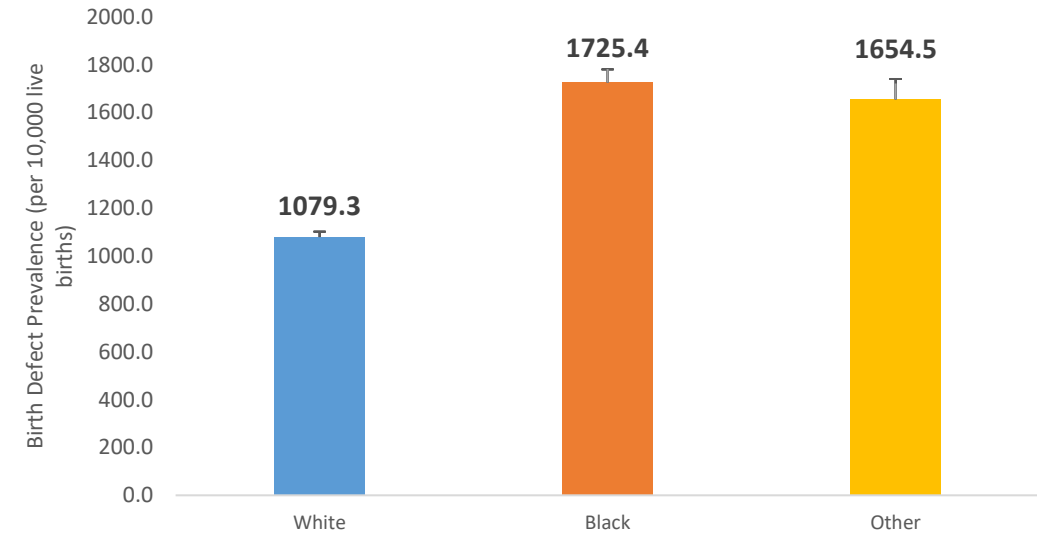
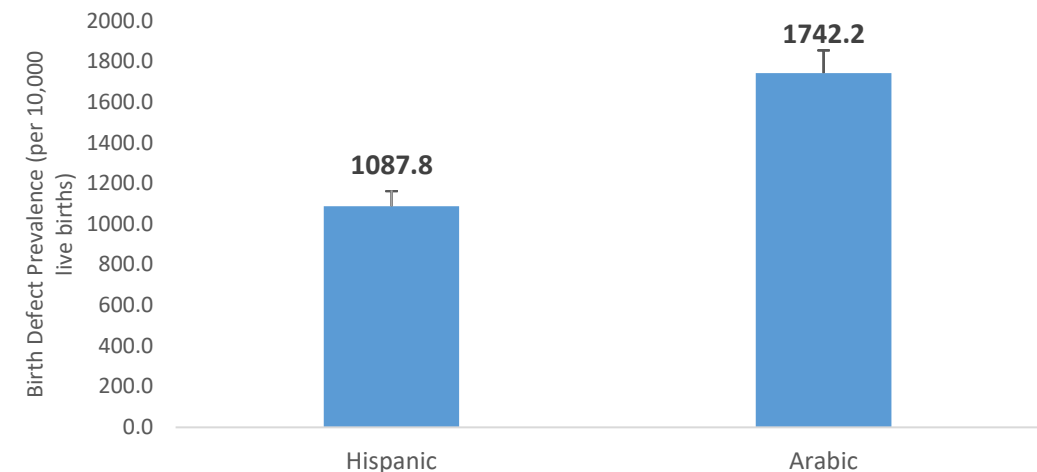


Figure 2. Statewide Maternal Ethnicity-Specific Birth Defect Prevalence Rates: MBDR, 2017



# Sleep-Related Infant Death Rate Michigan, 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

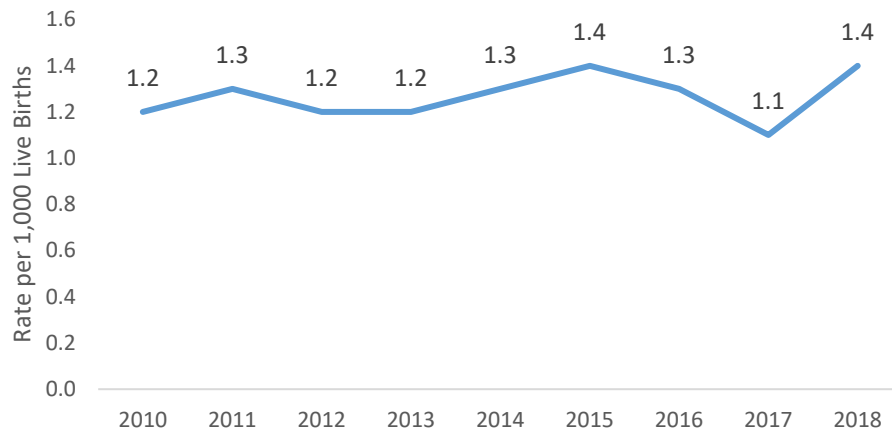
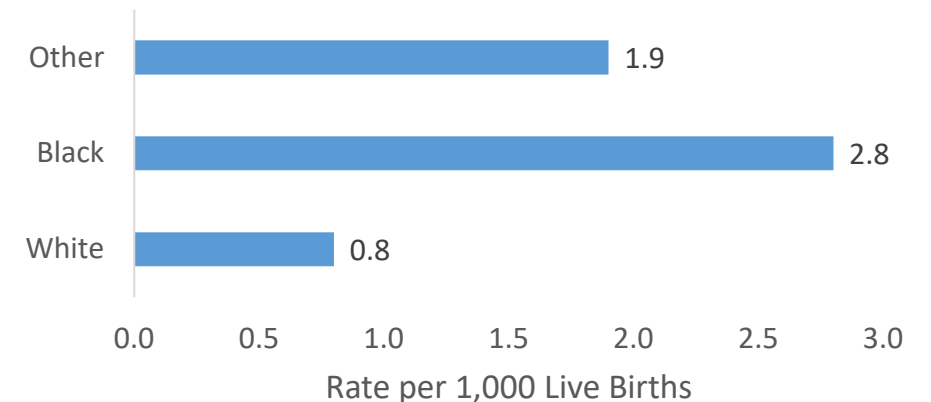


Figure 2. Rate of Sleep-Related Infant Deaths per 1,000 Live Births, by Race

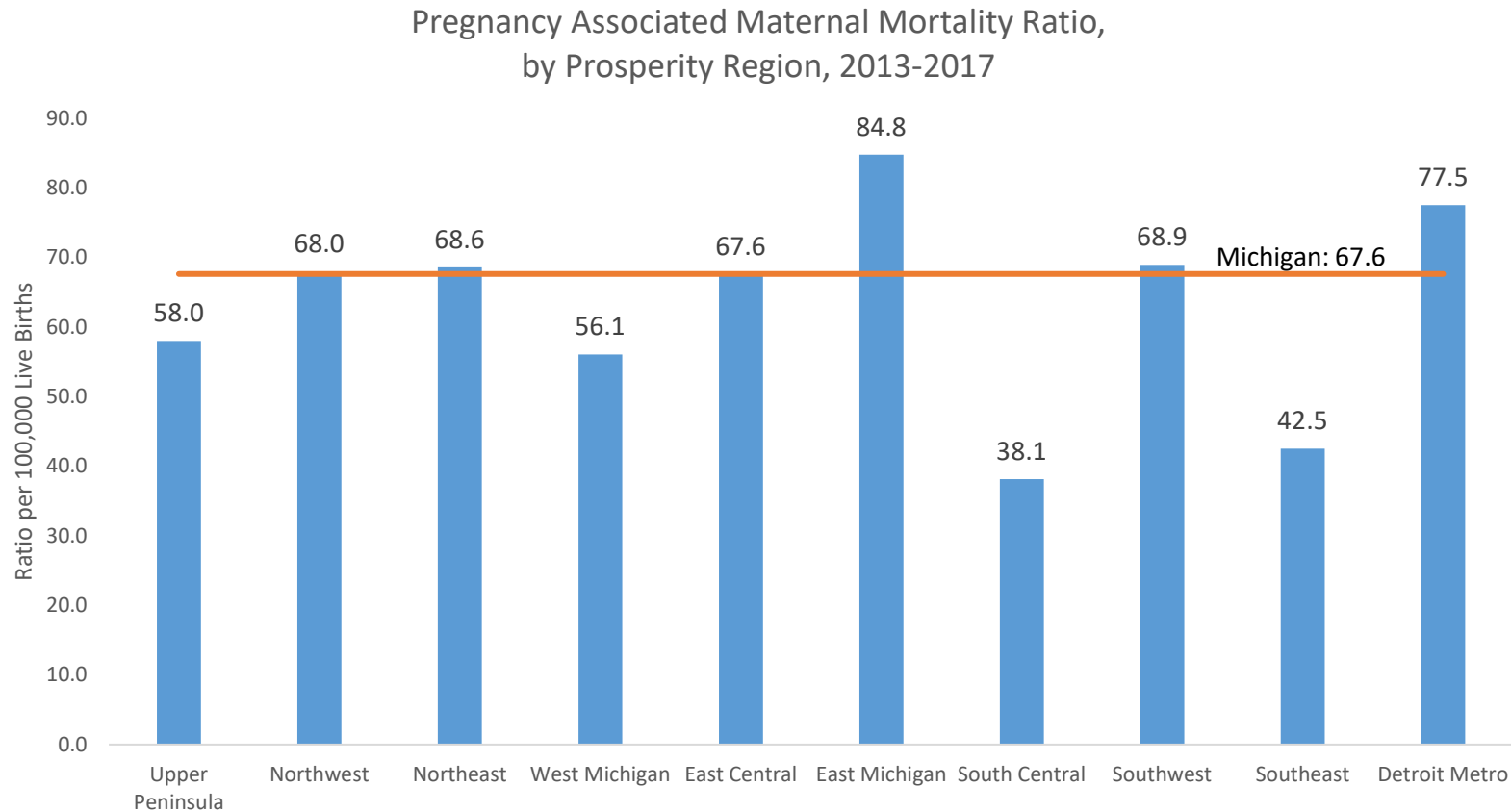




# Maternal Mortality Ratio by Prosperity Region, 2013-2017

# Maternal Mortality Ratio by Prosperity Region, 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.