

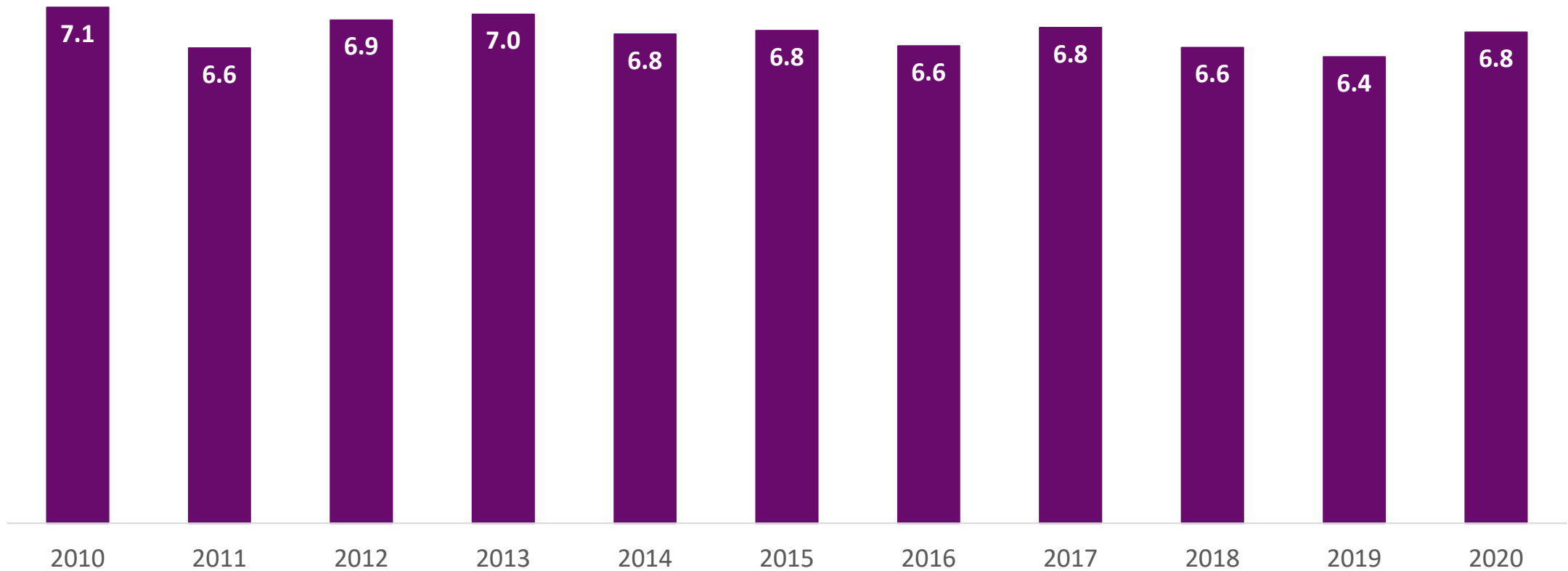
2020 Infant Health Statistics, Michigan

Prepared by Maternal and Child Health (MCH) Epidemiology Section,
Michigan Department of Health and Human Services (MDHHS)
Data source: Michigan resident live birth files (03/17/22) and infant mortality files (12/16/21),
Division for Vital Records and Health Statistics, MDHHS
June 2022

Infant Mortality Rate (IMR) 2010-2020

Infant Mortality Rate, 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.



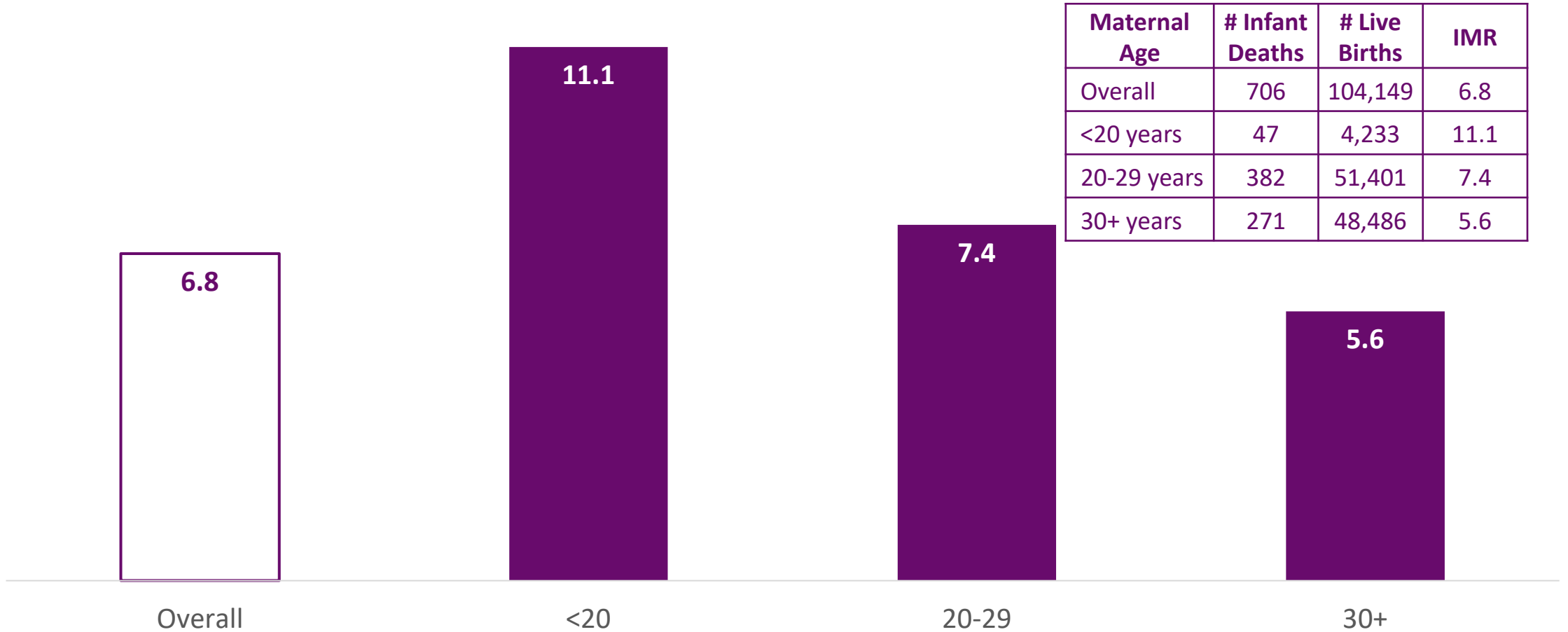
Infant Mortality Rate by Maternal Race/Ethnicity, 2020

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)
Overall	706	104,149	6.8
White Non-Hispanic	362	70,113	5.2
Black Non-Hispanic	260	19,180	13.6
Hispanic	35	7,141	4.9
American Indian	DNS	403	DNS
Asian/Pacific Islander	17	4,279	4.0

Infant Mortality Rate by Maternal Age, 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.



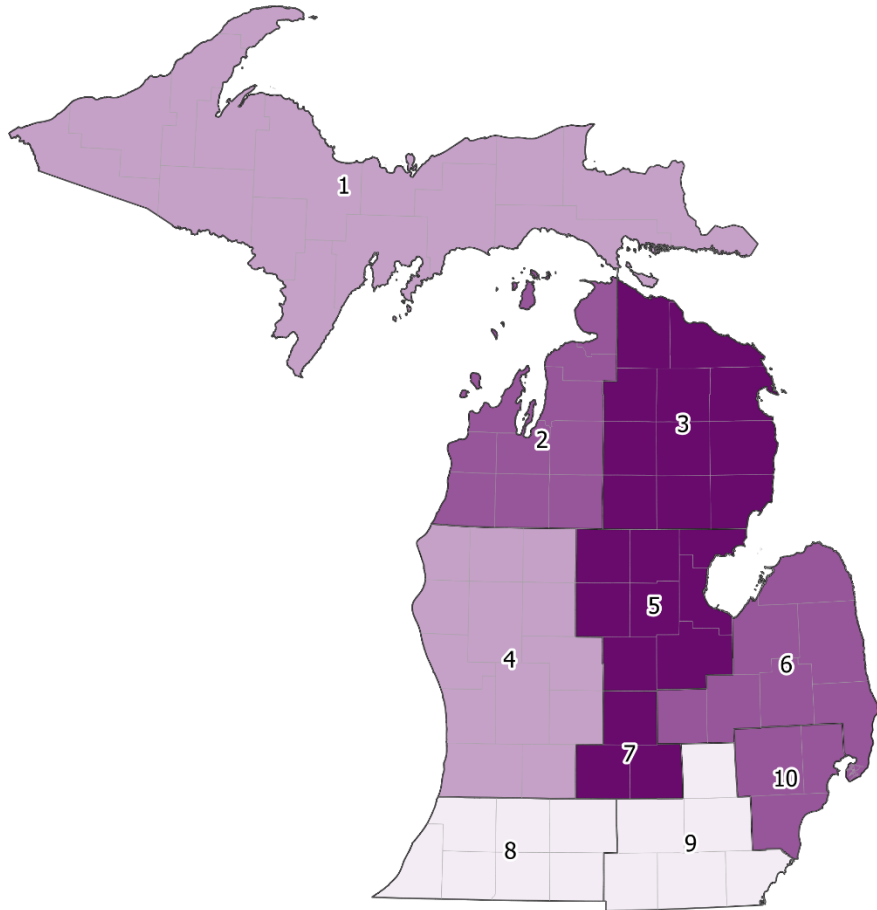
Infant Mortality Rate by Intended Payment Source, 2020

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)
Overall	706	104,149	6.8
Private Insurance	294	59,015	5.0
Medicaid	374	41,271	9.1

Infant Mortality Rate by Prosperity Region, 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.

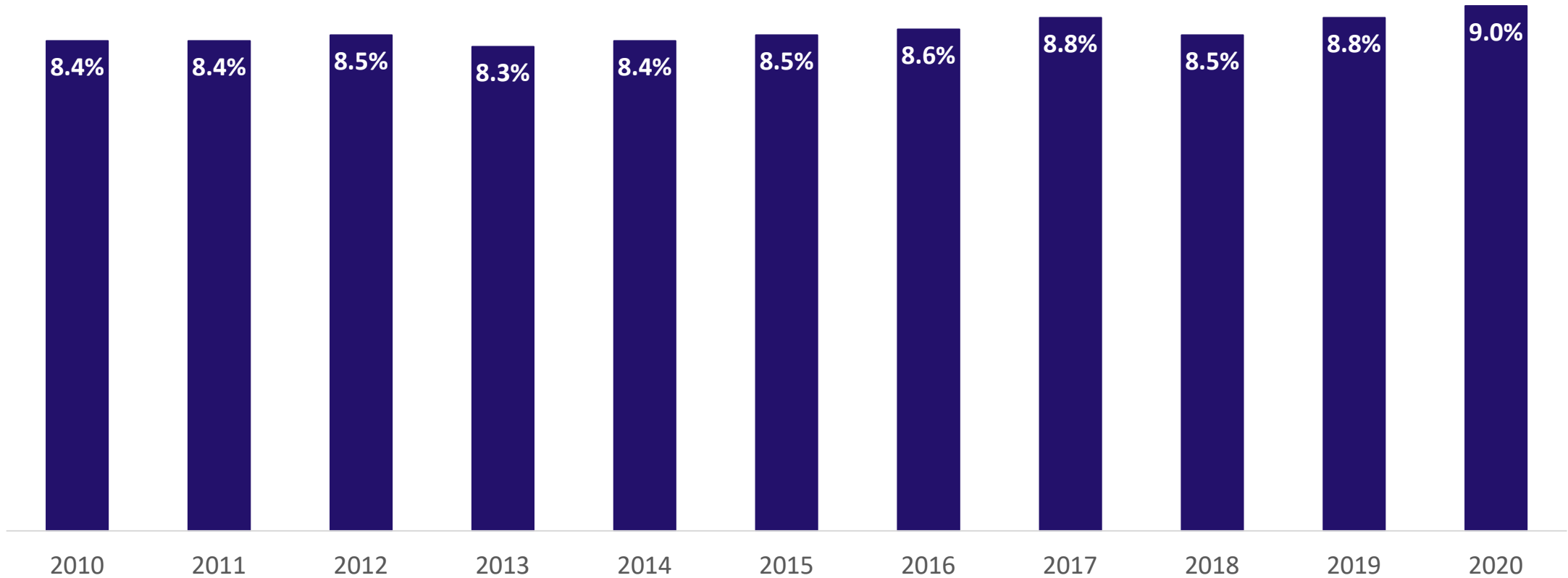


	# Infant Deaths	# Live Births	Rate per 1,000 Live Births
Overall	706	104,149	6.8
Region 1	16	2,489	6.4
Region 2	19	2,680	7.1
Region 3	13	1,613	8.1
Region 4	110	18,104	6.1
Region 5	45	5,333	8.4
Region 6	57	8,433	6.8
Region 7	36	4,653	7.7
Region 8	45	8,298	5.4
Region 9	52	9,660	5.4
Region 10	313	42,878	7.3

Low Birthweight (LBW) 2010-2020

Low Birthweight Michigan, 2010-2020

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



Low Birthweight by Maternal Race/Ethnicity, 2020

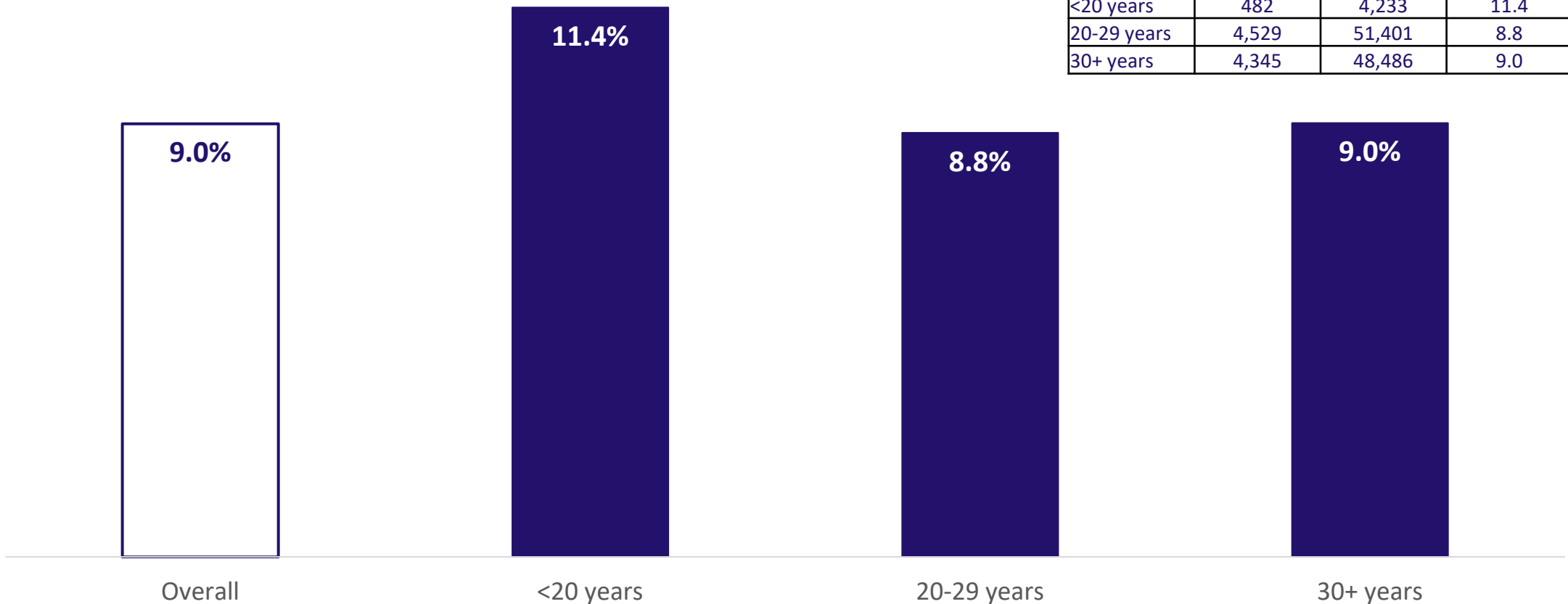
Low birthweight rate is defined as number of births with baby birthweight <2,500 grams per 100 live births.

Maternal Race	# LBW	# Live Births	Percent (%) Low Birthweight
Overall	9,358	104,149	9.0%
White non-Hispanic	5,126	70113	7.3%
Black non-Hispanic	2,946	19180	15.4%
Hispanic	529	7141	7.4%
American Indian	38	403	9.4%
Asian/Pacific Islander	418	4279	9.8%

Low Birthweight by Maternal Age, Michigan, 2020

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

Maternal Age	# LBW	# Live Births	% LBW
Overall	9,358	104,149	9.0
<20 years	482	4,233	11.4
20-29 years	4,529	51,401	8.8
30+ years	4,345	48,486	9.0



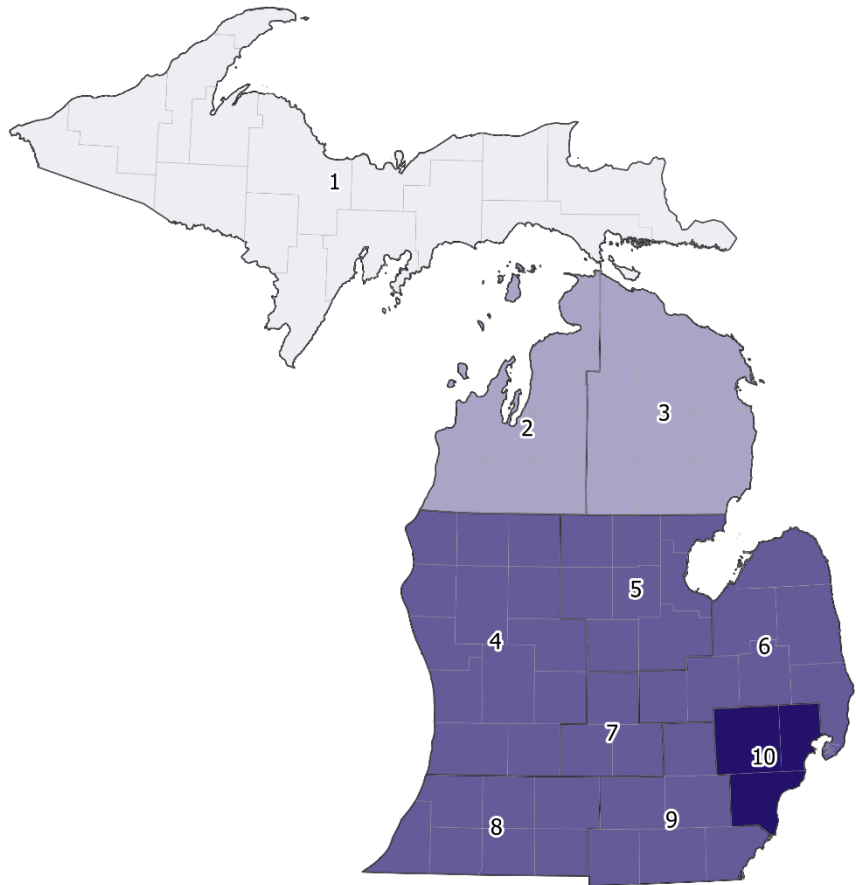
Low Birthweight by Intended Payment Source, 2020

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
Overall	9,358	104,149	9.0%	9.0%
Private Insurance	4,472	59,015	7.6%	7.6%
Medicaid	4,571	41,271	11.1%	11.1%

Low Birthweight by Prosperity Region, 2020

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

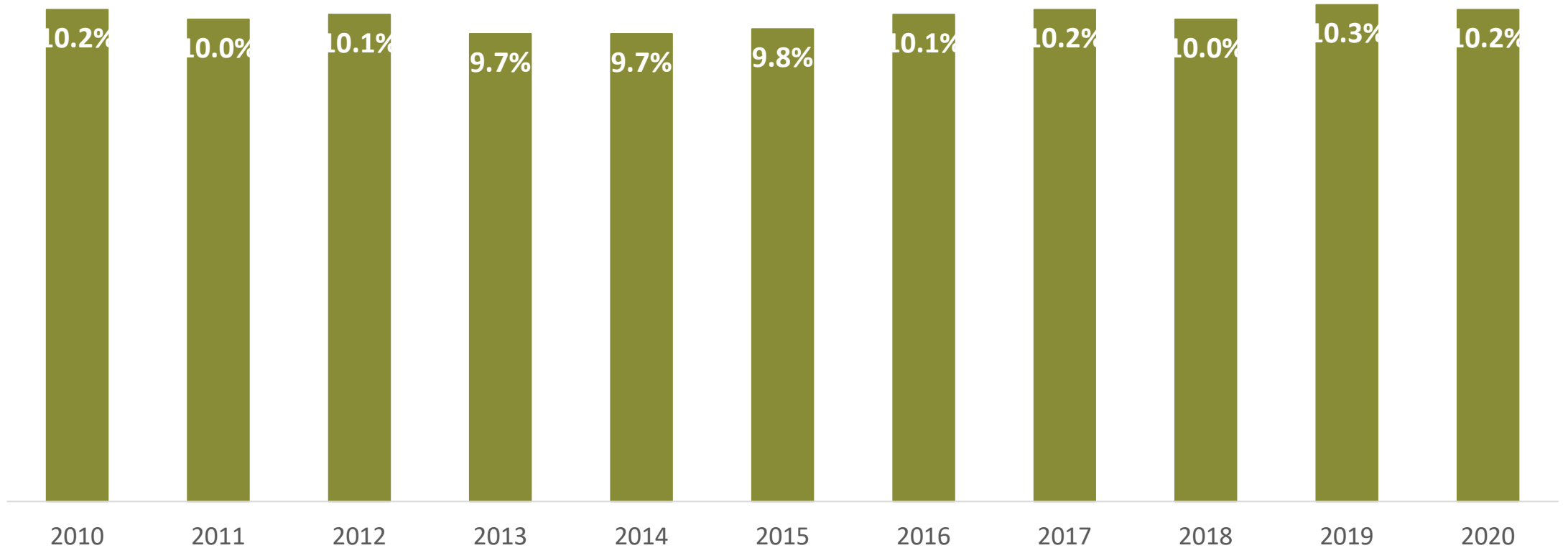


	# Low Birthweight	# Live Births	% LBW
Overall	9,358	104,149	9.0
Region 1	149	2,489	6.0
Region 2	197	2,680	7.4
Region 3	115	1,613	7.1
Region 4	1,518	18,104	8.4
Region 5	448	5,333	8.4
Region 6	741	8,433	8.8
Region 7	394	4,653	8.5
Region 8	674	8,298	8.1
Region 9	760	9,660	7.9
Region 10	4,361	42,878	10.2

Preterm Births 2010-2020

Preterm Births, Michigan, 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.



Preterm Birth by Maternal Race/Ethnicity, 2020

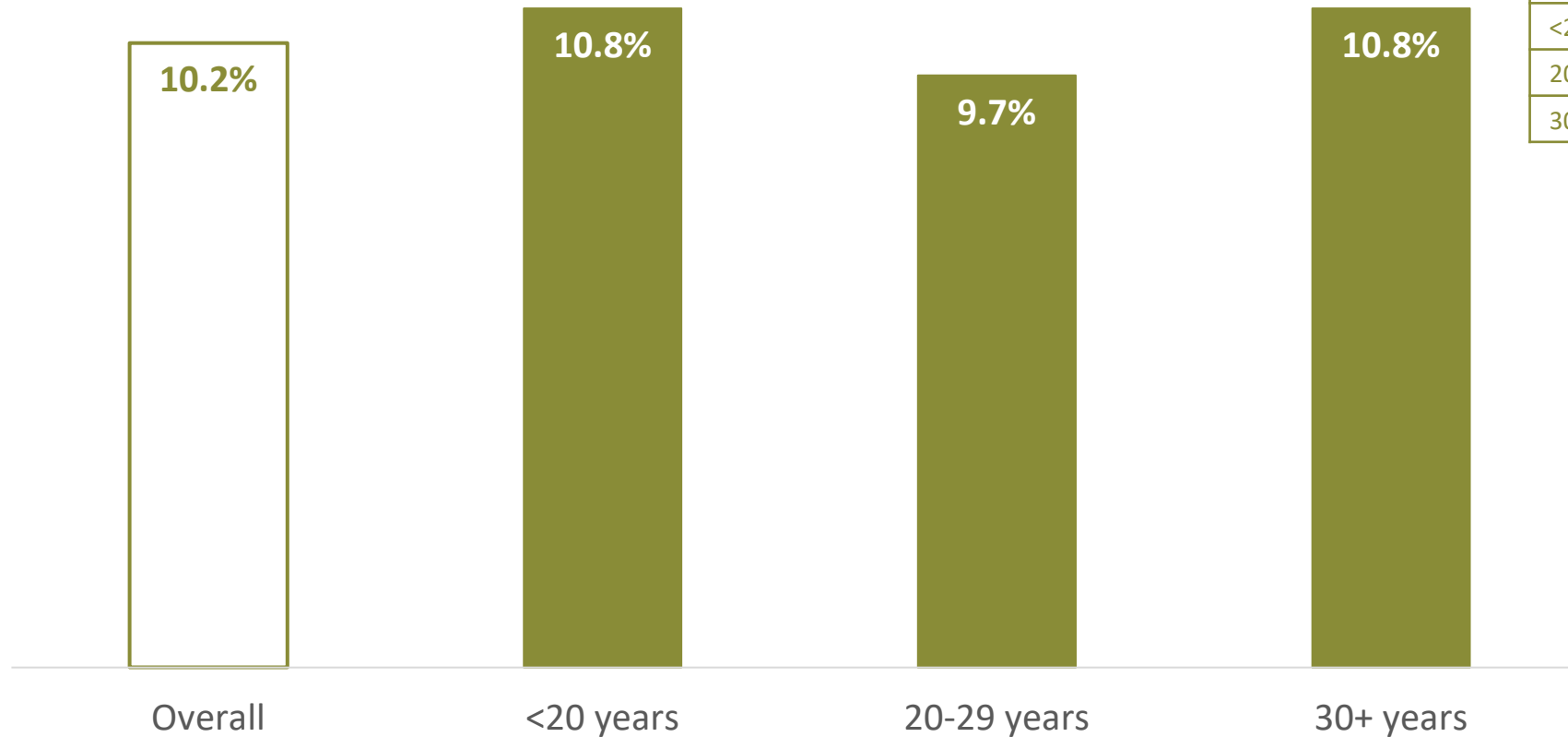
Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births. Gestational age is based on the obstetric estimate of gestation.

Maternal Race	# Preterm	# Live Births	Percent (%) Preterm
Overall	10,658	104,149	10.2%
White non-Hispanic	6,352	70,113	9.1%
Black non-Hispanic	2,885	19,180	15.0%
Hispanic	694	7,141	9.7%
American Indian	50	403	12.4%
Asian/Pacific Islander	358	4,279	8.4%

Preterm Birth by Maternal Age, Michigan, 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	# Preterm	# Live Births	% Preterm
Overall	10,658	104,149	10.2
<20 years	458	4,233	10.8
20-29 years	4,967	51,401	9.7
30+ years	5,227	48,486	10.8



Preterm Birth by Intended Payment Source, 2020

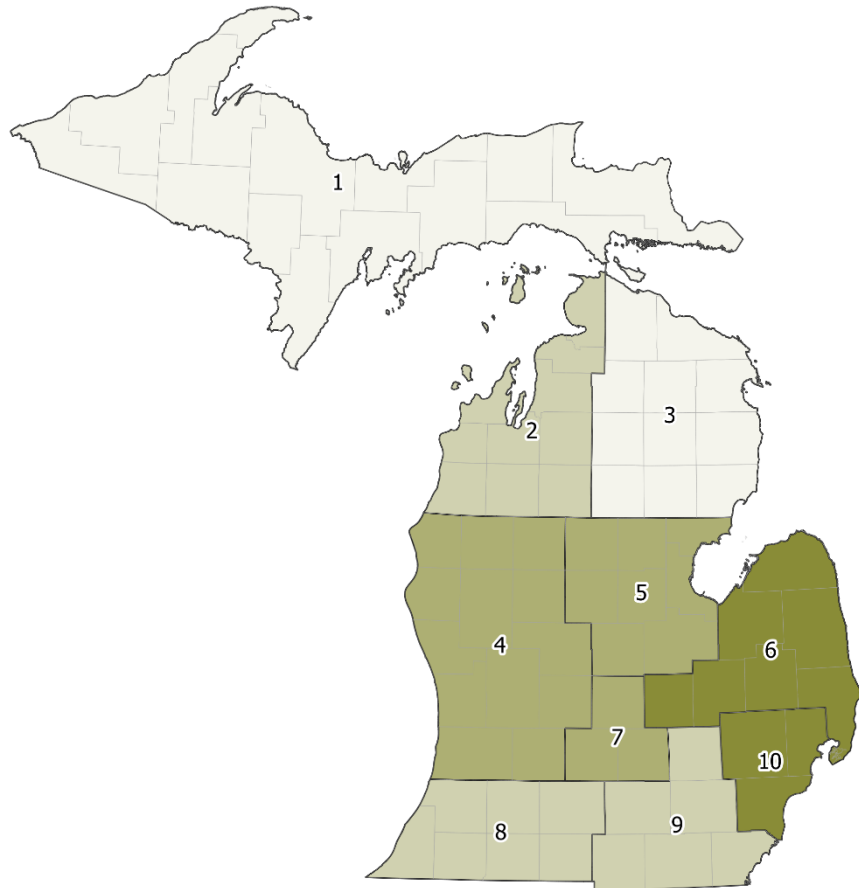
Preterm birth rate is defined as number of births delivered before 37 completed weeks of gestation per 100 live births.
Gestational age is based on the obstetric estimate of gestation.

Payment	# Preterm	# Live Births	Percent (%) Preterm
Overall	10,658	104,149	10.2%
Private Insurance	5,437	59,015	9.2%
Medicaid	4,879	41,271	11.8%

Preterm Birth by Prosperity Region, 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.



	# Preterm	# Live Births	% Preterm
Overall	10,658	104,149	10.2
Region 1	214	2,489	8.6
Region 2	241	2,680	9
Region 3	130	1,613	8.1
Region 4	1,791	18,104	9.9
Region 5	549	5,333	10.3
Region 6	888	8,433	10.5
Region 7	477	4,653	10.3
Region 8	772	8,298	9.3
Region 9	906	9,660	9.4
Region 10	4,690	42,878	10.9

Smoking During Pregnancy 2020

Smoking During Pregnancy by Maternal Race/Ethnicity, Michigan, 2020

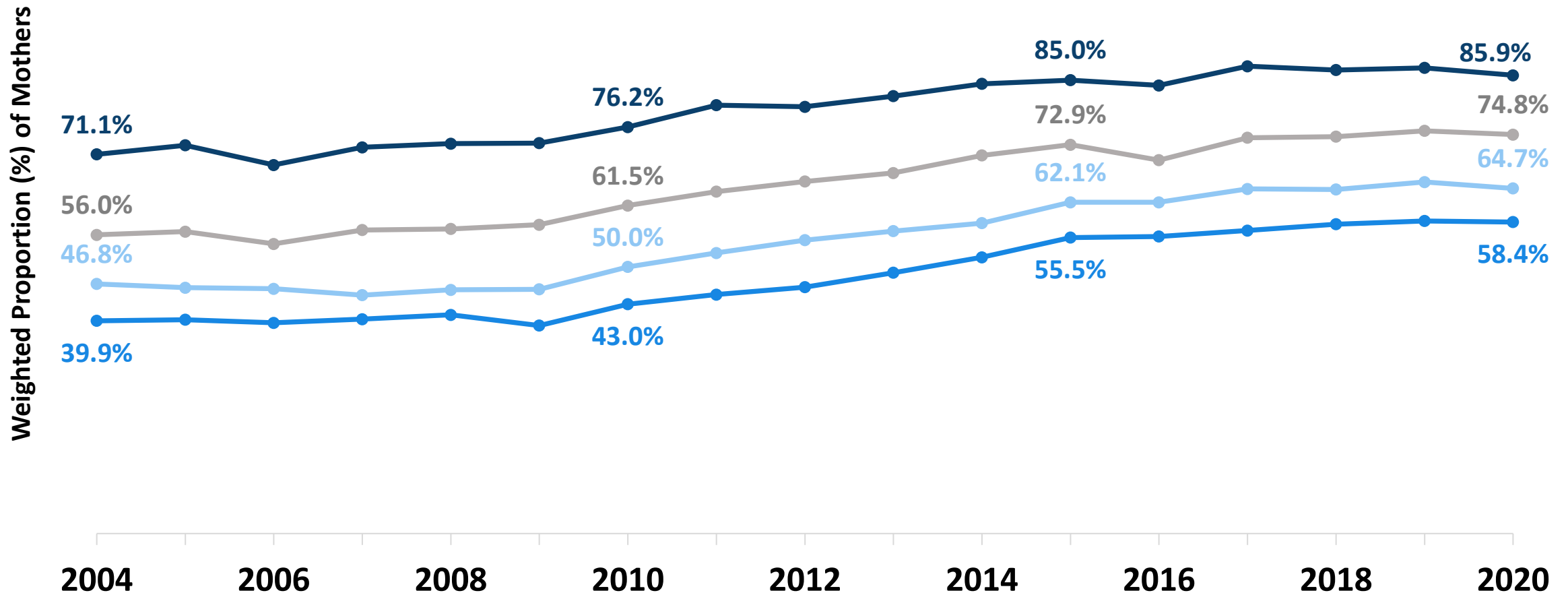
Maternal Race	# Smoke During Pregnancy	# Live Births	Percent (%) Smoking	
Overall	15,097	104,149	14.5%	14.5%
White non-Hispanic	11,069	70,113	15.8%	15.8%
Black non-Hispanic	2,442	19,180	12.7%	12.7%
Hispanic	737	7,141	10.3%	10.3%
American Indian	158	403	39.2%	39.2%
Asian/Pacific Islander	72	4,279	1.7%	1.7%

Breastfeeding Initiation and Duration 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 2020

Late Entry into Prenatal Care by Maternal Race/Ethnicity, Michigan, 2020

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

Maternal Race	# Late PNC	# Live Births	Percent (%) Late Entry into Prenatal Care
Overall	4,386	104,149	4.2%
White non-Hispanic	2,680	70,113	3.8%
Black non-Hispanic	996	19,180	5.2%
Hispanic	380	7,141	5.3%
American Indian	18	403	4.5%
Asian/Pacific Islander	145	4,279	3.4%

Neonatal Abstinence Syndrome (NAS) 2010-2020

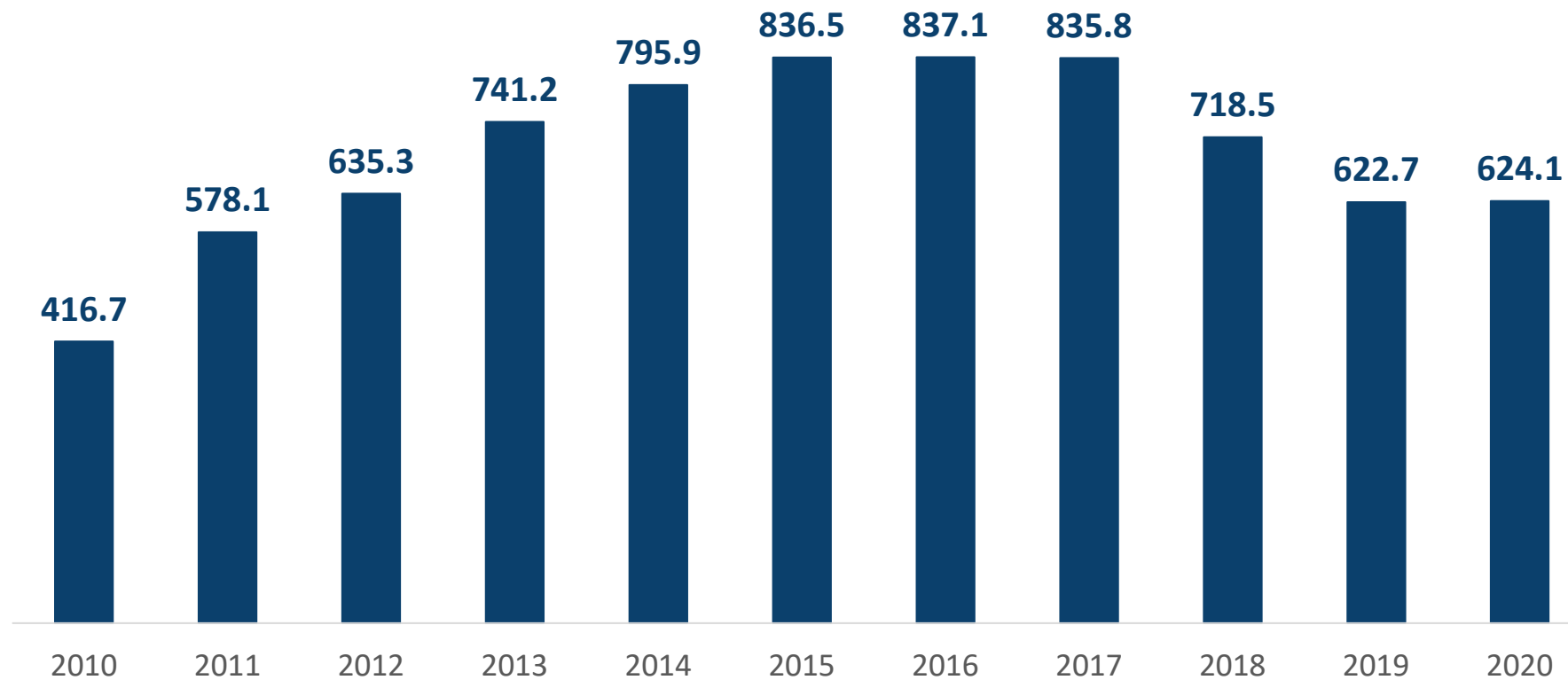
About the Data

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 Michigan, 2010-2020

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

NAS Incidence Rate per 100,000 Live Births



Birth Year	# Cases	# Births	Rate
2010	478	114,717	416.7
2011	660	114,159	578.1
2012	716	112,708	635.3
2013	843	113,732	741.2
2014	911	114,460	795.9
2015	947	113,211	836.5
2016	949	113,374	837.1
2017	932	111,507	835.8
2018	791	110,093	718.5
2019	672	107,917	622.7
2020	650	104,149	624.1

Neonatal Abstinence Syndrome by Maternal Race/Ethnicity, 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
Overall	650	104,149	624.1
White non-Hispanic	519	70,113	740.2
Black non-Hispanic	57	19,180	297.2
Hispanic	28	7,141	392.1
American Indian	19	403	4,714.6

Sleep-Related Infant Death Rate 2010-2019

Overview of Sleep-Related Infant Deaths Michigan, 2010-2019

- Between 2010 and 2019 there were 1,436 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 2019 Black Infants were 3.8 times more likely to die of sleep-related causes as compared to white Infants. Infants of races Other than white and Black were 3.5 times more likely to die of sleep-related causes as compared to white infants (Figure 2).

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

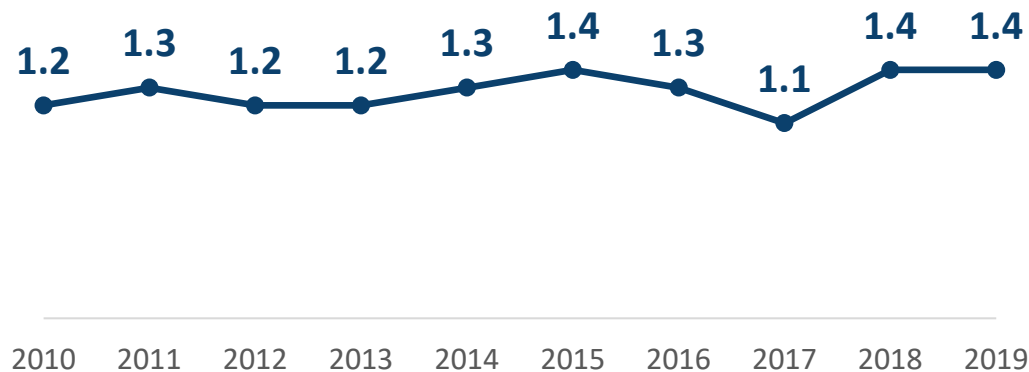
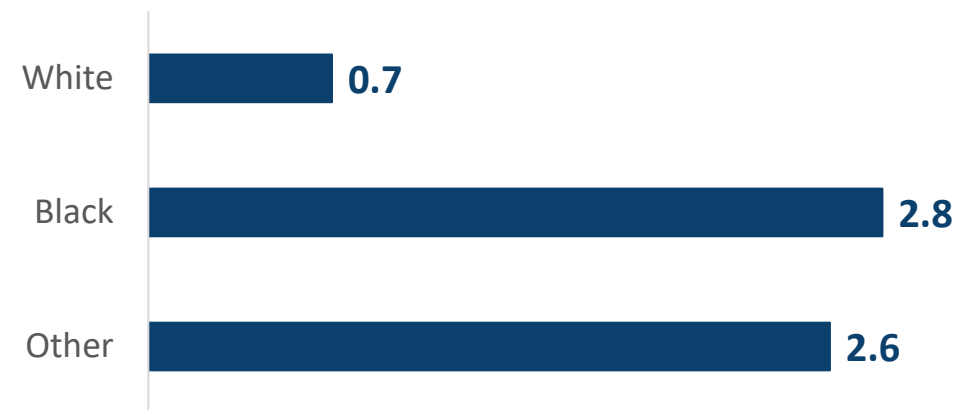


Figure 2. Rate of Sleep-Related Deaths
(per 1,000 Live Births)

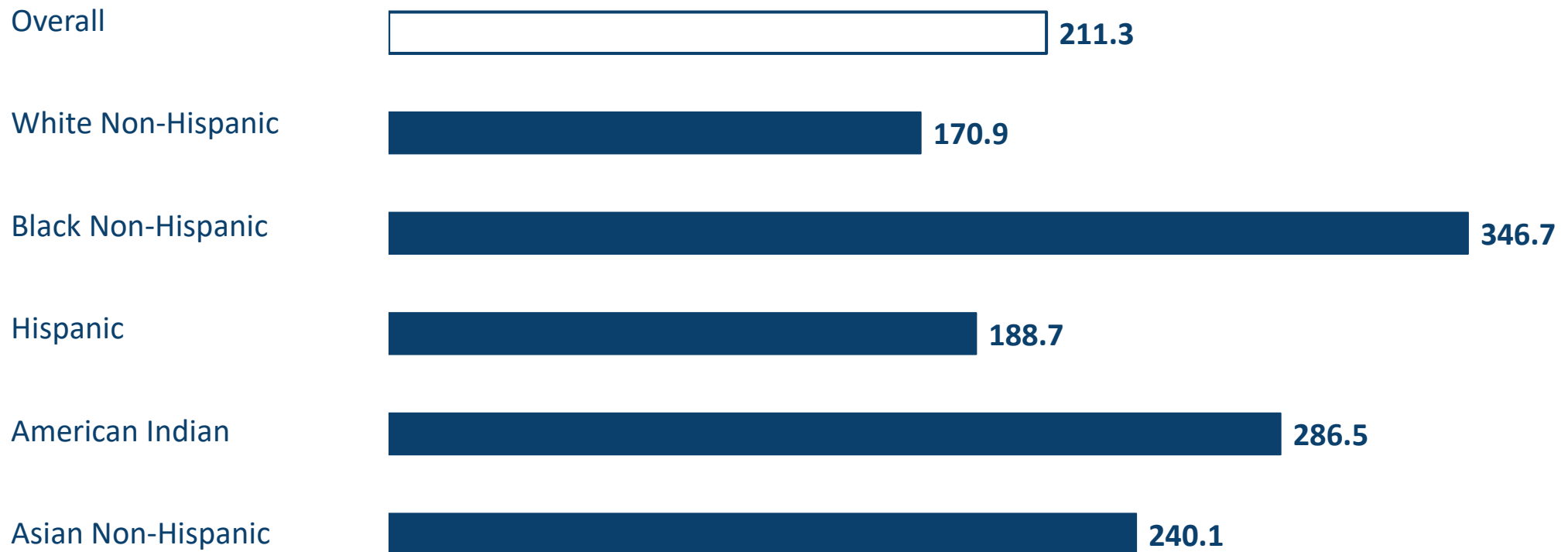


Severe Maternal Morbidity Rate 2020

Severe Maternal Morbidity Rate Michigan, 2020

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

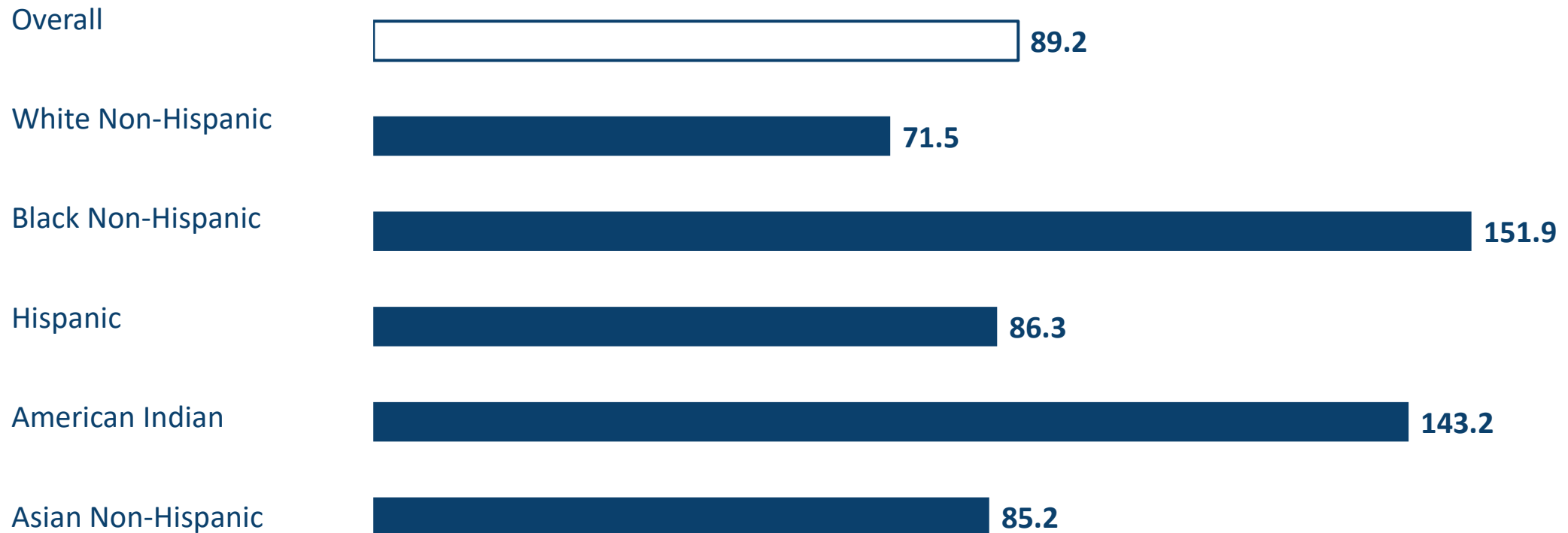
Severe Maternal Morbidity (SMM) Rate Per 10,000 Inpatient Delivery Hospitalizations



Severe Maternal Morbidity excluding Transfusions Michigan, 2020

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

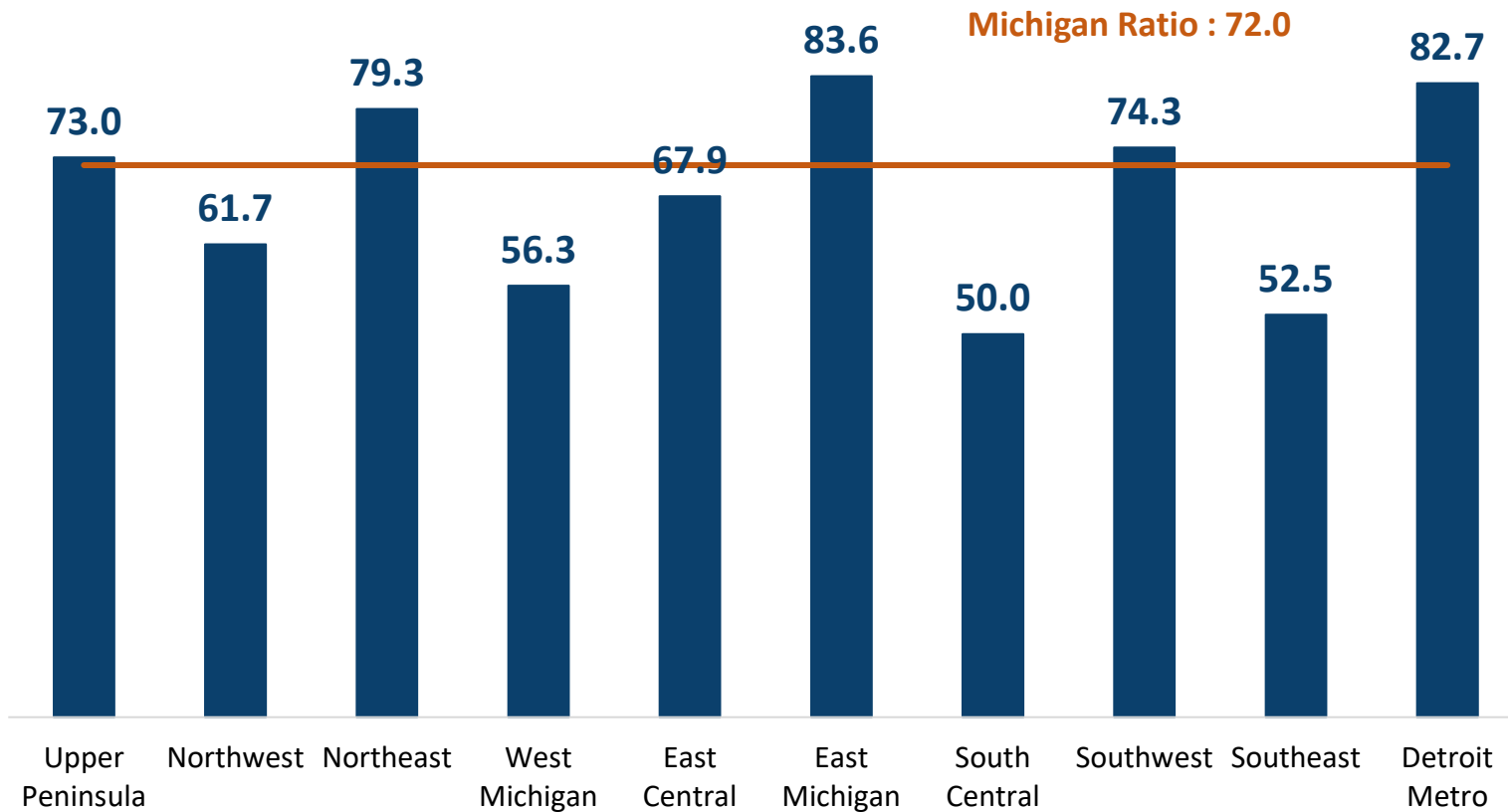
Severe Maternal Morbidity (SMM) Rate excluding Transfusions per 10,000 Inpatient Delivery Hospitalizations



Maternal Mortality Ratio 2014-2018

Maternal Mortality Ratio by Prosperity Region, 2014-2018

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



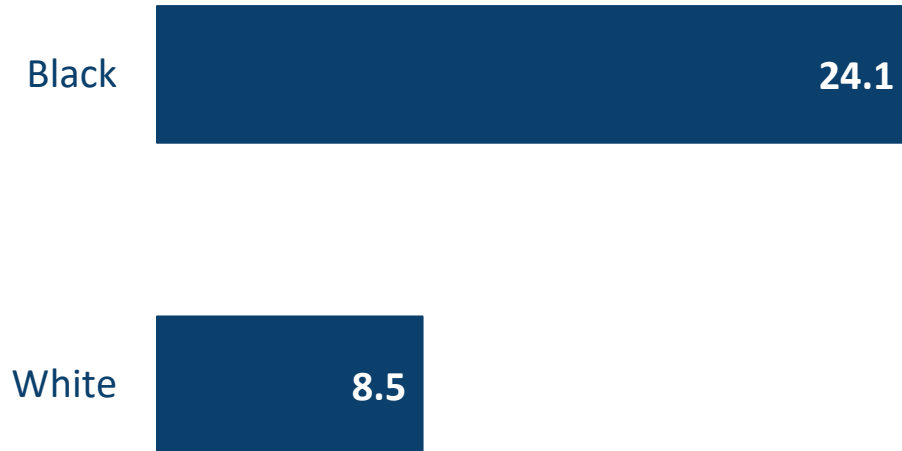
- Maternal deaths include deaths that occur during pregnancy, at delivery or within one year of pregnancy.
- Pregnancy associated (total) maternal mortality includes:
 - pregnancy associated, not related mortality (*unrelated to the pregnancy*),
 - pregnancy-related mortality (*related to or aggravated by the pregnancy*),
 - deaths where pregnancy-relatedness is unable to be determined.

Maternal Mortality Ratio by Race Michigan, 2014-2018

Pregnancy-Related Maternal Mortality

(directly related to or aggravated by the pregnancy)

Pregnancy-Related Mortality Ratio
(per 100,000 Live Births) by Maternal Race



Pregnancy-Associated, Not Related, Maternal Mortality

(death unrelated to the pregnancy)

Pregnancy-Associated, Not Related Mortality Ratio
(per 100,000 Live Births) by Maternal Race

