Toward Healthier Michigan Mothers and Babies

A concluding report on Healthy People 2020 indicators measured by the Michigan Pregnancy Risk Assement Monitoring System (PRAMS)

March 2021

Michigan Pregnancy Risk Assessment Monitoring System

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2007-2018

Birth Years

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Table of Contents

Acknowledgments

The people of the State of Michigan and the mothers who completed the PRAMS survey

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Introduction to Healthy People 2020

Healthy People is a national program which provides science-based, 10-year objectives for improving the health of all Americans. Healthy People 2020 developed a comprehensive set of 1,300 objectives organized into 42 topic areas, including Maternal, Infant, and Child Health. This particular topic area is aimed at improving the health and well-being of women, infants, children, and families.

MI PRAMS collected population-representative data on specific Healthy People 2020 indicators for birth years 2007-2018. The following Healthy People 2020 goals are tracked by MI PRAMS:

Healthy People 2020 / MI PRAMS Indicators	
MICH-16.1	Increase the proportion of women delivering a live birth who discussed preconception health with a health care worker prior to pregnancy
MICH-16.2	Increase the proportion of women delivering a live birth who took multivitamins/folic acid prior to pregnancy
MICH-16.3	Increase the proportion of women delivering a live birth who did not smoke prior to pregnancy
MICH-16.4	Increase the proportion of women delivering a live birth who did not drink alcohol prior to pregnancy
MICH-16.5	Increase the proportion of women delivering a live birth who had a healthy weight prior to pregnancy
MICH-16.6	Increase the proportion of women delivering a live birth who used a most effective or moderately effective contraception method postpartum
MICH-18	Reduce postpartum relapse of smoking among women who quit smoking during pregnancy
MICH-19	Increase the proportion of women giving birth who attend a postpartum care visit with a health care worker
MICH-20	Increase the proportion of infants who are put to sleep on their backs

Healthy People 2030 was launched in 2020, making it the fifth edition of the Healthy People framework. This revised set of objectives includes ambitious, quantifiable goals for the next 10-year period. MI PRAMS will continue to contribute towards the collection of population-representative data regarding Healthy People goals.

The Healthy People 2020 website displays national estimates from select years for maternal, infant, and child health goals drawn from multiple sources including the Pregnancy Risk Assessment Monitoring System, California's Maternal and Infant Health Assessment, and the California Department of Public Health. To provide a more complete comparison to Michigan data, this report features national estimates from all years using representative data from the Pregnancy Risk Assessment Monitoring System only. Michigan data was removed from these national estimates to provide an accurate comparison to the rest of the country. For a complete list of states included in yearly estimates, see page 7.

Birth Year	PRAMS States Included in National Estimates
2007	Alaska, Arkansas, Colorado, Delaware, Georgia, Hawaii, Illinois, Maine, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, New York, New York City, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Utah, Vermont, Washington, West Virginia, Wisconsin, Wyoming
2008	Alaska, Arkansas, Colorado, Delaware, Georgia, Hawaii, Illinois, Maine, Maryland, Massachusetts, Minnesota, Mississippi, Nebraska, New Jersey, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Utah, Vermont, Washington, West Virginia, Wisconsin, Wyoming
2009	Alaska, Arkansas, Colorado, Delaware, Georgia, Hawaii, Illinois, Maine, Maryland, Massachusetts, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, Wyoming
2010	Alaska, Arkansas, Colorado, Delaware, Georgia, Hawaii, Illinois, Maine, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, New York, New York City, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Texas, Utah, Vermont, Washington, West Virginia, Wyoming
2011	Arkansas, Colorado, Delaware, Georgia, Hawaii, Illinois, Maine, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, New Mexico, New York, New York City, Oklahoma, Oregon, Pennsylvania, Rhode Island, Utah, Vermont, Washington, West Virginia, Wisconsin, Wyoming
2012	Alaska, Arkansas, Colorado, Delaware, Georgia, Hawaii, Illinois, Maine, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, New Mexico, New York City, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Utah, Vermont, Washington, West Virginia, Wisconsin, Wyoming
2013	Alaska, Arkansas, Colorado, Delaware, Georgia, Hawaii, Illinois, Iowa, Maine, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New Mexico, New York, New York City, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Utah, Vermont, Washington, West Virginia, Wisconsin, Wyoming
2014	Alabama, Alaska, Connecticut, Delaware, Hawaii, Illinois, Iowa, Maine, Maryland, Massachusetts, Missouri, Nebraska, New Hampshire, New Jersey, New Mexico, New York, New York City, Ohio, Oklahoma, Pennsylvania, Rhode Island, Tennessee, Utah, Vermont, Washington, West Virginia, Wisconsin, Wyoming
2015	Alabama, Alaska, Arkansas, Colorado, Connecticut, Delaware, Hawaii, Illinois, Iowa, Louisiana, Maine, Maryland, Massachusetts, Missouri, Nebraska, New Hampshire, New Jersey, New Mexico, New York, New York City, Ohio, Oklahoma, Oregon, Pennsylvania, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming
2016	Alaska, Arkansas, Colorado, Connecticut, Delaware, Hawaii, Illinois, Iowa, Louisiana, Maine, Maryland, Massachusetts, Missouri, Nebraska, New Hampshire, New Jersey, New Mexico, New York, New York City, Oklahoma, Pennsylvania, Rhode Island, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming
2017	Alabama, Alaska, Colorado, Connecticut, Delaware, Georgia, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Missouri, Montana, New Hampshire, New Jersey, New Mexico, New York, New York City, North Carolina, North Dakota, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Puerto Rico
2018	Alaska, Colorado, Connecticut, Delaware, Georgia, Illinois, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, New Mexico, New York, North Dakota, Pennsylvania, Rhode Island, South Dakota, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Puerto Rico

Introduction to the 2007-2018 PRAMS data set

Michigan's Pregnancy Risk Assessment Monitoring System (MI PRAMS) is an annual population-based survey of new mothers, assessing behaviors and experiences around the time of pregnancy. MI PRAMS is a collaboration between the Centers for Disease Control and Prevention (CDC) and the Michigan Department of Health and Human Services (MDHHS). MI PRAMS operations are housed within the Maternal and Child Health Epidemiology Section, a part of the Lifecourse Epidemiology and Genomics Division.

MI PRAMS utilizes a mixed-mode methodology to gather information from women selected for the survey. This combination mail and telephone survey methodology is used to maximize response rates. The weighted response rates for birth years 2007-2018 are as follows:

Birth Year	Weighted Response Rate
2007	65%
2008	67%
2009	67%
2010	70%
2011	67%
2012	61%
2013	60%
2014	57%
2015	55%
2016	55%
2017	56%
2018	58%

MI PRAMS surveys approximately 1-2% of resident mothers who have delivered a live born infant in Michigan within each calendar year. MI PRAMS mothers are selected using a stratified random sample of live birth certificates. In a typical PRAMS year, women are selected from one of five strata:

- Low birth weight (LBW) infants
- Normal birth weight infants (NBW), black mothers, Southeast Michigan
- NBW infants, black mothers, rest of Michigan
- NBW infants, all other mothers, Southeast Michigan
- NBW infants, all other mothers, rest of Michigan

Analytic notes: interpretation of tables and graphs, confidence intervals, relative standard error, and comparisons between groups

PRAMS results are most often reported as a weighted percentage. Individual respondents are given an analytic weight so that the sum of all respondents is approximately equal to the total number of live births for the region and time specified. More accurately, the graphs and tables included here report the weighted proportion of mothers of live births using the SAS 9.4 survey procedures suite. The numbers reported are individual yearly weighted estimates for years 2007-2018 and cumulative estimates for most recent data years 2016-2018. Select tables present demographic characteristics with indicators denoted in the **demographic** column. Tables presenting marital status stratify findings by women who are legally married, and "other", representing women who were never married, divorced, or widowed.

Each table within this report contains the following statistics. The **sample frequency** represents the number of respondents (unweighted) who gave an answer of interest to a survey question. The **weighted frequency** is the number of mothers of live births across the specified period those responders represent. The **weighted percent**, also referred to as the point estimate, is the approximate proportion of all mothers of live births for the state who gave the answer of interest. The weighted frequency and weighted percent are estimates of what is truly happening at a population level.

PRAMS employs a stratified, randomly selected sample to describe the experiences of Michigan mothers. When using a subset of randomly selected women to represent an entire population, there will be some statistical uncertainty as to how well the estimate represents the population of interest. Two columns quantify this uncertainty - the 95% confidence interval (95% CI) and the relative standard error (RSE).

The **95% confidence interval (95% CI)** describes the range in which the actual population value is most likely to be found. A narrow CI indicates a high degree of statistical precision in an estimate; a broad CI indicates more statistical uncertainty in an estimate. The number of respondents has a direct effect on CIs - data at the state-level will have more respondents and narrower CIs. Comparing the overlap of confidence intervals for two estimates is an imperfect substitute for tests of statistical significance.

The **relative standard error (RSE)** is another important indicator of statistical reliability for a point estimate. The RSE is calculated by dividing the standard error for an estimate by the estimate itself and then multiplying it by 100. Estimates with a smaller RSE are more reliable than estimates with a large RSE. Point estimates with RSE values below 30% are ideal; point estimates with RSE values between 30% and 50% are interpreted with more caution. Point estimates with an RSE above 50% are suppressed.

MICH-16.1

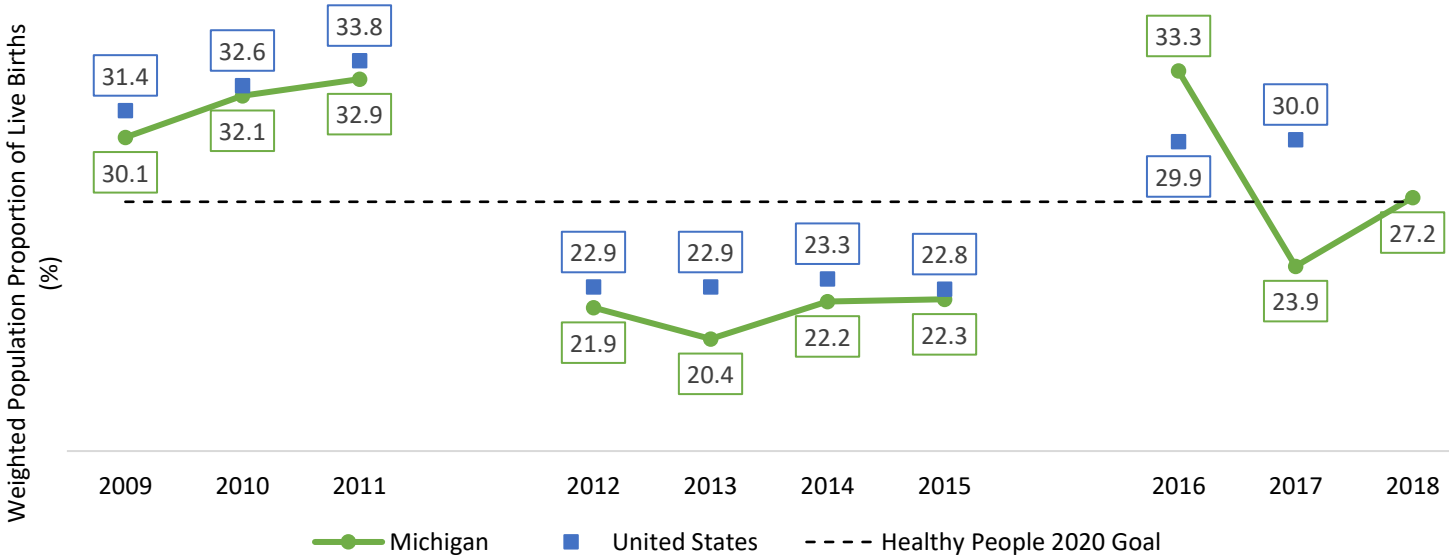
Increase the proportion of women delivering a live birth who discussed preconception health with a health care worker prior to pregnancy

MI PRAMS 2009-2018

Informational- cannot show change due to variations in measurement

Preconception health care visits can impact the health of a woman during pregnancy and beyond. Provider lead discussions about how to improve health prior to pregnancy promotes healthy behavior management, allows for patient education regarding conception and pregnancy, and assists in evaluating a woman's current health status.[1] In order to promote the health of women before, during, and after pregnancy, Healthy People 2020 establishes the goal of having 27% of women discussing preconception health with their provider.

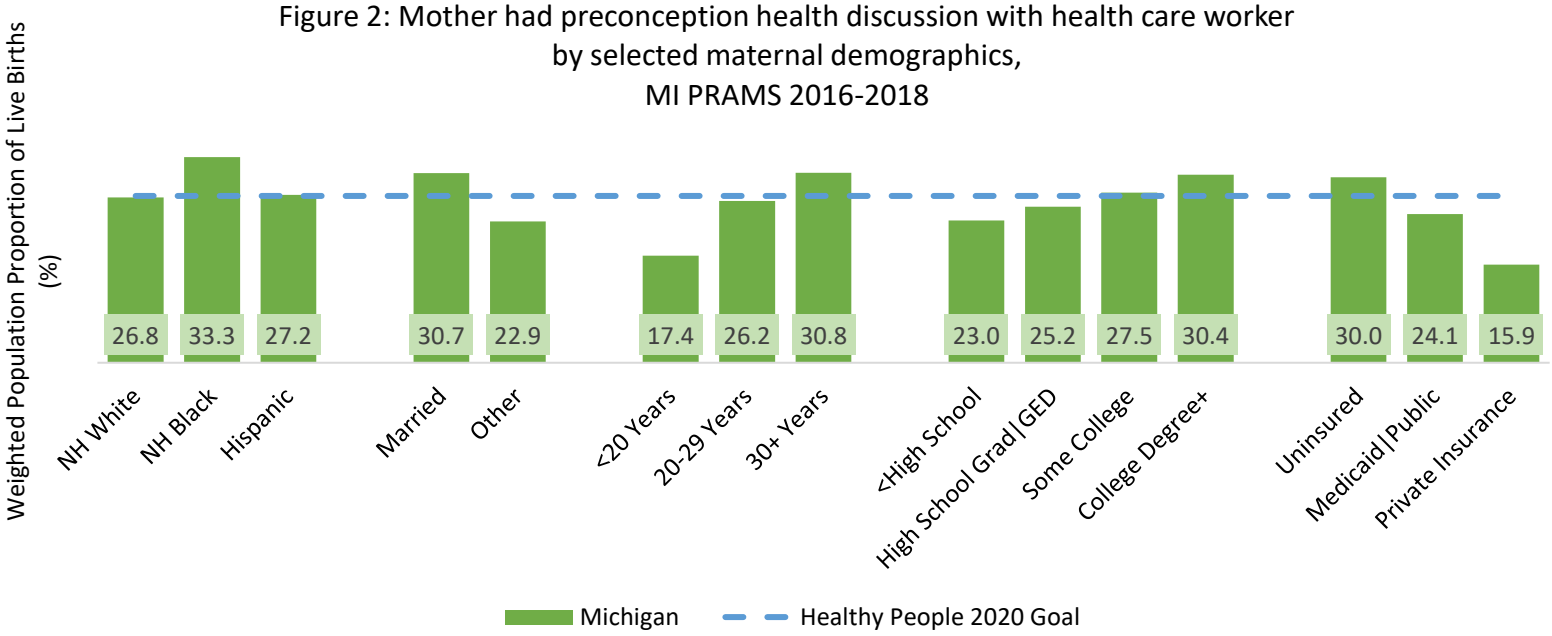
Figure 1: Mother had preconception health discussion with health care worker prior to pregnancy, MI PRAMS 2009-2018



In 2009, 3 in 10 Michigan new mothers discussed preconception health with a health care worker prior to pregnancy. From 2012-2014, a smaller percentage of Michigan mothers had preconception health discussions with their providers compared to the United States overall (Figure 1).

Due to variations in measurement across MI PRAMS phases, an overall trend cannot be interpreted across 2009-2018.

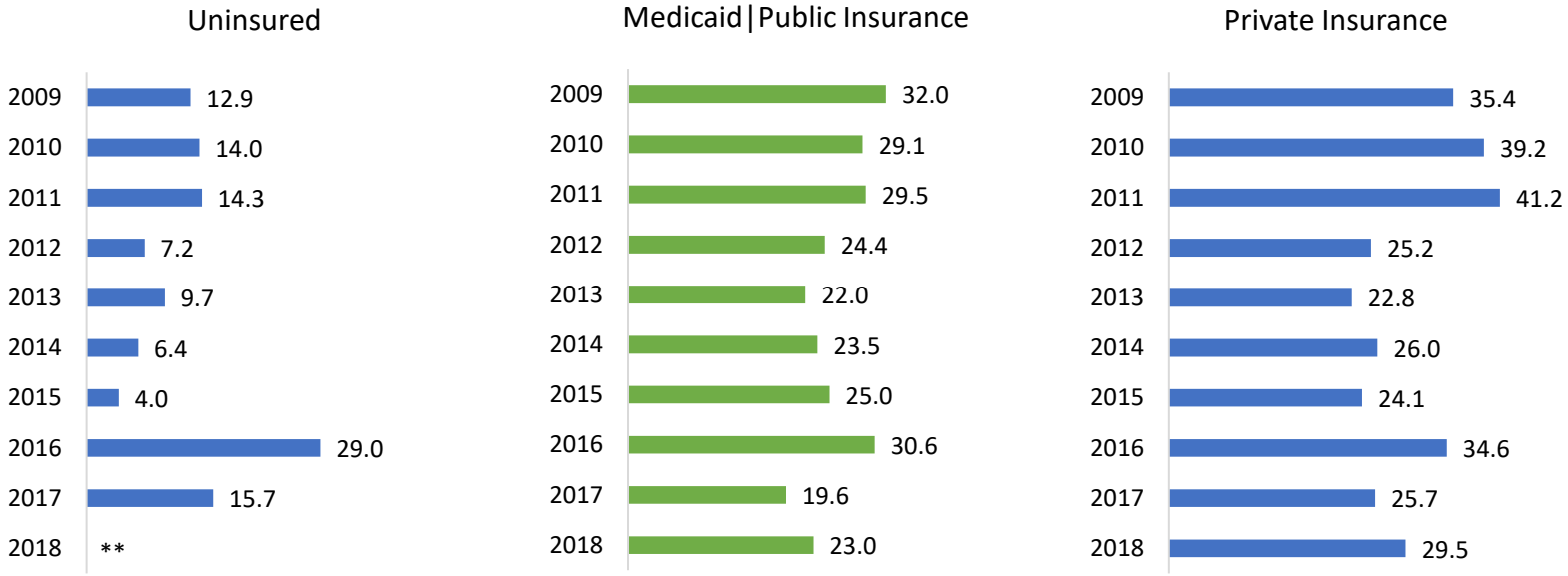
Figure 2: Mother had preconception health discussion with health care worker by selected maternal demographics, MI PRAMS 2016-2018



Multi-year estimates from 2016-2018 reveal significant disparities among pre-pregnancy health discussions by marital status (p<.0001), maternal age (p=.0026), and pre-pregnancy insurance status (p=.0017).

Yearly prevalence of pre-pregnancy health discussions by maternal pre-pregnancy insurance status reveal substantial differences among uninsured women compared to those with public or private insurance (Figure 3), with the largest difference of 26.9% existing between private insurance and uninsured women in 2011.

Figure 3: Mother had preconception health discussion with provider by maternal pre-pregnancy insurance status, MI PRAMS 2009-2018*



*Weighted population proportion of live births (%)
**Data not shown due to small sample size and/or relative standard error > 50%.

MICH-16.2

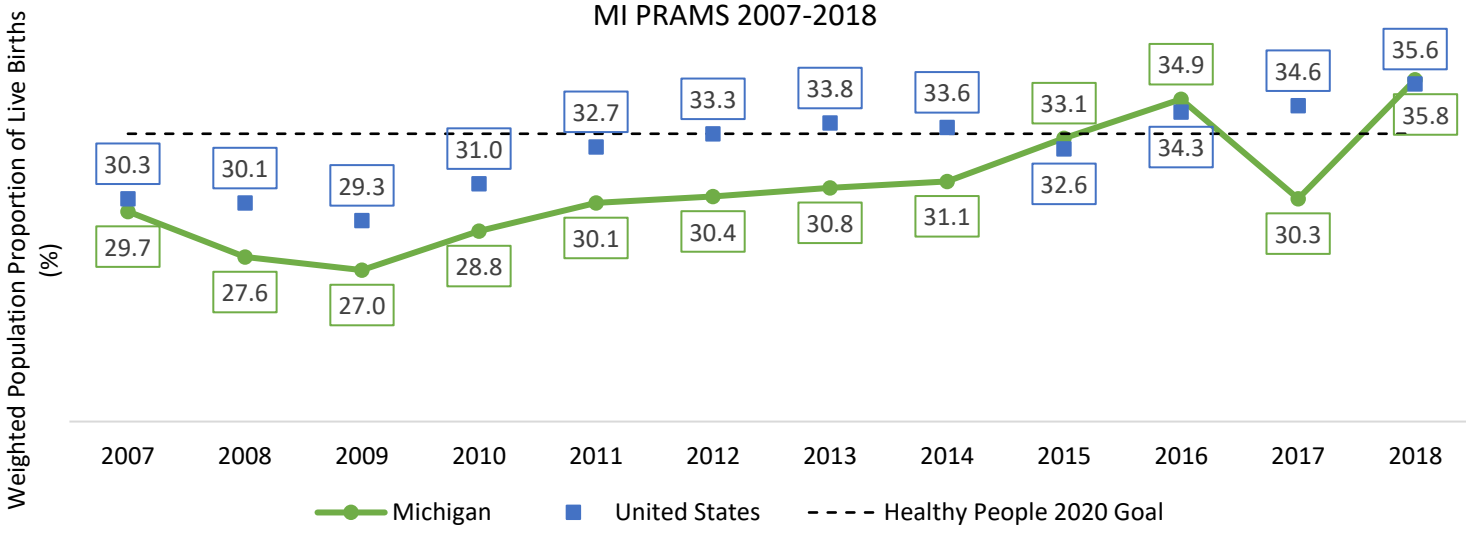
Increase the proportion of women delivering a live birth who took multivitamins/folic acid prior to pregnancy

MI PRAMS 2007-2018

Improving

Folic acid and other vitamin supplements are key in supporting fetal growth and development. Daily folic acid intake by pregnant women helps to reduce the risk of brain and spinal cord birth defects, such as anencephaly and spina bifida. Women are often not aware they are pregnant during very early pregnancy when folic acid is protective. Therefore, it is important that all women of child-bearing age get sufficient folic acid.[2] Healthy People 2020 establishes the goal of having 33.3% of women taking a daily folic acid or multi- vitamin.

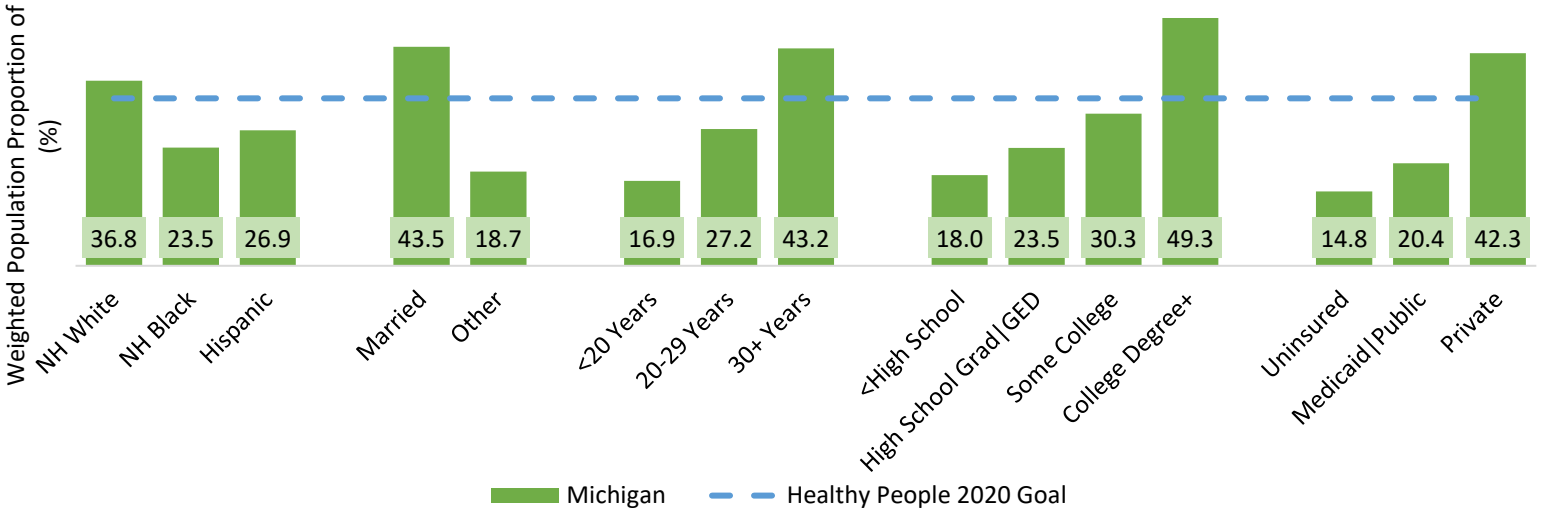
Figure 4: Mother took daily multivitamin or folic acid prior to pregnancy, MI PRAMS 2007-2018



In 2007, 3 out of 10 Michigan's new mothers took folic acid or a multivitamin every day prior to pregnancy. From 2011-2014, a smaller percentage of Michigan mothers took daily vitamins compared to the United States overall. In 2016 and 2018, the prevalence of Michigan mothers taking daily vitamins surpassed the Healthy People 2020 goal of 33.3% (Figure 4).

This goal is improving. Between 2016 and 2018, a statistically significant positive trend exists.

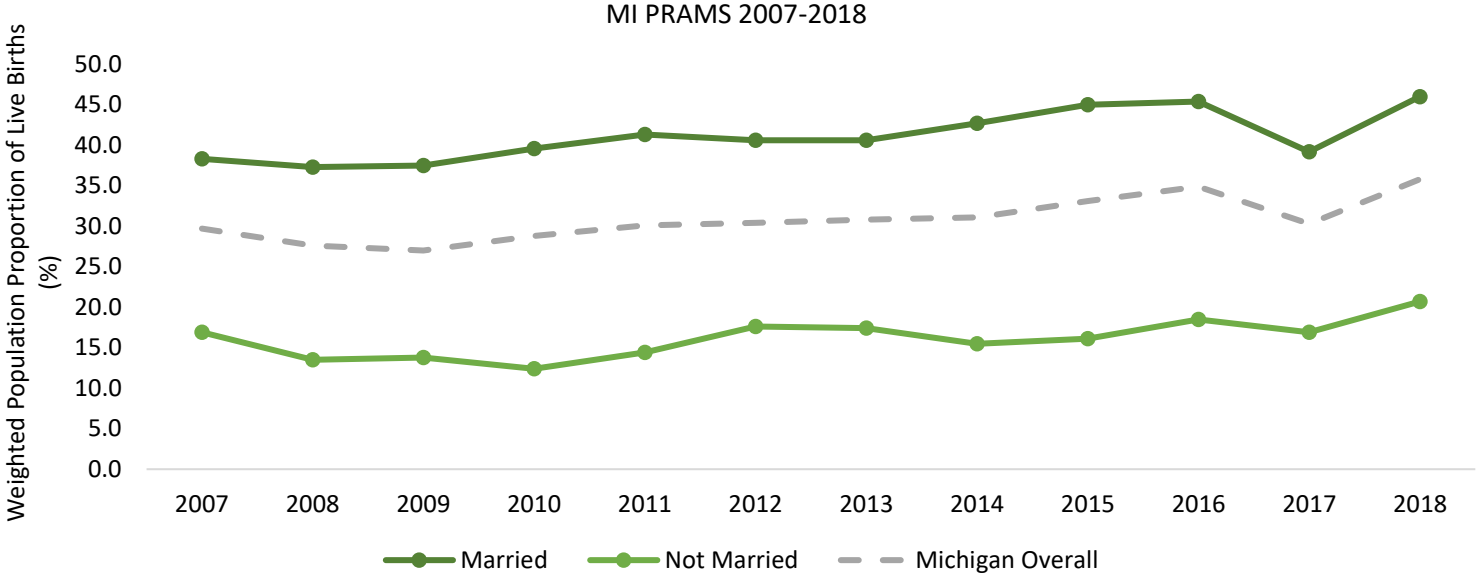
Figure 5: Mother took a daily multivitamin or folic acid prior to pregnancy by maternal demographics, MI PRAMS 2016-2018



In 2016-2018, significant disparities existed in daily folic acid or multivitamin use by marital status, maternal age, education, and preconception insurance status (all p<.0001). Mothers who are not married, younger, less educated, or not privately insured were less likely to meet the Healthy People 2020 goal of 33.3% (Figure 5).

In 2016-2018, mothers who were married were significantly more likely to be taking folic acid daily than mothers who were not married (p<.05). This disparity has persisted over time (Figure 6).

Figure 6: Mother took a daily multivitamin or folic acid prior to pregnancy by marital status, MI PRAMS 2007-2018



MICH-16.3

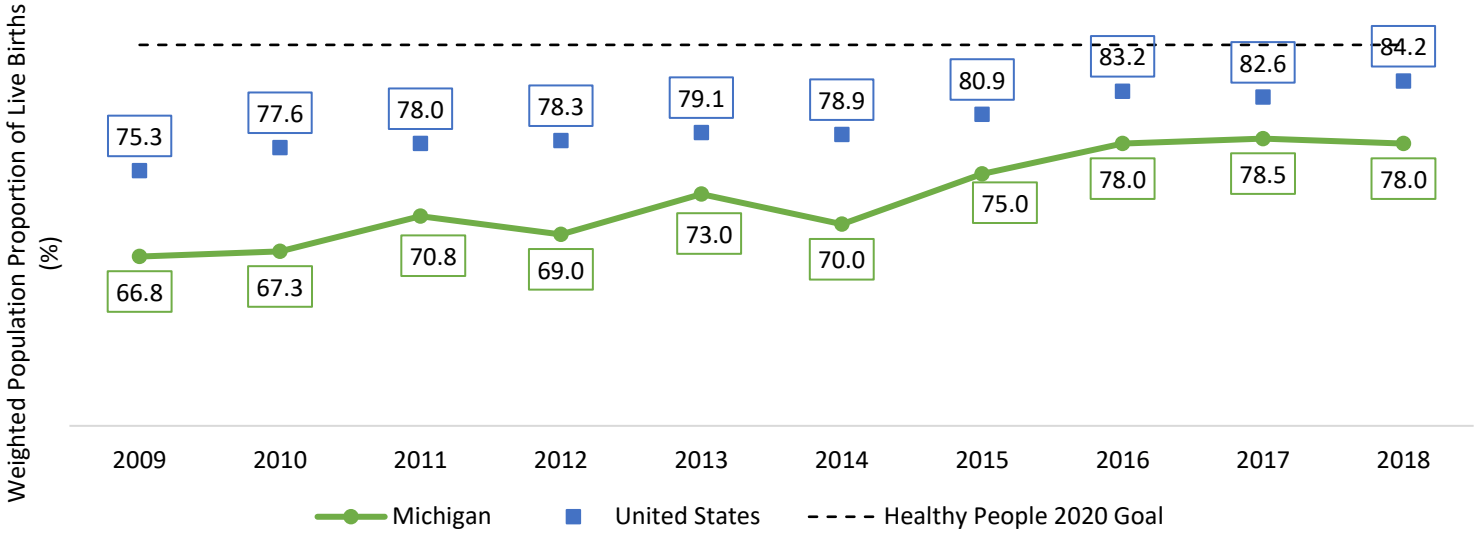
Increase the proportion of women delivering a live birth who did not smoke prior to pregnancy

MI PRAMS 2009-2018

Little or no change

A woman's chance of getting pregnant is reduced when smoking cigarettes. During pregnancy, smoking can contribute to ectopic pregnancies, preterm birth, and impaired infant development.[3,4] To promote intended pregnancies and protect the health of mothers and babies, Healthy People 2020 establishes the goal of 87.8% of women to be nonsmokers prior to pregnancy.

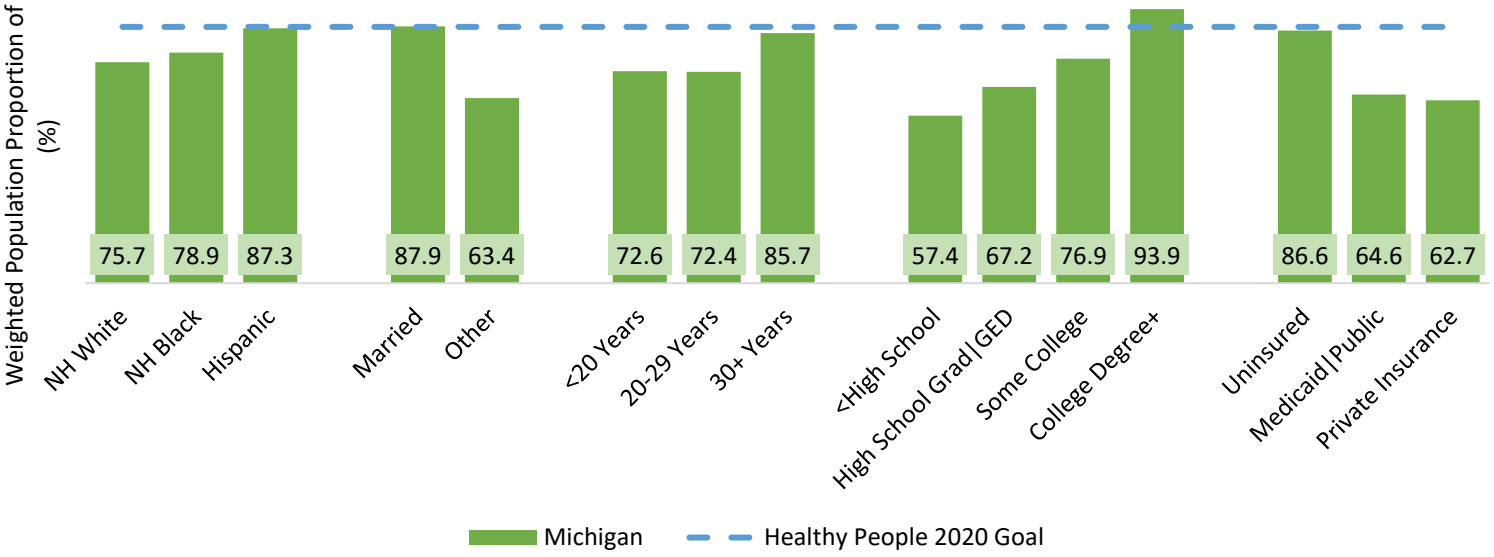
Figure 7: Mother was a nonsmoker prior to pregnancy,
MI PRAMS 2009-2018



Between 2009 and 2014, roughly 7 out of 10 Michigan new mothers did not smoke prior to pregnancy. In 2011-2014 and 2016, fewer Michigan mothers were nonsmokers compared to the Unites States overall. The State of Michigan has not reached the Healthy People 2020 goal of 87.8% (Figure 7).

There has been little change in this goal over time. While there was a significant upward trend between earlier and later years, in recent years (2016-2018) there has been no significant improvement.

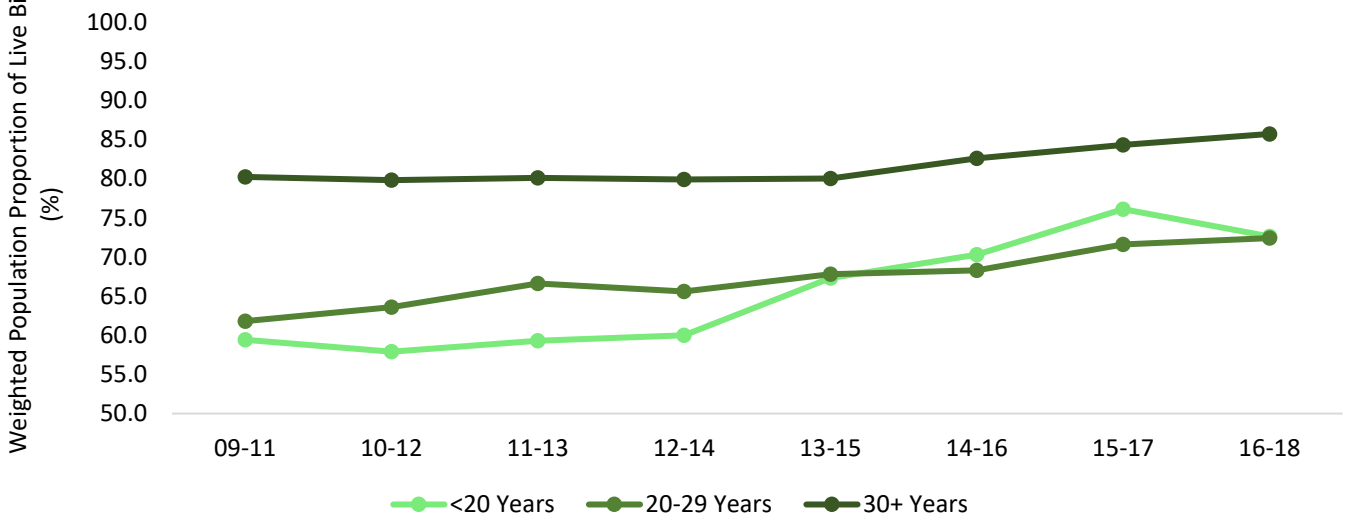
Figure 8: Mother was a nonsmoker prior to pregnancy by maternal demographics, MI PRAMS 2016-2018



In 2016-2018, more mothers who were Hispanic, married, older, more educated, or uninsured prior to pregnancy were nonsmokers compared to other groups. Disparities across maternal race, marital status, age, education, and insurance status are significant (p<.0001) for 2016-2018 (Figure 8).

Overall, more mothers aged 30 years or older were nonsmokers prior to pregnancy compared to younger women. Since 2012-2014, there has been an increase in nonsmoking among mothers younger than 20 years old (Figure 9).

Figure 9: Mother was a nonsmoker prior to pregnancy by maternal age, 3-year rolling averages|MI PRAMS 2009-2018



MICH-16.4

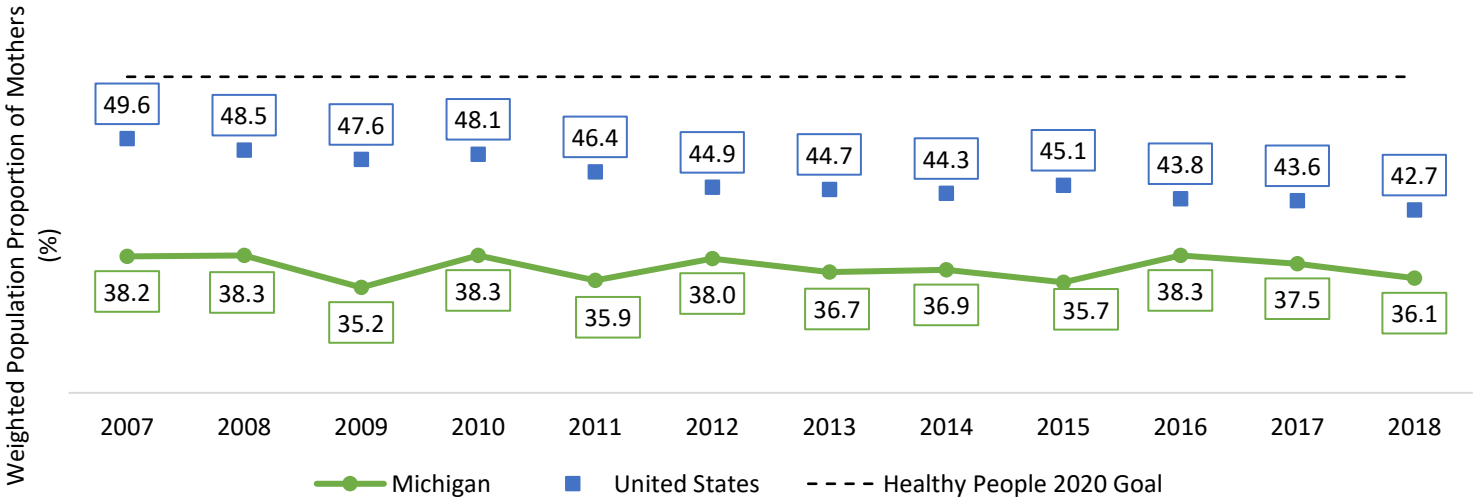
Increase the proportion of women delivering a live birth who did not drink alcohol prior to pregnancy

MI PRAMS 2007-2018

Little or no change

Drinking alcohol during pregnancy is known to diminish fetal neurodevelopment and impair cognitive abilities into childhood.[5] Women who have unintended pregnancies may be at risk of unknowingly drinking while pregnant. Additionally, 3 in 4 women who are trying to get pregnant report drinking alcohol. Most women are not aware of their pregnancy until they are 4-6 weeks along, and may drink alcohol during this time.[6] Due to the universal risk of unknowingly drinking while pregnant, Healthy People 2020 aims to increase the proportion of women who do not drink before pregnancy to 55.6%.

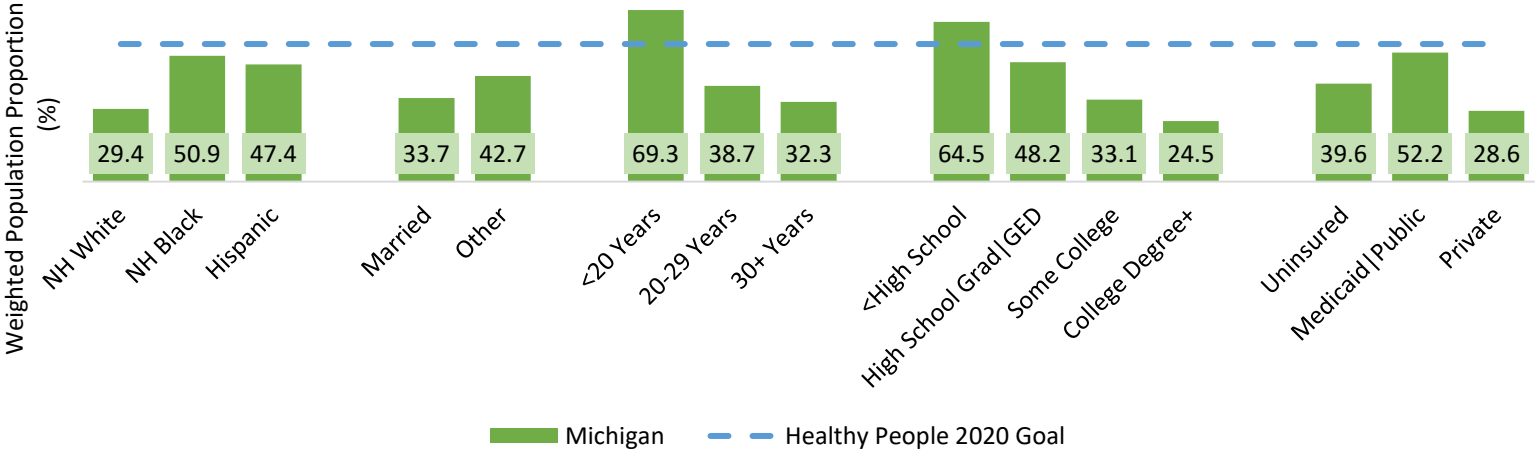
Figure 10: No alcohol use prior to pregnancy, MI PRAMS 2007-2018



Across 2007-2018, roughly 3 out of 10 Michigan mothers did not drink alcohol prior to pregnancy. Fewer Michigan mothers did not drink alcohol prior to pregnancy compared to the rest of the United States (Figure 10).

There is no significant trend in alcohol nonuse before pregnancy across 2007-2018.

Figure 11: No alcohol use before pregnancy by maternal demographics, MI PRAMS 2016-2018



Multi-year estimates from 2016-2018 reveal disparities in all demographic categories (Figure 11). Use of alcohol prior to pregnancy is more prevalent among mothers who are white, married, older, more educated, and on private pre-pregnancy insurance compared to other demographics (all p<.0001).

Across 2007-2018, the proportion of women who did not use alcohol is greatest among those with less than a high school education. Disparities in alcohol use have increased between those with less than a high school education and those with a college degree (Figure 12). Disparities in alcohol nonuse by maternal age have remained consistent, with greater proportions of mothers under 20 years and similar proportions of mothers aged 20-29 years and 30+ years abstaining from alcohol prior to pregnancy (Figure 13).

Figure 12: No alcohol use prior to pregnancy by maternal education, 3-year rolling averages|MI PRAMS 2007-2018

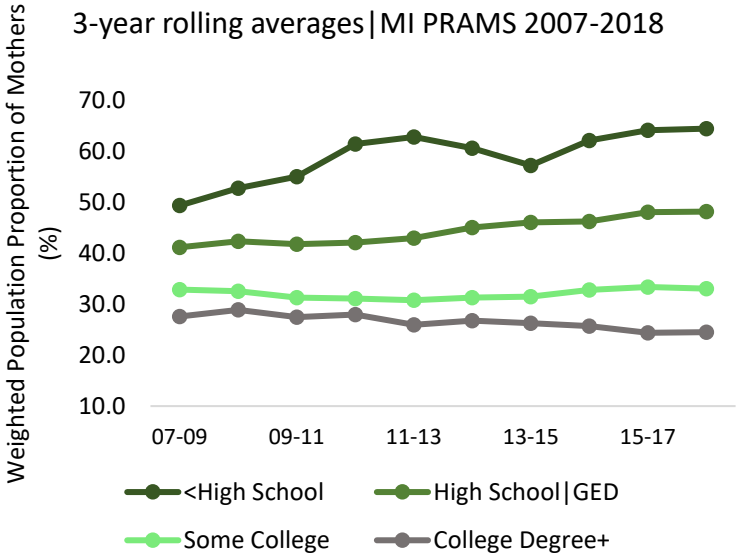
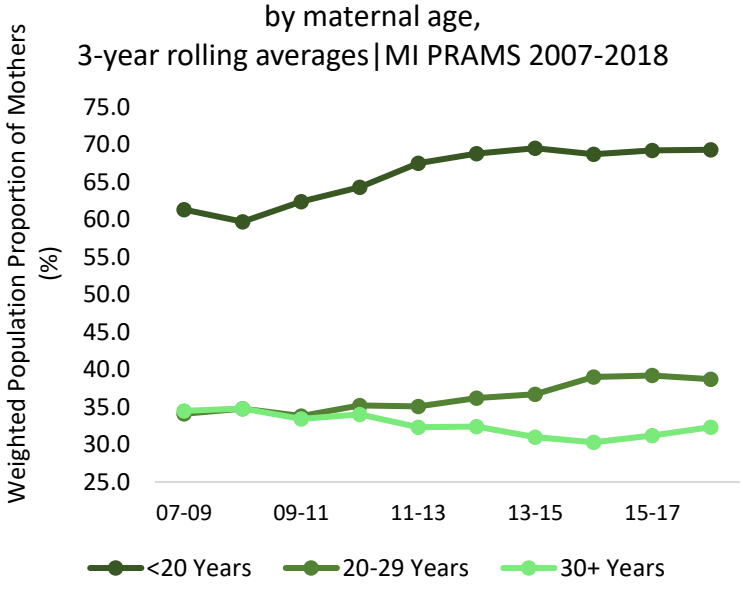


Figure 13: No alcohol use prior to pregnancy by maternal age, 3-year rolling averages|MI PRAMS 2007-2018



MICH-16.5

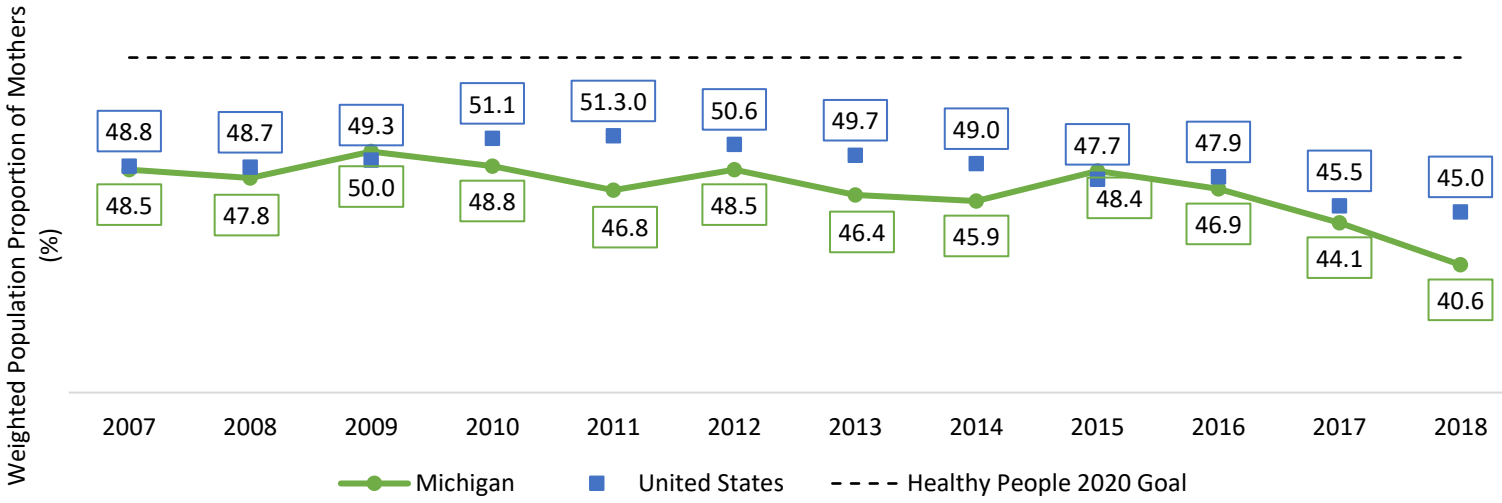
Increase the proportion of women delivering a live birth who had a healthy weight prior to pregnancy

MI PRAMS 2007-2018

Getting worse

Pre-pregnancy Body Mass Index (BMI) may predict a number of health indicators during pregnancy. Women who are underweight (BMI <18.5) before pregnancy are at higher risk of having low birthweight infants. Conversely, women who are overweight (BMI 25.0-29.9) or obese (BMI ≥30.0) prior to pregnancy are at increased risk of having high birthweight infants and children with childhood obesity,[7] and developing gestational diabetes.[8] Women with high pre-pregnancy BMI's are also less likely to initiate and continue breastfeeding.[9] Because pre-pregnancy BMI has wide-reaching impacts on health during and after pregnancy, Healthy People 2020 aims for 57.8% of mothers of live births to have a healthy weight (a BMI of 18.5 to 24.9) prior to pregnancy.

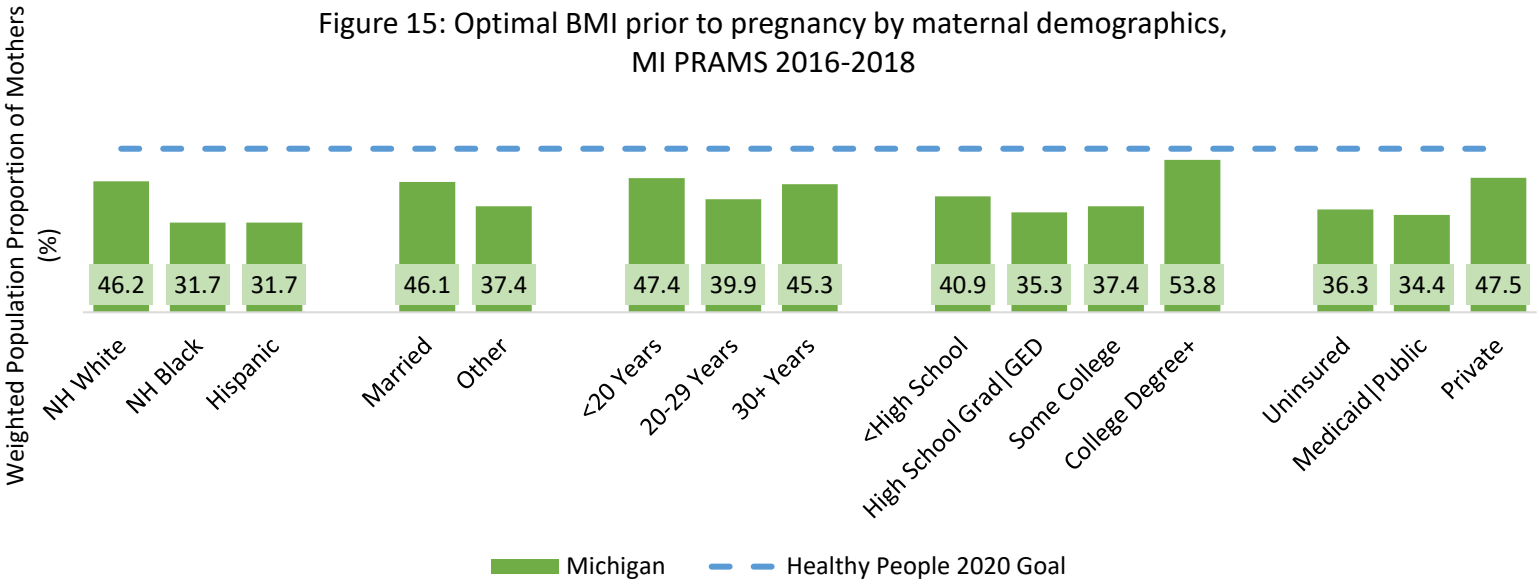
Figure 14: Optimal BMI prior to pregnancy,
MI PRAMS 2007-2018



On average, fewer than half of Michigan mothers had an optimal pre-pregnancy BMI in 2007-2018. Fewer Michigan mothers had an optimal pre-pregnancy BMI compared to Healthy People 2020 data (Figure 14).

This goal is getting worse. There is a significant downward trend between early years and 2017-2018.

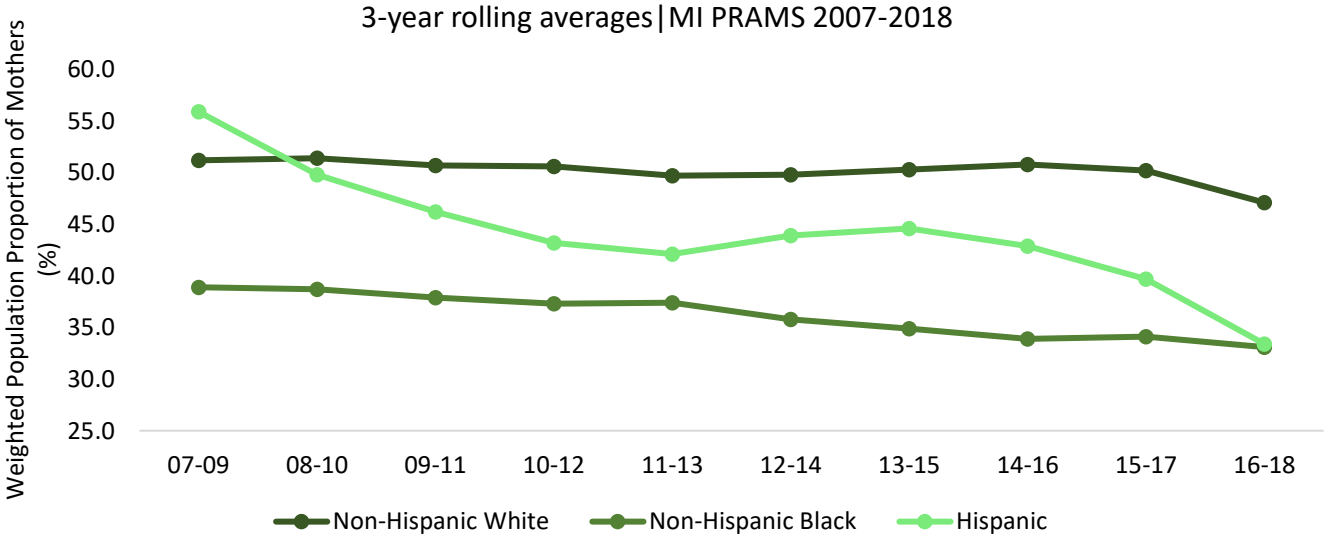
Figure 15: Optimal BMI prior to pregnancy by maternal demographics, MI PRAMS 2016-2018



Significant differences exist in having an optimal pre-pregnancy BMI across MI PRAMS demographics for years 2016-2018. More mothers who are NH White, married, on private pre-pregnancy insurance, or have a college degree also have optimal pre-pregnancy BMIs (p<.0001), compared to their demographic counterparts (Figure 15). Additionally, fewer mothers who are 20-29 years old have optimal pre-pregnancy BMIs than mothers younger than 20 or 30+ years (p=.0041).

Racial disparities exist in having an optimal BMI prior to pregnancy. Across 2007-2018, more Non-Hispanic White women had an optimal pre-pregnancy BMI compared to non-Hispanic Black women. Disparities have remained consistent, as the prevalence of having an optimal BMI has decreased over time among all racial and ethnic groups (Figure 16).

Figure 16: Optimal BMI prior to pregnancy by maternal race, 3-year rolling averages|MI PRAMS 2007-2018



MICH-16.6

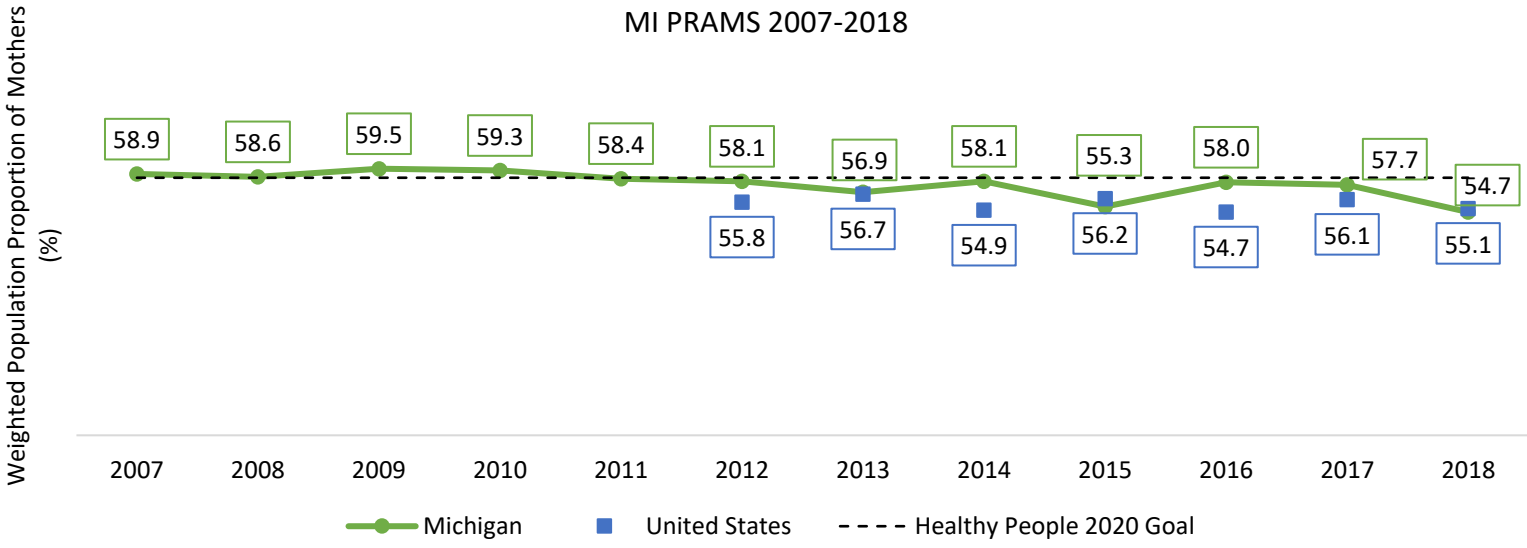
Increase the proportion of women delivering a live birth who used a most effective or moderately effective contraception method postpartum

MI PRAMS 2007-2018

Little/no change

The postpartum period offers a unique opportunity to link postnatal care to preconception health.[10,11] Prescribing most or moderately effective birth control methods following birth reduces a woman's chance of unintended subsequent pregnancies, therefore improving pregnancy health and birth outcomes.[12] Most or moderately effective birth control methods include male or female sterilization, implants, intrauterine devices, injectables, oral pills, patch, ring, or diaphragm. In order to promote healthy future pregnancies, Healthy People 2020 aims for 58.5% of women delivering a live birth to use a most effective or moderately effective contraception method postpartum.

Figure 17: Most or moderately effective contraceptive method postpartum,*
MI PRAMS 2007-2018

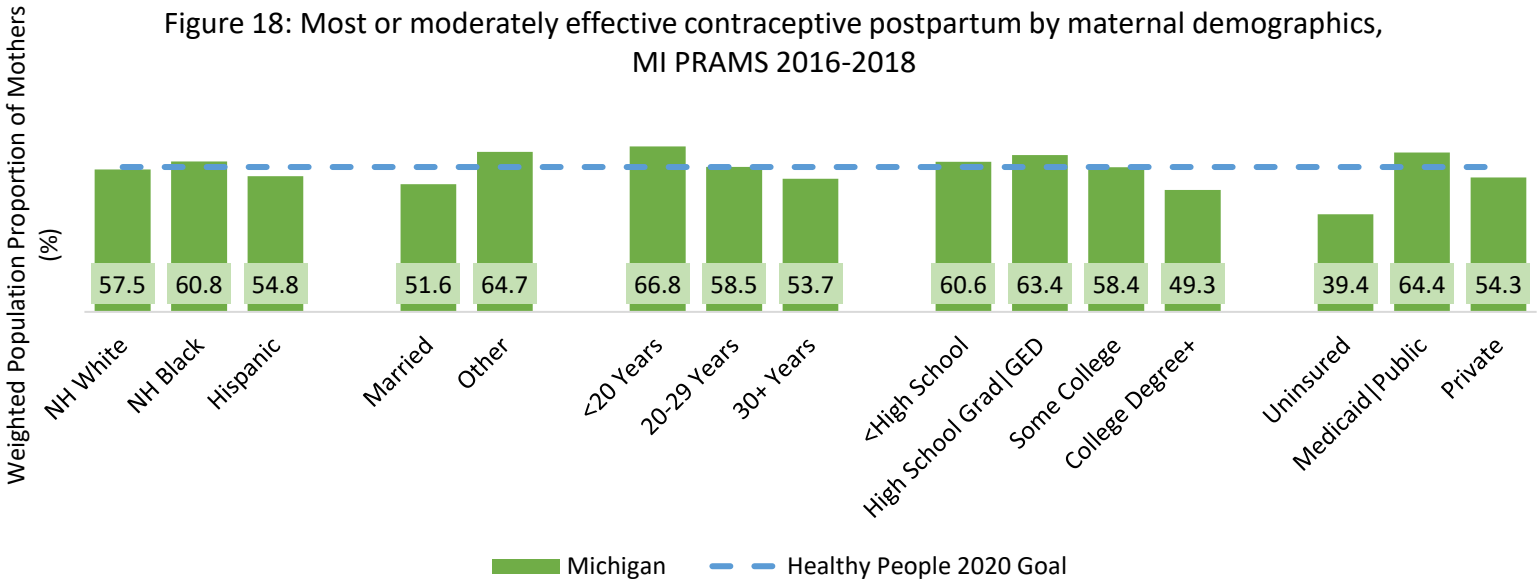


**This indicator has limited availability across 2007-2011 but was collected by all PRAMS states in 2012-2018.*

On average, a little over half of Michigan mothers used a most or moderately effective contraceptive method postpartum in 2007-2018. More Michigan mothers used a most or moderately effective contraceptive method postpartum compared to Healthy People 2020 data (Figure 17).

There is no significant trend in postpartum use of most or moderately effective contraceptive methods across 2007-2008.

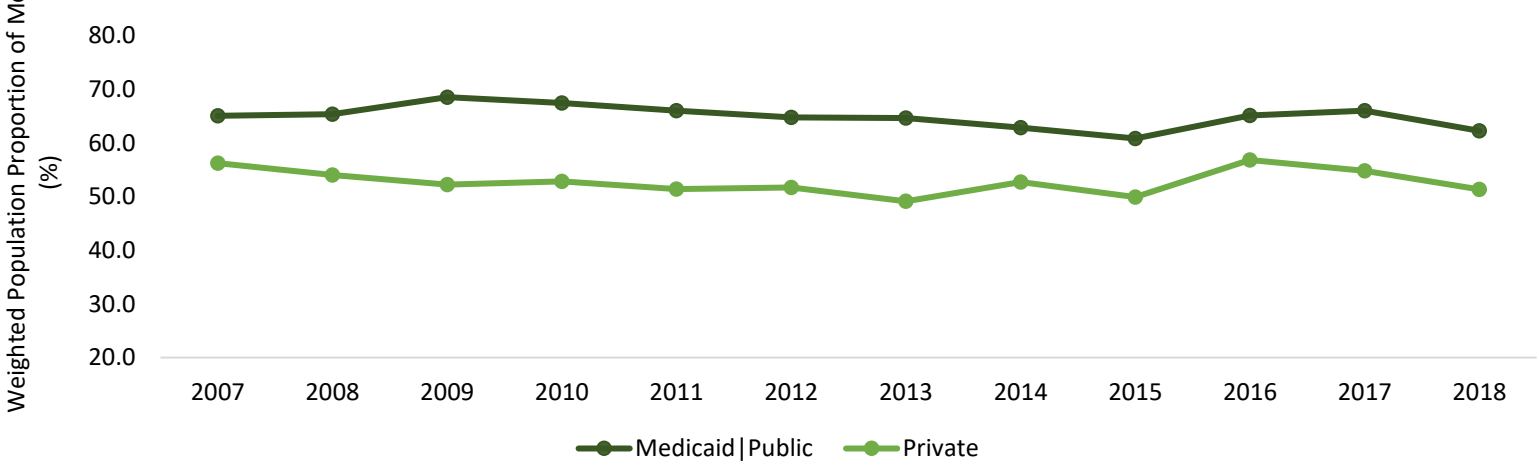
Figure 18: Most or moderately effective contraceptive postpartum by maternal demographics, MI PRAMS 2016-2018



Significant disparities exist among maternal race, marital status, age, education, and insurance status ($p<.05$). Far fewer mothers who are uninsured after pregnancy utilize a most or moderately effective contraceptive method following pregnancy, compared to those on public or private insurance (Figure 18).

Across 2007-2018, use of most or moderately effective contraceptive methods postpartum occurred most frequently among women on public insurance after pregnancy. This disparity differed by roughly ten percent across 2007-2018 (Figure 19).

Figure 19: Most or moderately effective contraceptive postpartum by public or private postpartum insurance, MI PRAMS 2007-2018



MICH-18

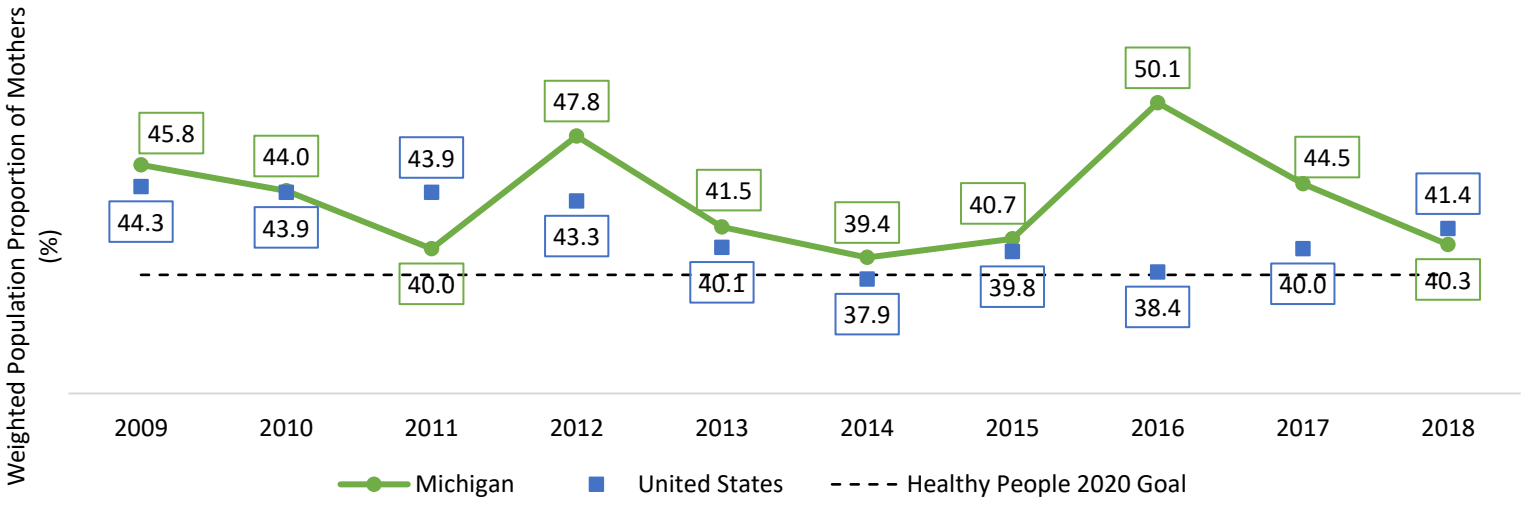
Reduce postpartum relapse of smoking among women who quit smoking during pregnancy

MI PRAMS 2009-2018

Little/no change

Quitting smoking during pregnancy is an important means of protecting the health of both mothers and babies. However, high smoking relapse rates in the postpartum period lead to childhood secondhand smoke exposure,[13] which contributes to an increased frequency of asthma as well as children smoking in the future.[14] In order to maintain smoking cessation behaviors and prevent childhood secondhand smoke exposure, Healthy People 2020 aims to reduce postpartum relapse of smoking among women who quit smoking during pregnancy to 38.2%.

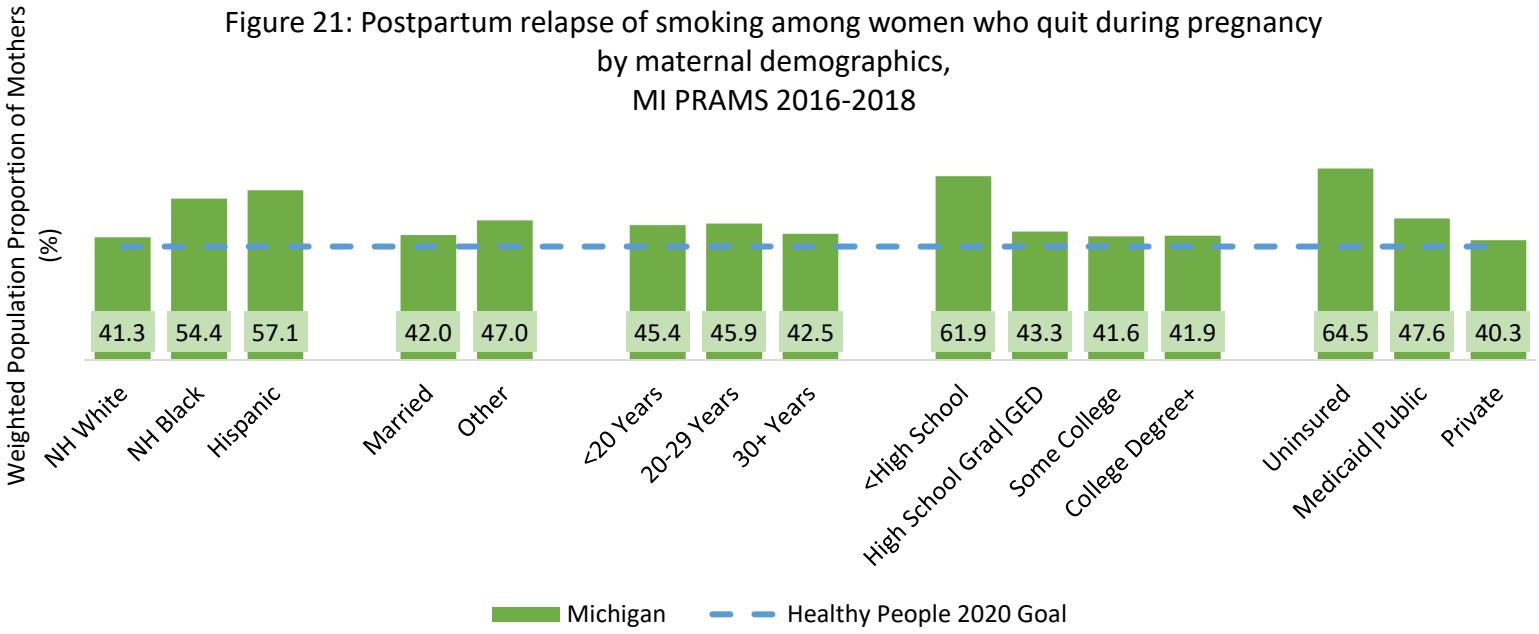
Figure 20: Postpartum relapse of smoking among women who quit during pregnancy, MI PRAMS 2009-2018



In 2009, 45.8% of mothers who quit smoking during pregnancy had resumed smoking following the birth of their baby. In 2018, this number had decreased by 5.5%, with 40.3% of mothers who quit smoking during pregnancy resuming following the birth of their baby (Figure 20).

There is no significant trend in relapse of smoking among women who quit during pregnancy across 2009-2018.

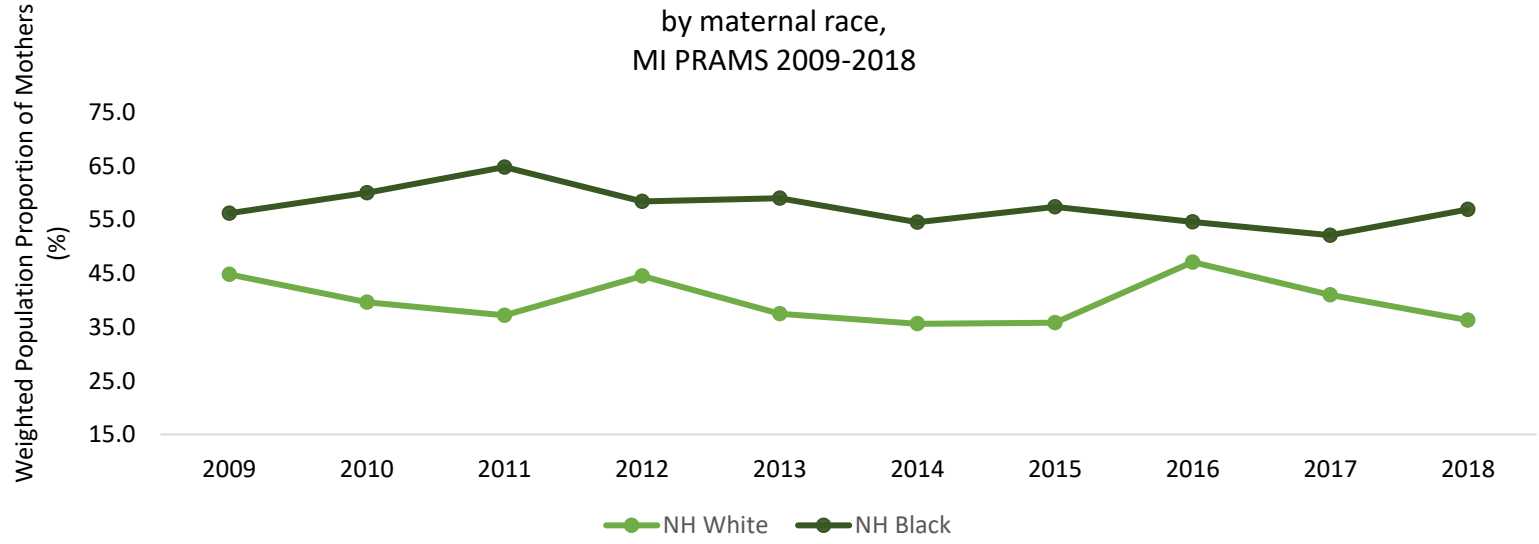
Figure 21: Postpartum relapse of smoking among women who quit during pregnancy by maternal demographics, MI PRAMS 2016-2018



No significant differences exist among women who quit smoking during pregnancy and resumed following the birth of their baby for years 2016-2018 (Figure 21, p>0.05 all).

Yearly differences in smoking relapse exist among non-Hispanic White, non-Hispanic Black, and Hispanic mothers. For 2009-2018, more NH Black mothers resumed smoking after quitting during pregnancy compared to NH White mothers, while more Hispanic mothers resumed smoking after quitting during pregnancy compared to both NH Black and NH White mothers (Figure 22).

Figure 22: Postpartum relapse of smoking among women who quit during pregnancy by maternal race, MI PRAMS 2009-2018



MICH-19

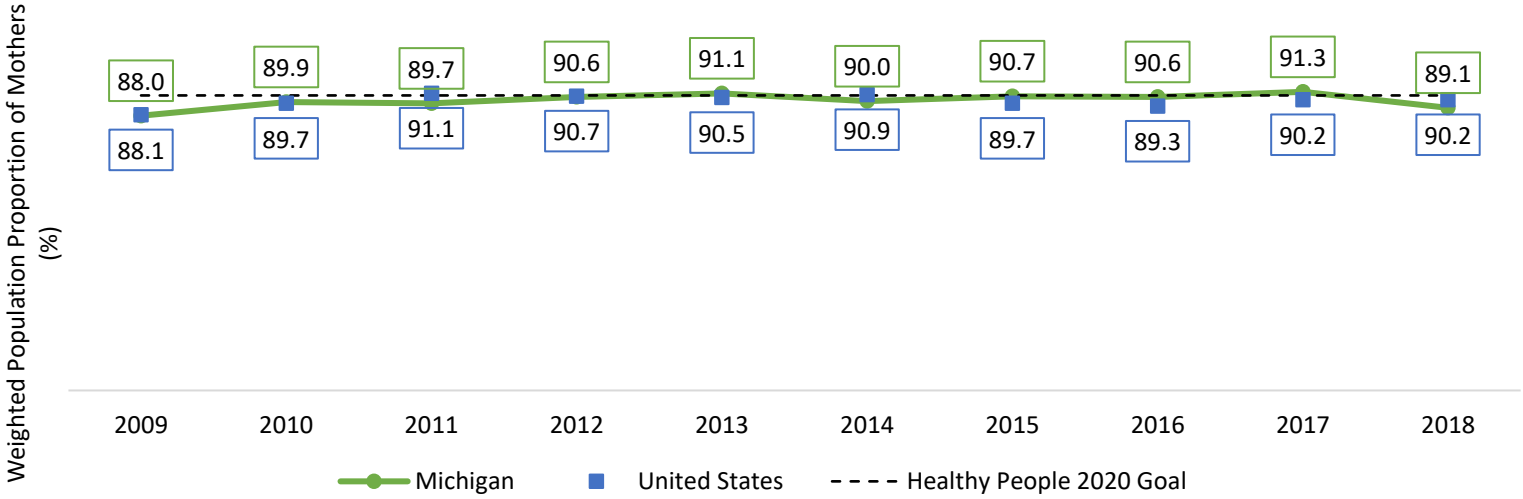
Increase the proportion of women giving birth who attend a postpartum care visit with a health care worker

MI PRAMS 2009-2018

Little/no change

The maternal postpartum checkup provides an opportunity to counsel women on their physical, emotional, and behavioral wellbeing following pregnancy. The postpartum checkup helps address postpartum depression, strengthen breastfeeding behaviors, and provide education regarding long term health risks.[15,16] Thus, Healthy People 2020 aims for 90.8% of mothers of live births to attend a postpartum care visit with a health care worker.

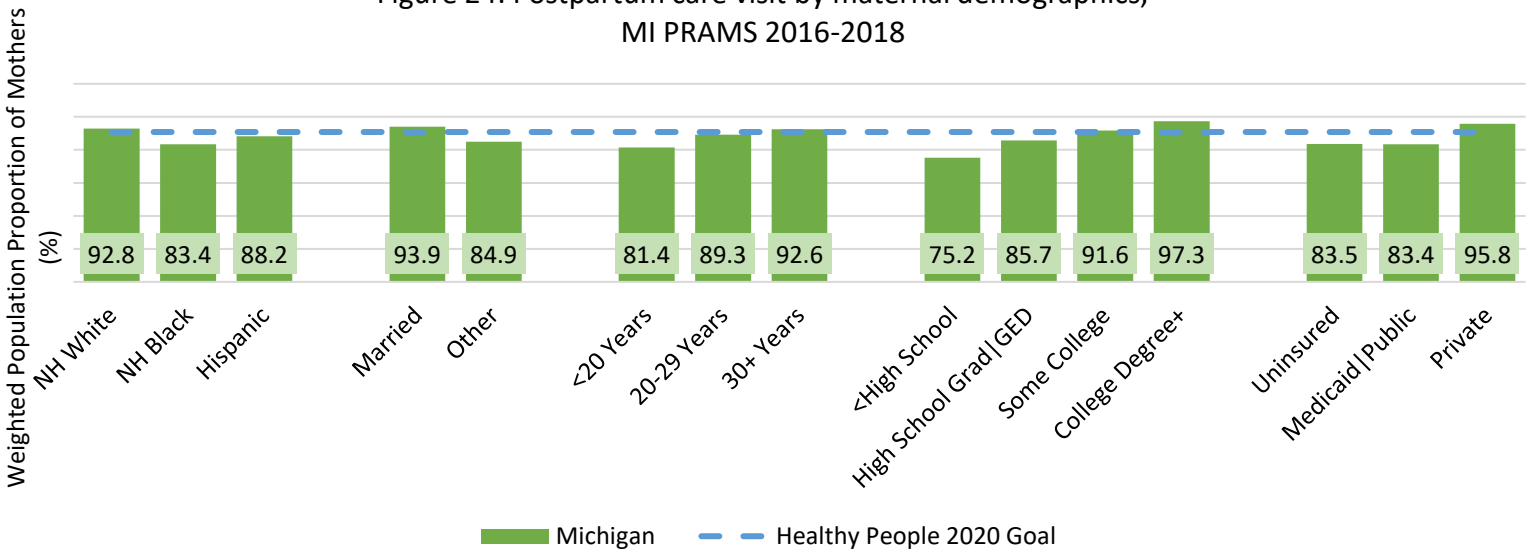
Figure 23: Postpartum care visit, MI PRAMS 2009-2018



From 2009-2018, roughly 9 in 10 mothers of live births reported attending a postpartum care visit with a health care worker. This is similar to the Healthy People 2020 target, as well as Healthy People 2020 data for 2012-2014 and 2016 (Figure 23).

There is no significant trend in the proportion of women attending a postpartum care visit from 2009-2018.

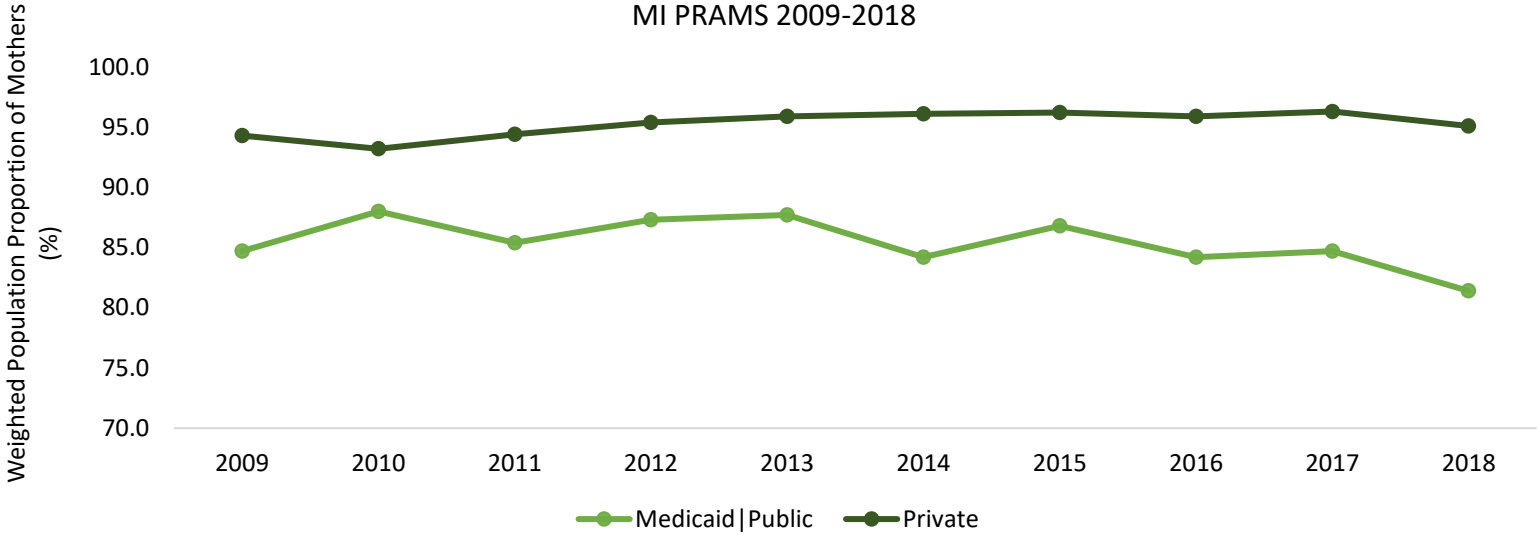
Figure 24: Postpartum care visit by maternal demographics, MI PRAMS 2016-2018



In 2016-2018, significant disparities exist in obtaining a postpartum visit among all demographic factors (Figure 24, p<.0001 all). Fewer mothers who were non-Hispanic Black, not married, younger, less educated, uninsured, or on public postpartum insurance obtained a postpartum care visit compared to respective demographics.

Whether a mother obtained a postpartum care visit from 2009-2018 varied by postpartum insurance status. More mothers on private insurance obtained a postpartum care visit compared to those on public insurance (Figure 25).

Figure 25: Postpartum care visit by public or private postpartum insurance, MI PRAMS 2009-2018



MICH-20

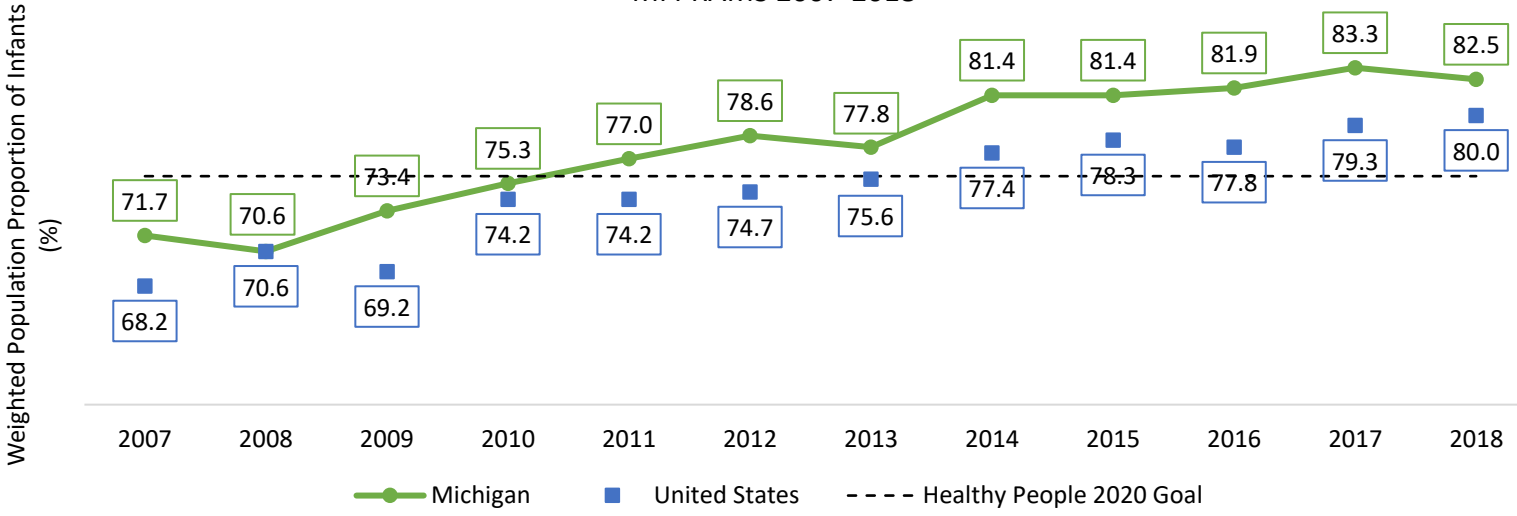
Increase the proportion of infants who are put to sleep on their backs

MI PRAMS 2007-2018

✓ *Target met*

Every year in the United States, 3,500 babies die suddenly and unexpectedly in their sleep, with no clear cause.[17] The primary risk factor for Sudden and Unexpected Infant Deaths is infant sleep position, with side and stomach sleeping significantly increasing the odds of SUID.[18] The Centers for Disease Control recommend infants be placed to sleep on their backs in order to reduce the risk of SUID.[17] In order to reduce infants' risk of SUID, Healthy People 2020 aims for 75.8% of infants to be put to sleep on their backs.

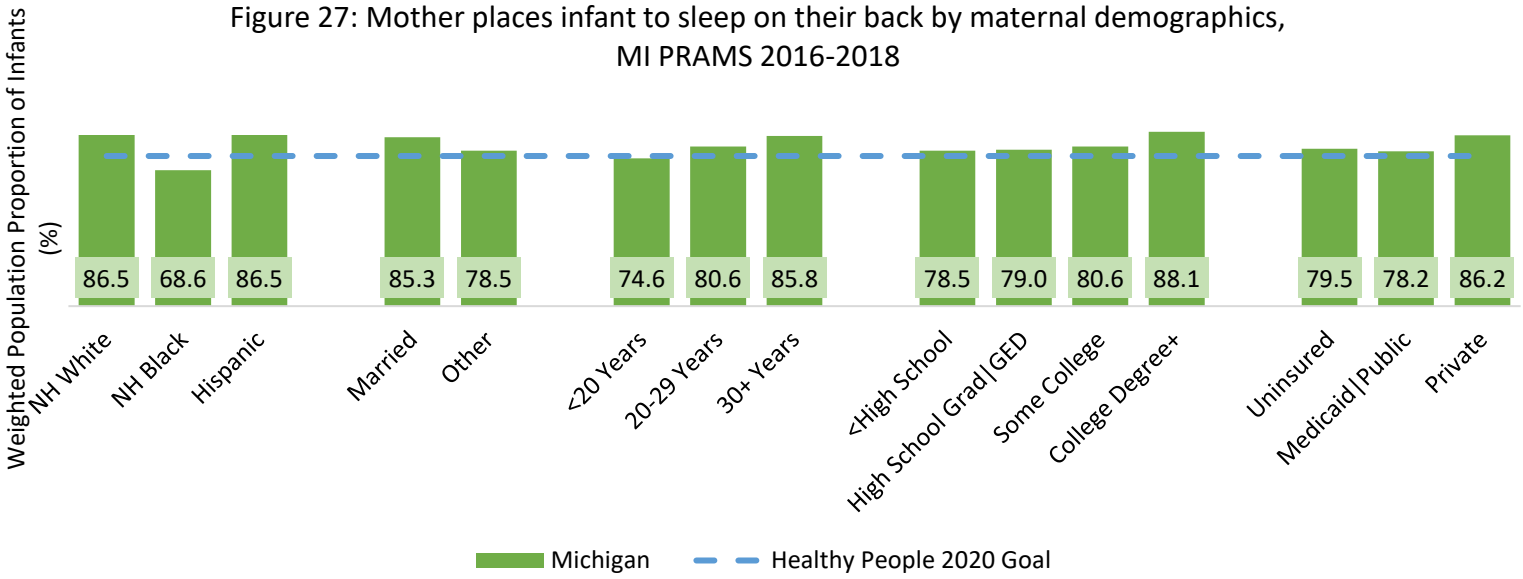
Figure 26: Mother places infant to sleep on their back, MI PRAMS 2007-2018



In 2007-2009, roughly 7 in 10 new Michigan infants were placed to sleep primarily on their backs. In 2014-2018, roughly 8 in 10 new Michigan infants were placed to sleep primarily on their backs. This surpasses the Healthy People 2020 goal of 75.8% (Figure 26).

✓ There is a significant positive trend from years 2007-2010 to years 2014-2018. Michigan has met the Healthy People 2020 target for increasing the proportion of infants placed to sleep on their backs.

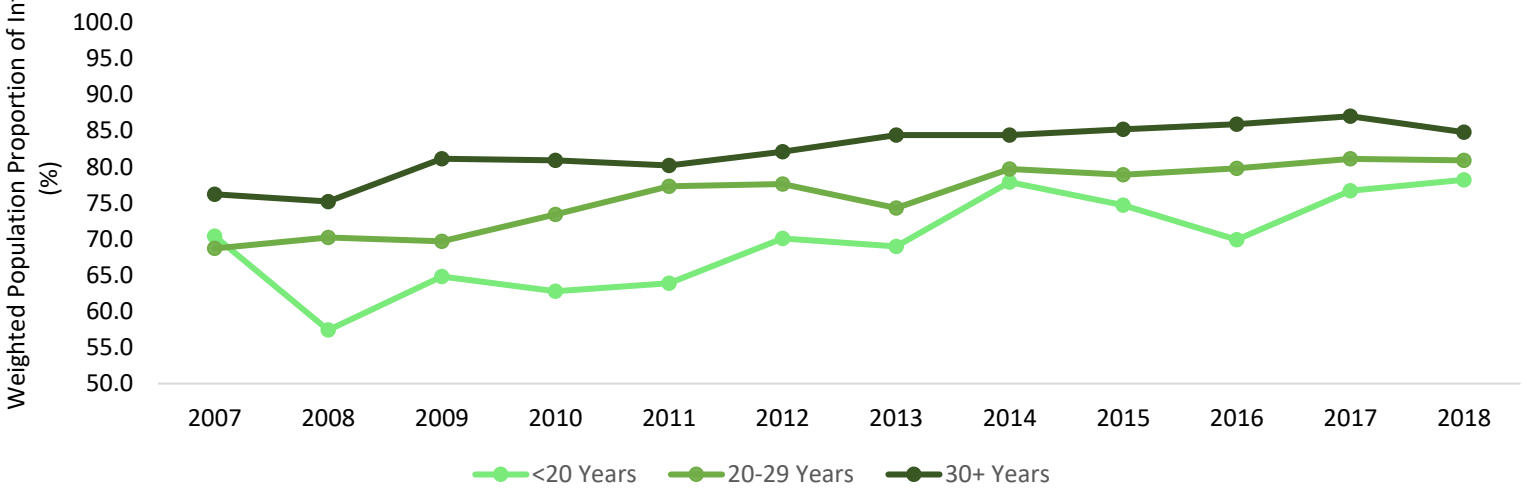
Figure 27: Mother places infant to sleep on their back by maternal demographics, MI PRAMS 2016-2018



Across all demographic factors, significant disparities exist in infant sleep position (Figure 27, p<.0001 all). Fewer infants whose mothers were non-Hispanic Black, not married, younger, less educated, and on public postpartum insurance were placed to sleep on their backs compared to infants whose mothers were of respective demographic counterparts.

The yearly proportion of infants put to sleep on their backs for 2007-2018 differs significantly by age (Figure 28). More infants whose mothers were 30+ years old were put to sleep on their backs, compared to infants whose mothers were 20-29 years old and younger than 20. This disparity has, however, decreased over time.

Figure 28: Mother places infant to sleep on their back by maternal age, MI PRAMS 2007-2018



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Appendix

Table 1. Distribution of selected maternal characteristics, MI PRAMS 2007

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Total	1,521	121,448	100.0		
Race/Ethnicity					
White, non-Hispanic	853	88,691	75.2	(73.5-76.8)	3.4
Black, non-Hispanic	551	20,888	17.7	(17.2-18.2)	1.5
Hispanic	48	5,239	4.4	(3.3-6.0)	15.4
Marital Status					
Married	834	72,920	60.1	(57.3-62.8)	3.5
Other	686	48,491	39.9	(37.2-42.7)	3.5
Maternal Age					
<20 Years	183	13,622	11.2	(9.5-13.2)	8.4
20-29 Years	799	62,494	51.5	(48.6-54.3)	3.0
30+ Years	539	45,332	37.3	(34.6-40.1)	3.7
Maternal Education					
<High School	497	39,541	33.1	(30.3-35.9)	4.3
High School Grad or GED	382	30,215	25.3	(22.8-27.9)	5.2
Some College	271	19,560	16.3	(14.4-18.5)	6.5
College Degree +	349	30,317	25.3	(22.9-27.9)	5.0
Pre-pregnancy Insurance					
Uninsured	327	27,590	22.8	(20.4-25.5)	5.6
Medicaid/Public Insurance	345	19,639	16.3	(14.4-18.3)	6.1
Private Insurance	842	73,531	60.9	(58.1-63.6)	3.6

Table 2. Distribution of selected maternal characteristics, MI PRAMS 2008

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Total	1,619	117,676	100.0		
Race/Ethnicity					
White, non-Hispanic	824	81,545	74.3	(72.6-75.9)	3.3
Black, non-Hispanic	633	20,934	19.1	(18.4-19.8)	1.8
Hispanic	49	4,890	4.5	(3.3-6.0)	15.2
Marital Status					
Married	821	69,662	59.2	(56.5-61.8)	3.3
Other	798	48,014	40.8	(38.2-43.5)	3.3
Maternal Age					
<20 Years	221	12,925	11.0	(9.4-12.8)	7.9
20-29 Years	849	63,594	54.0	(51.2-56.8)	3.1
30+ Years	549	41,157	35.0	(32.4-37.7)	3.9
Maternal Education					
<High School	280	18,549	15.9	(13.9-18.2)	6.8
High School Grad or GED	442	31,231	26.8	(24.3-29.5)	4.9
Some College	503	35,334	30.4	(27.8-33.0)	4.4
College Degree +	381	31,265	26.9	(24.4-29.4)	4.7
Pre-pregnancy Insurance					
Uninsured	323	24,403	20.9	(18.6-23.4)	5.8
Medicaid/Public Insurance	429	23,506	20.1	(18.1-22.3)	5.4
Private Insurance	855	68,999	59.0	(56.2-61.7)	3.4

Table 3. Distribution of selected maternal characteristics, MI PRAMS 2009

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Total	1,667	113,714	100.0		
Race/Ethnicity					
White, non-Hispanic	830	78,964	69.9	(67.8-71.9)	3.5
Black, non-Hispanic	692	20,804	18.4	(17.8-19.0)	1.6
Hispanic	64	6,545	5.8	(4.4-7.5)	13.4
Marital Status					
Married	791	63,758	56.2	(53.4-58.9)	3.2
Other	875	49,773	43.8	(41.1-46.6)	3.2
Maternal Age					
<20 Years	221	12,189	10.7	(9.1-12.6)	8.5
20-29 Years	883	59,656	52.5	(49.6-55.3)	3.1
30+ Years	563	41,869	36.8	(34.1-39.6)	3.8
Maternal Education					
<High School	258	16,505	14.6	(12.6-16.9)	7.6
High School Grad or GED	479	31,798	28.1	(25.6-30.8)	4.7
Some College	536	34,660	30.7	(28.1-33.3)	4.3
College Degree +	382	30,071	26.6	(24.2-29.2)	4.8
Pre-pregnancy Insurance					
Uninsured	290	21,337	19.0	(16.8-21.4)	6.2
Medicaid/Public Insurance	544	27,716	24.7	(22.4-27.1)	4.8
Private Insurance	814	63,183	56.3	(53.5-59.1)	3.3

Table 4. Distribution of selected maternal characteristics, MI PRAMS 2010

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Total	1,413	111,214	100.0		
Race/Ethnicity					
White, non-Hispanic	752	78,117	70.5	(68.4-72.5)	3.6
Black, non-Hispanic	542	20,374	18.4	(17.8-18.9)	1.6
Hispanic	57	6,465	5.8	(4.4-7.6)	14.0
Marital Status					
Married	745	66,864	60.1	(57.3-62.9)	3.6
Other	668	44,350	39.9	(37.1-42.7)	3.6
Maternal Age					
<20 Years	147	9,344	8.4	(6.9-10.2)	9.8
20-29 Years	750	60,747	54.6	(51.6-57.6)	3.3
30+ Years	516	41,124	37.0	(34.2-39.9)	3.9
Maternal Education					
<High School	215	16,623	15.1	(13.0-17.4)	7.5
High School Grad or GED	353	28,419	25.7	(23.1-28.6)	5.4
Some College	456	33,463	30.3	(27.7-33.1)	4.6
College Degree +	381	31,922	28.9	(26.3-31.6)	4.7
Pre-pregnancy Insurance					
Uninsured	240	20,066	18.2	(15.9-20.7)	6.7
Medicaid/Public Insurance	445	28,872	26.1	(23.7-28.8)	5.0
Private Insurance	711	61,512	55.7	(52.7-58.6)	3.4

Table 5. Distribution of selected maternal characteristics, MI PRAMS 2011

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Total	1,657	110,736	100.0		
Race/Ethnicity					
White, non-Hispanic	874	76,385	69.3	(67.3-71.3)	3.3
Black, non-Hispanic	624	20,558	18.7	(18.1-19.3)	1.7
Hispanic	67	6,874	6.2	(4.9-8.0)	12.7
Marital Status					
Married	874	64,609	58.4	(55.6-61.0)	3.3
Other	782	46,108	41.6	(39.0-44.4)	3.3
Maternal Age					
<20 Years	161	11,578	10.5	(8.7-12.5)	9.0
20-29 Years	892	60,595	54.7	(51.9-57.5)	3.1
30+ Years	604	38,563	34.8	(32.3-37.5)	3.8
Maternal Education					
<High School	218	15,851	14.4	(12.4-16.6)	7.5
High School Grad or GED	433	27,994	25.4	(23.0-27.9)	4.9
Some College	548	34,416	31.2	(28.7-33.9)	4.2
College Degree +	451	31,929	29.0	(26.6-31.5)	4.3
Pre-pregnancy Insurance					
Uninsured	292	21,071	19.2	(17.0-21.6)	6.1
Medicaid/Public Insurance	519	28,571	26.0	(23.7-28.4)	4.7
Private Insurance	834	60,251	54.8	(52.0-57.6)	3.1

Table 6. Distribution of selected maternal characteristics, MI PRAMS 2012

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Total	1,989	109,701	100.0		
Race/Ethnicity					
White, non-Hispanic	811	75,805	69.4	(67.2-71.5)	3.5
Black, non-Hispanic	1,010	19,598	17.9	(17.5-18.4)	1.3
Hispanic	64	5,977	5.5	(4.1-7.3)	14.6
Marital Status					
Married	857	61,289	55.9	(52.9-58.8)	3.4
Other	1,132	48,412	44.1	(41.2-47.1)	3.4
Maternal Age					
<20 Years	205	9,256	8.4	(6.8-10.4)	10.7
20-29 Years	1,108	59,452	54.2	(51.2-57.2)	3.3
30+ Years	676	40,993	37.4	(34.5-40.3)	3.9
Maternal Education					
<High School	287	16,061	14.7	(12.4-17.3)	8.4
High School Grad or GED	560	26,645	24.3	(21.9-26.9)	5.3
Some College	682	35,747	32.7	(29.9-35.5)	4.4
College Degree +	451	30,990	28.3	(25.7-31.0)	4.8
Pre-pregnancy Insurance					
Uninsured	264	17,702	16.3	(14.1-18.8)	7.3
Medicaid/Public Insurance	785	30,345	28.0	(25.5-30.7)	4.8
Private Insurance	916	60,373	55.7	(52.7-58.6)	3.4

Table 7. Distribution of selected maternal characteristics, MI PRAMS 2013

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Total	2,025	110,331	100.0		
Race/Ethnicity					
White, non-Hispanic	829	78,556	71.4	(69.4-73.3)	3.5
Black, non-Hispanic	1,046	20,374	18.5	(18.1-18.9)	1.1
Hispanic	67	5,861	5.3	(4.0-7.1)	14.8
Marital Status					
Married	911	63,582	57.6	(54.7-60.5)	3.6
Other	1,114	46,749	42.4	(39.5-45.3)	3.6
Maternal Age					
<20 Years	171	7,721	7.0	(5.4-8.9)	12.7
20-29 Years	1,135	60,329	54.7	(51.6-57.7)	3.4
30+ Years	719	42,281	38.3	(35.4-41.3)	3.9
Maternal Education					
<High School	267	13,130	12.0	(10.0-14.3)	9.2
High School Grad or GED	563	28,262	25.7	(23.0-28.6)	5.6
Some College	719	36,789	33.5	(30.7-36.4)	4.4
College Degree +	467	31,641	28.8	(26.2-31.6)	4.8
Pre-pregnancy Insurance					
Uninsured	276	18,019	16.5	(14.2-19.1)	7.6
Medicaid/Public Insurance	793	29,681	27.2	(24.7-29.9)	4.9
Private Insurance	932	61,383	56.3	(53.2-59.3)	3.5

Table 8. Distribution of selected maternal characteristics, MI PRAMS 2014

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Total	1,650	111,076	100.0		
Race/Ethnicity					
White, non-Hispanic	745	77,787	70.2	(68.0-72.3)	3.6
Black, non-Hispanic	758	19,765	17.8	(17.3-18.4)	1.5
Hispanic	63	6,153	5.6	(4.2-7.3)	13.9
Marital Status					
Married	779	63,661	57.3	(54.3-60.3)	3.6
Other	870	47,383	42.7	(39.7-45.7)	3.6
Maternal Age					
<20 Years	125	7,926	7.1	(5.6-9.1)	12.8
20-29 Years	910	60,086	54.1	(51.0-57.2)	3.4
30+ Years	615	43,064	38.8	(35.8-41.8)	3.9
Maternal Education					
<High School	203	12,941	11.7	(9.7-14.1)	9.7
High School Grad or GED	437	26,631	24.1	(21.5-26.9)	5.7
Some College	589	36,997	33.5	(30.7-36.5)	4.4
College Degree +	413	33,901	30.7	(28.0-33.6)	4.7
Pre-pregnancy Insurance					
Uninsured	226	16,650	15.0	(12.8-17.6)	8.0
Medicaid/Public Insurance	646	32,653	29.5	(26.8-32.3)	4.8
Private Insurance	772	61,330	55.4	(52.4-58.5)	3.5

Table 9. Distribution of selected maternal characteristics, MI PRAMS 2015

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Total	1,593	109,788	100.0		
Race/Ethnicity					
White, non-Hispanic	715	76,326	69.8	(67.6-72.0)	3.7
Black, non-Hispanic	744	20,084	18.4	(17.9-18.9)	1.4
Hispanic	53	5,137	4.7	(3.5-6.4)	15.6
Marital Status					
Married	754	64,547	58.8	(55.8-61.8)	3.7
Other	838	45,238	41.2	(38.2-44.2)	3.7
Maternal Age					
<20 Years	94	4,062	3.7	(2.7-5.0)	15.1
20-29 Years	891	59,800	54.5	(51.3-57.6)	3.5
30+ Years	608	45,926	41.8	(38.8-45.0)	3.8
Maternal Education					
<High School	179	9,706	8.9	(7.3-10.9)	10.3
High School Grad or GED	437	28,637	26.3	(23.5-29.2)	5.5
Some College	531	33,903	31.1	(28.3-34.1)	4.7
College Degree +	434	36,739	33.7	(30.8-36.7)	4.4
Pre-pregnancy Insurance					
Uninsured	138	11,056	10.1	(8.3-12.3)	10.0
Medicaid/Public Insurance	683	35,471	32.4	(29.6-35.3)	4.5
Private Insurance	766	62,958	57.5	(54.4-60.5)	3.7

Table 10. Distribution of selected maternal characteristics, MI PRAMS 2016

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Total	1,798	109,788	100.0		
Race/Ethnicity					
White, non-Hispanic	785	73,760	67.3	(65.0-69.4)	3.5
Black, non-Hispanic	824	19,759	18.0	(17.6-18.5)	1.2
Hispanic	79	7,180	6.5	(5.1-8.4)	12.8
Marital Status					
Married	891	67,050	61.1	(58.3-63.8)	3.6
Other	905	42,677	38.9	(36.2-41.7)	3.6
Maternal Age					
<20 Years	118	5,565	5.1	(3.9-6.5)	13.0
20-29 Years	970	56,681	51.6	(48.7-54.5)	3.1
30+ Years	710	47,542	43.3	(40.5-46.2)	3.4
Maternal Education					
<High School	226	11,496	10.5	(8.9-12.5)	8.8
High School Grad or GED	477	28,690	26.3	(23.7-29.1)	5.2
Some College	573	31,899	29.2	(26.7-31.9)	4.6
College Degree +	509	37,055	34.0	(31.2-36.8)	4.1
Pre-pregnancy Insurance					
Uninsured	104	6,869	6.5	(5.1-8.2)	12.4
Medicaid/Public Insurance	648	30,140	28.4	(25.9-31.1)	4.7
Private Insurance	984	68,974	65.1	(62.2-67.8)	4.1

Table 11. Distribution of selected maternal characteristics, MI PRAMS 2017

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Total	1,897	107,941	100.0		
Race/Ethnicity					
White, non-Hispanic	785	70,727	65.8	(63.5-68.1)	3.5
Black, non-Hispanic	908	19,961	18.6	(18.1-19.1)	1.4
Hispanic	72	7,355	6.8	(5.3-8.8)	12.9
Marital Status					
Married	869	64,866	60.1	(57.3-62.8)	3.5
Other	1,027	43,035	39.9	(37.2-42.7)	3.5
Maternal Age					
<20 Years	126	5,021	4.7	(3.6-6.0)	12.8
20-29 Years	1,039	58,113	53.8	(50.9-56.7)	3.2
30+ Years	732	44,807	41.5	(38.7-44.4)	3.5
Maternal Education					
<High School	216	10,016	9.4	(7.8-11.2)	9.2
High School Grad or GED	525	27,462	25.7	(23.2-28.5)	5.2
Some College	640	34,488	32.3	(29.6-35.2)	4.4
College Degree +	490	34,737	32.6	(29.9-35.4)	4.3
Pre-pregnancy Insurance					
Uninsured	101	7,607	7.3	(5.7-9.3)	12.5
Medicaid/Public Insurance	745	32,698	31.3	(28.7-34.1)	4.4
Private Insurance	975	63,998	61.4	(58.4-64.2)	3.8

Table 12. Distribution of selected maternal characteristics, MI PRAMS 2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Total	1,870	106,645	100.0		
Race/Ethnicity					
White, non-Hispanic	806	72,317	68.1	(65.9-70.2)	3.4
Black, non-Hispanic	878	19,443	18.3	(17.9-18.8)	1.3
Hispanic	73	6,624	6.2	(4.8-8.0)	12.9
Marital Status					
Married	879	63,006	59.2	(56.4-61.9)	3.4
Other	990	43,479	40.8	(38.1-43.6)	3.4
Maternal Age					
<20 Years	97	4,497	4.2	(3.2-5.5)	13.3
20-29 Years	983	53,605	50.3	(47.4-53.2)	3.0
30+ Years	790	48,543	45.5	(42.7-48.4)	3.2
Maternal Education					
<High School	222	10,543	10.0	(8.4-11.9)	8.8
High School Grad or GED	531	27,649	26.3	(23.8-28.9)	5.0
Some College	584	31,018	29.5	(26.9-32.2)	4.6
College Degree +	509	36,088	34.3	(31.6-37.1)	4.1
Pre-pregnancy Insurance					
Uninsured	102	7,313	7.1	(5.6-8.9)	11.8
Medicaid/Public Insurance	768	33,119	32.2	(29.6-34.9)	4.2
Private Insurance	932	62,499	60.7	(57.8-63.5)	3.7

MICH-16.1

Increase the proportion of women delivering a live birth who discussed preconception health with a health care worker prior to pregnancy

Survey Question:

Phase 5 (2007 & 2008): Not measured

Phase 6 (2009-2011): Before you got pregnant with your new baby, did a doctor, nurse, or other health care worker talk with you about how to prepare for a healthy pregnancy and baby?

Phase 7 (2012-2015): Before you got pregnant with your new baby, did a doctor, nurse, or other health care worker talk to you about how to improve your health before pregnancy?

Phase 8 (2016-2018): During any of your health care visits in the 12 months before you got pregnant, did a doctor, nurse, or other health care worker do any of the following things?

- Talk to me about how I could improve my health before a pregnancy

Response: Mothers who answered yes were included in this analysis.

Table 13. Preconception health discussion with health care worker prior to pregnancy by birth year, MI PRAMS 2009-2018

Year	Prepregnancy Health Discussion	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2009	Yes	516	33,839	30.1	(27.5-32.8)	4.5
2010	Yes	463	35,330	32.1	(29.4-35.0)	4.4
2011	Yes	575	36,176	32.9	(30.4-35.6)	4.0
2012	Yes	461	23,807	21.9	(19.6-24.5)	5.8
2013	Yes	445	22,414	20.4	(18.1-22.9)	6.1
2014	Yes	386	24,537	22.2	(19.8-24.9)	5.8
2015	Yes	381	24,331	22.3	(19.9-25.0)	5.9
2016	Yes	397	24,526	33.3	(30.0-36.7)	5.2
2017	Yes	339	17,819	23.9	(21.1-27.0)	6.3
2018	Yes	344	19,603	27.2	(24.2-30.5)	5.8

Table 14. Preconception health discussion by selected maternal demographic characteristics, MI PRAMS 2016-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Race/Ethnicity					
White, non-Hispanic	513	42979	26.8	(24.6-29.1)	4.2
Black, non-Hispanic	463	10468	33.3	(30.7-36.0)	4.0
Hispanic	37	3337	27.2	(19.2-36.9)	16.8
Marital Status					
Married	651	45443	30.7	(28.4-33.1)	3.9
Other	429	16504	22.9	(20.2-25.7)	6.2
Maternal Age					
<20 Years	43	1437	17.4	(11.3-25.7)	21.0
20-29 Years	515	26969	26.2	(23.7-28.9)	5.1
30+ Years	522	33542	30.8	(28.2-33.5)	4.4
Maternal Education					
<High School	80	3276	23.0	(17.2-30.0)	14.2
High School Grad or GED	225	11533	25.2	(21.4-29.5)	8.2
Some College	345	18348	27.5	(24.4-30.9)	6.0
College Degree +	415	27859	30.4	(27.6-33.4)	4.8
Pre-pregnancy Insurance					
Uninsured	19	1231	15.9	(9.0-26.4)	27.5
Medicaid/Public Insurance	318	12908	24.1	(20.8-27.6)	7.2
Private Insurance	709	45916	30.0	(27.8-32.3)	3.8

Table 15. Preconception health discussion by maternal prepregnancy insurance status, MI PRAMS 2009-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2009					
Uninsured	44	2,746	12.9	(9.1-18.0)	17.5
Medicaid/Public Insurance	180	8,667	32.0	(27.1-37.4)	8.2
Private Insurance	287	22,222	35.4	(31.7-39.2)	5.4
2010					
Uninsured	37	2,773	14.0	(9.6-19.9)	18.5
Medicaid/Public Insurance	143	8,310	29.1	(24.4-34.4)	8.8
Private Insurance	274	23,846	39.2	(35.2-43.2)	5.2
2011					
Uninsured	44	2,990	14.3	(10.3-19.6)	16.4
Medicaid/Public Insurance	179	8,321	29.5	(25.0-34.4)	8.2
Private Insurance	349	24,645	41.2	(37.5-44.9)	4.6
2012					
Uninsured	21	1,256	7.2	(4.2-12.1)	26.9
Medicaid/Public Insurance	195	7,340	24.4	(19.8-29.7)	10.3
Private Insurance	242	15,116	25.2	(21.9-28.8)	7.0
2013					
Uninsured	27	1,748	9.7	(5.7-16.1)	26.6
Medicaid/Public Insurance	196	6,526	22.0	(17.9-26.7)	10.3
Private Insurance	218	13,947	22.8	(19.5-26.4)	7.7
2014					
Uninsured	19	1,058	6.4	(3.5-11.2)	29.4
Medicaid/Public Insurance	155	7,556	23.5	(19.0-28.6)	10.4
Private Insurance	211	15,904	26.0	(22.6-29.8)	7.0
2015					
Uninsured	10	446	4.0**	(1.8-8.9)	41.6
Medicaid/Public Insurance	168	8,759	25.0	(20.7-29.9)	9.4
Private Insurance	202	15,096	24.1	(20.8-27.8)	7.5
2016					
Uninsured	8	586	29.0	(13.6-51.4)	34.5
Medicaid/Public Insurance	106	4,862	30.6	(24.1-37.9)	11.6
Private Insurance	276	18,707	34.6	(30.7-38.6)	5.9
2017					
Uninsured	7	466	15.7**	(5.6-37.1)	49.5
Medicaid/Public Insurance	102	3,742	19.6	(15.0-25.2)	13.2
Private Insurance	215	12,928	25.7	(22.1-29.6)	7.4
2018					
Uninsured	*	*	*	*	*
Medicaid/Public Insurance	110	4,304	23.0	(17.9-29.1)	12.4
Private Insurance	218	14,281	29.5	(25.8-33.6)	6.8

***Data not shown due to small sample size and/or relative standard error > 50%**

****Relative standard error (RSE) exceeds 30%. Interpret with caution.**

MICH-16.2

Increase the proportion of women delivering a live birth who took multivitamins/folic acid prior to pregnancy

Survey Question: During the month before you got pregnant with your new baby, how many times a week did you take a multivitamin, a prenatal vitamin, or a folic acid vitamin?

Response: Mothers who answered that they took a multivitamin, prenatal vitamin, or folic acid vitamin every day of the week were considered in this analysis.

Table 16. Daily multivitamin or folic acid prior to pregnancy by birth year, MI PRAMS 2007-2018

Year	Daily Multivitamin Use	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2007	Yes	440	36,085	29.7	(27.1-32.5)	4.6
2008	Yes	432	32,372	27.6	(25.1-30.2)	4.7
2009	Yes	427	30,558	27.0	(24.6-29.7)	4.8
2010	Yes	385	31,904	28.8	(26.1-31.6)	4.8
2011	Yes	470	33,164	30.1	(27.6-32.7)	4.3
2012	Yes	524	33,325	30.4	(27.7-33.3)	4.7
2013	Yes	545	33,845	30.8	(28.0-33.6)	4.7
2014	Yes	475	34,495	31.1	(28.3-34.0)	4.7
2015	Yes	463	36,299	33.1	(30.2-36.1)	4.6
2016	Yes	572	38,255	34.9	(32.2-37.8)	4.1
2017	Yes	549	32,495	30.3	(27.6-33.1)	4.6
2018	Yes	602	37,937	35.8	(33.1-38.6)	4.0

Table 17. Daily multivitamin or folic acid prior to pregnancy by selected maternal demographic characteristics, MI PRAMS 2016-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Race/Ethnicity					
White, non-Hispanic	922	79632	36.8	(34.7-39.0)	3.0
Black, non-Hispanic	606	13743	23.5	(21.8-25.3)	3.8
Hispanic	65	5660	26.9	(20.9-34.0)	12.5
Marital Status					
Married	1124	84455	43.5	(41.3-45.8)	2.6
Other	598	24073	18.7	(16.8-20.8)	5.3
Maternal Age					
<20 Years	75	2517	16.9	(12.1-23.1)	16.6
20-29 Years	745	45576	27.2	(25.1-29.4)	4.0
30+ Years	903	60595	43.2	(40.7-45.8)	3.0
Maternal Education					
<High School	147	5704	18.0	(14.4-22.4)	11.3
High School Grad or GED	348	19562	23.5	(20.6-26.5)	6.4
Some College	488	29348	30.3	(27.5-33.1)	4.7
College Degree +	718	52963	49.3	(46.3-52.2)	3.0
Pre-pregnancy Insurance					
Uninsured	50	3211	14.8	(10.6-20.3)	16.6
Medicaid/Public Insurance	446	19400	20.4	(18.1-22.9)	6.0
Private Insurance	1159	82281	42.3	(40.1-44.5)	2.6

Table 18. Daily multivitamin or folic acid prior to pregnancy by marital status, MI PRAMS 2007-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2007					
Married	313	27,916	38.3	(34.7-42.0)	4.9
Other	127	8,169	16.9	(13.8-20.5)	10.1
2008					
Married	318	25,897	37.3	(33.7-41.0)	5.0
Other	114	6,475	13.5	(10.9-16.7)	11.0
2009					
Married	295	23,703	37.5	(33.8-41.3)	5.2
Other	132	6,855	13.8	(11.2-16.9)	10.6
2010					
Married	290	26,448	39.6	(35.8-43.5)	5.0
Other	95	5,456	12.4	(9.8-15.5)	11.7
2011					
Married	358	26,575	41.3	(37.7-45.0)	4.5
Other	112	6,589	14.4	(11.7-17.6)	10.5
2012					
Married	332	24,832	40.6	(36.7-44.6)	5.0
Other	192	8,493	17.6	(14.3-21.4)	10.2
2013					
Married	368	25,736	40.6	(36.7-44.6)	5.0
Other	177	8,109	17.4	(14.0-21.3)	10.7
2014					
Married	325	27,187	42.7	(38.8-46.7)	4.8
Other	150	7,308	15.5	(12.3-19.2)	11.3
2015					
Married	336	29,033	45.0	(40.9-49.2)	4.7
Other	127	7,266	16.1	(12.8-20.1)	11.6
2016					
Married	384	30,371	45.4	(41.6-49.3)	4.3
Other	188	7,884	18.5	(15.3-22.2)	9.4
2017					
Married	340	25,256	39.2	(35.4-43.1)	5.0
Other	209	7,240	16.9	(13.9-20.4)	9.7
2018					
Married	400	28,828	46.0	(42.2-49.9)	4.3
Other	201	8,950	20.7	(17.4-24.5)	8.7

MICH-16.3

Increase the proportion of women delivering a live birth who did not smoke prior to pregnancy

Survey Question:

Phase 6, 7, and 8 (2009-2018): Have you smoked any cigarettes in the past 2 years?

In the 3 months before you got pregnant, how many cigarettes did you smoke on an average day?

Response: Mothers who answered no to having smoked any cigarettes in the past two years, and mothers who answered that they smoked 0 cigarettes in the 3 months before pregnancy were coded as nonsmokers.

Table 19. Nonsmokers prior to pregnancy by birth year, MI PRAMS 2009-2018

Year	Nonsmoker prior to pregnancy	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2009	Yes	1,132	75,316	66.8	(64.0-69.5)	4.2
2010	Yes	985	74,292	67.3	(64.3-70.1)	4.6
2011	Yes	1,170	77,545	70.8	(68.1-73.4)	4.6
2012	Yes	1,397	74,602	69.0	(66.0-71.8)	4.7
2013	Yes	1,479	79,827	73.0	(70.1-75.7)	5.3
2014	Yes	1,169	76,909	70.0	(66.9-72.9)	5.1
2015	Yes	1,156	80,541	75.0	(72.0-77.7)	5.8
2016	Yes	1,391	85,024	78.0	(75.4-80.5)	5.8
2017	Yes	1,457	83,629	78.5	(75.9-80.9)	5.9
2018	Yes	1,440	82,350	78.0	(75.4-80.4)	5.8

Table 20. Nonsmokers prior to pregnancy by selected maternal demographic characteristics, MI PRAMS 2016-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Race/Ethnicity					
White, non-Hispanic	1786	162587	75.7	(73.6-77.6)	4.2
Black, non-Hispanic	2005	45865	78.9	(77.2-80.5)	4.0
Hispanic	192	18412	87.3	(81.3-91.5)	20.4
Marital Status					
Married	2289	169948	87.9	(86.3-89.4)	6.4
Other	1996	80830	63.4	(60.8-65.9)	3.6
Maternal Age					
<20 Years	270	10885	72.6	(64.9-79.1)	13.3
20-29 Years	2193	120545	72.4	(70.1-74.5)	4.1
30+ Years	1825	119573	85.7	(83.8-87.4)	6.3
Maternal Education					
<High School	394	17984	57.4	(52.0-62.7)	6.4
High School Grad or GED	1061	55829	67.2	(63.8-70.4)	5.2
Some College	1380	74330	76.9	(74.1-79.4)	5.8
College Degree +	1404	100257	93.9	(92.2-95.2)	12.2
Pre-pregnancy Insurance					
Uninsured	213	13454	62.7	(84.9-88.1)	5.9
Medicaid/Public Insurance	1429	61332	64.6	(61.6-67.5)	4.2
Private Insurance	2491	168040	86.6	(55.3-69.5)	9.8

Table 21. Nonsmokers prior to pregnancy by maternal age, MI PRAMS 2009-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2009					
<20 Years	155	7,068	58.5	(49.3-67.1)	11.1
20-29 Years	533	34,606	58.6	(54.6-62.5)	4.9
30+ Years	444	33,642	80.9	(76.8-84.4)	10.0
2010					
<20 Years	102	5,642	62.2	(51.5-71.8)	13.8
20-29 Years	473	35,782	59.3	(55.0-63.3)	5.2
30+ Years	410	32,868	80.2	(76.0-83.8)	10.1
2011					
<20 Years	106	6,722	58.1	(48.4-67.1)	11.5
20-29 Years	601	40,359	67.7	(63.8-71.3)	5.9
30+ Years	463	30,463	79.5	(75.7-82.9)	9.0
2012					
<20 Years	145	4,903	53.5	(42.3-64.4)	12.3
20-29 Years	730	37,406	64.0	(59.9-67.9)	5.7
30+ Years	522	32,294	79.7	(75.5-83.4)	9.9
2013					
<20 Years	126	5,149	68.0	(54.6-79.0)	19.8
20-29 Years	799	40,945	68.1	(64.0-72.0)	6.4
30+ Years	554	33,733	80.9	(76.7-84.4)	10.4
2014					
<20 Years	88	4,686	59.8	(46.1-72.1)	16.8
20-29 Years	611	38,335	64.6	(60.3-68.8)	6.2
30+ Years	470	33,888	79.2	(74.8-83.0)	10.0
2015					
<20 Years	76	3,209	80.9**	(63.7-91.0)	36.3
20-29 Years	617	41,104	70.7	(66.4-74.6)	7.1
30+ Years	463	36,228	80.0	(75.7-83.7)	10.2

****Relative standard error (RSE) exceeds 30%. Interpret with caution.**

Table 21 (continued). Nonsmokers prior to pregnancy by maternal age, MI PRAMS 2009-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2016					
<20 Years	92	4,304	77.7	(64.7-86.9)	25.6
20-29 Years	702	39,126	69.6	(65.5-73.4)	6.7
30+ Years	597	41,595	88.1	(85.0-90.6)	11.9
2017					
<20 Years	102	3,504	70.4	(56.1-81.6)	22.3
20-29 Years	762	42,531	74.3	(70.5-77.8)	7.3
30+ Years	593	37,594	84.8	(81.2-87.8)	10.9
2018					
<20 Years	76	3,078	68.6	(54.5-80.0)	21.1
20-29 Years	729	38,889	73.2	(69.2-76.8)	7.2
30+ Years	635	40,384	84.2	(80.7-87.1)	10.2

MICH-16.4

Increase the proportion of women delivering a live birth who did not drink alcohol prior to pregnancy

Survey Question:

Phase 5, 6, 7, & 8 (2007-2018): Have you had any alcoholic drinks in the past 2 years?

During the 3 months before you got pregnant, how many alcoholic drinks did you have in an average week?

Response: Mothers who answered that they did not drink alcohol in the past 2 years and mothers who answered that they did not drink during the 3 months before they got pregnant were considered in this analysis.

Table 22. No alcohol use prior to pregnancy by birth year, MI PRAMS 2007-2018

Year	Prepregnancy Alcohol Use	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2007	No	622	45,598	38.2	(35.4-41.0)	3.8
2008	No	716	44,376	38.3	(35.6-41.1)	3.7
2009	No	649	39,520	35.2	(32.5-38.0)	4.0
2010	No	561	41,660	38.3	(35.4-41.3)	3.9
2011	No	621	39,053	35.9	(33.2-38.6)	3.8
2012	No	837	41,217	38.0	(35.1-41.0)	4.0
2013	No	824	39,982	36.7	(33.8-39.7)	4.1
2014	No	656	40,471	36.9	(33.9-39.9)	4.2
2015	No	630	38,317	35.7	(32.7-38.7)	4.3
2016	No	759	41,456	38.3	(35.5-41.3)	3.8
2017	No	800	39,663	37.5	(34.7-40.4)	3.9
2018	No	765	37,991	36.1	(33.4-38.9)	3.9

Table 23. No alcohol use prior to pregnancy by selected maternal demographic characteristics, MI PRAMS 2016-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Race/Ethnicity					
White, non-Hispanic	689	62942	29.4	(27.4-31.6)	3.6
Black, non-Hispanic	1307	29291	50.9	(48.8-53.0)	2.1
Hispanic	103	9917	47.4	(39.9-55.0)	8.2
Marital Status					
Married	954	64912	33.7	(31.6-35.9)	3.2
Other	1367	53977	42.7	(40.2-45.3)	3.1
Maternal Age					
<20 Years	256	10380	69.3	(61.6-76.1)	12.1
20-29 Years	1278	63825	38.7	(36.4-41.0)	3.0
30+ Years	790	44904	32.3	(29.9-34.7)	3.8
Maternal Education					
<High School	426	20175	64.5	(59.2-69.6)	7.5
High School Grad or GED	790	39609	48.2	(44.7-51.7)	3.7
Some College	656	31759	33.1	(30.4-36.0)	4.4
College Degree +	417	26103	24.5	(22.1-27.0)	5.2
Pre-pregnancy Insurance					
Uninsured	140	8315	39.6	(32.8-46.9)	9.1
Medicaid/Public Insurance	1113	49252	52.2	(49.1-55.2)	3.2
Private Insurance	951	55272	28.6	(26.7-30.6)	3.5

Table 24. No alcohol use prior to pregnancy by maternal education, MI PRAMS 2007-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2007					
<High School	232	17,920	45.9	(40.7-51.2)	5.9
High School Grad or GED	174	12,496	42.1	(36.3-48.0)	7.1
Some College	100	6,120	31.8	(25.9-38.4)	10.1
College Degree +	106	8,565	28.6	(23.8-34.1)	9.2
2008					
<High School	169	10,256	56.8	(49.3-64.1)	8.8
High School Grad or GED	219	12,316	40.1	(34.7-45.7)	7.0
Some College	202	12,252	35.1	(30.5-40.0)	6.9
College Degree +	122	9,048	29.2	(24.5-34.4)	8.7
2009					
<High School	137	8,005	49.5	(41.3-57.8)	8.5
High School Grad or GED	219	12,999	41.5	(36.3-46.9)	6.6
Some College	173	10,728	31.2	(26.8-36.1)	7.6
College Degree +	114	7,385	24.8	(20.4-29.8)	9.7
2010					
<High School	116	8,342	51.7	(43.5-59.8)	8.7
High School Grad or GED	160	12,711	46.1	(39.8-52.5)	7.0
Some College	156	10,203	31.3	(26.6-36.4)	8.0
College Degree +	127	10,208	32.3	(27.4-37.6)	8.1
2011					
<High School	146	9,943	64.6	(56.4-72.1)	11.4
High School Grad or GED	170	10,396	37.9	(32.5-43.5)	7.4
Some College	176	10,611	31.3	(26.9-36.1)	7.5
College Degree +	125	7,946	25.2	(21.1-29.7)	8.7
2012					
<High School	185	10,724	68.5	(59.4-76.4)	13.9
High School Grad or GED	265	11,224	42.5	(36.7-48.4)	7.0
Some College	239	10,900	30.8	(26.3-35.6)	7.7
College Degree +	142	8,186	26.6	(22.0-31.7)	9.3
2013					
<High School	154	7,010	54.1	(44.2-63.7)	11.0
High School Grad or GED	285	13,523	48.5	(42.1-55.0)	6.9
Some College	238	10,966	30.3	(25.9-35.2)	7.9
College Degree +	143	8,268	26.2	(21.7-31.3)	9.4

Table 24 (continued). No alcohol use prior to pregnancy by maternal education, MI PRAMS 2007-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2014					
<High School	116	7,386	57.7	(47.2-67.5)	12.4
High School Grad or GED	205	11,533	44.0	(37.7-50.5)	7.5
Some College	205	11,929	32.8	(28.1-37.9)	7.6
College Degree +	126	9,333	27.6	(23.1-32.6)	8.9
2015					
<High School	101	5,687	61.3	(50.3-71.3)	14.0
High School Grad or GED	206	12,703	45.7	(39.3-52.2)	7.2
Some College	192	10,379	31.2	(26.4-36.4)	8.2
College Degree +	126	9,138	25.2	(20.9-30.1)	9.3
2016					
<High School	150	7,624	68.2	(58.9-76.2)	14.0
High School Grad or GED	249	13,787	49.2	(43.0-55.4)	6.5
Some College	209	10,772	34.5	(29.7-39.6)	7.3
College Degree +	144	9,071	24.5	(20.5-29.0)	8.8
2017					
<High School	134	6,054	62.5	(52.7-71.4)	12.9
High School Grad or GED	284	13,268	49.4	(43.4-55.5)	6.3
Some College	236	11,682	34.4	(29.6-39.5)	7.4
College Degree +	130	7,999	23.5	(19.4-28.1)	9.5
2018					
<High School	142	6,497	62.5	(53.2-70.9)	12.2
High School Grad or GED	257	12,554	46.0	(40.3-51.9)	6.4
Some College	211	9,305	30.3	(25.8-35.4)	8.1
College Degree +	143	9,033	25.4	(21.3-29.9)	8.6

Table 25. No alcohol use prior to pregnancy by maternal age, MI PRAMS 2007-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2007					
<20 Years	125	9,117	67.2	(58.4-75.0)	13.1
20-29 Years	305	20,692	33.6	(29.9-37.5)	5.8
30+ Years	192	15,790	35.6	(31.1-40.3)	6.6
2008					
<20 Years	137	7,010	55.8	(47.3-63.9)	9.7
20-29 Years	355	23,131	36.9	(33.2-40.7)	5.2
30+ Years	224	14,235	35.1	(30.7-39.7)	6.6
2009					
<20 Years	143	7,263	60.4	(51.3-68.9)	11.4
20-29 Years	303	18,665	31.7	(28.2-35.5)	5.9
30+ Years	203	13,592	32.8	(28.5-37.4)	6.9
2010					
<20 Years	96	5,780	64.2	(53.8-73.5)	14.2
20-29 Years	272	21,132	35.6	(31.7-39.7)	5.7
30+ Years	193	14,748	36.6	(32.0-41.5)	6.6
2011					
<20 Years	102	7,059	63.1	(53.5-71.8)	12.8
20-29 Years	321	20,305	34.2	(30.6-37.9)	5.4
30+ Years	198	11,690	30.6	(26.6-34.9)	6.9
2012					
<20 Years	136	6,020	65.8	(54.8-75.2)	15.4
20-29 Years	452	21,078	35.9	(32.1-40.0)	5.6
30+ Years	249	14,119	34.6	(30.1-39.4)	6.9
2013					
<20 Years	126	5,749	76.2	(62.9-85.8)	24.7
20-29 Years	438	20,976	35.3	(31.4-39.4)	5.8
30+ Years	260	13,257	31.6	(27.3-36.2)	7.2
2014					
<20 Years	85	5,117	65.3	(51.6-76.9)	18.9
20-29 Years	359	22,076	37.4	(33.3-41.6)	5.7
30+ Years	212	13,278	30.9	(26.7-35.5)	7.3
2015					
<20 Years	61	2,618	65.3	(49.6-78.3)	21.7
20-29 Years	357	21,857	37.6	(33.5-41.8)	5.7
30+ Years	212	13,842	30.6	(26.4-35.2)	7.4

Table 25 (continued). No alcohol use prior to pregnancy by maternal age, MI PRAMS 2007-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2016					
<20 Years	93	4,176	76.1	(62.6-85.8)	24.9
20-29 Years	431	23,329	42.1	(38.1-46.3)	5.0
30+ Years	235	13,950	29.5	(25.7-33.7)	6.9
2017					
<20 Years	92	3,248	64.9	(51.1-76.6)	18.9
20-29 Years	444	21,638	38.1	(34.3-42.1)	5.3
30+ Years	264	14,777	33.6	(29.3-38.0)	6.6
2018					
<20 Years	71	2,956	65.9	(52.0-77.5)	19.4
20-29 Years	403	18,858	35.7	(31.8-39.7)	5.6
30+ Years	291	16,177	33.8	(29.8-37.9)	6.1

MICH-16.5

Increase the proportion of women delivering a live birth who had a healthy weight prior to pregnancy

Survey Question:

Phase 5, 6, 7, & 8 (2007-2018): Just before you got pregnant with your new baby, how much did you weigh?

How tall are you without shoes?

Response: Mothers who had a body mass index (BMI) between 18.5 and 24.9 were considered to have an optimal BMI.

Table 26. Optimal BMI prior to pregnancy by birth year, MI PRAMS 2007-2018

Year	Healthy BMI	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2007	Yes	678	58,090	48.5	(45.5-51.4)	3.1
2008	Yes	722	55,944	47.8	(45.0-50.7)	3.1
2009	Yes	769	55,371	50.0	(47.1-52.9)	3.0
2010	Yes	650	53,114	48.8	(45.8-51.9)	3.2
2011	Yes	726	50,282	46.8	(43.9-49.6)	3.1
2012	Yes	844	52,024	48.5	(45.4-51.5)	3.2
2013	Yes	841	49,715	46.4	(43.3-49.5)	3.4
2014	Yes	648	49,867	45.9	(42.8-49.1)	3.5
2015	Yes	693	51,657	48.4	(45.2-51.6)	3.3
2016	Yes	750	49,992	46.9	(43.9-49.9)	3.3
2017	Yes	729	46,399	44.1	(41.2-47.1)	3.5
2018	Yes	681	41,829	40.6	(37.8-43.6)	3.6

Table 27. Optimal BMI prior to pregnancy by selected maternal demographic characteristics, MI PRAMS 2016-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Race/Ethnicity					
White, non-Hispanic	1106	100267	46.2	(44.0-48.5)	2.5
Black, non-Hispanic	829	18774	31.7	(29.9-33.7)	3.0
Hispanic	71	6704	31.7	(25.1-39.1)	11.3
Marital Status					
Married	1124	89821	46.1	(43.8-48.3)	2.5
Other	1035	48364	37.4	(35.0-40.0)	3.4
Maternal Age					
<20 Years	158	7146	47.4	(39.9-55.0)	8.2
20-29 Years	1128	67246	39.9	(37.6-42.3)	3.0
30+ Years	874	63828	45.3	(42.8-47.8)	2.9
Maternal Education					
<High School	250	13124	40.9	(35.8-46.3)	6.6
High School Grad or GED	529	29552	35.3	(32.0-38.6)	4.8
Some College	617	36453	37.4	(34.5-40.4)	4.0
College Degree +	748	58059	53.8	(50.9-56.7)	3.2
Pre-pregnancy Insurance					
Uninsured	109	7914	36.3	(29.7-43.5)	9.7
Medicaid/Public Insurance	733	33055	34.4	(31.6-37.4)	4.2
Private Insurance	1241	92802	47.5	(45.3-49.7)	2.4

Table 28. Optimal BMI prior to pregnancy by maternal race, MI PRAMS 2007-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2007					
Non-Hispanic White	431	44,805	51.3	(47.7-55.0)	3.8
Non-Hispanic Black	182	6,947	33.5	(29.4-37.9)	6.5
Hispanic	24	2,494	47.6	(32.9-62.7)	16.5
2008					
Non-Hispanic White	408	40,057	49.3	(45.6-52.9)	3.8
Non-Hispanic Black	231	7,918	38.5	(34.3-42.8)	5.6
Hispanic	19	2,021	41.3	(27.2-57.0)	19.0
2009					
Non-Hispanic White	416	39,743	51.2	(47.5-54.9)	3.9
Non-Hispanic Black	272	7,689	38.9	(35.1-42.9)	5.1
Hispanic	31	3,480	55.9	(41.9-68.9)	16.0
2010					
Non-Hispanic White	385	39,707	51.6	(47.8-55.5)	4.1
Non-Hispanic Black	208	7,542	38.6	(34.3-43.1)	5.8
Hispanic	24	2,659	43.6	(30.0-58.2)	16.9
2011					
Non-Hispanic White	430	36,674	49.1	(45.5-52.7)	3.8
Non-Hispanic Black	226	7,249	36.3	(32.3-40.4)	5.8
Hispanic	24	2,415	39.0	(26.8-52.7)	17.3
2012					
Non-Hispanic White	409	38,230	51.2	(47.2-55.1)	4.1
Non-Hispanic Black	353	6,969	37.0	(33.5-40.6)	4.9
Hispanic	31	2,772	47.1	(32.7-62.1)	16.4
2013					
Non-Hispanic White	398	37,634	48.8	(44.8-52.8)	4.2
Non-Hispanic Black	377	7,547	38.9	(35.2-42.6)	4.8
Hispanic	25	2,150	40.1	(26.3-55.7)	19.3
2014					
Non-Hispanic White	361	37,920	49.6	(45.5-53.6)	4.2
Non-Hispanic Black	224	5,994	31.6	(28.0-35.5)	6.1
Hispanic	23	2,575	44.2	(30.3-58.9)	17.0
2015					
Non-Hispanic White	377	39,295	52.5	(48.4-56.5)	4.4
Non-Hispanic Black	255	6,585	34.3	(30.5-38.2)	5.8
Hispanic	23	2,408	50.0	(34.2-65.7)	16.6

Table 28 (continued). Optimal BMI prior to pregnancy by maternal race, MI PRAMS 2007-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2016					
Non-Hispanic White	389	36,189	50.2	(46.3-54.1)	4.0
Non-Hispanic Black	279	6,731	35.7	(32.3-39.3)	5.0
Hispanic	28	2,589	37.1	(25.5-50.4)	17.5
2017					
Non-Hispanic White	361	33,309	47.7	(43.7-51.7)	4.2
Non-Hispanic Black	290	6,259	32.4	(29.2-35.8)	5.2
Hispanic	24	2,463	35.1	(23.6-48.7)	18.6
2018					
Non-Hispanic White	356	30,770	43.4	(39.7-47.2)	4.4
Non-Hispanic Black	260	5,784	31.1	(27.8-34.5)	5.5
Hispanic	19	1,652	27.2	(16.9-40.6)	22.5

MICH-16.6

Increase the proportion of women delivering a live birth who used a most effective or moderately effective contraception method postpartum

Survey Question:

Phase 5, 6, 7, & 8 (2007-2018): Are you or your husband or partner doing anything now to keep from getting pregnant?

What kind of birth control are you or your husband or partner using now to keep from getting pregnant?

Response: Mothers who were currently pregnant or had a hysterectomy were excluded. The most effective methods of contraception are male or female sterilization, implants, and intrauterine devices or systems (IUD/IUS). Moderately effective methods of contraception are injectables, oral pills, patch, ring, or diaphragm. Mothers who reported using any of these methods were coded as having used a most or moderately effective method.

Table 29. Most or moderately effective contraception method postpartum by birth year, MI PRAMS 2007-2018

Year	Postpartum Contraception	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2007	Most or Moderate	856	67,612	58.9	(55.9-61.8)	3.6
2008	Most or Moderate	934	66,193	58.6	(55.7-61.4)	3.5
2009	Most or Moderate	975	65,362	59.5	(56.7-62.4)	3.6
2010	Most or Moderate	805	61,836	59.3	(56.2-62.3)	3.8
2011	Most or Moderate	923	61,020	58.4	(55.6-61.2)	3.5
2012	Most or Moderate	1,090	58,775	58.1	(55.0-61.1)	3.7
2013	Most or Moderate	1,165	59,509	56.9	(53.8-60.0)	3.7
2014	Most or Moderate	901	60,182	58.1	(54.9-61.2)	3.8
2015	Most or Moderate	851	57,038	55.3	(52.1-58.4)	3.6
2016	Most or Moderate	964	58,904	58.0	(55.0-61.0)	3.6
2017	Most or Moderate	1,015	57,996	57.7	(54.6-60.6)	3.6
2018	Most or Moderate	957	53,895	54.7	(51.6-57.6)	3.4

Table 30. Most or moderately effective contraceptive postpartum by selected maternal demographic characteristics, MI PRAMS 2016-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Race/Ethnicity					
White, non-Hispanic	1248	117209	57.5	(55.2-59.7)	2.7
Black, non-Hispanic	1437	32189	60.8	(58.6-62.8)	2.7
Hispanic	117	10749	54.8	(46.9-62.4)	8.8
Marital Status					
Married	1273	93761	51.6	(49.3-53.9)	2.4
Other	1661	76848	64.7	(62.1-67.2)	3.7
Maternal Age					
<20 Years	198	8984	66.8	(59.0-73.8)	11.5
20-29 Years	1602	91494	58.5	(56.1-60.9)	3.0
30+ Years	1136	70317	53.7	(51.1-56.3)	2.9
Maternal Education					
<High School	362	17434	60.6	(54.9-66.0)	7.2
High School Grad or GED	862	48091	63.4	(59.8-66.8)	4.9
Some College	988	53752	58.4	(55.2-61.4)	3.8
College Degree +	686	49732	49.3	(46.2-52.3)	3.1
Postpartum Insurance					
Uninsured	76	4961	39.4	(30.4-49.1)	12.2
Medicaid/Public Insurance	1432	69805	64.4	(61.6-67.1)	3.9
Private Insurance	1330	91055	54.3	(52.0-56.7)	2.6

Table 31. Most or moderately effective contraceptive postpartum by postpartum insurance status, MI PRAMS 2007-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2007					
Medicaid/Public Insurance	413	29,308	65.0	(60.3-69.3)	6.6
Private Insurance	420	36,602	56.2	(52.2-60.0)	4.6
2008					
Medicaid/Public Insurance	498	31,697	65.3	(61.0-69.4)	6.2
Private Insurance	397	32,031	54.0	(49.9-58.0)	4.5
2009					
Medicaid/Public Insurance	559	34,292	68.5	(64.3-72.3)	6.5
Private Insurance	335	26,407	52.2	(47.9-56.5)	4.6
2010					
Medicaid/Public Insurance	461	32,623	67.4	(63.0-71.6)	6.8
Private Insurance	311	27,156	52.8	(48.4-57.2)	4.8
2011					
Medicaid/Public Insurance	508	32,193	66.0	(61.9-69.9)	6.0
Private Insurance	380	26,742	51.4	(47.3-55.5)	4.3
2012					
Medicaid/Public Insurance	691	32,638	64.7	(60.4-68.8)	6.1
Private Insurance	336	23,505	51.7	(47.0-56.3)	4.9
2013					
Medicaid/Public Insurance	729	32,658	64.6	(60.2-68.8)	6.2
Private Insurance	373	24,588	49.1	(44.6-53.7)	4.8
2014					
Medicaid/Public Insurance	524	30,992	62.8	(58.2-67.2)	6.2
Private Insurance	318	25,720	52.7	(48.0-57.3)	5.0
2015					
Medicaid/Public Insurance	492	29,050	60.8	(56.1-65.4)	6.1
Private Insurance	308	24,935	49.9	(45.3-54.5)	4.7
2016					
Medicaid/Public Insurance	441	22,452	65.1	(60.3-69.7)	6.9
Private Insurance	462	32,523	56.8	(52.7-60.8)	4.8
2017					
Medicaid/Public Insurance	513	24,204	66.0	(61.1-70.6)	7.1
Private Insurance	449	30,592	54.8	(50.7-58.8)	4.6
2018					
Medicaid/Public Insurance	478	23,148	62.2	(57.4-66.8)	6.4
Private Insurance	419	27,940	51.3	(47.2-55.3)	4.3

MICH-18

Reduce postpartum relapse of smoking among women who quit smoking during pregnancy

Survey Question:

Phase 6, 7, and 8 (2009-2018): Have you smoked any cigarettes in the past 2 years?

In the last 3 months of your pregnancy, how many cigarettes did you smoke on an average day?

How many cigarettes do you smoke on an average day now?

Response: Mothers who answered yes to having smoked any cigarettes in the past 2 years and answered that they smoked 0 cigarettes during the last 3 months of their pregnancy were considered smokers who quit. Any of these mothers who reported smoking cigarettes on an average day now were considered to have relapsed smoking postpartum and are included in the responses below.

Table 32. Postpartum relapse of smoking among women who quit during pregnancy by birth year, MI PRAMS 2009-2018

Year	Postpartum Relapse	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2009	Yes	120	8047	45.8	(38.2-53.3)	3.9
2010	Yes	96	7694	44.1	(36.1-51.9)	4.0
2011	Yes	107	6299	40.0	(32.7-47.4)	3.7
2012	Yes	122	7450	47.8	(39.3-56.3)	4.3
2013	Yes	123	6168	41.5	(32.9-50.2)	4.4
2014	Yes	100	6117	39.4	(31.0-47.8)	4.3
2015	Yes	98	5233	40.8	(31.7-49.8)	4.6
2016	Yes	96	5834	50.1	(40.8-59.4)	4.7
2017	Yes	95	4689	44.5	(34.8-54.1)	4.9
2018	Yes	82	4933	40.3	(31.4-49.3)	4.6

Table 33. Postpartum relapse of smoking among women who quit during pregnancy by selected maternal demographic characteristics, MI PRAMS 2016-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Race/Ethnicity					
White, non-Hispanic	108	10365	41.3	(34.8-48.0)	8.2
Black, non-Hispanic	145	3455	54.4	(48.0-60.5)	7.0
Hispanic	11	1231	57.1	(33.5-77.9)	28.3
Marital Status					
Married	80	6128	42.0	(33.9-50.5)	10.2
Other	193	9327	47.0	(40.3-53.9)	7.5
Maternal Age					
<20 Years	16	749	45.4	(25.2-67.3)	25.2
20-29 Years	177	10380	45.9	(39.3-52.7)	7.5
30+ Years	80	4326	42.5	(33.7-51.9)	11.1
Maternal Education					
<High School	57	2677	61.9	(47.3-74.5)	18.6
High School Grad or GED	90	4999	43.3	(34.1-52.9)	11.2
Some College	96	5181	41.6	(33.4-50.3)	10.5
College Degree +	26	2383	41.9	(29.4-55.4)	16.2
Postpartum Insurance					
Uninsured	11	899	64.5**	(35.0-86.0)	40.0
Medicaid/Public Insurance	164	8105	47.6	(40.2-55.2)	8.1
Private Insurance	85	6112	40.3	(32.7-48.4)	10.0

****Relative standard error (RSE) exceeds 30%. Interpret with caution.**

Table 34. Postpartum relapse of smoking among women who quit during pregnancy by maternal race, MI PRAMS 2009-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2009					
Non-Hispanic White	62	5,745	44.8	(35.9-54.1)	10.5
Non-Hispanic Black	51	1,436	56.2	(45.0-66.8)	12.9
2010					
Non-Hispanic White	49	5,203	39.6	(30.8-49.2)	12.0
Non-Hispanic Black	38	1,497	60.0	(47.0-71.7)	16.1
2011					
Non-Hispanic White	51	4,409	37.2	(28.6-46.6)	12.4
Non-Hispanic Black	51	1,646	64.8	(53.1-74.9)	16.1
2012					
Non-Hispanic White	55	5,398	44.5	(34.8-54.7)	11.6
Non-Hispanic Black	58	1,200	58.4	(47.4-68.6)	13.1
2013					
Non-Hispanic White	37	4,274	37.5	(27.7-48.4)	14.2
Non-Hispanic Black	79	1,455	59.0	(48.3-69.0)	13.1
2014					
Non-Hispanic White	42	4,274	35.6	(26.3-46.0)	14.3
Non-Hispanic Black	52	1,289	54.5	(43.2-65.3)	12.6
2015					
Non-Hispanic White	30	3,276	35.8	(25.2-48.1)	16.6
Non-Hispanic Black	63	1,536	57.4	(46.3-67.7)	13.0
2016					
Non-Hispanic White	40	3,974	47.1	(35.8-58.6)	12.6
Non-Hispanic Black	50	1,257	54.6	(44.0-64.9)	11.9
2017					
Non-Hispanic White	37	2,950	41.0	(29.3-53.8)	15.6
Non-Hispanic Black	52	1,196	52.1	(41.6-62.5)	11.2
2018					
Non-Hispanic White	31	3,442	36.3	(26.5-47.4)	14.9
Non-Hispanic Black	43	1,002	56.9	(45.2-67.9)	13.6

****Relative standard error (RSE) exceeds 30%. Interpret with caution.**

MICH-19

Increase the proportion of women giving birth who attend a postpartum care visit with a health care worker

Survey Question:

Phase 6, 7, & 8 (2009-2018): Since your new baby was born, have you had a postpartum checkup for yourself?

Response: Mothers who answered yes are included in the responses below.

Table 35. Postpartum care visit by birth year, MI PRAMS 2009-2018

Year	Postpartum Visit	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2009	Yes	1,436	99,233	88.0	(86.0-89.7)	7.9
2010	Yes	1,245	98,570	89.9	(87.9-91.6)	9.3
2011	Yes	1,454	97,747	89.7	(87.8-91.3)	8.7
2012	Yes	1,719	97,439	90.6	(88.7-92.3)	9.7
2013	Yes	1,779	99,156	91.1	(89.2-92.6)	9.9
2014	Yes	1,429	98,233	90.0	(87.9-91.8)	9.9
2015	Yes	1,364	97,271	90.7	(88.8-92.3)	9.7
2016	Yes	1,550	97,834	90.6	(88.7-92.2)	9.3
2017	Yes	1,642	96,703	91.3	(89.5-92.8)	9.5
2018	Yes	1,583	93,023	89.1	(87.2-90.8)	8.5

Table 36. Postpartum care visit by selected maternal demographic characteristics, MI PRAMS 2016-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Race/Ethnicity					
White, non-Hispanic	2176	199223	92.8	(91.5-93.9)	8.5
Black, non-Hispanic	2102	47382	83.4	(81.7-84.9)	4.8
Hispanic	193	18440	88.2	(82.2-92.4)	21.9
Marital Status					
Married	2419	180225	93.9	(92.7-94.9)	9.2
Other	2353	107109	84.9	(82.9-86.6)	6.2
Maternal Age					
<20 Years	268	12080	81.4	(74.3-86.8)	17.2
20-29 Years	2509	147121	89.3	(87.8-90.6)	6.7
30+ Years	1998	128359	92.6	(91.1-93.8)	9.5
Maternal Education					
<High School	470	23423	75.2	(70.3-79.6)	9.6
High School Grad or GED	1235	69963	85.7	(83.2-87.9)	8.5
Some College	1582	87812	91.6	(89.8-93.2)	10.2
College Degree +	1437	103609	97.3	(96.2-98.1)	17.8
Postpartum Insurance					
Uninsured	147	10700	83.5	(75.3-89.4)	21.6
Medicaid/Public Insurance	2016	96855	83.4	(81.2-85.4)	6.4
Private Insurance	2413	168755	95.8	(94.9-96.6)	10.4

Table 37. Postpartum care visit by postpartum insurance status, MI PRAMS 2009-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2009					
Medicaid/Public Insurance	696	43,379	84.7	(81.4-87.5)	10.2
Private Insurance	615	48,861	94.3	(91.9-96.0)	17.9
2010					
Medicaid/Public Insurance	610	44,252	88.0	(84.8-90.6)	12.3
Private Insurance	576	50,337	93.2	(90.5-95.1)	16.9
2011					
Medicaid/Public Insurance	691	43,494	85.4	(82.2-88.2)	10.5
Private Insurance	703	50,753	94.4	(92.2-96.0)	17.3
2012					
Medicaid/Public Insurance	958	45,881	87.3	(84.2-89.9)	11.5
Private Insurance	650	46,798	95.4	(93.1-97.0)	21.2
2013					
Medicaid/Public Insurance	979	46,242	87.7	(84.5-90.2)	11.9
Private Insurance	706	49,566	95.9	(93.7-97.4)	22.5
2014					
Medicaid/Public Insurance	727	43,478	84.2	(80.4-87.4)	11.4
Private Insurance	609	49,573	96.1	(94.0-97.4)	22.1
2015					
Medicaid/Public Insurance	679	42,334	86.8	(83.3-89.6)	12.1
Private Insurance	611	50,577	96.2	(94.2-97.6)	22.2
2016					
Medicaid/Public Insurance	621	31,760	84.2	(80.2-87.4)	11.6
Private Insurance	801	57,604	95.9	(94.1-97.2)	18.7
2017					
Medicaid/Public Insurance	714	32,902	84.7	(80.8-87.9)	11.8
Private Insurance	818	56,454	96.3	(94.8-97.4)	17.8
2018					
Medicaid/Public Insurance	681	32,193	81.4	(77.4-84.8)	10.1
Private Insurance	794	54,697	95.1	(93.2-96.5)	17.0

MICH-20

Increase the proportion of infants who are put to sleep on their backs

Survey Question:

Phase 5 (2007-2008): How do you most often lay your baby down to sleep now?

a. On his or her side
b. On his or her back
c. On his or her stomach

Phase 6, 7, & 8 (2009-2018): In which one position do you most often lay your baby down to sleep now?

a. On his or her side
b. On his or her back
c. On his or her stomach

Response: If a mother answered "On his or her back," she is included in the responses below.

Table 38. Mother places infant to sleep on their back by birth year, MI PRAMS 2007-2018

Year	Sleep Position	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2007	Back	993	84,685	71.7	(69.0-74.2)	4.7
2008	Back	1,044	80,599	70.6	(67.9-73.1)	4.5
2009	Back	1,099	80,897	73.4	(70.9-75.8)	4.8
2010	Back	964	80,935	75.3	(72.7-77.8)	5.3
2011	Back	1,166	82,597	77.0	(74.6-79.2)	5.1
2012	Back	1,346	83,339	78.6	(76.2-80.9)	5.6
2013	Back	1,402	83,902	77.8	(75.3-80.2)	5.6
2014	Back	1,186	87,579	81.4	(78.9-83.6)	6.5
2015	Back	1,160	86,585	81.4	(78.9-83.7)	6.6
2016	Back	1,330	87,760	81.9	(79.6-84.0)	6.2
2017	Back	1,430	87,247	83.3	(81.1-85.4)	6.6
2018	Back	1,414	85,511	82.5	(80.2-84.6)	6.4

Table 39: Infants put to sleep on their backs by selected maternal demographic characteristics, MI PRAMS 2016-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
Race/Ethnicity					
White, non-Hispanic	1993	183331	86.5	(84.8-88.0)	6.0
Black, non-Hispanic	1721	38484	68.6	(66.6-70.5)	3.2
Hispanic	185	18139	86.5	(80.5-90.8)	19.3
Marital Status					
Married	2140	162654	85.3	(83.6-86.8)	5.6
Other	2031	97644	78.5	(76.4-80.4)	4.8
Maternal Age					
<20 Years	221	10958	74.6	(67.8-80.4)	12.7
20-29 Years	2164	131551	80.6	(78.7-82.4)	4.8
30+ Years	1789	118009	85.8	(84.0-87.5)	6.4
Maternal Education					
<High School	464	23671	78.5	(73.7-82.6)	10.6
High School Grad or GED	1073	64048	79.0	(76.1-81.6)	6.7
Some College	1326	76513	80.6	(78.1-82.8)	6.2
College Degree +	1263	93503	88.1	(86.1-89.8)	8.0
Postpartum Insurance					
Uninsured	128	9958	79.5	(70.7-86.2)	19.2
Medicaid/Public Insurance	1788	89341	78.2	(75.9-80.3)	5.2
Private Insurance	2085	151237	86.2	(84.6-87.7)	5.7

Table 40. Infants put to sleep on their backs by maternal age, MI PRAMS 2007-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2007					
<20 Years	107	9,163	70.4	(62.0-77.7)	13.6
20-29 Years	507	41,938	68.7	(64.8-72.3)	6.1
30+ Years	379	33,584	76.2	(71.9-80.0)	8.7
2008					
<20 Years	118	7,105	57.4	(48.8-65.5)	10.1
20-29 Years	547	43,226	70.2	(66.5-73.7)	6.2
30+ Years	379	30,268	75.2	(71.0-79.1)	8.4
2009					
<20 Years	121	7,679	64.8	(56.3-72.5)	11.8
20-29 Years	560	40,062	69.7	(66.0-73.2)	6.1
30+ Years	418	33,156	81.1	(77.3-84.5)	9.7
2010					
<20 Years	79	5,609	62.8	(52.7-71.8)	13.2
20-29 Years	501	42,864	73.4	(69.6-76.8)	7.0
30+ Years	384	32,462	80.9	(76.9-84.4)	10.0
2011					
<20 Years	90	6,965	63.9	(54.2-72.6)	13.2
20-29 Years	612	44,977	77.3	(74.1-80.3)	7.0
30+ Years	464	30,655	80.2	(76.4-83.5)	9.1
2012					
<20 Years	117	6,148	70.1	(59.9-78.6)	16.0
20-29 Years	733	44,660	77.6	(74.2-80.7)	7.4
30+ Years	496	32,532	82.1	(78.2-85.4)	10.3
2013					
<20 Years	108	5,138	69.0	(56.3-79.4)	19.3
20-29 Years	742	43,659	74.3	(70.7-77.7)	7.0
30+ Years	552	35,105	84.4	(80.7-87.5)	11.1
2014					
<20 Years	83	6,043	77.9	(65.7-86.6)	24.2
20-29 Years	635	45,990	79.7	(76.1-82.9)	8.5
30+ Years	468	35,546	84.4	(80.6-87.5)	11.2
2015					
<20 Years	56	2,884	74.7	(61.3-84.7)	23.8
20-29 Years	618	45,362	78.9	(75.3-82.2)	8.4
30+ Years	486	38,339	85.2	(81.4-88.3)	11.8

Table 40 (continued). Infants put to sleep on their backs by maternal age, MI PRAMS 2007-2018

Demographic	Sample Frequency	Weighted Frequency	Weighted Percent	95% Confidence Interval (CI)	Relative Standard Error (RSE)
2016					
<20 Years	78	3,811	69.9	(56.6-80.5)	20.5
20-29 Years	689	43,925	79.8	(76.4-82.8)	8.2
30+ Years	563	40,023	85.9	(82.7-88.6)	10.7
2017					
<20 Years	81	3,706	76.7	(65.6-85.0)	21.2
20-29 Years	757	45,690	81.1	(77.7-84.0)	8.5
30+ Years	592	37,852	87.0	(83.6-89.7)	11.8
2018					
<20 Years	62	3,441	78.2	(66.8-86.4)	23.0
20-29 Years	718	41,937	80.9	(77.5-83.8)	8.4
30+ Years	634	40,134	84.8	(81.3-87.7)	10.8

MI PRAMS strengths and limitations

Strengths: MI PRAMS is a population-based survey administered using a standard procedure and a validated survey instrument. Women share their personal information in the context of a confidential research study and disclose substance use at rates greater than that seen in other perinatal data sources. Multiple years of survey data were pooled to provide more statistical power in these estimates. This survey oversampled mothers of low birth weight infants and Black and African American mothers. The pool of possible responders is drawn from all certificates of live birth. Because there is data on non-responders, statistical adjustments are made to adjust for possible non-responder bias.

Limitations: Although the survey collects data close to the time of delivery (2-6 months postpartum), there is the possibility for recall bias. The survey is collected at one point in time and does not allow for measuring differences over time in individuals. The survey instrument is administered only in English.

PRAMS data requests and contact information

The mission of Michigan PRAMS is to collect high-quality data and provide analytic products that help facilitate positive changes for Michigan mothers and babies. If these results have been useful for you or your organization, please let us know! Your reports of how PRAMS data has been useful to your organization are vital to keeping PRAMS running.

If you need different analyses to help make positive changes for the mothers and babies that you serve, please contact the PRAMS project coordinator:

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