Massachusetts Pregnancy Risk Assessment Monitoring System (PRAMS) 2017–2018 Surveillance Report

Massachusetts Department of Public Health
Bureau of Family Health and Nutrition
Division of Maternal and Child Health Research and Analysis

December 2021

PRAMS
Massachusetts

Massachusetts PRAMS
2017–2018 Surveillance Report

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Marylou Sudders, Secretary of Health and Human Services
Margret R. Cooke, Acting Commissioner of Public Health

Elaine Fitzgerald Lewis, DrPH, MIA, Director
Bureau of Family Health and Nutrition
Hafsatou Diop, MD, MPH, Director
Division of Maternal and Child Health Research and Analysis

Massachusetts Department of Public Health

December 2021

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Acknowledgments

This report was prepared by Xiaoli Chen, Emily Lu, Sarah L. Stone, and Hafsatou Diop of Division of Maternal and Child Health Research and Analysis, Bureau of Family Health and Nutrition, Massachusetts Department of Public Health.

Special thanks go to:

Roger Wong, Jonathan Gottlieb, Susan E. Manning, Martha Morris, and Rebecca A. Carter, Bureau of Family Health and Nutrition; Maria Vu, Sharon Pagnano, and Karin Barrett, Registry of Vital Records and Statistics; Ada Dieke, Centers for Disease Control and Prevention; and the PRAMS Advisory Committee (see Appendix B for a list of PRAMS Advisory Committee Members).

Most importantly, our thanks go to all the mothers who completed the 2017–2018 Massachusetts PRAMS surveys which led to this report.

Suggested Citation:

Massachusetts Department of Public Health. Massachusetts Pregnancy Risk Assessment Monitoring System (PRAMS) 2017–2018 Surveillance Report. Boston, MA; December 2021.

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Massachusetts Department of Public Health
Bureau of Family Health and Nutrition
Division of Maternal and Child Health Research and Analysis - PRAMS
250 Washington Street, 6th Floor
Boston, MA 02108
Telephone: 617-624-5517
TTY: 617-624-5992
Email: DPH_MA_PRAMS@mass.gov

This publication can be downloaded from the following website:
https://www.mass.gov/dph/prams

Funding for Massachusetts Pregnancy Risk Assessment Monitoring System was provided in part by the Centers for Disease Control and Prevention Grant # 1U01DP006612.

The contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.

Highlights

This report contains results from the 2017–2018 Massachusetts Pregnancy Risk Assessment Monitoring System (MA PRAMS) data. MA PRAMS is a collaborative surveillance project between the Centers for Disease Control and Prevention (CDC) and the Massachusetts Department of Public Health. MA PRAMS collects state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy. MA PRAMS oversamples by race and Hispanic ethnicity to ensure adequate representation of mothers from all racial and ethnic minority groups. Findings from MA PRAMS are used to assess the health of mothers and infants across the state and to inform program monitoring, maternal and child health research and evaluation, and policy development. This is the seventh PRAMS report for Massachusetts since MA PRAMS began in 2007.

A total of 4,884 mothers were sampled and 2,859 responded to the survey during 2017–2018, resulting in a weighted response rate of 62.2%. Final results were weighted to represent 134,904 Massachusetts resident mothers who delivered a live infant during 2017–2018.

The Massachusetts Department of Public Health is not attributing the public health challenges summarized in this report to individual behaviors, but rather to structures and systems that have historically marginalized and disenfranchised certain populations and communities of color. Understanding the complex and myriad ways in which structures, systems, and policies affect health is critical; therefore, readers are encouraged to consider racial and other inequities, and current and historical systems and policies (e.g., redlining, incarcerations, disenfranchisement) that perpetuate such inequities, when reviewing the findings from this report. More information on Health Equity can be found on the Massachusetts Health Equity Dashboard.

The key findings in this report, organized by topic, are highlighted below and are matched to relevant state and national objectives.

Massachusetts Title V Indicators for Selected Title V Priorities

Reactions to Racism, 2017–2018

- Reactions to racism*:* Approximately one in three Black non-Hispanic mothers and one in three Hispanic mothers reported thinking about race at least once a day or constantly. Black non-Hispanic mothers reported the highest prevalence of feeling stressed, feeling upset, and experiencing physical symptoms due to racism during the twelve months before delivery (17.7%, 19.2%, and 8.8%, respectively) compared to White non-Hispanic mothers (2.7%, 2.4%, and NA*, respectively). When stratified by race/ethnicity and disability status, the highest prevalence of women feeling stressed, feeling upset, and experiencing physical symptoms was reported by Black non-Hispanic mothers with a disability (29.2%,

29.8%, and 16.2%, respectively), and followed by Hispanic mothers with a disability (12.0%, 16.6%, and 12.6%, respectively).

*NA: Not applicable due to insufficient data.

Safe Sleep, 2017–2018

- Infant sleep position: The Title V Safe Sleep Priority was assessed in part by the percentage of mothers who reported placing infants in supine (back) sleep position. A lower prevalence of infants being placed in supine sleep position was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (65.8%, 71.0%, and 83.7%, respectively) compared to White non-Hispanic mothers (90.3%). Differences in prevalence were also observed by maternal age, education, poverty status, nativity, marital status, and disability status. For example, the prevalence of placing the infant in supine position among mothers aged 30-39 years, mothers with a college degree, mothers living above 100% of the Federal Poverty Level (FPL), US-born mothers, married mothers, and mothers without a disability was near or above 90%, whereas the prevalence was <80% among infants of mothers in other sociodemographic categories and was particularly low among those with less than a high school education (69.0%).

- Infant on a separate approved sleep surface: The prevalence of infants' being placed on a separate, approved sleep surface was <40% in all sociodemographic categories. A lower prevalence of infants being placed on a separate approved sleep surface was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (27.0%, 29.3%, and 25.2%, respectively) compared to White non-Hispanic mothers (36.7%). Differences in prevalence were also observed by maternal education, poverty status, nativity, marital status, and disability status. For example, 39.3% of mothers with a college degree reported having their infants placed on a separate approved sleep surface, whereas the prevalence was <30% among mothers who had not completed college. Only 19.8% of mothers with a disability reported placing the infant on a separate approved sleep surface compared to 34.6% of mothers without a disability.

- Infant sleeping without soft objects or loose bedding: A lower prevalence of infants sleeping without soft objects or loose bedding was observed among Black non-Hispanic, Hispanic, Asian non-Hispanic, and other, non-Hispanic mothers (41.5%, 37.2%, 42.0%, and 44.2%, respectively) compared to White non-Hispanic mothers (65.6%). Differences in prevalence were also observed by maternal age, education, poverty status, nativity, marital status, and disability status. For example, 61.0% of mothers who were living above 100% of the FPL reported their infants sleeping without soft objects or loose bedding, whereas the prevalence was <45% among mothers who were living at or below 100% of the FPL.

Breastfeeding, 2017–2018

- Breastfeeding initiation: The Title V Breastfeeding Priority was assessed in part by the percentage of mothers who reported breastfeeding initiation. A higher prevalence was observed among Asian non-Hispanic mothers (97.2%) compared to White non-Hispanic mothers (87.9%). Differences were observed by maternal education, poverty status, nativity, marital status, and the Women, Infants, and Children (WIC) Nutrition Program participation status. For example, the prevalence of initiating breastfeeding among mothers with a college degree, mothers living above 100% of the FPL, non-US-born mothers, married mothers, and mothers without a disability was above 90%, whereas the prevalence was <90% among mothers in other sociodemographic categories, and was significantly lower among those with less than a high school education (82.5%).

- Breastfeeding for at least eight weeks: A higher prevalence was observed among Asian non-Hispanic mothers (84.6%) compared to White non-Hispanic mothers (70.6%). Similar differences were observed by maternal age, education, poverty status, nativity, marital status, disability status, and WIC participation status. For example, 75.5% of mothers who were living above 100% of the FPL reported breastfeeding for at least eight weeks, whereas the prevalence was <70% among mothers who were living at or below 100% of the FPL.

Emotional Wellness, 2017–2018

- Postpartum depressive symptoms: The Title V Mental Health and Emotional Well-being Priority was assessed in part by the prevalence of postpartum depressive symptoms. A higher prevalence was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (18.9%, 12.5%, and 14.3%, respectively) compared to White non-Hispanic mothers (7.8%). Similar differences were observed by maternal education, poverty status, nativity, and disability status. More than a quarter of mothers with a disability reported postpartum depressive symptoms, as compared to 8.3% of mothers without a disability. Other sociodemographic categories characterized by a high prevalence of postpartum depressive symptoms were mothers with less than a high school education (17.5%), mothers living at or below 100% of the FPL (16.4%), and mothers born outside of the US (15.2%).

Social Connectedness & Father's Involvement, 2017–2018

- Social support: Social connectedness and father's involvement were assessed by the percentage of mothers who reported having social support while being sick after delivery, partner encouragement and emotional support after delivery, and financial support from the infant's father. A lower prevalence of mothers having social support while being sick after delivery was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (80.3%, 79.1%, and 79.2%, respectively) compared to White non-Hispanic mothers (92.1%).

Differences in prevalence were also observed by maternal education, poverty status, nativity, marital status, and disability status. For example, 91.3% of mothers who were living above 100% of the FPL reported having social support, whereas the prevalence was <85% among mothers who were living at or below 100% of the FPL.

- Partner support: A lower prevalence of mothers with partner encouragement and emotional support after delivery was observed among Black non-Hispanic and Hispanic mothers (66.7% and 75.7%, respectively) compared to White non-Hispanic mothers (85.7%). Differences in prevalence were also observed by maternal education, poverty status, marital status, and disability status. The prevalence of partner encouragement and emotional support after delivery approached 90% among married mothers, mothers with a college degree, and mothers living above 100% of the FPL. The prevalence of partner encouragement and emotional support after delivery was <70% among mothers living at or below 100% of the FPL, unmarried mothers, and mothers with a disability.

- Financial support from infant's father: A lower prevalence was observed among Black non-Hispanic and Hispanic mothers (74.0% and 80.8%, respectively) compared to White non-Hispanic mothers (91.7%). Differences in prevalence were also observed by maternal age, education, poverty status, marital status, and disability status. Over 95% of married mothers, as compared to 70.7% of unmarried mothers, reported receiving financial support from the infant's father. The prevalence of receiving financial support from the infant's father was also >90% among mothers with a college degree and mothers who were living above 100% of the FPL, as compared to 74.0% and 69.0%, respectively, among mothers with less than a high school education and mothers who were living at or below 100% of the FPL.

Oral Health, 2017–2018

- Teeth cleaning twelve months before pregnancy: A lower prevalence was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (37.4%, 43.1%, and 41.0%, respectively) compared to White non-Hispanic mothers (63.5%). Differences in prevalence were also observed by maternal education, poverty status, nativity, and marital status. For example, 67.6% of mothers with a college degree reported having had their teeth cleaned 12 months before pregnancy, whereas the prevalence was <50% among mothers who had not completed college and was particularly low among those with less than a high school education (36.9%).

- Teeth cleaning during pregnancy: The Title V Oral Health Priority was assessed in part by the percentage of mothers who reported that they had had their teeth cleaned during pregnancy. A lower prevalence was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (46.5%, 48.6%, and 47.5%,

respectively) compared to White non-Hispanic mothers (63.0%). Differences in prevalence were also observed by maternal age, education, poverty status, nativity, and marital status. For example, the prevalence of teeth cleaning during pregnancy among mothers aged 30-39 years, mothers with a college degree, mothers living above 100% of the FPL, US-born mothers, married mothers, and mothers without a disability was near or above 60%, whereas the prevalence was <50% among mothers in other sociodemographic categories and was particularly low among those with less than a high school education (39.8%).

Healthy People 2020 and 2030 Objectives

- Unintended pregnancy: A higher prevalence of unintended pregnancy (mistimed or unwanted) was observed among Black non-Hispanic and Hispanic mothers (31.1% and 27.2%, respectively) compared to White non-Hispanic mothers (15.0%). The sociodemographic category with the highest prevalence of unintended pregnancy comprised mothers aged less than 20 years, about half of whom reported that the pregnancy had been unintended, as compared to about one quarter of mothers aged 20-29 years and 15.5% of mothers aged 30-39 years. At 35.6%, the prevalence of unintended pregnancy was also high among mothers with a history of physical abuse as compared to mothers with no such history (18.6%), among mothers who were living at or below 100% of the FPL (30.2%) as compared to mothers living above 100% of the FPL (15.3%), among mothers with a disability (28.5%) as compared to mothers with no disability (18.0%), and among unmarried mothers (29.9%) as compared to married mothers (14.2%). The sociodemographic category with the lowest prevalence of unintended pregnancy comprised mothers with a college degree (12.7%).

- Smoking during the last three months of pregnancy: A higher prevalence was observed among White non-Hispanic mothers (5.6%) compared to Asian non-Hispanic mothers (1.0%). The sociodemographic categories with the highest prevalence of smoking during the last 3 months of pregnancy comprised mothers with a disability, mothers who were living at or below 100% of the FPL, unmarried mothers, and mothers with less than a high school education. About 11% of the mothers in these categories reported that they had smoked during the last 3 months of pregnancy. By contrast, the prevalence of smoking was 3.6% among mothers without a disability, 2.6% among mothers who were living above 100% of the FPL, 1.2% among married mothers, and 0.9% among mothers with a college degree. The sociodemographic category with the lowest prevalence of smoking during the last 3 months of pregnancy comprised mothers who had not been born in the US, 0.7% of whom had smoked, as compared to 6.4% of US-born mothers.

- Smoking in the postpartum period: A higher prevalence was observed among White non-Hispanic mothers (8.9%) compared to Asian non-Hispanic mothers

(1.9%). Similar differences were observed by maternal education, poverty status, nativity, marital status, and disability status. For example, 16.3% of mothers with a disability reported smoking postpartum, whereas the prevalence was 6.3% among mothers without a disability.

Additional Topics:

Below summarized findings where PRAMS is currently the only source of data.

Pregnancy, 2017–2018

- Influenza vaccination before or during pregnancy: A higher prevalence was observed among Asian non-Hispanic mothers (83.7%) compared to White non-Hispanic mothers (73.6%). Differences in prevalence were also observed by maternal age, education, poverty status, and marital status. For example, 80.5% of mothers with a college degree reported having influenza vaccination, whereas the prevalence was <70% among mothers who had not completed college.

- Tetanus, diphtheria, pertussis (Tdap) vaccination during pregnancy: A lower prevalence was observed among Black non-Hispanic mothers (83.0%) compared to White non-Hispanic mothers (90.7%). No significant difference in the prevalence of Tdap vaccination was observed for mothers by other sociodemographic characteristics.

- HIV testing: A higher prevalence was observed among Black non-Hispanic, Hispanic, and other, non-Hispanic mothers (69.4%, 64.0%, and 66.3%, respectively) compared to White non-Hispanic mothers (45.4%). Similar differences were observed by maternal education, poverty status, nativity, and marital status. For example, 60.7% of unmarried mothers reported receiving an HIV testing, whereas the prevalence was <50% among married mothers.

Postpartum, 2017–2018

- Maternal postpartum check-up: A lower prevalence was observed among Black non-Hispanic and Hispanic mothers (90.6% and 88.3%, respectively) compared to White non-Hispanic mothers (95.1%). Similar differences were observed by maternal age, education, poverty status, marital status, and disability status. For example, 85.2% of mothers with a disability reported having maternal postpartum checkup, whereas the prevalence was 93.9% among mothers without a disability.

- Maternity leave: Overall, 41.4% of mothers reported taking paid maternity leave, followed by 39.2% of mothers taking unpaid leave only, 15.0% of mothers taking both paid and unpaid leave, and 4.5% of mothers reported not taking any maternity leave. Details by the type of maternity leave are presented in the full

report. PRAMS data on maternity leave will be used as a way to monitor the implementation of the Paid Family and Medical Leave Legislation in Massachusetts.

The Massachusetts Department of Public Health uses the PRAMS data to inform program monitoring, Maternal and Child Health (MCH) research and evaluation, and policy development. The MA PRAMS data are also used to inform the Title V MCH needs assessment and to monitor progress on the Healthy People 2020 and Health People 2030 objectives (Table 1). The MA PRAMS data are also regularly used by a variety of other MCH programs, policy makers, and initiatives.

Supplements including figures for the trends of selected topics are included in Appendix A. A copy of the 2012–2015 (phase 7) and 2016–2022 (phase 8) MA PRAMS surveys is included in Appendix C.

Introduction

The Pregnancy Risk Assessment Monitoring System (PRAMS) is a collaborative surveillance project of the Centers for Disease Control and Prevention (CDC) and state health departments. PRAMS collects state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy. Mothers are sampled for participation between two and six months postpartum.

The Massachusetts (MA) Department of Public Health uses PRAMS data to inform program monitoring, Maternal and Child Health (MCH) research and evaluation, and policy development. The MA PRAMS data are also used to inform the Title V MCH needs assessment. The Title V program is a federal-state partnership between the Health Resources and Services Administration and state health departments. The MA Title V program plays a key role in the provision of MCH services in Massachusetts. MA is a national leader in MCH programs and policy. MA Title V provides direct and enabling services to nearly 1 million pregnant women, infants, children, and children and youth with special health needs. MA Title V supports a statewide system of services that is comprehensive, community-based, and family-centered. MA Title V is located in the Bureau of Family Health and Nutrition (BFHN), which houses other important MCH programs such as the Women, Infants, & Children (WIC) Nutrition Program and Early Intervention (EI). Title V serves an important policy and systems-building role, as evidenced by the fact that a majority of its funding is dedicated to enabling population-based programs and services, such as maternal mortality review and newborn screening. Title V is also a convener and collaborator in addressing MCH issues and enhances initiatives funded through other sources, such as the federal home visiting initiative (MA_TitleV_PrintVersion (hrsa.gov)). The MA PRAMS survey was developed to support Title V priority needs and activities. Currently, PRAMS data are the only source of information for two of the Title V national performance measures: (1) Percent of infants placed to sleep on their backs; and (2) Percent of women who had a dental visit during pregnancy. Similarly, PRAMS data are used to monitor progress on the Healthy People 2020 and Health People 2030 objectives.

Healthy People 2020/2030 is the federal government's prevention agenda for building a healthier nation (Health People 2030). It is a statement of national health objectives designed to identify the most significant preventable threats to health and to establish national goals to reduce these threats. There are specific Healthy People 2020/2030 objectives and targets for the MCH population for which PRAMS data are relevant and useful. Table 1 shows the progress Massachusetts has made toward reaching the Healthy People 2020/2030 MCH targets as well as the Title V MCH performance measures.

PRAMS data are also regularly used by a variety of other MCH programs, policy makers, and initiatives including:

- The Collaborative Improvement and Innovation Network to reduce infant mortality (Infant Mortality CoIIN), which aims to improve birth outcomes, address racial disparities, and reduce infant mortality rates. PRAMS provided baseline data for

Massachusetts Infant Mortality CoIIN to reduce infant mortality through safe sleep initiatives.

- The Massachusetts Center for Birth Defects Research and Prevention, which relies on the PRAMS data to monitor the use of multivitamins containing folic acid prior to pregnancy.
- An Act Relative to Postpartum Depression, which was passed in 2010 and uses PRAMS data to monitor progress.

MA PRAMS began data collection in 2007. This is the seventh report of the MA PRAMS project.

Massachusetts Title V and Healthy People 2020 and Healthy People 2030 Objectives

Table 1. Massachusetts Title V Performance Measures for Selected Title V Priorities, Healthy People 2020 and Healthy People 2030 Objectives, and MA PRAMS

Title V[1] Performance Measures (PM)	Healthy People 2020 and Healthy People 2030[2]		PRAMS 2017–2018	
	Objective	Target	Survey Question	Prevalence
EFFECTS OF RACISM				
State measure related to eliminating institutional and structural racism in internal DPH programs, policies, and practices	2020-No Objective[2] 2030-No Objective[2]		Stress due to racism	2.7%-17.7%[3]
			Felt upset due to racism	2.4%-19.2%[3]
			Physical symptoms due to racism	0.7%-8.8%[3]
SAFE SLEEP				
Increase the percent of infants placed to sleep on their backs (supine) (NPM 5)[1]	Increase the proportion of infants who are put to sleep on their backs	2020-75.8% 2030-88.9%	Placed infant to sleep on back	83.2%
BREASTFEEDING				
Increase the percent of infants who are ever breastfed (NPM 4a)[1]	Increase the proportion of infants who are breastfed (ever)	2020-81.9%	Breastfed ever	90.0%
EMOTIONAL WELLNESS				
Increase the percent of women who report that a health care worker asked if	2020-No Objective[2] 2030-No Objective[2]		During prenatal care visit, a health care worker asked if they were feeling down or depressed during pregnancy	83.6%

Table 1. Massachusetts Title V Performance Measures for Selected Title V Priorities, Healthy People 2020 and Healthy People 2030 Objectives, and MA PRAMS

Title V[1] Performance Measures (PM)	Healthy People 2020 and Healthy People 2030[2]		PRAMS 2017–2018	
	Objective	Target	Survey Question	Prevalence
they felt depressed during pregnancy during any prenatal care visit				
No Title V PM	Decrease the proportion of mothers delivering a live birth who experience postpartum depressive symptoms	2020-No Target[2]	Experienced depressive symptoms (always/often) in the postpartum period	10.5%
Increase the percent of women who report being screened for depression by a health care worker during any prenatal care or postpartum visits	Screening for depression during or after pregnancy	2020-No Target[2] 2030-No Target[2]	Had screening for depression during or after pregnancy	96.0%
ORAL HEALTH				
Increase the percent of mothers who have a dental visit during pregnancy (NPM 13)[1]	2020-No Objective[2] 2030-No Objective[2]		Had teeth cleaned by a dentist or dental hygienist during pregnancy	57.0%
PRECONCEPTION HEALTH				
No Title V PM	Increase the proportion of	2020-56.0%	Wanted to get pregnant then or sooner	67.2%

Table 1. Massachusetts Title V Performance Measures for Selected Title V Priorities, Healthy People 2020 and Healthy People 2030 Objectives, and MA PRAMS

Title V[1] Performance Measures (PM)	Healthy People 2020 and Healthy People 2030[2]		PRAMS 2017–2018	
	Objective	Target	Survey Question	Prevalence
	pregnancies that are intended			
No Title V PM	Decrease the proportion of unintended (mistimed or unwanted) pregnancies	2030-36.5%	Didn't want to be pregnant then or any time later	19.3%
No Title V PM	Increase the proportion of women who took multivitamins/folic acid daily prior to pregnancy	2020-33.3% 2030-86.2%	Took a daily multivitamin in the month prior to pregnancy	43.1%
No Title V PM	Increase the proportion of women delivering a live birth who did not smoke prior to pregnancy	2020-87.8%	Abstained from cigarette smoking in the three months prior to pregnancy	88.8%
No Title V PM	Increase the proportion of mothers who did not drink alcohol during the three months prior to pregnancy	2020-55.6%	Reported no alcohol consumption in the three months prior to pregnancy	34.9%
No Title V PM	Increase the proportion of mothers who had a healthy weight (BMI 18.5-24.9) prior to pregnancy	2020-57.8% 2030-47.1%	Reported a healthy weight prior to pregnancy	50.3%
No Title V PM	Increase the proportion of women delivering a live birth who discussed	2020-27.0%	Reported having discussed preconception health with a health	33.4%

Table 1. Massachusetts Title V Performance Measures for Selected Title V Priorities, Healthy People 2020 and Healthy People 2030 Objectives, and MA PRAMS

Title V[1] Performance Measures (PM)	Healthy People 2020 and Healthy People 2030[2]		PRAMS 2017–2018	
	Objective	**Target**	**Survey Question**	**Prevalence**
	preconception health with a health care worker prior to pregnancy		care worker prior to pregnancy	
No Title V PM	Increase the proportion of pregnancies that are intended	2020-56.0%	Wanted to get pregnant then or sooner	67.2%
PRENATAL CARE				
No Title V PM	Increase the proportion of pregnant women who receive prenatal care beginning in the first trimester	2020-84.8% 2030-84.8%	Received prenatal care during the first trimester of pregnancy	91.2%
No Title V PM	Increase the proportion of pregnant women who receive early and adequate prenatal care	2020-83.2% 2030-80.5%	Reported having received early and adequate prenatal care	82.4%
Decrease the number of women who smoke during pregnancy (NPM 14a-but MA did not select this)	Increase abstinence from cigarette smoking among pregnant women	2020-98.6% 2030-95.7%	Reported abstaining from cigarette smoking in the last three months of pregnancy	95.5
No Title V PM	Increase the proportion of pregnant women who receive 1 dose of Tdap vaccine during pregnancy	2030-No Target[2]	Reported receiving Tdap during pregnancy	89.4%
POSTPARTUM HEALTH/BEHAVIOR				

Table 1. Massachusetts Title V Performance Measures for Selected Title V Priorities, Healthy People 2020 and Healthy People 2030 Objectives, and MA PRAMS

Title V[1] Performance Measures (PM)	Healthy People 2020 and Healthy People 2030[2]		PRAMS 2017–2018	
	Objective	Target	Survey Question	Prevalence
No Title V PM	Increase the proportion of women giving birth who attend a postpartum care visit with a health care worker	2020-90.8%	Reported attending a postpartum care visit with a health care worker	92.8%
No Title V PM	Reduce postpartum relapse of smoking among women who quit smoking during pregnancy	2020-38.2%	Women who quit smoking during pregnancy reported postpartum relapse of smoking	42.2%
No Title V PM	Increase the proportion of women delivering a live birth who used a most effective or moderately effective contraception method postpartum	2020-58.5%	Reported using a most effective or moderately effective contraception method postpartum	50.4%

[1]This Title V Performance Measure is both a State Performance Measure and a National Performance Measure (NPM in parenthesis).

[2]Where a Healthy People Objective exists, the objective, year and target are presented. *No Objective* indicates that this topic has no directly comparable Healthy People Objective. *No Target* indicates that this target has yet to be established. Some objectives exist only for 2020 and others exist only for 2030.

[3]Significant variation in prevalence across race and ethnic categories.

Massachusetts Title V Indicators for Selected Title V Priorities

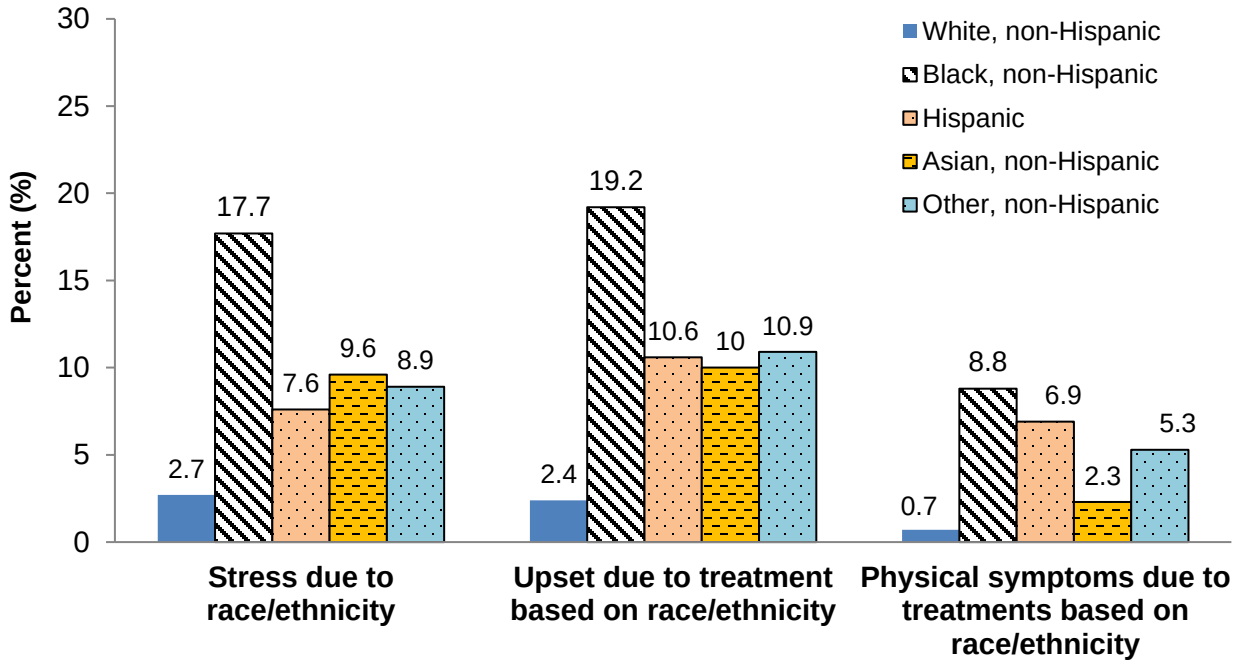
Racial Equity:

Reactions to racism

Racism can be described as an individual-level psychosocial stressor due to perceived exposure to racial prejudice and discrimination (Clark et al, 1999). Racial minorities encounter racism regularly in their lives. Racism has been linked to a variety of mental and physical health outcomes (Harrell et al., 2003) including maternal stress during pregnancy, low birth weight, and preterm delivery (Giscombe & Lobel, 2005). African American women, in particular, experience a greater number of stressful life events (Feldman, Dunkel-Schetter, Woo, & Hobel, 1997) and are more distressed by them (Zambrana, Dunkel-Schetter, Collins, & Scrimshaw, 1999) than other racial or ethnic groups. Stress may be more detrimental to African American women during pregnancy (Orr et al., 1996).

Approximately one in three Black non-Hispanic mothers and Hispanic mothers reported thinking about race at least once a day or constantly. Black non-Hispanic mothers reported the highest prevalence of feeling stressed, feeling upset, and experiencing physical symptoms due to racism during the twelve months before delivery (17.7%, 19.2%, and 8.8%, respectively) than White non-Hispanic mothers (2.7%, 2.4%, and 0.7%, respectively) (Figure 1).

Figure 1. Prevalence of reactions to racism during the twelve months before delivery, by maternal race/ethnicity, MA PRAMS 2017-2019



The highest prevalence of mothers feeling stressed, feeling upset, and experiencing physical symptoms was reported by Black non-Hispanic mothers with disabilities (29.2%, 29.8%, and 16.2%, respectively) and followed by Hispanic mothers with disabilities (12.0%, 16.6%, and 12.6%, respectively) (Tables 2-7).

Table 2. Prevalence of feeling stressed due to racial/ethnic background by maternal sociodemographic characteristics, among White non-Hispanic and Black non-Hispanic mothers, MA PRAMS, 2017–2018

	White non-Hispanic						Black non-Hispanic				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	2,052	2.7	1.7	-	4.4		2,251	17.7	14.4	-	21.5
Maternal age (years)											
<20	0	0.0	.	-	.		Insufficient Data to Report				
20-29	716	3.3	1.5	-	7.3		768	15.2	11.3	-	20.3
30-39	1,337	2.7	1.5	-	4.8		1,263	19.6	14.6	-	26.0
40+	0	0.0	.	-	.		180	19.8	10.2	-	35.0
Maternal education											
<High school	Insufficient Data to Report						Insufficient Data to Report				
High school diploma	Insufficient Data to Report						403	13.7	6.4	-	27.0
Some college	842	5.5	2.5	-	11.7		838	16.1	12.0	-	21.2
College graduate	585	1.2	0.5	-	2.7		891	24.0	18.3	-	30.7
Household poverty level											
≤100% FPL	681	**8.6**	**3.6**	**-**	**19.2**		680	13.5	8.3	-	21.4
>100% FPL	1,280	1.9	1.1	-	3.5		1,436	21.0	16.9	-	25.7
Maternal nativity											
Non-US-born	597	7.1	3.0	-	16.1		1,157	15.6	11.2	-	21.2
US-born	1,456	2.2	1.2	-	3.8		1,093	20.6	16.1	-	26.0
Marital status											
Unmarried	1,213	**6.6**	**3.5**	**-**	**12.2**		1,208	19.0	13.9	-	25.3
Married	839	1.5	0.7	-	3.0		1,043	16.4	12.6	-	20.9
Disability status											
No	1,394	2.0	1.2	-	3.6		1,626	15.3	11.9	-	19.5
Yes	659	**9.6**	**4.0**	**-**	**21.0**		592	**29.2**	**21.0**	**-**	**39.0**
WIC participation											
No	718	1.2	0.6	-	2.4		1,364	26.9	20.5	-	34.5
Yes	1,334	**10.0**	**5.5**	**-**	**17.7**		837	**11.3**	**8.4**	**-**	**14.9**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: 20-29 years, <High school, >100% FPL, US-born, married, not a WIC participant, and without a disability.
Insufficient Data to Report: sample size less than 5.

Table 3. Prevalence of feeling stressed due to racial/ethnic background by maternal sociodemographic characteristics, among Hispanic and Asian non-Hispanic mothers, MA PRAMS, 2017–2018

	Hispanic						Asian non-Hispanic				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	1,975	7.6	5.9	-	9.8		1,121	9.6	7.4	-	12.3
Maternal age (years)											
<20	Insufficient Data to Report						0	0.0	.	-	.
20-29	928	6.9	4.8	-	9.8		307	8.4	5.0	-	13.8
30-39	895	8.6	5.7	-	12.7		814	10.9	8.0	-	14.5
40+	Insufficient Data to Report						0	0.0	.	-	.
Maternal education											
<High school	192	**3.2**	**1.5**	**-**	**6.9**		Insufficient Data to Report				
High school diploma	322	**4.4**	**2.4**	**-**	**7.9**		Insufficient Data to Report				
Some college	729	9.6	6.0	-	15.0		127	9.2	4.2	-	18.9
College graduate	733	16.6	11.5	-	23.4		897	10.6	8.0	-	13.9
Household poverty level											
≤100% FPL	1,047	7.7	5.3	-	11.1		136	9.3	3.9	-	20.5
>100% FPL	834	8.4	5.8	-	11.9		936	9.7	7.3	-	12.6
Maternal nativity											
Non-US-born	1,177	7.0	4.9	-	9.9		863	8.8	6.6	-	11.7
US-born	799	8.7	6.0	-	12.5		258	13.8	8.0	-	22.7
Marital status											
Unmarried	1,182	8.2	5.7	-	11.5		151	11.6	5.3	-	23.7
Married	793	6.9	4.8	-	9.9		970	9.3	7.1	-	12.2
Disability status											
No	1,471	6.7	4.9	-	9.0		1,028	9.8	7.5	-	12.6
Yes	474	12.0	7.4	-	19.0		Insufficient Data to Report				
WIC participation											
No	915	11.3	7.6	-	16.4		849	9.5	7.0	-	12.6
Yes	1,060	6.0	4.3	-	8.3		272	10.1	6.0	-	17.4

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: 20-29 years, <High school, >100% FPL, US-born, married, not a WIC participant, and without a disability.
Insufficient Data to Report: sample size less than 5.

Table 4. Prevalence of feeling upset due to treatment based on racial/ethnic background by maternal sociodemographic characteristics, among White non-Hispanic and Black non-Hispanic mothers, MA PRAMS, 2017–2018

	White non-Hispanic						Black non-Hispanic				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	1,809	2.4	1.5	-	4.0		2,445	19.2	15.9	-	23.1
Maternal age (years)											
<20	0	0.0	.	-	.		Insufficient Data to Report				
20-29	589	2.7	1.1	-	6.5		791	15.6	11.8	-	20.5
30-39	1,220	2.4	1.3	-	4.5		1,362	21.4	16.2	-	27.7
40+	0	0.0	.	-	.		229	25.2	14.2	-	40.7
Maternal education											
<High school	Insufficient Data to Report						Insufficient Data to Report				
High school diploma	Insufficient Data to Report						400	13.6	6.3	-	26.9
Some college	Insufficient Data to Report						895	17.4	13.2	-	22.5
College graduate	588	1.2	0.5	-	2.7		1,074	28.6	22.5	-	35.5
Household poverty level											
≤100% FPL	772	**9.8**	**4.4**	**-**	**20.3**		682	13.7	8.4	-	21.6
>100% FPL	1,037	1.6	0.8	-	3.0		1,693	24.8	20.4	-	29.7
Maternal nativity											
Non-US-born	574	6.9	2.9	-	15.7		1,192	16.1	11.8	-	21.7
US-born	1,234	1.9	1.0	-	3.4		1,253	23.6	18.8	-	29.1
Marital status											
Unmarried	1,058	**5.8**	**2.9**	**-**	**11.1**		1,276	20.2	15.0	-	26.6
Married	751	1.3	0.6	-	2.8		1,169	18.3	14.5	-	22.8
Disability status											
No	1,017	1.5	0.8	-	2.9		1,848	17.4	13.8	-	21.7
Yes	792	11.5	5.3	-	23.3		597	29.8	21.7	-	39.5
WIC participation											
No	876	1.4	0.7	-	2.8		1,420	27.8	21.5	-	35.2
Yes	933	**7.1**	**3.4**	**-**	**14.1**		986	**13.4**	**10.3**	**-**	**17.3**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: 20-29 years, <High school, >100% FPL, US-born, married, not a WIC participant, and without a disability.

Insufficient Data to Report: sample size less than 5.

Table 5. Prevalence of feeling upset due to treatment based on racial/ethnic background by maternal sociodemographic characteristics, among Hispanic and Asian non-Hispanic mothers, MA PRAMS, 2017–2018

	Hispanic						Asian non-Hispanic				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	2,745	10.6	8.5	-	13.0		1,169	10.0	7.5	-	13.3
Maternal age (years)											
<20	Insufficient Data to Report						0	0.0	.	-	.
20-29	1,369	10.1	7.6	-	13.4		268	7.4	4.3	-	12.3
30-39	1,160	11.1	7.8	-	15.6		882	11.8	8.3	-	16.4
40+	Insufficient Data to Report						Insufficient Data to Report				
Maternal education											
<High school	384	**6.4**	**3.7**	**-**	**10.8**		Insufficient Data to Report				
High school diploma	705	9.5	5.8	-	15.3		0	0.0	.	-	.
Some college	901	11.8	8.3	-	16.5		108	7.8	3.3	-	17.3
College graduate	722	16.4	11.0	-	23.1		994	11.7	8.5	-	15.9
Household poverty level											
≤100% FPL	1,453	10.7	8.1	-	14.0		Insufficient Data to Report				
>100% FPL	1,136	11.4	8.1	-	15.9		1,106	11.4	8.5	-	15.2
Maternal nativity											
Non-US-born	1,605	9.6	7.1	-	12.7		881	9	6.3	-	12.6
US-born	1,140	12.4	9.2	-	16.6		288	15.3	9.3	-	24.3
Marital status											
Unmarried	1,589	10.9	8.4	-	14.1		Insufficient Data to Report				
Married	1,156	10.1	7.1	-	14.1		1,086	10.5	7.7	-	14.0
Disability status											
No	2,049	9.3	7.3	-	11.9		932	8.8	6.7	-	11.6
Yes	665	16.6	11.0	-	24.2		237	22.0	9.2	-	44.0
WIC participation											
No	1,041	12.8	8.9	-	18.2		1,087	12.2	9.0	-	16.2
Yes	1,704	9.6	7.4	-	12.3		Insufficient Data to Report				

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: 20-29 years, <High school, >100% FPL, US-born, married, not a WIC participant, and without a disability.
Insufficient Data to Report: sample size less than 5.

Table 6. Prevalence of experiencing physical symptoms due to treatment based on racial/ethnic background by maternal sociodemographic characteristics, among White non-Hispanic and Black non-Hispanic mothers, MA PRAMS, 2017–2018

	White non-Hispanic						Black non-Hispanic				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	Insufficient Data to Report						1,121	8.8	6.2	-	12.2
Maternal age (years)											
<20	0	0.0	.	-	.		Insufficient Data to Report				
20-29	Insufficient Data to Report						283	5.6	3.4	-	9.1
30-39	Insufficient Data to Report						689	10.7	6.5	-	17.0
40+	0	0.0	.	-	.		107	11.8	5.3	-	24.4
Maternal education											
<High school	Insufficient Data to Report						Insufficient Data to Report				
High school diploma	Insufficient Data to Report						268	9.1	3.0	-	24.8
Some college	0	0.0	.	-	.		387	7.5	4.9	-	11.2
College graduate	Insufficient Data to Report						389	10.3	6.9	-	15.2
Household poverty level											
≤100% FPL	Insufficient Data to Report						424	8.4	4.0	-	17.0
>100% FPL	Insufficient Data to Report						647	9.4	6.9	-	12.8
Maternal nativity											
Non-US-born	Insufficient Data to Report						683	9.2	5.6	-	14.8
US-born	Insufficient Data to Report						438	8.2	5.5	-	12.0
Marital status											
Unmarried	Insufficient Data to Report						608	9.6	5.5	-	16.1
Married	Insufficient Data to Report						513	8.0	5.6	-	11.2
Disability status											
No	Insufficient Data to Report						760	7.1	4.5	-	11.1
Yes	Insufficient Data to Report						327	16.2	10.3	-	24.4
WIC participation											
No	Insufficient Data to Report						549	10.7	6.0	-	18.5
Yes	Insufficient Data to Report						499	6.7	4.6	-	9.7

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: 20-29 years, <High school, >100% FPL, US-born, married, not a WIC participant, without a disability. Insufficient Data to Report: sample size less than 5.

Table 7. Prevalence of experiencing physical symptoms due to treatment based on racial/ethnic background by maternal sociodemographic characteristics, among Hispanic and Asian non-Hispanic mothers, MA PRAMS, 2017–2018

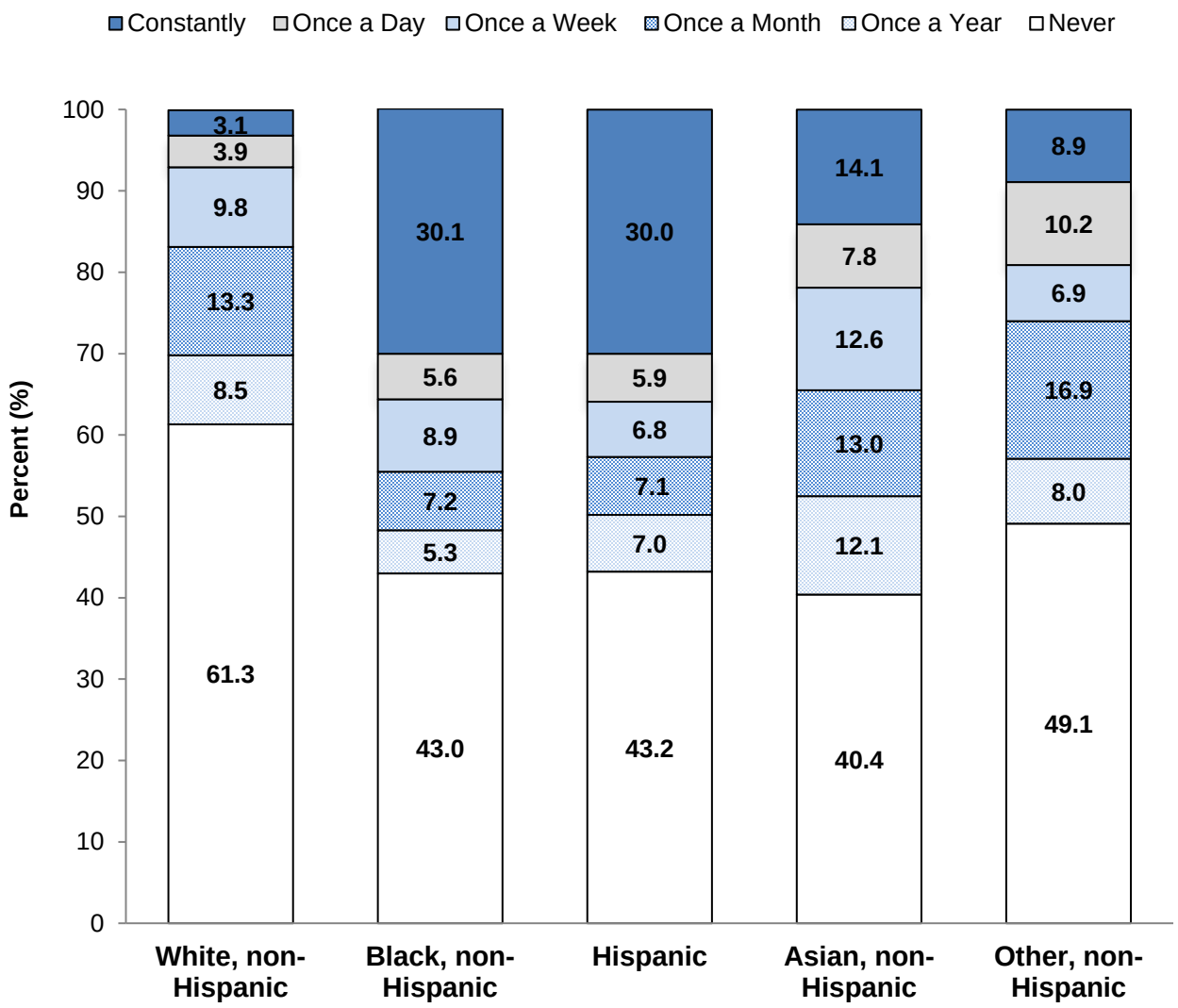
	Hispanic						Asian non-Hispanic				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	1,797	6.9	5.2	-	9.0		273	2.3	1.3	-	4.1
Maternal age (years)											
<20	Insufficient Data to Report						0	0.0	.	-	.
20-29	978	7.2	5.1	-	10.1		141	3.9	1.7	-	8.4
30-39	662	6.3	3.8	-	10.2		113	1.5	0.6	-	3.6
40+	Insufficient Data to Report						Insufficient Data to Report				
Maternal education											
<High school	552	9.0	5.1	-	15.5		0	0.0	.	-	.
High school diploma	403	5.5	3.1	-	9.3		Insufficient Data to Report				
Some college	561	7.4	4.7	-	11.3		0	0.0	.	-	.
College graduate	247	5.6	3.0	-	10.3		177	2.1	1.1	-	3.9
Household poverty level											
≤100% FPL	1,029	7.6	5.4	-	10.4		Insufficient Data to Report				
>100% FPL	458	4.6	2.8	-	7.3		191	2.0	1.0	-	3.7
Maternal nativity											
Non-US-born	1,301	7.7	5.5	-	10.6		225	2.3	1.2	-	4.2
US-born	496	5.4	3.4	-	8.5		Insufficient Data to Report				
Marital status											
Unmarried	1,398	**9.5**	**7.0**	**-**	**12.9**		Insufficient Data to Report				
Married	399	3.5	2.1	-	5.8		244	2.3	1.3	-	4.2
Disability status											
No	1,257	5.7	4.1	-	7.9		200	1.9	1.0	-	3.6
Yes	509	12.6	7.9	-	19.6		Insufficient Data to Report				
WIC participation											
No	491	6.1	3.8	-	9.5		210	2.4	1.3	-	4.3
Yes	1,305	7.3	5.2	-	10.0		Insufficient Data to Report				

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: 20-29 years, <High school, >100% FPL, US-born, married, not a WIC participant, and without a disability. Insufficient Data to Report: sample size less than 5.

Time spent thinking about race

Approximately one in three Black non-Hispanic mothers and Hispanic mothers reported thinking about race at least once a day or constantly during 2017–2018 (Figure 2).

Figure 2. Time spent thinking about race by maternal race/ethnicity, MA PRAMS, 2017–2018



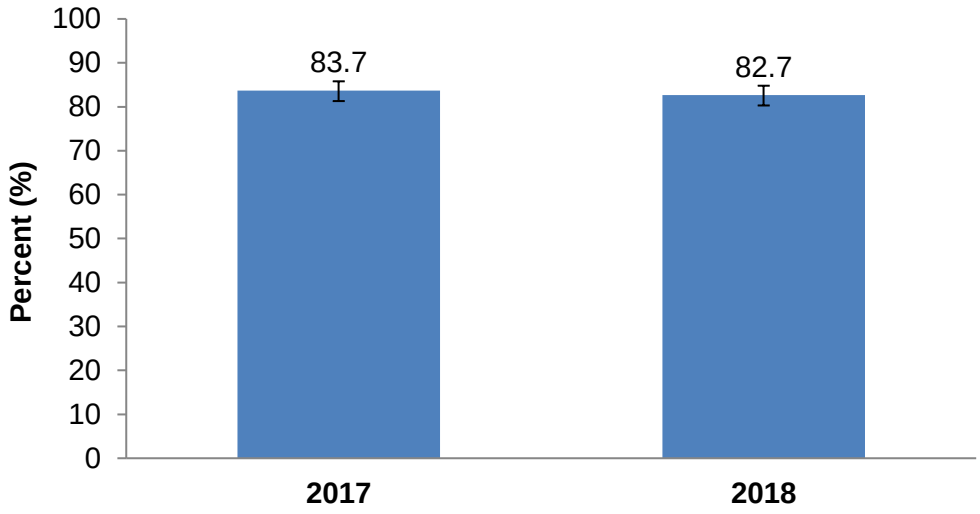
Safe Sleep

Infant sleep position

The safest position for infants to sleep is on their back (supine position). Since 1992, AAP has recommended supine sleep positioning to reduce the risk of sudden infant death syndrome (SIDS). As a result, nationwide, the frequency of supine sleeping has increased from 13% in 1992 to approximately 73% in 2010 (National Infant Sleep Position Household Survey, 2010) and the SIDS rate has decreased by 74% from 1990 to 2018 (CDC, 2019). The 2016 PRAMS data from 29 states showed that 78.0% of mothers reported usually placing their infants to sleep on their backs, and infants of black mothers were least likely to sleep on their back (Hirai et al., 2019).

The prevalence of infant supine sleep position did not differ significantly from 2017 (83.7%) to 2018 (82.7%) (Figure 3).

Figure 3. Prevalence of infants placed in supine sleep position, MA PRAMS, 2017–2018



There was no significant difference in the prevalence of infant supine sleep positioning during 2017–2018 (83.2%) compared to 2015–2016 (86.0%), or across sociodemographic groups. However, disparities were observed when examining the prevalence of supine sleep positioning by maternal sociodemographic characteristics during 2017–2018. A lower prevalence of supine sleep position was observed among infants of Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (65.8%, 71.0%, and 83.7%, respectively) compared to White non-Hispanic mothers (90.3%); those with less than a high school education, a high school diploma, or some college education (69.0%, 73.0%, and 78.9%, respectively) compared to mothers with a college degree (90.2%); those who were living at or below 100% of the FPL (70.8%) compared to those who were living above 100% of the FPL (87.4%); those born outside of the US (74.1%) compared to US-born mothers (87.7%); those who were unmarried (77.1%) compared to those who were married (86.0%); those with a disability (71.8%) compared to mothers without a disability (84.6%); and those who participated in the WIC program (72.3%) compared to those who did not participate in the WIC program (88.5%) (Table 8).

Table 8. Prevalence of infants placed in supine sleep position by maternal sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	114,270	86.0	84.5	-	87.5		109,340	83.2	81.5	-	84.7
Maternal race/ethnicity											
White non-Hispanic	71,135	91.5	89.2	-	93.4		67,461	90.3	87.7	-	92.3
Black non-Hispanic	8,952	**72.5**	**68.1**	**-**	**76.5**		8,242	**65.8**	**61.7**	**-**	**69.7**
Hispanic	18,114	**74.4**	**70.7**	**-**	**77.8**		18,408	**71.0**	**67.6**	**-**	**74.2**
Asian non-Hispanic	10,100	**85.6**	**82.1**	**-**	**88.5**		9,559	**83.7**	**80.2**	**-**	**86.7**
Other, non-Hispanic	3,813	93.4	84.2	-	97.4		3,292	85.0	73.5	-	92.1
Maternal age (years)											
<20	2,373	72.9	59.8	-	82.9		1,459	69.3	54.0	-	81.2
20-29	38,805	81.9	78.9	-	84.6		35,222	77.8	74.7	-	80.6
30-39	68,381	**89.4**	**87.5**	**-**	**91.1**		68,115	**86.6**	**84.5**	**-**	**88.4**
40+	4,712	82.7	73.6	-	89.1		4,544	83.7	74.9	-	89.9
Maternal education											
<High school	8,742	**74.6**	**68.2**	**-**	**80.1**		7,119	**69.0**	**62.0**	**-**	**75.2**
High school diploma	15,219	**80.2**	**75.1**	**-**	**84.5**		14,385	**73.0**	**67.6**	**-**	**77.8**
Some college	23,469	**80.3**	**76.3**	**-**	**83.8**		23,890	**78.9**	**75.2**	**-**	**82.2**
College graduate	62,867	91.9	90.1	-	93.5		60,112	90.2	88.2	-	91.9
Household poverty level											
≤100% FPL	19,673	**75.1**	**70.7**	**-**	**79.0**		20,313	**70.8**	**66.7**	**-**	**74.6**
>100% FPL	88,196	89.5	87.8	-	91.0		84,780	87.4	85.6	-	89.1
Maternal nativity											
Non-US-born	33,126	**78.3**	**75.5**	**-**	**80.8**		32,688	**74.1**	**71.3**	**-**	**76.8**
US-born	81,144	89.7	87.7	-	91.3		76,652	87.7	85.7	-	89.5
Marital status											
Unmarried	35,203	**80.2**	**76.9**	**-**	**83.1**		32,425	**77.1**	**73.7**	**-**	**80.1**
Married	79,067	89.1	87.3	-	90.6		76,915	86.0	84.1	-	87.8
Disability status											
No	103,348	86.6	85.0	-	88.1		97,857	84.6	83.0	-	86.2
Yes	9,825	80.6	73.6	-	86.1		10,817	**71.8**	**65.2**	**-**	**77.5**
WIC participation											
No	80,767	91.6	89.9	-	93.0		78,062	88.5	86.6	-	90.2
Yes	33,047	**75.2**	**71.9**	**-**	**78.2**		31,016	**72.3**	**69.0**	**-**	**75.4**

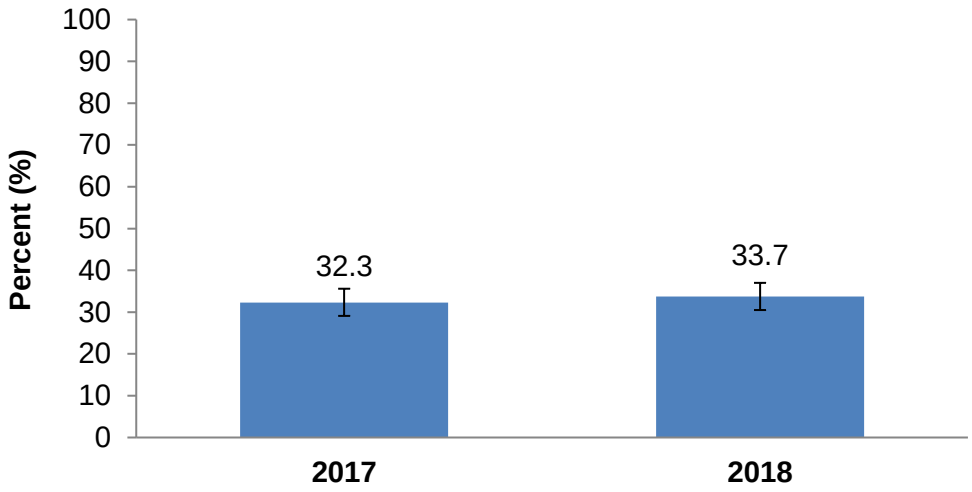
Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, not a WIC participant, and without a disability.

Infant sleeping on a separate approved sleep surface

AAP recommends infants sleep on their back on a firm sleep surface like a crib, with no soft bedding or loose objects (American Academy of Pediatrics). CDC recommends using a firm, flat sleep surface (e.g., a mattress) in a safety-approved crib covered only by a fitted sheet. Soft surfaces can increase the risk of infant sleep-related death. A firm sleep surface helps reduce the risk of SIDS and suffocation. The 2016 PRAMS data from 29 states showed that 31.8% of mothers used a separate approved sleep surface for their infants, and separate approved sleep surfaces were least common among Asian/Pacific Islanders (Hirai et al., 2019).

The prevalence of infants sleeping on a separate approved sleep surface (crib, bassinet, or pack and play) did not differ from 2017 (32.3%) to 2018 (33.7%) (Figure 4). This is a new question that was added in 2016 (Phase 8).

Figure 4. Prevalence of infants sleeping on a separate approved sleep surface, MA PRAMS, 2017–2018



During 2017–2018, a lower prevalence of infants sleeping on a separate approved sleep surface was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (27.0%, 29.3%, and 25.2%, respectively) compared to White non-Hispanic mothers (36.7%); those with a high school diploma or some college education (29.6% and 24.4%, respectively) compared to mothers with a college degree (39.3%); those who were living at or below 100% of the FPL (25.2%) compared to those who were living above 100% of the FPL (35.5%); those born outside of the US (26.7%) compared to US-born mothers (36.0%); those who were unmarried (27.0%) compared to those who were married (35.8%); and those with a disability (19.8%) compared to mothers without a disability (34.6%) (Table 9).

Table 9. Prevalence of infants sleeping on a separate approved sleep surface by maternal sociodemographic characteristics, MA PRAMS, 2017–2018

	2017–2018*				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	41,247	33.0	30.7	-	35.3
Maternal race/ethnicity					
White non-Hispanic	26,417	36.7	33.2	-	40.5
Black non-Hispanic	3,150	**27.0**	**23.4**	**-**	**31.0**
Hispanic	7,110	**29.3**	**26.1**	**-**	**32.8**
Asian non-Hispanic	2,681	**25.2**	**21.4**	**-**	**29.5**
Other, non-Hispanic	1,105	29.9	19.8	-	42.5
Maternal age (years)					
<20	368	17.2	10.0	-	28.0
20-29	12,792	29.9	26.3	-	33.7
30-39	26,209	34.8	31.8	-	38.0
40+	1,878	38.0	27.0	-	50.4
Maternal education					
<High school	2,782	28.5	21.7	-	36.5
High school diploma	5,505	**29.6**	**24.3**	**-**	**35.5**
Some college	7,032	**24.4**	**20.5**	**-**	**28.9**
College graduate	24,943	39.3	35.9	-	42.8
Household poverty level					
≤100% FPL	6,839	**25.2**	**21.5**	**-**	**29.2**
>100% FPL	33,020	35.5	32.7	-	38.4
Maternal nativity					
Non-US-born	10,861	**26.7**	**23.9**	**-**	**29.9**
US-born	30,386	36.0	32.9	-	39.1
Marital status					
Unmarried	10,901	**27.0**	**23.4**	**-**	**30.9**
Married	30,346	35.8	33.0	-	38.8
Disability status					
No	38,132	34.6	32.1	-	37.2
Yes	2,820	**19.8**	**14.9**	**-**	**25.9**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

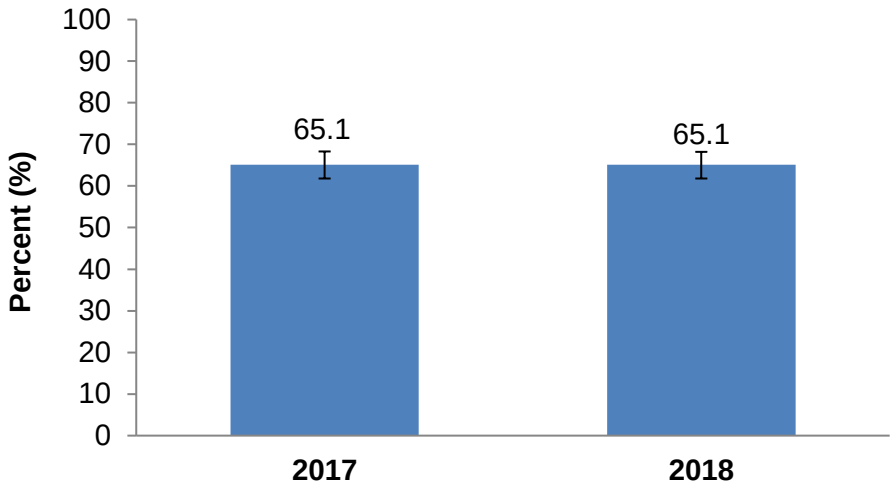
*This is a new question that was added in 2016 (Phase 8). See Appendix C for survey questions.

Infant room-sharing without bed-sharing

AAP recommends infants should share a room with their caregivers without sharing a bed (American Academy of Pediatrics). The 2016 PRAMS data from 29 states showed that most mothers reported room-sharing without bed-sharing (57.1%) (Hirai et al., 2019).

The MA PRAMS 2017–2018 data showed the prevalence of infant room-sharing without bed-sharing was 65.1% in both 2017 and 2018 (Figure 5). This is a new question that was added in 2016 (Phase 8).

Figure 5. Prevalence of infant room-sharing without bed-sharing, MA PRAMS, 2017–2018



During 2017–2018, a higher prevalence of infant room-sharing without bed-sharing was observed among Hispanic mothers (73.2%) compared to White non-Hispanic mothers (63.1%); those with less than high school education (76.0%) compared to mothers with a college degree (62.4%); and those born outside of the US (70.5%) compared to US-born mothers (62.3%) (Table 10).

Table 10. Prevalence of infant room-sharing without bed-sharing by maternal sociodemographic characteristics, MA PRAMS, 2017–2018

	2017–2018*				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	85,303	65.1	62.8	-	67.4
Maternal race/ethnicity					
White non-Hispanic	46,971	63.1	59.4	-	66.6
Black non-Hispanic	7,874	62.8	58.3	-	67.1
Hispanic	18,764	**73.2**	**69.9**	**-**	**76.3**
Asian non-Hispanic	7,203	62.5	57.9	-	66.8
Other, non-Hispanic	2,210	57.1	44.6	-	68.7
Maternal age (years)					
<20	1,260	58.9	42.9	-	73.3
20-29	28,705	64.1	60.2	-	67.8
30-39	51,883	65.8	62.7	-	68.7
40+	3,455	65.6	53.9	-	75.7
Maternal education					
<High school	7,829	**76.0**	**68.5**	**-**	**82.2**
High school diploma	12,876	65.6	59.6	-	71.1
Some college	20,090	66.3	61.6	-	70.8
College graduate	41,329	62.4	58.9	-	65.7
Household poverty level					
≤100% FPL	19,537	68.5	64.0	-	72.6
>100% FPL	61,468	63.6	60.7	-	66.3
Maternal nativity					
Non-US-born	31,205	**70.5**	**67.5**	**-**	**73.4**
US-born	54,097	62.3	59.2	-	65.4
Marital status					
Unmarried	28,192	67.2	63.1	-	71.1
Married	57,111	64.1	61.2	-	66.8
Disability status					
No	75,720	65.7	63.2	-	68.1
Yes	9,035	60.4	53.3	-	67.0

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, not a WIC participant, and without a disability.

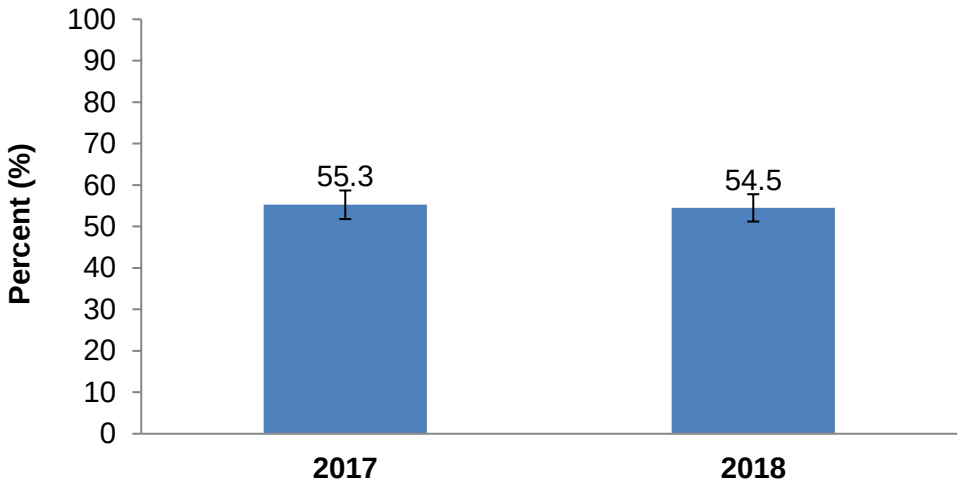
*This is a new question that was added in 2016 (Phase 8). See Appendix C for survey questions.

Infant sleeping without soft objects or loose bedding

AAP recommends infants sleep on their back on a firm sleep surface without soft bedding or loose objects. The 2016 PRAMS data from 29 states showed that 42.4% of mothers reported avoiding soft bedding for their infants (Hirai et al., 2019).

There was no significant difference in the prevalence of infant sleeping without soft objects or loose bedding such as blankets, toys or crib bumper pads from 2017 (55.3%) to 2018 (54.5%) (Figure 6). This is a new question that was added in 2016 (Phase 8).

Figure 6. Prevalence of infant sleeping without soft objects or loose bedding, MA PRAMS, 2017–2018



During 2017–2018, a lower prevalence of infant sleeping without soft objects or loose bedding was observed among Black non-Hispanic, Hispanic, Asian non-Hispanic, and other, non-Hispanic mothers (41.5%, 37.2%, 42.0%, and 44.2%, respectively) compared to White non-Hispanic mothers (65.6%); those with less than high school education, a high school diploma, or some college education (37.3%, 34.9%, and 42.7%, respectively) compared to mothers with a college degree (69.3%); those who were living at or below 100% of the FPL (37.3%) compared to those who were living above 100% of the FPL (61.0%); those born outside of the US (42.1%) compared to US-born mothers (61.0%); those who were unmarried (38.6%) compared to those who were married (62.6%); and those with a disability (39.8%) compared to mothers without a disability (56.9%) (Table 11).

Table 11. Prevalence of infant sleep without soft objects or loose bedding by maternal sociodemographic characteristics, MA PRAMS, 2017–2018

	2017–2018*				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	68,890	54.9	52.5	-	57.3
Maternal race/ethnicity					
White non-Hispanic	47,253	65.6	61.8	-	69.2
Black non-Hispanic	4,792	**41.5**	**37.2**	**-**	**45.9**
Hispanic	9,116	**37.2**	**33.6**	**-**	**40.9**
Asian non-Hispanic	4,481	**42.0**	**37.4**	**-**	**46.6**
Other, non-Hispanic	1,628	**44.2**	**32.4**	**-**	**56.8**
Maternal age (years)					
<20	933	44.1	30.2	-	59.1
20-29	19,397	45.1	41.1	-	49.1
30-39	45,191	**60.0**	**56.9**	**-**	**63.1**
40+	3,369	**66.3**	**54.8**	**-**	**76.2**
Maternal education					
<High school	3,609	**37.3**	**29.9**	**-**	**45.4**
High school diploma	6,496	**34.9**	**29.4**	**-**	**40.9**
Some college	12,386	**42.7**	**37.7**	**-**	**47.7**
College graduate	44,139	69.3	66.2	-	72.3
Household poverty level					
≤100% FPL	10,119	**37.3**	**32.9**	**-**	**42.0**
>100% FPL	56,888	61.0	58.1	-	63.8
Maternal nativity					
Non-US-born	17,181	**42.1**	**38.8**	**-**	**45.5**
US-born	51,709	61.0	57.9	-	64.1
Marital status					
Unmarried	15,607	**38.6**	**34.5**	**-**	**42.9**
Married	53,283	62.6	59.8	-	65.4
Disability status					
No	62,883	56.9	54.3	-	59.4
Yes	5,624	**39.8**	**32.8**	**-**	**47.1**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, not a WIC participant, and without a disability.

*This is a new question that was added in 2016 (Phase 8). See Appendix C for survey questions.

Breastfeeding

Breastfeeding

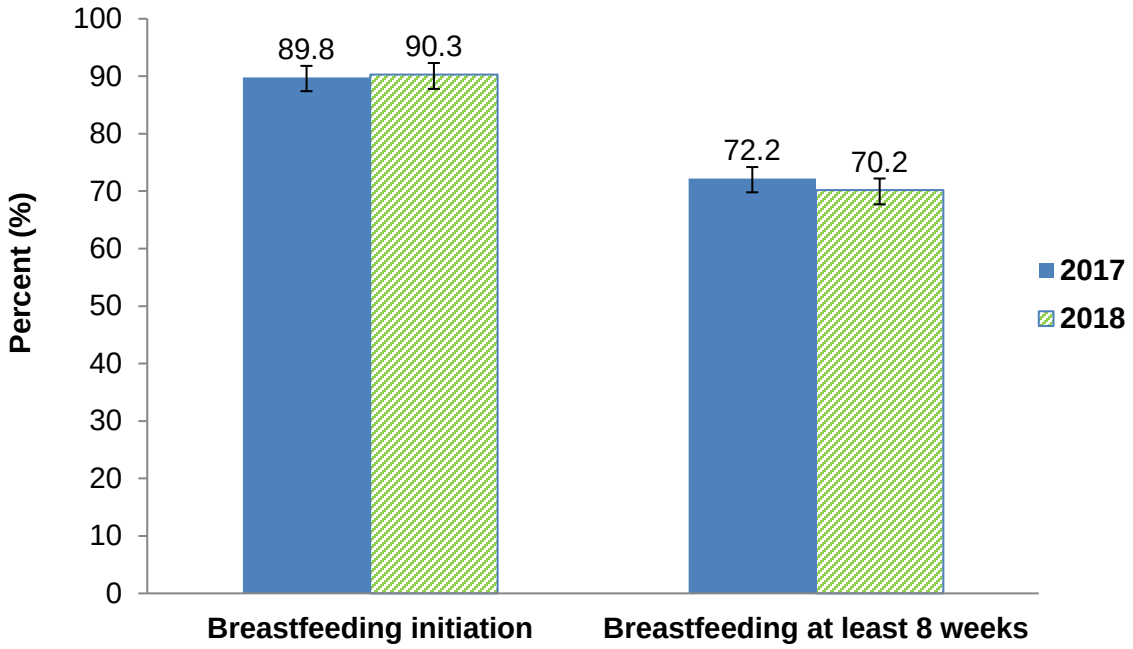
AAP recommends exclusive breastfeeding for the first six months of an infant's life. After the first six months and up to one year, breastfeeding can continue with introduction of solid foods (Eidelman & Schanler, 2012). According to the Centers for Disease Control and Prevention (CDC), breastfeeding was initiated for 83% of US infants born in 2014. In addition, 55% of infants born in 2014 were still being breastfed at six months of age, up from 42% in 2004 (CDC, 2017). The benefits of breastfeeding include providing a child with a nutritionally balanced meal, some protection against common childhood infections, and better survival during an infant's first year, including a lower risk of SIDS (Ip et al., 2007). Previous research has showed that breastfeeding may reduce the risk for certain allergic diseases, asthma, obesity, and Type 2 diabetes (Ip et al., 2007; Pattison et al., 2019).

Breastfeeding is also strongly encouraged and promoted by the WIC program. All WIC program staff are trained to support mother's desire to breastfeed and help new breastfeeding mothers to continue breastfeeding as long as they wish. However, despite the WIC's breastfeeding promotion, many mothers in the WIC program may experience barriers such as returning to work or social/cultural barriers to continue breastfeeding. Healthy People 2020 target for the proportion of infants who were ever breastfed is 81.9% (Healthy People, 2021).

The Baby-Friendly Hospital Initiative has a substantial role in promoting breastfeeding and it was launched in 1991 by the World Health Organization and the United Nations Children's Fund. Its focus is to improve breastfeeding rates while encouraging mother-infant bonding (Baby-Friendly USA). To earn the designation, hospitals and birth centers must adopt the practice of keeping mothers and infants together at all times (Pearson, 2016). Many Massachusetts hospitals and birth centers have implemented policies and care practices that meet the gold standard for protecting, promoting and supporting breastfeeding.

Between 2017 and 2018, there was no significant difference in the prevalence of mothers who initiated breastfeeding (89.8% vs. 90.3%) or breastfed for at least 8 weeks (72.2% vs. 70.2%) (Figure 7).

Figure 7. Prevalence of breastfeeding initiation and duration for at least 8 weeks, MA PRAMS, 2017–2018



During 2017–2018, 90.0% of mothers reported having ever initiated breastfeeding. A higher prevalence of breastfeeding initiation was observed among Asian non-Hispanic mothers (97.2%) compared to White non-Hispanic mothers (87.9%); those with a college degree (95.1%) compared to those with less than a high school education (82.5%), a high school diploma (82.7%), or some college education (86.1%); those who were living above 100% of the FPL (92.1%) compared to those who were living at or below 100% of the FPL (83.2%); those born outside of the US (95.7%) compared to US-born mothers (87.2%); those who were married (93.4%) compared to those who were unmarried (82.9%); and those who were not enrolled in the WIC program (93.4%) compared to mothers who were enrolled in the WIC program (83.3%) (Table 12).

During 2017–2018, 71.2% of mothers reported breastfeeding for at least 8 weeks. A higher prevalence of breastfeeding for at least eight weeks was observed among Asian non-Hispanic mothers (84.6%) compared to White non-Hispanic mothers (70.6%); those aged 30-39 years (76.1%) compared to those aged 20-29 years (63.8%); those with a college degree (82.5%) compared to those with less than a high school education, a high school diploma, or some college education (57.2%, 58.1%, and 60.7%, respectively); those living above 100% of the FPL (75.5%) compared to those living below 100% of the FPL (57.2%); those born outside of the US (80.2%) compared to the US-born mothers (66.6%); those who were married (79.4%) compared to those who were unmarried (53.6%); those without a disability (72.5%) compared to those with a disability (61.3%); and those not enrolled in the WIC program (78.2%) compared to those enrolled in the WIC program (57.1%) (Table 13).

Table 12. Prevalence of breastfeeding initiation by maternal sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	120,208	89.9	88.2	-	91.4		119,248	90.0	88.4	-	91.5
Maternal race/ethnicity											
White non-Hispanic	69,207	88.5	85.8	-	90.8		65,955	87.9	85.1	-	90.2
Black non-Hispanic	11,077	88.8	84.8	-	91.9		11,626	90.7	88.0	-	92.8
Hispanic	22,748	**93.1**	**90.9**	**-**	**94.8**		23,984	92.1	89.9	-	93.8
Asian non-Hispanic	11,326	**94.6**	**91.4**	**-**	**96.6**		11,312	**97.2**	**95.3**	**-**	**98.4**
Other, non-Hispanic	3,450	84.1	66.9	-	93.2		3,532	90.8	82.1	-	95.5
Maternal age (years)											
<20	2,999	90.2	76.5	-	96.3		1,849	85.3	66.4	-	94.4
20-29	41,688	87.6	84.2	-	90.3		39,629	87.3	84.1	-	90.0
30-39	70,693	91.8	89.7	-	93.5		73,148	92.1	90.0	-	93.7
40+	4,828	84.9	73.6	-	92.0		4,622	85.1	74.3	-	91.9
Maternal education											
<High school	9,274	**79.3**	**71.4**	**-**	**85.5**		8,613	**82.5**	**74.7**	**-**	**88.2**
High school diploma	15,918	**82.9**	**76.7**	**-**	**87.7**		16,341	**82.7**	**77.0**	**-**	**87.2**
Some college	25,623	**86.8**	**82.6**	**-**	**90.2**		26,272	**86.1**	**81.9**	**-**	**89.4**
College graduate	65,290	95.0	93.2	-	96.3		63,880	95.1	93.3	-	96.5
Household poverty level											
≤100% FPL	22,025	**83.5**	**78.7**	**-**	**87.4**		24,115	**83.2**	**79.0**	**-**	**86.8**
>100% FPL	91,327	92.1	90.2	-	93.6		89,878	92.1	90.2	-	93.6
Maternal nativity											
Non-US-born	40,778	**95.8**	**94.3**	**-**	**96.9**		42,775	**95.7**	**94.2**	**-**	**96.8**
US-born	79,430	87.2	84.8	-	89.3		76,473	87.2	84.7	-	89.2
Marital status											
Unmarried	36,567	**82.7**	**78.8**	**-**	**86.1**		35,060	**82.9**	**79.1**	**-**	**86.2**
Married	83,499	93.5	91.8	-	94.9		84,189	93.4	91.7	-	94.7
Disability status											
No	109,141	90.8	89.1	-	92.3		105,429	90.5	88.7	-	92.0
Yes	10,038	**82.5**	**74.1**	**-**	**88.6**		13,050	86.3	80.1	-	90.7
WIC Participation											
No	82,224	92.8	91.0	-	94.3		82,892	93.4	91.6	-	94.8
Yes	37,409	**84.5**	**80.8**	**-**	**87.5**		36,067	**83.3**	**79.8**	**-**	**86.4**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, without a disability, and not a WIC participant.

Table 13. Prevalence of breastfeeding duration for at least 8 weeks by maternal sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

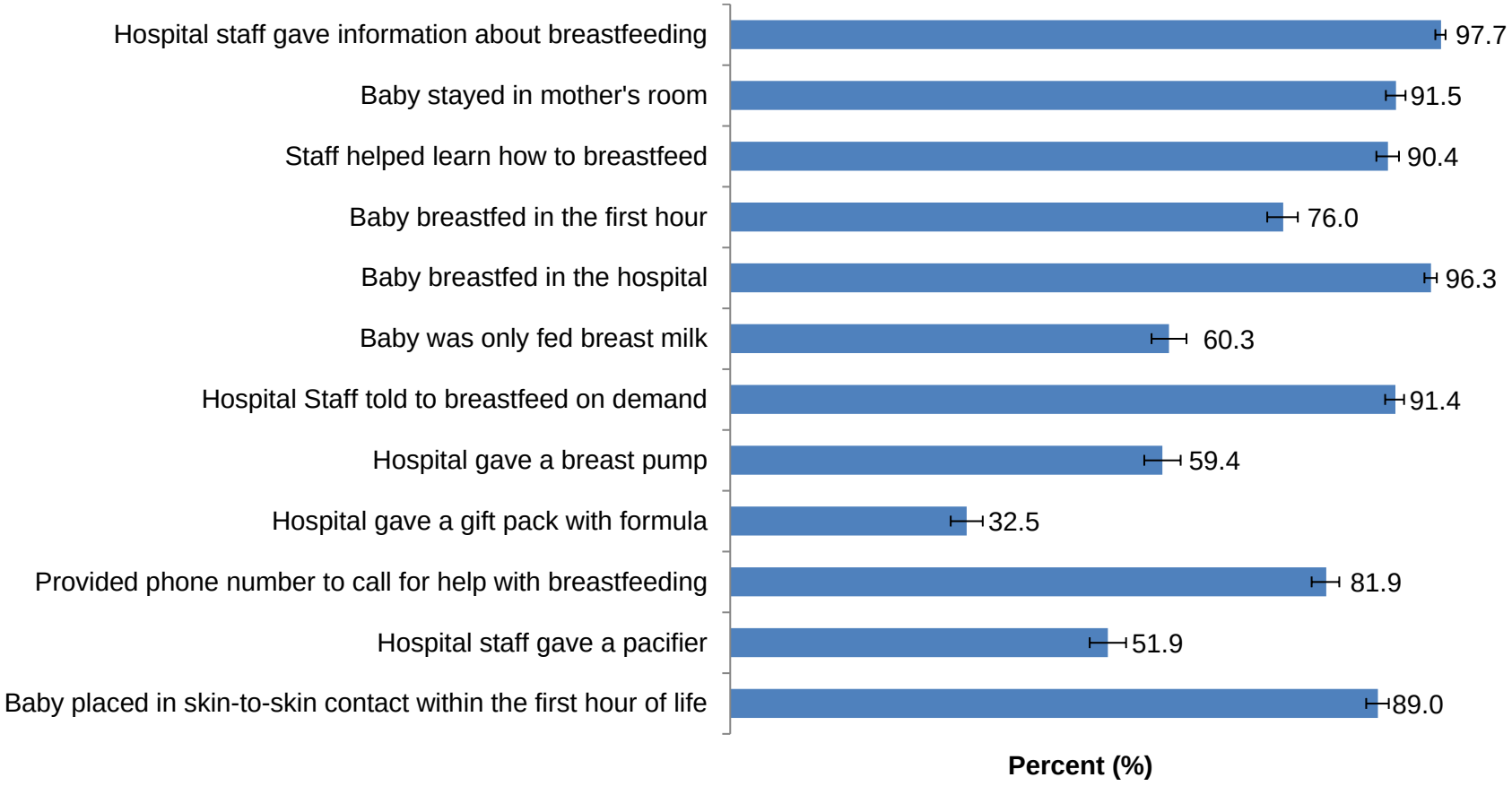
	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	96,249	72.2	69.9	-	74.4		93,720	71.2	69.0	-	73.4
Maternal race/ethnicity											
White non-Hispanic	55,889	71.8	68.3	-	75.1		52,640	70.6	67.0	-	73.9
Black non-Hispanic	9,097	72.9	68.3	-	77.0		9,477	74.7	71.0	-	78.2
Hispanic	16,288	66.5	62.7	-	70.2		16,984	65.4	61.9	-	68.8
Asian non-Hispanic	10,061	**84.3**	**80.3**	**-**	**87.5**		9,788	**84.6**	**80.9**	**-**	**87.8**
Other, non-Hispanic	3,028	74.2	57.2	-	86.1		2,746	72.2	59.2	-	82.2
Maternal age (years)											
<20	1,498	**45.5**	**31.9**	**-**	**59.8**		1,129	52.0	37.7	-	66.1
20-29	30,440	64.1	60.0	-	68.1		28,859	63.8	59.9	-	67.5
30-39	60,207	**78.4**	**75.6**	**-**	**80.9**		60,053	**76.1**	**73.2**	**-**	**78.8**
40+	4,105	72.0	60.3	-	81.3		3,680	69.9	57.8	-	79.7
Maternal education											
<High school	5,970	**50.3**	**43.1**	**-**	**57.6**		5,951	**57.2**	**49.3**	**-**	**64.6**
High school diploma	10,533	**55.0**	**48.5**	**-**	**61.3**		11,299	**58.1**	**52.1**	**-**	**64.0**
Some college	19,252	**65.6**	**60.5**	**-**	**70.4**		18,461	**60.7**	**55.8**	**-**	**65.5**
College graduate	57,124	83.5	80.7	-	85.9		55,213	82.5	79.7	-	85.0
Household poverty level											
≤100% FPL	14,496	**54.9**	**49.7**	**-**	**59.9**		16,496	**57.2**	**52.6**	**-**	**61.7**
>100% FPL	76,224	77.2	74.6	-	79.6		73,288	75.5	72.9	-	78.0
Maternal nativity											
Non-US-born	34,640	**81.5**	**79.0**	**-**	**83.8**		35,615	**80.2**	**77.5**	**-**	**82.7**
US-born	61,609	67.8	64.8	-	70.8		58,105	66.6	63.5	-	69.6
Marital status											
Unmarried	24,661	**55.9**	**51.5**	**-**	**60.2**		22,394	**53.6**	**49.3**	**-**	**57.7**
Married	71,446	80.3	77.8	-	82.5		71,327	79.4	77.0	-	81.7
Disability status											
No	88,526	73.9	71.6	-	76.1		83,855	72.5	70.1	-	74.7
Yes	6,933	**56.8**	**48.5**	**-**	**64.7**		9,232	**61.3**	**54.2**	**-**	**68.0**
WIC participation											
No	69,588	78.7	76.0	-	81.2		69,038	78.2	75.5	-	80.6
Yes	26,312	**59.4**	**55.5**	**-**	**63.3**		24,466	**57.1**	**53.2**	**-**	**60.9**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, without a disability, and not a WIC participant.

Hospital breastfeeding practices

The majority (97.7%) of mothers reported that hospital staff gave them information about breastfeeding during the maternal delivery hospital stay, 91.5% of infants stayed in the mother's room, 89.0% of infants were placed in skin to skin contact within the first hour of life, and 96.3% of infants were breastfed in the hospital (Figure 8).

Figure 8. Hospital breastfeeding practices for maternal delivery hospital stay, MA PRAMS, 2017–2018



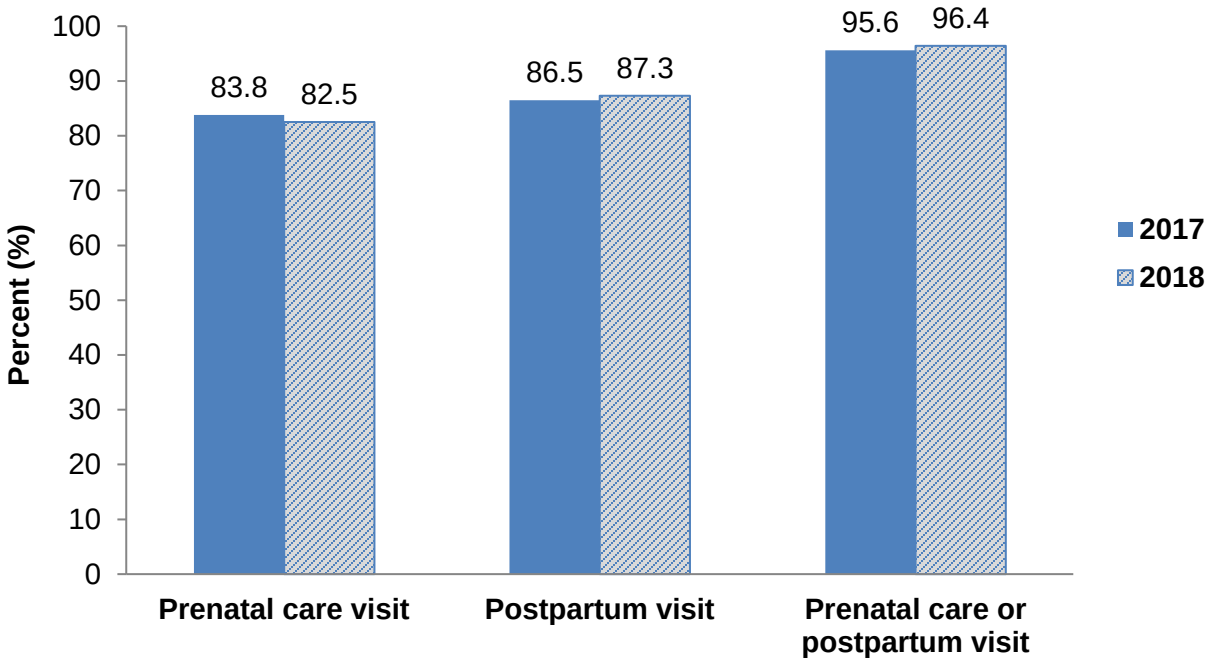
Emotional Wellness:

Screening for depression during prenatal care or postpartum visits

Screening for depression symptoms during pregnancy has been reported to help identify women at risk for early cessation of exclusive breastfeeding, whereas exclusive breastfeeding may help to reduce symptoms of depression from childbirth to 3 months postpartum (Figueiredo et al., 2014). Prenatal education and screening for depression at hospital delivery may be feasible and may result in more women being educated and screened (Farr et al., 2014).

During 2017-2018, the majority of mothers reported that health care providers asked if they were feeling down or depressed during their prenatal care visits (83.8% in 2017 and 82.5% in 2018, respectively) and during their postpartum visits (86.5% in 2017 and 87.3% in 2018, respectively). There was no significant difference in the prevalence of women being screened for depression between 2017 and 2018 during prenatal care or postpartum visits. Overall, more than 95% of mothers reported being screened for depression during their prenatal care or postpartum visits (95.6% in 2017 and 96.4% in 2018) (Figure 9). These two new questions were added in 2016 (Phase 8).

Figure 9. Prevalence of mothers being screened for depression during prenatal care or postpartum visits, MA PRAMS, 2017–2018



A higher prevalence of mothers reported being screened for depression during prenatal care visits was observed among Black non-Hispanic and Hispanic mothers (88.1% and 91.1%, respectively) compared to White non-Hispanic mothers (80.3%); mothers aged 20-29 years (86.9%) compared to mothers aged 30-39 years (81.6%) and those aged 40 years and older (71.6%); those with less than a high school education, a high school diploma, or some college education (89.9%, 89.9%, and 89.0%, respectively) compared to mothers with a college degree (76.8%); those who were living at or below 100% of the FPL (89.7%) compared to those who were living above 100% of the FPL (80.7%); those

who were unmarried (89.7%) compared to those who were married (80.0%); and those with a disability (93.3%) compared to mothers without a disability (81.8%) (Table 14).

Table 14. Prevalence of mothers being screened for depression during prenatal care visits by sociodemographic characteristics, MA PRAMS, 2017–2018

	2017–2018*				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	109,252	83.1	81.2	-	84.9
Maternal race/ethnicity					
White non-Hispanic	59,870	80.3	77.2	-	83.0
Black non-Hispanic	11,132	**88.1**	**84.8**	**-**	**90.7**
Hispanic	23,253	**91.1**	**88.9**	**-**	**93.0**
Asian non-Hispanic	8,987	78.4	74.0	-	82.2
Other, non-Hispanic	3,135	79.9	67.9	-	88.1
Maternal age (years)					
<20	1,847	89.1	73.3	-	96.0
20-29	39,407	86.9	84.0	-	89.4
30-39	64,144	**81.6**	**79.0**	**-**	**83.9**
40+	3,853	**71.6**	**59.5**	**-**	**81.3**
Maternal education					
<High school	9,332	**89.9**	**84.2**	**-**	**93.7**
High school diploma	17,621	**89.9**	**85.7**	**-**	**93.0**
Some college	27,043	**89.0**	**85.4**	**-**	**91.8**
College graduate	50,813	76.8	73.7	-	79.6
Household poverty level					
≤100% FPL	25,538	**89.7**	**86.5**	**-**	**92.3**
>100% FPL	78,030	80.7	78.3	-	82.9
Maternal nativity					
Non-US-born	38,141	86.2	83.8	-	88.4
US-born	70,979	81.5	78.9	-	83.9
Marital status					
Unmarried	38,167	**89.7**	**86.8**	**-**	**92.0**
Married	71,085	80.0	77.5	-	82.2
Disability status					
No	94,049	81.8	79.7	-	83.8
Yes	13,892	**93.3**	**89.3**	**-**	**95.9**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

*****This is a new question that was added in 2016 (Phase 8). See Appendix C for survey questions.

A lower prevalence of mothers who reported being screened for depression during the postpartum visit was observed among Hispanic mothers (82.3%) compared to White non-Hispanic mothers (88.8%); mothers aged less than 20 years (66.5%) compared to mothers aged 20-29 years (84.1%); those with less than a high school education and a high school diploma (74.8% and 81.8%, respectively) compared to mothers with a college degree (90.1%); those who were living at or below 100% of the FPL (80.2%) compared to those who were living above 100% of the FPL (89.4%); those who were unmarried (83.6%) compared to those who were married (88.4%); and those with a disability (80.2%) compared to mothers without a disability (87.9%) (Table 15).

Table 15. Prevalence of mothers being screened for depression during the postpartum visit by sociodemographic characteristics, MA PRAMS, 2017–2018

	2017–2018*				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	115,351	86.9	85.3	-	88.4
Maternal race/ethnicity					
White non-Hispanic	66,734	88.8	86.2	-	91.0
Black non-Hispanic	10,914	85.0	81.9	-	87.6
Hispanic	21,398	**82.3**	**79.3**	**-**	**84.9**
Asian non-Hispanic	9,858	85.1	81.3	-	88.2
Other, non-Hispanic	3,353	86.6	74.6	-	93.4
Maternal age (years)					
<20	1,464	**66.5**	**52.3**	**-**	**78.3**
20-29	38,300	84.1	81.1	-	86.7
30-39	70,963	89.2	87.0	-	91.0
40+	4,624	85.5	78.0	-	90.7
Maternal education					
<High school	7,786	**74.8**	**67.6**	**-**	**80.8**
High school diploma	16,421	**81.8**	**77.1**	**-**	**85.7**
Some college	26,532	86.7	83.0	-	89.7
College graduate	60,139	90.1	87.8	-	91.9
Household poverty level					
≤100% FPL	23,475	**80.2**	**76.5**	**-**	**83.4**
>100% FPL	87,419	89.4	87.4	-	91.0
Maternal nativity					
Non-US-born	38,019	85.1	82.7	-	87.2
US-born	77,201	87.8	85.6	-	89.7
Marital status					
Unmarried	35,606	**83.6**	**80.5**	**-**	**86.3**
Married	79,744	88.4	86.5	-	90.1
Disability status					
No	102,658	87.9	86.2	-	89.4
Yes	12,267	**80.2**	**74.3**	**-**	**85.0**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

*This is a new question that was added in 2016 (Phase 8). See Appendix C for survey questions.

A higher prevalence of mothers who reported being screened for depression during prenatal care or postpartum visits was observed among mothers with a disability (99.3%) compared to mothers without a disability (95.6%), but not among mothers with other sociodemographic characteristics (Table 16).

Table 16. Prevalence of mothers being screened for depression during prenatal care or postpartum visits by sociodemographic characteristics, MA PRAMS, 2017–2018

	2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	128,065	96.0	94.9	-	96.9
Maternal race/ethnicity					
White non-Hispanic	72,020	95.6	93.8	-	96.9
Black non-Hispanic	12,541	96.8	95.2	-	97.9
Hispanic	25,405	97.1	95.4	-	98.2
Asian non-Hispanic	11,070	94.4	91.4	-	96.5
Other, non-Hispanic	3,837	97.8	94.1	-	99.2
Maternal age (years)					
<20	2,033	93.7	75.2	-	98.6
20-29	44,489	96.6	94.9	-	97.7
30-39	76,505	96.0	94.4	-	97.1
40+	5,038	92.6	85.4	-	96.4
Maternal education					
<High school	10,041	95.9	91.8	-	98.0
High school diploma	19,373	95.6	92.1	-	97.6
Some college	29,804	97.2	95.3	-	98.4
College graduate	64,056	95.4	93.7	-	96.7
Household poverty level					
≤100% FPL	27,749	95.1	92.5	-	96.9
>100% FPL	94,019	96.1	94.8	-	97.1
Maternal nativity					
Non-US-born	43,138	96.1	94.6	-	97.2
US-born	84,796	95.9	94.4	-	97.1
Marital status					
Unmarried	41,743	96.9	95.1	-	98.1
Married	86,322	95.6	94.2	-	96.6
Disability status					
No	111,612	95.6	94.3	-	96.5
Yes	15,047	**99.3**	**98.2**	**-**	**99.7**

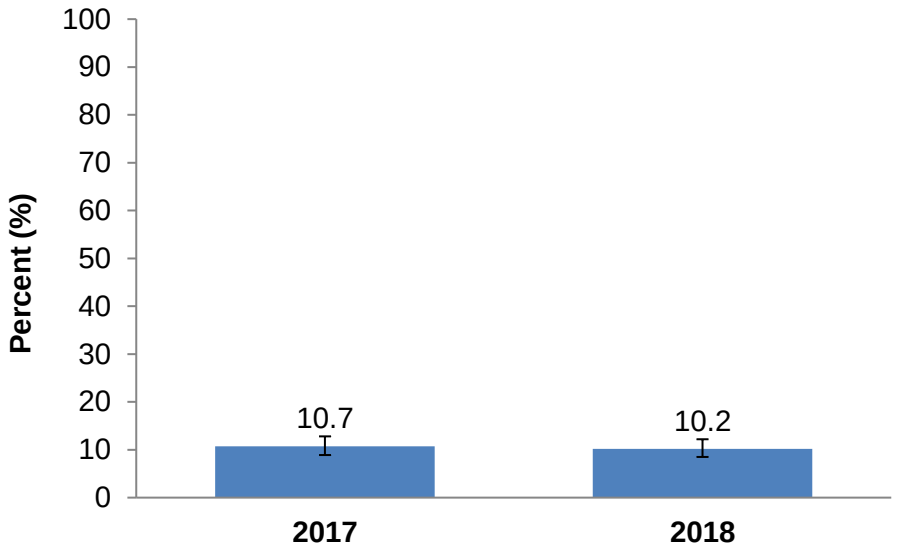
Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

Postpartum depressive symptoms

Postpartum depression (PPD) is a mood disorder that can affect mothers after childbirth. Mothers with PPD experience feelings of sadness, anxiety, and exhaustion that are associated with adverse infant and maternal outcomes. Mothers with a history of depression and those who experience depression during pregnancy are at highest risk for PPD (Thompson & Fox, 2010). Nationally, about one in nine women experiences symptoms of PPD (Ko et al., 2017).

The trend for postpartum depressive symptoms among Massachusetts mothers did not change significantly from 2017 (10.7%) to 2018 (10.2%) (Figure 10).

Figure 10. Prevalence of mothers with postpartum depressive symptoms, MA PRAMS, 2017–2018



A higher prevalence was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (18.9%,12.5%, and 14.3%, respectively) compared to White non-Hispanic mothers (7.8%); those with less than a high school education and high school diploma (17.5% and 14.4%, respectively) compared to mothers with a college degree (7.8%); those who were living at or below 100% of the FPL (16.4%) compared to those who were living above 100% of the FPL (8.6%); those born outside of the US (15.2%) compared to US-born mothers (8.0%); and those with a disability (26.4%) compared to those without a disability (8.3%). There was no significant difference in the prevalence of mothers with postpartum depressive symptoms during 2015-2016 and 2017-2018 overall and among mothers with different sociodemographic characteristics (Table 17).

Table 17. Prevalence of mothers with postpartum depressive symptoms by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	14,373	10.6	9.2	-	12.1		13,930	10.5	9.2	-	11.9
Maternal race/ethnicity											
White non-Hispanic	6,253	7.9	6.1	-	10.2		5,819	7.8	5.9	-	10.1
Black non-Hispanic	2,226	**17.4**	**13.6**	**-**	**21.9**		2,425	**18.9**	**15.7**	**-**	**22.5**
Hispanic	3,410	**13.6**	**11.1**	**-**	**16.5**		3,302	**12.5**	**10.5**	**-**	**15.0**
Asian non-Hispanic	1,816	**14.8**	**11.9**	**-**	**18.1**		1,683	**14.3**	**11.3**	**-**	**18.0**
Other, non-Hispanic	566	13.8	6.1	-	28.3		381	9.9	4.6	-	19.9
Maternal age (years)											
<20	889	**26.2**	**16.5**	**-**	**39.1**		398	18.1	10.4	-	29.4
20-29	6,492	13.3	10.9	-	16.2		5,060	11.0	9.0	-	13.5
30-39	6,197	**8.0**	**6.5**	**-**	**9.8**		7,608	9.6	7.9	-	11.5
40+	795	13.0	7.2	-	22.4		864	16.1	9.3	-	26.5
Maternal education											
<High school	1,995	**16.2**	**11.7**	**-**	**21.9**		1,855	**17.5**	**12.7**	**-**	**23.7**
High school diploma	3,141	**15.8**	**11.5**	**-**	**21.3**		2,876	**14.4**	**11.0**	**-**	**18.6**
Some college	3,450	11.6	8.8	-	15.0		3,497	11.4	8.8	-	14.6
College graduate	5,564	8.0	6.5	-	9.9		5,212	7.8	6.2	-	9.7
Household poverty level											
≤100% FPL	5,250	**19.0**	**15.3**	**-**	**23.4**		4,818	**16.4**	**13.5**	**-**	**19.7**
>100% FPL	8,135	8.1	6.8	-	9.7		8,467	8.6	7.2	-	10.3
Maternal nativity											
Non-US-born	6,036	**13.9**	**11.8**	**-**	**16.3**		6,871	**15.2**	**13.1**	**-**	**17.6**
US-born	8,337	9.0	7.3	-	11.0		7,033	8.0	6.5	-	9.9
Marital status											
Unmarried	6,861	**15.0**	**12.2**	**-**	**18.3**		5,599	13.1	10.7	-	16.1
Married	7,512	8.3	7.0	-	9.9		8,331	9.2	7.8	-	10.9
Disability status											
No	9,793	8.0	6.8	-	9.4		9,745	8.3	7.1	-	9.7
Yes	4,470	**35.8**	**28.6**	**-**	**43.6**		4,049	**26.4**	**20.8**	**-**	**32.9**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

Social Connectedness & Father's Involvement

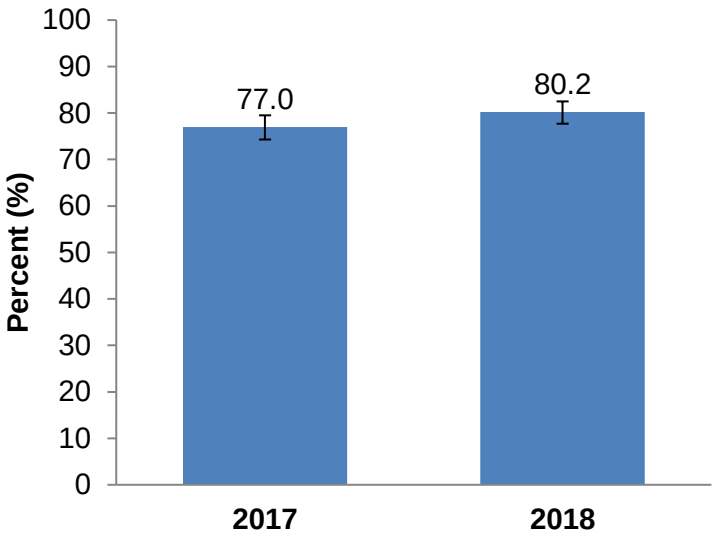
Lack of social support is an important risk factor for postpartum depressive symptoms, whereas the presence of social support can buffer against postpartum depressive symptoms (Alhasanat-Khalil et al., 2018; Pao et al., 2019). Continuous support from family members, friends, and health professionals during childbirth has been reported to be valued by most women (Lunda et al., 2018). Previous research has shown the significant role of fathers during childbirth (Gebuza et al., 2018).

Social support

Social support is defined using the following five kinds of support the mother received after delivery: 1) being loaned money (someone to loan her $50); 2) having help while being sick and needed to be in bed; 3) having someone to talk with about her problems; 4) having help while being tired and feeling frustrated with the new baby; 5) having someone to take her and her baby to the doctor's office.

The prevalence of mothers with social support (being loaned money) after delivery did not change significantly from 2017 (77.0%) to 2018 (80.2%) (Figure 11).

Figure 11. Prevalence of mothers with social support (being loaned money) after delivery, MA PRAMS, 2017–2018



A lower prevalence of mothers with social support (being loaned money) after delivery was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (66.8%, 67.5%, and 57.6%, respectively) compared to White non-Hispanic mothers (87.4%); those with less than a high school education, a high school diploma, or some college education (55.6%, 65.7%, and 78.1%, respectively) compared to mothers with a college degree (86.0%); those who were living at or below 100% of the FPL (60.8%) compared to those who were living above 100% of the FPL (85.1%); those born outside of the US (57.7%) compared to US-born mothers (89.2%); those who were unmarried

(74.0%) compared to those who were married (80.7%); and those with a disability (68.9%) compared to mothers without a disability (79.8%) (Table 18).

Table 18. Prevalence of mothers with social support (being loaned money) after delivery by sociodemographic characteristics, MA PRAMS, 2017–2018

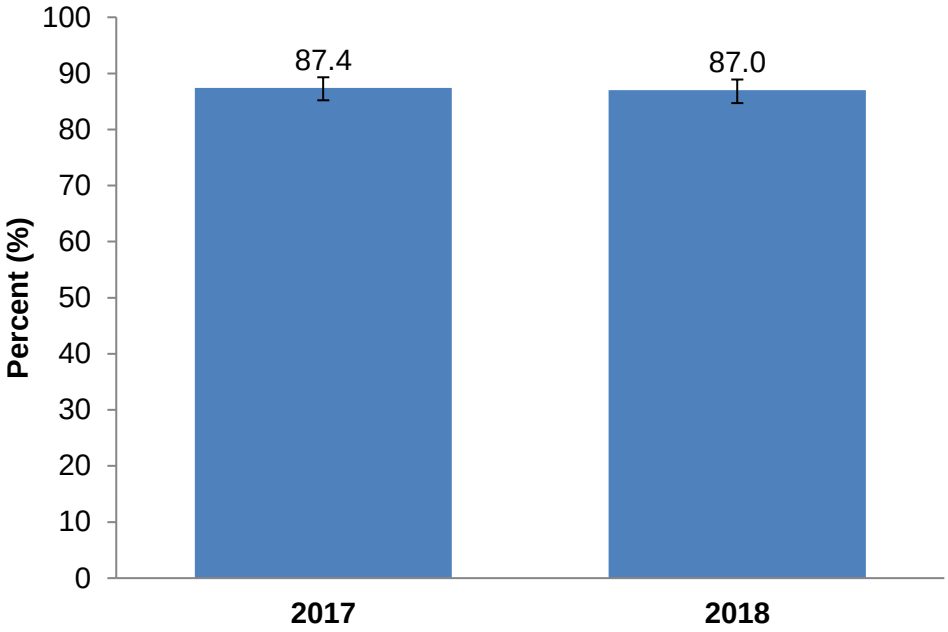
	2017–2018*				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	102,644	78.6	76.8	-	80.3
Maternal race/ethnicity					
White non-Hispanic	65,192	87.4	84.6	-	89.8
Black non-Hispanic	8,267	**66.8**	**62.4**	**-**	**71.0**
Hispanic	17,213	**67.5**	**63.9**	**-**	**70.9**
Asian non-Hispanic	6,562	**57.6**	**53.1**	**-**	**62.1**
Other, non-Hispanic	3,002	79.8	68.6	**-**	87.7
Maternal age (years)					
<20	1,480	67.2	51.8	-	79.7
20-29	33,763	75.3	72.1	-	78.3
30-39	63,149	80.5	78.1	**-**	82.8
40+	4,252	82.2	74.1	**-**	88.2
Maternal education					
<High school	5,669	**55.6**	**47.8**	**-**	**63.2**
High school diploma	12,780	**65.7**	**59.8**	**-**	**71.1**
Some college	23,378	**78.1**	**74.1**	**-**	**81.6**
College graduate	57,173	86.0	83.9	-	87.9
Household poverty level					
≤100% FPL	17,510	**60.8**	**56.4**	**-**	**65.2**
>100% FPL	82,107	85.1	83.1	-	86.8
Maternal nativity					
Non-US-born	25,340	**57.7**	**54.4**	**-**	**61.0**
US-born	77,304	89.2	87.1	-	90.9
Marital status					
Unmarried	30,716	**74.0**	**70.3**	**-**	**77.4**
Married	71,928	80.7	78.6	-	82.7
Disability status					
No	91,885	79.8	77.9	-	81.6
Yes	10,199	**68.9**	**62.2**	**-**	**74.9**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

*This is a new question that was added in 2016 (Phase 8). See Appendix C for survey questions.

The prevalence of mothers with social support (having help while being sick and needed to be in bed) after delivery did not differ significantly from 2017 (87.4%) to 2018 (87.0%) (Figure 12).

Figure 12. Prevalence of mothers with social support (having help while being sick and needed to be in bed) after delivery, MA PRAMS, 2017–2018



A lower prevalence of mothers with social support (having help while being sick and needed to be in bed) after delivery was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (80.3%, 79.1%, and 79.2%, respectively) compared to White non-Hispanic mothers (92.1%); those with less than a high school education, a high school diploma, or some college education (77.8%, 77.8%, and 84.8%, respectively) compared to mothers with a college degree (92.1%); those who were living at or below 100% of the FPL (74.7%) compared to those who were living above 100% of the FPL (91.3%); those born outside of the US (76.7%) compared to US-born mothers (92.5%); those who were unmarried (82.6%) compared to those who were married (89.3%); and those with a disability (76.7%) compared to mothers without a disability (88.7%) (Table 19).

Table 19. Prevalence of mothers with social support (having help while being sick and needed to be in bed) after delivery by sociodemographic characteristics, MA PRAMS, 2017–2018

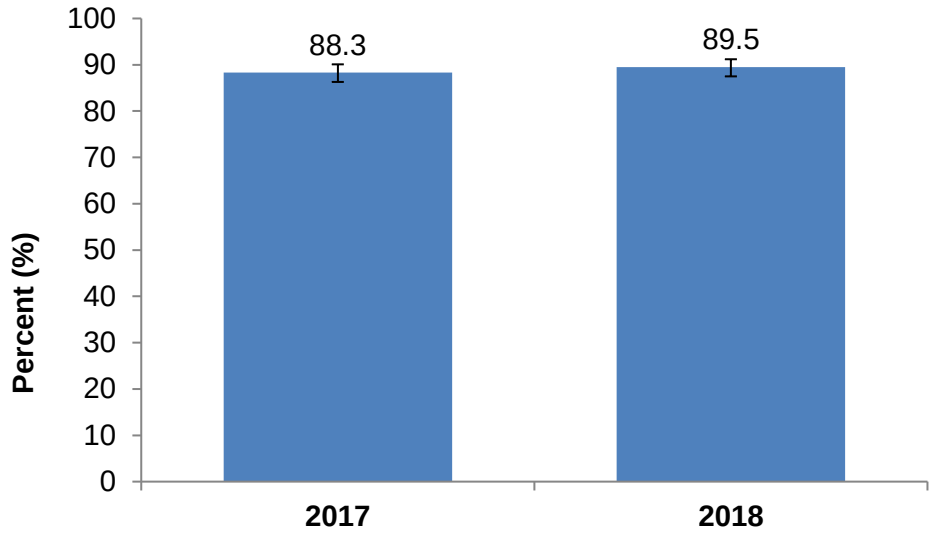
	2017–2018*				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	114,147	87.2	85.7	-	88.6
Maternal race/ethnicity					
White non-Hispanic	68,812	92.1	89.7	-	94.0
Black non-Hispanic	9,931	**80.3**	**76.1**	**-**	**84.0**
Hispanic	20,223	**79.1**	**76.0**	**-**	**81.9**
Asian non-Hispanic	9,044	**79.2**	**75.4**	**-**	**82.5**
Other, non-Hispanic	3,241	84.1	74.2	**-**	90.7
Maternal age (years)					
<20	1,806	82.0	70.7	-	89.6
20-29	38,206	85.2	82.5	-	87.5
30-39	69,408	88.3	86.3	**-**	90.1
40+	4,727	89.3	82.3	**-**	93.7
Maternal education					
<High school	7,950	**77.8**	**71.0**	**-**	**83.3**
High school diploma	15,334	**77.8**	**72.6**	**-**	**82.3**
Some college	25,481	**84.8**	**81.3**	**-**	**87.7**
College graduate	61,201	92.1	90.3	-	93.6
Household poverty level					
≤100% FPL	21,522	**74.7**	**70.6**	**-**	**78.4**
>100% FPL	88,106	91.3	89.7	-	92.6
Maternal nativity					
Non-US-born	33,757	**76.7**	**73.9**	**-**	**79.4**
US-born	80,390	92.5	90.6	-	94.0
Marital status					
Unmarried	34,438	**82.6**	**79.3**	**-**	**85.4**
Married	79,710	89.3	87.7	-	90.8
Disability status					
No	102,418	88.7	87.1	-	90.0
Yes	11,321	**76.7**	**70.4**	**-**	**82.0**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

*This is a new question that was added in 2016 (Phase 8). See Appendix C for survey questions.

The prevalence of mothers with social support (talking with about their problems) after delivery did not change significantly from 2017 (88.3%) to 2018 (89.5%) (Figure 13).

Figure 13. Prevalence of mothers with social support (having someone to talk with about their problems) after delivery, MA PRAMS, 2017–2018



A lower prevalence of mothers with social support (having someone to talk with about their problems) after pregnancy was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (81.0%, 82.7%, and 76.5%, respectively) compared to White non-Hispanic mothers (93.8%); those with less than a high school education, a high school diploma, or some college education (80.8%, 82.2%, and 86.9%, respectively) compared to mothers with a college degree (92.6%); those who were living at or below 100% of the FPL (79.5%) compared to those who were living above 100% of the FPL (91.9%); those born outside of the US (79.2%) compared to US-born mothers (93.8%); those who were unmarried (85.7%) compared to those who were married (90.4%); and those with a disability (81.5%) compared to mothers without a disability (89.9%) (Table 20).

Table 20. Prevalence of mothers with social support (having someone to talk with about their problems) after delivery by sociodemographic characteristics, MA PRAMS, 2017–2018

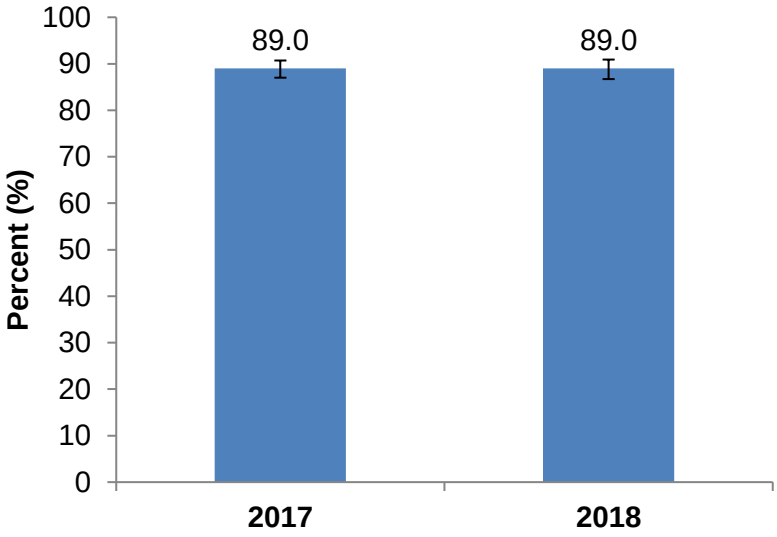
	2017–2018*				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	116,422	88.9	87.5	-	90.2
Maternal race/ethnicity					
White non-Hispanic	70,048	93.8	91.6	-	95.4
Black non-Hispanic	10,063	**81.0**	**76.9**	**-**	**84.6**
Hispanic	21,156	**82.7**	**79.7**	**-**	**85.3**
Asian non-Hispanic	8,714	**76.5**	**72.3**	**-**	**80.2**
Other, non-Hispanic	3,457	89.7	80.9	-	94.7
Maternal age (years)					
<20	1,896	86.1	75.7	-	92.5
20-29	39,155	87.4	84.9	-	89.5
30-39	70,673	89.9	88.0	-	91.5
40+	4,698	87.9	81.0	-	92.6
Maternal education					
<High school	8,268	**80.8**	**74.5**	**-**	**85.8**
High school diploma	16,164	**82.2**	**77.4**	**-**	**86.1**
Some college	26,098	**86.9**	**83.5**	**-**	**89.6**
College graduate	61,558	92.6	90.9	-	94.0
Household poverty level					
≤100% FPL	22,893	**79.5**	**75.7**	**-**	**82.9**
>100% FPL	88,771	91.9	90.4	-	93.2
Maternal nativity					
Non-US-born	34,886	**79.2**	**76.6**	**-**	**81.7**
US-born	81,536	93.8	92.1	-	95.1
Marital status					
Unmarried	35,808	**85.7**	**82.7**	**-**	**88.3**
Married	80,613	90.4	88.8	-	91.8
Disability status					
No	103,854	89.9	88.4	-	91.2
Yes	12,036	**81.5**	**76.0**	**-**	**86.0**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

*This is a new question that was added in 2016 (Phase 8). See Appendix C for survey questions.

The prevalence of mothers with social support (having someone's help while being tired and feeling frustrated with the new baby) after delivery did not change significantly from 2017 (89.0%) to 2018 (89.0%) (Figure 14).

Figure 14. Prevalence of mothers with social support (having help while being tired and feeling frustrated with the new baby) after delivery, MA PRAMS, 2017–2018



A lower prevalence of mothers with social support (having help while being tired and feeling frustrated with the new baby) after delivery was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (84.4%, 81.3%, and 82.7%, respectively) compared to White non-Hispanic mothers (92.9%); those with less than a high school education, a high school diploma, or some college education (75.7%, 82.2%, and 86.8%, respectively) compared to mothers with a college degree (93.6%); those who were living at or below 100% of the FPL (79.8%) compared to those who were living above 100% of the FPL (92.1%); those born outside of the US (80.1%) compared to US-born mothers (93.5%); those who were unmarried (85.7%) compared to those who were married (90.5%); and those with a disability (82.3%) compared to mothers without a disability (89.8%) (Table 21).

Table 21. Prevalence of mothers with social support (having someone's help while being tired and feeling frustrated with the new baby) after delivery by sociodemographic characteristics, MA PRAMS, 2017–2018

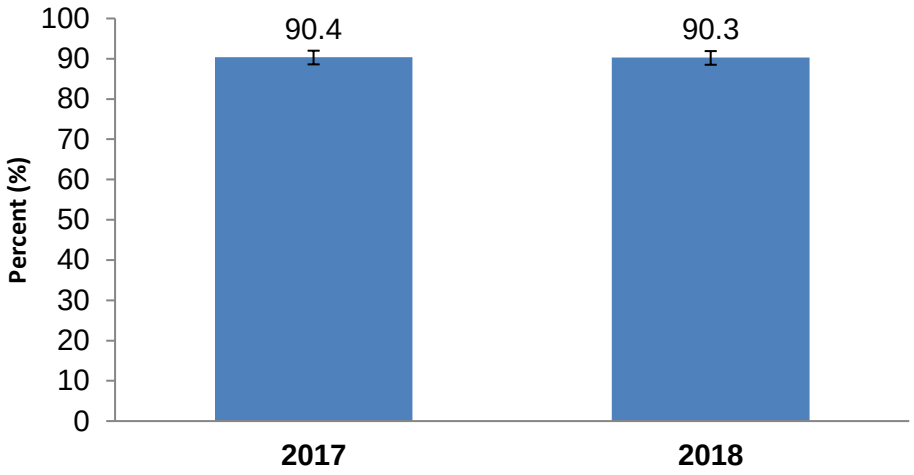
	2017–2018*				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	116,581	89.0	87.5]	-	90.3
Maternal race/ethnicity					
White non-Hispanic	69,416	92.9	90.6	-	94.7
Black non-Hispanic	10,550	**84.4**	**80.2**	**-**	**87.8**
Hispanic	20,759	**81.3**	**78.3**	**-**	**84.1**
Asian non-Hispanic	9,443	**82.7**	**79.1**	**-**	**85.8**
Other, non-Hispanic	3,423	88.9	77.7	**-**	94.8
Maternal age (years)					
<20	1,837	83.4	72.4	-	90.6
20-29	39,697	88.4	86.0	-	90.5
30-39	70,344	89.5	87.5	**-**	91.2
40+	4,702	88.3	80.2	**-**	93.4
Maternal education					
<High school	7,705	**75.7**	**68.2**	**-**	**81.8**
High school diploma	16,198	**82.2**	**77.3**	**-**	**86.3**
Some college	26,129	**86.8**	**83.4**	**-**	**89.5**
College graduate	62,211	93.6	91.9	-	94.9
Household poverty level					
≤100% FPL	22,985	**79.8**	**76.0**	**-**	**83.1**
>100% FPL	89,126	92.1	90.6	-	93.5
Maternal nativity					
Non-US-born	35,340	**80.1**	**77.4**	**-**	**82.6**
US-born	81,240	93.5	91.7	-	94.9
Marital status					
Unmarried	35,686	**85.7**	**82.7**	**-**	**88.2**
Married	80,895	90.5	88.8	-	92.0
Disability status					
No	103,876	89.8	88.3	-	91.2
Yes	12,143	**82.3**	**76.4**	**-**	**86.9**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

*This is a new question that was added in 2016 (Phase 8). See Appendix C for survey questions.

The prevalence of mothers with social support (being given a ride to see a doctor) after delivery did not change significantly from 2017 (90.4%) to 2018 (90.3%) (Figure 15).

Figure 15. Prevalence of mothers with social support (being given a ride to see a doctor) after delivery, MA PRAMS, 2017–2018



A lower prevalence of mothers with social support (being given a ride to see a doctor) after delivery was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (83.7%, 84.1%, and 78.3%, respectively) compared to White non-Hispanic mothers (95.3%); those with less than a high school education, a high school diploma, or some college education (80.7%, 84.4%, and 88.3%, respectively) compared to mothers with a college degree (94.2%); those who were living at or below 100% of the FPL (80.5%) compared to those who were living above 100% of the FPL (93.4%); those born outside of the US (81.3%) compared to US-born mothers (95.0%); those who were unmarried (86.7%) compared to those who were married (92.1%); and those with a disability (82.9%) compared to mothers without a disability (91.3%) (Table 22).

Table 22. Prevalence of mothers with social support (being given a ride to see a doctor) after delivery by sociodemographic characteristics, MA PRAMS, 2017–2018

	2017–2018*				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	118,344	90.4	89.1	-	91.5
Maternal race/ethnicity					
White non-Hispanic	71,232	95.3	93.4	-	96.7
Black non-Hispanic	10,500	**83.7**	**79.6**	**-**	**87.1**
Hispanic	21,467	**84.1**	**81.4**	**-**	**86.6**
Asian non-Hispanic	8,887	**78.3**	**74.4**	**-**	**81.7**
Other, non-Hispanic	3,365	87.8	76.7	-	94.0
Maternal age (years)					
<20	1,906	86.6	76.1	-	92.8
20-29	39,930	89.0	86.6	-	91.0
30-39	71,610	91.2	89.5	-	92.6
40+	4,899	92.0	86.9	-	95.2
Maternal education					
<High school	8,155	**80.7**	**73.8**	**-**	**86.1**
High school diploma	16,634	**84.4**	**80.0**	**-**	**88.0**
Some college	26,656	**88.3**	**85.2**	**-**	**90.9**
College graduate	62,544	94.2	92.8	-	95.3
Household poverty level					
≤100% FPL	23,211	**80.5**	**76.8**	**-**	**83.8**
>100% FPL	90,302	93.4	92.1	-	94.5
Maternal nativity					
Non-US-born	35,810	**81.3**	**78.8**	**-**	**83.6**
US-born	82,534	95.0	93.5	-	96.2
Marital status					
Unmarried	36,115	**86.7**	**83.8**	**-**	**89.2**
Married	82,228	92.1	90.7	-	93.2
Disability status					
No	105,548	91.3	90.0	-	92.4
Yes	12,195	**82.9**	**77.2**	**-**	**87.4**

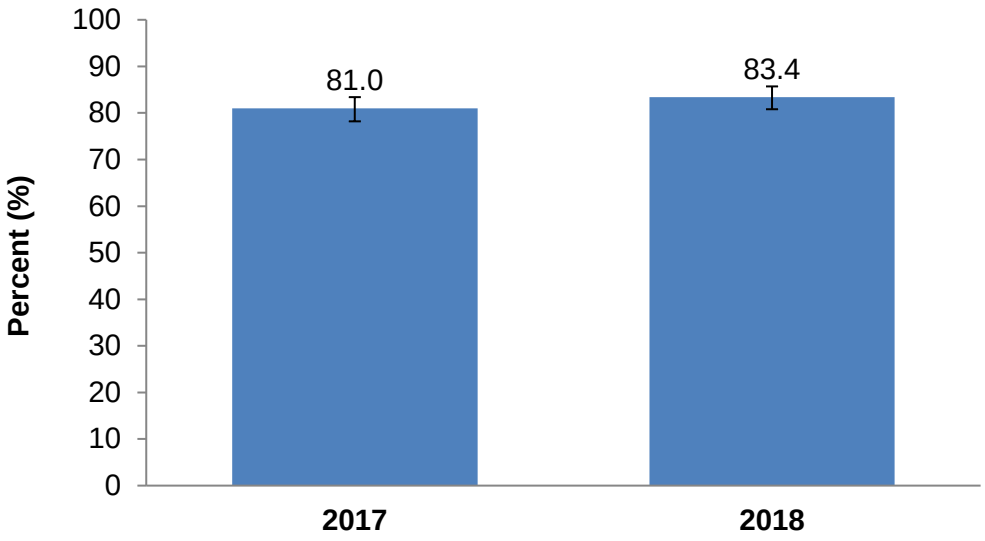
Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

*This is a new question that was added in 2016 (Phase 8). See Appendix C for survey questions.

Partner support

The prevalence of mothers with partner's emotional support after delivery did not change significantly from 2017 (81.0%) to 2018 (83.4%) (Figure 16).

Figure 16. Prevalence of mothers with partner's emotional support after delivery, MA PRAMS, 2017–2018



A lower prevalence of mothers with partner's emotional support after delivery was observed among Black non-Hispanic and Hispanic mothers (66.7% and 75.7%, respectively) compared to White non-Hispanic mothers (85.7%); those with less than a high school education, a high school diploma, or some college education (71.7%, 73.4%, and 76.8%, respectively) compared to mothers with a college degree (88.6%); those who were living at or below 100% of the FPL (67.4%) compared to those who were living above 100% of the FPL (86.5%); those who were unmarried (66.7%) compared to those who were married (89.4%); and those with a disability (61.3%) compared to mothers without a disability (84.8%) (Table 23).

Table 23. Prevalence of mothers with partner's emotional support after delivery by sociodemographic characteristics, MA PRAMS, 2017–2018

	2017–2018*				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	109,202	82.2	80.3	-	83.9
Maternal race/ethnicity					
White non-Hispanic	64,323	85.7	82.7	-	88.2
Black non-Hispanic	8,542	**66.7**	**62.3**	**-**	**70.8**
Hispanic	19,805	**75.7**	**72.4**	**-**	**78.6**
Asian non-Hispanic	10,302	87.9	84.4	-	90.6
Other, non-Hispanic	3,386	87.4	78.3	-	93.0
Maternal age (years)					
<20	1,503	68.2	55.3	-	78.9
20-29	35,770	78.4	75.0	-	81.4
30-39	67,330	**84.7**	**82.3**	**-**	**86.8**
40+	4,600	82.7	72.5	-	89.6
Maternal education					
<High school	7,509	**71.7**	**64.4**	**-**	**78.1**
High school diploma	14,663	**73.4**	**67.9**	**-**	**78.2**
Some college	23,465	**76.8**	**72.4**	**-**	**80.6**
College graduate	59,373	88.6	86.3	-	90.6
Household poverty level					
≤100% FPL	19,761	**67.4**	**63.1**	**-**	**71.5**
>100% FPL	84,867	86.5	84.4	-	88.4
Maternal nativity					
Non-US-born	36,608	81.5	78.9	-	83.8
US-born	72,463	82.5	80.0	-	84.7
Marital status					
Unmarried	28,281	**66.7**	**62.7**	**-**	**70.5**
Married	80,922	89.4	87.6	-	91.0
Disability status					
No	99,509	84.8	83.0	-	86.5
Yes	9,285	**61.3**	**54.4**	**-**	**67.7**

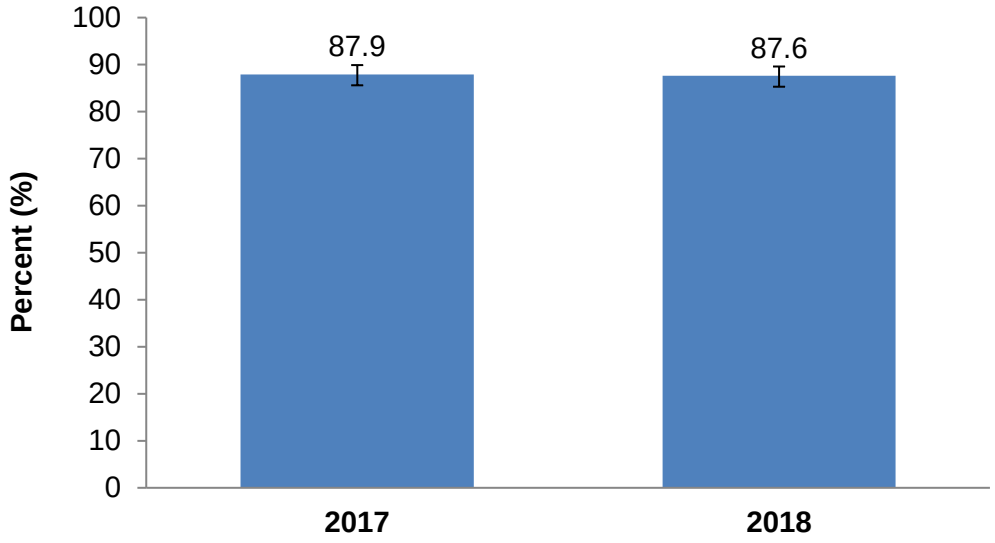
Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

*This is a new question that was added in 2016 (Phase 8). See Appendix C for survey questions.

Financial support from infant's father

The prevalence of mothers with financial support from the infant's father after delivery did not change significantly from 2017 (87.9%) to 2018 (87.6%) (Figure 17).

Figure 17. Prevalence of mothers with financial support from infant's father after delivery, MA PRAMS, 2017–2018



A lower prevalence of mothers with financial support from the infant's father after delivery was observed among Black non-Hispanic and Hispanic mothers (74.0% and 80.8%, respectively) compared to White non-Hispanic mothers (91.7%); mothers aged less than 20 years (68.0%) compared to those aged 20-29 years (83.9%); those with less than a high school education, a high school diploma, or some college education (74.0%, 75.8%, and 83.3%, respectively) compared to mothers with a college degree (95.3%); those who were living at or below 100% of the FPL (69.0%) compared to those who were living above 100% of the FPL (93.6%); those who were unmarried (70.7%) compared to those who were married (95.7%); and those with a disability (71.7%) compared to mothers without a disability (89.8%) (Table 24).

Table 24. Prevalence of mothers with financial support from infant's father after delivery by sociodemographic characteristics, MA PRAMS, 2017–2018

	2017–2018*				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	115,391	87.8	86.2	-	89.2
Maternal race/ethnicity					
White non-Hispanic	68,303	91.7	89.1	-	93.7
Black non-Hispanic	9,346	**74.0**	**69.7**	**-**	**77.9**
Hispanic	20,897	**80.8**	**77.8**	**-**	**83.4**
Asian non-Hispanic	10,864	93.6	91.0	-	95.4
Other, non-Hispanic	3,241	83.7	72.5	-	90.9
Maternal age (years)					
<20	1,496	**68.0**	**55.1**	**-**	**78.6**
20-29	37,974	83.9	80.9	-	86.4
30-39	71,004	**90.3**	**88.2**	**-**	**92.1**
40+	4,916	**91.4**	**86.4**	**-**	**94.7**
Maternal education					
<High school	7,679	**74.0**	**66.5**	**-**	**80.3**
High school diploma	14,973	**75.8**	**70.2**	**-**	**80.6**
Some college	25,358	**83.3**	**79.4**	**-**	**86.6**
College graduate	63,212	95.3	93.8	-	96.4
Household poverty level					
≤100% FPL	19,970	**69.0**	**64.5**	**-**	**73.1**
>100% FPL	90,799	93.6	92.1	-	94.9
Maternal nativity					
Non-US-born	38,237	85.9	83.5	-	87.9
US-born	77,154	88.7	86.6	-	90.6
Marital status					
Unmarried	29,663	**70.7**	**66.8**	**-**	**74.4**
Married	85,729	95.7	94.6	-	96.7
Disability status					
No	104,361	89.8	88.2	-	91.2
Yes	10,609	**71.7**	**65.0**	**-**	**77.6**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

*This is a new question that was added in 2016 (Phase 8). See Appendix C for survey questions.

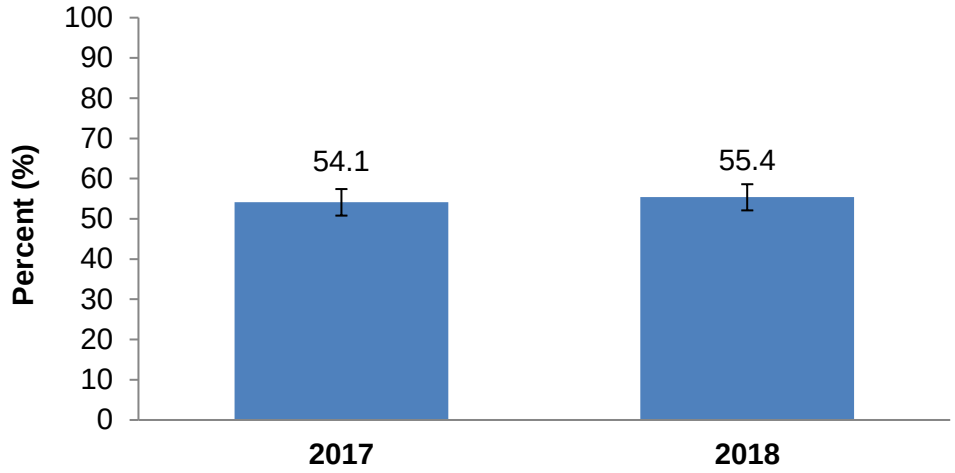
Oral Health

Teeth cleaning twelve months before pregnancy

Maintaining good oral hygiene is important when planning to get pregnant as it can help to prevent or reduce the severity of oral health problems during pregnancy such as gingivitis, gingival hyperplasia, and pyogenic granuloma (Hemalatha et al., 2013). For optimal oral health, the American Dental Association recommends regular dental visits, at intervals determined by a dentist (American Dental Association).

The prevalence of mothers' reporting having had their teeth cleaned by a dentist or dental hygienist during the 12 months before pregnancy did not differ significantly between 2017 (54.1%) and 2018 (55.4%) (Figure 18).

Figure 18. Prevalence of mothers' reporting having had their teeth cleaned in the 12 months before pregnancy, MA PRAMS, 2017–2018



Compared to 2015–2016, there was a significant decrease in the prevalence of teeth cleaning in the 12 months before pregnancy overall during 2017–2018 (54.7% vs. 61.3%), among Black non-Hispanic mothers (37.4% vs. 46.9%) and Hispanic mothers (43.1% vs. 53.3%), mothers aged 20-29 years (44.1% vs. 53.5%), mothers with a high school diploma (37.2% vs. 49.7%), mothers who were living at or below 100% of the FPL (35.4% vs. 50.5%), those born outside of the US (40.3% vs. 51.5%), those who were unmarried (41.0% vs. 49.9%), those who were married (61.3% vs. 67.1%), and those without a disability (56.0% vs. 62.0%) (Table 25).

During 2017–2018, a lower prevalence of teeth cleaning in the 12 months before pregnancy was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (37.4%, 43.1%, and 41.0%, respectively) compared to White non-Hispanic mothers (63.5%); those with less than a high school education, a high school diploma, or some college education (36.9%, 37.2%, and 44.7%, respectively) compared to mothers with a college degree (67.6%); those who were living at or below 100% of the FPL (35.4%) compared to those who were living above 100% of the FPL (62.1%); those born outside of the US (40.3%) compared to US-born mothers (62.1%); and those who were unmarried (41.0%) compared to mothers who were married (61.3%) (Table 25).

Table 25. Prevalence of mothers' reporting having had their teeth cleaned in the 12 months before pregnancy by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016*						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	83,973	61.3	59.0	-	63.6		73,469	54.7	52.4	-	57.0
Maternal race/ethnicity											
White non-Hispanic	55,122	69.0	65.5	-	72.3		48,040	63.5	59.8	-	67.0
Black non-Hispanic	6,069	**46.9**	**42.2**	**-**	**51.7**		4,964	**37.4**	**33.2**	**-**	**41.8**
Hispanic	13,401	**53.3**	**49.4**	**-**	**57.1**		11,397	**43.1**	**39.6**	**-**	**46.6**
Asian non-Hispanic	6,041	**49.0**	**44.5**	**-**	**53.6**		4,832	**41.0**	**36.6**	**-**	**45.5**
Other, non-Hispanic	1,844	**44.4**	**31.1**	**-**	**58.5**		2,371	60.7	49.0	-	71.3
Maternal age (years)											
<20	1,595	47.6	34.1	-	61.5		1,089	50.2	36.0	-	64.3
20-29	26,150	53.5	49.4	-	57.5		20,465	44.1	40.3	-	48.0
30-39	52,255	**66.5**	**63.6**	**-**	**69.3**		48,966	**61.1**	**58.1**	**-**	**64.1**
40+	3,973	65.1	54.1	-	74.7		2,950	52.7	41.5	-	63.7
Maternal education											
<High school	5,693	**45.5**	**38.6**	**-**	**52.6**		3,935	**36.9**	**30.1**	**-**	**44.4**
High school diploma	9,995	**49.7**	**43.5**	**-**	**56.0**		7,713	**37.2**	**31.7**	**-**	**43.0**
Some college	16,097	**53.4**	**48.4**	**-**	**58.3**		13,748	**44.7**	**39.9**	**-**	**49.5**
College graduate	49,320	70.8	67.8	-	73.7		45,531	67.6	64.4	-	70.6
Household poverty level											
≤100% FPL	13,849	**50.5**	**45.5**	**-**	**55.4**		10,423	**35.4**	**31.2**	**-**	**39.8**
>100% FPL	65,300	65.2	62.5	-	67.8		60,714	62.1	59.3	-	64.8
Maternal nativity											
Non-US-born	22,297	**51.5**	**48.2**	**-**	**54.6**		18,339	**40.3**	**37.2**	**-**	**43.5**
US-born	61,676	65.9	62.8	-	68.8		54,999	62.1	59.0	-	65.1
Marital status											
Unmarried	23,009	**49.9**	**45.6**	**-**	**54.1**		17,779	**41.0**	**37.0**	**-**	**45.1**
Married	60,822	67.1	64.5	-	69.6		55,690	61.3	58.5	-	63.9
Disability status											
No	75,512	62.0	59.6	-	64.3		65,603	56.0	53.5	-	58.5
Yes	7,027	55.4	47.5	-	63.1		7,070	46.6	39.8	-	53.6

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

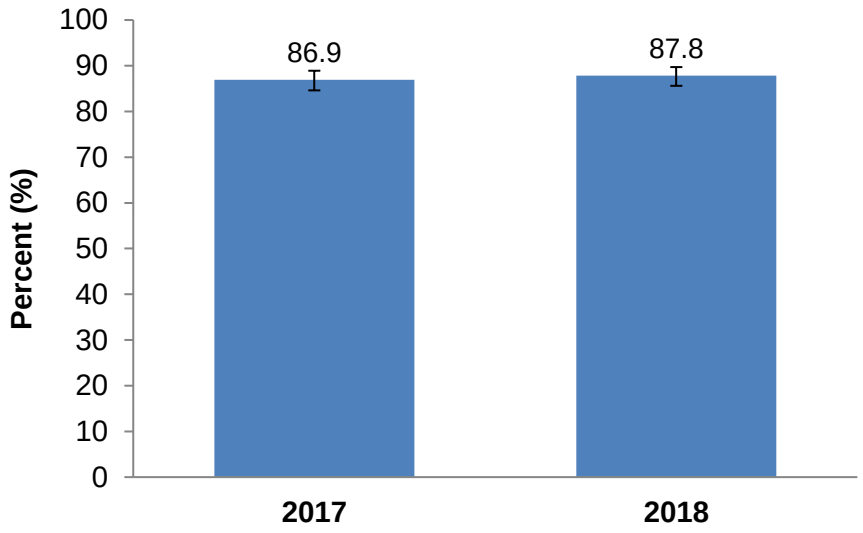
*The 2016–2018 question on teeth cleaning in the 12 months before pregnancy was different from 2015. See Appendix C for survey questions.

Knowledge of the importance of teeth and gum care during pregnancy

In addition to regular dental checkups, daily oral care at home is very important. According to the American Dental Association, brushing teeth twice a day and flossing once a day can help to prevent plaque buildup, which causes gum disease and tooth decay. Mouth rinsing with baking soda is recommended after morning sickness to prevent the adverse effect of stomach acid on teeth (American College of Nurse-Midwives, 2014).

The prevalence of maternal knowledge regarding the importance of teeth and gum care during pregnancy did not differ significantly from 2017 (86.9%) to 2018 (87.8%) (Figure 19).

Figure 19. Prevalence of maternal knowledge of the importance of teeth and gum care during pregnancy, MA PRAMS, 2017–2018



Compared to 2015–2016, there was no overall significant change in the prevalence of maternal knowledge regarding the importance of teeth and gum care during 2017–2018 (Table 26).

During 2017–2018, a lower prevalence of maternal knowledge regarding the importance of teeth and gum care was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (81.5%, 78.0%, and 84.7%, respectively) compared to White non-Hispanic mothers (91.9%); those with less than a high school education, a high school diploma, or some college education (75.7%, 82.0%, and 84.6%, respectively) compared to mothers with a college degree (92.7%); those who were living at or below 100% of the FPL (77.3%) compared to those who were living above 100% of the FPL (90.8%); those born outside of the US (80.7%) compared to US-born mothers (90.8%); those who were unmarried (80.9%) compared to those who were married (90.4%); and those with a disability (78.8%) compared to those without a disability (88.5%) (Table 26).

Table 26. Prevalence of mothers with knowledge of the importance of teeth and gum care during pregnancy by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	121,088	88.9	87.4	-	90.3		116,747	87.4	85.8	-	88.8
Maternal race/ethnicity											
White non-Hispanic	73,551	92.6	90.3	-	94.3		69,331	91.9	89.5	-	93.8
Black non-Hispanic	10,915	**85.0**	**81.3**	**-**	**88.1**		10,568	**81.5**	**78.2**	**-**	**84.5**
Hispanic	21,052	**84.1**	**81.0**	**-**	**86.8**		20,566	**78.0**	**74.6**	**-**	**81.1**
Asian non-Hispanic	10,308	**84.0**	**80.5**	**-**	**87.0**		9,899	**84.7**	**81.0**	**-**	**87.7**
Other, non-Hispanic	3,370	83.0	67.7	-	91.9		3,716	95.5	91.0	-	97.8
Maternal age (years)											
<20	2,653	78.3	63.6	-	88.2		1,972	89.6	79.8	-	94.9
20-29	42,053	86.6	83.7	-	89.0		38,537	83.6	80.7	-	86.1
30-39	70,873	90.7	88.7	-	92.3		71,096	89.0	87.0	-	90.8
40+	5,509	91.2	83.5	-	95.5		5,142	94.0	87.6	-	97.2
Maternal education											
<High school	9,924	**82.1**	**76.3**	**-**	**86.8**		7,902	**75.7**	**68.2**	**-**	**81.9**
High school diploma	16,408	**81.4**	**75.7**	**-**	**85.9**		16,632	**82.0**	**77.3**	**-**	**86.0**
Some college	26,494	**88.2**	**84.6**	**-**	**91.0**		26,013	**84.6**	**81.0**	**-**	**87.7**
College graduate	64,553	93.1	91.3	-	94.5		62,373	92.7	90.9	-	94.1
Household poverty level											
≤100% FPL	22,604	**82.6**	**78.6**	**-**	**86.1**		22,490	**77.3**	**73.2**	**-**	**81.0**
>100% FPL	91,246	91.3	89.6	-	92.7		88,960	90.8	89.1	-	92.2
Maternal nativity											
Non-US-born	36,174	**83.7**	**81.2**	**-**	**85.9**		36,208	**80.7**	**78.1**	**-**	**83.1**
US-born	84,914	91.3	89.4	-	93.0		80,513	90.8	88.8	-	92.5
Marital status											
Unmarried	38,857	**84.7**	**81.4**	**-**	**87.5**		35,024	**80.9**	**77.5**	**-**	**84.0**
Married	82,089	91.1	89.4	-	92.5		81,724	90.4	88.8	-	91.8
Disability status											
No	109,064	89.7	88.2	-	91.1		103,348	88.5	86.9	-	89.9
Yes	10,197	**80.4**	**73.3**	**-**	**86.0**		12,078	**78.8**	**72.5**	**-**	**83.9**

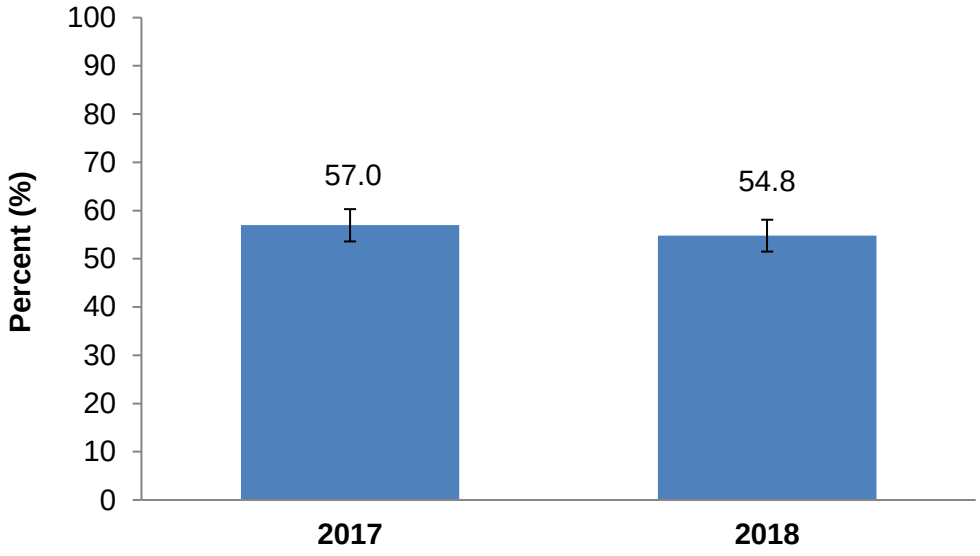
Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

Counseling on the importance of teeth care during pregnancy

Oral health promotion and education are very important during prenatal care. Research shows that women who received oral health counseling were more likely to get their teeth cleaned during pregnancy (Thompson et al., 2013). Therefore, the American College of Obstetricians and Gynecologists (ACOG) recommends that health care providers counsel all women on the importance of teeth care during pregnancy (ACOG, 2013).

The prevalence of mothers who reported having received counseling on the importance of teeth care during pregnancy did not differ significantly from 2017 (57.0%) to 2018 (54.8%) (Figure 20).

Figure 20. Prevalence of counseling on the importance of teeth care during pregnancy, MA PRAMS, 2017–2018



Despite the ACOG's recommendation, only 55.9% of mothers reported having received counseling during 2017–2018 (Table 27).

There was no significant difference in the prevalence of mothers who reported having received counseling on the importance of teeth care during pregnancy overall during 2017–2018 (55.9%) compared to 2015–2016 (57.0%), or across sociodemographic groups. During 2017–2018, a lower prevalence was observed among Hispanic mothers (47.0%) compared to White non-Hispanic mothers (59.7%); those with less than a high school education, a high school diploma, or some college education (45.8%, 42.5%, and 50.7%, respectively) compared to mothers with a college degree (63.2%); those who were living at or below 100% of the FPL (45.5%) compared to those who were living above 100% of the FPL (60.0%); those born outside of the US (46.1%) compared to US-born mothers (60.7%); and those who were unmarried (46.2%) compared to mothers who were married (60.5%) (Table 27).

Table 27. Prevalence of mothers receiving counseling on the importance of teeth care during pregnancy by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	76,843	57.0	54.7	-	59.4		73,970	55.9	53.5	-	58.2
Maternal race/ethnicity											
White non-Hispanic	47,772	60.6	57.0	-	64.1		44,731	59.7	55.9	-	63.3
Black non-Hispanic	5,876	**47.1**	**42.3**	**-**	**52.0**		6,809	53.9	49.7	-	58.1
Hispanic	13,223	53.5	49.5	-	57.4		12,280	**47.0**	**43.4**	**-**	**50.5**
Asian non-Hispanic	6,569	54.4	49.7	-	59.0		6,014	52.3	47.7	-	56.8
Other, non-Hispanic	2,105	51.6	37.0	-	65.9		2,049	53.5	41.2	-	65.3
Maternal age (years)											
<20	1,807	53.4	39.5	-	66.8		1,204	54.7	40.6	-	68.1
20-29	25,581	53.3	49.1	-	57.3		22,538	49.3	45.4	-	53.2
30-39	45,955	59.3	56.2	-	62.4		46,707	59.1	56.0	-	62.2
40+	3,499	59.6	48.7	-	69.7		3,521	65.9	54.5	-	75.7
Maternal education											
<High school	6,641	55.9	48.7	-	62.9		4,687	**45.8**	**38.3**	**-**	**53.4**
High school diploma	10,156	**51.8**	**45.5**	**-**	**58.1**		8,485	**42.5**	**36.9**	**-**	**48.3**
Some college	14,873	**50.2**	**45.2**	**-**	**55.2**		15,449	**50.7**	**45.9**	**-**	**55.6**
College graduate	42,799	61.9	58.6	-	65.1		42,223	63.2	59.9	-	66.4
Household poverty level											
≤100% FPL	13,226	**49.2**	**44.1**	**-**	**54.2**		13,093	**45.5**	**41.1**	**-**	**50.0**
>100% FPL	59,008	59.5	56.7	-	62.2		58,345	60.0	57.2	-	62.8
Maternal nativity											
Non-US-born	22,233	**52.1**	**48.8**	**-**	**55.4**		20,296	**46.1**	**42.9**	**-**	**49.4**
US-born	54,609	59.3	56.2	-	62.4		53,570	60.7	57.6	-	63.8
Marital status											
Unmarried	23,287	**51.8**	**47.5**	**-**	**56.1**		19,755	**46.2**	**42.1**	**-**	**50.4**
Married	53,555	59.8	56.9	-	62.5		54,215	60.5	57.7	-	63.3
Disability status											
No	70,758	58.7	56.2	-	61.1		65,685	56.6	54.1	-	59.1
Yes	5,306	**42.9**	**35.3**	**-**	**50.8**		7,739	51.7	44.8	-	58.6

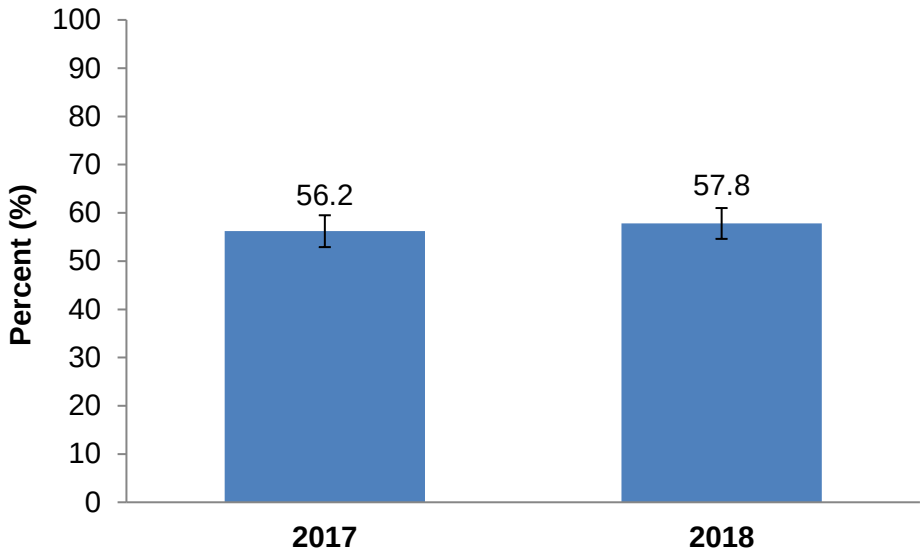
Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

Teeth cleaning during pregnancy

Untreated gum disease (periodontitis) may cause premature birth and low birth weight (March of Dimes, 2019). The American Dental Association (ADA), the American College of Obstetricians and Gynecologists (ACOG) and the American Academy of Pediatrics (AAP) encourage mothers to get dental care while pregnant. Getting a dental check-up during pregnancy is safe and important for maintaining good oral health.

During 2017–2018, the prevalence of mothers who had their teeth cleaned by a dentist or dental hygienist during pregnancy did not differ significantly from 2017 (56.2%) to 2018 (57.8%) (Figure 21).

Figure 21. Prevalence of mothers' reporting having had their teeth cleaned during pregnancy, MA PRAMS, 2017–2018



There was no significant difference in the prevalence of mothers' reporting having had their teeth cleaned by a dentist or dental hygienist during pregnancy overall during 2017–2018 (57.0%) compared to 2015–2016 (58.5%), or across sociodemographic groups (Table 28).

During 2017–2018, a lower prevalence was observed among Black non-Hispanic, Hispanic, and Asian non-Hispanic mothers (46.5%, 48.6%, and 47.5%, respectively) compared to White non-Hispanic (63.0%) mothers; those aged 20-29 years (49.6%) compared to those aged 30-39 years (61.2%); those with less than a high school education, a high school diploma, or some college education (39.8%, 42.6%, and 48.9%, respectively) compared to mothers with a college degree (67.4%); those who were living at or below 100% of the FPL (40.4%) compared to those who were living above 100% of the FPL (62.8%); those born outside of the US (48.8%) compared to US-born mothers (61.2%); and those who were unmarried (45.2%) compared to those who were married (62.6%) (Table 28).

Table 28. Prevalence of mothers' reporting having had their teeth cleaned during pregnancy by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016*						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	79,822	58.5	56.1	-	60.8		76,503	57.0	54.7	-	59.3
Maternal race/ethnicity											
White non-Hispanic	50,296	63.2	59.6	-	66.7		47,682	63.0	59.3	-	66.6
Black non-Hispanic	5,549	**43.3**	**38.6**	**-**	**48.1**		6,068	**46.5**	**42.2**	**-**	**50.8**
Hispanic	14,300	56.8	52.9	-	60.7		12,877	**48.6**	**45.0**	**-**	**52.1**
Asian non-Hispanic	6,373	**51.9**	**47.2**	**-**	**56.5**		5,615	**47.5**	**43.0**	**-**	**52.0**
Other, non-Hispanic	1,816	**43.7**	**30.5**	**-**	**57.9**		2,256	58.0	45.9	-	69.2
Maternal age (years)											
<20	1,829	54.0	39.8	-	67.6		899	40.8	28.1	-	54.9
20-29	24,836	51.0	46.9	-	55.1		23,051	49.6	45.7	-	53.5
30-39	49,501	**63.2**	**60.2**	**-**	**66.2**		49,015	**61.2**	**58.2**	**-**	**64.2**
40+	3,656	59.9	49.0	-	69.8		3,538	64.8	53.5	-	74.7
Maternal education											
<High school	6,348	**52.0**	**44.9**	**-**	**59.1**		4,218	**39.8**	**32.9**	**-**	**47.2**
High school diploma	9,384	**46.5**	**40.4**	**-**	**52.8**		8,740	**42.6**	**37.0**	**-**	**48.3**
Some college	14,645	**48.6**	**43.6**	**-**	**53.6**		15,017	**48.9**	**44.1**	**-**	**53.7**
College graduate	46,760	67.3	64.2	-	70.4		45,534	67.4	64.3	-	70.5
Household poverty level											
≤100% FPL	13,184	**48.1**	**43.2**	**-**	**53.1**		11,861	**40.4**	**36.1**	**-**	**44.7**
>100% FPL	62,052	62.0	59.2	-	64.7		61,611	62.8	60.0	-	65.5
Maternal nativity											
Non-US-born	23,034	**53.1**	**49.8**	**-**	**56.3**		22,108	**48.8**	**45.6**	**-**	**52.0**
US-born	56,787	61.0	57.9	-	64.1		54,290	61.2	58.1	-	64.2
Marital status											
Unmarried	21,307	**46.4**	**42.2**	**-**	**50.7**		19,587	**45.2**	**41.1**	**-**	**49.3**
Married	58,372	64.6	61.8	-	67.2		56,916	62.6	59.9	-	65.3
Disability status											
No	73,522	60.4	57.9	-	65.0		68,342	58.2	55.7	-	60.7
Yes	5,532	43.8	36.2	-	63.0		7,477	49.2	42.4	-	56.1

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

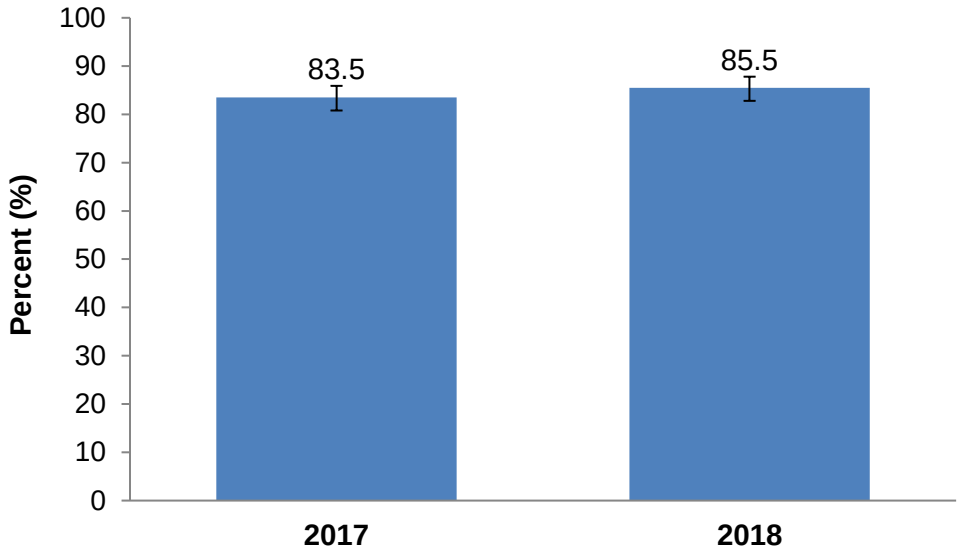
*The 2016–2018 question on teeth cleaning during pregnancy was different from 2015. See Appendix C for survey questions.

Dental insurance during pregnancy

In 2014, approximately 64.8% of Americans had dental insurance coverage (Nasseh & Vujicic, 2016). For adults ages 19-64 in 2015, 59.0% had private dental benefits, 7.4% had dental benefits through Medicaid, and 33.6% did not have dental benefits (American Dental Association). Access to oral health care remains a big challenge for pregnant women, especially minority and low-income groups (Bersell, 2017). MassHealth (Massachusetts Medicaid) members are eligible for dental services such as oral exams, x-rays, cleanings, extractions, and some oral surgery performed by a MassHealth dentist (Dental Service of Massachusetts, 2012).

In Massachusetts, the prevalence of mothers' reporting that they had dental insurance during pregnancy did not change significantly from 2017 to 2018 (Figure 22).

Figure 22. Prevalence of mothers' reporting that they had dental insurance during pregnancy, MA PRAMS, 2017–2018



There was no significant difference in the prevalence of mothers with dental insurance during 2017–2018 (84.5%) compared to 2015–2016 (84.9%), or across sociodemographic groups (Table 29).

During 2017–2018, a lower prevalence was observed among mothers aged 20-29 years (81.6%) compared to those aged less than 20 years (97.5%); those who were living at or below 100% of the FPL (79.9%) compared to those who were living above 100% of the FPL (85.9%); and those born outside of the US (80.5%) compared to US-born mothers (86.5%) (Table 29).

Table 29. Prevalence of mothers with dental insurance during pregnancy by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	114,124	84.9	83.0	-	86.6		111,287	84.5	82.6	-	86.2
Maternal race/ethnicity											
White non-Hispanic	67,638	85.7	82.9	-	88.1		62,814	84.1	81.0	-	86.7
Black non-Hispanic	10,221	82.0	77.5	-	85.8		10,668	84.3	81.1	-	87.1
Hispanic	21,231	86.8	83.9	-	89.3		22,262	86.1	83.5	-	88.4
Asian non-Hispanic	9,902	81.7	77.8	-	85.0		9,534	83.2	79.4	-	86.4
Other, non-Hispanic	2,936	72.1	54.9	-	84.5		3,181	83.6	71.4	-	91.3
Maternal age (years)											
<20	3,071	**92.6**	**85.5**	**-**	**96.3**		2,146	**97.5**	**90.6**	**-**	**99.4**
20-29	38,680	81.5	77.9	-	84.6		36,985	81.6	78.2	-	84.6
30-39	67,484	**87.0**	**84.7**	**-**	**88.9**		67,534	85.7	83.2	-	87.8
40+	4,888	80.5	70.3	-	87.8		4,622	85.6	76.7	-	91.5
Maternal education											
<High school	10,058	85.0	79.8	-	89.1		8,062	79.7	72.0	-	85.7
High school diploma	15,739	80.8	74.7	-	85.6		16,174	81.9	76.6	-	86.2
Some college	24,054	**81.3**	**76.8**	**-**	**85.1**		24,861	82.0	77.7	-	85.7
College graduate	60,797	88.0	85.6	-	90.0		57,858	86.8	84.2	-	88.9
Household poverty level											
≤100% FPL	22,192	82.7	78.4	-	86.2		22,842	**79.9**	**75.8**	**-**	**83.5**
>100% FPL	84,847	85.6	83.4	-	87.5		83,404	85.9	83.7	-	87.9
Maternal nativity											
Non-US-born	34,378	**81.2**	**78.5**	**-**	**83.6**		35,007	**80.5**	**77.6**	**-**	**83.0**
US-born	79,746	86.6	84.1	-	88.7		76,176	86.5	84.0	-	88.6
Marital status											
Unmarried	36,470	81.3	77.4	-	84.6		34,399	81.3	77.6	-	84.5
Married	77,512	86.7	84.6	-	88.4		76,889	86.0	83.8	-	87.9
Disability status											
No	102,638	85.5	83.6	-	87.2		98,170	85.1	83.2	-	86.9
Yes	9,762	78.0	69.8	-	84.5		11,982	79.9	73.3	-	85.2

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group.

The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

Healthy People 2020 and Healthy People 2030 Objectives

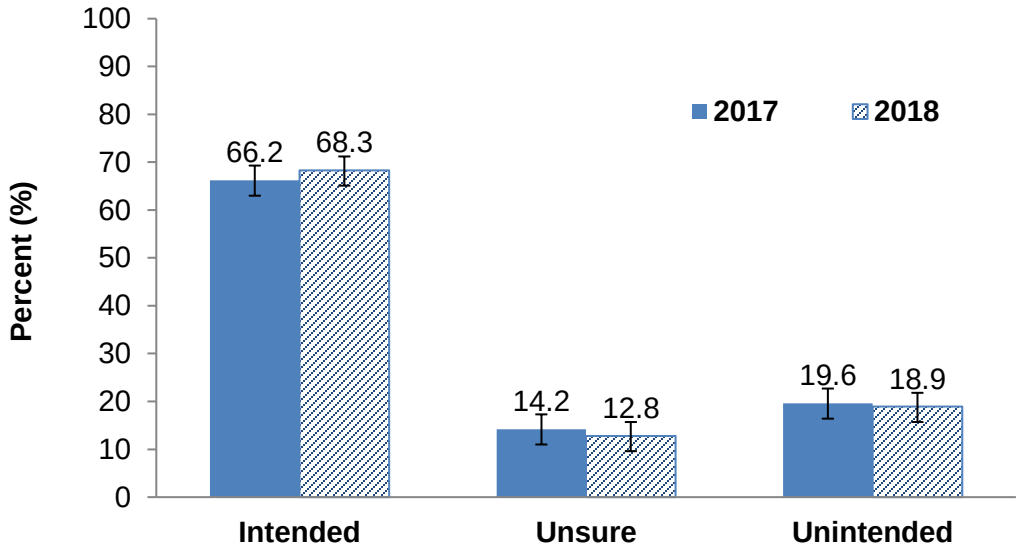
Pregnancy Intention

Unintended pregnancy has been reported to be associated with delayed entry into prenatal care (Altfeld, 1997). Having an unintended pregnancy could result in later awareness of the pregnancy and subsequently later cessation of dangerous and unhealthy behaviors, such as smoking or substance use. Healthy People 2020 target for the proportion of pregnancies that are intended is 56% (Healthy People, 2021).

During 2017–2018, 67.2% of Massachusetts mothers reported that their pregnancy was intended, and 19.3% of Massachusetts mothers reported that their pregnancy was unintended. The prevalence of unintended pregnancy (mistimed or unwanted) among mothers who had a live birth did not significantly change from 2017 (19.6%) to 2018 (18.9%) (Figure 23).

Since 2012, a new response choice, “I wasn’t sure what I wanted” (unsure about becoming pregnant) was included in the survey, and therefore, the prevalence of the unsure about becoming pregnant group is also included. CDC’s recommendation is not to combine unsure with unintended pregnancy, while keeping in mind that ambivalent feelings about pregnancy are real and are associated with different levels of risk.

Figure 23. Pregnancy intention status, MA PRAMS, 2017–2018



A higher prevalence of unintended pregnancy was observed among Black non-Hispanic and Hispanic mothers (31.1% and 27.2%, respectively) compared to White non-Hispanic mothers (15.0%); those aged less than 20 years (44.7%) compared to 20-29 years (24.8%); those with less than a high school education, a high school diploma, or some college education (24.1%, 29.0%, and 25.2%, respectively) compared to mothers with a college degree (12.7%); those who were living at or below 100% of the FPL (30.2%) compared to those who were living above 100% of the FPL (15.3%); mothers who were born outside of the US (23.6%) compared to those born in the US (17.1%); those who were unmarried (29.9%) compared to those who were married (14.2%); those with a history of physical abuse (35.6%) compared to those without a history of physical abuse (18.6%); and those with a disability (28.5%) compared to mothers without a disability (18.0%) (Table 30).

Table 30. Prevalence of women with an unintended pregnancy by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	27,742	20.4	18.5	-	22.3		25,193	19.3	17.5	-	21.2
Maternal race/ethnicity											
White non-Hispanic	12,096	15.2	12.7	-	18.1		11,349	15.0	12.5	-	18.0
Black non-Hispanic	3,852	**30.2**	**25.8**	**-**	**35.1**		4,070	**31.1**	**27.1**	**-**	**35.3**
Hispanic	7,515	**29.9**	**26.3**	**-**	**33.8**		7,200	**27.2**	**24.1**	**-**	**30.6**
Asian non-Hispanic	1,953	16.0	12.7	-	19.9		1,546	13.1	10.5	-	16.3
Other, non-Hispanic	1,333	**32.1**	**19.6**	**-**	**47.8**		1,028	26.2	16.4	-	39.1
Maternal age (years)											
<20	1,640	48.9	35.2	-	62.8		984	**44.7**	**31.3**	**-**	**59.0**
20-29	15,530	31.9	28.2	-	35.8		11,537	24.8	21.7	-	28.2
30-39	9,715	**12.4**	**10.5**	**-**	**14.6**		12,378	**15.5**	**13.4**	**-**	**17.9**
40+	857	**14.3**	**8.0**	**-**	**24.2**		895	16.5	9.4	-	27.5
Maternal education											
<High school	3,755	**30.2**	**23.9**	**-**	**37.3**		2,546	**24.1**	**18.1**	**-**	**31.4**
High school diploma	5,805	**29.1**	**23.8**	**-**	**35.1**		6,013	**29.0**	**24.1**	**-**	**34.6**
Some college	8,872	**29.5**	**25.2**	**-**	**34.2**		7,694	**25.2**	**21.3**	**-**	**29.4**
College graduate	7,752	11.2	9.3	-	13.4		8,517	12.7	10.6	-	15.1
Household poverty level											
≤100% FPL	10,447	**38.4**	**33.5**	**-**	**43.5**		8,867	**30.2**	**26.2**	**-**	**34.4**
>100% FPL	15,320	15.3	13.4	-	17.5		14,932	15.3	13.4	-	17.5
Maternal nativity											
Non-US-born	10,097	23.4	20.7	-	26.4		10,743	**23.6**	**20.9**	**-**	**26.6**
US-born	17,645	18.9	16.6	-	21.5		15,051	17.1	14.9	-	19.5
Marital status											
Unmarried	15,306	**33.2**	**29.4**	**-**	**37.4**		12,949	**29.9**	**26.4**	**-**	**33.7**
Married	12,293	13.6	11.8	-	15.7		12,845	14.2	12.3	-	16.3
History of physical abuse											
No	26,317	19.9	18.1	-	21.9		23,879	18.6	16.8	-	20.5
Yes	1,354	**49.9**	**34.2**	**-**	**65.6**		1,532	**35.6**	**23.9**	**-**	**49.4**
Disability status											
No	23,580	19.4	17.5	-	21.5		21,034	18.0	16.2	-	20.0
Yes	3,656	**29.0**	**22.2**	**-**	**37.0**		4,306	**28.5**	**22.6**	**-**	**35.2**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, with no history of physical abuse, and without a disability.

During 2017–2018, a higher prevalence of mothers being unsure about becoming pregnant was observed among mothers aged less than 20 years and 20-29 years (27.8% and 18.7%, respectively) compared to those aged 30-39 years (9.9%); those with less than a high school education, a high school diploma, or some college education (19.3%, 22.0%, and 19.2%, respectively) compared to mothers with a college degree (7.6%); those who were living at or below 100% of the FPL (24.2%) compared to those who were living above 100% of the FPL (9.8%); those who were unmarried (23.7%) compared to those who were married (8.6%); those with a history of physical abuse (30.6%) compared to those without a history of physical abuse (12.6%); and those with a disability (25.0%) compared to those without a disability (11.7%) (Table 31).

Table 31. Prevalence of mothers being unsure about becoming pregnant by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

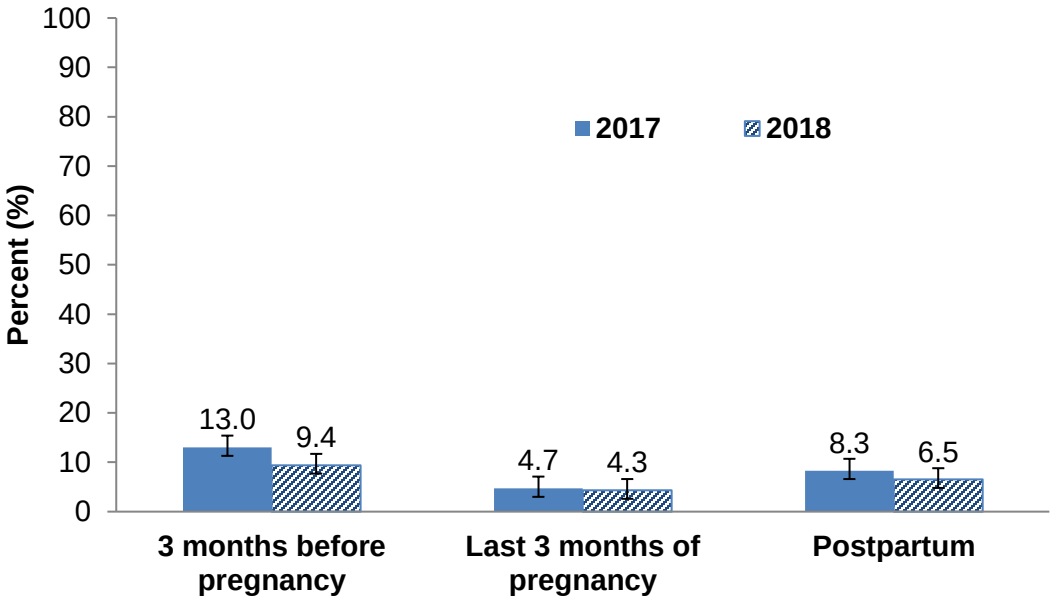
	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	17,297	12.7	11.2	-	14.4		17,879	13.7	12.1	-	15.4
Maternal race/ethnicity											
White non-Hispanic	9,142	11.5	9.3	-	14.1		9,295	12.3	10.0	-	15.1
Black non-Hispanic	2,711	**21.3**	**17.1**	**-**	**26.1**		2,330	17.8	15.0	-	21.0
Hispanic	3,579	14.3	11.8	-	17.1		4,277	16.2	13.7	-	19.0
Asian non-Hispanic	1,237	10.1	7.7	-	13.2		1,280	10.9	8.2	-	14.3
Other, non-Hispanic	628	15.1	6.8	-	30.3		697	17.8	9.3	-	31.3
Maternal age (years)											
<20	551	16.4	8.8	-	28.7		611	27.8	15.4	-	44.7
20-29	7,734	15.9	13.1	-	19.1		8,712	18.7	15.8	-	22.1
30-39	8,159	**10.4**	**8.6**	**-**	**12.6**		7,878	**9.9**	**8.2**	**-**	**11.9**
40+	854	14.2	7.9	-	24.3		876	16.2	9.3	-	26.6
Maternal education											
<High school	2,181	**17.5**	**12.8**	**-**	**23.5**		2,035	**19.3**	**13.4**	**-**	**26.8**
High school diploma	4,526	**22.7**	**17.4**	**-**	**29.0**		4,550	**22.0**	**17.4**	**-**	**27.4**
Some college	5,159	**17.2**	**13.7**	**-**	**21.3**		5,863	**19.2**	**15.6**	**-**	**23.4**
College graduate	5,178	7.5	5.9	-	9.4		5,139	7.6	6.0	-	9.6
Household poverty level											
≤100% FPL	5,520	**20.3**	**16.4**	**-**	**24.7**		7,120	**24.2**	**20.4**	**-**	**28.4**
>100% FPL	10,386	10.4	8.7	-	12.3		9,581	9.8	8.2	-	11.7
Maternal nativity											
Non-US-born	4,789	11.1	9.3	-	13.2		5,417	11.9	10.0	-	14.1
US-born	12,508	13.4	11.4	-	15.8		12,529	14.2	12.1	-	16.6
Marital status											
Unmarried	10,295	**22.4**	**18.9**	**-**	**26.2**		10,272	**23.7**	**20.3**	**-**	**27.5**
Married	7,003	7.8	6.4	-	9.4		7,804	8.6	7.1	-	10.4
History of physical abuse											
No	16,501	12.5	10.9	-	14.3		16,225	12.6	11.1	-	14.3
Yes	571	21.1	12.0	-	34.3		1,317	**30.6**	**19.3**	**-**	**44.9**
Disability status											
No	13,709	11.3	9.8	-	13.0		13,638	11.7	10.1	-	13.4
Yes	3,359	**26.7**	**19.9**	**-**	**34.8**		3,771	**25.0**	**19.3**	**-**	**31.7**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, with no history of physical abuse, and without a disability.

Tobacco Smoking

Smoking before and during pregnancy has a negative impact on the health of both a mother and her infant. Smoking reduces woman's chances of getting pregnant and also increases the risks of pregnancy complications such as placenta previa, placental abruption (Murin et al., 2011), miscarriage, preterm delivery, and stillbirth (Surgeon General's Report, 2014). In addition, exposure to nicotine in utero harms infants and puts them at a greater risk for low birth weight and congenital heart defects (Alverson et al., 2011). Infants whose mothers smoke are also about three times as likely to die from sudden infant death syndrome (Surgeon General's Report, 2014). The Healthy People 2020 target for the proportion of mothers who did not smoke in the three months prior to pregnancy is 87.8 % (Healthy People, 2021). During 2017-2018, 88.8% of mothers reported that they did not smoke in the three months prior to pregnancy. The prevalence of mother who reported smoking did not change significantly from 2017 (13.0%) to 2018 (9.4%) during the 3 months before pregnancy, from 2017 (4.7%) to 2018 (4.3%) during the last 3 months of pregnancy, or from 2017 (8.3%) to 2018 (6.5%) during the postpartum period (Figure 24).

Figure 24. Prevalence of maternal smoking before pregnancy, during pregnancy, and postpartum period, MA PRAMS, 2017–2018



Smoking during the three months before pregnancy:

A higher prevalence of smoking during the three months before pregnancy was reported by White non-Hispanic mothers (13.3%) compared to Black non-Hispanic and Asian non-Hispanic mothers (8.1% and 3.2%, respectively); those with less than a high school education, a high school diploma, or some college education (18.0%, 19.2%, and 17.8%,

respectively) compared to mothers with a college degree (4.9%); those who were living at or below 100% of the FPL (20.2%) compared to those who were living above 100% of the FPL (9.0%); US-born mothers (15.2%) compared to those born outside of the US (3.5%); those who were unmarried (23.8%) compared to those who were married (5.2%); and those with a disability (24.0%) compared to those without a disability (9.6%) (Table 32).

Compared to 2015–2016, there was no significant change in the prevalence of maternal smoking during the three months prior to pregnancy across maternal sociodemographic characteristics during 2017–2018 (Table 32).

Smoking during the last three months of pregnancy:

During 2017–2018, a higher prevalence of smoking during the last three months of pregnancy was reported by White non-Hispanic mothers (5.6%) compared to Asian non-Hispanic mothers (1.0%); mothers with less than a high school education, a high school diploma, or some college education (11.2%, 10.5%, and 6.7%, respectively) compared to mothers with a college degree (0.9%); those who were living at or below 100% of the FPL (11.5%) compared to those who were living above 100% of the FPL (2.6%); US-born mothers (6.4%) compared to those born outside of the US (0.7%); those who were unmarried (11.3%) compared to those who were married (1.2%); and those with a disability (11.5%) compared to those without a disability (3.6%) (Table 33).

Compared to 2015–2016, there was no significant change in the prevalence of maternal smoking during the last three months of pregnancy across sociodemographic characteristics during 2017–2018 (Table 33).

Smoking in the postpartum period:

A higher prevalence of smoking in the postpartum period was reported by White non-Hispanic mothers (8.9%) compared to Asian non-Hispanic mothers (1.9%); those with less than a high school education, a high school diploma, or some college education (14.7%, 14.2%, and 12.9%, respectively) compared to mothers with a college degree (1.9%); those who were living at or below 100% of the FPL (15.1%) compared to those who were living above 100% of the FPL (5.4%); US-born mothers (10.6%) compared to those born outside of the US (1.3%); those who were unmarried (17.7%) compared to those who were married (2.6%); and those with a disability (16.3%) compared to those without a disability (6.3%) (Table 34).

Compared to 2015–2016, there was no significant change in the prevalence of maternal smoking in the postpartum period by maternal sociodemographic characteristics during 2017–2018 (Table 34).

Table 32. Prevalence of maternal smoking during the 3 months prior to pregnancy by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	18,641	13.7	12.0	-	15.6		14,929	11.2	9.7	-	13.0
Maternal race/ethnicity											
White non-Hispanic	12,236	15.5	12.9	-	18.5		9,992	13.3	10.8	-	16.2
Black non-Hispanic	1,772	13.7	10.5	-	17.7		1,060	**8.1**	**6.1**	**-**	**10.6**
Hispanic	3,315	13.3	10.7	-	16.2		2,599	9.9	7.9	-	12.3
Asian non-Hispanic	331	**2.7**	**1.5**	**-**	**4.7**		376	**3.2**	**2.0**	**-**	**5.2**
Other, non-Hispanic	987	23.9	12.7	-	40.5		696	17.9	9.8	-	30.4
Maternal age (years)											
<20	854	25.2	13.9	-	41.3		200	9.1	4.3	-	18.2
20-29	9,184	18.9	15.7	-	22.7		6,205	13.5	10.9	-	16.8
30-39	7,684	**9.8**	**8.0**	**-**	**12.0**		8,090	10.2	8.2	-	12.5
40+	919	15.0	7.8	-	26.9		Insufficient Data to Report				
Maternal education											
<High school	2,714	**22.3**	**16.1**	**-**	**30.1**		1,911	**18.0**	**12.1**	**-**	**26.0**
High school diploma	5,282	**26.3**	**20.7**	**-**	**32.9**		3,881	**19.2**	**14.5**	**-**	**24.9**
Some college	6,766	**22.6**	**18.4**	**-**	**27.5**		5,455	**17.8**	**14.0**	**-**	**22.3**
College graduate	3,406	4.9	3.6	-	6.7		3,299	4.9	3.6	-	6.7
Household poverty level											
≤100% FPL	7,709	**28.1**	**23.4**	**-**	**33.3**		5,925	**20.2**	**16.3**	**-**	**24.7**
>100% FPL	9,651	9.6	7.9	-	11.7		8,758	9.0	7.3	-	10.9
Maternal nativity											
Non-US-born	1,990	**4.6**	**3.2**	**-**	**6.5**		1,582	**3.5**	**2.4**	**-**	**5.1**
US-born	16,652	18.0	15.6	-	20.6		13,347	15.2	13.0	-	17.7
Marital status											
Unmarried	13,108	**28.7**	**24.8**	**-**	**33.0**		10,214	**23.8**	**20.1**	**-**	**27.9**
Married	5,534	6.1	4.8	-	7.8		4,715	5.2	4.0	-	6.7
Disability status											
No	14,918	12.3	10.5	-	14.2		11,173	9.6	8.1	-	11.3
Yes	3,430	**27.1**	**20.4**	**-**	**35.0**		3,673	**24.0**	**18.1**	**-**	**31.2**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.
Insufficient Data to Report: sample size less than 5.

Table 33. Prevalence of mothers smoking during the last 3 months of pregnancy by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	7,201	5.3	4.2	-	6.7		5,965	4.5	3.5	-	5.8
Maternal race/ethnicity											
White non-Hispanic	4,530	5.7	4.1	-	7.9		4,191	5.6	4.0	-	7.8
Black non-Hispanic	651	5.0	3.5	-	7.2		395	3.0	1.9	-	4.8
Hispanic	1,223	4.9	3.5	-	6.7		986	3.8	2.4	-	5.7
Asian non-Hispanic	*Insufficient Data to Report*						122	**1.0**	**0.4**	**-**	**2.5**
Other, non-Hispanic	729	17.5	7.8	-	35.0		271	7.0	2.2	-	20.2
Maternal age (years)											
<20	*Insufficient Data to Report*						Insufficient Data to Report				
20-29	3,156	6.5	4.6	-	9.2		2,198	4.8	3.2	-	7.2
30-39	3,535	4.5	3.3	-	6.3		3,512	4.4	3.1	-	6.2
40+	*Insufficient Data to Report*						*Insufficient Data to Report*				
Maternal education											
<High school	1,719	**14.1**	**9.0**	**-**	**21.5**		1,188	**11.2**	**6.3**	**-**	**19.3**
High school diploma	2,502	**12.5**	**8.4**	**-**	**18.0**		2,117	**10.5**	**6.9**	**-**	**15.5**
Some college	2,266	**7.6**	**5.1**	**-**	**11.1**		2,056	**6.7**	**4.2**	**-**	**10.4**
College graduate	373	0.5	0.2	-	1.3		604	0.9	0.4	-	1.9
Household poverty level											
≤100% FPL	4,137	**15.1**	**11.3**	**-**	**19.8**		3,363	**11.5**	**8.3**	**-**	**15.7**
>100% FPL	2,757	2.8	1.9	-	4.1		2,543	2.6	1.7	-	3.9
Maternal nativity											
Non-US-born	297	**0.7**	**0.3**	**-**	**1.5**		337	**0.7**	**0.3**	**-**	**2.0**
US-born	6,903	7.4	5.9	-	9.4		5,628	6.4	4.9	-	8.3
Marital status											
Unmarried	6,234	**13.7**	**10.7**	**-**	**17.3**		4,855	**11.3**	**8.6**	**-**	**14.9**
Married	966	1.1	0.6	-	1.9		1,110	1.2	0.7	-	2.1
Disability status											
No	5,408	4.4	3.4	-	5.8		4,146	3.6	2.6	-	4.8
Yes	1,618	**12.8**	**7.9**	**-**	**20.0**		1,759	**11.5**	**7.2**	**-**	**18.1**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.
Insufficient Data to Report: sample size less than 5.

Table 34. Prevalence of maternal smoking during postpartum period by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	11,330	8.3	7.0	-	9.9		9,932	7.5	6.2	-	9.0
Maternal race/ethnicity											
White non-Hispanic	7,281	9.2	7.1	-	11.8		6,712	8.9	6.9	-	11.5
Black non-Hispanic	999	7.8	5.8	-	10.4		808	6.2	4.0	-	9.4
Hispanic	2,105	8.4	6.4	-	10.9		1,609	6.1	4.5	-	8.3
Asian non-Hispanic	186	**1.5**	**0.7**	**-**	**3.1**		225	**1.9**	**1.0**	**-**	**3.7**
Other, non-Hispanic	759	18.3	8.3	-	35.5		463	11.9	5.0	-	25.7
Maternal age (years)											
<20	579	17.3	7.4	-	35.3		169	7.7	3.4	-	16.4
20-29	5,812	12.0	9.3	-	15.2		3,937	8.6	6.4	-	11.5
30-39	4,495	**5.8**	**4.3**	**-**	**7.6**		5,392	6.8	5.2	-	8.8
40+	443	7.2	2.7	-	17.7		Insufficient Data to Report				
Maternal education											
<High school	2,127	**17.5**	**11.9**	**-**	**25.1**		1,551	**14.7**	**9.1**	**-**	**22.7**
High school diploma	3,777	**18.8**	**13.9**	**-**	**25.0**		2,881	**14.2**	**10.1**	**-**	**19.6**
Some college	3,940	**13.2**	**9.9**	**-**	**17.4**		3,958	**12.9**	**9.5**	**-**	**17.2**
College graduate	1,012	1.5	0.8	-	2.6		1,251	1.9	1.1	-	3.1
Household poverty level											
≤100% FPL	6,158	**22.5**	**18.0**	**-**	**27.6**		4,449	**15.1**	**11.6**	**-**	**19.5**
>100% FPL	4,529	4.5	3.4	-	6.1		5,291	5.4	4.1	-	7.1
Maternal nativity											
Non-US-born	539	**1.2**	**0.6**	**-**	**2.5**		609	**1.3**	**0.8**	**-**	**2.3**
US-born	10,791	11.6	9.7	-	13.9		9,323	10.6	8.7	-	12.9
Marital status											
Unmarried	9,314	**20.4**	**16.9**	**-**	**24.4**		7,580	**17.7**	**14.3**	**-**	**21.6**
Married	2,016	2.2	1.5	-	3.4		2,352	2.6	1.8	-	3.8
Disability status											
No	8,390	6.9	5.6	-	8.5		7,387	6.3	5.1	-	7.9
Yes	2,699	**21.3**	**15.2**	**-**	**29.1**		2,485	**16.3**	**11.2**	**-**	**23.1**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference group: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.
Insufficient Data to Report: sample size less than 5.

Additional Topics

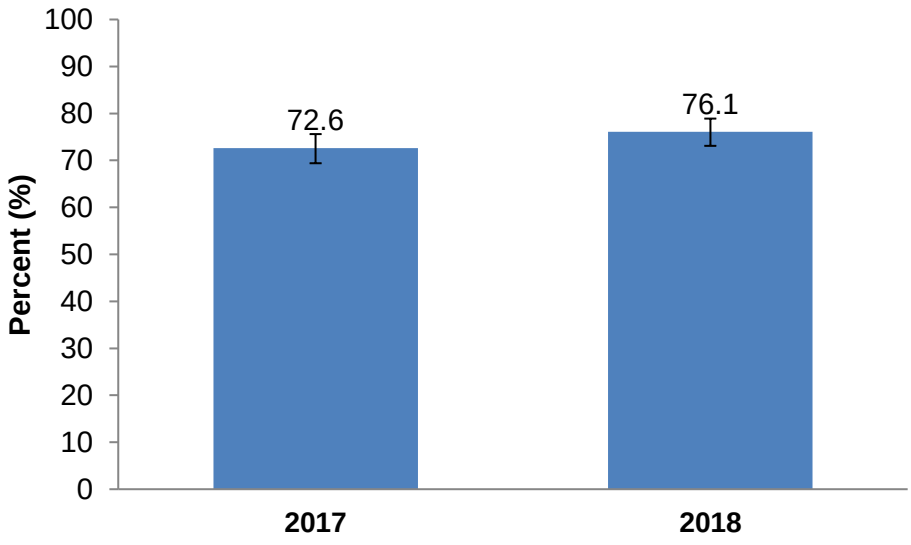
Pregnancy

Influenza vaccination before or during pregnancy:

Vaccines help to protect a mother and her baby against serious diseases. The Centers for Disease Control and Prevention (CDC) recommends getting an influenza vaccine before or during each pregnancy. Previous research has showed that getting an influenza vaccine has significant clinical effectiveness, with a reduction of 63% in laboratory-proven influenza illness in infants up to six months of age and reductions of 29% and 36% in rates of respiratory illness with fever in infants and mothers, respectively (Zaman et al., 2008).

The prevalence of mothers receiving influenza vaccination before or during pregnancy did not change significantly from 2017 (72.6%) to 2018 (76.1%) (Figure 25).

Figure 25. Prevalence of mothers receiving influenza vaccination before or during pregnancy, MA PRAMS, 2017–2018



A higher prevalence was observed among Asian non-Hispanic mothers (83.7%) compared to White non-Hispanic mothers (73.6%); mothers aged 30-39 years (77.4%) compared to those aged 20-29 years (68.6%); those with a college degree (80.5%) compared to those with some college education, a high school diploma, or less than a high school education (69.0%, 63.5%, and 69.2%, respectively); those who were living above 100% of the FPL (76.9%) compared to those who were living at or below 100% of the FPL (66.9%); and those who were married (78.9%) compared to those who were unmarried (64.8%). Compared to 2015–2016, there was no significant difference in the prevalence of mothers receiving an influenza vaccine before or during pregnancy by maternal sociodemographic characteristics during 2017–2018 (Table 35).

Table 35. Prevalence of mothers receiving influenza vaccination before or during pregnancy by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	99,980	74.4	72.2	-	76.5		98,911	74.3	72.2	-	76.4
Maternal race/ethnicity											
White non-Hispanic	57,324	72.9	69.5	-	76.0		55,593	73.6	70.1	-	76.8
Black non-Hispanic	8,595	68.5	63.5	-	73.1		8,942	69.4	65.5	-	73.0
Hispanic	19,141	77.9	74.4	-	81.0		19,062	73.7	70.4	-	76.8
Asian non-Hispanic	10,138	**82.7**	**79.1**	**-**	**85.8**		9,817	**83.7**	**79.9**	**-**	**86.8**
Other, non-Hispanic	3,106	76.9	62.4	-	86.9		2,949	76.4	64.4	-	85.2
Maternal age (years)											
<20	2,364	69.8	55.2	-	81.3		1,414	68.0	52.0	-	80.7
20-29	33,000	68.7	64.7	-	72.5		31,570	68.6	64.8	-	72.2
30-39	60,040	**77.9**	**75.2**	**-**	**80.5**		61,569	**77.4**	**74.6**	**-**	**80.0**
40+	4,575	77.2	66.2	-	85.4		4,358	80.2	68.7	-	88.2
Maternal education											
<High school	8,074	**68.8**	**61.0**	**-**	**75.6**		7,158	**69.2**	**60.8**	**-**	**76.5**
High school diploma	13,259	**66.7**	**60.1**	**-**	**72.7**		12,892	**63.5**	**57.5**	**-**	**69.1**
Some college	20,396	**68.6**	**63.7**	**-**	**73.1**		20,869	**69.0**	**64.2**	**-**	**73.4**
College graduate	54,886	79.9	77.0	-	82.5		54,284	80.5	77.7	-	83.1
Household poverty level											
≤100% FPL	19,059	70.5	65.5	-	75.0		19,335	**66.9**	**62.3**	**-**	**71.2**
>100% FPL	74,550	75.5	72.9	-	77.9		75,007	76.9	74.3	-	79.2
Maternal nativity											
Non-US-born	33,808	**79.6**	**76.8**	**-**	**82.1**		34,172	76.9	73.9	-	79.6
US-born	66,172	72.0	69.0	-	74.8		64,634	73.0	70.1	-	75.8
Marital status											
Unmarried	30,227	**67.1**	**62.8**	**-**	**71.2**		27,811	**64.8**	**60.6**	**-**	**68.8**
Married	69,611	78.1	75.5	-	80.4		71,100	78.9	76.4	-	81.1
Disability status											
No	89,651	74.8	72.4	-	77.0		87,424	75.2	72.9	-	77.4
Yes	8,689	69.1	61.0	-	76.3		10,715	70.6	63.8	-	76.6

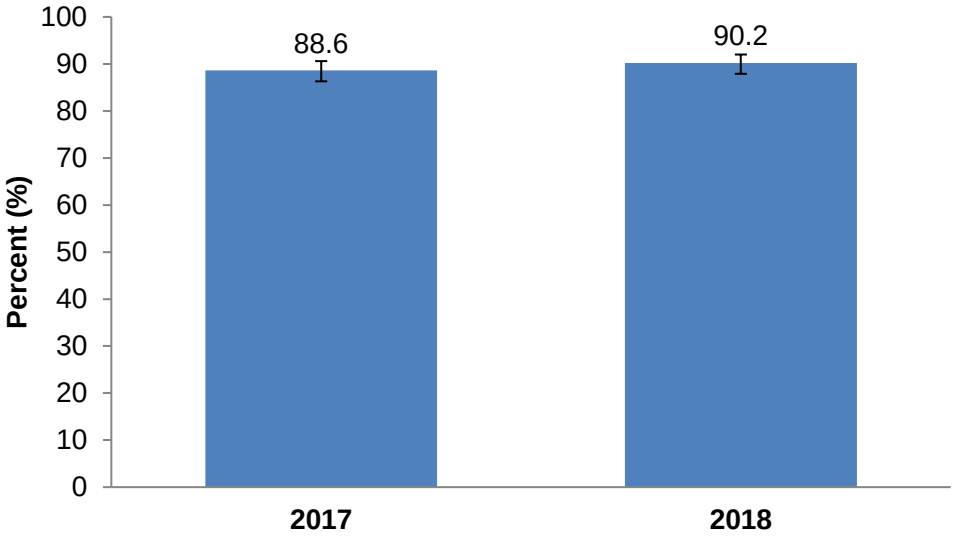
Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

Tetanus, diphtheria, and pertussis (Tdap) vaccination during pregnancy:

The CDC's Advisory Committee on Immunization Practices (ACIP) recommends routine vaccination for tetanus, diphtheria, and pertussis (Tdap). Women are recommended to receive a dose of Tdap during each pregnancy, which should be administered from 27 through 36 weeks' gestation, regardless of previous receipt of Tdap (Liang, 2018).

The prevalence of mothers receiving Tdap vaccination during pregnancy did not change significantly from 2017 (88.6%) to 2018 (90.2%) (Figure 26).

Figure 26. Prevalence of mothers receiving Tdap vaccination, MA PRAMS, 2017–2018



A lower prevalence of Tdap vaccination during pregnancy was observed among Black non-Hispanic mothers (83.0%) compared to White non-Hispanic mothers (90.7%). No significant difference in the prevalence of Tdap vaccination was observed for mothers by other sociodemographic characteristics (Table 36).

Table 36. Prevalence of mothers receiving Tdap vaccination by sociodemographic characteristics, MA PRAMS, 2017–2018

	2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	112,409	89.4	87.8	-	90.8
Maternal race/ethnicity					
White non-Hispanic	66,092	90.7	88.2	-	92.7
Black non-Hispanic	9,501	**83.0**	**79.0**	**-**	**86.3**
Hispanic	20,858	87.8	85.2	-	90.0
Asian non-Hispanic	9,868	92.2	89.3	-	94.3
Other, non-Hispanic	3,198	86.1	74.8	-	92.8
Maternal age (years)					
<20	1,718	84.3	72.9	-	91.4
20-29	37,370	88.9	86.2	-	91.1
30-39	69,020	89.8	87.7	-	91.7
40+	4,300	89.1	79.4	-	94.5
Maternal education					
<High school	7,959	84.7	77.1	-	90.1
High school diploma	15,440	86.6	82.2	-	90.0
Some college	24,820	88.3	84.8	-	91.1
College graduate	59,860	91.2	89.0	-	93.0
Household poverty level					
≤100% FPL	22,376	86.8	83.4	-	89.7
>100% FPL	84,911	90.3	88.4	-	91.9
Maternal nativity					
Non-US-born	36,077	90.5	88.5	-	92.2
US-born	76,227	88.8	86.7	-	90.7
Marital status					
Unmarried	34,437	87.1	84.0	-	89.6
Married	77,972	90.5	88.6	-	92.1
Disability status					
No	99,080	89.9	88.2	-	91.4
Yes	12,245	87.0	81.8	-	90.9

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

*This is a new question that was added in 2016 (Phase 8). See Appendix C for survey questions.

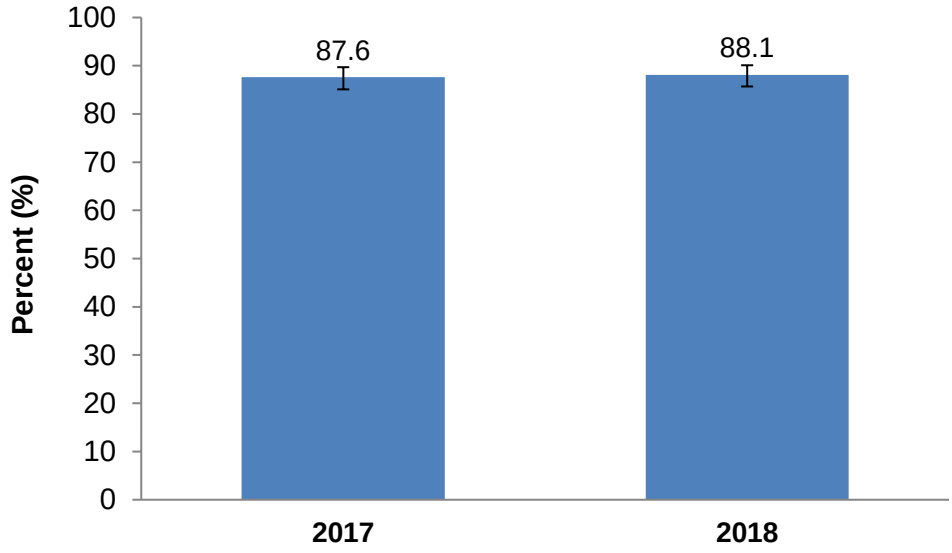
HIV testing

Human immunodeficiency virus (HIV) is the virus that causes acquired immunodeficiency syndrome (AIDS). HIV testing is very important during prenatal care. Universal HIV testing for all pregnant women is recommended by the American Congress of Obstetricians and Gynecologists (ACOG). If a pregnant woman has HIV infection, without treatment she has a one in four chance of passing the infection to her baby during pregnancy, at delivery, or during breastfeeding (ACOG, 2011). With a positive diagnosis, special HIV medications during pregnancy and possibly a cesarean delivery will be recommended to improve a mother's health and protect the health of the infant.

Being offered an HIV test

The prevalence of women being offered an HIV test did not change significantly from 2017 (87.6%) to 2018 (88.1%) (Figure 27).

Figure 27. Prevalence of mothers being offered an HIV test, MA PRAMS, 2017–2018



A higher prevalence of mothers being offered an HIV test was observed among Black non-Hispanic mothers (91.8%) compared to White non-Hispanic mothers (86.6%); and those who were living at or below of the FPL (92.3%) compared to those living above 100% of the FPL (86.5%) (Table 37).

Table 37. Prevalence of mothers being offered an HIV test by sociodemographic characteristics, MA PRAMS, 2017–2018

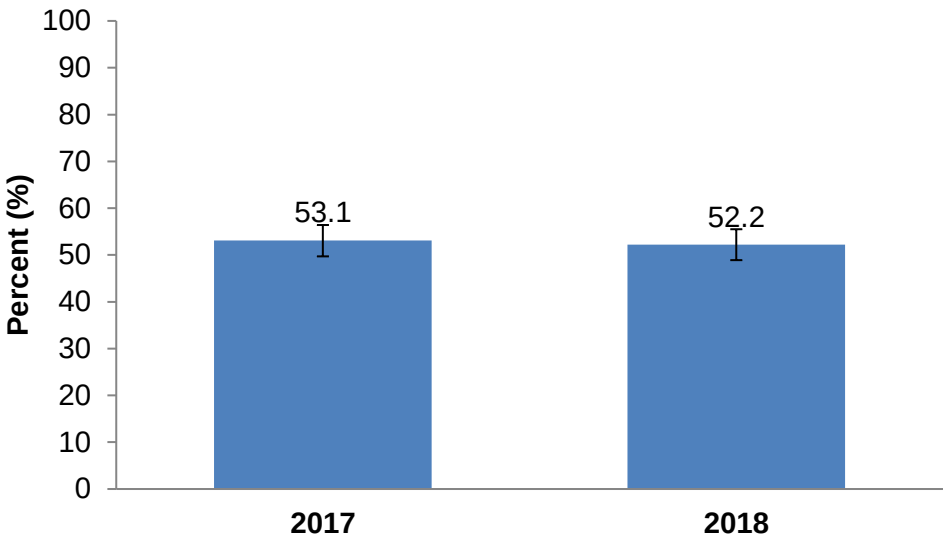
	2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	118,450	87.8	86.1	-	89.3
Maternal race/ethnicity					
White non-Hispanic	65,723	86.6	83.8	-	88.9
Black non-Hispanic	12,195	**91.8**	**89.4**	**-**	**93.7**
Hispanic	23,717	89.0	86.4	-	91.2
Asian non-Hispanic	10,278	86.8	83.6	-	89.4
Other, non-Hispanic	3,480	88.6	76.0	-	95.0
Maternal age (years)					
<20	2,018	91.7	82.4	-	96.3
20-29	40,556	86.7	83.6	-	89.3
30-39	70,846	88.2	86.0	-	90.1
40+	5,031	89.9	81.5	-	94.8
Maternal education					
<High school	9,639	90.2	83.9	-	94.2
High school diploma	18,720	89.9	85.7	-	92.9
Some college	27,189	88.1	84.4	-	91.1
College graduate	58,300	86.2	83.6	-	88.4
Household poverty level					
≤100% FPL	27,306	**92.3**	**89.5**	**-**	**94.4**
>100% FPL	84,996	86.5	84.4	-	88.4
Maternal nativity					
Non-US-born	40,957	89.5	87.3	-	91.4
US-born	77,362	86.9	84.6	-	88.9
Marital status					
Unmarried	38,938	89.1	86.0	-	91.5
Married	79,513	87.2	85.1	-	89.0
Disability status					
No	102,683	87.3	85.5	-	89.0
Yes	14,225	92.8	89.0	-	95.4

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

Receiving an HIV test during pregnancy

The prevalence of women receiving an HIV test did not change significantly from 2017 (53.1%) to 2018 (52.2%) (Figure 28).

Figure 28. Prevalence of mothers receiving an HIV test, MA PRAMS, 2017–2018



A higher prevalence of receiving an HIV test was observed among Black non-Hispanic, Hispanic, and other, non-Hispanic mothers (69.4%, 64.0%, and 66.3%, respectively) compared to White non-Hispanic mothers (45.4%); those with less than a high school education, a high school diploma, or some college education (61.5%, 61.9%, and 56.7%, respectively) compared to those with a college degree (46.6%); those who were living at or below of the FPL (65.9%) compared to those living above 100% of the FPL (48.4%); those born outside of the US (61.5%) compared to US-born mothers (48.1%); and those who were unmarried (60.7%) compared to married mothers (48.8%) (Table 38).

Compared to 2015–2016, there was no significant change in the prevalence of mothers receiving an HIV test by maternal sociodemographic characteristics during 2017–2018 (Table 38).

Table 38. Prevalence of mothers receiving an HIV test by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	76,008	55.3	52.9	-	57.6		71,002	52.6	50.3	-	55.0
Maternal race/ethnicity											
White non-Hispanic	39,205	49.0	45.4	-	52.6		34,492	45.4	41.7	-	49.2
Black non-Hispanic	9,338	**71.7**	**67.0**	**-**	**75.9**		9,216	**69.4**	**65.3**	**-**	**73.2**
Hispanic	17,418	**68.4**	**64.5**	**-**	**72.0**		17,038	**64.0**	**60.5**	**-**	**67.3**
Asian non-Hispanic	6,344	51.0	46.4	-	55.7		6,018	50.8	46.3	-	55.3
Other, non-Hispanic	1,925	46.3	32.5	-	60.8		2,603	**66.3**	**54.6**	**-**	**76.3**
Maternal age (years)											
<20	2,254	66.6	52.1	-	78.5		1,359	61.7	46.3	-	75.1
20-29	27,536	55.9	51.8	-	59.9		25,465	54.4	50.5	-	58.3
30-39	42,397	53.8	50.7	-	56.9		41,406	51.5	48.4	-	54.6
40+	3,821	62.4	51.2	-	72.4		2,772	49.5	38.4	-	60.8
Maternal education											
<High school	8,472	**67.0**	**59.9**	**-**	**73.3**		6,568	**61.5**	**54.0**	**-**	**68.5**
High school diploma	11,785	58.1	51.8	-	64.1		12,893	**61.9**	**56.0**	**-**	**67.4**
Some college	18,142	**60.0**	**55.0**	**-**	**64.9**		17,501	**56.7**	**51.9**	**-**	**61.5**
College graduate	34,452	49.3	46.0	-	52.7		31,549	46.6	43.3	-	50.0
Household poverty level											
≤100% FPL	18,387	**66.4**	**61.5**	**-**	**71.0**		19,490	**65.9**	**61.6**	**-**	**70.0**
>100% FPL	52,906	52.7	49.8	-	55.5		47,579	48.4	45.6	-	51.3
Maternal nativity											
Non-US-born	27,612	**63.0**	**59.8**	**-**	**66.1**		28,147	**61.5**	**58.4**	**-**	**64.6**
US-born	48,396	51.6	48.5	-	54.7		42,855	48.1	45.0	-	51.3
Marital status											
Unmarried	30,248	**65.1**	**60.9**	**-**	**69.1**		26,543	**60.7**	**56.6**	**-**	**64.7**
Married	45,617	50.1	47.3	-	53.0		44,459	48.8	45.9	-	51.6
Disability status											
No	67,320	55.0	52.5	-	57.5		61,213	52.1	49.5	-	54.6
Yes	7,775	61.3	53.3	-	68.8		9,071	59.2	52.2	-	65.8

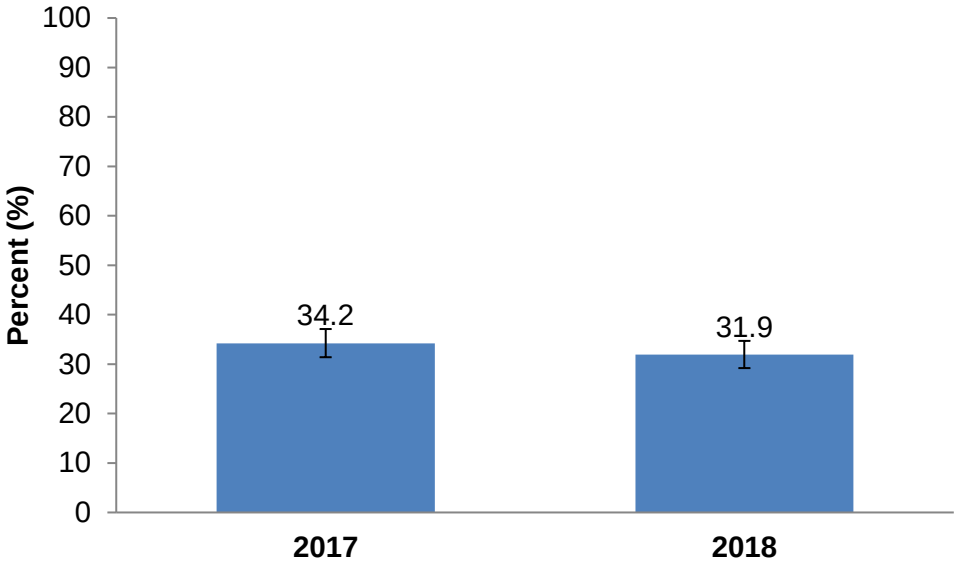
Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

WIC enrollment during pregnancy

The Women, Infants, and Children (WIC) Program is a supplemental food and nutrition program for low-income pregnant, postpartum, and breastfeeding mothers and children up to age 5 years who are at risk for poor nutrition. The WIC program serves low-income women and offers education on healthy eating, breastfeeding support, referrals to medical and other community providers, and financial assistance in purchasing food. Women who are enrolled in prenatal WIC services improve their nutrition, have healthier pregnancies, and give birth to healthier infants (Carlson & Neuberger, 2021).

The prevalence of Massachusetts mothers enrolled in WIC during pregnancy did not change significantly from 2017 (34.2%) to 2018 (31.9%) (Figure 29).

Figure 29. Prevalence of women enrolled in WIC during pregnancy, MA PRAMS, 2017–2018



A higher prevalence was reported among Black non-Hispanic, Hispanic, and other, non-Hispanic mothers (59.5%, 68.9%, and 37.0%, respectively) compared to White non-Hispanic mothers (17.8%); those aged less than 20 years (85.8%) compared to those aged 20-29 years (50.2%); those with less than a high school education, a high school diploma, or some college education (81.0%, 70.4%, and 49.3%, respectively) compared to mothers with a college degree (6.7%); those who were living at or below 100% of the FPL (82.0%) compared to those who were living above 100% of the FPL (16.5%); those born outside of the US (50.0%) compared to US-born mothers (24.3%); those who were unmarried (65.6%) compared to those who were married (17.6%); and those with a disability (53.6%) compared to mothers without a disability (30.3%). The prevalence of women enrolled in WIC during pregnancy did not change significantly from 2015–2016 (33.9%) to 2017–2018 (33.1%), or across maternal sociodemographic characteristics (Table 39).

Table 39. Prevalence of mothers enrolled in WIC during pregnancy by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	46,157	33.9	31.9	-	35.9		44,218	33.1	31.1	-	35.1
Maternal race/ethnicity											
White non-Hispanic	13,890	17.5	14.7	-	20.7		13,447	17.8	15.0	-	21.1
Black non-Hispanic	8,687	**67.6**	**62.9**	**-**	**71.9**		7,679	**59.5**	**55.1**	**-**	**63.7**
Hispanic	18,578	**74.1**	**70.5**	**-**	**77.3**		18,258	**68.9**	**65.5**	**-**	**72.2**
Asian non-Hispanic	2,674	21.7	18.1	-	25.8		2,698	23.0	19.4	-	27.0
Other, non-Hispanic	1,582	**38.1**	**24.9**	**-**	**53.3**		1,433	**37.0**	**25.8**	**-**	**49.8**
Maternal age (years)											
<20	2,835	**83.7**	**69.5**	**-**	**92.1**		1,888	**85.8**	**71.9**	**-**	**93.4**
20-29	23,970	49.3	45.3	-	53.3		23,169	50.2	46.3	-	54.0
30-39	17,587	**22.5**	**20.2**	**-**	**25.0**		17,821	**22.3**	**20.0**	**-**	**24.7**
40+	1,765	**28.9**	**20.2**	**-**	**39.5**		1,340	**24.7**	**16.4**	**-**	**35.3**
Maternal education											
<High school	10,308	**84.5**	**78.1**	**-**	**89.3**		8,585	**81.0**	**73.9**	**-**	**86.5**
High school diploma	13,865	**69.2**	**62.7**	**-**	**75.0**		14,357	**70.4**	**64.6**	**-**	**75.6**
Some college	15,186	**50.4**	**45.5**	**-**	**55.4**		15,149	**49.3**	**44.5**	**-**	**54.1**
College graduate	5,388	7.8	6.3	-	9.5		4,511	6.7	5.6	-	8.1
Household poverty level											
≤100% FPL	22,522	**82.2**	**77.7**	**-**	**86.0**		24,085	**82.0**	**78.1**	**-**	**85.4**
>100% FPL	18,251	18.2	16.3	-	20.4		16,202	16.5	14.7	-	18.6
Maternal nativity											
Non-US-born	22,667	**52.2**	**49.0**	**-**	**55.3**		22,615	**50.0**	**46.9**	**-**	**53.2**
US-born	23,490	25.3	22.7	-	28.1		21,498	24.3	21.8	-	27.0
Marital status											
Unmarried	30,214	**65.8**	**61.5**	**-**	**69.9**		28,305	**65.6**	**61.4**	**-**	**69.5**
Married	15,800	17.5	15.8	-	19.4		15,913	17.6	15.8	-	19.4
Disability status											
No	37,972	31.2	29.1	-	33.3		35,541	30.3	28.3	-	32.4
Yes	7,466	**59.1**	**51.0**	**-**	**66.6**		8,205	**53.6**	**46.7**	**-**	**60.4**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

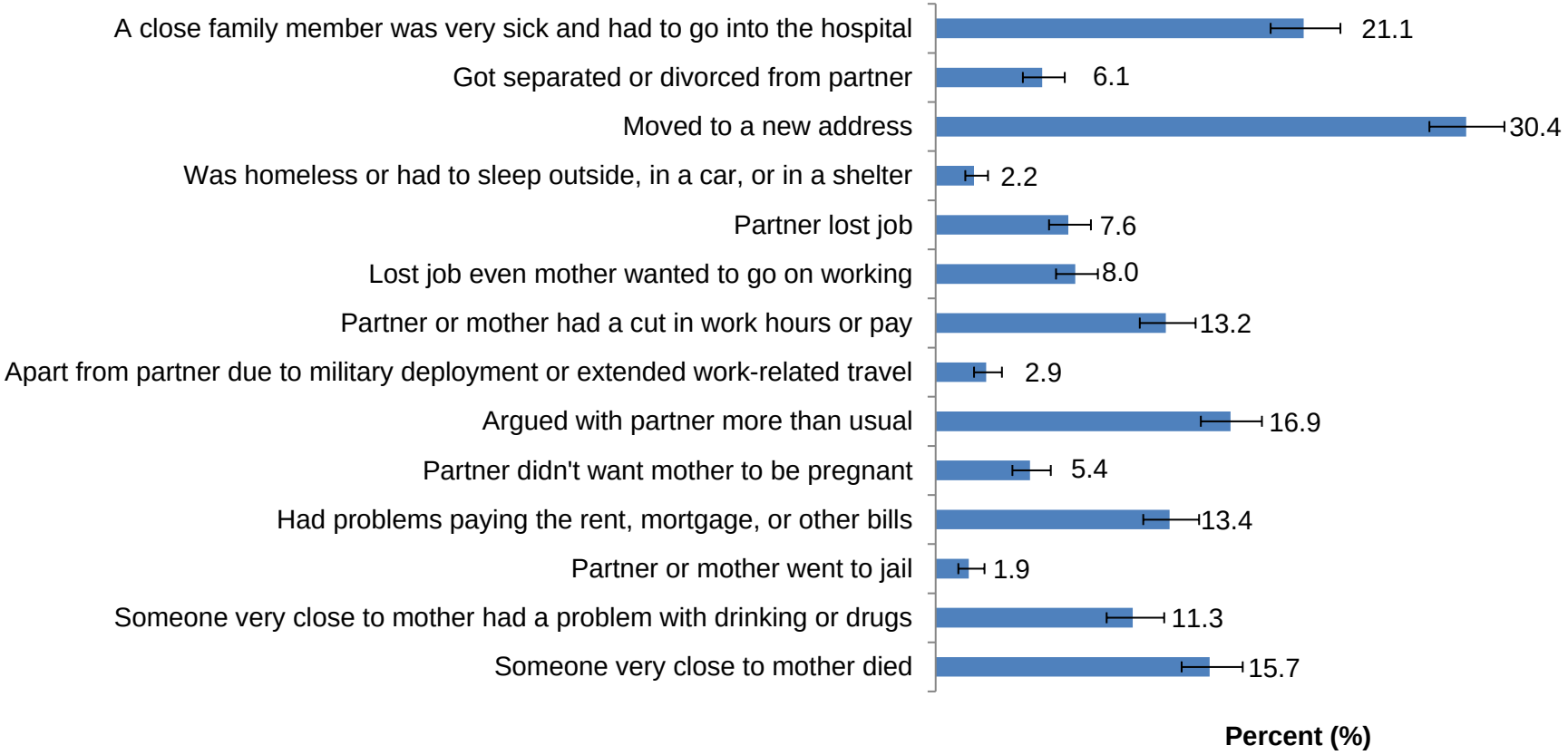
Life stressors

Stress is one of the most common and underappreciated causes of reproductive frailty in women (Valsamakis et al., 2019). Women with perinatal stress (e.g., partner-related stressor) have been reported to have an increased prevalence of postpartum depressive symptoms (Stone et al., 2015).

The MA PRAMS 2017–2018 asked mothers if they had experienced 14 specific stressful life events during the 12 months before their new infants were born. These stressful life events were grouped into 4 categories based on the earlier work of Ahluwalia (Ahluwalia et al., 2001) and other researchers (Stone et al., 2015; Newton et al., 1979): 1) Emotional stressor ("A close family member was very sick and had to go into the hospital"; "I was apart from my husband or partner due to military deployment or extended work-related travel"; "Someone very close to me died"); 2) Partner-related stressor ("I got separated or divorced from my husband or partner"; "I argued with my husband or partner more than usual"; "My husband or partner said he didn't want me to be pregnant"); 3) Financial stressor ("I moved to a new address"; "My husband or partner lost his job"; "I lost my job even though I wanted to go on working"; "My husband, partner, or I had a cut in work hours or pay"; "I had problems paying the rent, mortgage, or other bills"); and 4) Traumatic stressor ("I was homeless or had to sleep outside, in a car, or in a shelter"; "My husband, partner, or I went to jail"; "Someone very close to me had a problem with drinking or drugs"). A copy of the survey is included in Appendix C.

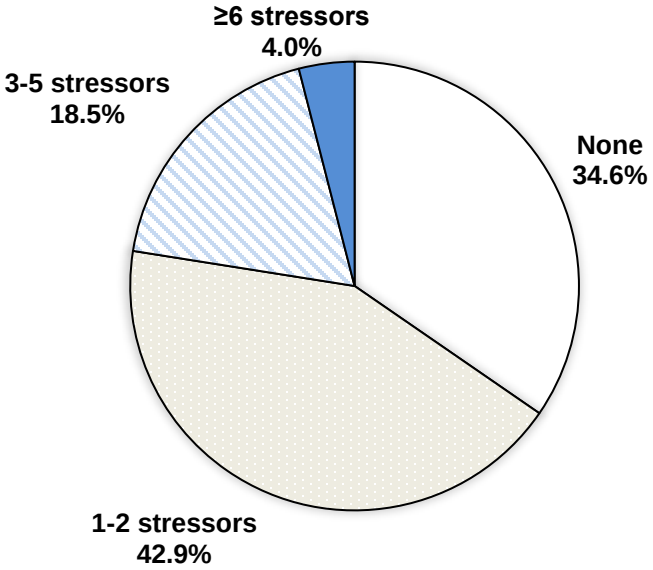
Among the 14 different stressful life events, 30.4% of mothers reported moving to a new address, 21.1% of mothers reported that they had a close family member who was very sick and had to go into the hospital, 16.9% of mothers reported arguing with their husband or partner more than usual, and 15.7% of mothers reported that someone very close to them died (Figure 30).

Figure 30. Prevalence of mothers with 14 life stressors, MA PRAMS, 2017–2018



Approximately 34.6% of mothers reported having none of the 14 life stressors 12 months before their new infants were born, 42.9% of mothers had 1 to 2 life stressors, 18.5% of mothers experienced 3 to 5 life stressors, and 4.0% of mothers had 6 life stressors or more (Figure 31).

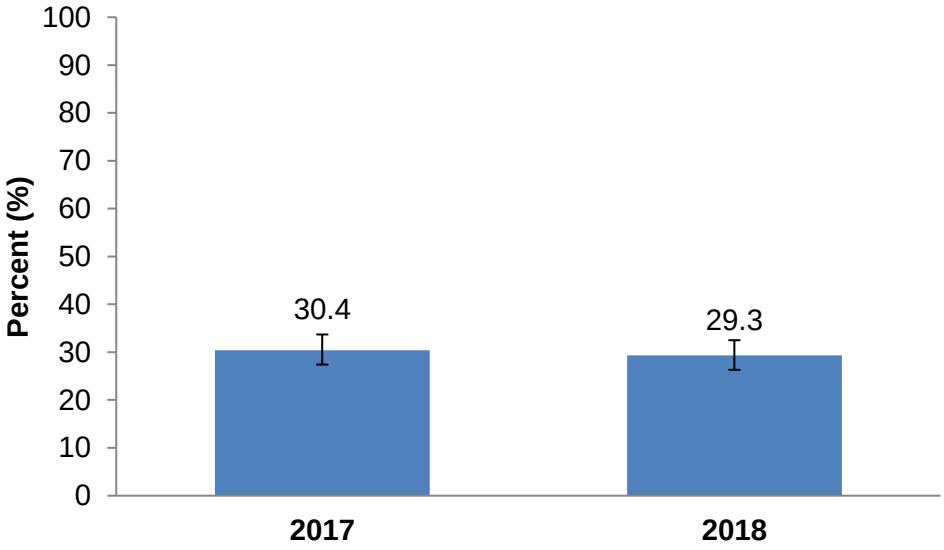
Figure 31. Proportion of mothers with total number of life stressors, MA PRAMS, 2017–2018



Emotional stressor

The prevalence of mothers with emotional stressor did not change significantly from 2017 (30.4%) to 2018 (29.3%) (Figure 32).

Figure 32. Prevalence of mothers with emotional stressor, MA PRAMS, 2017–2018



A higher prevalence of emotional stressor was reported among White non-Hispanic, Black non-Hispanic, and Hispanic mothers (31.8%, 34.3%, and 28.1%, respectively) compared to Asian non-Hispanic mothers (16.9%); those with some college education (37.5%) compared to mothers with a college degree (26.9%); those US-born mothers (34.0%) compared to mothers born outside of the US (21.7%); and those who were unmarried (34.8%) compared to those who were married (27.5%) (Table 40).

Table 40. Prevalence of mothers with emotional stressor by sociodemographic characteristics, MA PRAMS, 2017–2018

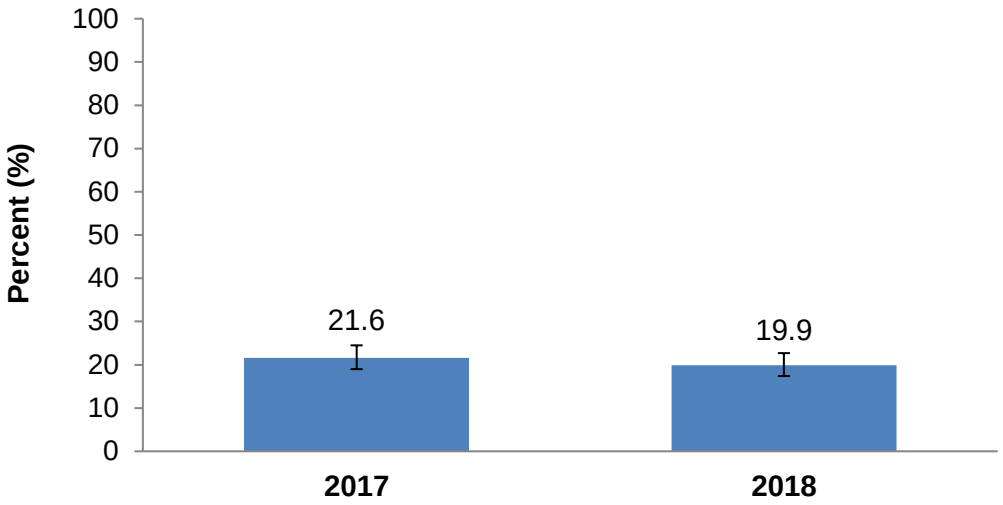
	2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	39,569	29.9	27.7		32.1
Maternal race/ethnicity				-	
White non-Hispanic	23,814	**31.8**	**28.4**	**-**	**35.4**
Black non-Hispanic	4,431	**34.3**	**30.2**	**-**	**38.6**
Hispanic	7,319	**28.1**	**25.0**	**-**	**31.5**
Asian non-Hispanic	1,950	16.9	13.7	-	20.7
Other, non-Hispanic	812	20.9	13.6	-	30.7
Maternal age (years)					
<20	851	38.6	25.9	-	53.1
20-29	14,401	31.5	27.9	-	35.3
30-39	23,230	29.3	26.5	-	32.3
40+	1,087	20.1	12.5	-	30.7
Maternal education					
<High school	2,676	25.9	19.7	-	33.4
High school diploma	5,988	29.8	24.6	-	35.4
Some college	11,421	**37.5**	**32.8**	**-**	**42.4**
College graduate	17,996	26.9	24.0	-	30.1
Household poverty level					
≤100% FPL	8,419	28.8	24.9	-	33.1
>100% FPL	29,506	30.3	27.7	-	33.1
Maternal nativity					
Non-US-born	9,698	**21.7**	**19.2**	**-**	**24.4**
US-born	29,844	34.0	31.1	-	37.1
Marital status					
Unmarried	14,777	**34.8**	**30.9**	**-**	**39.0**
Married	24,791	27.5	25.0	-	30.2
Disability status					
No	33,798	29.1	26.8	-	31.5
Yes	5,492	36.1	29.7	-	43.0

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: Asian non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

Partner-related stressor

The prevalence of mothers reporting partner-related stressor did not change significantly from 2017 (21.6%) to 2018 (19.9%) (Figure 33).

Figure 33. Prevalence of mothers with partner-related stressor, MA PRAMS, 2017–2018



A higher prevalence of partner-related stressor was reported among Black non-Hispanic and Hispanic mothers (31.0% and 26.4%, respectively) compared to White non-Hispanic mothers (18.7%); mothers aged less than 20 years (36.5%) and those aged 20-29 years (25.4%) compared to older mothers aged 30-39 years (17.7%); those with less than a high school education, a high school diploma, or some college education (25.9%, 27.1%, and 27.8%, respectively) compared to mothers with a college degree (15.2%); those who were living at or below 100% of the FPL (33.6%) compared to those who were living above 100% of the FPL (16.9%); those who were unmarried (36.7%) compared to those who were married (13.3%); and those with a disability (43.8%) compared to mothers without a disability (17.8%) (Table 41).

Table 41. Prevalence of mothers with partner-related stressor by sociodemographic characteristics, MA PRAMS, 2017–2018

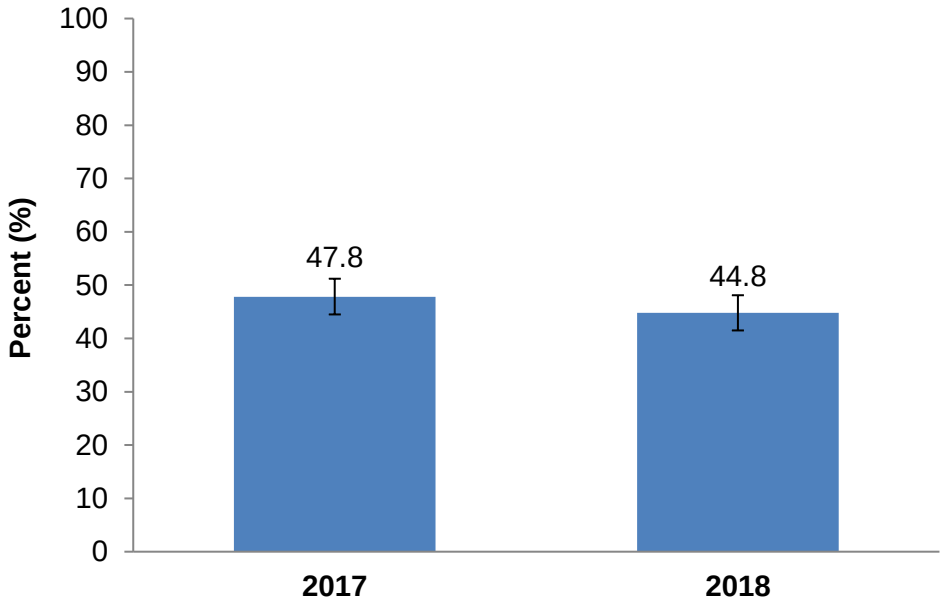
	2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	27,574	20.8	18.9	-	22.8
Maternal race/ethnicity					
White non-Hispanic	14,007	18.7	15.8	-	21.9
Black non-Hispanic	4,005	**31.0**	**27.1**	**-**	**35.3**
Hispanic	6,898	**26.4**	**23.4**	**-**	**29.6**
Asian non-Hispanic	1,633	14.2	11.2	-	17.8
Other, non-Hispanic	660	17.0	10.6	-	26.2
Maternal age (years)					
<20	803	**36.5**	**24.9**	**-**	**49.7**
20-29	11,639	**25.4**	**22.1**	**-**	**29.0**
30-39	13,980	17.7	15.4	-	20.2
40+	1,153	21.3	13.2	-	32.4
Maternal education					
<High school	2,710	**25.9**	**19.9**	**-**	**33.0**
High school diploma	5,445	**27.1**	**22.2**	**-**	**32.6**
Some college	8,464	**27.8**	**23.6**	**-**	**32.4**
College graduate	10,174	15.2	12.9	-	17.9
Household poverty level					
≤100% FPL	9,832	**33.6**	**29.4**	**-**	**38.0**
>100% FPL	16,483	16.9	14.9	-	19.2
Maternal nativity					
Non-US-born	8,557	19.1	16.8	-	21.7
US-born	19,016	21.7	19.2	-	24.4
Marital status					
Unmarried	15,591	**36.7**	**32.7**	**-**	**40.8**
Married	11,983	13.3	11.5	-	15.3
Disability status					
No	20,728	17.8	16.0	-	19.8
Yes	6,687	**43.8**	**37.0**	**-**	**50.7**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 30-39 years, college graduate, >100% FPL, US-born, married, and without a disability.

Financial stressor

The prevalence of mothers with financial stressor did not change significantly from 2017 (47.8%) to 2018 (44.8%) (Figure 34).

Figure 34. Prevalence of mothers with financial stressor, MA PRAMS, 2017–2018



A higher prevalence of financial stressor during 2017–2018 was observed among Black non-Hispanic and Hispanic mothers (58.8% and 56.3%, respectively) compared to White non-Hispanic mothers (41.7%); mothers aged less than 20 years (63.0%) and aged 20-29 years (54.3%) compared to mothers aged 30-39 years (42.2%); those with less than a high school education, a high school diploma, or some college education (56.8%, 51.2%, and 55.1%, respectively) compared to mothers with a college degree (38.8%); those who were living at or below 100% of the FPL (62.8%) compared to those who were living above 100% of the FPL (41.0%); those who were unmarried (59.7%) compared to those who were married (40.0%); and those with a disability (68.7%) compared to mothers without a disability (43.2%) (Table 42).

Table 42. Prevalence of mothers with financial stressor by sociodemographic characteristics, MA PRAMS, 2017–2018

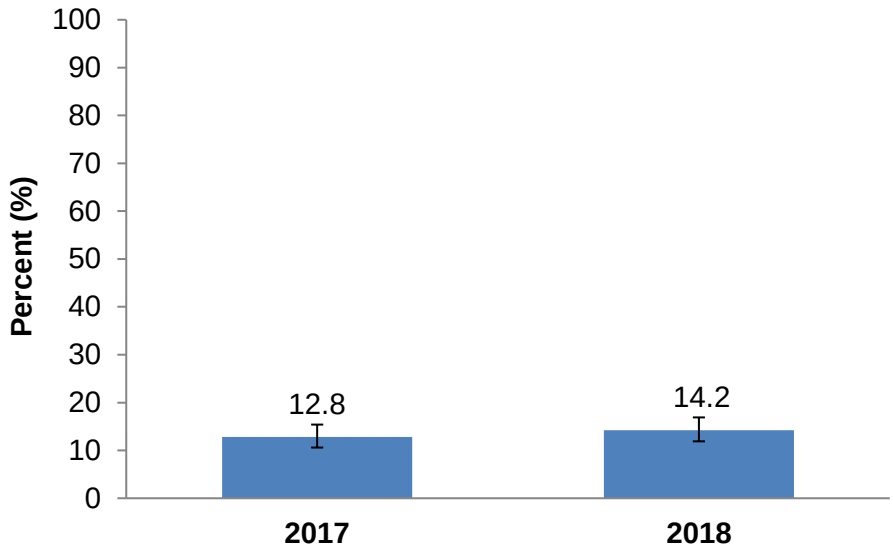
	2017-2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	61,262	46.3	44.0	-	48.7
Maternal race/ethnicity					
White non-Hispanic	31,195	41.7	38.1	-	45.5
Black non-Hispanic	7,599	**58.8**	**54.4**	**-**	**63.1**
Hispanic	14,656	**56.3**	**52.7**	**-**	**59.8**
Asian non-Hispanic	4,287	37.3	33.0	-	41.8
Other, non-Hispanic	2,024	52.0	40.0	-	63.8
Maternal age (years)					
<20	1,388	**63.0**	**48.0**	**-**	**75.9**
20-29	24,865	**54.3**	**50.4**	**-**	**58.2**
30-39	33,370	42.2	39.2	-	45.4
40+	1,639	30.9	21.4	-	42.5
Maternal education					
<High school	5,860	**56.8**	**49.3**	**-**	**64.1**
High school diploma	10,301	**51.2**	**45.3**	**-**	**57.1**
Some college	16,755	**55.1**	**50.2**	**-**	**59.9**
College graduate	25,849	38.8	35.5	-	42.1
Household poverty level					
≤100% FPL	18,241	**62.8**	**58.3**	**-**	**67.1**
>100% FPL	39,877	41.0	38.2	-	43.9
Maternal nativity					
Non-US-born	21,447	48.2	45.0	-	51.4
US-born	39,684	45.3	42.2	-	48.5
Marital status					
Unmarried	25,311	**59.7**	**55.6**	**-**	**63.8**
Married	35,952	40.0	37.2	-	42.8
Disability					
No	50,196	43.2	40.8	-	45.8
Yes	10,400	**68.7**	**62.0**	**-**	**74.8**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 30-39 years, college graduate, >100% FPL, US-born, married, and without a disability.

Traumatic stressor

The prevalence of mothers with traumatic stressor did not change significantly from 2017 (12.8%) to 2018 (14.2%) (Figure 35).

Figure 35. Prevalence of mothers with traumatic stressor, MA PRAMS, 2017–2018



A higher prevalence of traumatic stressor was observed among White non-Hispanic, Black non-Hispanic, and Hispanic mothers (16.0%, 13.7%, and 11.9%, respectively) compared to Asian non-Hispanic mothers (2.3%); mothers aged less than 20 years (23.3%) and aged 20-29 years (18.8%) compared to mothers aged 30-39 years (10.5%); those with a high school diploma or some college education (20.2% and 23.1%, respectively) compared to mothers with a college degree (7.4%); those who were living at or below 100% of the FPL (22.3%) compared to those who were living above 100% of the FPL (11.1%); those US-born mothers (17.8%) compared to mothers born outside of the US (4.7%); those who were unmarried (24.8%) compared to those who were married (8.1%); and those with a disability (23.8%) compared to mothers without a disability (12.1%) (Table 43).

Table 43. Prevalence of mothers with traumatic stressor by sociodemographic characteristics, MA PRAMS, 2017–2018

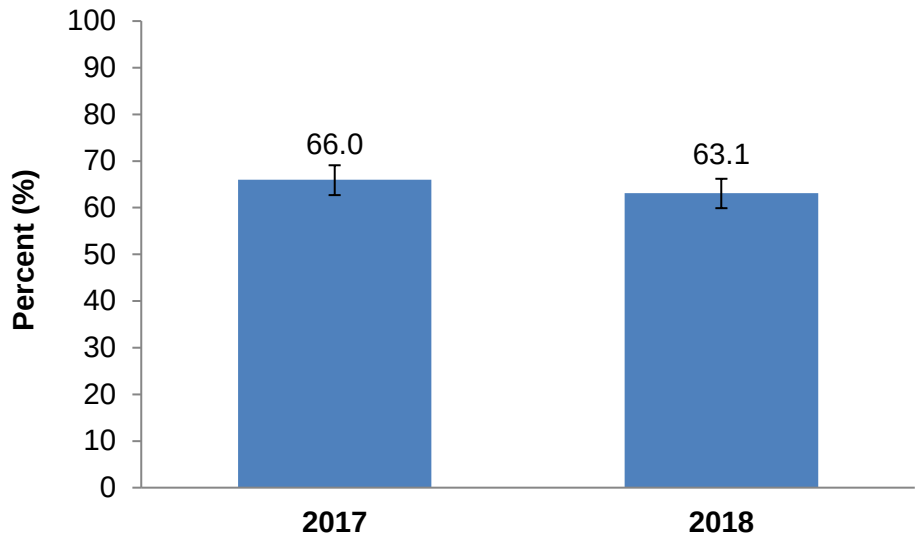
	2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	17,830	13.5	11.8	-	15.3
Maternal race/ethnicity					
White non-Hispanic	11,968	**16.0**	**13.4**	**-**	**19.1**
Black non-Hispanic	1,771	**13.7**	**11.1**	**-**	**16.7**
Hispanic	3,099	**11.9**	**9.9**	**-**	**14.3**
Asian non-Hispanic	259	2.3	1.3	-	4.1
Other, non-Hispanic	374	9.7	4.7	-	18.7
Maternal age (years)					
<20	512	**23.3**	**14.6**	**-**	**34.9**
20-29	8,607	**18.8**	**15.8**	**-**	**22.4**
30-39	8,318	10.5	8.6	-	12.8
40+	393	7.2	3.0	-	16.7
Maternal education					
<High school	1,125	11.0	7.2	-	16.4
High school diploma	4,051	**20.2**	**15.5**	**-**	**25.8**
Some college	7,009	**23.1**	**18.9**	**-**	**27.8**
College graduate	4,907	7.4	5.7	-	9.5
Household poverty level					
≤100% FPL	6,491	**22.3**	**18.4**	**-**	**26.7**
>100% FPL	10,756	11.1	9.3	-	13.2
Maternal nativity					
Non-US-born	2,107	4.7	3.7	-	6.0
US-born	15,618	**17.8**	**15.5**	**-**	**20.5**
Marital status					
Unmarried	10,547	**24.8**	**21.2**	**-**	**28.8**
Married	7,284	8.1	6.6	-	10.0
Disability status					
No	14,003	12.1	10.4	-	14.0
Yes	3,597	**23.8**	**18.3**	**-**	**30.3**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: Asian non-Hispanic, 30-39 years, college graduate, >100% FPL, non-US-born, married, and without a disability.

Any life stressor

The prevalence of mothers reporting any life stressor did not change significantly from 2017 (66.0%) to 2018 (63.1%) (Figure 36).

Figure 36. Prevalence of mothers with any life stressor, MA PRAMS, 2017–2018



A higher prevalence of mothers with any life stressor during 2017–2018 was observed among White non-Hispanic, Black non-Hispanic, and Hispanic mothers (63.5%, 71.7%, and 70.1%, respectively) compared to Asian non-Hispanic mothers (51.9%); mothers aged less than 20 years, 20-29 years, and 20-29 years (80.5%, 71.5%, and 61.4%, respectively) compared to mothers aged 40 years and older (46.0%); those with less than a high school education or some college education (71.9% and 76.9%, respectively) compared to mothers with a college degree (57.9%); those who were living at or below 100% of the FPL (76.5%) compared to those who were living above 100% of the FPL (61.2%); those who were unmarried (77.5%) compared to those who were married (58.4%); and those with a disability (82.6%) compared to mothers without a disability (62.7%) (Table 44).

Table 44. Prevalence of mothers with any life stressor by sociodemographic characteristics, MA PRAMS, 2017–2018

	2017-2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	87,105	64.6	62.3	-	66.8
Maternal race/ethnicity					
White non-Hispanic	48,197	**63.5**	**59.8**	**-**	**67.0**
Black non-Hispanic	9,530	**71.7**	**67.5**	**-**	**75.7**
Hispanic	18,685	**70.1**	**66.7**	**-**	**73.4**
Asian non-Hispanic	6,145	51.9	47.4	-	56.4
Other, non-Hispanic	2,489	63.4	51.2	-	74.1
Maternal age (years)					
<20	1,773	**80.5**	**63.3**	**-**	**90.8**
20-29	33,453	**71.5**	**68.0**	**-**	**74.8**
30-39	49,306	**61.4**	**58.3**	**-**	**64.4**
40+	2,573	46.0	35.1	-	57.3
Maternal education					
<High school	7,679	**71.9**	**65.0**	**-**	**77.9**
High school diploma	13,249	63.6	57.8	-	69.0
Some college	23,724	**76.9**	**72.8**	**-**	**80.6**
College graduate	39,170	57.9	54.5	-	61.2
Household poverty level					
≤100% FPL	22,629	**76.5**	**72.7**	**-**	**79.9**
>100% FPL	60,096	61.2	58.4	-	63.9
Maternal nativity					
Non-US-born	27,732	60.6	57.4	-	63.7
US-born	59,242	66.5	63.5	**-**	69.5
Marital status					
Unmarried	33,882	**77.5**	**74.0**	**-**	**80.7**
Married	53,223	58.4	55.5	-	61.2
Disability					
No	73,703	62.7	60.2	-	65.1
Yes	12,659	**82.6**	**76.8**	**-**	**87.2**

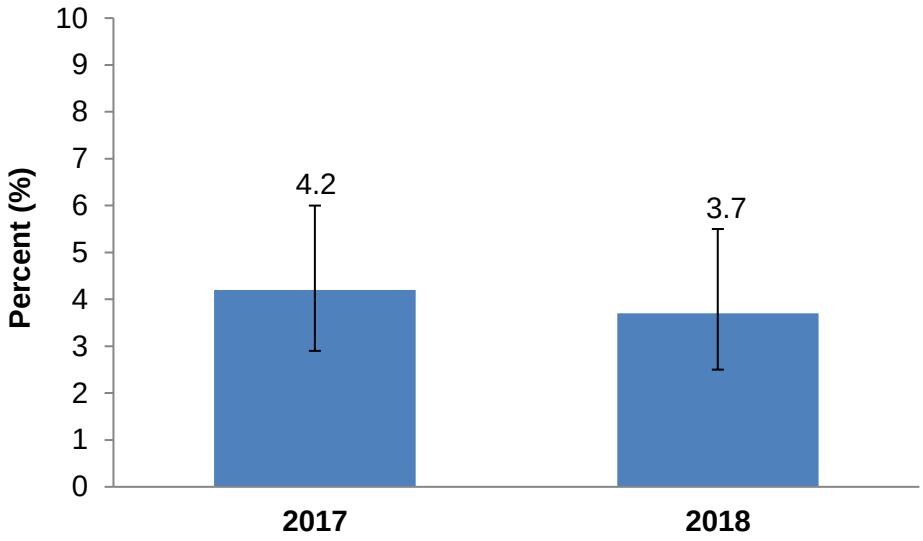
Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: Asian non-Hispanic, 40+ years, college graduate, >100% FPL, US-born, married, and without a disability.

E-cigarette smoking

Some women may be using or considering using e-cigarettes to quit or reduce smoking for their pregnancy. It is important for women to have accurate and up-to-date information about the risks and benefits of e-cigarette use during pregnancy (Wigginton et al., 2017). Much remains to be determined about the lasting health impact of e-cigarettes on the lungs (American Lung Association). Using e-cigarettes can cause health risks. E-cigarettes both contain and emit potentially toxic substances. Although the Food and Drug Administration (FDA) recently authorized e-cigarette products for the first time, it does not mean these products are safe or "FDA approved" (Food and Drug Administration).

Based on the MA PRAMS 2017–2018 data, the prevalence of mothers who reported e-cigarette smoking in the last 2 years did not change significantly from 2017 (4.2%) to 2018 (3.7%) (Figure 37).

Figure 37. Prevalence of mothers who reported e-cigarette smoking in the last 2 years, MA PRAMS, 2017–2018



A higher prevalence of e-cigarette smoking in the last 2 years was reported among White non-Hispanic mothers (5.3%) compared to Black non-Hispanic mothers (1.3%); those aged 20-29 years (6.0%) compared to mothers aged 30-39 years (2.6%); those with less than a high school education, a high school diploma, or some college education (7.3%, 6.8%, and 5.8%, respectively) compared to mothers with a college degree (2.0%); those US-born mothers (5.3%) compared to mothers born outside of the US (1.3%); those who were unmarried (8.0%) compared to those who were married (2.1%); and those with a disability (9.4%) compared to mothers without a disability (3.3%) (Table 45).

Table 45. Prevalence of mothers who reported e-cigarette smoking in the last 2 years by maternal sociodemographic characteristics, MA PRAMS, 2017–2018

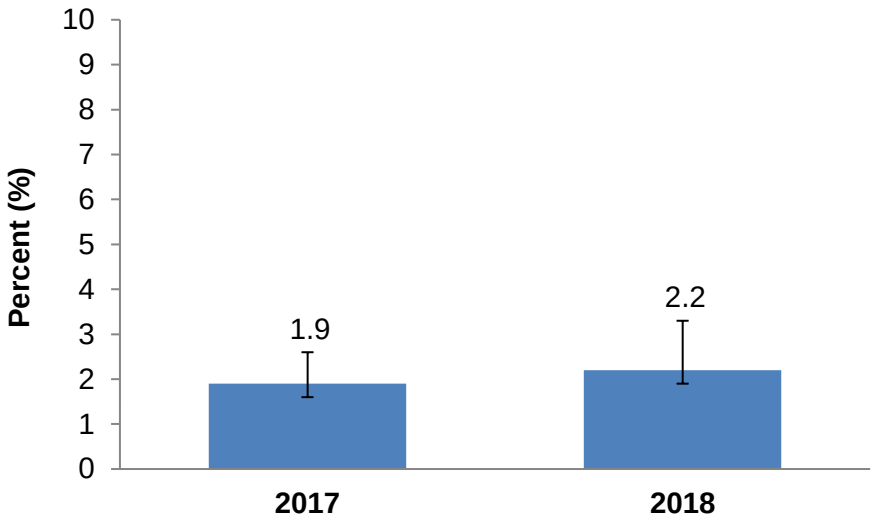
	2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	5,267	4.0	3.0	-	5.2
Maternal race/ethnicity					
White non-Hispanic	3,932	**5.3**	**3.7**	**-**	**7.3**
Black non-Hispanic	171	1.3	0.7	-	2.6
Hispanic	727	2.8	1.9	-	4.1
Asian non-Hispanic	170	1.5	0.7	-	3.1
Other, non-Hispanic	267	6.9	2.1	-	19.9
Maternal age (years)					
<20	158	7.2	2.9	-	16.5
20-29	2,723	**6.0**	**4.1**	**-**	**8.5**
30-39	2,098	2.6	1.7	-	4.0
40+	*Insufficient Data to Report*				
Maternal education					
<High school	761	**7.3**	**3.6**	**-**	**14.4**
High school diploma	1,367	**6.8**	**3.9**	**-**	**11.5**
Some college	1,776	**5.8**	**3.7**	**-**	**9.0**
College graduate	1,330	2.0	1.2	-	3.3
Household poverty level					
≤100% FPL	1,738	5.9	3.8	-	9.1
>100% FPL	3,164	3.3	2.3	-	4.6
Maternal nativity					
Non-US-born	575	**1.3**	**0.7**	**-**	**2.3**
US-born	4,692	5.3	4.0	-	7.1
Marital status					
Unmarried	3,401	**8.0**	**5.7**	**-**	**11.1**
Married	1,866	2.1	1.4	-	3.1
Disability status					
No	3,800	3.3	2.4	-	4.5
Yes	1,440	**9.4**	**5.6**	**-**	**15.4**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: Black non-Hispanic, 30-39 years, college graduate, >100% FPL, US-born, married, and without a disability.

Insufficient Data to Report: sample size less than 5.

The prevalence of mothers who reported e-cigarette smoking in the last 3 months before pregnancy did not change significantly from 2017 (1.9%) to 2018 (2.2%) (Figure 38).

Figure 38. Prevalence of mothers who reported e-cigarette smoking in the last 3 months before pregnancy, MA PRAMS, 2017–2018



A higher prevalence of e-cigarette smoking in the last 3 months before pregnancy was reported among mothers with a high school diploma or some college education (5.2% and 3.4%, respectively) compared to mothers with a college degree (0.6%); those who were living at or below 100% of the FPL (4.1%) compared to those who were living above 100% of the FPL (1.4%); those US-born mothers (2.8%) compared to mothers born outside of the US (0.6%); and those who were unmarried (3.9%) compared to those who were married (1.2%) (Table 46).

Table 46. Prevalence of mothers who reported e-cigarette smoking in the last 3 months before pregnancy by sociodemographic characteristics, MA PRAMS, 2017–2018

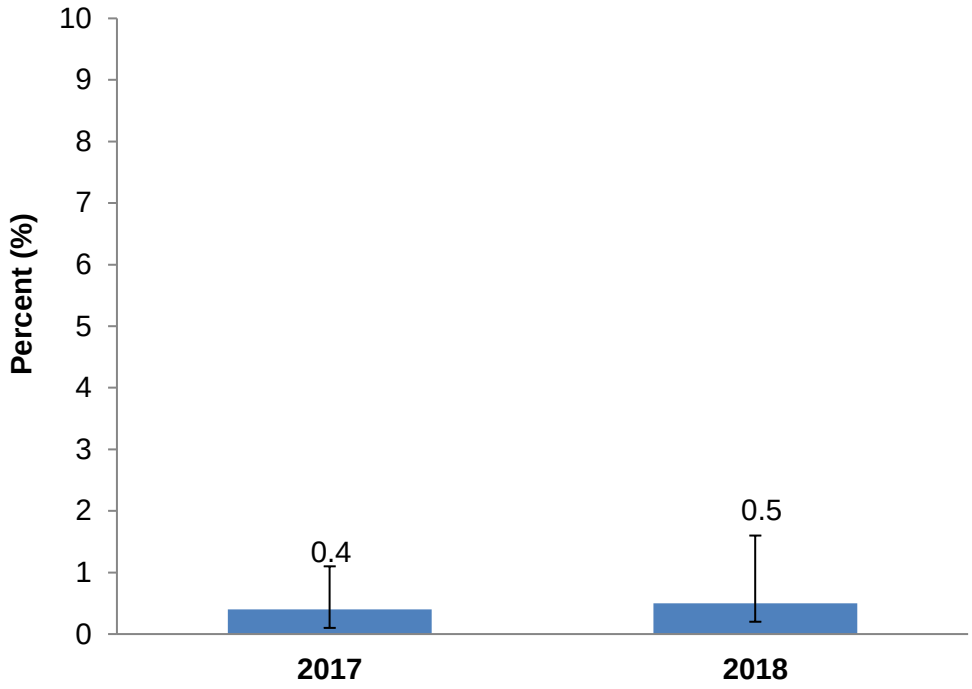
	2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	2,721	2.1	1.4	-	3.0
Maternal race/ethnicity					
White non-Hispanic	2,083	2.8	1.7	-	4.5
Black non-Hispanic	*Insufficient Data to Report*				
Hispanic	451	1.7	1.0	-	2.8
Asian non-Hispanic	*Insufficient Data to Report*				
Other, non-Hispanic	*Insufficient Data to Report*				
Maternal age (years)					
<20	*Insufficient Data to Report*				
20-29	1,386	3.0	1.8	-	5.1
30-39	1,211	1.5	0.8	-	2.7
40+	*Insufficient Data to Report*				
Maternal education					
<High school	*Insufficient Data to Report*				
High school diploma	1,047	**5.2**	**2.7**	**-**	**9.5**
Some college	1,031	**3.4**	**1.8**	**-**	**6.1**
College graduate	410	0.6	0.3	-	1.4
Household poverty level					
≤100% FPL	1,208	**4.1**	**2.3**	**-**	**7.2**
>100% FPL	1,312	1.4	0.8	-	2.3
Maternal nativity					
Non-US-born	264	**0.6**	**0.2**	**-**	**1.5**
US-born	2,457	2.8	1.9	-	4.2
Marital status					
Unmarried	1,674	**3.9**	**2.4**	**-**	**6.4**
Married	1,048	1.2	0.7	-	2.0
Disability status					
No	2,076	1.8	1.2	-	2.7
Yes	619	4.1	1.8	-	8.8

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

Insufficient Data to Report: sample size less than 5.

The prevalence of mothers who reported e-cigarette smoking in the last 3 months of pregnancy did not change significantly from 2017 (0.4%) to 2018 (0.5%) (Figure 39).

Figure 39. Prevalence of mothers who reported e-cigarette smoking in the last 3 months of pregnancy, MA PRAMS, 2017–2018



During 2017–2018, no clear pattern was observed for the prevalence of e-cigarette smoking in the last 3 months of pregnancy across maternal sociodemographic characteristics due to insufficient data (Table 47).

Table 47. Prevalence of mothers who reported e-cigarette smoking in the last 3 months of pregnancy by sociodemographic characteristics, MA PRAMS, 2017–2018

	2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	579	0.4	0.2	-	1.0
Maternal race/ethnicity					
White non-Hispanic	*Insufficient Data to Report*				
Black non-Hispanic	*Insufficient Data to Report*				
Hispanic	135	0.5	0.2	-	1.2
Asian non-Hispanic	*Insufficient Data to Report*				
Other, non-Hispanic	0	0	.	-	.
Maternal age (years)					
<20	0	0	.	-	.
20-29	*Insufficient Data to Report*				
30-39	446	0.6	0.2	-	1.5
40+	*Insufficient Data to Report*				
Maternal education					
<High school	*Insufficient Data to Report*				
High school diploma	*Insufficient Data to Report*				
Some college	*Insufficient Data to Report*				
College graduate	*Insufficient Data to Report*				
Household poverty level					
≤100% FPL	355	1.2	0.4	-	3.7
>100% FPL	*Insufficient Data to Report*				
Maternal nativity					
Non-US-born	*Insufficient Data to Report*				
US-born	388	0.4	0.2	-	1.3
Marital status					
Unmarried	395	0.9	0.3	-	2.6
Married	*Insufficient Data to Report*				
Disability status					
No	398	0.3	0.1	-	0.8
Yes	*Insufficient Data to Report*				

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

Insufficient Data to Report: sample size less than 5.

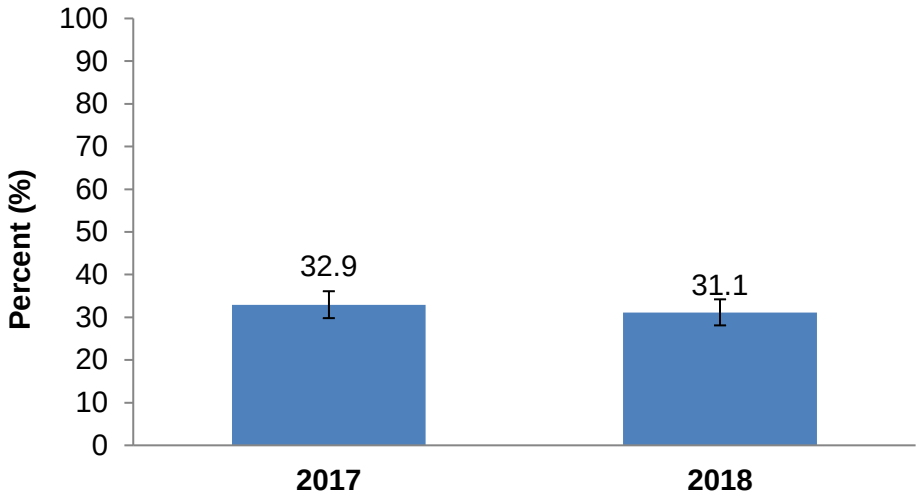
Method of delivery

Vaginal delivery is the most common and safest type of childbirth. If a woman is unable to have vaginal delivery, cesarean delivery (C-section) may be necessary for the safety of mother and her child. The need for a cesarean delivery is usually determined during labor when unexpected problems happen during delivery (March of Dimes, 2018). In some instances, when medical complications are known and expected, a health care provider may recommend a C-section before labor.

According to the National Center for Health Statistics, the national cesarean delivery rate decreased from 32.2% in 2014 to 32.0% in 2015 (Martin et al., 2017).

The prevalence of mothers with cesarean delivery did not change significantly from 2017 (32.9%) to 2018 (31.1%) (Figure 40).

Figure 40. Prevalence of mothers with cesarean deliveries, MA PRAMS, 2017–2018



Black non-Hispanic mothers had the highest prevalence of cesarean delivery (41.3%) compared to White non-Hispanic (31.3%), Hispanic (31.0%), and Asian non-Hispanic mothers (27.7%). A higher prevalence was observed among mothers aged 30-39 years (33.6%) and 40 years and older (63.0%) compared to mothers aged 20-29 years (26.4%) (Table 48).

Table 48. Prevalence of mothers with cesarean deliveries by sociodemographic characteristics, MA PRAMS, 2017–2018

	2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**		
Total	43,047	32.0	29.8	-	34.2
Maternal race/ethnicity					
White non-Hispanic	23,797	31.3	28.0	-	34.9
Black non-Hispanic	5,492	**41.3**	**37.2**	**-**	**45.6**
Hispanic	8,256	31.0	27.8	-	34.5
Asian non-Hispanic	3,285	27.7	23.8	-	32.0
Other, non-Hispanic	1,164	29.7	20.0	-	41.6
Maternal age (years)					
<20	343	15.6	8.7	-	26.2
20-29	12,264	26.4	23.1	-	29.9
30-39	26,988	**33.6**	**30.7**	**-**	**36.6**
40+	3,452	**63.0**	**51.5**	**-**	**73.1**
Maternal education					
<High school	3,258	30.5	24.0	-	37.9
High school diploma	7,192	34.5	29.2	-	40.3
Some college	9,125	29.6	25.4	-	34.1
College graduate	21,728	32.1	29.0	-	35.4
Household poverty level					
≤100% FPL	9,262	31.5	27.5	-	35.8
>100% FPL	31,228	31.9	29.3	-	34.6
Maternal nativity					
Non-US-born	15,683	34.3	31.3	-	37.4
US-born	27,364	30.8	28.0	-	33.8
Marital status					
Unmarried	14,199	32.6	28.8	-	36.5
Married	28,847	31.7	29.1	-	34.4
Disability status					
No	36,937	31.5	29.2	-	33.9
Yes	5,505	36.0	29.6	-	42.9

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

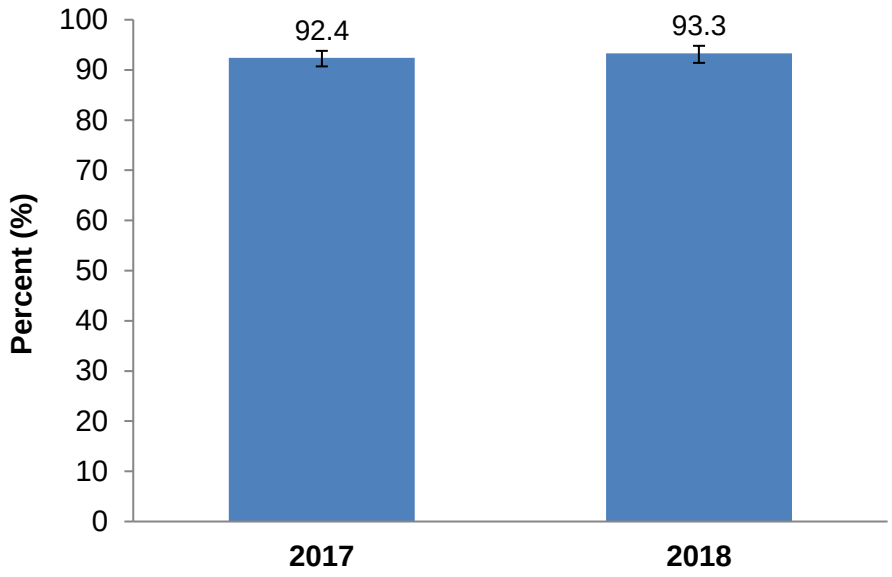
Postpartum:

Maternal postpartum check-up

The American College of Obstetricians and Gynecologists (OB/GYN) recommends that a woman see her OB/GYN provider four to six weeks after delivery (ACOG, 2016). Postpartum care is important as after giving birth a mother goes through multiple physical and psychological changes. The postpartum visit offers an opportunity for a mother to discuss any health-related and mental health concerns with her provider, ask questions about birth control and breastfeeding, and identify other health care professionals who will comprise the postpartum care team for herself and her infant.

The prevalence of mothers receiving a postpartum checkup did not change significantly from 2017 (92.4%) to 2018 (93.3%) (Figure 41).

Figure 41. Prevalence of mothers receiving a postpartum check-up, MA PRAMS, 2017–2018



A lower prevalence of mothers receiving a postpartum check-up was observed among Black non-Hispanic and Hispanic mothers (90.6% and 88.3%, respectively) compared to White non-Hispanic mothers (95.1%); those aged less than 20 years (81.9%) and 20-29 years (89.7%) compared to those aged 30-39 years (94.9%); those with less than a high school education, a high school diploma, or some college education (81.6%, 86.9%, and 91.1%, respectively) compared to mothers with a college degree (97.2%); those who were living at or below 100% of the FPL (85.0%) compared to those who were living above 100% of the FPL (95.5%); those who were unmarried (88.4%) compared to those who were married (94.9%); and those with a disability (85.2%) compared to mothers without a disability (93.9%). Compared to 2015–2016, there was no significant difference in the prevalence of mothers with postpartum check-up during 2017–2018 (Table 49).

Table 49. Prevalence of mothers receiving a maternal postpartum check-up by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	124,588	92.0	90.5	-	93.2		123,648	92.8	91.6	-	93.9
Maternal race/ethnicity											
White non-Hispanic	74,637	94.5	92.4	-	96.0		71,576	95.1	93.1	-	96.5
Black non-Hispanic	11,372	**88.8**	**84.2**	**-**	**92.2**		11,647	**90.6**	**88.0**	**-**	**92.7**
Hispanic	21,303	**85.5**	**82.1**	**-**	**88.3**		23,134	**88.3**	**85.9**	**-**	**90.3**
Asian non-Hispanic	11,462	93.8	91.3	-	95.7		10,724	91.6	88.7	-	93.8
Other, non-Hispanic	3,415	84.4	67.5	-	93.4		3,470	89.6	76.7	-	95.8
Maternal age (years)											
<20	2,639	79.6	63.8	-	89.6		1,803	81.9	70.3	-	89.6
20-29	43,490	89.3	86.3	-	91.7		41,118	89.7	87.2	-	91.8
30-39	73,089	**94.5**	**93.0**	**-**	**95.7**		75,612	**94.9**	**93.4**	**-**	**96.1**
40+	5,370	87.7	77.5	-	93.6		5,114	93.6	87.7	-	96.8
Maternal education											
<High school	9,177	**76.0**	**68.6**	**-**	**82.0**		8,573	**81.6**	**74.9**	**-**	**86.8**
High school diploma	16,609	**83.9**	**78.2**	**-**	**88.3**		17,482	**86.9**	**82.8**	**-**	**90.1**
Some college	27,537	**92.5**	**89.5**	**-**	**94.7**		27,903	**91.1**	**87.9**	**-**	**93.6**
College graduate	67,111	96.8	95.4	-	97.8		65,186	97.2	96.0	-	98.1
Household poverty level											
≤100% FPL	22,480	**82.2**	**77.7**	**-**	**85.9**		24,978	**85.0**	**81.7**	**-**	**87.8**
>100% FPL	95,052	95.0	93.6	-	96.2		93,795	95.5	94.2	-	96.6
Maternal nativity											
Non-US-born	39,357	91.4	89.2	-	93.1		40,868	90.9	88.9	-	92.6
US-born	85,231	92.2	90.3	-	93.8		82,648	93.8	92.2	-	95.1
Marital status											
Unmarried	38,927	**85.7**	**82.3**	**-**	**88.5**		37,736	**88.4**	**85.6**	**-**	**90.7**
Married	85,519	95.1	93.7	-	96.2		85,912	94.9	93.6	-	96.0
Disability status											
No	112,869	92.7	91.2	-	93.9		110,074	93.9	92.7	-	94.9
Yes	10,642	**85.8**	**79.2**	**-**	**90.5**		13,026	**85.2**	**79.8**	**-**	**89.4**

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 30-39 years, college graduate, >100% FPL, US-born, married, and without a disability.

Maternity leave

Maternity leave refers to the period that a mother takes off from work following delivery. It provides an important time for a mother to recover after delivery as well as to bond with her child. According to a national survey of employers conducted by the Bureau of Labor Statistics (BLS), 18% of private-industry employees had access to paid family leave (separate from other leave categories) through their employer in March 2019 (Congressional Research Service, 2020). Paid maternity leave has been linked to increased rates of breastfeeding (Huang & Yang, 2015) and decreased risks of adverse birth outcomes such as low birth weight and premature birth (Sterns, 2015).

It is also important to recognize social and racial inequalities that exist in accessing paid maternity leave. Research has shown that low-wage and part-time workers, minority workers, and less-educated workers often lack access to paid leave (Ben-Ishai, 2014). Only 43% of African American and 25% of Hispanic workers have access to paid parental leave (Glynn & Farell, 2012). In 2008, only 19% of first-time mothers with less than a high school education reported having paid maternity leave (Laughlin, 2011).

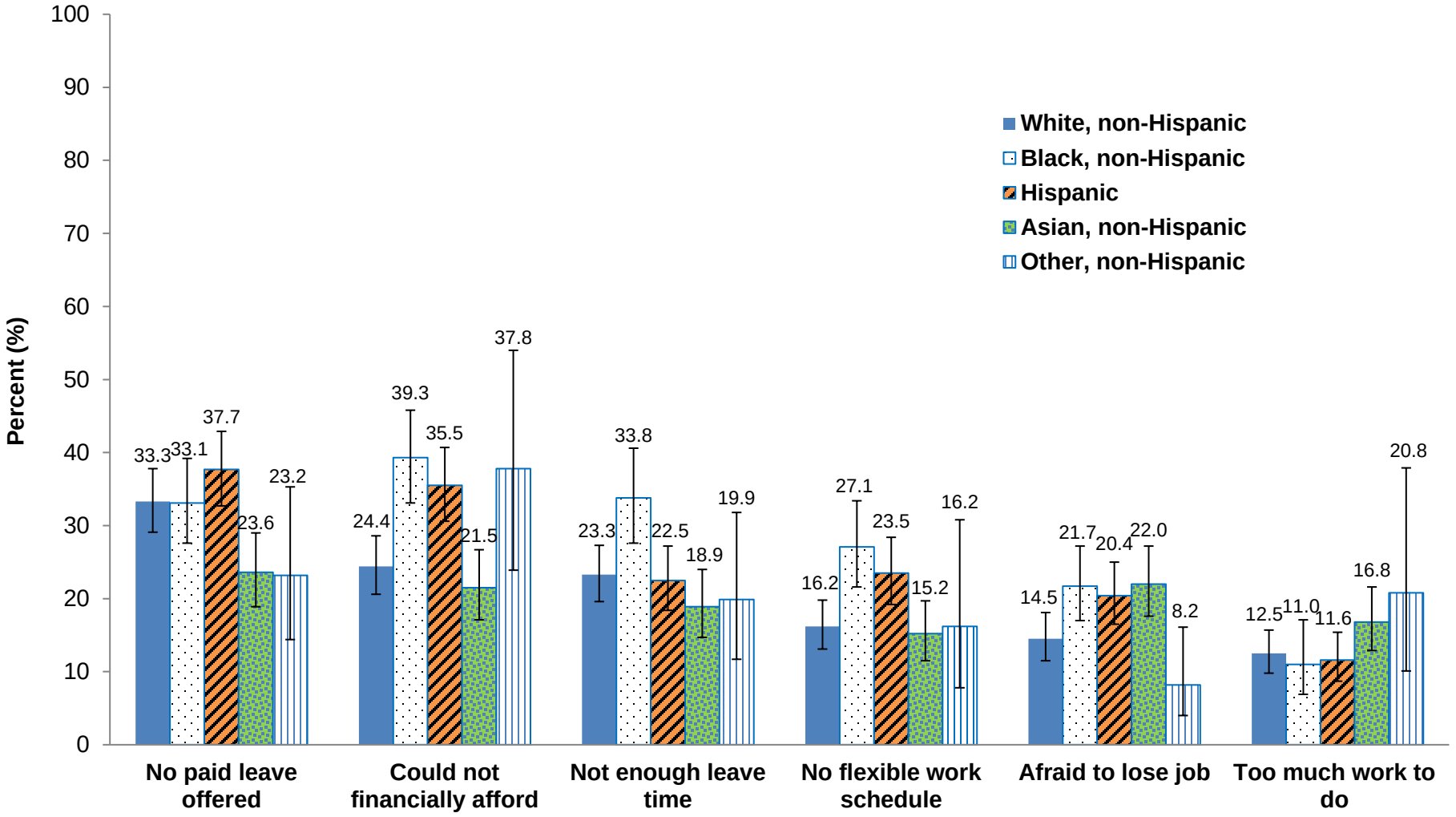
Unpaid leave is covered under the Family and Medical Leave Act (FMLA) and allows a parent to take up to twelve weeks off without pay after the birth of a child. According to Institute for Women's Policy Research, nationwide only about half of working mothers aged 18 to 34 years qualified for job-protected unpaid leave in 2012.

Taking unpaid leave can be very costly, especially to low-income families. Many parents cannot afford to take unpaid leave because of the loss of income, and some parents choose to cut their leave short because of financial or workplace pressures (Pew Research Center, 2017). Having no access to paid maternity leave can negatively affect the health of mothers and their children.

Factors Affecting Maternal Decisions about Taking Leave from Work

During 2017–2018, the two most common factors affecting Massachusetts mothers' decisions about taking maternity leave from work included "no paid leave offered" and "could not financially afford to take leave". When stratified by race/ethnicity, a higher prevalence of "no paid leave offered" was reported among Hispanic mothers (37.7%) compared to White non-Hispanic mothers (33.3%). A higher prevalence of "could not financially afford leave" was reported among Black non-Hispanic mothers (39.3%) and Hispanic mothers (35.5%) compared to White non-Hispanic mothers (24.4%). A higher prevalence of "not enough leave time" was reported among Black non-Hispanic mothers (33.8%) compared to White non-Hispanic mothers (23.3%). A higher prevalence of "no flexible work schedule" was reported among Black non-Hispanic mothers (27.1%) compared to White non-Hispanic mothers (16.2%) (Figure 42).

Figure 42. Factors affecting mothers' decisions about taking maternity leave from work, MA PRAMS, 2017–2018



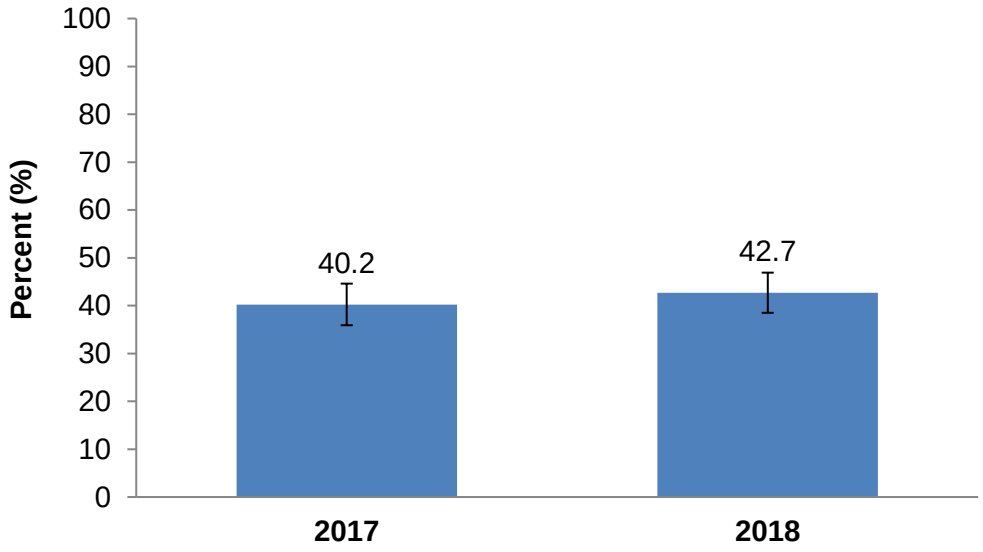
Maternity Leave Types

Overall, 41.4% of Massachusetts mothers reported taking paid maternity leave, followed by 39.2% of mothers taking unpaid leave only, 15.0% of mothers taking both paid and unpaid leave, and 4.5% of mothers reported not taking any maternity leave (Tables 50-53). Below are the sociodemographic characteristics of working mothers by the type of maternity leave.

Paid Leave only

The prevalence of mothers with paid maternity leave did not change significantly from 2017 (40.2%) to 2018 (42.7%) (Figure 43).

Figure 43. Prevalence of mothers with paid maternity leave only, MA PRAMS, 2017–2018

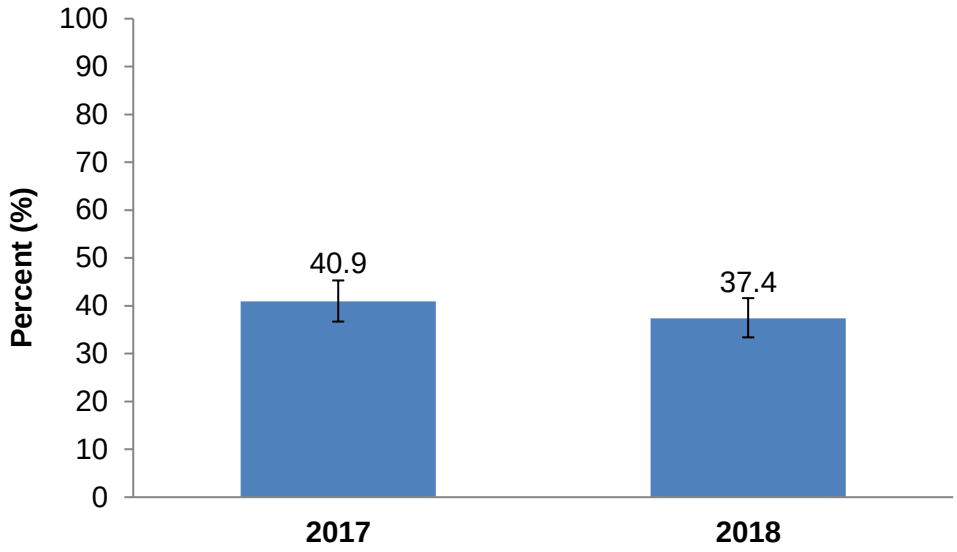


A lower prevalence of mothers with paid maternity leave was observed among Hispanic and other, non-Hispanic mothers (27,.5% and 26.7%, respectively) compared to White non-Hispanic mothers (43.9%); mothers aged 20-29 years (32.8%) compared to those aged 30-39 years (45.9%); those with less than a high school education, a high school diploma, or some college education (14.9%, 16.3%, and 29.2%, respectively) compared to mothers with a college degree (51.0%); those who were living at or below 100% of the FPL (11.1%) compared to those who were living above 100% of the FPL (46.1%); and those who were unmarried (23.9%) compared to those who were married (47.5%) (Table 50).

Unpaid Leave only

The prevalence of mothers with unpaid maternity leave did not change significantly from 2017 (40.9%) to 2018 (37.4%) (Figure 44).

Figure 44. Prevalence of mothers with unpaid maternity leave only, MA PRAMS, 2017–2018

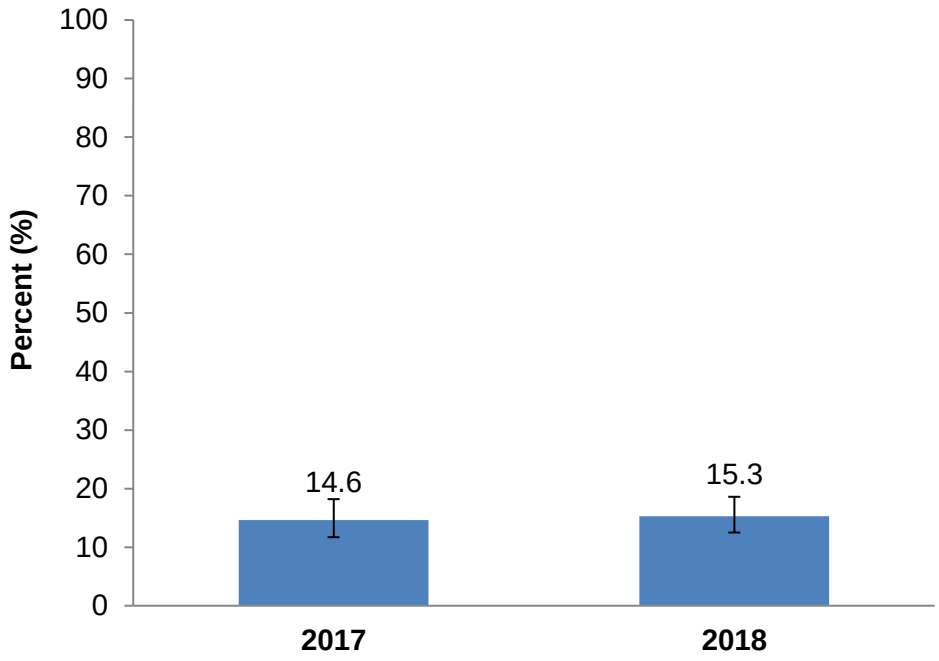


A higher prevalence of mothers with unpaid maternity leave was observed among Black non-Hispanic mothers and Hispanic mothers (47.1% and 56.0%, respectively) compared to White non-Hispanic mothers (35.9%); those aged less than 20 years (87.0%) and 20-29 years (52.2%) compared to those aged 30-39 years (33.6%); those with less than a high school education, a high school diploma, or some college education (69.4%, 70.9%, and 56.2%, respectively) compared to mothers with a college degree (26.7%); those who were living at or below 100% of the FPL (76.7%) compared to those who were living above 100% of the FPL (33.5%); and those who were unmarried (59.6%) compared to those who were married (32.0%) (Table 51).

Paid and Unpaid Leave only

The prevalence of mothers with paid and unpaid maternity leave did not change significantly from 2017 (14.6%) to 2018 (15.3%) (Figure 45).

Figure 45. Prevalence of mothers with paid and unpaid maternity leave only, MA PRAMS, 2017–2018

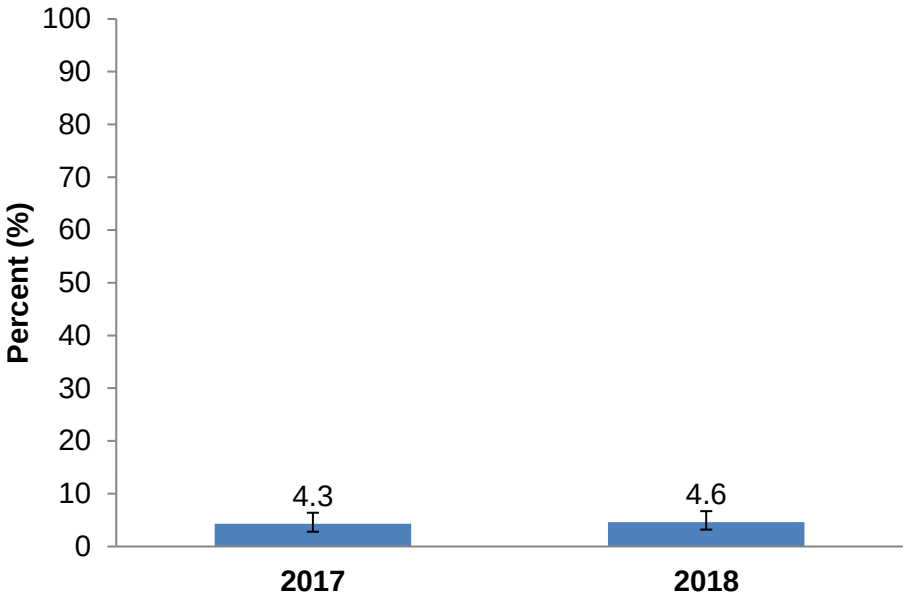


A lower prevalence of mothers having paid and unpaid maternity leave was observed among Hispanic mothers (9.1%) compared to White non-Hispanic mothers (16.6%); mothers with a high school diploma (4.7%) or some college education (9.8%) compared to mothers with a college graduate degree (18.7%); mothers who were living below 100% of the FPL (1.7%) compared to those who were living above 100% of the FPL (17.1%); mothers born outside of the US (9.6%) compared to US-born mothers (16.9%); and those who were unmarried (9.7%) compared to those who were married (16.8%) (Table 52).

No Maternity Leave

The prevalence of mothers with no maternity leave did not change significantly from 2017 (4.3%) to 2018 (4.6%) (Figure 46).

Figure 46. Prevalence of mothers with no maternity leave, MA PRAMS, 2017–2018



A higher prevalence of mothers with no maternity leave was observed among mothers who were living at or below 100% of the FPL (10.5%) compared to those who were living above 100% of the FPL (3.3%); and those born outside of the US (7.4%) compared to US-born mothers (3.4%). No significant difference was observed in the prevalence of mothers with no maternity leave among mothers with other sociodemographic characteristics (Table 53).

Table 50. Prevalence of mothers with paid maternity leave only by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	29,443	37.3	34.3	-	40.4		34,452	41.4	38.4	-	44.5
Maternal race/ethnicity											
White non-Hispanic	20,270	39.3	35.1	-	43.6		23,211	43.9	39.6	-	48.3
Black non-Hispanic	1,834	**27.3**	**22.0**	**-**	**33.3**		2,879	37.4	31.5	-	43.6
Hispanic	2,817	**27.9**	**22.8**	**-**	**33.6**		3,092	**27.5**	**23.1**	**-**	**32.2**
Asian non-Hispanic	3,032	48.3	41.9	-	54.8		3,506	53.3	47.2	-	59.2
Other, non-Hispanic	789	30.6	16.6	-	49.3		670	**26.7**	**17.5**	**-**	**38.5**
Maternal age (years)											
<20	0	0.0	.	-	.		0	0.0	.	-	.
20-29	7,289	**29.7**	**24.6**	**-**	**35.5**		8,075	**32.8**	**27.7**	**-**	**38.3**
30-39	20,585	41.0	37.3	-	44.9		24,991	45.9	42.1	-	49.7
40+	1,570	40.2	28.1	-	53.7		1,387	37.6	25.4	-	51.7
Maternal education											
<High school	390	**17.5**	**10.2**	**-**	**28.5**		448	**14.9**	**8.3**	**-**	**25.2**
High school diploma	1,990	**23.1**	**16.0**	**-**	**32.2**		1,366	**16.3**	**10.8**	**-**	**23.8**
Some college	5,332	**30.9**	**24.9**	**-**	**37.5**		5,198	**29.2**	**23.7**	**-**	**35.3**
College graduate	20,652	42.9	38.9	-	46.9		25,905	51.0	47.0	-	55.0
Household poverty level											
≤100% FPL	1,243	**15.0**	**9.4**	**-**	**23.2**		1,198	**11.1**	**7.9**	**-**	**15.4**
>100% FPL	27,202	40.1	36.8	-	43.6		32,644	46.1	42.7	-	49.5
Maternal nativity											
Non-US-born	6,940	35.1	30.7	-	39.7		9,353	43.2	38.6	-	47.9
US-born	22,503	38.0	34.3	-	41.9		25,099	40.8	37.1	-	44.5
Marital status											
Unmarried	5,708	**27.4**	**22.0**	**-**	**33.4**		5,152	**23.9**	**19.2**	**-**	**29.4**
Married	23,735	40.8	37.3	-	44.5		29,300	47.5	44.0	-	51.1
Disability status											
No	27,776	37.7	34.6	-	40.9		31,989	42.3	39.2	-	45.5
Yes	1,566	30.6	20.3	-	43.2		2,374	32.4	23.5	-	42.7

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 30-39 years, college graduate, >100% FPL, US-born, married, and without a disability.

Table 51. Prevalence of mothers with unpaid maternity leave only by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	31,707	40.1	37.1	-	43.3		32,599	39.2	36.3	-	42.2
Maternal race/ethnicity											
White non-Hispanic	19,501	37.8	33.6	-	42.2		18,959	35.9	31.7	-	40.2
Black non-Hispanic	3,491	**51.9**	**45.7**	**-**	**58.1**		3,630	**47.1**	**41.3**	**-**	**53.1**
Hispanic	5,325	**52.7**	**46.6**	**-**	**58.7**		6,307	**56.0**	**50.8**	**-**	**61.1**
Asian non-Hispanic	1,748	27.9	22.6	-	33.7		1,829	27.8	22.9	-	33.3
Other, non-Hispanic	1,236	47.9	30.4	-	65.8		1,179	47.0	32.9	-	61.5
Maternal age (years)											
<20	295	**70.8**	**42.7**	**-**	**88.7**		357	**87.0**	**59.8**	**-**	**96.8**
20-29	13,136	**53.6**	**47.7**	**-**	**59.4**		12,841	**52.2**	**46.6**	**-**	**57.7**
30-39	17,360	34.6	31.0	-	38.4		18,331	33.6	30.1	-	37.3
40+	917	23.5	15.0	-	34.8		1,069	29.0	18.5	-	42.3
Maternal education											
<High school	1,130	**50.8**	**36.8**	**-**	**64.7**		2,092	**69.4**	**55.2**	**-**	**80.7**
High school diploma	5,485	**63.8**	**54.4**	**-**	**72.2**		5,955	**70.9**	**62.3**	**-**	**78.3**
Some college	9,427	**54.5**	**47.8**	**-**	**61.1**		10,015	**56.2**	**49.7**	**-**	**62.5**
College graduate	14,862	30.8	27.2	-	34.8		13,556	26.7	23.3	-	30.3
Household poverty level											-
≤100% FPL	6,208	**75.1**	**67.0**	**-**	**81.8**		8,263	**76.7**	**70.3**	**-**	**82.1**
>100% FPL	24,194	35.7	32.4	-	39.1		23,756	33.5	30.4	-	36.8
Maternal nativity											
Non-US-born	8,079	40.9	36.4	-	45.5		8,619	39.8	35.6	-	44.2
US-born	23,628	39.9	36.1	-	43.8		23,980	39.0	35.3	-	42.7
Marital status											-
Unmarried	11,876	**56.9**	**50.6**	**-**	**63.1**		12,851	**59.6**	**53.6**	**-**	**65.3**
Married	19,831	34.1	30.7	-	37.7		19,748	32.0	28.8	-	35.4
Disability status											-
No	28,928	39.2	36.1	-	42.5		29,162	38.6	35.5	-	41.7
Yes	2,779	54.2	42.1	-	65.9		3,358	45.8	35.9	-	56.1

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 30-39 years, college graduate, >100% FPL, US-born, married, and without a disability.

Table 52. Prevalence of mothers with both paid and unpaid maternity leave by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	15,064	19.1	16.7	-	21.7		12,448	15.0	12.9	-	17.3
Maternal race/ethnicity											
White non-Hispanic	10,651	20.6	17.4	-	24.3		8,756	16.6	13.6	-	20.0
Black non-Hispanic	895	13.3	10.0	-	17.5		835	10.8	8.1	-	14.3
Hispanic	1,124	**11.1**	**8.0**	**-**	**15.2**		1,019	**9.1**	**6.6**	**-**	**12.4**
Asian non-Hispanic	1,373	21.9	16.9	-	27.8		859	13.0	9.8	-	17.2
Other, non-Hispanic	440	17.0	8.0	-	32.7		480	19.1	9.4	-	34.9
Maternal age (years)											
<20	0	0.0	.	-	.		*Insufficient Data to Report*				
20-29	3,030	12.4	9.1	-	16.6		2,865	11.6	8.5	-	15.8
30-39	10,949	**21.8**	**18.8**	**-**	**25.3**		8,583	15.8	13.1	-	18.8
40+	1,084	**27.8**	**17.3**	**-**	**41.4**		980	26.6	15.6	-	41.5
Maternal education											
<High school	*Insufficient Data to Report*						*Insufficient Data to Report*				
High school diploma	497	**5.8**	**2.7**	**-**	**11.8**		397	**4.7**	**2.2**	**-**	**9.9**
Some college	1,840	**10.6**	**7.4**	**-**	**15.1**		1,740	**9.8**	**6.6**	**-**	**14.3**
College graduate	11,841	24.6	21.2	-	28.2		9,501	18.7	15.8	-	22.0
Household poverty level											
≤100% FPL	219	**2.6**	**1.4**	**-**	**5.1**		183	**1.7**	**0.8**	**-**	**3.4**
>100% FPL	14,574	21.5	18.8	-	24.4		12,119	17.1	14.7	-	19.8
Maternal nativity											
Non-US-born	3,123	**15.8**	**12.4**	**-**	**19.9**		2,072	**9.6**	**7.5**	**-**	**12.2**
US-born	11,941	20.2	17.3	-	23.4		10,376	16.9	14.2	-	19.9
Marital status											
Unmarried	1,819	**8.7**	**6.0**	**-**	**12.5**		2,093	**9.7**	**6.7**	**-**	**13.8**
Married	13,245	22.8	19.8	-	26.0		10,355	16.8	14.3	-	19.7
Disability status											
No	14,628	19.8	17.4	-	22.6		11,158	14.8	12.6	-	17.2
Yes	436	**8.5**	**4.0**	**-**	**17.0**		1,162	15.8	9.5	-	25.3

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

Insufficient Data to Report: sample size less than 5.

Table 53. Prevalence of mothers with no maternity leave by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	2,769	3.5	2.6	-	4.8		3,703	4.5	3.4	-	5.8
Maternal race/ethnicity											
White non-Hispanic	1,189	2.3	1.2	-	4.3		1,932	3.7	2.3	-	5.8
Black non-Hispanic	501	**7.5**	**4.9**	**-**	**11.1**		358	4.6	2.9	-	7.4
Hispanic	840	**8.3**	**5.6**	**-**	**12.2**		841	7.5	4.8	-	11.4
Asian non-Hispanic	122	1.9	0.8	-	4.6		390	5.9	3.8	-	9.2
Other, non-Hispanic	*Insufficient Data to Report*						*Insufficient Data to Report*				
Maternal age (years)											
<20	*Insufficient Data to Report*						*Insufficient Data to Report*				
20-29	1,060	4.3	2.8	-	6.7		834	3.4	2.0	-	5.8
30-39	1,254	2.5	1.5	-	4.1		2,587	4.7	3.4	-	6.6
40+	333	8.5	3.1	-	21.5		249	6.8	2.6	-	16.6
Maternal education											
<High school	617	**27.7**	**15.1**	**-**	**45.3**		319	10.6	4.3	-	23.5
High school diploma	630	**7.3**	**4.0**	**-**	**12.9**		678	8.1	4.5	-	14.1
Some college	684	4.0	2.4	-	6.5		859	4.8	2.8	-	8.3
College graduate	838	1.7	0.9	-	3.3		1,824	3.6	2.4	-	5.4
Household poverty level				-							
≤100% FPL	596	**7.2**	**4.6**	**-**	**11.1**		1,128	**10.5**	**6.5**	**-**	**16.4**
>100% FPL	1,803	2.7	1.7	-	4.0		2,341	3.3	2.3	-	4.7
Maternal nativity											
Non-US-born	1,635	**8.3**	**5.8**	**-**	**11.6**		1,595	**7.4**	**5.2**	**-**	**10.4**
US-born	1,134	1.9	1.1	-	3.3		2,107	3.4	2.3	-	5.1
Marital status											
Unmarried	1,453	**7.0**	**4.4**	**-**	**10.8**		1,456	6.8	4.3	-	10.4
Married	1,315	2.3	1.5	-	3.4		2,247	3.6	2.6	-	5.1
Disability status											
No	2,390	3.2	2.3	-	4.5		3,266	4.3	3.2	-	5.8
Yes	342	6.7	3.1	-	13.9		437	6.0	2.8	-	12.3

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

Insufficient Data to Report: sample size less than 5.

Contraceptive methods

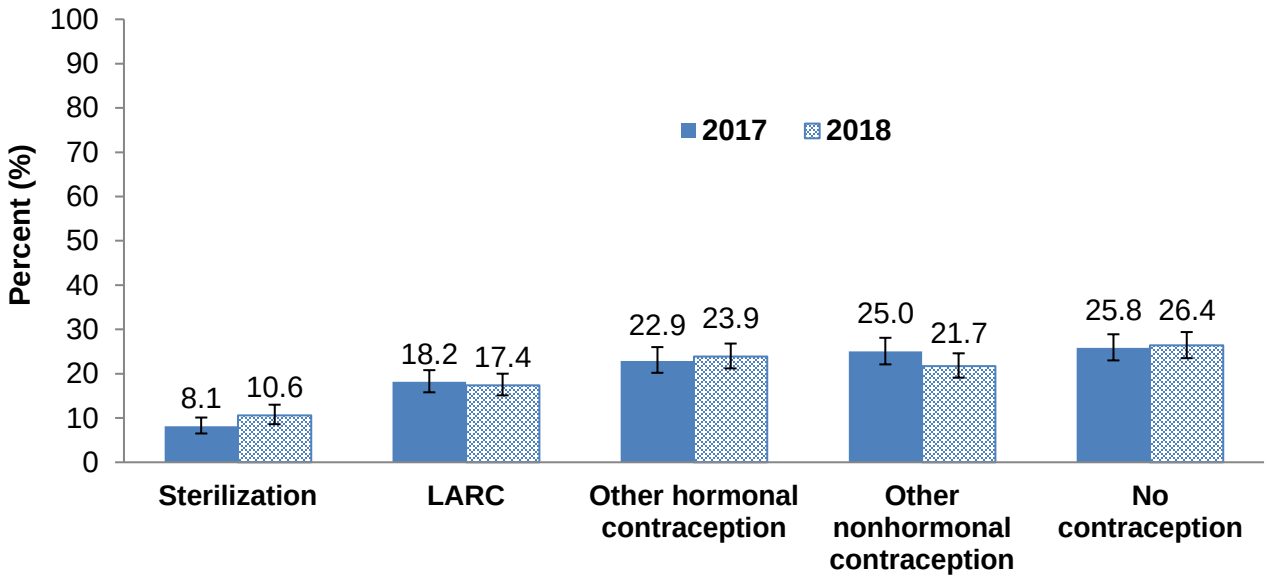
Short interval repeat pregnancy increases maternal and neonatal morbidity, and provision of postpartum contraception provides primary protection against these adverse outcomes. It is important to counsel mothers antenatally regarding the full spectrum of contraceptive options available with a focus on long-acting reversible contraceptive methods (Taub & Jensen, 2017).

Long-acting reversible contraception (LARC)—which include intrauterine devices and implants— are safe and highly effective contraceptive methods. LARCs are endorsed by the American College of Obstetricians and Gynecologists, American Academy of Pediatrics, and American Academy of Family Physicians and are the most effective reversible contraception available today. Users report high satisfaction and high continuation rates (Peipert et al., 2011). Improving postpartum initiation of effective contraception, including LARC, is a key strategy to reduce unintended pregnancy and health inequities.

Postpartum contraceptive methods were grouped into five categories: sterilization which included tubal sterilization and vasectomy; LARC; other hormonal contraception which include shots, pills, patch, and vaginal ring; other nonhormonal contraception which include condoms, diaphragm, withdrawal, natural family planning including rhythm method; and no contraception which include women who reported not having sex (Oduyebo et al., 2019).

Based on the MA PRAMS 2017–2018, the prevalence of Massachusetts mothers with postpartum contraception did not change significantly from 2017 (sterilization: 8.1%; LARC: 18.2%; other hormonal contraception: 22.9%; other nonhormonal contraception: 25.0%; no contraception: 25.8%) to 2018 (sterilization: 10.6%; LARC: 17.4%; other hormonal contraception: 23.9%; other nonhormonal contraception: 21.7%; no contraception: 26.4%) (Figure 47).

Figure 47. Prevalence of contraception, MA PRAMS, 2017-2018



Compared to 2015–2016, there was no overall significant change in the prevalence of LARC use during 2017–2018. During 2017–2018**,** a higher prevalence of LARC use was observed among Black non-Hispanic and Hispanic mothers (22.4% and 28.9%, respectively) compared to White non-Hispanic mothers (14.3%); those with less than a high school education, a high school diploma, or some college education (26.9%, 26.6%, and 19.2%, respectively) compared to mothers with a college degree (12.9%); those who were living at or below 100% of the FPL (26.1%) compared to those who were living above 100% of the FPL (15.4%); those born outside of the US (21.7%) compared to US-born mothers (15.7%); and those who were unmarried (24.4%) compared to those who were married (14.7%). A lower prevalence of LARC use was observed among mothers aged 40 years and older (6.3%) compared to mothers aged 20-29 years old (21.3%) (Table 54).

There was no overall significant change in the prevalence of other hormonal contraception during 2017–2018 as compared to 2015–2016. A lower prevalence of other hormonal contraception was observed among Asian non-Hispanic and other, non-Hispanic mothers (11.7% and 10.7%, respectively) compared to White non-Hispanic mothers (24.6%); those aged 30-39 years and 40 years and older (19.9% and 11.4%, respectively) compared to mothers aged 20-29 years (30.0%); and those born outside of the US (19.5%) compared to US-born mothers (25.4%). A higher prevalence of other hormonal contraception was observed among mothers who were unmarried (29.1%) compared to mothers who were married (20.8%) (Table 55).

Compared to 2015–2016 (26.4%), there was no overall significant change in the prevalence of other nonhormonal contraception during 2017–2018 (23.4%). During 2017–2018, a lower prevalence of other nonhormonal contraception was observed among Black non-Hispanic and Hispanic mothers (17.4% and 11.9%, respectively) compared to White non-Hispanic mothers (26.4%); those with less than a high school education, a high school diploma, or some college education (11.2%, 13.0%, and 16.7%, respectively) compared to mothers with a college degree (31.6%); those who were living at or below 100% of the FPL (11.3%) compared to those who were living above 100% of the FPL (27.3%); mothers who were unmarried (13.3%) compared to those who were married (28.1%), and those with a disability (15.5%) compared to those without a disability (24.4%). A higher prevalence of other nonhormonal contraception was observed among Asian non-Hispanic mothers (37.5%) compared to White non-Hispanic mothers (26.4%) (Table 56).

Compared to 2015–2016 (22.8%), there was no overall significant change in the prevalence of no postpartum contraception during 2017–2018 (26.1%). During 2017–2018, a higher prevalence of no postpartum contraception was observed among Asian non-Hispanic mothers (37.1%) compared to White non-Hispanic mothers (25.9%); and those aged 40 years and older (41.1%) compared to mothers aged 20-29 years old (22.7%) (Table 57).

Table 54. Prevalence of LARC use by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	24,757	18.4	16.7	-	20.3		23,551	17.8	16.1	-	19.6
Maternal race/ethnicity											
White non-Hispanic	11,910	15.2	12.7	-	18.1		10,741	14.3	11.9	-	17.2
Black non-Hispanic	2,903	**22.8**	**18.6**	**-**	**27.6**		2,860	**22.4**	**18.9**	**-**	**26.2**
Hispanic	7,370	**30.0**	**26.5**	**-**	**33.7**		7,526	**28.9**	**25.7**	**-**	**32.2**
Asian non-Hispanic	1,361	11.3	8.4	-	15.0		1,155	10.0	7.7	-	12.9
Other, non-Hispanic	868	21.3	11.7	-	35.4		950	24.4	16.0	-	35.4
Maternal age (years)											
<20	1,149	34.3	23.0	-	47.6		684	31.5	19.2	-	47.1
20-29	11,406	23.8	20.5	-	27.4		9,654	21.3	18.4	-	24.5
30-39	11,639	**15.1**	**13.0**	**-**	**17.5**		12,875	16.2	14.1	-	18.6
40+	563	**9.5**	**5.0**	**-**	**17.3**		338	**6.3**	**3.6**	**-**	**10.9**
Maternal education											
<High school	2,906	**24.7**	**19.4**	**-**	**30.9**		2,795	**26.9**	**21.1**	**-**	**33.7**
High school diploma	5,323	**27.3**	**22.0**	**-**	**33.4**		5,305	**26.6**	**21.8**	**-**	**32.0**
Some college	7,586	**25.7**	**21.5**	**-**	**30.4**		5,831	**19.2**	**15.8**	**-**	**23.2**
College graduate	8,244	12.0	10.0	-	14.3		8,663	12.9	10.9	-	15.4
Household poverty level											
≤100% FPL	7,316	**24.8**	**20.9**	**-**	**29.2**		7,590	**26.1**	**22.6**	**-**	**30.0**
>100% FPL	15,714	16.2	14.2	-	18.4		15,013	15.4	13.4	-	17.5
Maternal nativity											
Non-US-born	9,202	21.5	19.0	-	24.4		9,713	**21.7**	**19.3**	**-**	**24.4**
US-born	15,555	17.0	14.8	-	19.5		13,733	15.7	13.6	-	18.1
Marital status											
Unmarried	12,063	**27.1**	**23.4**	**-**	**31.0**		10,294	**24.4**	**21.2**	**-**	**28.0**
Married	12,694	14.2	12.3	-	16.2		13,257	14.7	12.8	-	16.8
Disability											
No	21,463	17.8	16.0	-	19.7		20,350	17.5	15.7	-	19.4
Yes	3,001	24.4	18.0	-	32.2		3,184	20.9	15.8	-	27.1

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

Table 55. Prevalence of other hormonal contraception by maternal sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	32,244	24.0	22.0	-	26.2		30,995	23.4	21.4	-	25.5
Maternal race/ethnicity											
White non-Hispanic	19,493	24.9	21.9	-	28.2		18,419	24.6	21.5	-	28.0
Black non-Hispanic	3,245	25.5	21.6	-	29.9		2,928	22.9	19.5	-	26.7
Hispanic	6,758	27.5	24.0	-	31.3		7,130	27.4	24.2	-	30.7
Asian non-Hispanic	1,617	**13.4**	**10.4**	**-**	**17.1**		1,360	**11.7**	**9.2**	**-**	**14.8**
Other, non-Hispanic	834	20.4	11.3	-	34.1		415	**10.7**	**6.6**	**-**	**16.7**
Maternal age (years)											
<20	1,101	32.8	20.8	-	47.6		913	42.1	28.8	-	56.6
20-29	13,459	28.1	24.6	-	31.9		13,627	30.0	26.5	-	33.8
30-39	17,018	22.1	19.5	-	24.9		15,846	**19.9**	**17.5**	**-**	**22.6**
40+	667	**11.2**	**6.1**	**-**	**19.7**		610	**11.4**	**6.2**	**-**	**20.2**
Maternal education											
<High school	3,772	**32.0**	**25.3**	**-**	**39.6**		2,079	20.0	14.7	-	26.7
High school diploma	5,145	26.4	21.4	-	32.2		5,420	27.2	22.3	-	32.6
Some college	7,880	26.7	22.4	-	31.5		8,073	26.6	22.5	-	31.1
College graduate	14,767	21.4	18.7	-	24.4		14,099	21.1	18.3	-	24.1
Household poverty level											
≤100% FPL	7,897	26.8	22.6	-	31.4		6,538	22.5	19.0	-	26.3
>100% FPL	22,378	23.1	20.7	-	25.6		22,840	23.4	21.0	-	25.9
Maternal nativity											
Non-US-born	8,459	**19.8**	**17.3**	**-**	**22.6**		8,725	**19.5**	**17.1**	**-**	**22.2**
US-born	23,786	26.0	23.3	-	28.9		22,271	25.4	22.8	-	28.3
Marital status											
Unmarried	13,169	**29.5**	**25.8**	**-**	**33.6**		12,256	**29.1**	**25.4**	**-**	**33.1**
Married	19,075	21.3	19.0	-	23.8		18,739	20.8	18.5	-	23.2
Disability											
No	29,360	24.3	22.2	-	26.6		28,185	24.2	22.1	-	26.5
Yes	2,477	20.2	14.6	-	27.3		2,570	16.9	12.5	-	22.4

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

Table 56. Prevalence of other nonhormonal contraception by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	35,375	26.4	24.3	-	28.5		30,943	23.4	21.4	-	25.5
Maternal race/ethnicity											
White non-Hispanic	22,831	29.2	26.0	-	32.5		19,805	26.4	23.3	-	29.8
Black non-Hispanic	2,292	**18.0**	**15.0**	**-**	**21.5**		2,231	**17.4**	**14.4**	**-**	**21.0**
Hispanic	3,298	**13.4**	**10.9**	**-**	**16.4**		3,098	**11.9**	**9.9**	**-**	**14.3**
Asian non-Hispanic	5,275	**43.6**	**39.0**	**-**	**48.4**		4,341	**37.5**	**33.1**	**-**	**42.1**
Other, non-Hispanic	694	17.0	9.5	-	28.5		688	17.7	10.9	-	27.4
Maternal age (years)											
<20	618	18.4	9.3	-	33.3		230	10.6	4.0	-	25.4
20-29	10,076	21.0	17.8	-	24.6		9,873	21.8	18.6	-	25.3
30-39	23,413	**30.4**	**27.6**	**-**	**33.3**		19,901	25.0	22.4	-	27.8
40+	1,268	21.4	13.7	-	31.8		939	17.6	10.6	-	27.8
Maternal education											
<High school	1,128	**9.6**	**6.4**	**-**	**14.1**		1,161	**11.2**	**7.6**	**-**	**16.1**
High school diploma	3,748	**19.2**	**14.4**	**-**	**25.2**		2,588	**13.0**	**9.5**	**-**	**17.5**
Some college	5,020	**17.0**	**13.6**	**-**	**21.0**		5,084	**16.7**	**13.4**	**-**	**20.7**
College graduate	24,286	35.2	32.1	-	38.5		21,129	31.6	28.5	-	34.8
Household poverty level											
≤100% FPL	4,850	**16.4**	**13.1**	**-**	**20.4**		3,280	**11.3**	**8.8**	**-**	**14.3**
>100% FPL	28,376	29.3	26.7	-	32.0		26,669	27.3	24.8	-	29.9
Maternal nativity											
Non-US-born	11,567	27.1	24.2	-	30.1		10,122	22.6	20.1	-	25.4
US-born	23,808	26.0	23.3	-	28.9		20,794	23.8	21.1	-	26.6
Marital status											
Unmarried	6,708	**15.0**	**12.1**	**-**	**18.5**		5,621	**13.3**	**10.8**	**-**	**16.4**
Married	28,667	32.0	29.4	-	34.8		25,321	28.1	25.5	-	30.7
Disability											
No	32,893	27.3	25.1	-	29.6		28,389	**24.4**	**22.2**	**-**	**26.6**
Yes	2,389	19.5	13.7	-	26.9		2,356	15.5	11.3	-	20.9

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

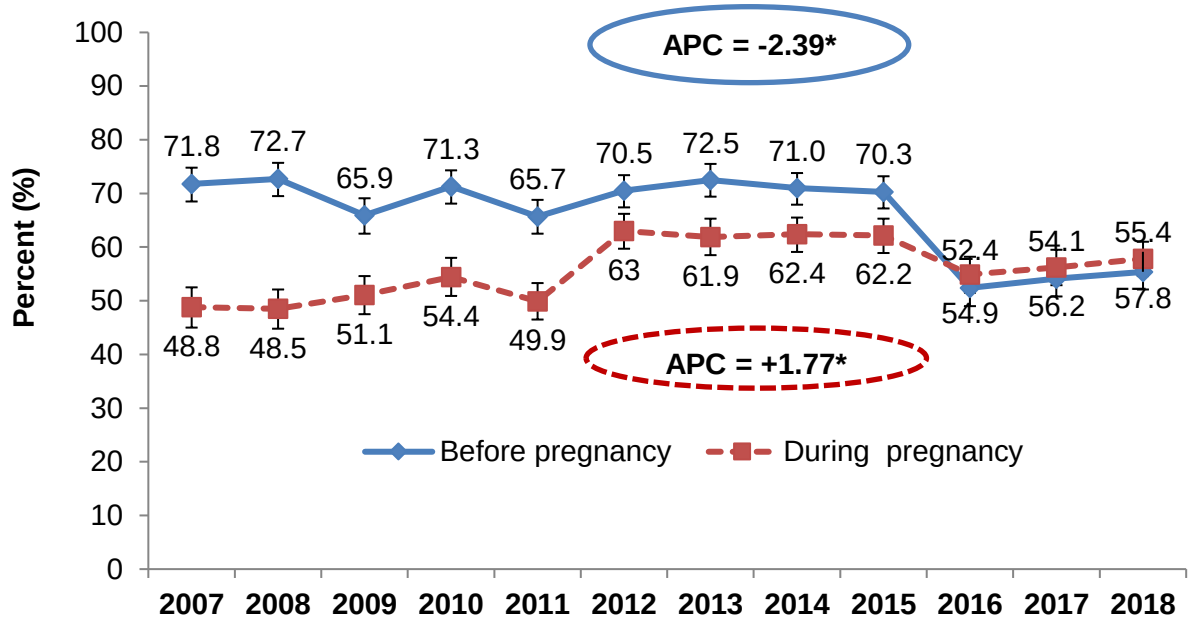
Table 57. Prevalence of no postpartum contraception by sociodemographic characteristics, MA PRAMS, 2015–2016 and 2017–2018

	2015–2016						2017–2018				
Characteristic	**Weighted n**	**Weighted %**	**95% CL**				**Weighted n**	**Weighted %**	**95% CL**		
Total	30,614	22.8	20.9	-	24.9		34,533	26.1	24.1	-	28.2
Maternal race/ethnicity											
White non-Hispanic	18,590	23.8	20.8	-	27.0		19,370	25.9	22.7	-	29.3
Black non-Hispanic	3,348	26.3	22.2	-	30.9		3,547	27.7	24.2	-	31.5
Hispanic	3,778	**15.4**	**12.7**	**-**	**18.4**		5,186	19.9	17.1	-	23.1
Asian non-Hispanic	3,305	27.3	23.6	-	31.4		4,298	**37.1**	**32.8**	**-**	**41.6**
Other, non-Hispanic	823	20.2	10.6	-	34.9		1,072	27.6	18.1	-	39.6
Maternal age (years)											
<20	486	14.5	6.6	-	28.9		342	15.8	8.8	-	26.7
20-29	10,360	21.6	18.4	-	25.3		10,313	22.7	19.7	-	26.1
30-39	17,525	22.7	20.2	-	25.5		21,683	27.3	24.6	-	30.2
40+	2,243	**37.8**	**27.9**	**-**	**49.0**		2,194	**41.1**	**30.4**	**-**	**52.8**
Maternal education											
<High school	2,081	17.7	12.6	-	24.3		2,979	28.7	21.7	-	36.9
High school diploma	2,972	**15.3**	**11.3**	**-**	**20.3**		4,308	21.6	17.2	-	26.8
Some college	5,975	20.3	16.6	-	24.5		7,410	24.4	20.4	-	28.9
College graduate	18,110	26.3	23.4	-	29.3		18,752	28.0	25.1	-	31.1
Household poverty level											
≤100% FPL	5,172	**17.5**	**14.4**	**-**	**21.2**		7,793	26.8	22.8	-	31.2
>100% FPL	23,928	24.7	22.3	-	27.3		25,360	26.0	23.6	-	28.5
Maternal nativity											
Non-US-born	9,604	22.5	19.9	-	25.4		11,972	26.8	24.0	-	29.7
US-born	21,010	23.0	20.4	-	25.7		22,561	25.8	23.1	-	28.7
Marital status											
Unmarried	9,144	20.5	17.2	-	24.3		10,054	23.9	20.4	-	27.7
Married	21,328	23.8	21.5	-	26.4		24,478	27.1	24.7	-	29.7
Disability											
No	27,303	22.6	20.6	-	24.8		29,423	25.3	23.1	-	27.5
Yes	3,048	24.8	18.7	-	32.2		4,877	32.0	25.9	-	38.8

Bolding indicates non-overlapping 95% Confidence Limits (95% CL), showing a difference between the reference group and the comparison group. The reference groups: White non-Hispanic, 20-29 years, college graduate, >100% FPL, US-born, married, and without a disability.

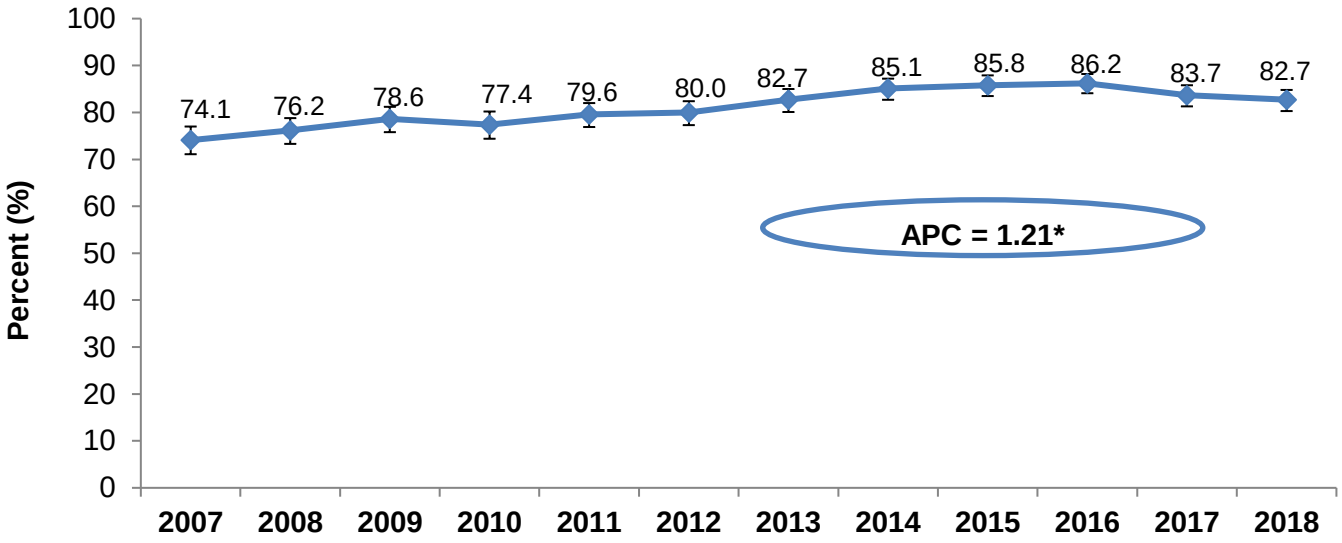
Appendix A: Trends of Selected Topics

Appendix Figure 1. Trends of teeth cleaning in the 12 months before pregnancy and during pregnancy, MA PRAMS, 2007–2018



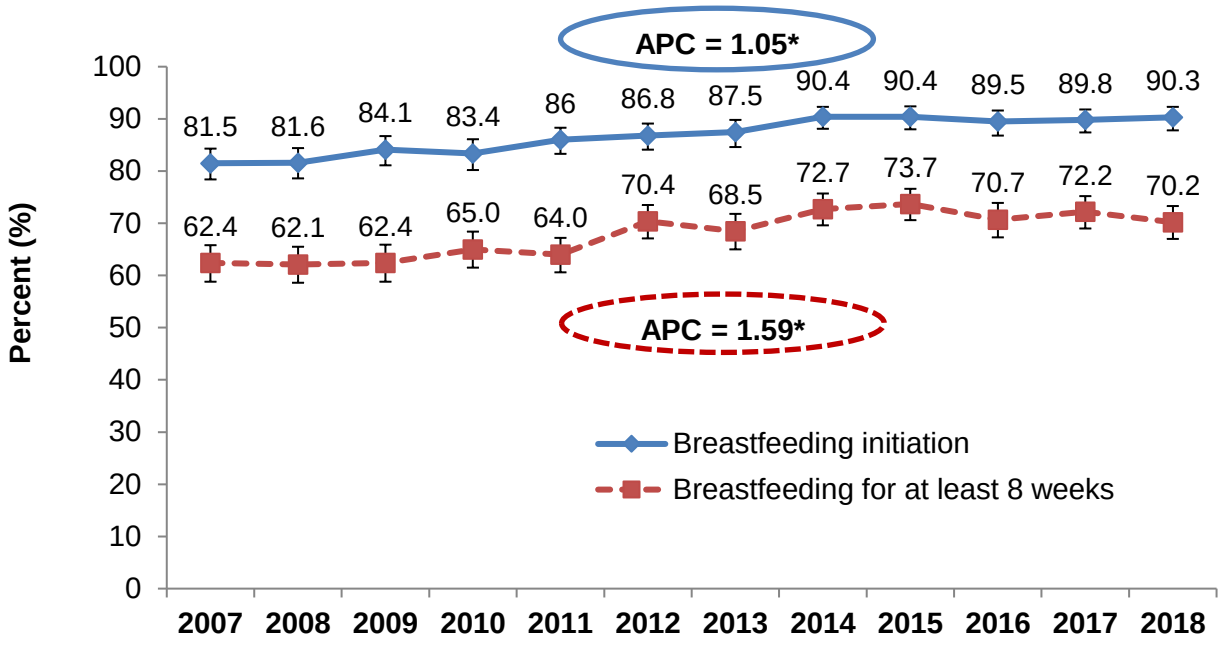
APC = Annual Percent Change; *P-value for trend was statistically significant (P<0.05).

Appendix Figure 2. Trend of infants with supine sleep position, MA PRAMS, 2007–2018



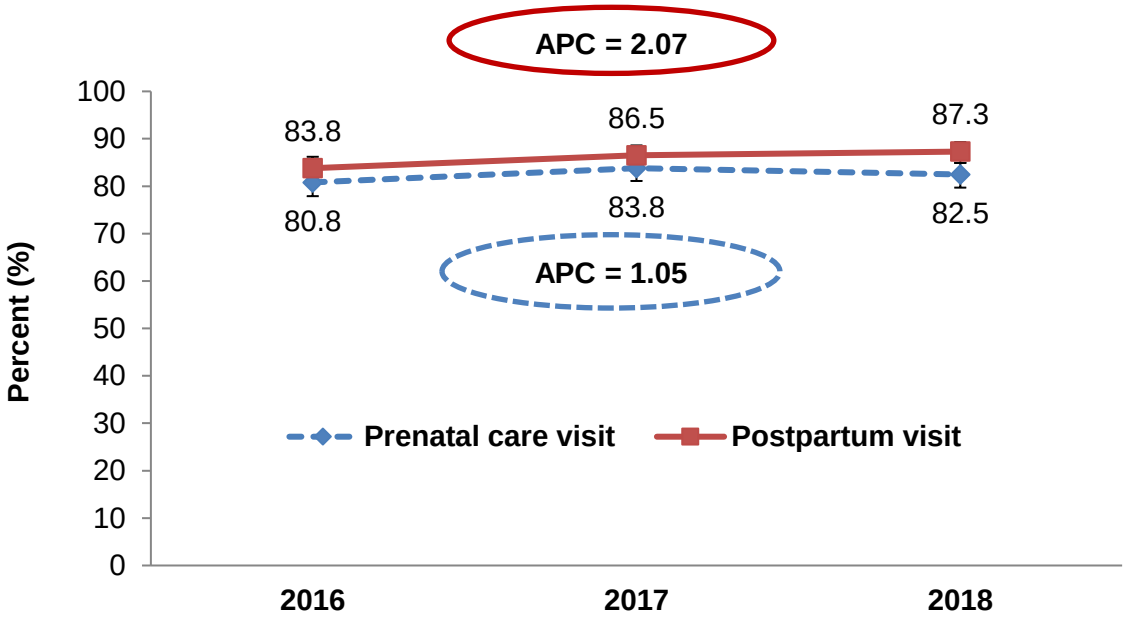
APC = Annual Percent Change; *P-value for trend was statistically significant (P<0.05).

Appendix Figure 3. Trends of breastfeeding initiation and breastfeeding for at least 8 weeks, MA PRAMS, 2007–2018



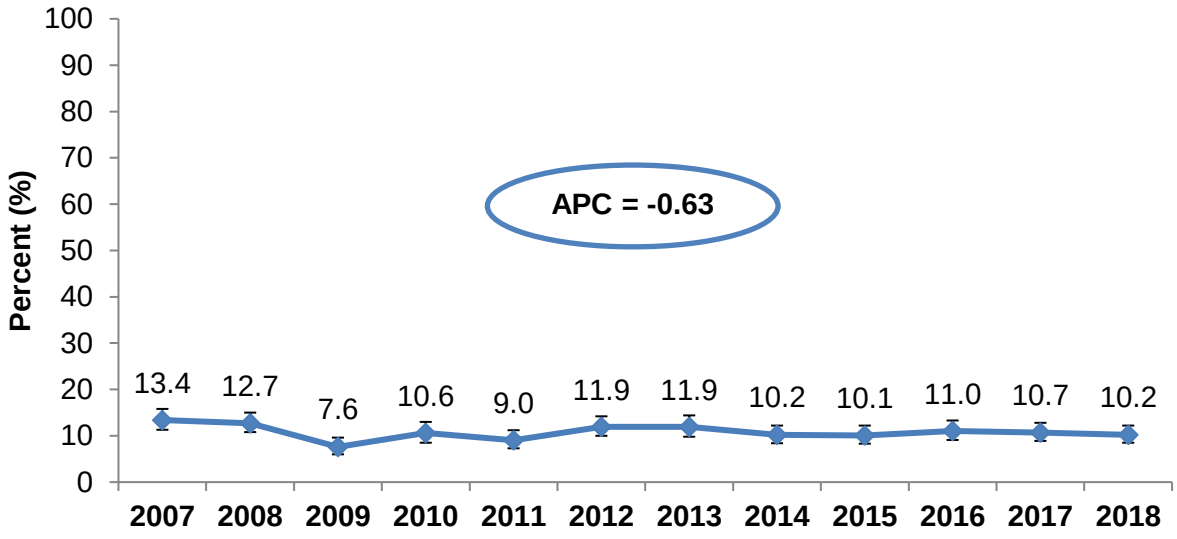
APC = Annual Percent Change; *P-value for trend was statistically significant (P<0.05).

Appendix Figure 4. Trends of depression screening during prenatal care and postpartum visits, MA PRAMS, 2016–2018



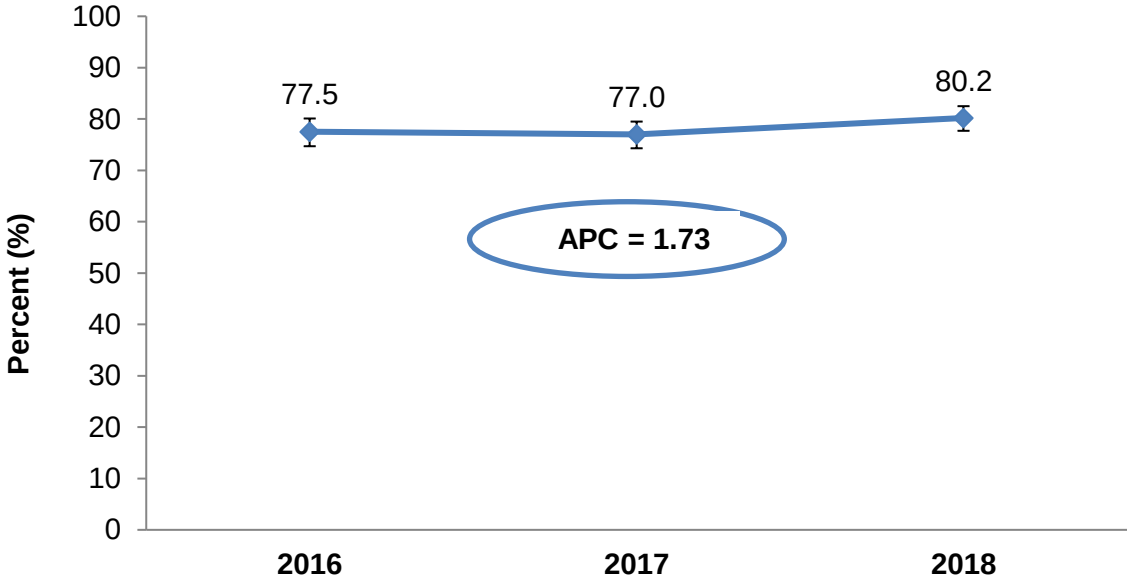
APC = Annual Percent Change; P-value for trend was not statistically significant

Appendix Figure 5. Trend of postpartum depressive symptoms, MA PRAMS, 2007–2018



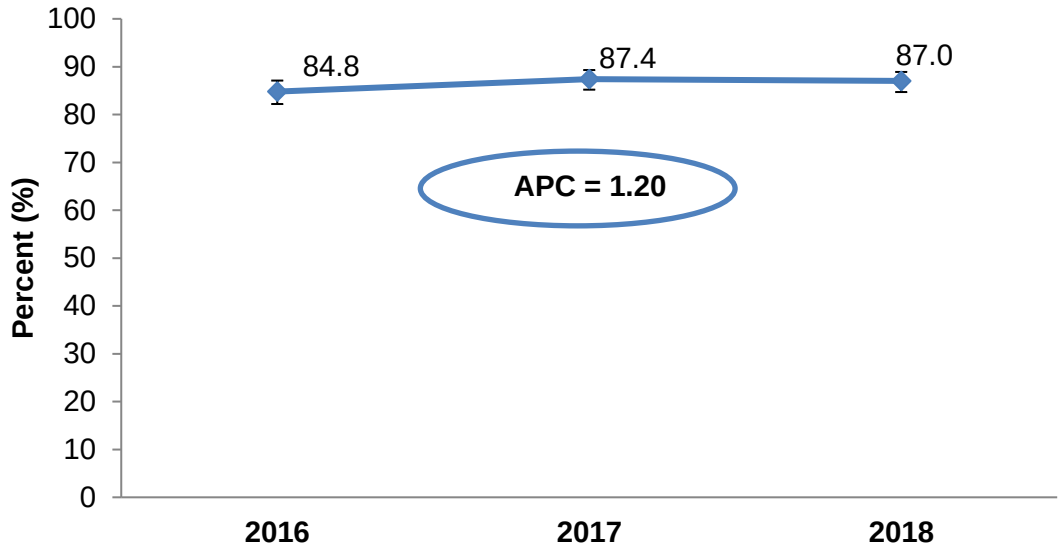
APC = Annual Percent Change; P-value for trend was not statistically significant.

Appendix Figure 6. Trend of social support (being loaned money) after delivery, MA PRAMS, 2016–2018



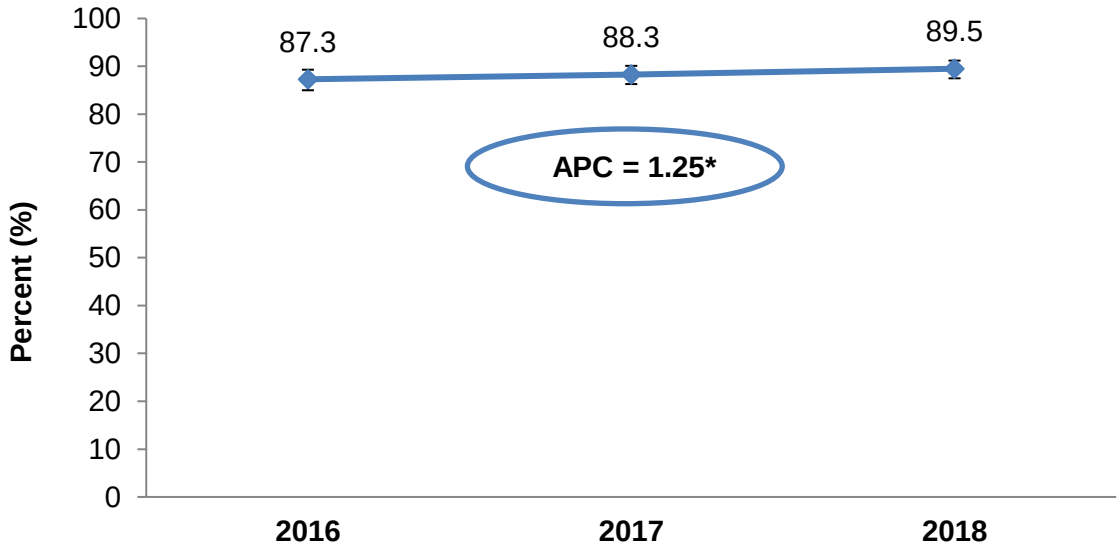
APC = Annual Percent Change; P-value for trend was not statistically significant.

Appendix Figure 7. Trend of social support (having help while being sick and needed to be in bed) after delivery, MA PRAMS, 2016–2018



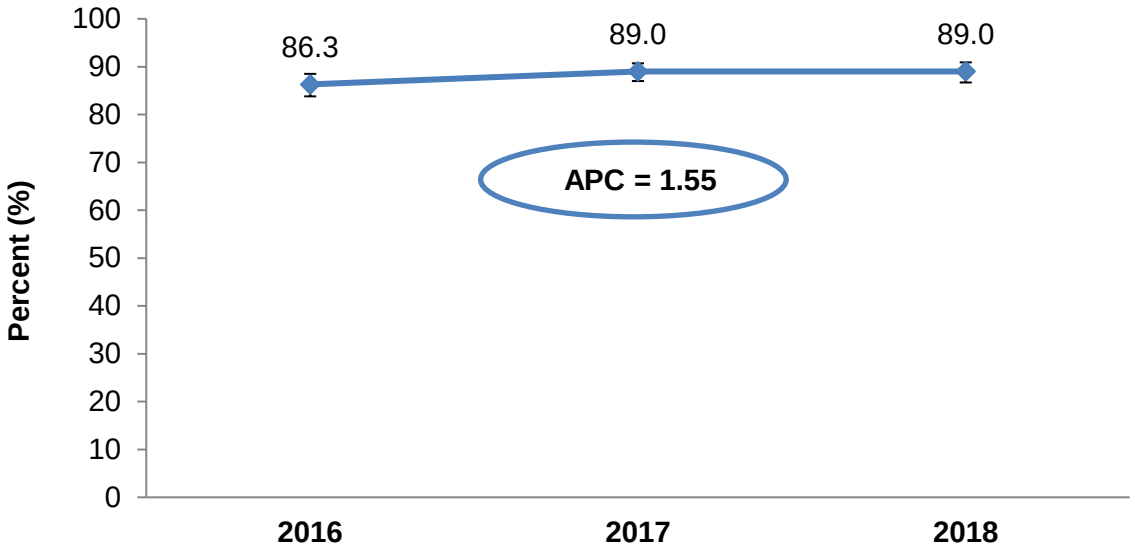
APC = Annual Percent Change; P-value for trend was not statistically significant.

Appendix Figure 8. Trend of social support (having someone to talk with about their problems) after delivery, MA PRAMS, 2016–2018



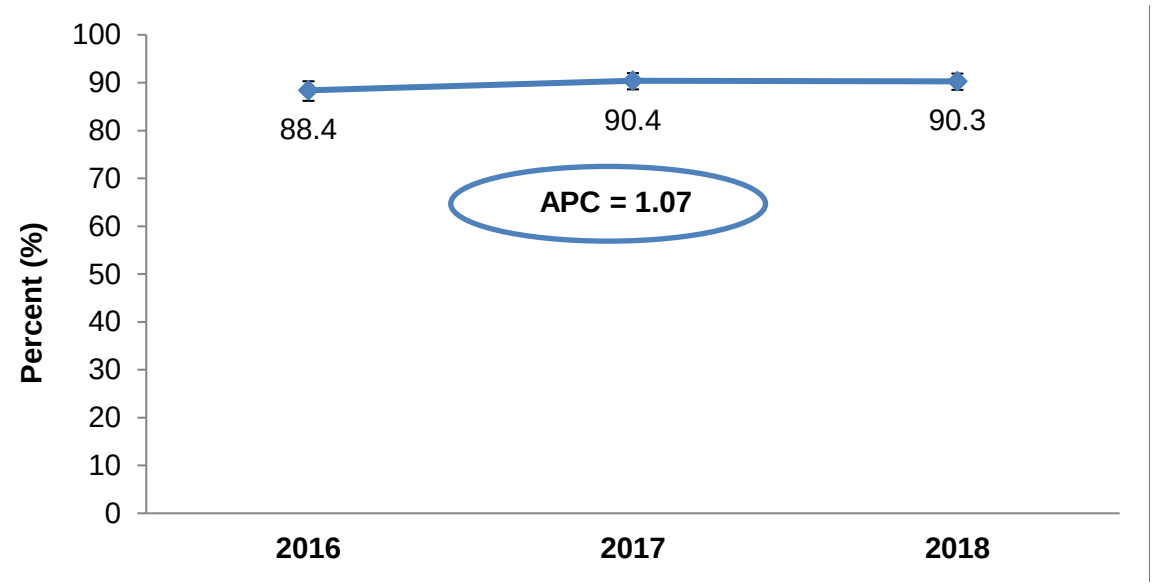
APC = Annual Percent Change; *P-value for trend was statistically significant (P<0.05).

Appendix Figure 9. Trend of social support (having help while being tired and feeling frustrated with the new baby) after delivery, MA PRAMS, 2016–2018



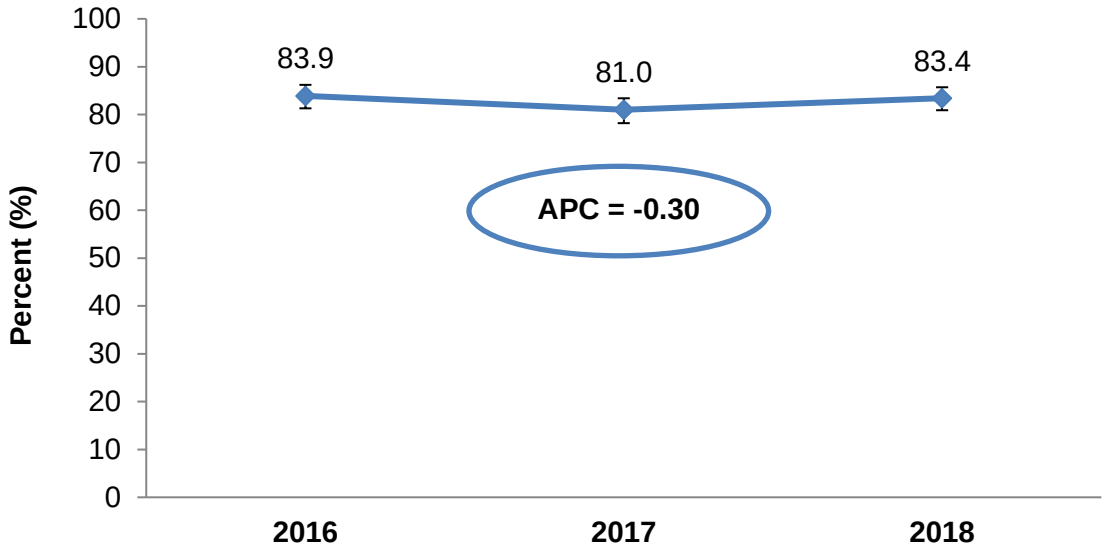
APC = Annual Percent Change; P-value for trend was not statistically significant.

Appendix Figure 10. Trend of social support (being given a ride to a doctor) after delivery, MA PRAMS, 2016–2018



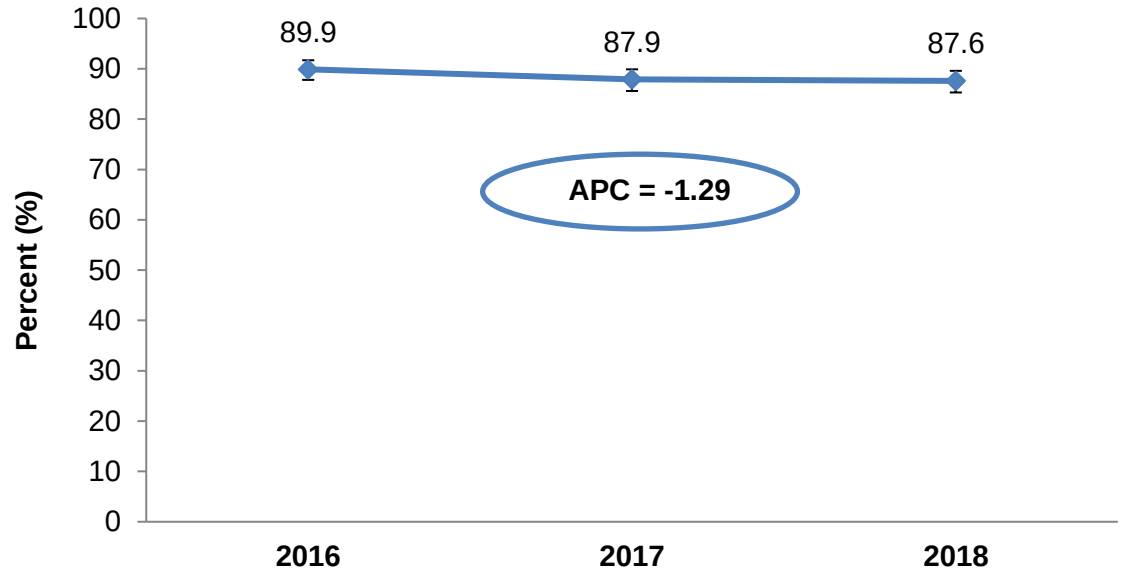
APC = Annual Percent Change; P-value for trend was not statistically significant.

Appendix Figure 11. Trend in the prevalence of mothers with partner support after delivery, MA PRAMS, 2016–2018



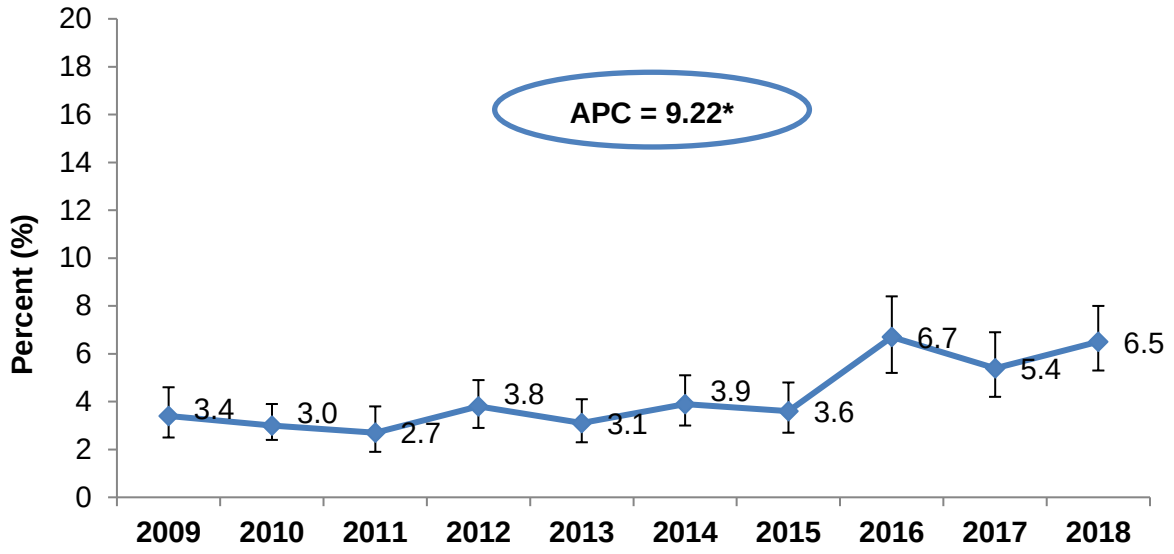
APC = Annual Percent Change; P-value for trend was not statistically significant.

Appendix Figure 12. Trend of financial support from infant's father after delivery, MA PRAMS, 2016–2018



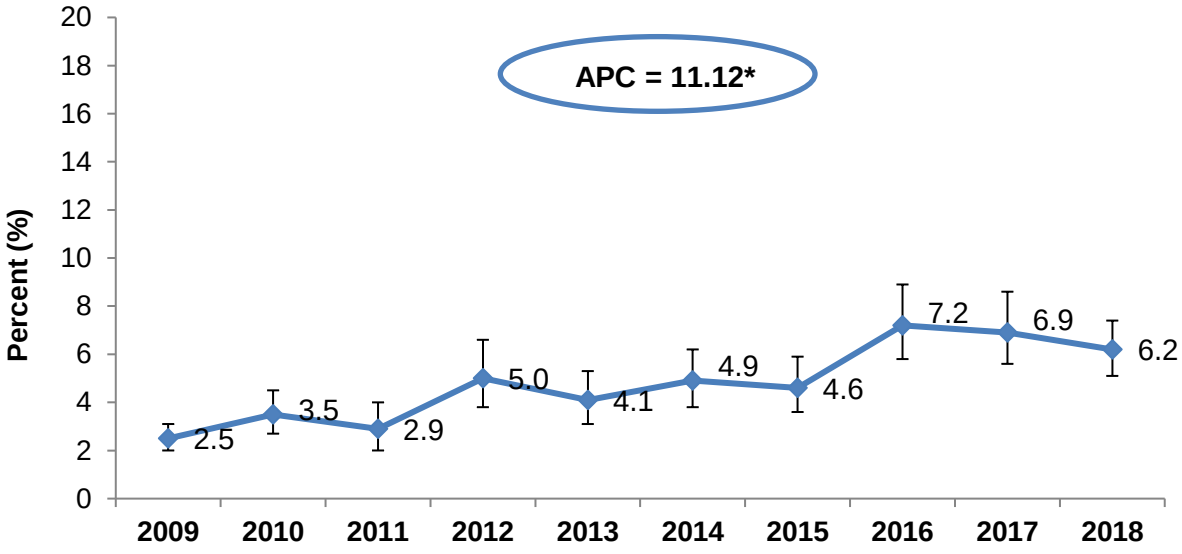
APC = Annual Percent Change; P-value for trend was not statistically significant.

Appendix Figure 13. Trend of stress due to racial/ethnic background during the twelve months before delivery, MA PRAMS, 2009–2018



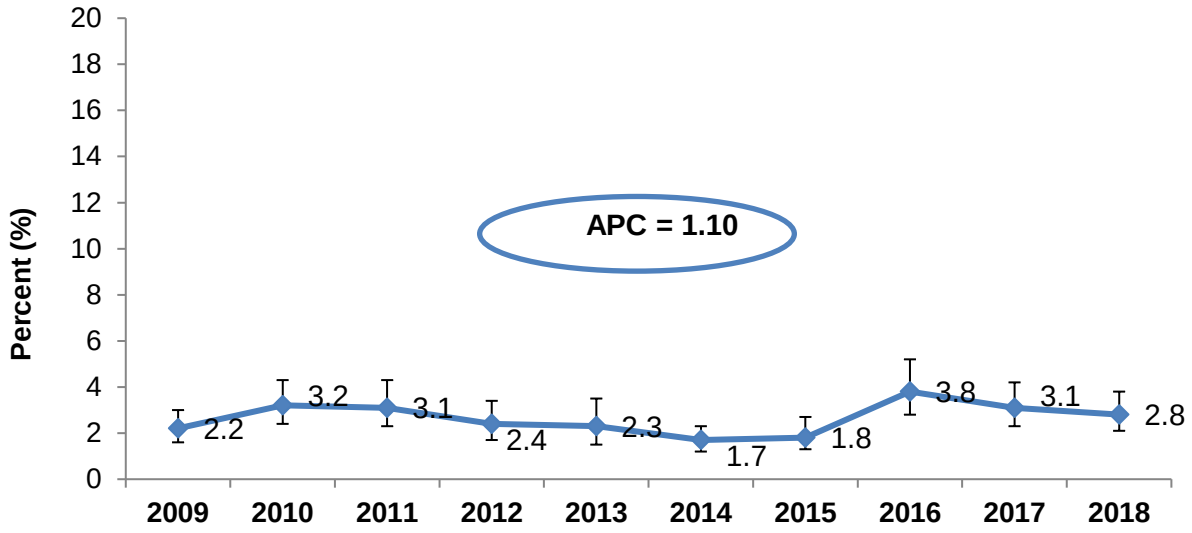
APC = Annual Percent Change; *P-value for trend was statistically significant (P<0.05).

Appendix Figure 14. Trend of feeling upset due to treatment based on racial/ethnic background during the twelve months before delivery, MA PRAMS, 2009–2018



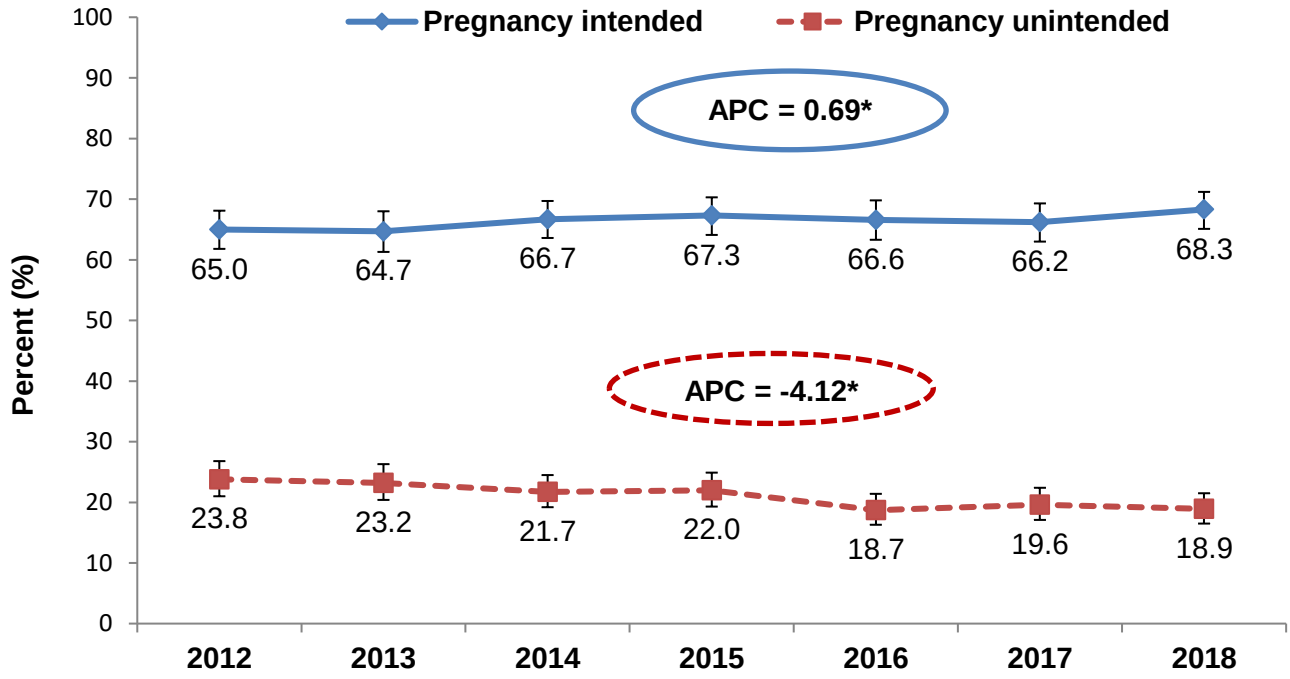
APC = Annual Percent Change; *P-value for trend was statistically significant (P<0.05).

Appendix Figure 15. Trend of experiencing physical symptoms due to treatment based on racial/ethnic background during the twelve months before delivery, MA PRAMS, 2009–2018



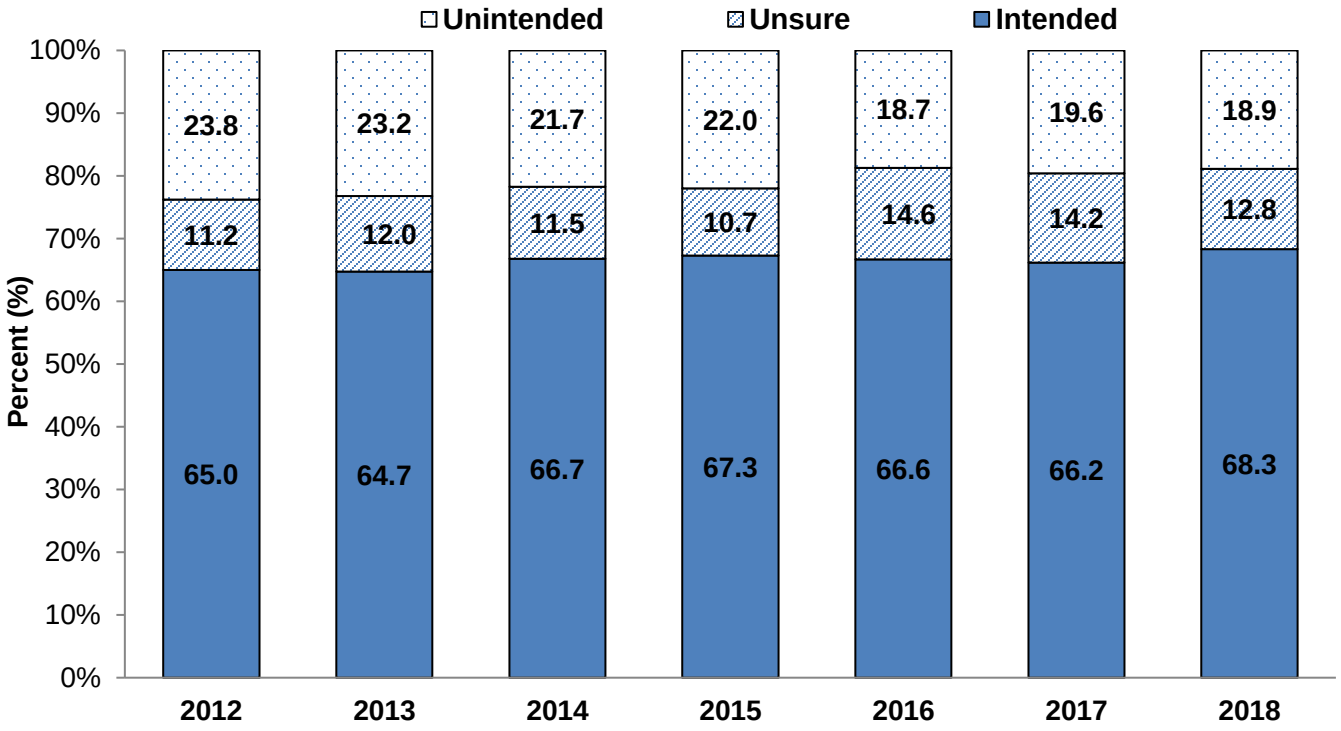
APC = Annual Percent Change; P-value for trend was not statistically significant.

Appendix Figure 16. Trends of intended and unintended pregnancies, MA PRAMS, 2012–2018

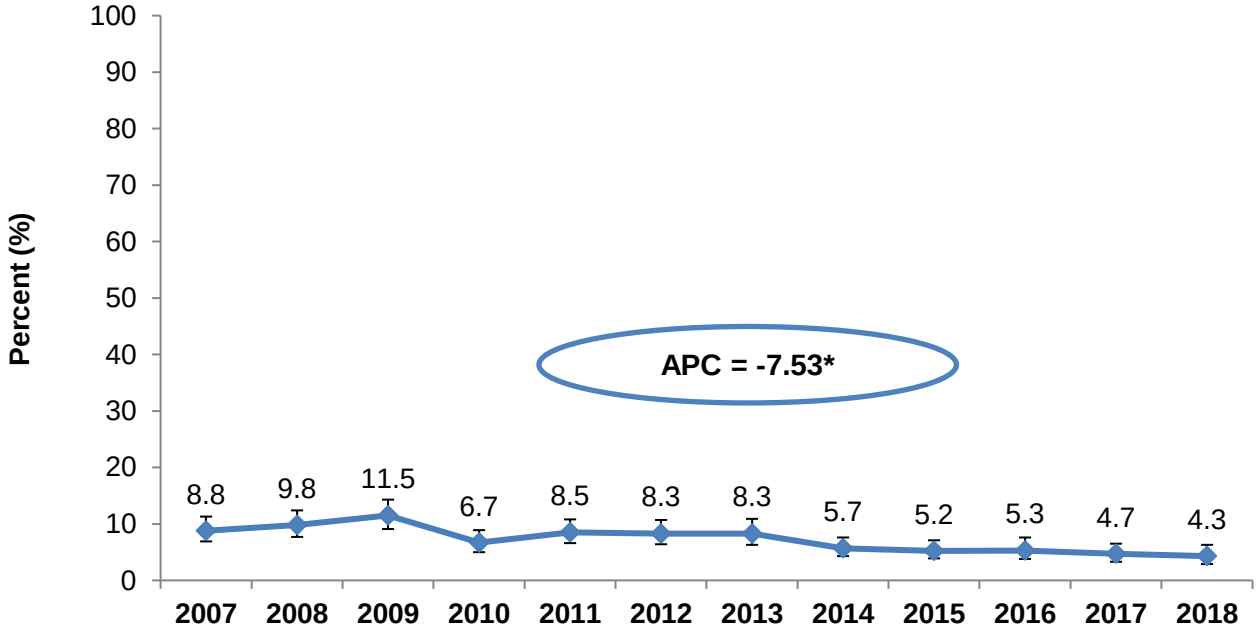


APC = Annual Percent Change; * P-value for trend was statistically significant (P<0.05).

Appendix Figure 17. Trends of pregnancy intention status, MA PRAMS, 2012–2018

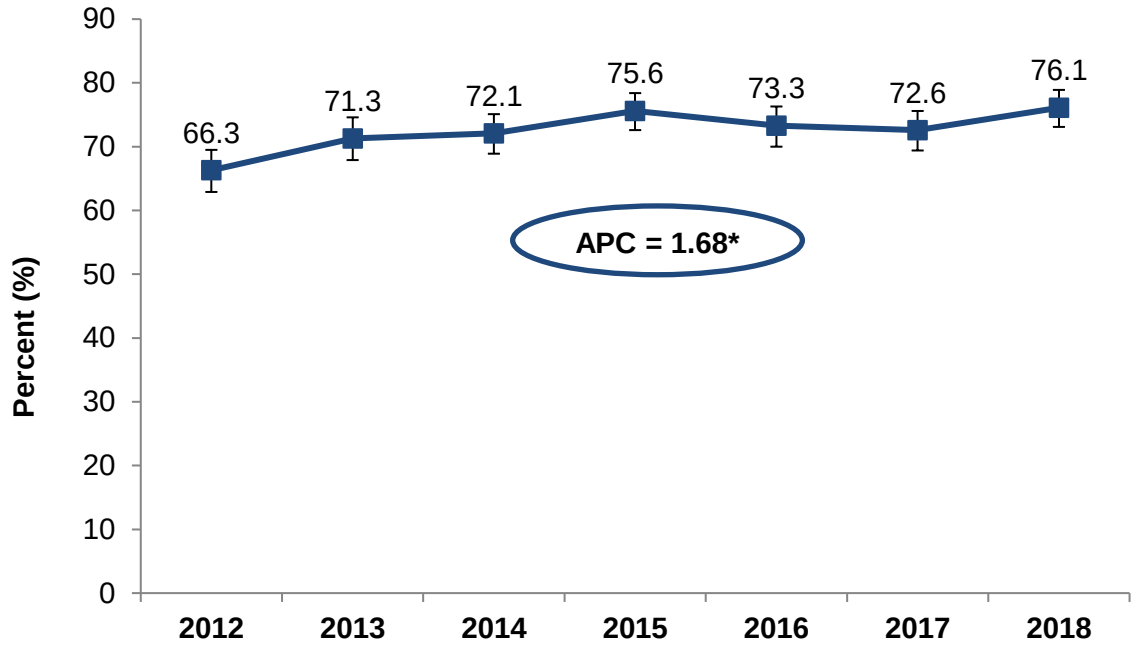


Appendix Figure 18. Trends of smoking in the last trimester of pregnancy, MA PRAMS, 2007–2018



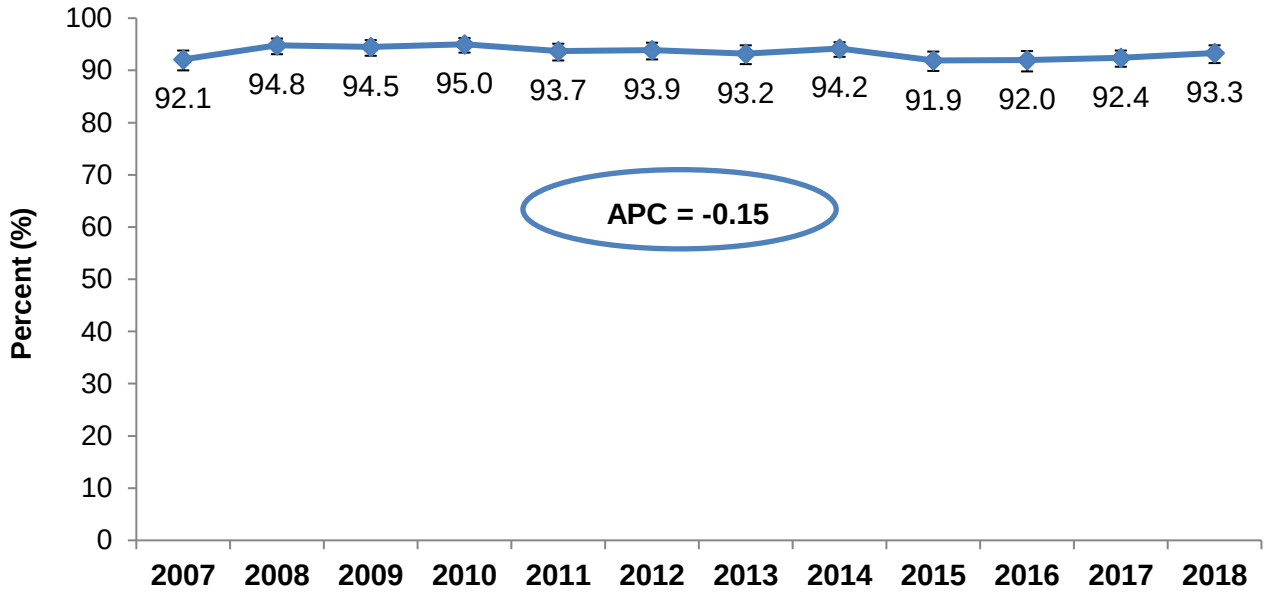
APC = Annual Percent Change; *P-value for trend was statistically significant (P<0.05).

Appendix Figure 19. Trend of influenza vaccination before or during pregnancy, MA PRAMS, 2012–2018



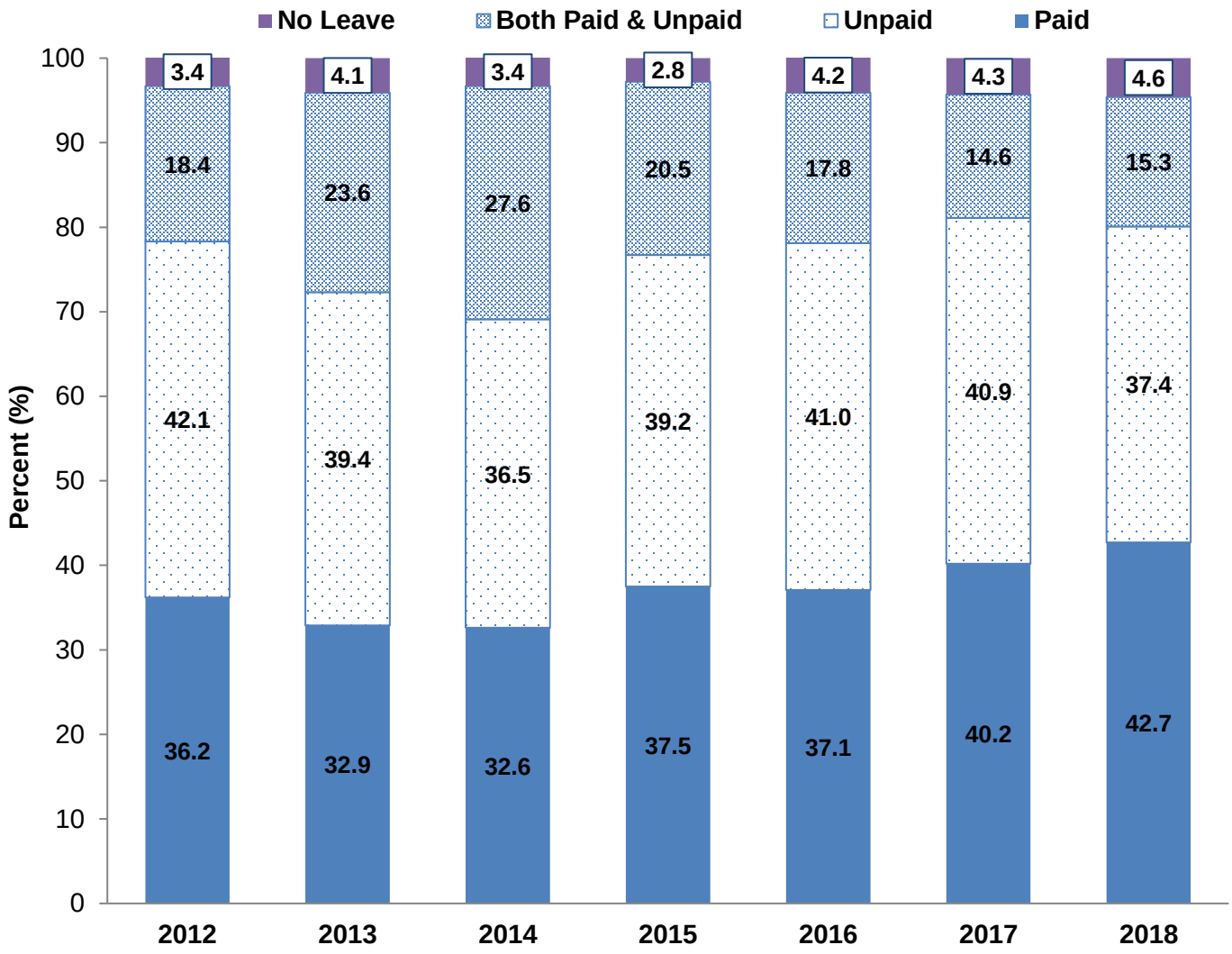
APC = Annual Percent Change; *P-value for trend was statistically significant (P<0.05).

Appendix Figure 20. Trend of postpartum check-up, MA PRAMS, 2007–2018



APC = Annual Percent Change; P-value for trend was not statistically significant.

Appendix Figure 21. Prevalence of maternity leave types, MA PRAMS, 2012–2018



Appendix B: PRAMS Advisory Committee Members

Name	Organization
Dolores Acevedo-Garcia	Institute for Child, Youth and Family Policy The Heller School for Social Policy and Management Brandeis University
Kathryn Ahnger-Pier	Immunization Assessment Unit
Ndidiamaka Amutah-Onukagha	Tufts University School of Medicine Department of Public Health and Community Medicine
Candice M. Belanoff	Boston University School of Public Health Department of Community Health Sciences
Debra Bercuvitz	MDPH, Perinatal Substance Use Initiative
Sandra Broughton	MDPH, Division for Perinatal, Early Childhood and Special Health Needs, Community Support (Perinatal HIV)
Brittany Brown	MDPH, Office of Oral Health
Catherine Brown	MDPH, Division of Epidemiology and Immunization
Oanh Thi Thu Bui	MDPH, Office of Health Equity
Nancy Byatt	UMass Memorial Medical Center/UMass Medical School
Paula Callahan	Massachusetts Department of Children & Families
Jill Clark	MDPH, Division of Child/Adolescent Health and Reproductive Health
Jennifer Cochran	MDPH, Refugee and Immigrant Health Program
Rachel Colchamiro	MDPH, Nutrition Division
Eugene Declercq	Boston University School of Public Health Department of Community Health Sciences Health Program
Deborah Dill	MDPH, Sexual and Reproductive Health Program
Dan Dooley	Boston Public Health Commission

	Research and Evaluation Office
Karin Downs	MDPH, Division of Pregnancy, Infancy and Early Childhood
Justin Egan	MDPH, Office of Sexual Health & Youth Development
Elaine Fitzgerald Lewis	MDPH, Bureau of Family Health and Nutrition
Christina Gebel	Massachusetts Accompany Doula Care
Lauren Hanley	Massachusetts General Hospital Massachusetts Breastfeeding Coalition
Chien-Chi Huang	Asian Women for Health
Sunah (Susan) Hwang	University of Colorado School of Medicine Department of Pediatrics, Section of Neonatology Children's Hospital Colorado
Erin Jones	March of Dimes, Advocacy and Government Affairs
Pamela Joshi	Brandeis University Heller School for Social Policy and Management Institute for Child, Youth and Family Policy
Milton Kotelchuck	Massachusetts General Hospital (MGH) for Children MGH Center for Child and Adolescent Health Policy
Susan Lett	MDPH, Immunization Program
Susan Manning	MDPH, Bureau of Family Health and Nutrition
Kelley May	MDPH, Nutrition Division
Monika Mitra	Brandeis University Heller School for Social Policy and Management
Rodrigo Monterrey	MDPH, Office of Health Equity
Tiffany A. Moore Simas	University of Massachusetts Medical School/UMass Memorial Health Care
Vera Mouradian	MDPH, Division of Violence and Injury Prevention

Candace Nelson	MDPH, Office of Data Management and Outcomes Assessment
Nassira Nicola	MDPH, Office of Health Equity
Paul Oppedisano	MDPH, Commissioner's Office
Sarah Scotland	MDPH, Division of Epidemiology and Immunization
Vincent Smith	Boston Medical Center, Department of Pediatrics
Laura Smock	MDPH, Division of Global Populations and Infectious Disease Prevention
Caroline Stack	MDPH, Division of Sexual and Domestic Violence Prevention and Services
Katie Stetler	MDPH, Maternal and Child Health Initiatives
Sarah L. Stone	MDPH, Office of Data Translation
Rebekah Thomas	MDPH, Division of Violence and Injury Prevention
Ellen Tolan	MDPH, Massachusetts WIC Program, Nutrition Division
Maria Vu	MDPH, Registry of Vital Records and Statistics
Kimberley Warsett	MDPH, Office of Health Equity
Mahsa Yazdy	MDPH, Center for Birth Defects Research and Prevention
Megan Young	MDPH, Division for Children & Youth with Special Health Needs

Appendix C:

MA PRAMS 2012–2015 survey (Phase 7)

Please check the box next to your answer or follow the directions included with the question. You may be asked to skip some questions that do not apply to you.

BEFORE PREGNANCY

The first questions are about *you*.

1. How tall are *you* without shoes?

____ Feet ____ Inches

OR ____ Centimeters

2. *Just before* you got pregnant with your *new* baby, how much did you weigh?

____ Pounds OR ____ Kilos

3. What is *your* date of birth?

____ / ____ / ____

Month Day Year

4. *Before* you got pregnant with your new baby, did you ever have any other babies who were born alive?

❑ No → **Go to Question 7**

❑ Yes

5. Did the baby born *just before* your new one weigh 5 pounds, 8 ounces (2.5 kilos) or *less* at birth?

❑ No

❑ Yes

6. Was the baby *just before* your new one born *earlier* than 3 weeks before his or her due date?

❑ No

❑ Yes

The next questions are about the time *before* you got pregnant with your *new* baby.

7. At any time during the *12 months before* you got pregnant with your new baby, did you do any of the following things? For each item, check **No** if you did not do it or **Yes** if you did it.

	No	Yes
a. I was dieting (changing my eating habits) to lose weight	❑	❑
b. I was exercising 3 or more days of the week	❑	❑
c. I was regularly taking prescription medicines other than birth control	❑	❑
d. I visited a health care worker and was checked for diabetes	❑	❑
e. I visited a health care worker and was checked for high blood pressure	❑	❑
f. I visited a health care worker and was checked for depression or anxiety	❑	❑
g. I talked to a health care worker about my family medical history	❑	❑
h. I had my teeth cleaned by a dentist or dental hygienist	❑	❑

8. During the *month before* you got pregnant with your new baby, what kind of *health insurance* did you have?

Check ALL that apply

- ❑ Private health insurance from my job or the job of my husband, partner, or parents
- ❑ Private health insurance purchased directly from an insurance company
- ❑ Medicaid or MassHealth
- ❑ Commonwealth Care
- ❑ Some other kind of health insurance → Please tell us:

  _____
- ❑ I did not have any health insurance during the *month before* I got pregnant

9. 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?

- ❑ I didn't take a multivitamin, prenatal vitamin, or folic acid vitamin in the *month before* I got pregnant
- ❑ 1 to 3 times a week
- ❑ 4 to 6 times a week
- ❑ Every day of the week

10. *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?

- ❑ No
- ❑ Yes

11. *Before* you got pregnant, would you say that, in general, your health was—

- ❑ Excellent
- ❑ Very good
- ❑ Good
- ❑ Fair
- ❑ Poor

12. *Before* you got pregnant with your new baby, did a doctor, nurse, or other health care worker tell you that you had any of the following health conditions? For each one, check **No** if you did not have the condition or **Yes** if you did.

	No	Yes
a. Type 1 or Type 2 diabetes (NOT the same as gestational diabetes or diabetes that starts during pregnancy)	❑	❑
b. High blood pressure or hypertension	❑	❑
c. Depression	❑	❑

The next questions are about the time when you got pregnant with your new baby.

13. Thinking back to *just before* you got pregnant with your new baby, how did you feel about becoming pregnant?

Check ONE answer

- ❑ I wanted to be pregnant later
- ❑ I wanted to be pregnant sooner
- ❑ I wanted to be pregnant then
- ❑ I didn't want to be pregnant then or at any time in the future

→ **Go to Question 15**

- ❑ I wasn't sure what I wanted

Go to Question 14

14. How much longer did you want to wait to become pregnant?

- ❑ Less than 1 year
- ❑ 1 year to less than 2 years
- ❑ 2 years to less than 3 years
- ❑ 3 years to 5 years
- ❑ More than 5 years

15. When you got pregnant with your new baby, were you trying to get pregnant?

- ❑ No
- ❑ Yes → **Go to Question 18**

16. When you got pregnant with your new baby, were you or your husband or partner doing anything to keep from getting pregnant? Some things people do to keep from getting pregnant include using birth control pills, condoms, withdrawal, or natural family planning.

- ❑ No
- ❑ Yes → **Go to Page 4, Question 20**

Go to Question 17

17. What were your reasons or your husband's or partner's reasons for not doing anything to keep from getting pregnant?

Check ALL that apply

- ❑ I didn't mind if I got pregnant
- ❑ I thought I could not get pregnant at that time
- ❑ I had side effects from the birth control method I was using
- ❑ I had problems getting birth control when I needed it
- ❑ I thought my husband or partner or I was sterile (could not get pregnant at all)
- ❑ My husband or partner didn't want to use anything
- ❑ I forgot to use a birth control method
- ❑ Other → Please tell us:

If you were <u>not trying</u> to get pregnant when you got pregnant with your new baby, go to Page 4, Question 20.

18. Did you take any fertility drugs or receive any medical procedures from a doctor, nurse, or other health care worker to help you get pregnant with your new baby? This may include infertility treatments such as fertility-enhancing drugs or assisted reproductive technology.

- ❑ No → **Go to Page 4, Question 20**
- ❑ Yes

Go to Page 4, Question 19

19. Did you use any of the following fertility treatments *during the month you got pregnant* with your new baby?

Check ALL that apply

- ❑ Fertility-enhancing drugs prescribed by a doctor (fertility drugs include Clomid®, Serophene®, Pergonal®, or other drugs that stimulate ovulation)
- ❑ Artificial insemination or intrauterine insemination (treatments in which sperm, but NOT eggs, were collected and medically placed into a woman's body)
- ❑ Assisted reproductive technology (treatments in which BOTH a woman's eggs and a man's sperm were handled in the laboratory, such as in vitro fertilization [IVF], gamete intrafallopian transfer [GIFT], zygote intrafallopian transfer [ZIFT], intracytoplasmic sperm injection [ICSI], frozen embryo transfer, or donor embryo transfer)
- ❑ Other medical treatment → Please tell us:

  _____
- ❑ I wasn't using fertility treatments *during the month* that I got pregnant with my new baby

DURING PREGNANCY

The next questions are about the prenatal care you received during your most recent pregnancy. Prenatal care includes visits to a doctor, nurse, or other health care worker before your baby was born to get checkups and advice about pregnancy. (It may help to look at the calendar when you answer these questions.)

20. How many weeks *or* months pregnant were you when you had your first visit for prenatal care? Do not count a visit that was only for a pregnancy test or only for WIC (the Special Supplemental Nutrition Program for Women, Infants, and Children).

____ Weeks **OR** ____ Months

- ❑ I didn't go for prenatal care → **Go to Question 24**

21. During *your most recent* pregnancy, what kind of *health insurance* did you have to pay for your *prenatal care*?

Check ALL that apply

- ❑ Private health insurance from my job or the job of my husband, partner, or parents
- ❑ Private health insurance purchased directly from an insurance company
- ❑ Medicaid or MassHealth
- ❑ Commonwealth Care
- ❑ Some other kind of health insurance → Please tell us:

  _____
- ❑ I did not have any health insurance to pay for my *prenatal care*

22. ***During any of your prenatal care visits,*** **did a doctor, nurse, or other health care worker talk with you about any of the things listed below?** *Please count only discussions,* not reading materials or videos. For each item, check **No** if no one talked with you about it or **Yes** if someone did.

	No	Yes
a. How much weight I should gain during my pregnancy	❑	❑
b. How smoking during pregnancy could affect my baby	❑	❑
c. Breastfeeding my baby	❑	❑
d. How drinking alcohol during pregnancy could affect my baby	❑	❑
e. Using a seat belt during my pregnancy	❑	❑
f. Medicines that are safe to take during my pregnancy	❑	❑
g. How using illegal drugs could affect my baby	❑	❑
h. Doing tests to screen for birth defects or diseases that run in my family	❑	❑
i. The signs and symptoms of preterm labor (labor more than 3 weeks before the baby is due)	❑	❑
j. Getting tested for HIV (the virus that causes AIDS)	❑	❑
k. What to do if I feel depressed during my pregnancy or after my baby is born	❑	❑
l. Physical abuse to women by their husbands or partners	❑	❑

23. How did you feel about the prenatal care you got during ***your most recent*** **pregnancy?** If you went to more than one place for prenatal care, answer for the place where you got *most* of your care. For each item, check **No** if you were not satisfied or **Yes** if you were satisfied.

Were you satisfied with—

	No	Yes
a. The amount of time you had to wait after you arrived for your visits	❑	❑
b. The amount of time the doctor, nurse, or midwife spent with you during your visits	❑	❑
c. The advice you got on how to take care of yourself	❑	❑
d. The understanding and respect that the staff showed toward you as a person	❑	❑

24. At any time during ***your most recent*** **pregnancy or delivery, did you have a test for HIV (the virus that causes AIDS)?**

❑ No
❑ Yes → **Go to Page 6, Question 28**
❑ I don't know

25. Were you ***offered*** **an HIV test during** ***your most recent*** **pregnancy or delivery?**

❑ No → **Go to Page 6, Question 28**
❑ Yes

26. Did you turn down the HIV test?

❑ No → **Go to Page 6, Question 28**
❑ Yes

Go to Page 6, Question 27

27. Why did you turn down the HIV test?

Check ALL that apply

- ❑ I did not think I was at risk for HIV
- ❑ I did not want people to think I was at risk for HIV
- ❑ I was afraid of getting the result
- ❑ I was tested before this pregnancy, and did not think I needed to be tested again
- ❑ Other → Please tell us:

28. During the 12 months *before the delivery* of your new baby, did a doctor, nurse, or other health care worker *offer* you a flu shot or *tell* you to get one?

- ❑ No
- ❑ Yes

29. During the 12 months *before the delivery* of your new baby, did you *get* a flu shot?

Check ONE answer

- ❑ No → **Go to Question 31**
- ❑ Yes, before my pregnancy
- ❑ Yes, during my pregnancy

30. During what month and year did you get the flu shot?

____ / 20____

Month Year

- ❑ I don't remember

31. This question is about the care of your teeth *during your most recent* pregnancy. For each item, check **No** if it is not true or does not apply to you or **Yes** if it is true.

	No	Yes
a. I knew it was important to care for my teeth and gums during my pregnancy	❑	❑
b. A dental or other health care worker talked with me about how to care for my teeth and gums	❑	❑
c. I had my teeth cleaned by a dentist or dental hygienist	❑	❑
d. I had insurance to cover dental care during my pregnancy	❑	❑
e. I needed to see a dentist for a **problem**	❑	❑
f. I went to a dentist or dental clinic about a **problem**	❑	❑

32. During *your most recent* pregnancy, did you take a class or classes to prepare for childbirth and learn what to expect during labor and delivery?

- ❑ No
- ❑ Yes

33. During *your most recent* pregnancy, did a home visitor come to your home to help you prepare for your new baby? A home visitor is a nurse, a health care worker, a social worker, or other person who works for a program that helps pregnant women.

- ❑ No
- ❑ Yes

34. During *your most recent* pregnancy, were you on WIC (the Special Supplemental Nutrition Program for Women, Infants, and Children)?

- ❑ No
- ❑ Yes

35. During *your most recent* pregnancy, were you told by a doctor, nurse, or other health care worker that you had gestational diabetes (diabetes that started during *this* pregnancy)?

❑ No → **Go to Question 37**
❑ Yes

36. During *your most recent* pregnancy, when you were told that you had gestational diabetes, did a doctor, nurse, or other health care worker do any of the things listed below? For each item, check **No** if it was not done or **Yes** if it was done.

	No	Yes
a. Refer you to a nutritionist	❑	❑
b. Talk to you about the importance of exercise	❑	❑
c. Talk to you about getting to and staying at a healthy weight after delivery	❑	❑
d. Suggest that you breastfeed your new baby	❑	❑
e. Talk to you about your risk for Type 2 diabetes	❑	❑

The next questions are about smoking cigarettes around the time of pregnancy (before, during, and after).

37. Have you smoked any cigarettes in the *past 2 years*?

❑ No → **Go to Page 8, Question 41**
❑ Yes

Go to Question 38

38. In the *3 months before* you got pregnant, how many cigarettes did you smoke on an average day? A pack has 20 cigarettes.

❑ 41 cigarettes or more
❑ 21 to 40 cigarettes
❑ 11 to 20 cigarettes
❑ 6 to 10 cigarettes
❑ 1 to 5 cigarettes
❑ Less than 1 cigarette
❑ I didn't smoke then

39. In the *last 3 months* of your pregnancy, how many cigarettes did you smoke on an average day? A pack has 20 cigarettes.

❑ 41 cigarettes or more
❑ 21 to 40 cigarettes
❑ 11 to 20 cigarettes
❑ 6 to 10 cigarettes
❑ 1 to 5 cigarettes
❑ Less than 1 cigarette
❑ I didn't smoke then

40. How many cigarettes do you smoke on an average day *now*? A pack has 20 cigarettes.

❑ 41 cigarettes or more
❑ 21 to 40 cigarettes
❑ 11 to 20 cigarettes
❑ 6 to 10 cigarettes
❑ 1 to 5 cigarettes
❑ Less than 1 cigarette
❑ I don't smoke now

The next questions are about drinking alcohol around the time of pregnancy (before and during).

41. **Have you had any alcoholic drinks in the *past 2 years*?** A drink is 1 glass of wine, wine cooler, can or bottle of beer, shot of liquor, or mixed drink.

- ❑ No → **Go to Question 44**
- ❑ Yes

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

- ❑ 14 drinks or more a week
- ❑ 7 to 13 drinks a week
- ❑ 4 to 6 drinks a week
- ❑ 1 to 3 drinks a week
- ❑ Less than 1 drink a week
- ❑ I didn't drink then

43. **During the *last 3 months* of your pregnancy, how many alcoholic drinks did you have in an average week?**

- ❑ 14 drinks or more a week
- ❑ 7 to 13 drinks a week
- ❑ 4 to 6 drinks a week
- ❑ 1 to 3 drinks a week
- ❑ Less than 1 drink a week
- ❑ I didn't drink then

Pregnancy can be a difficult time for some women. The next questions are about things that may have happened *before* and *during* your most recent pregnancy.

44. **This question is about things that may have happened during the *12 months before your new baby was born*.** For each item, check **No** if it did not happen to you or **Yes** if it did. (It may help to look at the calendar when you answer these questions.)

	No	Yes
a. A close family member was very sick and had to go into the hospital	❑	❑
b. I got separated or divorced from my husband or partner	❑	❑
c. I moved to a new address	❑	❑
d. I was homeless or had to sleep outside, in a car, or in a shelter	❑	❑
e. My husband or partner lost his job	❑	❑
f. I lost my job even though I wanted to go on working	❑	❑
g. My husband, partner, or I had a cut in work hours or pay	❑	❑
h. I was apart from my husband or partner due to military deployment or extended work-related travel	❑	❑
i. I argued with my husband or partner more than usual	❑	❑
j. My husband or partner said he didn't want me to be pregnant	❑	❑
k. I had problems paying the rent, mortgage, or other bills	❑	❑
l. My husband, partner, or I went to jail	❑	❑
m. Someone very close to me had a problem with drinking or drugs	❑	❑
n. Someone very close to me died	❑	❑

45. During the *12 months before you got pregnant* with your new baby, did your husband or partner push, hit, slap, kick, choke, or physically hurt you in any other way?

- ❑ No
- ❑ Yes

46. During *your most recent* pregnancy, did your husband or partner push, hit, slap, kick, choke, or physically hurt you in any other way?

- ❑ No
- ❑ Yes

The next questions are about your labor and delivery.

47. When was your new baby born?

____ / ____ / 20____

Month Day Year

48. How was your new baby delivered?

- ❑ Vaginally
- ❑ Cesarean delivery (c-section)

49. By the end of *your most recent* pregnancy, how much weight had you gained?

Check ONE answer and fill in blank if needed

- ❑ I gained ____ pounds
- ❑ I didn't gain any weight, but I lost ____ pounds
- ❑ My weight didn't change during my pregnancy
- ❑ I don't know

AFTER PREGNANCY

The next questions are about the time since your new baby was born.

50. After your baby was delivered, was he or she put in an intensive care unit (NICU)?

- ❑ No
- ❑ Yes
- ❑ I don't know

51. After your baby was delivered, how long did he or she stay in the hospital?

- ❑ Less than 24 hours (less than 1 day)
- ❑ 24 to 48 hours (1 to 2 days)
- ❑ 3 to 5 days
- ❑ 6 to 14 days
- ❑ More than 14 days
- ❑ My baby was not born in a hospital
- ❑ My baby is still in the hospital → **Go to Question 54**

52. Is your baby alive now?

- ❑ No → *We are very sorry for your loss.* **Go to Page 10, Question 61**
- ❑ Yes

53. Is your baby living with you now?

- ❑ No → **Go to Page 10, Question 60**
- ❑ Yes

54. Did you ever breastfeed or pump breast milk to feed your new baby, even for a short period of time?

- ❑ No → **Go to Page 10, Question 58**
- ❑ Yes

Go to Page 10, Question 55

55. Are you currently breastfeeding or feeding pumped milk to your new baby?

- ❑ No
- ❑ Yes → **Go to Question 57**

56. How many weeks or months did you breastfeed or pump milk to feed your baby?

____ Weeks **OR** ____ Months

❑ Less than 1 week

If your baby was not born in a hospital, go to Question 58.

57. This question asks about things that may have happened at the hospital where your new baby was born. For each item, check **No** if it did not happen or **Yes** if it did happen.

	No	Yes
a. Hospital staff gave me information about breastfeeding	❑	❑
b. My baby stayed in the same room with me at the hospital	❑	❑
c. Hospital staff helped me learn how to breastfeed	❑	❑
d. I breastfed in the first hour after my baby was born	❑	❑
e. I breastfed my baby in the hospital	❑	❑
f. My baby was fed only breast milk at the hospital	❑	❑
g. Hospital staff told me to breastfeed whenever my baby wanted	❑	❑
h. The hospital gave me a breast pump to use	❑	❑
i. The hospital gave me a gift pack with formula	❑	❑
j. The hospital gave me a telephone number to call for help with breastfeeding	❑	❑
k. Hospital staff gave my baby a pacifier	❑	❑

58. Have you ever heard or read about what can happen if a baby is shaken?

- ❑ No
- ❑ Yes

If your baby is still in the hospital, go to Question 60.

59. In which *one* position do you *most often* lay your baby down to sleep now?

Check ONE answer

- ❑ On his or her side
- ❑ On his or her back
- ❑ On his or her stomach

60. *Since your new baby was born,* has a home visitor come to your home to help you learn how to take care of yourself or your new baby? A home visitor is a nurse, a health care worker, a social worker, or other person who works for a program that helps mothers of newborns.

- ❑ No
- ❑ Yes

61. Are you or your husband or partner doing anything *now* to keep from getting pregnant? Some things people do to keep from getting pregnant include using birth control pills, condoms, withdrawal, or natural family planning.

- ❑ No
- ❑ Yes → **Go to Question 63**

Go to Question 62

62. What are your reasons or your husband's or partner's reasons for not doing anything to keep from getting pregnant *now*?

Check ALL that apply

- ❑ I am not having sex
- ❑ I want to get pregnant
- ❑ I don't want to use birth control
- ❑ I am worried about side effects from birth control
- ❑ My husband or partner doesn't want to use anything
- ❑ I have problems getting birth control when I need it
- ❑ I had my tubes tied or blocked
- ❑ My husband or partner had a vasectomy
- ❑ I am pregnant now
- ❑ Other ⟶ Please tell us:

_____

If you or your husband or partner is not doing anything to keep from getting pregnant *now*, go to Question 64.

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

Check ALL that apply

- ❑ Tubes tied or blocked (female sterilization, Essure®, Adiana®)
- ❑ Vasectomy (male sterilization)
- ❑ Birth control pill
- ❑ Condoms
- ❑ Injection (Depo-Provera®)
- ❑ Contraceptive implant (Implanon®)
- ❑ Contraceptive patch (OrthoEvra®) or vaginal ring (NuvaRing®)
- ❑ IUD (including Mirena® or ParaGard®)
- ❑ Natural family planning (including rhythm method)
- ❑ Withdrawal (pulling out)
- ❑ Not having sex (abstinence)
- ❑ Other ⟶ Please tell us:

_____

64. *Since your new baby was born*, have you had a postpartum checkup for yourself? A postpartum checkup is the regular checkup a woman has about 4-6 weeks after she gives birth.

- ❑ No
- ❑ Yes

65. *Since your new baby was born*, how often have you felt down, depressed, or hopeless?

- ❑ Always
- ❑ Often
- ❑ Sometimes
- ❑ Rarely
- ❑ Never

66. *Since your new baby was born*, **how often have you had little interest or little pleasure in doing things?**

- ❑ Always
- ❑ Often
- ❑ Sometimes
- ❑ Rarely
- ❑ Never

67. **What kind of *health insurance* do <u>you</u> have *now*?**

Check ALL that apply

- ❑ Private health insurance from my job or the job of my husband, partner, or parents
- ❑ Private health insurance purchased directly from an insurance company
- ❑ Medicaid or MassHealth
- ❑ Commonwealth Care
- ❑ Some other kind of health insurance → Please tell us:

  _____
- ❑ I do not have health insurance *now*

OTHER EXPERIENCES

The next questions are on a variety of topics.

68. ***Before* you got pregnant with your new baby, did your husband or partner ever try to keep you from using your birth control so that you would get pregnant when you didn't want to?** For example, did he hide your birth control, throw it away or do anything else to keep you from using it?

- ❑ No
- ❑ Yes

69. **At any time during *your most recent* pregnancy, did you *ask for help* for depression from a doctor, nurse, or other health care worker?**

- ❑ No
- ❑ Yes

If you did not have a cesarean delivery, go to Question 71.

70. **Which statement best describes whose idea it was for you to have a cesarean delivery (c-section)?**

Check ONE answer

- ❑ My health care provider recommended a cesarean delivery *before* I went into labor
- ❑ My health care provider recommended a cesarean delivery while I was in labor
- ❑ I asked for the cesarean delivery *before* I went into labor
- ❑ I asked for the cesarean delivery while I was in labor

71. **At any time during *your most recent* pregnancy, did you work at a job for pay?**

- ❑ No → **Go to Question 75**
- ❑ Yes

72. **Have you returned to the job you had during *your most recent* pregnancy?**

Check ONE answer

- ❑ No → **Go to Question 75**
- ❑ No, but I will be returning
- ❑ Yes

Go to Question 73

73. Which of the following describes the leave or time you took off from work *after* your new baby was born?

Check ALL that apply

- ❑ I took *paid* leave from my job
- ❑ I took *unpaid* leave from my job
- ❑ I did not take leave

74. Did any of the things listed below affect your decision about taking leave from work *after* your new baby was born? For each item, check **No** if it does not apply to you or **Yes** if it does.

	No	Yes
a. I could not financially afford to take leave	❑	❑
b. I was afraid I'd lose my job if I took leave or stayed out longer	❑	❑
c. I had too much work to do to take leave or stay out longer	❑	❑
d. My job does not have paid leave	❑	❑
e. My job does not offer a flexible work schedule	❑	❑
f. I had not built up enough leave time to take any or more time off	❑	❑

If your baby is not alive, is not living with you, or is still in the hospital, go to Question 77.

75. How often does your new baby sleep or nap on the same sleep surface with you and/or anyone else? (This can include a bed, crib, futon, couch, recliner, or any other sleep surface used for sleeping.)

Check ONE answer

- ❑ Always
- ❑ 5 or more times per week, but not always
- ❑ 1 to 4 times per week
- ❑ Less than once a week, but on occasion
- ❑ Never

76. Please read each statement below. For each statement, check **No** or **Yes** to best describe how you feel about your baby's crying or how you manage his or her crying.

	No	Yes
a. I can almost always get my baby to stop crying	❑	❑
b. I would like to learn more about how to comfort my baby when he or she is crying	❑	❑
c. In the past week, I have carried my baby in my arms or in a cloth baby carrier for 5 or more hours every day	❑	❑
d. I think that picking up a baby every time he or she cries will spoil the baby	❑	❑
e. I sometimes feel overwhelmed by my baby's crying	❑	❑

77. *Since your new baby was born*, have you been tested for diabetes or high blood sugar?

- ❑ No
- ❑ Yes

78. Are you limited in any way in any activities because of physical, mental, or emotional problems?

- ❑ No
- ❑ Yes

79. Which of these groups would you say best represents your race?

Check ALL that apply

- ❑ White
- ❑ Black or African American
- ❑ Hispanic or Latina
- ❑ Asian or Pacific Islander
- ❑ American Indian
- ❑ Other → Please tell us:

80. How do other people usually classify you in this country? That is how other people usually classify you in this country, which might be different from how you classify yourself. **Check ONE answer**

- ❑ White
- ❑ Black or African American
- ❑ Hispanic or Latina
- ❑ Asian or Pacific Islander
- ❑ American Indian
- ❑ Other → Please tell us:

_____

81. How often do you think about your race? If you cannot decide between two categories, check the lower time frequency of the two categories. **Check ONE answer**

- ❑ Constantly
- ❑ Once a day
- ❑ Once a week
- ❑ Once a month
- ❑ Once a year
- ❑ Never

82. This question is about things that may have happened during the *12 months before* your new baby was born. For each item, check **No** if it didn't happen to you or **Yes** if it did. It may help to use the calendar.

	No	Yes
a. I felt that my race or ethnic background contributed to the stress in my life	❑	❑
b. I felt emotionally upset (for example, angry, sad, or frustrated) as a result of how I was treated based on my race or ethnic background	❑	❑
c. I experienced physical symptoms (for example, a headache, an upset stomach, pounding heart) that I felt were related to how I was treated based on my race or ethnic background	❑	❑

The last questions are about the time during the *12 months before* your new baby was born.

83. During the *12 months before* your new baby was born, what was your yearly total household income before taxes? Include your income, your husband's or partner's income, and any other income you may have received. *All information will be kept private* and will not affect any services you are now getting.

- ❑ $0 to $15,000
- ❑ $15,001 to $19,000
- ❑ $19,001 to $22,000
- ❑ $22,001 to $26,000
- ❑ $26,001 to $29,000
- ❑ $29,001 to $37,000
- ❑ $37,001 to $44,000
- ❑ $44,001 to $52,000
- ❑ $52,001 to $56,000
- ❑ $56,001 to $67,000
- ❑ $67,001 to $79,000
- ❑ $79,001 or more

84. During the *12 months before* your new baby was born, how many people, *including yourself*, depended on this income?

____ People

85. What is today's date?

____ / ____ / 20____

Month Day Year

Please use this space for any additional comments you would like to make about your experiences around the time of your pregnancy or the health of mothers and babies in Massachusetts.

Thanks for answering our questions!

Your answers will help us work to make Massachusetts mothers and babies healthier.

MA PRAMS 2016–2022 survey (Phase 8)

Please check the box next to your answer or follow the directions included with the question. You may be asked to skip some questions that do not apply to you.

BEFORE PREGNANCY

The first questions are about *you*.

1. How tall are *you* without shoes?

_____ Feet _____ Inches

OR _____ Centimeters

2. *Just before* you got pregnant with your *new* baby, how much did you weigh?

_____ Pounds OR _____ Kilos

3. What is *your* date of birth?

_____ / _____ / _____

Month Day Year

The next questions are about the time *before* you got pregnant with your *new* baby.

4. *Before* you got pregnant with your new baby, did you ever have any other babies who were born alive?

- ☐ No → **Go to Question 6**
- ☐ Yes

5. Was the baby *just before* your new one born *earlier* than 3 weeks before his or her due date?

- ☐ No
- ☐ Yes

6. During the *3 months before* you got pregnant with your *new* baby, did you have any of the following health conditions? For each one, check **No** if you did not have the condition or **Yes** if you did.

	No	Yes
a. Type 1 or Type 2 diabetes (**not** gestational diabetes or diabetes that starts during pregnancy)	☐	☐
b. High blood pressure or hypertension	☐	☐
c. Depression	☐	☐

7. 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?

- ☐ I didn't take a multivitamin, prenatal vitamin, or folic acid vitamin in the *month before* I got pregnant
- ☐ 1 to 3 times a week
- ☐ 4 to 6 times a week
- ☐ Every day of the week

8. In the *12 months before* you got pregnant with your new baby, did you have any health care visits with a doctor, nurse, or other health care worker, including a dental or mental health worker?

- ☐ No → **Go to Page 2, Question 11**
- ☐ Yes

Go to Page 2, Question 9

9. What type of health care visit did you have in the *12 months before* you got pregnant with your new baby?

Check ALL that apply

- ❑ Regular checkup at my family doctor's office
- ❑ Regular checkup at my OB/GYN's office
- ❑ Visit for an illness or chronic condition
- ❑ Visit for an injury
- ❑ Visit for family planning or birth control
- ❑ Visit for depression or anxiety
- ❑ Visit to have my teeth cleaned by a dentist or dental hygienist
- ❑ Other → Please tell us:

10. 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? For each item, check **No** if they did not or **Yes** if they did.

	No	Yes
a. Tell me to take a vitamin with folic acid	❑	❑
b. Talk to me about maintaining a healthy weight	❑	❑
c. Talk to me about controlling any medical conditions such as diabetes or high blood pressure	❑	❑
d. Talk to me about my desire to have or not have children	❑	❑
e. Talk to me about using birth control to prevent pregnancy	❑	❑
f. Talk to me about how I could improve my health before a pregnancy	❑	❑
g. Talk to me about sexually transmitted infections such as chlamydia, gonorrhea, or syphilis	❑	❑
h. Ask me if I was smoking cigarettes	❑	❑
i. Ask me if someone was hurting me emotionally or physically	❑	❑
j. Ask me if I was feeling down or depressed	❑	❑
k. Ask me about the kind of work I do	❑	❑
l. Test me for HIV (the virus that causes AIDS)	❑	❑

The next questions are about your *health insurance coverage* before, during, and after your pregnancy with your *new* baby.

11. During the *month before* you got pregnant with your new baby, what kind of health insurance did you have?

Check ALL that apply

- ❑ Private health insurance from my job or the job of my husband or partner
- ❑ Private health insurance from my parents
- ❑ Private health insurance from the Health Insurance Marketplace or mahealthconnector.org or HealthCare.gov
- ❑ Medicaid or MassHealth
- ❑ ConnectorCare
- ❑ TRICARE or other military health care
- ❑ Other health insurance → Please tell us:
- ❑ I did not have any health insurance during the *month before* I got pregnant

12. During your *most recent pregnancy*, what kind of health insurance did you have for your *prenatal care*?

Check ALL that apply

- ❑ I did not go for prenatal care → **Go to Question 13**
- ❑ Private health insurance from my job or the job of my husband or partner
- ❑ Private health insurance from my parents
- ❑ Private health insurance from the Health Insurance Marketplace or mahealthconnector.org or HealthCare.gov
- ❑ Medicaid or MassHealth
- ❑ ConnectorCare
- ❑ TRICARE or other military health care
- ❑ Other health insurance → Please tell us:
- ❑ I did not have any health insurance for my *prenatal care*

13. What kind of health insurance do you have *now*?

Check ALL that apply

- ☐ Private health insurance from my job or the job of my husband or partner
- ☐ Private health insurance from my parents
- ☐ Private health insurance from the Health Insurance Marketplace or mahealthconnector.org or HealthCare.gov
- ☐ Medicaid or MassHealth
- ☐ ConnectorCare
- ☐ TRICARE or other military health care
- ☐ Other health insurance → Please tell us:

  _____
- ☐ I do not have health insurance *now*

14. Thinking back to *just before* you got pregnant with your new baby, how did you feel about becoming pregnant?

Check ONE answer

- ☐ I wanted to be pregnant later
- ☐ I wanted to be pregnant sooner
- ☐ I wanted to be pregnant then
- ☐ I didn't want to be pregnant then or at any time in the future
- ☐ I wasn't sure what I wanted

15. When you got pregnant with your new baby, were you trying to get pregnant?

- ☐ No
- ☐ Yes → **Go to Question 18**

16. When you got pregnant with your new baby, were you or your husband or partner doing anything to keep from getting pregnant? Some things people do to keep from getting pregnant include having their tubes tied, using birth control pills, condoms, withdrawal, or natural family planning.

- ☐ No
- ☐ Yes → **Go to Page 4, Question 20**

Go to Question 17

17. What were your reasons or your husband's or partner's reasons for not doing anything to keep from getting pregnant?

Check ALL that apply

- ☐ I didn't mind if I got pregnant
- ☐ I thought I could not get pregnant at that time
- ☐ I had side effects from the birth control method I was using
- ☐ I had problems getting birth control when I needed it
- ☐ I thought my husband or partner or I was sterile (could not get pregnant at all)
- ☐ My husband or partner didn't want to use anything
- ☐ I forgot to use a birth control method
- ☐ Other → Please tell us:

  _____

If you were <u>not trying</u> to get pregnant when you got pregnant with your new baby, go to Page 4, Question 20.

18. Did you take any fertility drugs or receive any medical procedures from a doctor, nurse, or other health care worker to help you get pregnant with your *new* baby? This may include infertility treatments such as fertility-enhancing drugs or assisted reproductive technology.

- ☐ No → **Go to Page 4, Question 20**
- ☐ Yes

Go to Page 4, Question 19

19. Did you use any of the following fertility treatments *during the month you got pregnant* with your *new* baby?

Check ALL that apply

- ❑ Fertility-enhancing drugs prescribed by a doctor (fertility drugs include Clomid®, Serophene®, Pergonal®, or other drugs that stimulate ovulation)
- ❑ Artificial insemination or intrauterine insemination (treatments in which sperm, but NOT eggs, were collected and medically placed into a woman's body)
- ❑ Assisted reproductive technology (treatments in which BOTH a woman's eggs and a man's sperm were handled in the laboratory, such as in vitro fertilization [IVF], gamete intrafallopian transfer [GIFT], zygote intrafallopian transfer [ZIFT], intracytoplasmic sperm injection [ICSI], frozen embryo transfer, or donor embryo transfer)
- ❑ Other medical treatment → Please tell us:

  _____
- ❑ I wasn't using fertility treatments *during the month* that I got pregnant with my new baby

DURING PREGNANCY

The next questions are about the prenatal care you received during your most recent pregnancy. Prenatal care includes visits to a doctor, nurse, or other health care worker before your baby was born to get checkups and advice about pregnancy. (It may help to look at the calendar when you answer these questions.)

20. How many weeks *or* months pregnant were you when you had your first visit for prenatal care?

_____ Weeks **OR** _____ Months

- ❑ I didn't go for prenatal care → **Go to Question 22**

Go to Question 21

21. *During any of your prenatal care visits*, did a doctor, nurse, or other health care worker ask you any of the things listed below? For each item, check **No** if they did not ask you about it or **Yes** if they did.

		No	Yes
a.	If I knew how much weight I should gain during pregnancy	❑	❑
b.	If I was taking any prescription medication	❑	❑
c.	If I was smoking cigarettes	❑	❑
d.	If I was drinking alcohol	❑	❑
e.	If someone was hurting me emotionally or physically	❑	❑
f.	If I was feeling down or depressed	❑	❑
g.	If I was using drugs such as marijuana, cocaine, crack, or meth	❑	❑
h.	If I wanted to be tested for HIV (the virus that causes AIDS)	❑	❑
i.	If I planned to breastfeed my new baby	❑	❑
j.	If I planned to use birth control after my baby was born	❑	❑

22. At any time during *your most recent* pregnancy or delivery, did you have a test for HIV (the virus that causes AIDS)?

- ❑ No
- ❑ Yes
- ❑ I don't know

→ **Go to Question 24**

23. Why didn't you have an HIV test during your most recent pregnancy or delivery?

Check ALL that apply

- ❑ I was not offered the test
- ❑ I did not want to have the test
- ❑ I already knew my HIV status
- ❑ I did not think I was at risk for HIV
- ❑ I did not want people to think I was at risk for HIV
- ❑ I was afraid of getting the result
- ❑ I was tested *before* this pregnancy, and did not think I needed to be tested again
- ❑ Other reason → Please tell us:

  _____

24. During the 12 months *before the delivery* of your new baby, did a doctor, nurse, or other health care worker *offer* you a flu shot or *tell* you to get one?

- ❑ No
- ❑ Yes

25. During the 12 months *before the delivery* of your new baby, did you *get* a flu shot?

Check ONE answer

- ❑ No
- ❑ Yes, before my pregnancy
- ❑ Yes, during my pregnancy

26. During *your most recent* pregnancy, did you get a Tdap shot or vaccination? A Tdap vaccination is a tetanus booster shot that also protects against pertussis (whooping cough).

- ❑ No
- ❑ Yes
- ❑ I don't know

27. During *your most recent* pregnancy, did you have your teeth cleaned by a dentist or dental hygienist?

- ❑ No
- ❑ Yes

28. This question is about other care of your teeth *during your most recent* pregnancy. For each item, check **No** if it is not true or does not apply to you or **Yes** if it is true.

	No	Yes
a. I knew it was important to care for my teeth and gums during my pregnancy	❑	❑
b. A dental or other health care worker talked with me about how to care for my teeth and gums	❑	❑
c. I had insurance to cover dental care during my pregnancy	❑	❑
d. I needed to see a dentist for a **problem**	❑	❑
e. I went to a dentist or dental clinic about a **problem**	❑	❑

29. Did any of the following things make it hard for you to go to a dentist or dental clinic during *your most recent* pregnancy? For each item, check **No** if it was not something that made it hard for you to go to a dentist during pregnancy or **Yes** if it was.

	No	Yes
a. I could not find a dentist or dental clinic that would take pregnant patients	❑	❑
b. I could not find a dentist or dental clinic that would take MassHealth patients	❑	❑
c. I did not think it was safe to go to the dentist during pregnancy	❑	❑
d. I could not afford to go to the dentist or dental clinic	❑	❑

30. During *your most recent* pregnancy, were you on WIC (the Special Supplemental Nutrition Program for Women, Infants, and Children)?

- ❑ No
- ❑ Yes

31. During *your most recent* pregnancy, did you have any of the following health conditions? For each one, check **No** if you did not have the condition or **Yes** if you did.

	No	Yes
a. Gestational diabetes (diabetes that **started** during *this* pregnancy)	❑	❑
b. High blood pressure (that **started** during *this* pregnancy), pre-eclampsia or eclampsia	❑	❑
c. Depression	❑	❑

32. During *your most recent* pregnancy, did a doctor, nurse, or other health care worker give you a series of weekly shots of a medicine called progesterone, Makena®, or 17P (17 alpha-hydroxyprogesterone) to try to keep your new baby from being born too early?

- ❑ No
- ❑ Yes
- ❑ I don't know

The next questions are about smoking cigarettes around the time of pregnancy (before, during, and after).

33. Have you smoked any cigarettes in the *past 2 years*?

- ❑ No → **Go to Question 37**
- ❑ Yes

34. In the 3 *months* before you got pregnant, how many cigarettes did you smoke on an average day? A pack has 20 cigarettes.

- ❑ 41 cigarettes or more
- ❑ 21 to 40 cigarettes
- ❑ 11 to 20 cigarettes
- ❑ 6 to 10 cigarettes
- ❑ 1 to 5 cigarettes
- ❑ Less than 1 cigarette
- ❑ I didn't smoke then

35. In the *last 3 months* of your pregnancy, how many cigarettes did you smoke on an average day? A pack has 20 cigarettes.

- ❑ 41 cigarettes or more
- ❑ 21 to 40 cigarettes
- ❑ 11 to 20 cigarettes
- ❑ 6 to 10 cigarettes
- ❑ 1 to 5 cigarettes
- ❑ Less than 1 cigarette
- ❑ I didn't smoke then

36. How many cigarettes do you smoke on an average day *now*? A pack has 20 cigarettes.

- ❑ 41 cigarettes or more
- ❑ 21 to 40 cigarettes
- ❑ 11 to 20 cigarettes
- ❑ 6 to 10 cigarettes
- ❑ 1 to 5 cigarettes
- ❑ Less than 1 cigarette
- ❑ I don't smoke now

The next questions are about using other tobacco products around the time of pregnancy.

E-cigarettes (electronic cigarettes) and other electronic nicotine products (such as vape pens, e-hookahs, hookah pens, e-cigars, e-pipes) are battery-powered devices that use nicotine liquid rather than tobacco leaves, and produce vapor instead of smoke.

A **hookah** is a water pipe used to smoke tobacco. It is not the same as an e-hookah or hookah pen.

37. Have you used any of the following products in the *past 2 years*? For each item, check **No** if you did not use it or **Yes** if you did.

	No	Yes
a. E-cigarettes or other electronic nicotine products	❑	❑
b. Hookah	❑	❑

If you used e-cigarettes or other electronic nicotine products in the *past 2 years*, go to Question 38. Otherwise, go to Question 40.

38. During the 3 *months* before you got pregnant, on average, how often did you use e-cigarettes or other electronic nicotine products?

- ❑ More than once a day
- ❑ Once a day
- ❑ 2-6 days a week
- ❑ 1 day a week or less
- ❑ I did not use e-cigarettes or other electronic nicotine products then

39. During the *last 3 months* of your pregnancy, on average, how often did you use e-cigarettes or other electronic nicotine products?

- ❑ More than once a day
- ❑ Once a day
- ❑ 2-6 days a week
- ❑ 1 day a week or less
- ❑ I did not use e-cigarettes or other electronic nicotine products then

The next questions are about drinking alcohol around the time of pregnancy.

40. Have you had any alcoholic drinks in the *past 2 years*? A drink is 1 glass of wine, wine cooler, can or bottle of beer, shot of liquor, or mixed drink.

- ❑ No → **Go to Question 42**
- ❑ Yes

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

- ❑ 14 drinks or more a week
- ❑ 8 to 13 drinks a week
- ❑ 4 to 7 drinks a week
- ❑ 1 to 3 drinks a week
- ❑ Less than 1 drink a week
- ❑ I didn't drink then

Pregnancy can be a difficult time. The next questions are about things that may have happened *before* and *during* your most recent pregnancy.

42. This question is about things that may have happened during the *12 months before* your new baby was born. For each item, check **No** if it did not happen to you or **Yes** if it did. (It may help to look at the calendar when you answer these questions.)

	No	Yes
a. A close family member was very sick and had to go into the hospital	❑	❑
b. I got separated or divorced from my husband or partner	❑	❑
c. I moved to a new address	❑	❑
d. I was homeless or had to sleep outside, in a car, or in a shelter	❑	❑
e. My husband or partner lost their job	❑	❑
f. I lost my job even though I wanted to go on working	❑	❑
g. My husband, partner, or I had a cut in work hours or pay	❑	❑
h. I was apart from my husband or partner due to military deployment or extended work-related travel	❑	❑
i. I argued with my husband or partner more than usual	❑	❑
j. My husband or partner said they didn't want me to be pregnant	❑	❑
k. I had problems paying the rent, mortgage, or other bills	❑	❑
l. My husband, partner, or I went to jail	❑	❑
m. Someone very close to me had a problem with drinking or drugs	❑	❑
n. Someone very close to me died	❑	❑

43. In the *12 months before you got pregnant* with your new baby, did any of the following people push, hit, slap, kick, choke, or physically hurt you in any other way? For each person, check **No** if they did not hurt you during this time or **Yes** if they did.

	No	Yes
a. My husband or partner	❑	❑
b. My ex-husband or ex-partner	❑	❑
c. Another family member	❑	❑
d. Someone else	❑	❑

44. During *your most recent pregnancy*, did any of the following people push, hit, slap, kick, choke, or physically hurt you in any other way? For each person, check **No** if they did not hurt you during this time or **Yes** if they did.

	No	Yes
a. My husband or partner	❑	❑
b. My ex-husband or ex-partner	❑	❑
c. Another family member	❑	❑
d. Someone else	❑	❑

AFTER PREGNANCY

The next questions are about the time since your new baby was born.

45. When was your new baby born?

____ / ____ / 20____

Month Day Year

46. After your baby was delivered, how long did he or she stay in the hospital?

- ❑ Less than 24 hours (less than 1 day)
- ❑ 24 to 48 hours (1 to 2 days)
- ❑ 3 to 5 days
- ❑ 6 to 14 days
- ❑ More than 14 days
- ❑ My baby was not born in a hospital
- ❑ My baby is still in the hospital → **Go to Question 49**

47. Is your baby alive now?

- ❑ No → *We are very sorry for your loss.* **Go to Page 10, Question 61**
- ❑ Yes

48. Is your baby living with you now?

- ❑ No → **Go to Page 10, Question 60**
- ❑ Yes

49. *Before or after your new baby was born*, did you receive information about breastfeeding from any of the following sources? For each one, check **No** if you did not receive information from this source or **Yes** if you did.

	No	Yes
a. My doctor	❑	❑
b. A nurse, midwife, or doula	❑	❑
c. A breastfeeding or lactation specialist	❑	❑
d. My baby's doctor or health care provider	❑	❑
e. A breastfeeding support group	❑	❑
f. A breastfeeding hotline or toll-free number	❑	❑
g. Family or friends	❑	❑
h. Other	❑	❑

Please tell us:

_____

50. Did you ever breastfeed or pump breast milk to feed your new baby, even for a short period of time?

- ❑ No → **Go to Question 55**
- ❑ Yes

51. Are you currently breastfeeding or feeding pumped milk to your new baby?

- ❑ No
- ❑ Yes → **Go to Question 53**

52. How many weeks or months did you breastfeed or feed pumped milk to your baby?

- ❑ Less than 1 week

_____ Weeks **OR** _____ Months

53. How old was your new baby the first time he or she had liquids other than breast milk (such as formula, water, juice, or cow's milk)?

_____ Weeks **OR** _____ Months

- ❑ My baby was less than 1 week old
- ❑ My baby has not had any liquids other than breast milk

If your baby was not born in a hospital, go to Question 55.

54. This question asks about things that may have happened at the hospital where your new baby was born. For each item, check **No** if it did not happen or **Yes** if it did.

	No	Yes
a. Hospital staff gave me information about breastfeeding	❑	❑
b. My baby stayed in the same room with me at the hospital	❑	❑
c. I breastfed my baby in the hospital	❑	❑
d. Hospital staff helped me learn how to breastfeed	❑	❑
e. I breastfed in the first hour after my baby was born	❑	❑
f. My baby was placed in skin-to-skin contact within the first hour of life	❑	❑
g. My baby was fed only breast milk at the hospital	❑	❑
h. Hospital staff told me to breastfeed whenever my baby wanted	❑	❑
i. The hospital gave me a breast pump to use	❑	❑
j. The hospital gave me a gift pack with formula	❑	❑
k. The hospital gave me a telephone number to call for help with breastfeeding	❑	❑
l. Hospital staff gave my baby a pacifier	❑	❑

If your baby is still in the hospital, go to Page 10, Question 60.

55. In which *one* position do you *most often* lay your baby down to sleep now?

Check ONE answer

- ❑ On his or her side
- ❑ On his or her back
- ❑ On his or her stomach

56. In the *past 2 weeks*, how often has your new baby slept alone in his or her own crib or bed?

- ❑ Always
- ❑ Often
- ❑ Sometimes
- ❑ Rarely
- ❑ Never → **Go to Question 58**

57. When your new baby sleeps alone, is his or her crib or bed in the same room where *you* sleep?

- ❑ No
- ❑ Yes

58. Listed below are some more things about how babies sleep. How did your new baby *usually* sleep in the *past 2 weeks*? For each item, check **No** if your baby did not *usually* sleep like this or **Yes** if he or she did.

	No	Yes
a. In a crib, bassinet, or pack and play	❑	❑
b. On a twin or larger mattress or bed	❑	❑
c. On a couch, sofa, or armchair	❑	❑
d. In an infant car seat or swing	❑	❑
e. In a sleeping sack or wearable blanket	❑	❑
f. With a blanket	❑	❑
g. With toys, cushions, or pillows, including nursing pillows	❑	❑
h. With crib bumper pads (mesh or non-mesh)	❑	❑

59. Did a doctor, nurse, or other health care worker tell you any of the following things? For each thing, check **No** if they did not tell you or **Yes** if they did.

	No	Yes
a. Place my baby on his or her back to sleep	❑	❑
b. Place my baby to sleep in a crib, bassinet, or pack and play	❑	❑
c. Place my baby's crib or bed in my room	❑	❑
d. What things should and should not go in bed with my baby	❑	❑

60. *Since your new baby was born*, has a home visitor come to your home to help you learn how to take care of yourself or your new baby? A home visitor is a nurse, a health care worker, a social worker, or other person who works for a program that helps mothers of newborns.

- ❑ No
- ❑ Yes

61. Are you or your husband or partner doing anything *now* to keep from getting pregnant? Some things people do to keep from getting pregnant include having their tubes tied, using birth control pills, condoms, withdrawal, or natural family planning.

- ❑ No
- ❑ Yes → **Go to Question 63**

62. What are your reasons or your husband's or partner's reasons for not doing anything to keep from getting pregnant *now*?

Check ALL that apply

- ❑ I want to get pregnant
- ❑ I am pregnant now
- ❑ I had my tubes tied or blocked
- ❑ I don't want to use birth control
- ❑ I am worried about side effects from birth control
- ❑ I am not having sex
- ❑ My husband or partner doesn't want to use anything
- ❑ I have problems paying for birth control
- ❑ Other → Please tell us:

If you or your husband or partner is not doing anything to keep from getting pregnant *now*, go to Question 64.

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

Check ALL that apply

- ❑ Tubes tied or blocked (female sterilization or Essure®)
- ❑ Vasectomy (male sterilization)
- ❑ Birth control pills
- ❑ Condoms
- ❑ Shots or injections (Depo-Provera®)
- ❑ Contraceptive patch (OrthoEvra®) or vaginal ring (NuvaRing®)
- ❑ IUD (including Mirena®, ParaGard®, Liletta®, or Skyla®)
- ❑ Contraceptive implant in the arm (Nexplanon® or Implanon®)
- ❑ Natural family planning (including rhythm method)
- ❑ Withdrawal (pulling out)
- ❑ Not having sex (abstinence)
- ❑ Other → Please tell us:

64. *Since your new baby was born*, have you had a postpartum checkup for yourself? A postpartum checkup is the regular checkup a woman has about 4-6 weeks after she gives birth.

- ❑ No → **Go to Question 66**
- ❑ Yes

Go to Question 65

65. *During your postpartum checkup*, did a doctor, nurse, or other health care worker <u>do</u> any of the following things? For each item, check **No** if they did not do it or **Yes** if they did.

	No	Yes
a. Tell me to take a vitamin with folic acid	❑	❑
b. Talk to me about healthy eating, exercise, and losing weight gained during pregnancy	❑	❑
c. Talk to me about how long to wait before getting pregnant again	❑	❑
d. Talk to me about birth control methods I can use after giving birth	❑	❑
e. Give or prescribe me a contraceptive method such as the pill, patch, shot (Depo-Provera®), NuvaRing®, or condoms	❑	❑
f. Insert an IUD (Mirena®, ParaGard®, Liletta®, or Skyla®) or a contraceptive implant (Nexplanon® or Implanon®)	❑	❑
g. Ask me if I was smoking cigarettes	❑	❑
h. Ask me if someone was hurting me emotionally or physically	❑	❑
i. Ask me if I was feeling down or depressed	❑	❑
j. Test me for diabetes	❑	❑

66. *Since your new baby was born*, how often have you felt down, depressed, or hopeless?

- ❑ Always
- ❑ Often
- ❑ Sometimes
- ❑ Rarely
- ❑ Never

67. *Since your new baby was born*, how often have you had little interest or little pleasure in doing things you usually enjoyed?

- ❑ Always
- ❑ Often
- ❑ Sometimes
- ❑ Rarely
- ❑ Never

OTHER EXPERIENCES

The next questions are on a variety of topics.

68. *Before* you got pregnant with your new baby, did your husband or partner ever try to keep you from using your birth control so that you would get pregnant when you didn't want to? For example, did they hide your birth control, throw it away or do anything else to keep you from using it?

- ❑ No
- ❑ Yes

69. At any time during *your most recent* pregnancy, did you work at a job for pay?

- ❑ No → **Go to Question 74**
- ❑ Yes

70. Have you returned to the job you had during *your most recent* pregnancy?

Check ONE answer

- ❑ No, and I do not plan to return → **Go to Question 74**
- ❑ No, but I will be returning
- ❑ Yes

71. Did you take leave from work *after* your new baby was born?

Check ALL that apply

- ❑ I took *paid* leave from my job
- ❑ I took *unpaid* leave from my job
- ❑ I did not take any leave → **Go to Question 73**

72. How many weeks *or* months of leave, in total, did you take or will you take?

_____ Weeks **OR** _____ Months

- ❑ Less than 1 week

73. Did any of the things listed below affect your decision about taking leave from work *after* your new baby was born? For each item, check **No** if it does not apply to you or **Yes** if it does.

	No	Yes
a. I could not financially afford to take leave	❑	❑
b. I was afraid I'd lose my job if I took leave or stayed out longer	❑	❑
c. I had too much work to do to take leave or stay out longer	❑	❑
d. My job does not have paid leave	❑	❑
e. My job does not offer a flexible work schedule	❑	❑
f. I had not built up enough leave time to take any or more time off	❑	❑

If your baby is not alive, is not living with you, or is still in the hospital, go to Question 76.

74. *Since your new baby was born*, would you have the kinds of help listed below if you needed them? For each one, check **No** if you would not have it or **Yes** if you would.

	No	Yes
a. Someone to loan me $50	❑	❑
b. Someone to help me if I were sick and needed to be in bed	❑	❑
c. Someone to talk with about my problems	❑	❑
d. Someone to help me if I were tired and feeling frustrated with my new baby	❑	❑
e. Someone to take me and my baby to the doctor's office if I had no other way of getting there	❑	❑

75. *Since your new baby was born*, how often does your new baby's father contribute things such as money, food, clothing, shelter, or health care to provide for your new baby's basic needs?

- ❑ Always
- ❑ Often
- ❑ Sometimes
- ❑ Rarely
- ❑ Never

76. *Since your new baby was born*, how often does your husband or partner provide you with encouragement and emotional support?

- ❑ Always
- ❑ Often
- ❑ Sometimes
- ❑ Rarely
- ❑ Never

77. *Since your new baby was born*, have you had your teeth cleaned by a dentist or dental hygienist?

- ❑ No
- ❑ Yes

78. Do you have serious difficulty walking or climbing stairs?

- ❑ No
- ❑ Yes

79. Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions?

- ❑ No
- ❑ Yes

80. In what country were you born?

Check ONE answer

- ❑ United States → **Go to Question 82**
- ❑ Puerto Rico
- ❑ Other Country → Please tell us:

_____

81. How old were you when you moved to the United States?

_____ Age in years

82. How often do you think about your race?

Check ONE answer

- ❑ Constantly
- ❑ Once a day
- ❑ Once a week
- ❑ Once a month
- ❑ Once a year
- ❑ Never

83. This question is about things that may have happened during the *12 months before your new baby was born*. For each item, check **No** if it did not happen to you or **Yes** if it did.

	No	Yes
a. I felt that my race or ethnic background contributed to the stress in my life	❑	❑
b. I felt emotionally upset (for example, angry, sad, or frustrated) as a result of how I was treated based on my race or ethnic background	❑	❑
c. I experienced physical symptoms (for example, a headache, an upset stomach, or a pounding heart) that I felt were related to how I was treated based on my race or ethnic background	❑	❑

The last questions are about the time during the *12 months before* your new baby was born.

84. During the *12 months before* your new baby was born, what was your yearly total household income before taxes? Include your income, your husband's or partner's income, and any other income you may have received. *All information will be kept private* and will not affect any services you are now getting.

- ☐ $0 to $16,000
- ☐ $16,001 to $20,000
- ☐ $20,001 to $24,000
- ☐ $24,001 to $28,000
- ☐ $28,001 to $32,000
- ☐ $32,001 to $40,000
- ☐ $40,001 to $48,000
- ☐ $48,001 to $57,000
- ☐ $57,001 to $60,000
- ☐ $60,001 to $73,000
- ☐ $73,001 to $85,000
- ☐ $85,001 or more

85. During the *12 months before* your new baby was born, how many people, *including yourself*, depended on this income?

_____ People

86. What is today's date?

____ / ____ / 20____

Month Day Year

Please use this space for any additional comments you would like to make about your experiences around the time of your pregnancy or the health of mothers and babies in Massachusetts.

Thanks for answering our questions!

Your answers will help us work to keep mothers and babies in Massachusetts healthy.

Appendix D: PRAMS Methodology

Sampling Methodology

The MA PRAMS is an ongoing, population-based surveillance system designed to identify and monitor selected maternal attitudes, experiences and behaviors that occur before, during and after pregnancy. The PRAMS survey consists of three types of questions. All surveys include a required set of questions ("Core" questions), which allow for multi-state analyses. Each state can select additional questions from a CDC-approved-questions list ("Standard" questions), or can create questions tailored to meet its needs ("State-developed" questions). See Appendix C for a copy of the 2012–2015 (phase 7) and 2016–2022 (phase 8) MA PRAMS surveys. The survey was administered in English and Spanish only.

PRAMS survey participants were sampled from a frame of eligible birth certificates which included all live-born infants of Massachusetts resident mothers, delivered in the state, for whom a birth certificate was available. Based on CDC's PRAMS protocol, stillbirths, fetal deaths, induced abortions and multiple births with quadruplets or more were excluded from the sampling frame.

Since 2007, Massachusetts has used a stratified sampling methodology, sampling disproportionately from four racial and Hispanic ethnic groups: (1) White non-Hispanic; (2) Black non-Hispanic; (3) Hispanic; and (4) Other, non-Hispanic. All but White non-Hispanic mothers were oversampled to improve precision in examining disparities by race and ethnicity. For oversampling purposes, the category of Other, non-Hispanic includes all racial and ethnic groups besides White, Black, and Hispanic. Similar to previous reports, in the 2017–2018 report, Massachusetts separates Asian non-Hispanics from the "Other, non-Hispanic" category for analytical purposes. Therefore, the "Other, non-Hispanic" group has a small sample size which resulted in having prevalence estimates with wider 95% confidence limits (95% CL) and the findings in this group should be interpreted with caution. Disability status was ascertained by participants' response to the PRAMS question: "Are you limited in any way in any activities because of physical, mental, or emotional problems?" Additional demographic information was obtained from the birth file, including maternal education, age, marital status, parity, and nativity.

About three percent of Massachusetts mothers with a live birth in our study period were sampled, and received up to three mailed paper surveys. Mothers who did not respond to the survey after the third mailing were contacted by telephone. The survey data were weighted using selected maternal demographics to account for non-response and adjusted for sampling probabilities and coverage to represent the Massachusetts birth population in 2017–2018.

Analyses for the MA PRAMS 2017–2018 report accounted for the stratified sampling method and included the final survey weights. SAS v9.3 and SUDAAN v11.0 were used to calculate prevalence and bivariate statistics. Joinpoint v4.6 was used to examine trends. Joinpoint is a trend analysis tool developed by the National Cancer Institute. It creates a regression model (graph) that best describes the trend in events. It shows the Annual Percentage Change (APC) for each trend and whether it is statistically significance ($P < 0.05$). The 95% CLs are included whenever possible in this report. When comparing estimates, if the 95% CLs do not overlap, we indicate that there is a statistically significant difference. Otherwise, differences that are not significant are reported as having no statistical difference or not statistically significant.

Limitations

The data presented in this report are generalizable only to pregnancies resulting in a live birth of singletons or multiples of fewer than four, to Massachusetts residents who gave birth in the state.

The PRAMS survey is currently only administered in English and Spanish. This might present a limitation in collecting data from mothers with limited proficiency in either of these languages.

Because PRAMS is based on self-reported information, there is the potential for misclassification error. Bias may occur if some groups of mothers recall experiences more or less accurately than others.

Income data were collected; however, about seven percent of respondents declined to report income, and analyses involving household poverty could not include these respondents. In general, income data tend to be underreported on surveys.

In addition, the PRAMS survey did not collect information on gender identity or sexual orientation.

Lastly, while PRAMS data are weighted to reflect the population of mothers giving birth in Massachusetts in 2017–2018, about 38% of those surveyed did not respond and results may be biased if weighting did not account for certain characteristics or experiences associated with non-response.

Sample Size, Response Rates, and Total Births, MA PRAMS, 2007–2018

Sample size, response rates, and total births, MA PRAMS, 2007–2018

Data Years Presented in this Report	Sample Size	Number of Respondents	Weighted Response Rate	Total Massachusetts Resident Births*
2007	2,343	1,489	69.8	77,934
2008	2,354	1,508	71.5	76,969
2009	2,179	1,388	67.9	74,966
2010	2,448	1,514	66.1	72,835
2011	2,506	1,603	68.5	73,169
2012 (Feb. 1 – Dec. 31)	2,495	1,539	67.5	66,853
2013	2,585	1,473	62.0	71,618
2014	2,847	1,546	60.0	71,867
2015	2,328	1,330	62.5	71,484
2016	2,403	1,311	59.9	71,319
2017	2,434	1,423	61.9	70,704
2018	2,450	1,436	62.4	67,838

Source: 2007–2018 Massachusetts PRAMS, Office of Data Translation, Massachusetts Department of Public Health. Note: Estimated PRAMS coverage is 99.8%.

*Massachusetts Births, 2007–2017, Registry of Vital Records and Statistics, Massachusetts Department of Public Health. The 2018 total births are based on preliminary 2018 data as of December 4, 2020.

Sample Characteristics (Weighted)

Sample characteristics (weighted), MA PRAMS, 2017–2018

2017–2018				
Characteristics	**Number of respondents**	**Weighted number**	**PRAMS percent**	**Statewide percent* from MA BC**
Total	2,859	134,904	100.0	100.0
Maternal race/ethnicity (BC)				
White non-Hispanic	709	75,929	56.3	57.5
Black non-Hispanic	621	13,284	9.8	10.4
Hispanic	828	26,640	19.7	19.7
Asian non-Hispanic	528	11,843	8.8	9.2
Other/Unknown	173	7,209	5.3	3.1
Maternal age (BC)				
Less than 20 years	68	2,202	1.6	2.5
20-29 years	1,090	46,776	34.7	35.0
30-39 years	1,572	80,331	59.5	57.9
40 years and older	129	5,595	4.1	4.6
Maternal education (BC)				
Less than high school	264	10,684	8.2	8.8
High school	472	20,830	16.0	16.3
Some college	746	30,845	23.7	25.0
College graduate	1,311	67,662	52.0	49.9
Marital status (BC)				
Married	1,858	91,191	67.6	66.7
Other	1,001	43,713	32.4	33.3
Maternal nativity (BC)				
Non-US-born	1,488	45,751	33.9	33.8
US-born	1,369	89,022	66.1	66.2
Preferred language (BC)				
English	2,431	118,487	88.9	88.8
Spanish	296	10,426	7.8	6.0
Other	115	4,438	3.3	5.2
Federal poverty level (FPL) (PRAMS)				
Below or at 100% FPL	805	29,573	23.1	-
Above 100% FPL	1,857	98,239	76.9	-
Maternal disability status (PRAMS)				
No	2,452	117,593	88.5	-
Yes	356	15,327	11.5	-
Parity (BC)				
No previous live births	1,240	58,798	43.7	43.4
Previous live births	1,616	75,855	56.3	56.6

*Massachusetts Births, 2017–2018, preliminary data, Registry of Vital Records and Statistics, Massachusetts Department of Public Health. BC = Birth Certificate.

PRAMS sample characteristics compared to Massachusetts birth population

Race/Hispanic ethnicity and nativity

After applying sampling weights, MA PRAMS 2017–2018 respondents were largely reflective of the overall population of Massachusetts mothers giving birth to a live-born infant by race/Hispanic ethnicity. White non-Hispanics represented 56.3% of the PRAMS sample, Black non-Hispanics, 9.8%, Hispanics 19.7%, Asian non-Hispanics, 8.8%, and Other, non-Hispanics/unknown, 5.3%. About 34% of the respondents were not born in the United States and this profile is similar to what was reported according to birth certificate records in Massachusetts (**Table 56**).

Age

The majority of the respondents (59.5%) were aged 30-39 years, followed by 34.7% of mothers aged 20-29 years. The age distribution of the respondents is similar to the distribution of mothers giving birth according to birth certificate records.

Education

About 52% of the respondents had at least a college degree. The educational profile of the respondents is similar to that of all mothers giving birth in Massachusetts according to birth certificate records.

Marital status

The majority of the respondents (67.6%) were married, similar to mothers giving birth in Massachusetts according to birth certificate records.

Preferred language

The majority of PRAMS respondents, 88.9%, preferred to read or discuss health-related materials in English, followed by Spanish, 7.8%, and all other languages, 3.3%. The preferred language distribution of the respondents is similar to that of all mothers giving birth in Massachusetts according to birth certificate records.

Income

About 23% of the respondents reported living at or below 100% of the Federal Poverty Level in the year before their child was born. For a family of four, the household income at 100% Federal Poverty Level was $25,100 in 2018. Income and household size are not currently collected on the birth certificate.

Disability

About 12% of the respondents reported having a current physical or cognitive disability. Disability status is not currently collected on the birth certificate.

Parity

About 44% of respondents were first-time mothers and this profile is similar to the prevalence of first-time mothers giving birth in Massachusetts according to the birth certificate.

Appendix E: References

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