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RHODE ISLAND  
PREGNANCY  
RISK ASSESSMENT  
MONITORING SYSTEM  
DATA BOOK

3rd Edition



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Rhode Island: [www.health.ri.gov/prams](http://www.health.ri.gov/prams)

Centers for Disease Control and Prevention (CDC): [www.cdc.gov/prams](http://www.cdc.gov/prams)

For previous editions of RI PRAMS data book:

1st edition: [www.health.ri.gov/publications/databooks/2012PregnancyRiskAssessmentMonitoringSystem.pdf](http://www.health.ri.gov/publications/databooks/2012PregnancyRiskAssessmentMonitoringSystem.pdf)

2nd edition: [www.health.ri.gov/publications/databooks/2014PregnancyRiskAssessmentMonitoringSystem.pdf](http://www.health.ri.gov/publications/databooks/2014PregnancyRiskAssessmentMonitoringSystem.pdf)

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## INTRODUCTION

The goal of the Rhode Island Pregnancy Risk Assessment Monitoring System (PRAMS) Program is to improve the health of mothers and infants by providing accurate, timely, and comprehensive data to decision makers, health professionals, and the general public. To this end, the Rhode Island PRAMS Program collects, monitors, analyzes, and disseminates information on a variety of maternal behaviors and experiences that may be associated with maternal and infant health outcomes.

This third edition of the Rhode Island PRAMS data book provides information on 15 health topics regarding maternal behaviors and experiences before, during, and shortly after pregnancy using the Rhode Island PRAMS data. The 15 topics include unintended pregnancy, pre-pregnancy obesity, pre-pregnancy multi-vitamin use, intimate partner violence, cigarette smoking, prenatal care, flu vaccination, HIV testing, dental care, perinatal depression, low birth weight, preterm birth, breastfeeding, infant safe sleep practices, and postpartum contraception use. These topics were selected by the Rhode Island PRAMS Steering Committee as the key factors that may contribute to maternal and infant health during perinatal periods (the periods around childbirth). This data book focuses on monitoring the prevalence of health problems over time and identifying groups at high risk for problems. The data in this book are intended to be used to help guide policy, decision making, program planning, other efforts to reduce health disparities among groups, and improve the health of pregnant women and their infants in Rhode Island. The first and the second editions of the Rhode Island PRAMS data book can be viewed in the links below:



First edition: [www.health.ri.gov/publications/databooks/2012PregnancyRiskAssessmentMonitoringSystem.pdf](http://www.health.ri.gov/publications/databooks/2012PregnancyRiskAssessmentMonitoringSystem.pdf)

Second edition: [www.health.ri.gov/publications/databooks/2014PregnancyRiskAssessmentMonitoringSystem.pdf](http://www.health.ri.gov/publications/databooks/2014PregnancyRiskAssessmentMonitoringSystem.pdf)

# What is PRAMS?

PRAMS is a cooperative surveillance project of the Centers for Disease Control and Prevention (CDC) and state health departments, which collects state-specific, population-based data on maternal behaviors and experiences before, during, and shortly after pregnancy.<sup>1</sup> PRAMS was initiated in 1987 and the survey instrument is revised periodically. The PRAMS survey instrument consists of three parts: core questions that all states must include, standardized optional questions that states may select from, and state-developed questions that reflect state-specific issues.<sup>1,2</sup>

Rhode Island has collected PRAMS data since 2002, along with 47 states, New York City, Puerto Rico, the District of Columbia, and the Great Plains Tribal Chairmen’s Health Board (GPTCHB).<sup>1,2</sup> Each year, about 1,900 women who delivered a live infant in Rhode Island are randomly selected from the State’s birth file as a PRAMS sample, which represents more than 18% of women who have recently given birth to a live infant in the state.<sup>2</sup> The Rhode Island PRAMS Program selects all mothers delivering a low birth weight baby to ensure adequate data in the smaller, but higher-risk, populations.<sup>2</sup> The survey collects information about core city residence<sup>a</sup> to evaluate risks among women in this population. The survey is mailed to the mothers who are selected up to three times, and then follow-up phone calls are made for non-respondents.<sup>1,2</sup> The survey is conducted two to six months postpartum and is available in both English and Spanish. Currently, CDC requires a minimum response rate of 55% to analyze and use the data.<sup>2</sup> More detailed information is available on CDC and RIDOH’s PRAMS web pages.<sup>1,2</sup>

A summary of the Rhode Island PRAMS population size, number of survey respondents, and weighted response rate for 2002-2015 appears below.

Year	Rhode Island PRAMS Population Size	Rhode Island Number of Respondents	Rhode Island Weighted Response Rate	Response Rate Required by CDC	PRAMS Survey Phase
2002	12,179	1,414	71.7	70	4
2003	12,426	1,533	71.8	70	4
2004	12,064	1,506	75.5	70	5
2005	12,013	1,424	75.1	70	5
2006	11,732	1,360	72.5	70	5
2007	11,802	1,372	72.1	65	5
2008	11,467	1,297	70.4	65	5
2009	10,910	1,294	71.4	65	6
2010	10,652	1,282	68.0	65	6
2011	10,469	1,252	69.2	65	6
2012	10,410	1,211	65.1	60	7
2013	10,231	1,202	62.0	60	7
2014	10,209	1,229	62.3	60	7
2015	10,232	1,045	51.6	55	7

NOTE: 2015 is the first year that Rhode Island’s weighted response rate is below CDC’s required response rate. This may impact slightly the data in this report.

<sup>a</sup> Beginning in 2012, four core cities were identified as Rhode Island communities in which more than 25% of the children live below the poverty threshold according to the 2006-2010 American Community Survey, conducted by the US Census Bureau. The four core cities are Central Falls, Pawtucket, Providence, and Woonsocket.

# About This Data Book

The topics presented in this data book are organized according to the pregnancy periods: **before pregnancy** (unintended pregnancy, pre-pregnancy obesity, pre-pregnancy multi-vitamin use), **during pregnancy** (intimate partner violence, cigarette smoking, prenatal care, flu vaccination, HIV testing, dental care, perinatal depression), and **after pregnancy** (low birth weight, preterm birth, breastfeeding, infant safe sleep practices, postpartum contraception use). Each topic includes the definition and significance of the health issue, the Healthy People 2020 Target, prevalence and trend data, demographic characteristics, associations with maternal risk behaviors and birth outcomes, and other related information. Graphs and a brief explanation on reading them are also included.

The 2012-2015 Rhode Island PRAMS data (Phase 7) were analyzed to describe demographic characteristics and related health risks for each topic. In the trend graphs, the 2004-2015 data are presented if the 2004-2008 (Phase 5) and the 2009-2011 (Phase 6) data are available and consistent with 2012-2015 (Phase 7) data. The trend of the prevalence was examined using logistic regression analyses with linear trend tests. Throughout this data book, weighted data are used to represent all women who delivered a live birth in Rhode Island. The p-values from the chi-square tests are presented in the graphs to determine the statistical significance of the differences among groups. The p-values less than 0.05 are considered statistically significant in this data book, and the smaller p-values reflect stronger evidence of significant differences among the groups compared. The response categories of *don't know* and *refused* are excluded from the analyses, unless otherwise stated. Healthy People 2020 objectives are introduced for relevant health topics, if available.

A description of the Rhode Island PRAMS population for 2015, the PRAMS Phase 7 questionnaire, and detailed data tables for each topic are included in appendices A and B.

## Limitations

The data reported in this data book have several limitations. First, since the PRAMS data are based on self-reporting and are not verified by a physician or medical records, it can be subject to a recall bias or a bias towards the socially-desirable answer. Second, certain high-risk populations may be under-represented in the estimates due to non-response or non-coverage bias. Third, the PRAMS Program samples only women who have delivered a live infant, so the estimates cannot be extrapolated to all pregnant women in Rhode Island. Nevertheless, the PRAMS survey is an important data source that provides data not available from other sources about pregnancy and the first few months after birth.

## References

<sup>1</sup> Centers for Disease Control and Prevention (CDC). Pregnancy Risk Assessment Monitoring System (PRAMS): Home. [www.cdc.gov/prams](http://www.cdc.gov/prams)

<sup>2</sup> State of Rhode Island, Department of Health. Pregnancy Risk Assessment Monitoring System. [www.health.ri.gov/programs/pregnancyriskassessmentmonitoring](http://www.health.ri.gov/programs/pregnancyriskassessmentmonitoring)





# 1. UNINTENDED PREGNANCY

## Definition and Significance

An unintended pregnancy is defined as a pregnancy that is either mistimed (the woman wanted to be pregnant later) or unwanted (she did not want to be pregnant then or at any time in the future) at the time of conception.<sup>3</sup> An unintended pregnancy may influence a woman's behaviors and experiences during and after pregnancy and is associated with increased risk of complications for both the mother and the baby.<sup>3</sup> For instance, women with an unintended pregnancy may receive delayed prenatal care or use tobacco and alcohol during pregnancy, which can cause adverse effects for both mothers and infants.<sup>3</sup> Unintended pregnancy mainly results from not using contraception or incorrect/inconsistent use of effective contraceptive methods.<sup>3</sup>

The PRAMS survey asks mothers about the timing and intention of their pregnancy at the time of conception: *Thinking back to just before you got pregnant with your new baby, how did you feel about becoming pregnant?* Response options include *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, and I wasn't sure what I wanted.* Women who responded that they wanted to be pregnant sooner or then were classified as having intended pregnancies. The PRAMS survey also asks mothers about their reasons for not using birth control.

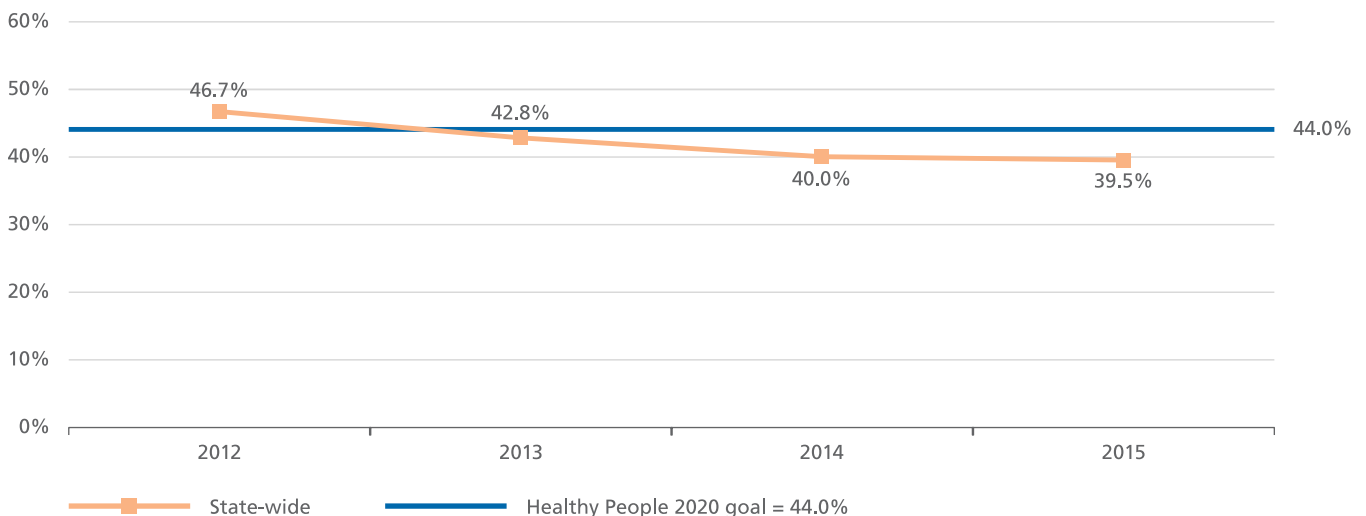
## Healthy People 2020 Target

FP-1: Increase the proportion of pregnancies that are intended to 56% (or reduce the proportion of pregnancies that are unintended to 44%).<sup>4</sup>

## Prevalence and Trends, 2012-2015

The proportion of Rhode Island mothers who had an unintended pregnancy decreased significantly from 46.7% in 2012 to 39.5% in 2015 (p-value less than 0.01). The Healthy People 2020 goal of reducing the proportion of unintended pregnancies to 44%<sup>4</sup> has been achieved since 2013. The pregnancy intention questions were changed in Phase 7, so the 2004-2011 data are not comparable with the 2012-2015 data and are not reported here.

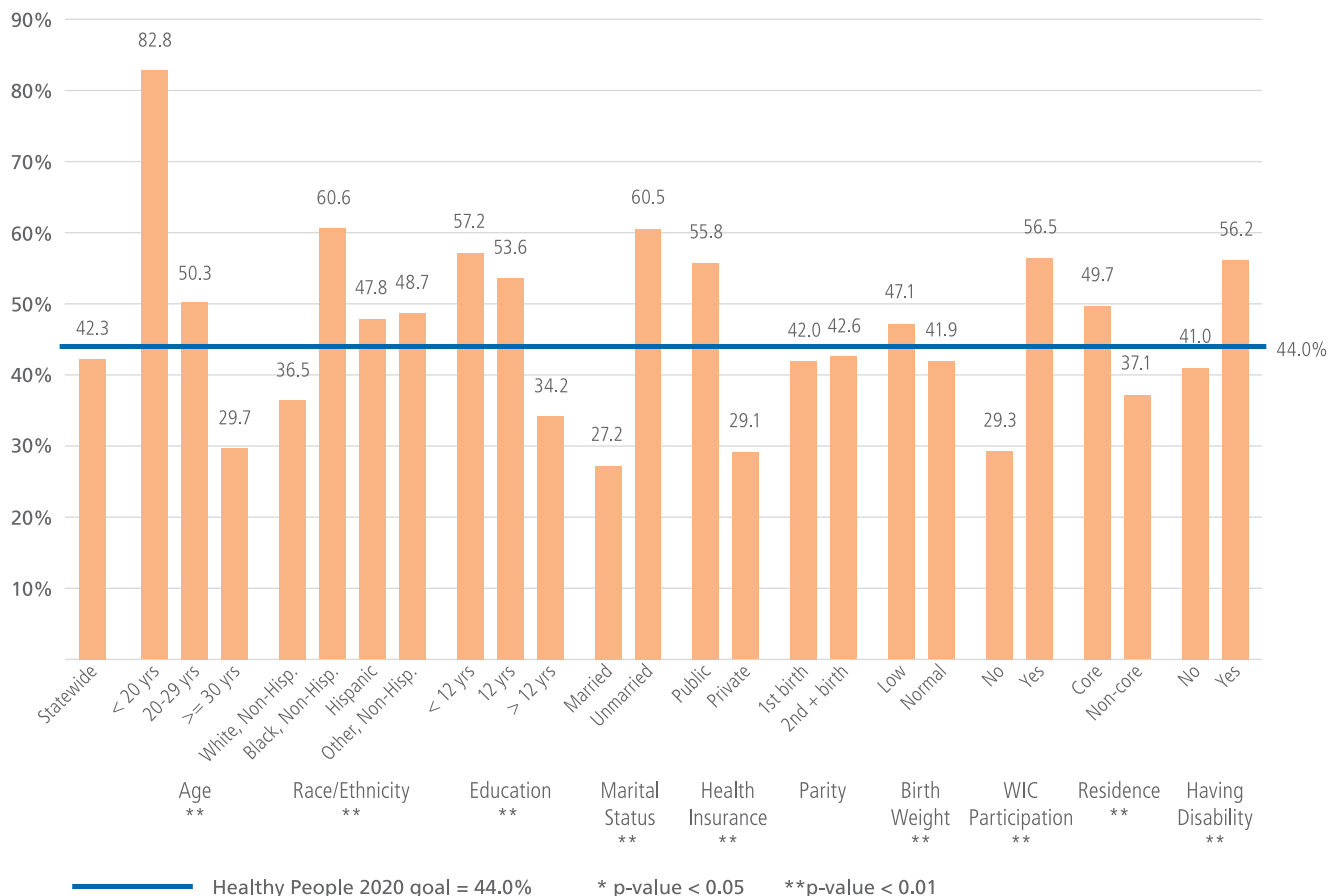
**FIGURE 1-1: UNINTENDED PREGNANCY BY YEAR, RHODE ISLAND, 2012-2015**



## Demographic Characteristics, 2012-2015

- » The overall prevalence of Rhode Island mothers with an unintended pregnancy was 42.3%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with unintended pregnancy included age, race/ethnicity, educational level, marital status, health insurance type, birth weight, participation in the Women, Infants, and Children (WIC) program, core city residence, and self-reported disability status.
  - » Mothers who were younger than 20 (82.8%), Black non-Hispanic (60.6%), were unmarried (60.5%), had less than 12 years of education (57.2%), had public health insurance (55.8%), had a low birth weight infant (47.1%), participated in the WIC program (56.5%), resided in a core city (49.7%), and had a self-reported disability (56.2%) had a higher prevalence of unintended pregnancy compared with their counterparts.

**FIGURE 1-2: UNINTENDED PREGNANCY BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**

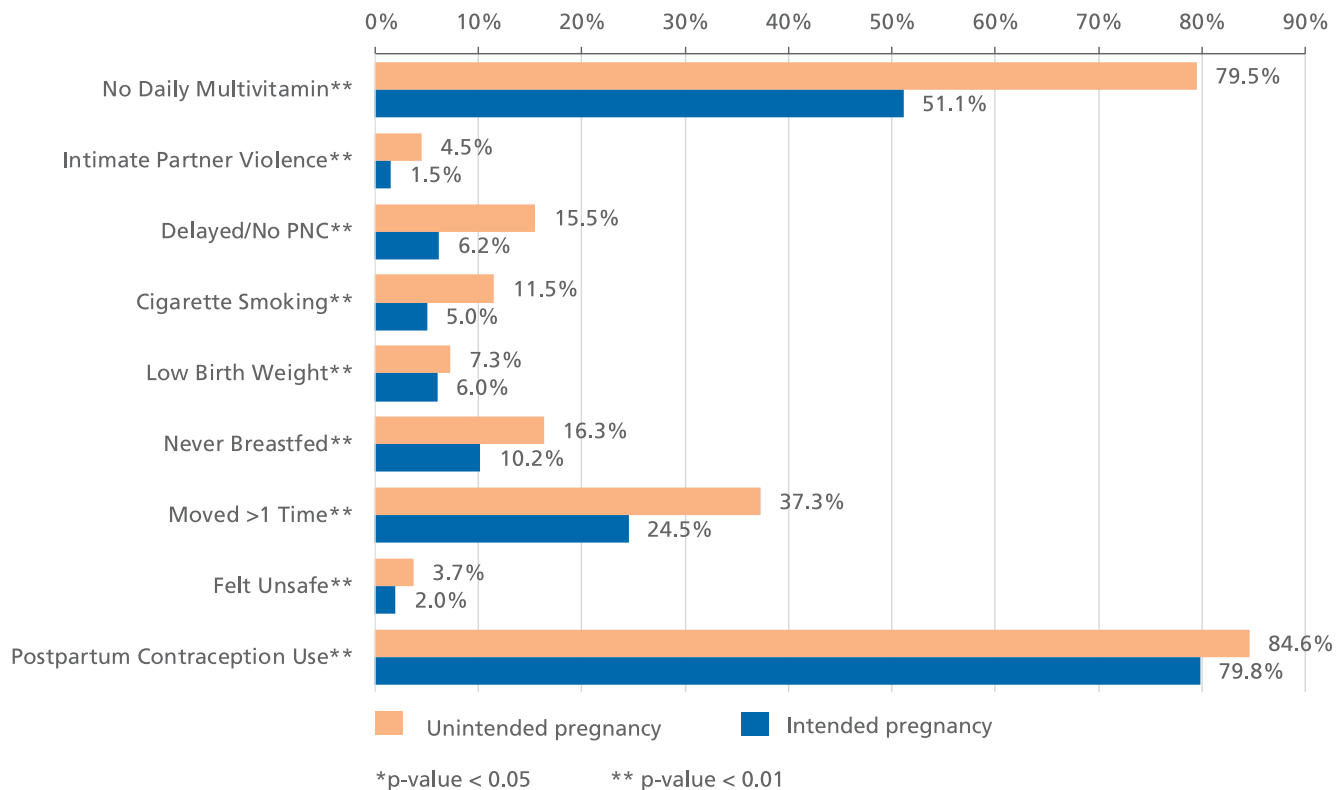


# Risk Behaviors and Outcomes by Pregnancy Intention, 2012-2015

Mothers who had an unintended pregnancy, compared to mothers who had an intended pregnancy, were significantly (p-value less than 0.05) more likely to report that:

- » They did not take multi-vitamins daily in the month prior to pregnancy (79.5% versus 51.1%).
- » They experienced intimate partner violence during the 12 months before or during pregnancy (4.5% versus 1.5%).
- » They had delayed or no prenatal care (PNC) visits (15.5% versus 6.2%).
- » They smoked during their pregnancy (11.5% versus 5.0%).
- » They had a low birth weight baby (7.3% versus 6.0%).
- » They never breastfed their baby (16.3% versus 10.2%).
- » They moved more than one time in the previous three years (37.7% versus 24.5%).
- » They felt unsafe in their neighborhood in the 12 months before their baby was born (3.7% versus 2.0%).
- » They were using postpartum contraception at the time of the survey (84.6% versus 79.8%).

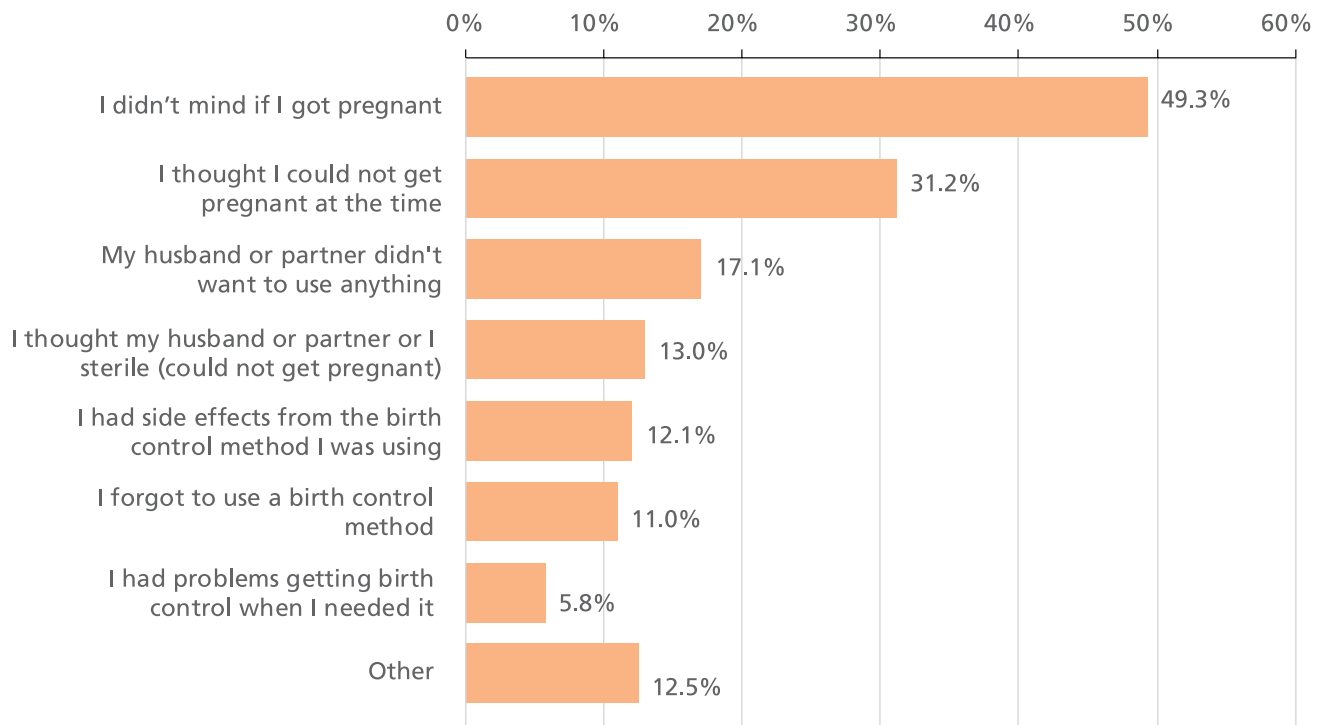
**FIGURE 1-3: RISK BEHAVIORS AND OUTCOMES BY PREGNANCY INTENTION, RHODE ISLAND, 2012-2015**



## Reasons for Not Using Birth Control, 2012-2015

Among women who were not trying to get pregnant, 52.6% did not use birth control at the time of pregnancy. Of those who were not trying to get pregnant and did not use birth control at the time of pregnancy, the most common reasons for not using birth control were they did not mind if they got pregnant (49.3%), they thought they could not get pregnant at that time (31.2%), and their husbands or partners did not want to use anything to prevent pregnancy (17.1%).

**FIGURE 1-4: REASONS FOR NOT USING BIRTH CONTROL, RHODE ISLAND, 2012-2015**



## References

<sup>3</sup> Centers for Disease Control and Prevention (CDC). Unintended Pregnancy Prevention: Home. [www.cdc.gov/reproductivehealth/unintendedpregnancy](http://www.cdc.gov/reproductivehealth/unintendedpregnancy)

<sup>4</sup> US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020, Family Planning. [www.healthypeople.gov/2020/topics-objectives/topic/family-planning/objectives](http://www.healthypeople.gov/2020/topics-objectives/topic/family-planning/objectives)

## 2. PRE-PREGNANCY OBESITY

### Definition and Significance

Body mass index (BMI) is calculated by dividing a person's weight in kilograms by the square of height in meters ( $\text{kg}/\text{m}^2$ ).<sup>5</sup> Obesity for adults is defined as having a BMI of 30 or higher.<sup>5</sup> Maternal obesity during pregnancy is associated with many complications such as gestational diabetes, preeclampsia, eclampsia, cesarean section, macrosomia, and fetal distress.<sup>6</sup> A study, published in 2013 using the PRAMS data from 20 states, reported that the prevalence of pre-pregnancy obesity increased from 17.6% in 2003 to 20.5% in 2009.<sup>7</sup>

The PRAMS survey asks mothers about their weight prior to pregnancy and their height without shoes to calculate their pre-pregnancy BMI.

In the 2012 edition, presenting PRAMS phase 5 (2004-2008) data, pre-pregnancy obesity was calculated as having a BMI of higher than 29, which represented the old definition. Here, we recalculated phase 5 data using a new definition of a BMI of 30 or higher to be consistent for all years.

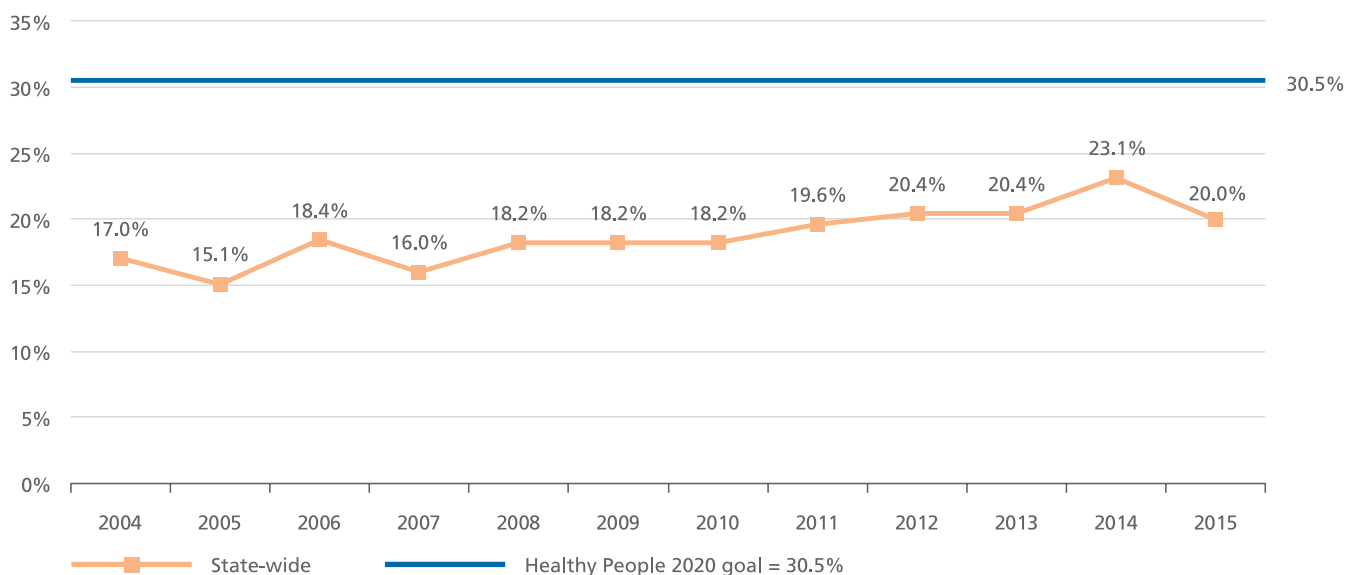
### Healthy People 2020 Target

NWS-9: Reduce the proportion of adults who are obese to 30.5%.<sup>8</sup>

### Prevalence and Trends, 2004-2015

The prevalence of Rhode Island mothers who were obese prior to pregnancy ranged from 15.1% to 23.1% between 2004 and 2015, which represents a significant increase during the period (p-value less than 0.001). The Healthy People 2020 goal of reducing the adult obesity rate to 30.5%<sup>8</sup> has been achieved since 2002, when Rhode Island started to collect the PRAMS data.

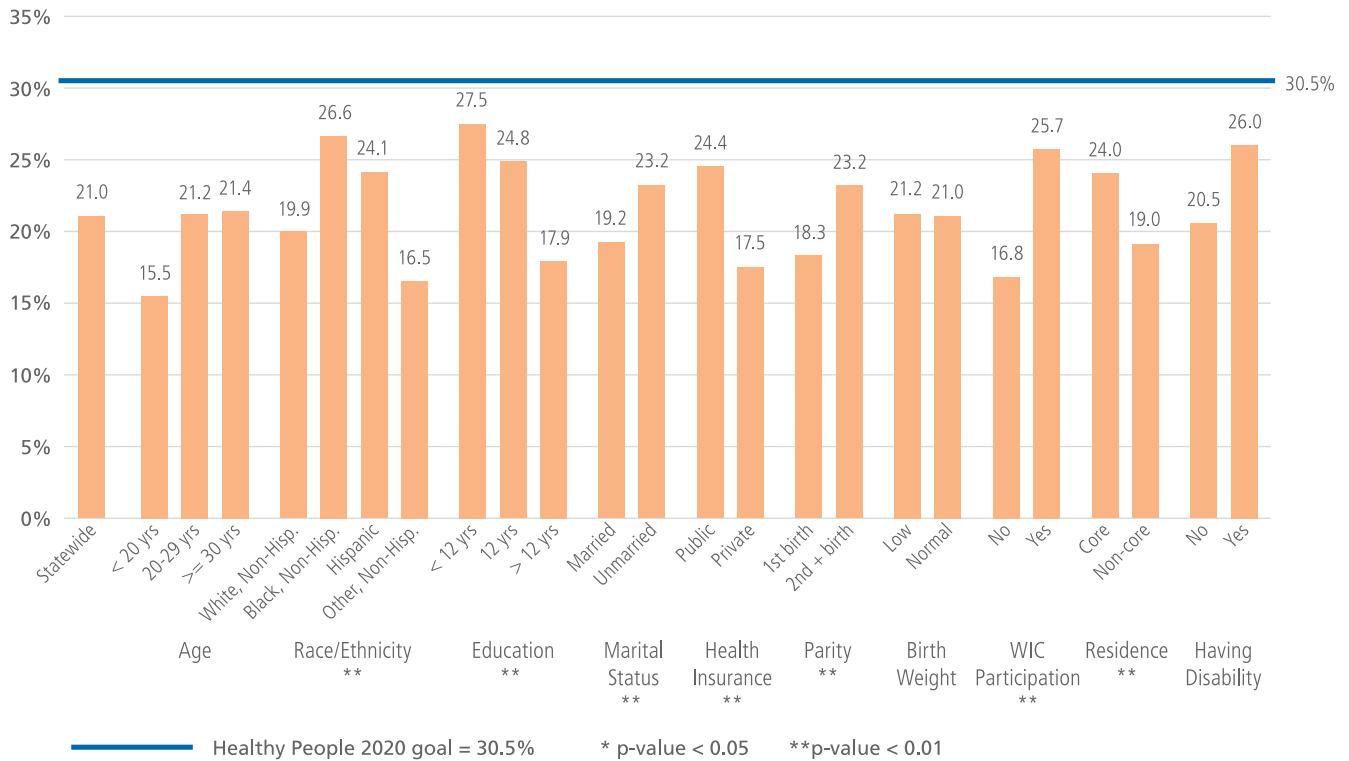
**FIGURE 2-1: PRE-PREGNANCY OBESITY BY YEAR, RHODE ISLAND, 2004-2015**



## Demographic Characteristics, 2012-2015

- » The overall prevalence of Rhode Island mothers being obese prior to pregnancy was 21.0%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with pre-pregnancy obesity included race/ethnicity, education level, marital status, health insurance type, parity, participation in the WIC program, and core city residence.
- » Mothers who were Black non-Hispanic (26.6%), had less than 12 years of education (27.5%), were unmarried (23.2%), had public health insurance (24.4%), had their second or later birth (23.2%), participated in the WIC program (25.7%), and resided in a core city (24.0%) had a higher prevalence of pre-pregnancy obesity compared with their counterparts.
- » All of the demographic groups met the Healthy People 2020 goal of a 30.5% obesity rate.

**FIGURE 2-2: PRE-PREGNANCY OBESITY BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**

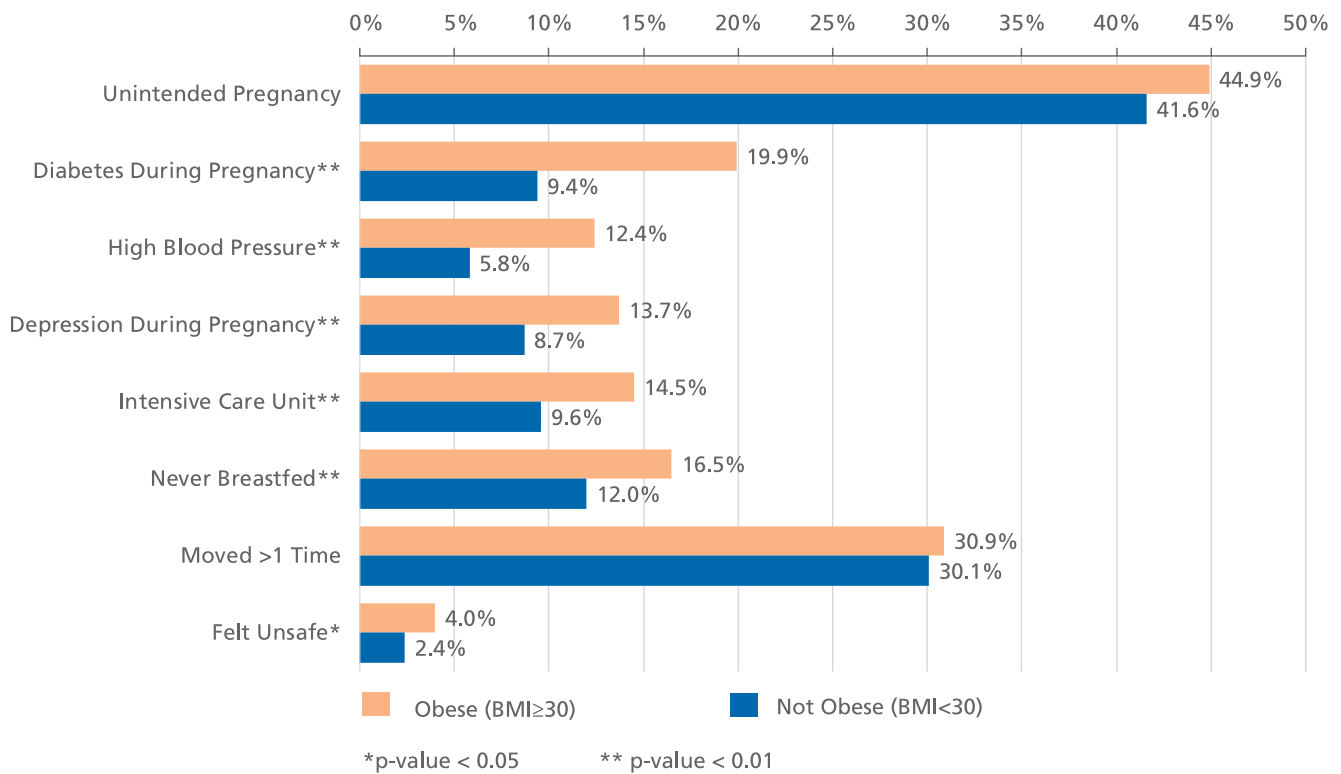


# Risk Behaviors and Outcomes by Pre-Pregnancy Obesity, 2012-2015

Mothers who were obese prior to pregnancy, compared to mothers who were not obese, were significantly (p-value less than 0.05) more likely to report that:

- » They had high blood sugar (diabetes) that started during the pregnancy (19.9% versus 9.4%).
- » They had high blood pressure (12.4% versus 5.8%).
- » They were diagnosed with depression during pregnancy (13.7% versus 8.7%).
- » Their baby was put in an intensive care unit after the baby was born (14.5% versus 9.6%).
- » They never breastfed their baby (16.5% versus 12.0%).
- » They felt unsafe in their neighborhood in the 12 months before their baby was born (4.0% versus 2.4%).

**FIGURE 2-3: RISK BEHAVIORS AND OUTCOMES BY PRE-PREGNANCY OBESITY, RHODE ISLAND, 2012-2015**





## References

- <sup>5</sup> Centers for Disease Control and Prevention (CDC). Overweight and Obesity. <https://www.cdc.gov/obesity/adult/defining.html>
- <sup>6</sup> The American College of Obstetricians and Gynecologists (ACOG): Obesity and Pregnancy FAQ. <https://www.acog.org/Patients/FAQs/Obesity-and-Pregnancy>
- <sup>7</sup> Fisher SC, Kim SY, Sharma AJ, Rochat R, Morrow B. Is obesity still increasing among pregnant women? Pre-pregnancy obesity trends in 20 states, 2003-2009. *Prev med.* 2013 Jun;56(6):372-8.
- <sup>8</sup> US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020, Nutrition and Weight. [www.healthypeople.gov/2020/topics-objectives/topic/nutrition-and-weight-status/objectives](http://www.healthypeople.gov/2020/topics-objectives/topic/nutrition-and-weight-status/objectives)

## Related Publication

Kim H, Monteiro K, Phanthavong S, Viner-Brown S. Pre-pregnancy Obesity and Adverse Health Conditions in Rhode Island. *Rhode Island Medical Journal*, March 2015:39-41. Available from: <http://rimed.org/rimedicaljournal/2015/03/2015-39-health-kim.pdf>



### 3. PRE-PREGNANCY MULTI-VITAMIN USE

#### Definition and Significance

The daily consumption of 400 micrograms (mcg) of folic acid before conception and during the first trimester is recommended in order to reduce the occurrence of neural tube defects (NTDs).<sup>9,10</sup> NTDs, including spina bifida and anencephaly, affect an estimated 3,000 pregnancies annually in the United States and are among the most common birth defects that contribute to perinatal mortality, infant mortality, and serious disability in surviving children.<sup>9,10</sup> Although folic acid can be obtained from fortified foods or dietary supplements containing folic acid, not all women obtain an adequate level of folic acid through their diet.<sup>9,10</sup> Therefore, taking daily multi-vitamins is recommended since they generally contain 400 mcg of folic acid.<sup>9,10</sup>

The PRAMS survey asks mothers how many times a week they took a multi-vitamin, a prenatal vitamin, or a folic acid vitamin during the month before they got pregnant. The response options include *I didn't take a multivitamin, prenatal vitamin or folic acid vitamin in the month before I got pregnant, one to three times a week, four to six times a week, and every day of the week.*

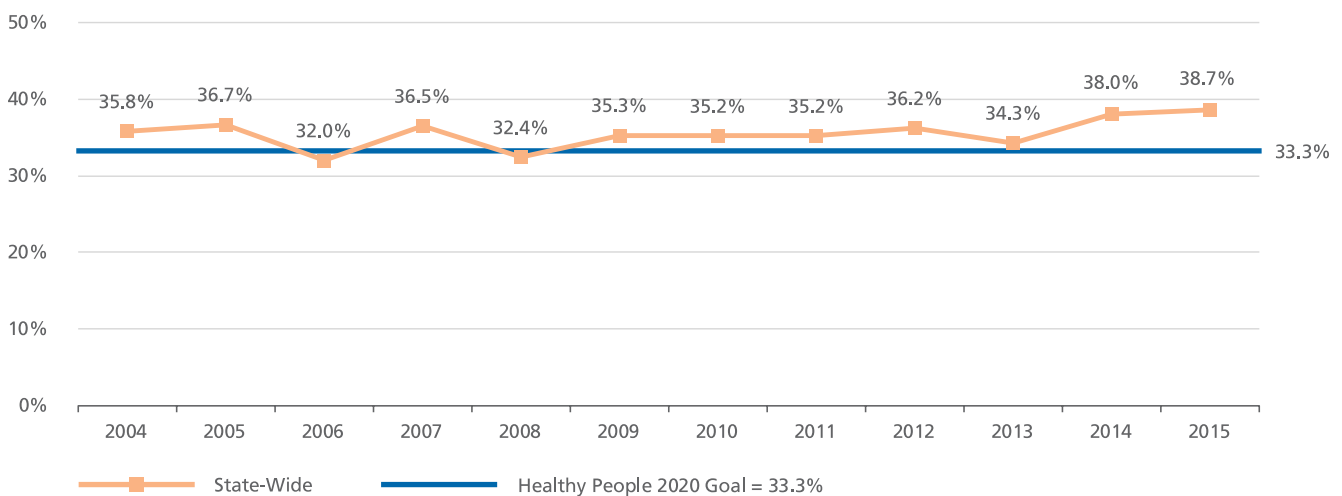
#### Healthy People 2020 Target

MICH-16.2: Increase the proportion of women delivering a live birth who took multi-vitamins/folic acid prior to pregnancy to 33.3%.<sup>11</sup>

#### Prevalence and Trends, 2004-2015

The proportion of Rhode Island mothers who took a daily multi-vitamin during the month prior to pregnancy ranged from 32.0% to 38.7% during 2004-2015. However, the linear trend was not statistically significant. Rhode Island had achieved the Healthy People 2020 goal of increasing the proportion of women delivering a live birth who took multi-vitamins/folic acid every day prior to pregnancy to 33.3%<sup>11</sup> for all years except for 2006 and 2008.

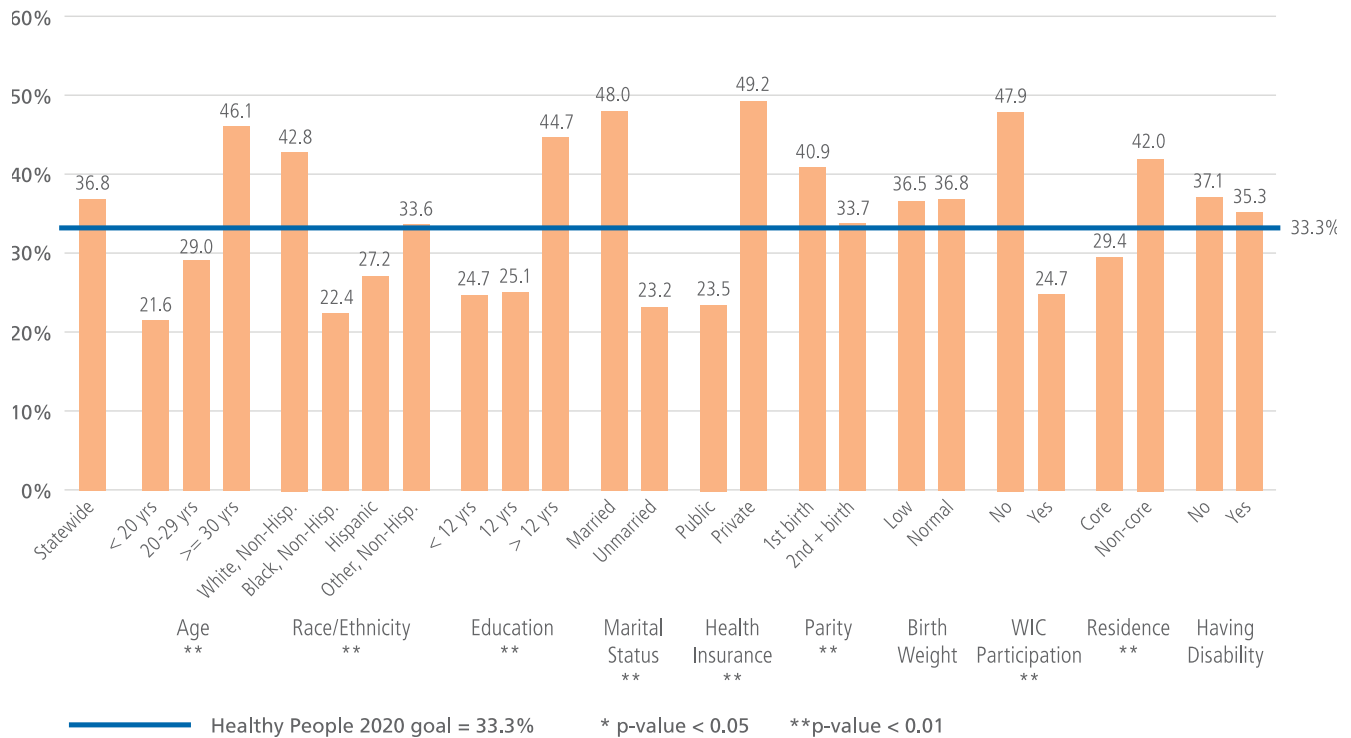
**FIGURE 3-1: DAILY MULTI-VITAMIN USE PRIOR TO PREGNANCY BY YEAR, RHODE ISLAND, 2004-2015**



## Demographic Characteristics, 2012-2015

- » The overall prevalence of Rhode Island mothers taking a daily multi-vitamin prior to pregnancy was 36.8%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with daily multi-vitamin use prior to pregnancy included age, race/ethnicity, education level, marital status, health insurance type, parity, participation in the WIC program, and core city residence.
  - » Mothers who were 30 or older (46.1%), White non-Hispanic (42.8%), were married (48.0%), had more than 12 years of education (44.7%), had private health insurance (49.2%), had their first birth (40.9%), did not participate in the WIC program (47.9%), and resided in a non-core city (42.0%) had a higher prevalence of daily multi-vitamin use prior to pregnancy compared with their counterparts.

**FIGURE 3-2: DAILY MULTI-VITAMIN USE PRIOR TO PREGNANCY BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**

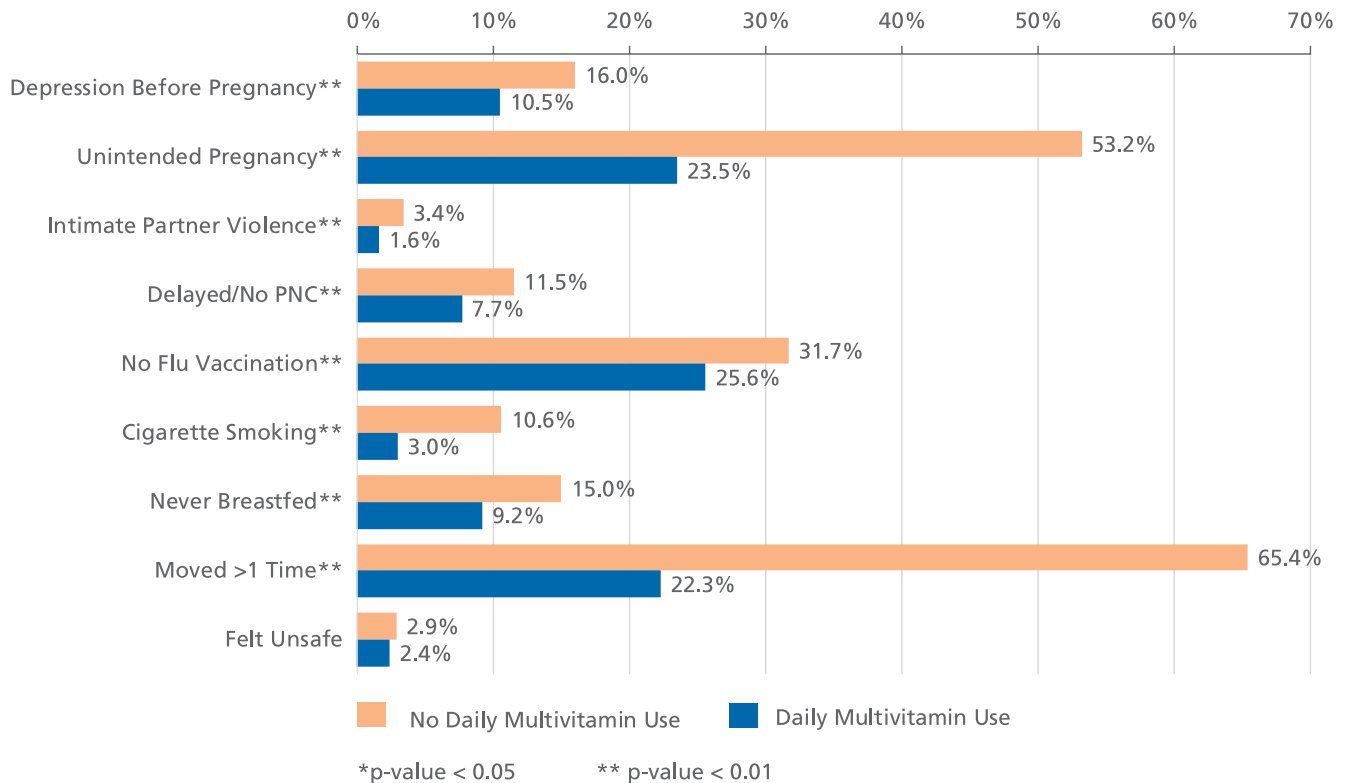


## Risk Behaviors and Outcomes by Daily Multi-Vitamin Use, 2012-2015

Mothers who did not take a daily multi-vitamin prior to pregnancy, compared to mothers who took a daily multi-vitamin, were significantly (p-value less than 0.05) more likely to report that:

- » They experienced depression before pregnancy (16.0% versus 10.5%).
- » Their pregnancy was unintended (53.2% versus 23.5%).
- » They experienced intimate partner violence before or during pregnancy (3.4% versus 1.6%).
- » They had delayed or no prenatal care (PNC) visits (11.5% versus 7.7%).
- » They did not get a flu vaccination during the 12 months before baby’s delivery (31.7% versus 25.6%).
- » They smoked during their pregnancy (10.6% versus 3.0%).
- » They never breastfed their baby (15.0% versus 9.2%).
- » They moved more than one time in the last three years (65.4% versus 22.3%).

**FIGURE 3-3: RISK BEHAVIORS AND OUTCOMES BY DAILY MULTI-VITAMIN USE, RHODE ISLAND, 2012-2015**



## References

<sup>9</sup> Centers for Disease Control and Prevention (CDC). Folic Acid.

[www.cdc.gov/ncbddd/folicacid/index.html](http://www.cdc.gov/ncbddd/folicacid/index.html)

<sup>10</sup> Centers for Disease Control and Prevention (CDC). Folic Acid: Questions and Answers.

<https://www.cdc.gov/ncbddd/folicacid/faqs/index.html>.

<sup>11</sup> US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020, Maternal, Infant, and Child Health.

[www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives](http://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives)

## Related Publication

Kim H, Cain R, Viner-Brown S, Yang M. Multivitamin Use prior to Pregnancy in Rhode Island.

*Medicine & Health / Rhode Island*, Vol. 94 (No. 9):276-278, September 2011.

[www.rimed.org/medhealthri/2011-09/2011-09-276.pdf](http://www.rimed.org/medhealthri/2011-09/2011-09-276.pdf)



## 4. INTIMATE PARTNER VIOLENCE BEFORE OR DURING PREGNANCY

### Definition and Significance

Intimate partner violence (IPV) usually includes four types of behavior: physical violence, sexual violence, stalking, and psychological aggression.<sup>12</sup> It occurs between two people in a close relationship, including current and former partners.<sup>12</sup> In the US about one in six murder victims are killed by an intimate partner, and nearly half of female murder victims are killed by an intimate partner.<sup>12,13</sup> Victims of IPV usually suffer physical injuries, emotional harm, eating disorders, depression, and other adverse health outcomes.<sup>12</sup> They often practice harmful health behaviors such as tobacco and alcohol use.<sup>12</sup>

The PRAMS survey asks mothers two questions regarding IPV (one question for before pregnancy and one question for during pregnancy): whether husband or partner pushed, hit, slapped, kicked, choked, or physically hurt them in any other way during the 12 months before pregnancy or during pregnancy. In this data book, mothers who responded yes to one or both questions were defined as having experienced IPV.

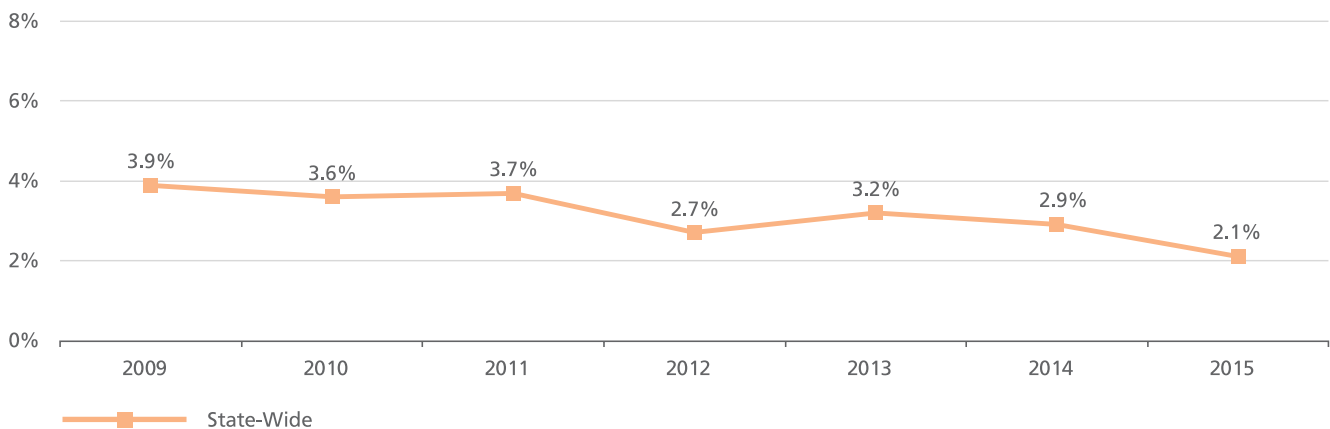
### Healthy People 2020 Target

IVP-39.1: (Developmental) Reduce physical violence by current or former intimate partners.<sup>14</sup>

### Prevalence and Trends, 2009-2015

The proportion of Rhode Island mothers who experienced IPV at any time during the 12 months before pregnancy or during pregnancy decreased significantly from 3.9% in 2009 to 2.1% in 2015 (p-value less than 0.05). The IPV questions were changed in Phase 6 and 7, so the 2004-2008 data are not comparable with the 2009-2015 data and are not reported here.

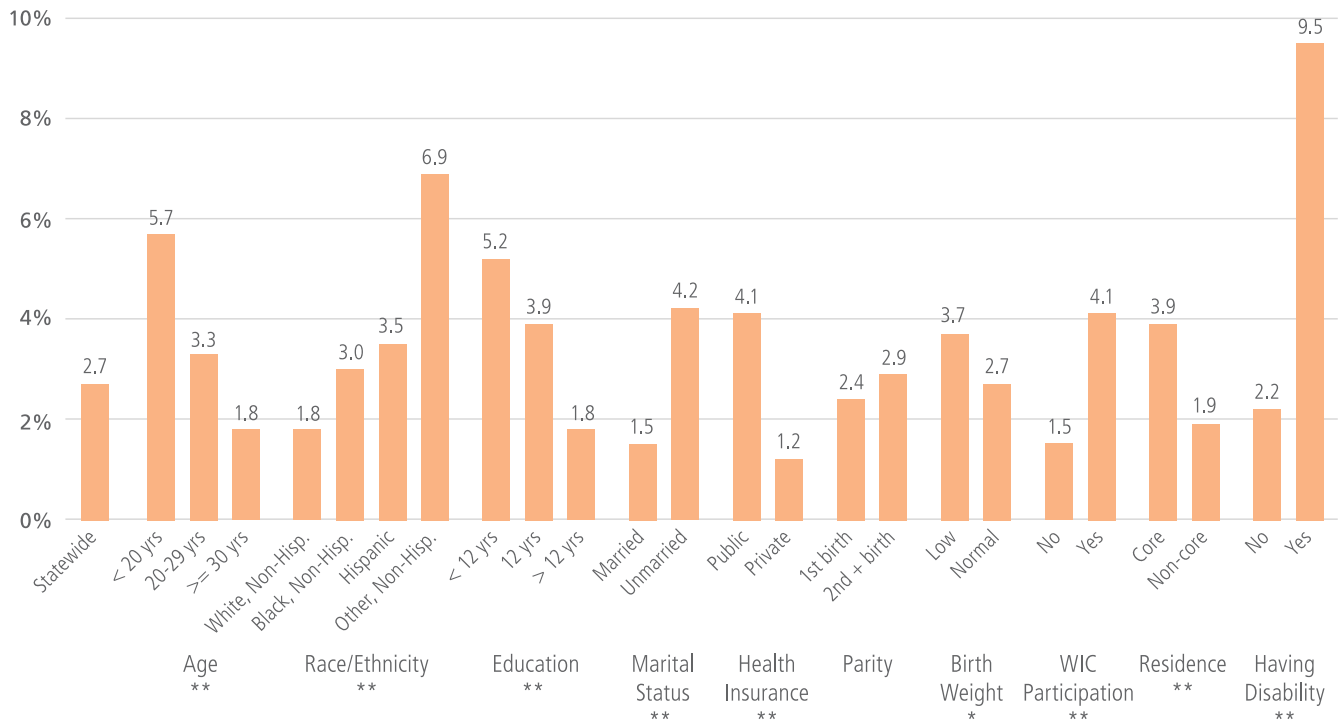
**FIGURE 4-1: INTIMATE PARTNER VIOLENCE BEFORE/DURING PREGNANCY BY YEAR, RHODE ISLAND, 2009-2015**



## Demographic Characteristics, 2012-2015

- » The overall prevalence of Rhode Island mothers experiencing IPV before or during pregnancy was 2.7%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with experiencing IPV before or during pregnancy included age, race/ethnicity, education level, marital status, health insurance type, birth weight, participation in the WIC program, core city residence, and self-reported disability status.
- » Mothers who were younger than 20 (5.7%), other race non-Hispanic (6.9%), were unmarried (4.2%), had less than 12 years of education (5.2%), had public health insurance (4.1%), had a low birth weight baby (3.7%), participated in the WIC program (4.1%), resided in a core city (3.9%), and had a self-reported disability (9.5%) had a higher prevalence of experiencing IPV compared with their counterparts.

**FIGURE 4-2: INTIMATE PARTNER VIOLENCE BEFORE/DURING PREGNANCY BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**



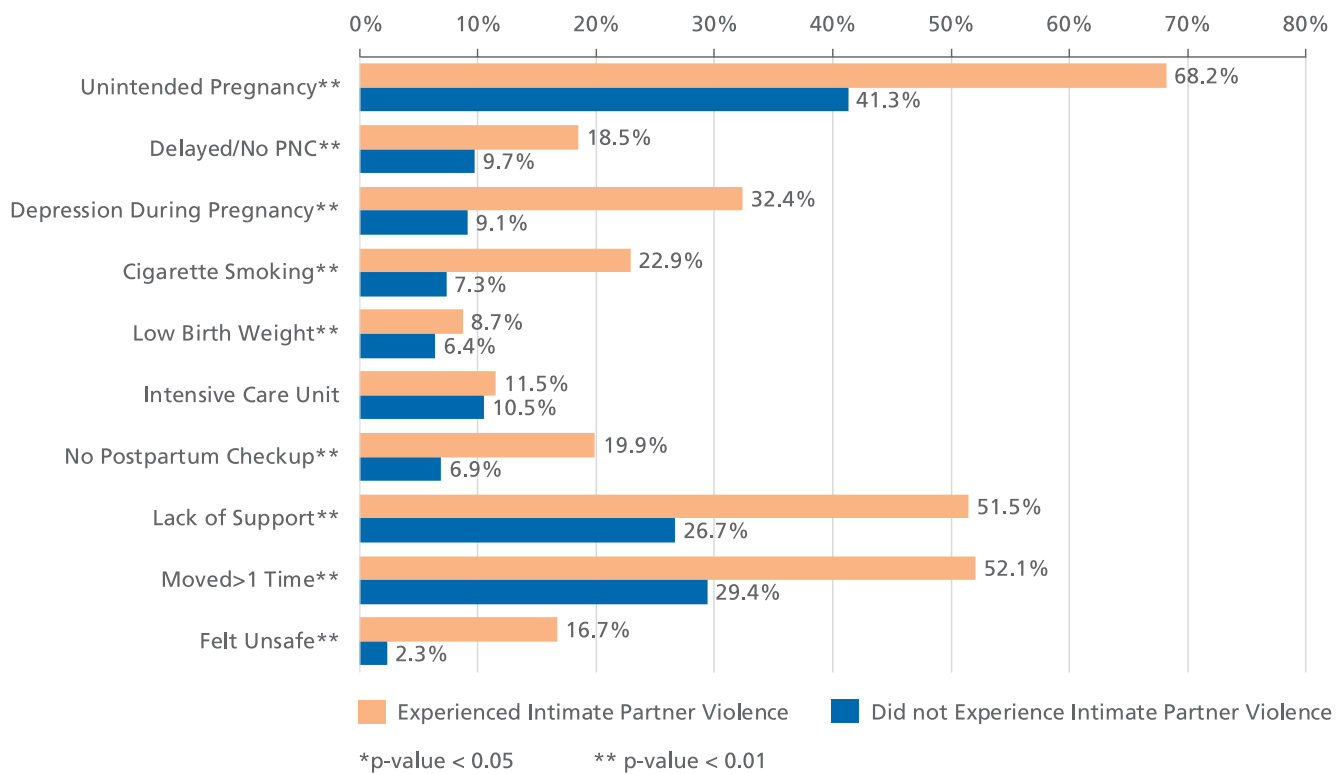
\* p-value < 0.05    \*\*p-value < 0.01

## Risk Behaviors and Outcomes by IPV Experience, 2012-2015

Mothers who experienced IPV before or during pregnancy, compared to mothers who did not experience IPV, were significantly (p-value less than 0.05) more likely to report that:

- » Their pregnancy was unintended (68.2% versus 41.3%).
- » They had delayed or no prenatal care (PNC) visits (18.5% versus 9.7%).
- » They were diagnosed with depression during their pregnancy (32.4% versus 9.1%).
- » They smoked during their pregnancy (22.9% versus 7.3%).
- » They had a low birth weight baby (8.7% versus 6.4%).
- » They did not have a postpartum checkup (19.9% versus 6.9%).
- » They lacked some social support since delivery (51.5% versus 26.7%).
- » They moved more than once in the last three years (52.1% versus 29.4%).
- » They felt unsafe in their neighborhood in the 12 months before their baby was born (16.7% versus 2.3%).

**FIGURE 4-3: RISK BEHAVIORS AND OUTCOMES BY INTIMATE PARTNER VIOLENCE, RHODE ISLAND, 2012-2015**





## References

<sup>12</sup> Centers for Disease Control and Prevention (CDC). Preventing Intimate Partner Violence, Fact Sheet, 2017. <https://www.cdc.gov/violenceprevention/pdf/ipv-factsheet.pdf>

<sup>13</sup> Department of Justice, Bureau of Justice Statistics. Intimate Partner Violence, 1993-2010. [www.bjs.gov/index.cfm?ty=pbdetail&iid=4536](http://www.bjs.gov/index.cfm?ty=pbdetail&iid=4536)

<sup>14</sup> US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020, Injury and Violence Prevention. [www.healthypeople.gov/2020/topics-objectives/topic/injury-and-violence-prevention/objectives](http://www.healthypeople.gov/2020/topics-objectives/topic/injury-and-violence-prevention/objectives)

## Related Publication

Kim H, Cain R, Viner-Brown S. Intimate Partner Violence Before or During Pregnancy in Rhode Island. *Medicine & Health / Rhode Island*, Vol. 93 (No. 1):29-31, January 2010. [www.rimed.org/medhealthri/2010-01/2010-01-29.pdf](http://www.rimed.org/medhealthri/2010-01/2010-01-29.pdf)



# 5. CIGARETTE SMOKING

## Definition and Significance

Cigarette smoking during pregnancy increases the risk for several adverse health outcomes for both mothers and newborns.<sup>15</sup> Women who smoke during their pregnancy are more likely to experience premature rupture of membranes (PROM) or problems with the placenta (placental abruption or placenta previa) during pregnancy.<sup>15</sup> Babies born to women who smoke during pregnancy are more likely to be born prematurely, be low birth weight, or die of Sudden Unexpected Infant Death (SUID).<sup>15</sup> Therefore, the CDC recommends that pregnant women not smoke cigarettes during pregnancy.

The PRAMS survey asks mothers about their cigarette smoking and the number of cigarettes smoked in the three months before pregnancy, in the last three months of pregnancy, and after delivery. Smoking cessation during pregnancy was defined in this data book if a mother reported smoking in the three months before pregnancy and reported not smoking in the last three months of pregnancy.

## Healthy People 2020 Target

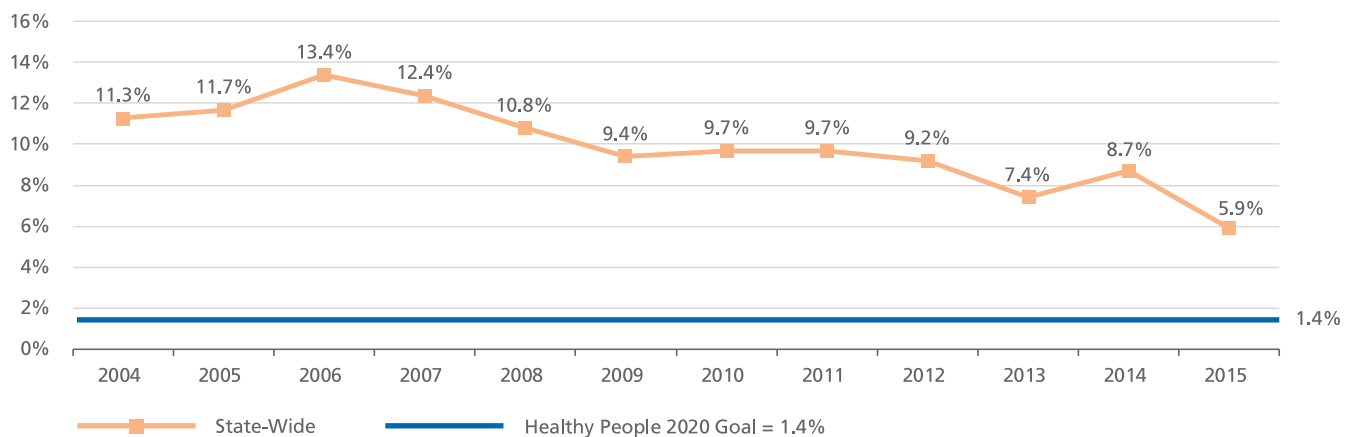
MICH-11.3: Increase abstinence from cigarette smoking among pregnant women to 98.6% (or reduce cigarette smoking among pregnant women to 1.4%).<sup>16</sup>

TU-6: Increase smoking cessation during pregnancy to 30.0%.<sup>17</sup>

## Prevalence and Trends: Cigarette Smoking, 2004-2015

The proportion of Rhode Island mothers who smoked cigarettes in the last three months of pregnancy ranged from 5.9% to 13.4% during 2004-2015. The linear trend of cigarette smoking represents a significant decrease during the period (p-value less than 0.001). Rhode Island has not achieved the Healthy People 2020 goal of reducing cigarette smoking among pregnant women to 1.4%<sup>16</sup> for all years.

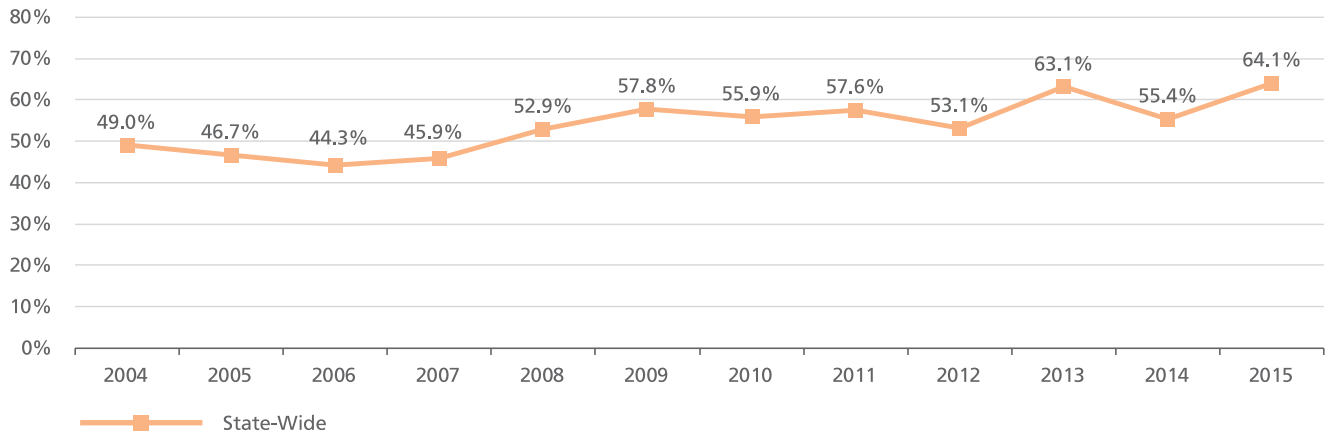
**FIGURE 5-1: CIGARETTE SMOKING DURING PREGNANCY BY YEAR, RHODE ISLAND, 2004-2015**



## Prevalence and Trends: Smoking Cessation, 2004-2015

The proportion of Rhode Island mothers who quit smoking during their pregnancy increased significantly from 49.0% in 2004 to 64.1% in 2015 (p-value less than 0.001). Smoking cessation data presented in Figure 5-2 should not be compared directly with the Healthy People 2020 target stated in TU-6<sup>17</sup> because the Healthy People 2020 target uses different definition and data source.

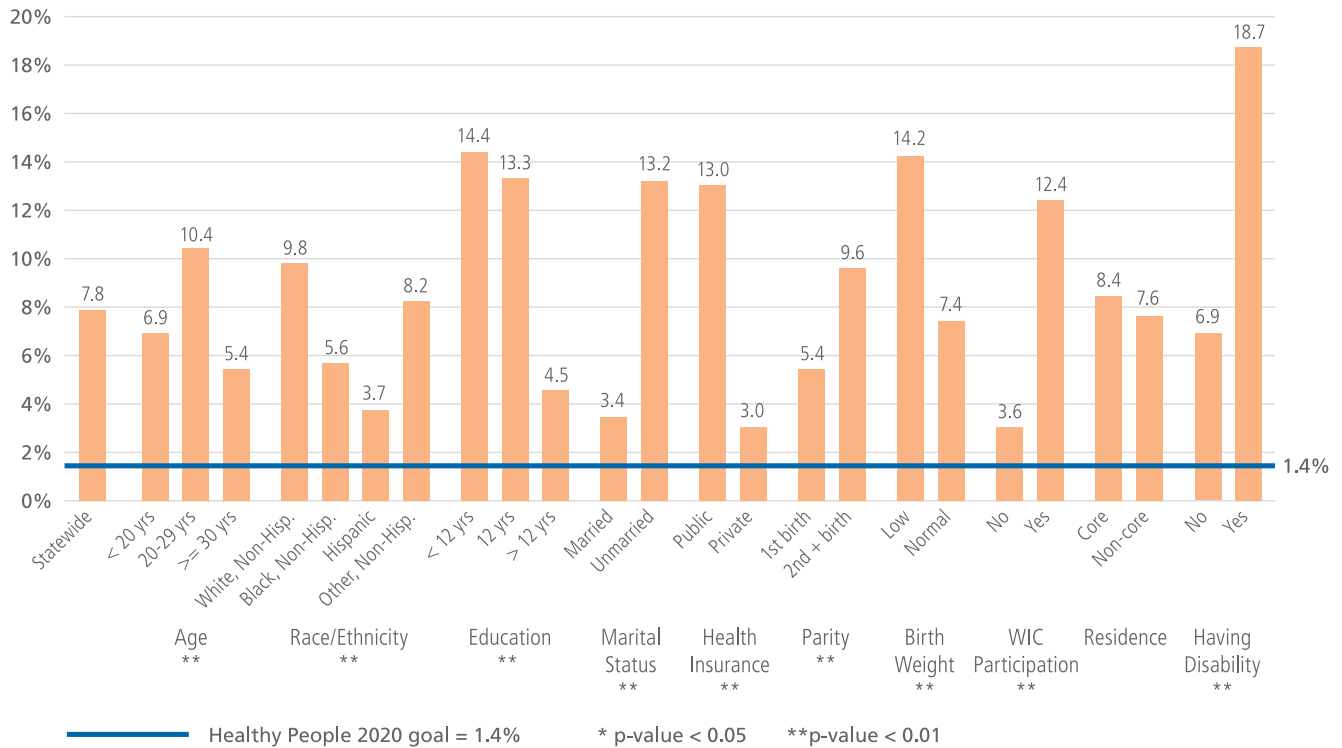
**FIGURE 5-2: SMOKING CESSATION DURING PREGNANCY BY YEAR, RHODE ISLAND, 2004-2015**



# Demographic Characteristics, 2012-2015

- » The overall prevalence of Rhode Island mothers smoking cigarettes in the last three months of pregnancy was 7.8%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with cigarette smoking in the last three months of pregnancy included age, race/ethnicity, education level, marital status, health insurance type, parity, birth weight, participation in the WIC program, and self-reported disability status.
- » Mothers who were 20-29 (10.4%), White non-Hispanic (9.8%), had less than 12 years of education (14.4%), were unmarried (13.2%), had public health insurance (13.0%), had their second or later birth (9.6%), had a low birth weight infant (14.2%), participated in the WIC program (12.4%), and had a self-reported disability (18.7%) had a higher prevalence of cigarette smoking during pregnancy compared with their counterparts.

**FIGURE 5-3: CIGARETTE SMOKING DURING PREGNANCY BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**

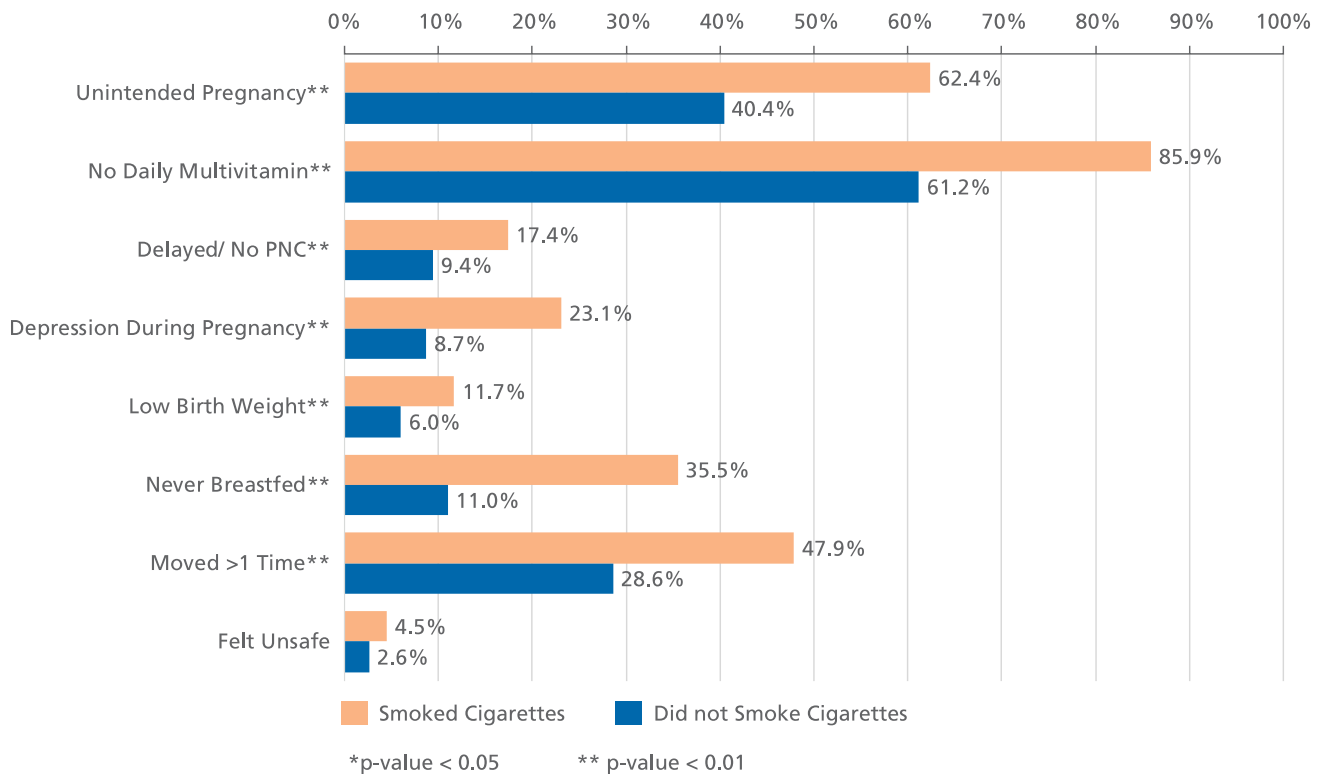


# Risk Behaviors and Outcomes by Cigarette Smoking During Pregnancy, 2012-2015

Mothers who smoked cigarettes in the last three months of pregnancy, compared to mothers who did not smoke, were significantly (p-value less than 0.05) more likely to report that:

- » Their pregnancy was unintended (62.4% versus 40.4%).
- » They did not take multi-vitamins daily in the month prior to pregnancy (85.9% versus 61.2%).
- » They had delayed or no prenatal care (PNC) visits (17.4% versus 9.4%).
- » They were diagnosed with depression during their pregnancy (23.1% versus 8.7%).
- » They had a low birth weight baby (11.7% versus 6.0%).
- » They never breastfed their baby (35.5% versus 11.0%).
- » They moved more than one time in the last three years (47.9% versus 28.6%).

**FIGURE 5-4: RISK BEHAVIORS AND OUTCOMES BY CIGARETTE SMOKING DURING PREGNANCY, RHODE ISLAND, 2012-2015**



## References

<sup>15</sup> Centers for Disease Control and Prevention (CDC). Reproductive Health. Tobacco Use and Pregnancy. [www.cdc.gov/reproductivehealth/TobaccoUsePregnancy](http://www.cdc.gov/reproductivehealth/TobaccoUsePregnancy)

<sup>16</sup> US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020, Maternal, Infant, and Child Health. [www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives](http://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives)

<sup>17</sup> US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020, Tobacco Use. [www.healthypeople.gov/2020/topics-objectives/topic/tobacco-use/objectives](http://www.healthypeople.gov/2020/topics-objectives/topic/tobacco-use/objectives)

## Related Publication

Kim H, Monteiro K, Larson E, Derisier D. Effects of Smoking and Smoking Cessation during Pregnancy on Adverse Birth Outcomes in Rhode Island, 2012-2014. *Rhode Island Medical Journal*, June 2017:50-52. <http://www.rimed.org/rimedicaljournal/2017/06/2017-06-50-health-kim.pdf>





## 6. PRENATAL CARE

### Definition and Significance

Prenatal care (PNC) is a series of assessments and interventions for pregnant women to help ensure healthy pregnancies and birth outcomes and to prevent any potential adverse health outcomes to mothers and their babies.<sup>18,19</sup> It is recommended that PNC start in the first trimester of pregnancy and continue throughout the whole pregnancy period.<sup>18</sup> Early PNC provides opportunities for detection, treatment, and management of medical and obstetric conditions, as well as the opportunity for encouraging healthy behaviors by educating women in their pregnancies.<sup>18,19</sup>

The PRAMS survey asks mothers about how many weeks or months pregnant they were when they had their first visit for PNC, which is used to determine the timing of PNC initiation. The survey also asks mothers about the health topics that were discussed during PNC visits.

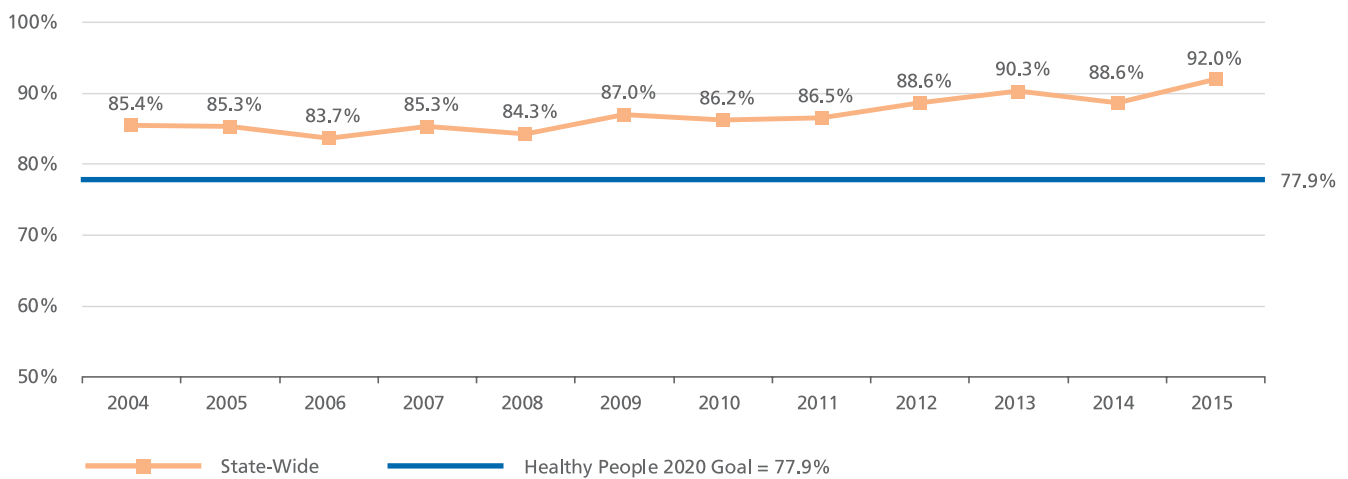
### Healthy People 2020 Target

MICH-10.1: Increase the proportion of pregnant women who receive PNC beginning in the first trimester to 77.9%.<sup>20</sup>

### Prevalence and Trends, 2004-2015

The proportion of Rhode Island mothers who initiated PNC in the first trimester ranged from 83.7% to 92.0% during 2004-2015. This represents a statistically significant increase during the period (p-value <0.01). The Healthy People 2020 goal of increasing the proportion of women initiating PNC in the first trimester to 77.9%<sup>20</sup> has been achieved since 2002, when Rhode Island started to collect the PRAMS data.

**FIGURE 6-1: PRENATAL CARE IN FIRST TRIMESTER BY YEAR, RHODE ISLAND, 2004-2015**

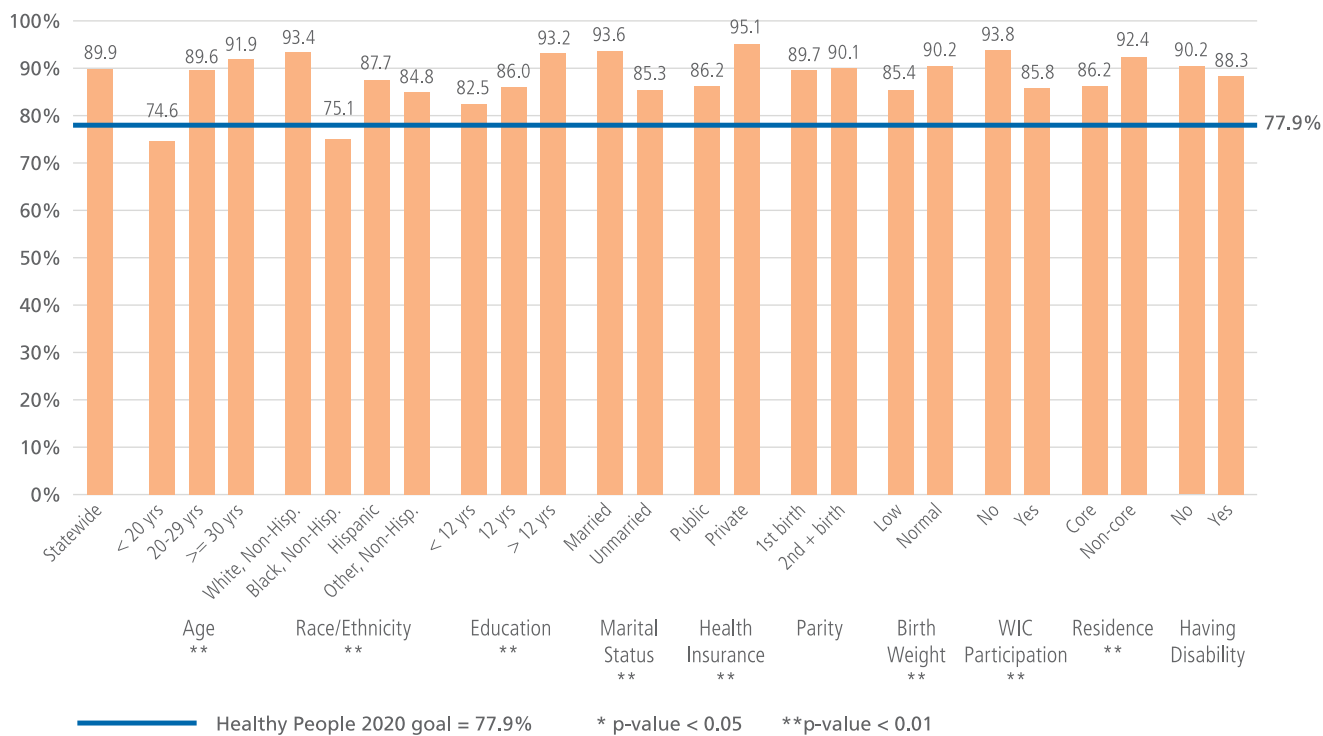




## Demographic Characteristics, 2012-2015

- » The overall prevalence of Rhode Island mothers initiating PNC in the first trimester was 89.9%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with initiating PNC in the first trimester included age, race/ethnicity, education level, marital status, health insurance type, birth weight, participation in the WIC program, and core city residence.
- » Mothers who were 30 or older (91.9%), White non-Hispanic (93.4%), were married (93.6%), had more than 12 years of education (93.2%), had private health insurance (95.1%), had a normal birth weight infant (90.2%), did not participate in the WIC program (93.8%), and resided in a non-core city (92.4) had a higher prevalence of initiating PNC in the first trimester compared with their counterparts.

**FIGURE 6-2: PRENATAL CARE IN FIRST TRIMESTER BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**

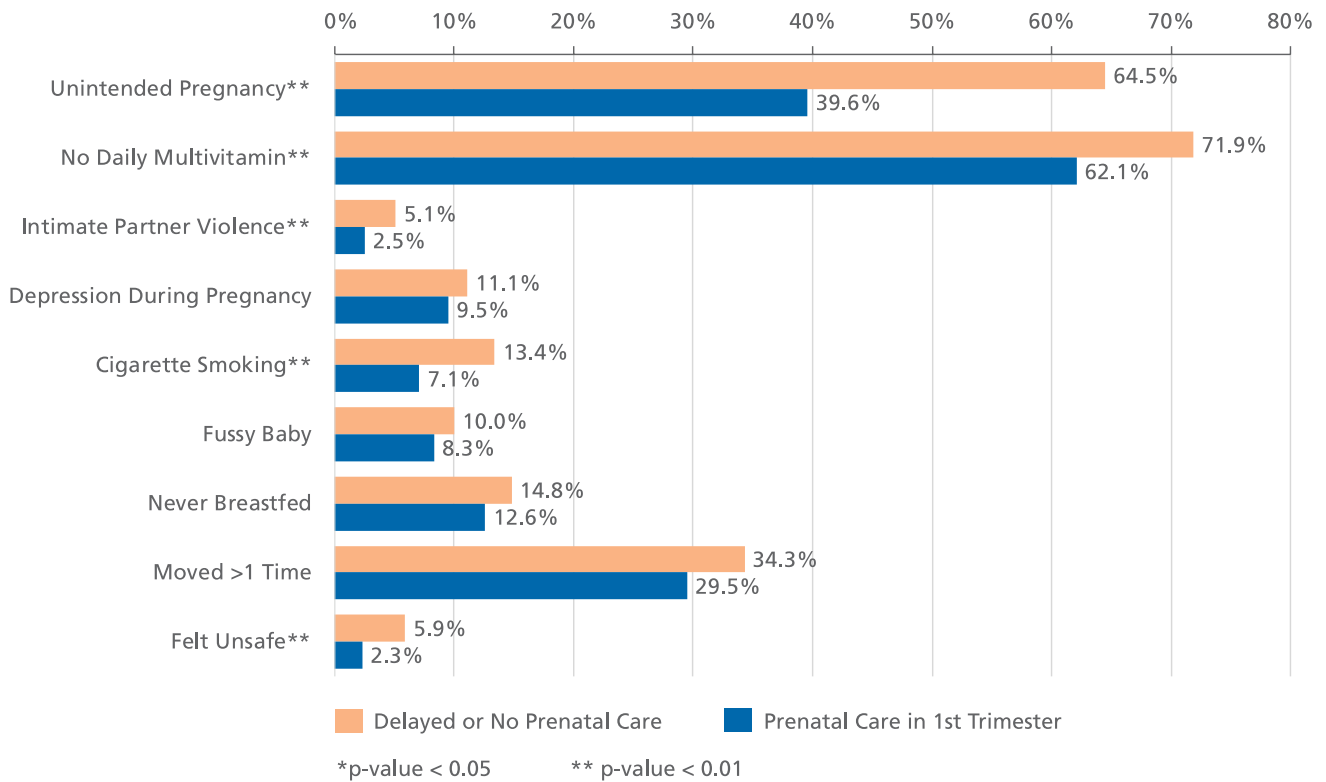


## Risk Behaviors and Outcomes by PNC Initiation, 2012-2015

Mothers who had delayed or no prenatal care, compared to mothers who initiated prenatal care in the first trimester, were significantly (p-value less than 0.05) more likely to report that:

- » Their pregnancy was unintended (64.5% versus 39.6%).
- » They did not take multi-vitamins daily prior to pregnancy (71.9% versus 62.1%).
- » They experienced intimate partner violence during the 12 months before or during pregnancy (5.1% versus 2.5%).
- » They smoked during their pregnancy (13.4% versus 7.1%).
- » They felt unsafe in their neighborhood in the 12 months before their baby was born (5.9% versus 2.3%).

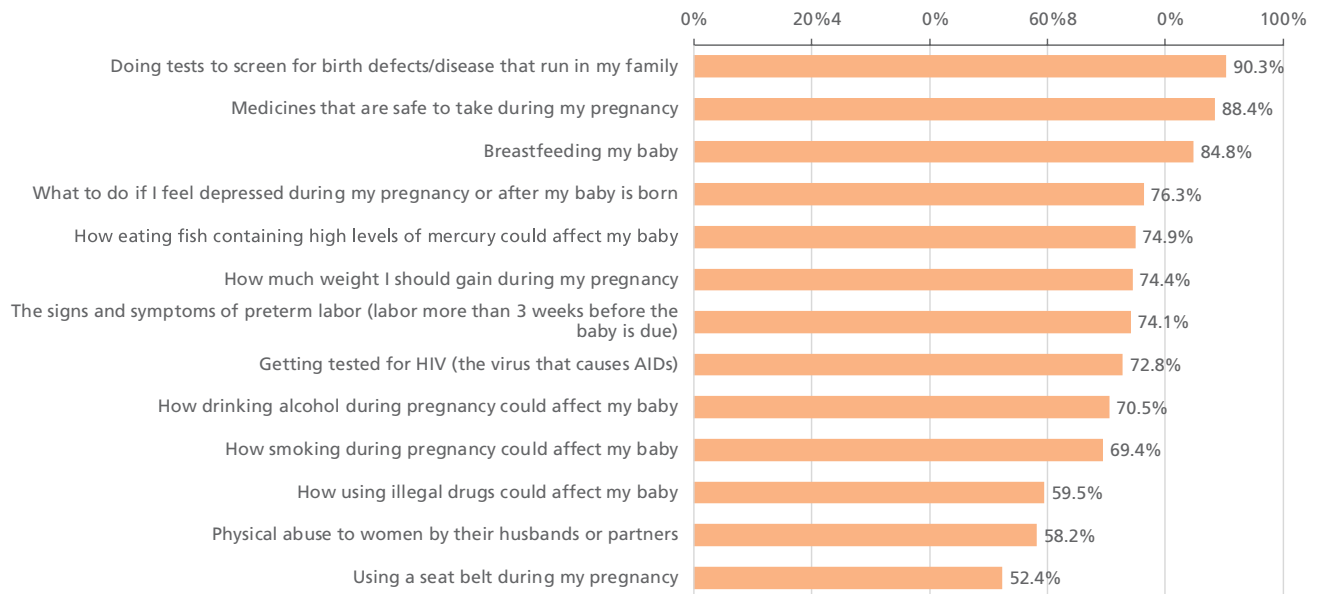
**FIGURE 6-3: RISK BEHAVIORS AND OUTCOMES BY PRENATAL CARE INITIATION, RHODE ISLAND, 2012-2015**



## Discussions During PNC Visits, 2012-2015

The PRAMS survey asks mothers about what kinds of health topics their healthcare providers discussed with them during their PNC visits. The most frequently discussed health topics were doing tests to screen for birth defects or diseases that run in their family (90.3%), medicines that are safe to take during pregnancy (88.4%), and breastfeeding their baby (84.8%). However, only 52.4% of the mothers reported discussions about using a seat belt during pregnancy.

**FIGURE 6-4: DISCUSSIONS WITH HEALTHCARE PROVIDERS DURING PRENATAL CARE VISITS, RHODE ISLAND, 2012-2015**



## References

- <sup>18</sup> UpToDate. Initial prenatal assessment and first trimester prenatal care. [www.uptodate.com/contents/initial-prenatal-assessment-and-first-trimester-prenatal-care](http://www.uptodate.com/contents/initial-prenatal-assessment-and-first-trimester-prenatal-care)
- <sup>19</sup> Child Trends Data Bank. Late or No Prenatal Care. Updated January 2014. <https://www.childtrends.org/indicators/late-or-no-prenatal-care>
- <sup>20</sup> US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020, Maternal, Infant, and Child Health. [www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives](http://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives)

## Related Publications

- Bromley E, Nunes A, Phipps M. Disparities in Pregnancy Healthcare Utilization Between Hispanic and Non-Hispanic White Women in Rhode Island. *Matern Child Health J*, 16(8): 1576-82, November 2011.
- Yang M, Kim H, Cain R, Viner-Brown S. Discussion of Health Topics during Prenatal Care in Rhode Island. *Medicine & Health / Rhode Island*, Vol. 95 (No. 2):63-65, February 2012. <http://rimed.org/medhealthri/2012-02/2012-02-63.pdf>
- Giang L, Gjelsvik A, Cain R, Paine V. Gestational Diabetes in Rhode Island. *Rhode Island Medical Journal*, 45-48, April 2013. [www.rimed.org/rimedicaljournal/2013/04/2013-04-45-health-diabetes.pdf](http://www.rimed.org/rimedicaljournal/2013/04/2013-04-45-health-diabetes.pdf)

# 7. SEASONAL INFLUENZA (FLU) VACCINATION DURING PREGNANCY

## Definition and Significance

Pregnant women have increased morbidity and mortality from flu infection, likely due to the physiological changes associated with pregnancy.<sup>21</sup> Pregnant women who get the flu also have an increased risk of developing health problems for their unborn baby, including premature labor and delivery.<sup>21</sup> Flu vaccination during pregnancy is safe and is the most effective way to protect pregnant women, their unborn babies, and infants younger than six months from the flu and its complications. Research has shown that vaccination during pregnancy significantly reduces flu illness among infants up to six months of age who are too young to be vaccinated.<sup>22</sup> Therefore, the CDC recommends that all pregnant women, regardless of trimester of pregnancy, get a flu vaccination during the flu season.

The Rhode Island PRAMS survey includes two standard questions regarding flu vaccination, which ask mothers whether their healthcare provider offered a flu vaccination or told them to get one at any time during the 12 months before the delivery of their new baby, and whether they got a flu vaccination during the 12 months before the delivery of their new baby.

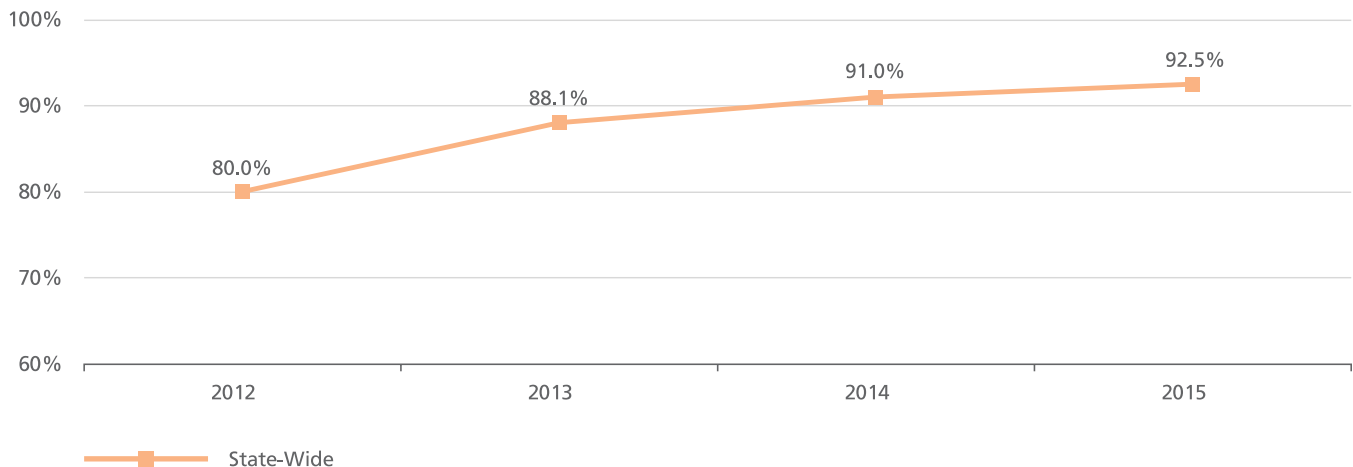
## Healthy People 2020 Target

IID-12.10: Increase the percentage of pregnant women who are vaccinated against seasonal influenza to 80.0%.<sup>23</sup>

## Prevalence and Trends: Flu Vaccine Offered/Recommended, 2012-2015

The proportion of Rhode Island mothers who were offered a seasonal flu vaccination or told to get one by their healthcare providers during the 12 months before the delivery of their new baby increased significantly from 80.0% in 2012 to 92.5% in 2015 (p-value less than 0.001). The flu vaccination questions were changed in Phase 7, so the 2004-2011 data are not comparable with the 2012-2015 data and are not reported here.

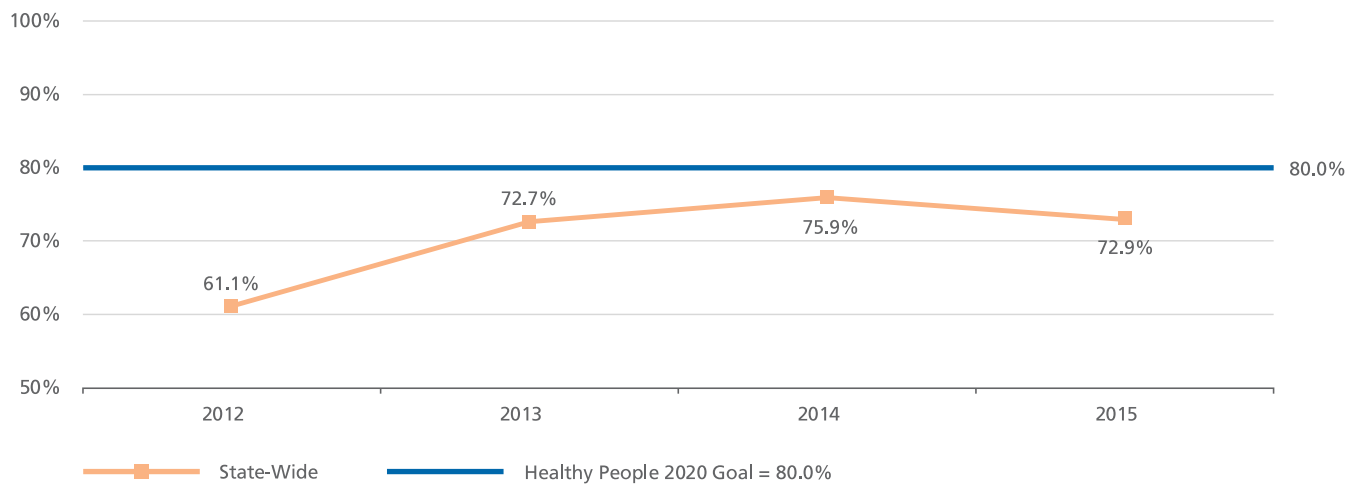
**FIGURE 7-1: FLU VACCINE OFFERED/RECOMMENDED DURING THE 12 MONTHS BEFORE BABY'S DELIVERY BY YEAR, RHODE ISLAND, 2012-2015**



## Prevalence and Trends: Flu Vaccine Received, 2012-2015

The proportion of Rhode Island mothers who received a seasonal flu vaccination during the 12 months before the delivery of their new baby increased significantly from 61.1% in 2012 to 75.9% in 2014 (p-value less than 0.001), then dropped to 72.9% in 2015. The Healthy People 2020 goal of increasing the proportion of pregnant women who are vaccinated against seasonal influenza to 80.0%<sup>23</sup> was not achieved. The flu vaccination questions were changed in Phase 7, so the 2004-2011 data are not comparable with the 2012-2015 data and are not reported here.

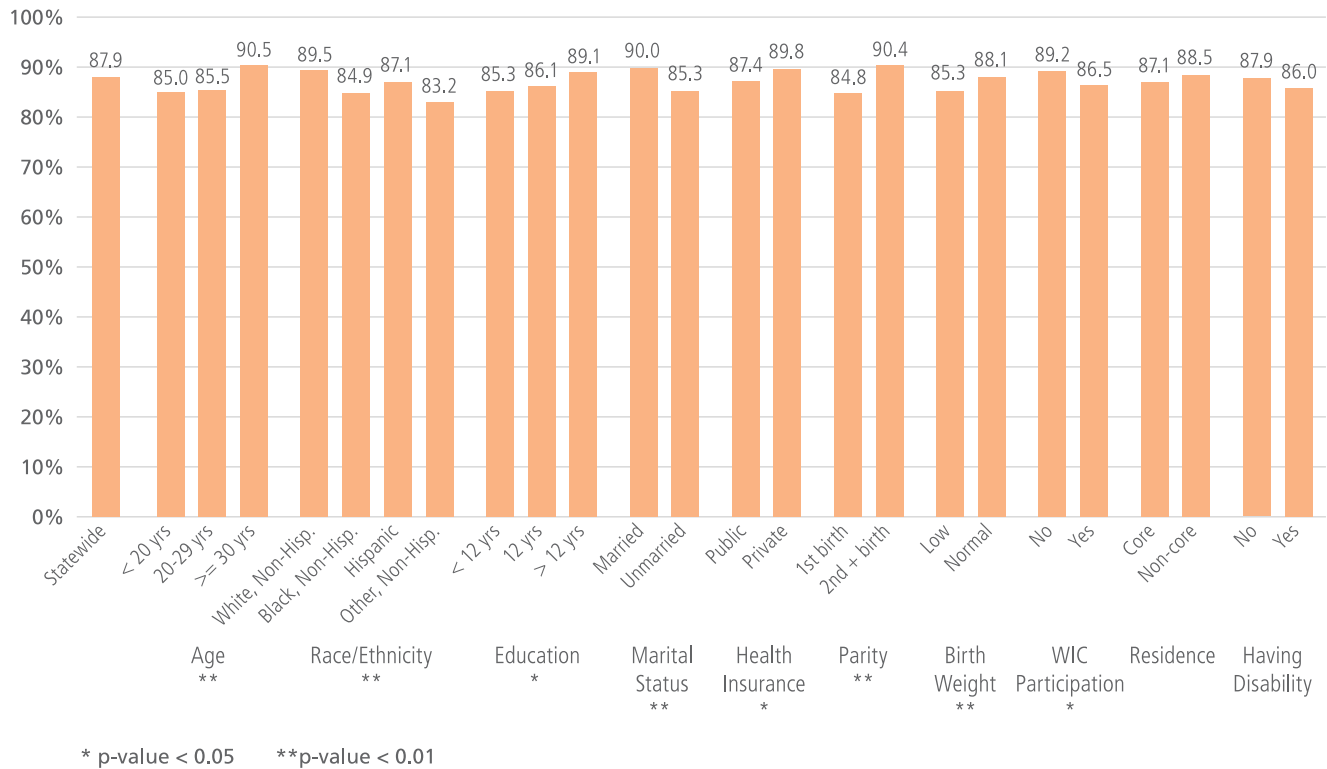
**FIGURE 7-2: FLU VACCINE RECEIVED DURING THE 12 MONTHS BEFORE BABY'S DELIVERY BY YEAR, RHODE ISLAND, 2012-2015**



# Demographic Characteristics: Flu Vaccine Offered/Recommended, 2012-2015

- » The overall prevalence of Rhode Island mothers being offered a seasonal flu vaccination or told to get one by their healthcare providers during the 12 months before the delivery of their new baby was 87.9%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with receiving advice on seasonal flu vaccination during the 12 months before the delivery of their new baby included age, race/ethnicity, education level, marital status, health insurance type, parity, birth weight, and participation in the WIC program.
- » Mothers who were 30 or older (90.5%), White non-Hispanic (89.5%), were married (90.0%), had more than 12 years of education (89.1%), had private health insurance (89.8%), delivered their second or later baby (90.4%), delivered a normal birth weight infant (88.1%), and did not participate in the WIC program (89.2%) had a higher prevalence of receiving advice on seasonal flu vaccination during the 12 months before the delivery of their new baby compared with their counterparts.

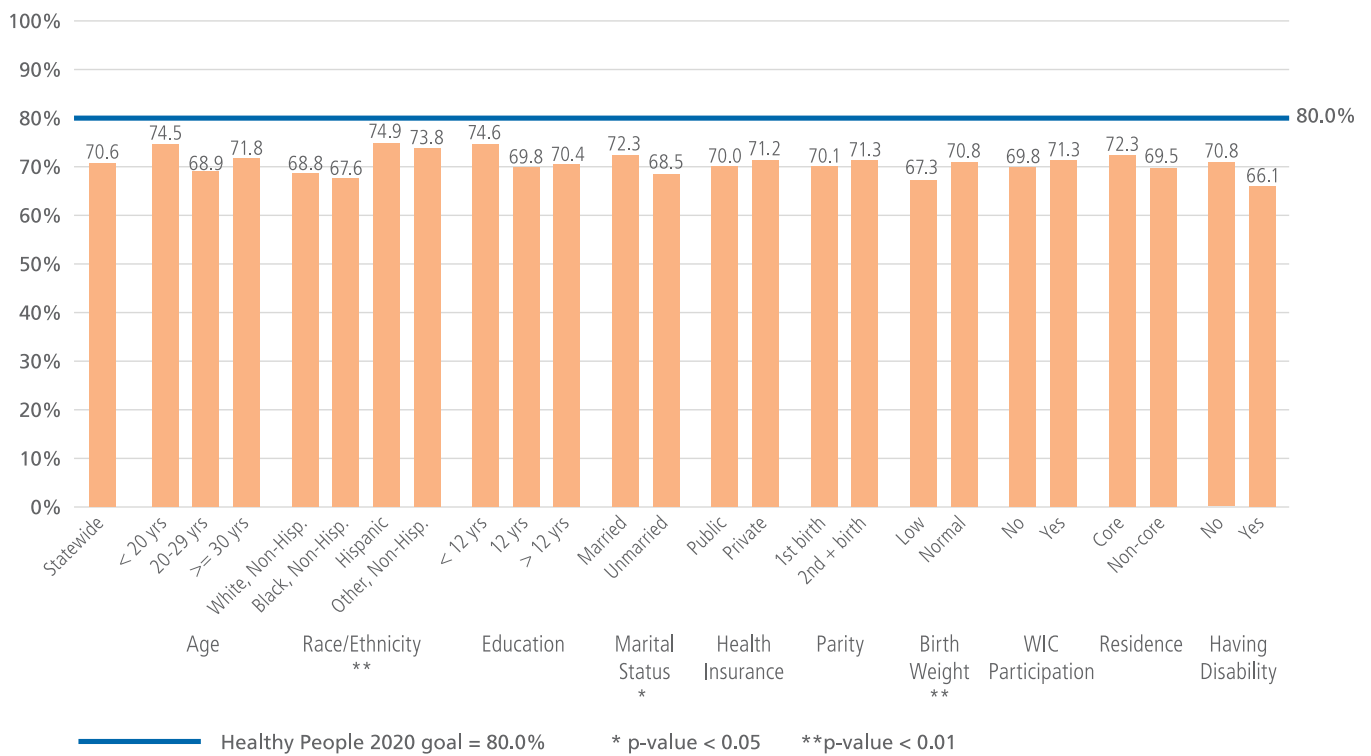
**FIGURE 7-3: FLU VACCINE OFFERED/RECOMMENDED BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**



## Demographic Characteristics: Flu Vaccine Received, 2012-2015

- » The overall prevalence of Rhode Island mothers receiving a seasonal flu vaccination during the 12 months before the delivery of their new baby was 70.6%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with receiving a seasonal flu vaccination during the 12 months before the delivery of their new baby included race/ethnicity, marital status, and birth weight.
- » Mothers who were Hispanic (74.9%), were married (72.3%), and delivered a normal birth weight baby (70.8%) had a higher prevalence of receiving a seasonal flu vaccination during the 12 months before the delivery of their new baby compared with their counterparts.

**FIGURE 7-4: FLU VACCINE RECEIVED BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**

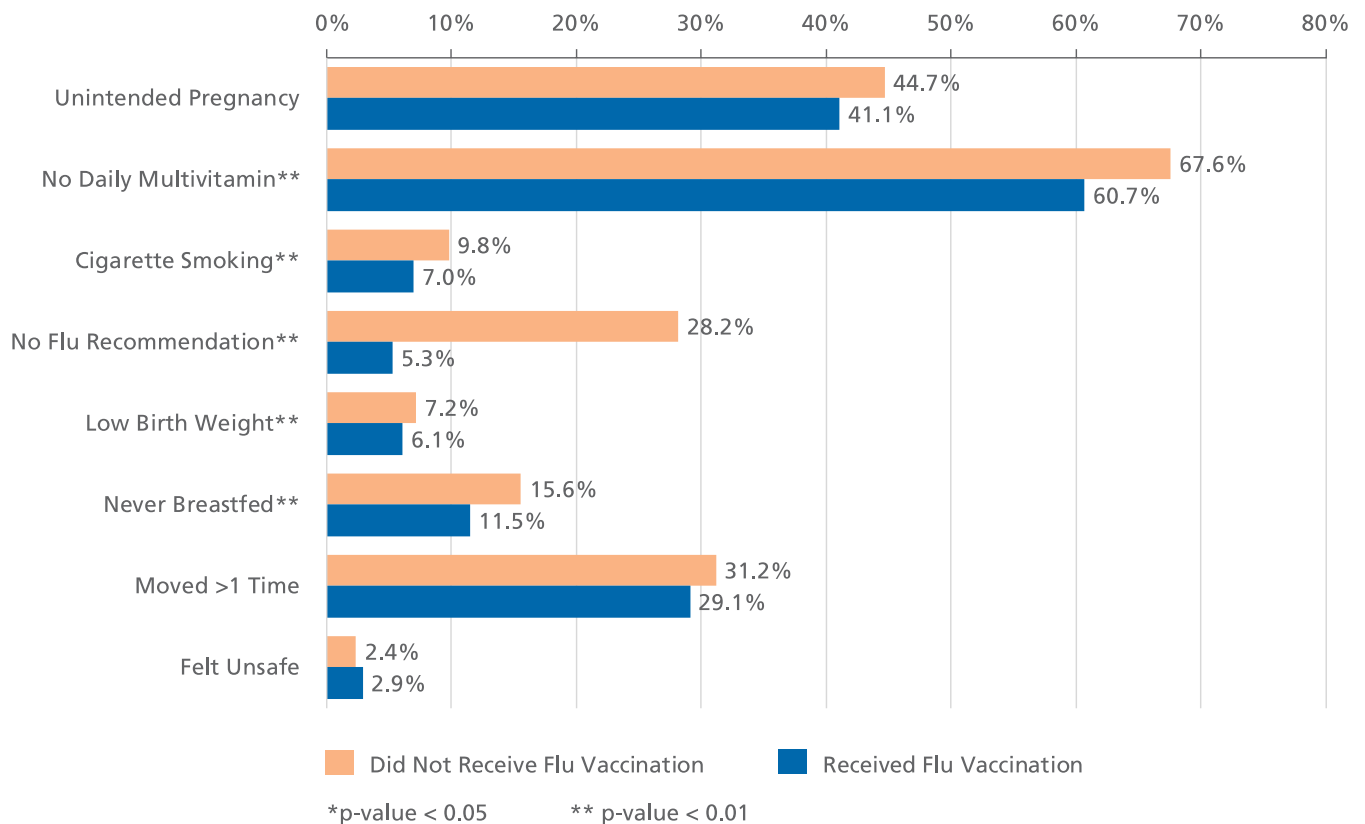


## Risk Behaviors and Outcomes by Flu Vaccination Receipt, 2012-2015

Mothers who did not receive a flu vaccination during the 12 months before the delivery of their new baby, compared to mothers who received a flu vaccination, were significantly (p-value less than 0.05) more likely to report that:

- » They did not take multi-vitamins daily in the month prior to pregnancy (67.6% versus 60.7%).
- » They smoked cigarettes during their pregnancy (9.8% versus 7.0%).
- » They were not offered a flu vaccination or not told to get one by their healthcare providers during the 12 months before the delivery of their new baby (28.2% versus 5.3%).
- » They delivered a low birth weight baby (7.2% versus 6.1%).
- » They never breastfed their baby (15.6% versus 11.5%).

**FIGURE 7-5: RISK BEHAVIORS AND OUTCOMES BY FLU VACCINATION RECEIPT, RHODE ISLAND, 2012-2015**





## References

<sup>21</sup> Centers for Disease Control and Prevention (CDC). Pregnant Women and Influenza (Flu). [www.cdc.gov/flu/protect/vaccine/pregnant.htm](http://www.cdc.gov/flu/protect/vaccine/pregnant.htm)

<sup>22</sup> Zaman K, Roy E, Arifeen S, et al. Effectiveness of maternal influenza immunization in mothers and infants. *New England Journal of Medicine*; 359:1555-1564.

<sup>23</sup> US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020, Immunization and Infectious Diseases. [www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives](http://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives)

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Kim H, Raymond R, Paine V, Cain R, Viner-Brown S. Seasonal Influenza Vaccination Coverage among Pregnant Women in Rhode Island. *Medicine & Health / Rhode Island*, Vol. 92 (No. 10):345-347, October 2009. [www.rimed.org/medhealthri/2009-10/2009-10-345.pdf](http://www.rimed.org/medhealthri/2009-10/2009-10-345.pdf)

Kim H, Raymond R, Paine V, Cain R. Seasonal Influenza Vaccination among Pregnant Women in Rhode Island, 2002-2011. *Medicine & Health / Rhode Island*, Vol. 95 (No. 9):296-299, September 2012. [www.rimed.org/medhealthri/2012-09/2012-09-296.pdf](http://www.rimed.org/medhealthri/2012-09/2012-09-296.pdf)



## 8. HUMAN IMMUNODEFICIENCY VIRUS (HIV) TESTING

### Definition and Significance

In the United States, one in four people living with HIV infection are women and only about 50% of women who are diagnosed with HIV have it under control.<sup>24</sup> HIV can be transmitted from HIV-positive mothers to their babies during pregnancy, during childbirth, or through breastfeeding.<sup>25</sup> The chance that HIV infection is transmitted from an HIV-positive mother to her baby can be reduced to less than 1% if the mother is treated.<sup>25</sup> Therefore, getting an HIV test before pregnancy, or as early as possible during pregnancy, is important to prevent newborn babies from contracting HIV.<sup>25</sup>

The PRAMS survey asks mothers about whether they were tested for HIV at any time during their pregnancy or delivery. Three response options are included: *yes*, *no*, and *I do not know*. Since a large proportion of mothers do not know whether they had an HIV test during their pregnancy, all three response options were included in the analyses.

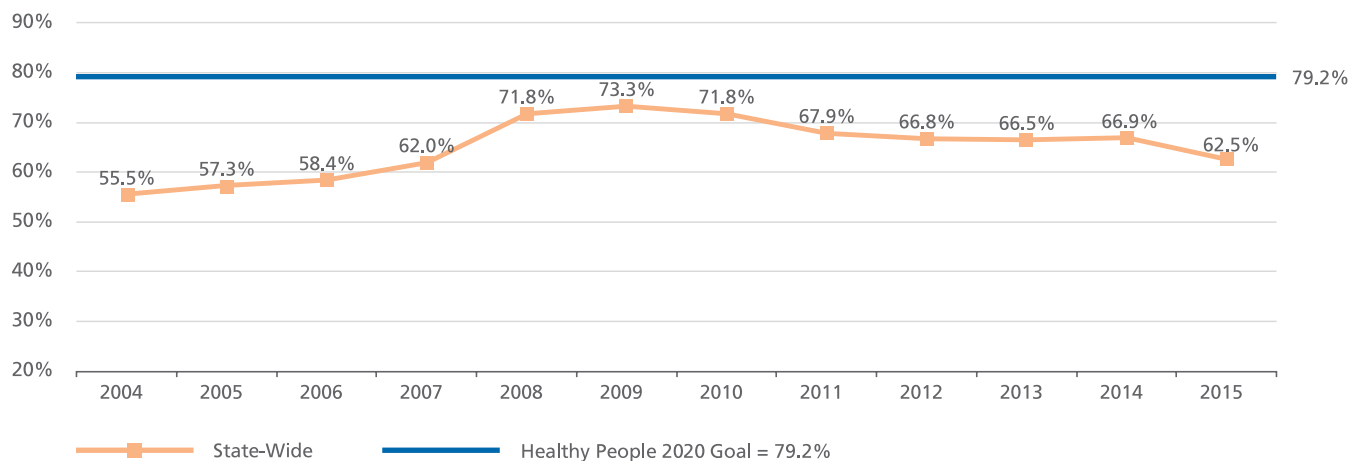
### Healthy People 2020 Target

HIV-14.3: Increase the proportion of pregnant women who have been tested for HIV in the past 12 months to 79.2%.<sup>26</sup>

### Prevalence and Trends, 2004-2015

The proportion of Rhode Island mothers who were tested for HIV at any time during pregnancy or delivery ranged from 55.5% to 73.3% during 2004-2011. The trend of prevalence represents a significant increase during the period (p-value less than 0.001). The Healthy People 2020 goal of increasing the proportion of pregnant women tested for HIV to 79.2%<sup>26</sup> was not achieved.

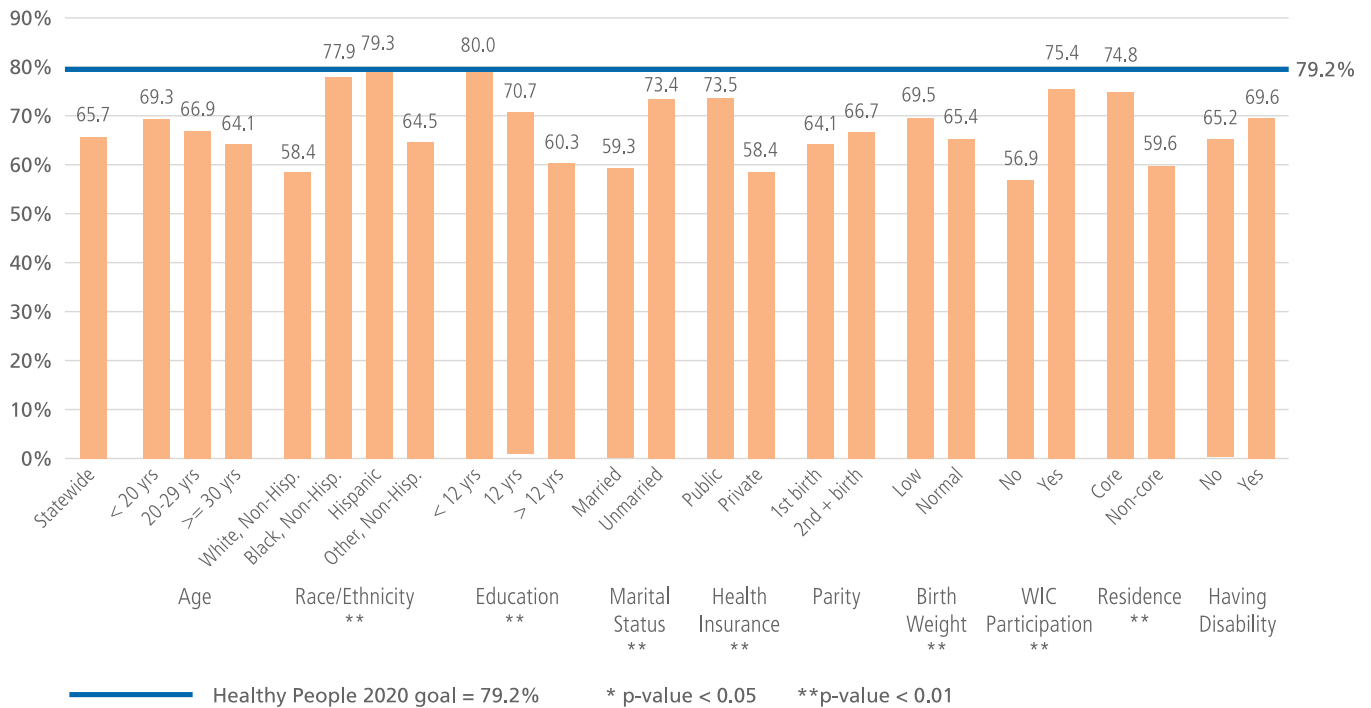
**FIGURE 8-1: TESTED FOR HIV DURING PREGNANCY OR DELIVERY BY YEAR, RHODE ISLAND, 2004-2015**



## Demographic Characteristics, 2012-2015

- » The overall prevalence of Rhode Island mothers getting an HIV test at any time during pregnancy or delivery was 65.7%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with getting an HIV test at any time during pregnancy or delivery included race/ethnicity, education level, marital status, health insurance type, birth weight, participation in the WIC program, and core city residence.
- » Mothers who were Hispanic (79.3%), were unmarried (73.4%), had less than 12 years of education (80.0%), had public health insurance (73.5%), delivered a low birth weight baby (69.5%), participated in the WIC program (75.4%), and resided in a core city (74.8%) had a higher prevalence of getting an HIV test during their pregnancy or delivery compared with their counterparts.

**FIGURE 8-2: TESTED FOR HIV DURING PREGNANCY OR DELIVERY BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**

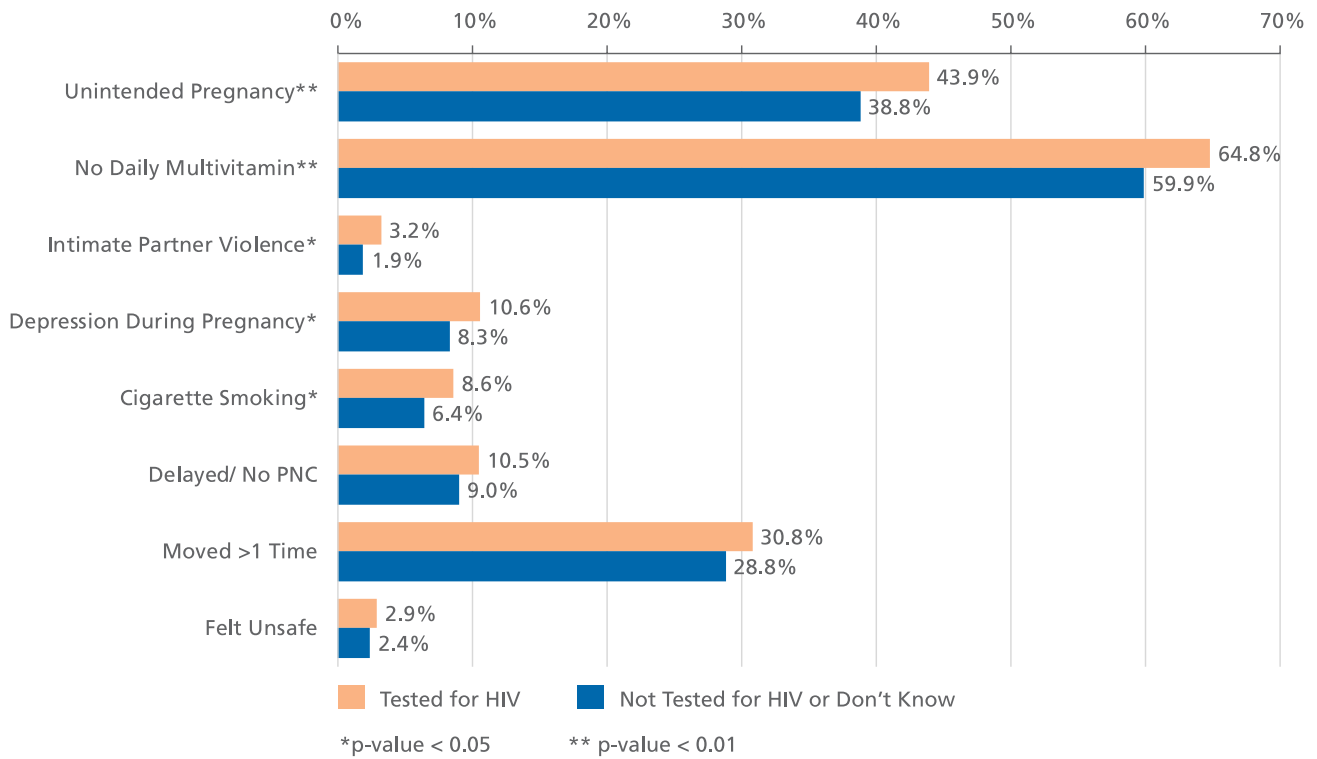


# Risk Behaviors and Outcomes by HIV Testing During Pregnancy or Delivery, 2012-2015

Mothers who were tested for HIV at any time during pregnancy or delivery, compared to mothers who were not tested for HIV, were significantly (p-value less than 0.05) more likely to report that:

- » Their pregnancy was unintended (43.9% versus 38.8%).
- » They did not take multi-vitamins daily in the month prior to pregnancy (64.8% versus 59.9%).
- » They experienced intimate partner violence during the 12 months before pregnancy or during pregnancy (3.2% versus 1.9%).
- » They were diagnosed with depression during their pregnancy (10.6% versus 8.3%).
- » They smoked cigarettes during their pregnancy (8.6% versus 6.4%).

**FIGURE 8-3: RISK BEHAVIORS AND OUTCOMES BY HIV TESTING DURING PREGNANCY OR DELIVERY, RHODE ISLAND, 2012-2015**



## References

<sup>24</sup> Centers for Disease Control and Prevention (CDC). HIV Among Women.  
<https://www.cdc.gov/hiv/group/gender/women/index.html>

<sup>25</sup> Centers for Disease Control and Prevention (CDC). HIV Among Pregnant Women, Infants, and Childbirth.  
<https://www.cdc.gov/hiv/group/gender/pregnantwomen/index.html>

<sup>26</sup> US Department of Health and Human Services, Office of Disease Prevention and Health Promotion.  
Healthy People 2020, HIV.  
[www.healthypeople.gov/2020/topics-objectives/topic/hiv/objectives](http://www.healthypeople.gov/2020/topics-objectives/topic/hiv/objectives)



## 9. DENTAL CARE DURING PREGNANCY

### Definition and Significance

The American College of Obstetricians and Gynecologists (ACOG) and the American Dental Association (ADA) recommend that all pregnant women obtain counseling on oral healthcare and dental hygiene, preventive services, and treatment needed during their prenatal care period.<sup>27</sup> Controlling oral diseases and improving oral health during pregnancy not only enhance women's overall health but also contribute to improving the oral health of their children.

The PRAMS survey asks mothers whether they had their teeth cleaned by a dentist or dental hygienist and whether a dental or other healthcare professional discussed how to care for teeth and gums during the most recent pregnancy.

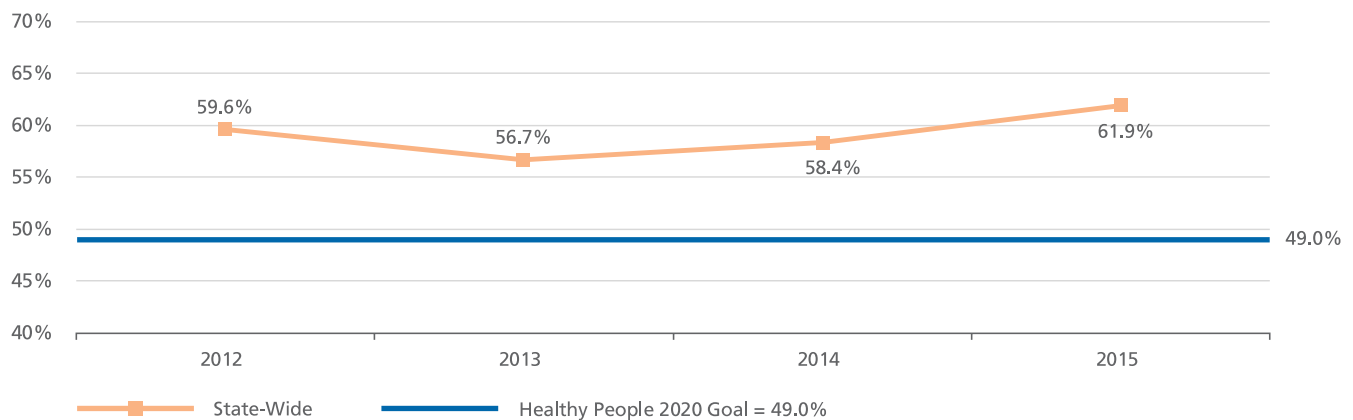
### Healthy People 2020 Target

OH-7: Increase the proportion of children, adolescents, and adults who used the oral healthcare system in the past year to 49%.<sup>28</sup>

### Prevalence and Trends, 2012-2015

The proportion of Rhode Island women who had their teeth cleaned by a dentist or dental hygienist during the most recent pregnancy ranged from 56.7% to 61.9% during 2012-2015. However, the linear trend is not statistically significant during the period. The Healthy People 2020 goal of increasing the proportion of individuals who used the oral healthcare system to 49%<sup>28</sup> has been achieved. The teeth cleaning question was included in the Phase 7 survey for the first time, so the previous years' data are not available and are not reported here.

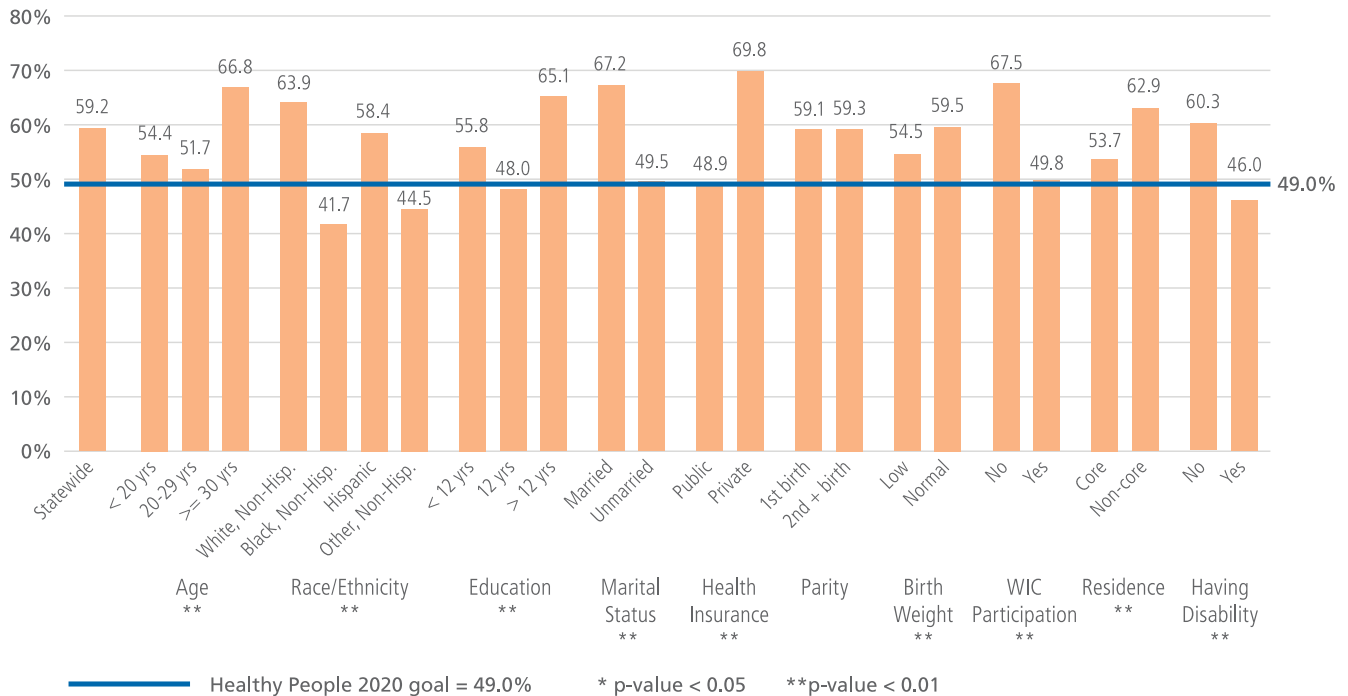
**FIGURE 9-1: TEETH CLEANED DURING PREGNANCY BY YEAR, RHODE ISLAND, 2012-2015**



## Demographic Characteristics, 2012-2015

- » The overall prevalence of Rhode Island women who had their teeth cleaned by a dentist or dental hygienist during their most recent pregnancy was 59.2%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with receipt of teeth cleaning during pregnancy included age, race/ethnicity, education level, marital status, health insurance type, birth weight, participation in the WIC program, core city residence, and self-reported disability status.
- » Mothers who were 30 or older (66.8%), White non-Hispanic (63.9%), were married (67.2%), had more than 12 years of education (65.1%), had private insurance (69.8%), had a normal birth weight baby (59.5%), did not participate in the WIC program (67.5%), resided in a non-core city (62.9%), and did not have a self-reported disability (60.3%) had a higher prevalence of a dental cleaning during pregnancy compared with their counterparts.

**FIGURE 9-2: TEETH CLEANED DURING PREGNANCY BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**

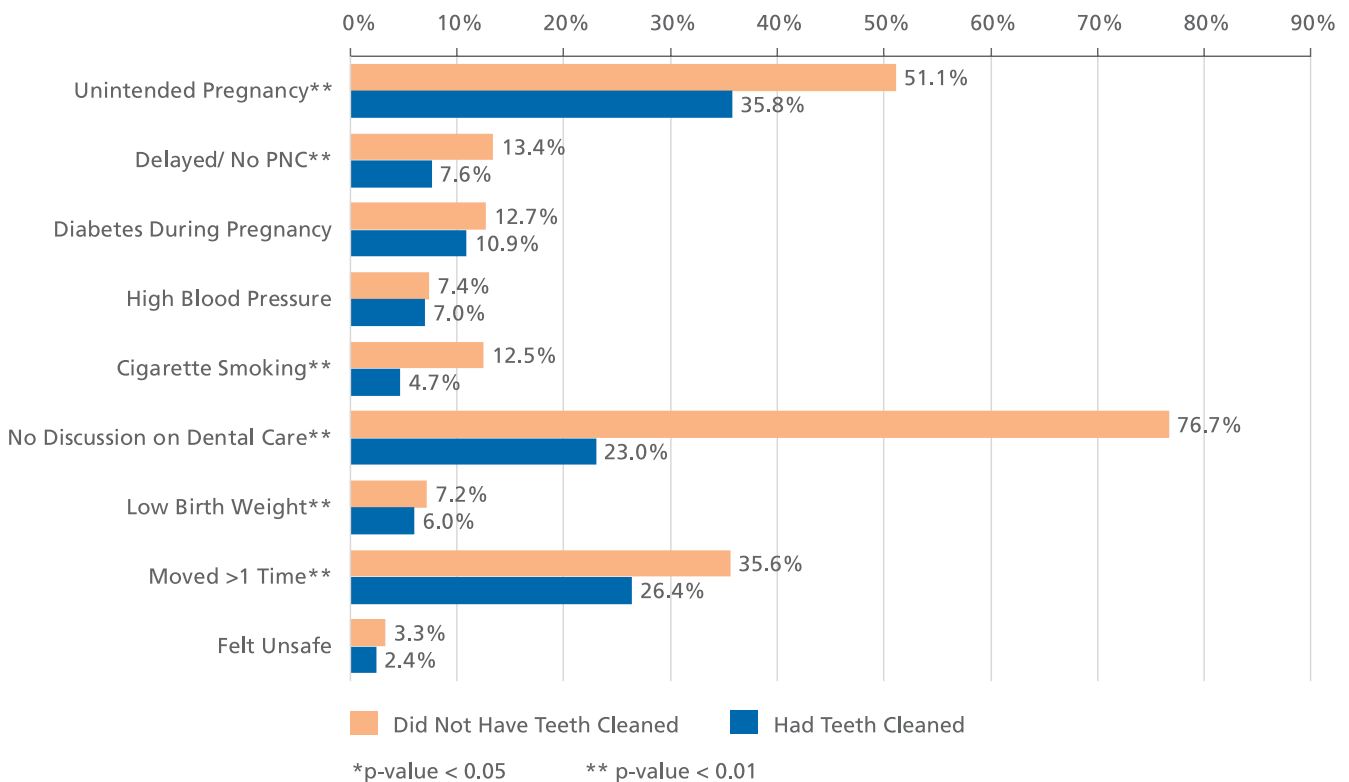


# Risk Behaviors and Outcomes by Teeth Cleaning During Pregnancy, 2012-2015

Mothers who did not have their teeth cleaned by a dentist or dental hygienist during pregnancy, compared to mothers who did, were significantly (p-value less than 0.05) more likely to report that:

- » Their pregnancy was unintended (51.1% versus 35.8%).
- » They had delayed or no prenatal care (PNC) visits (13.4% versus 7.6%).
- » They smoked cigarettes during their pregnancy (12.5% versus 4.7%).
- » Their dental or healthcare professional did not discuss how to care for teeth and gums (76.7% versus 23.0%).
- » They had a low birth weight baby (7.2% versus 6.0%).
- » They moved more than one time in the last three years (35.6% versus 26.4%).

**FIGURE 9-3: RISK BEHAVIORS AND OUTCOMES BY TEETH CLEANING DURING PREGNANCY, RHODE ISLAND, 2012-2015**





## Oral Health Counseling Compared with Discussions on Other Prenatal Care Topics During Pregnancy, 2012-2015

Just over half (55.1%) of Rhode Island pregnant women received oral health counseling from dental or other healthcare professionals during pregnancy. Oral healthcare (how to care for teeth and gums) was not as frequently discussed with women as other prenatal care issues, such as screening for birth defects (90.3%), safe medicine uses (88.4%), breastfeeding (84.8%), maternal depression (76.3%), mercury levels in fish (74.9%) and weight gain during pregnancy (74.4%). (See Page 35, Figure 6-4: Discussions with Healthcare Providers during Prenatal Care Visits, Rhode Island, 2012-2015.)

### References

<sup>27</sup> Oral Health Care During Pregnancy Expert Workgroup. 2012. Oral Health Care During Pregnancy: A National Consensus Statement. Washington, DC: National Maternal and Child Oral Health Resource Center.

<sup>28</sup> US Department of Health and Human Services, Office of Disease Prevention and Health Promotion Healthy People 2020, Oral Health. Washington, DC: US Department of Health and Human Services. [www.healthypeople.gov/2020/topics-objectives/topic/oral-health/objectives](http://www.healthypeople.gov/2020/topics-objectives/topic/oral-health/objectives)

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# 10. PERINATAL DEPRESSION

## Definition and Significance

Perinatal depression includes both depression during pregnancy and postpartum depression (depression after pregnancy). Depression symptoms may include a sad mood, loss of interest in activities, feelings of worthlessness, problems in concentrating or making decisions, and changes in eating or sleep.<sup>29</sup> Depression during or after pregnancy (postpartum depression) may affect a woman’s ability to perform daily activities or to take care of her infant.<sup>29,30</sup>

The Rhode Island PRAMS survey includes a CDC standard question that asks mothers whether their doctor, nurse, or other healthcare worker diagnosed them with **depression at any time during their pregnancy**. The PRAMS survey also asks mothers two questions to determine **postpartum depression**, which includes *Since your new baby was born, how often have you felt down, depressed, or hopeless?* and *Since your new baby was born, how often have you had little interest or little pleasure in doing things?* Each question includes five response categories: *always, often, sometimes, rarely, and never*. Mothers who answered *always* or *often* to at least one of these questions were classified as experiencing postpartum depression symptoms (PDS).

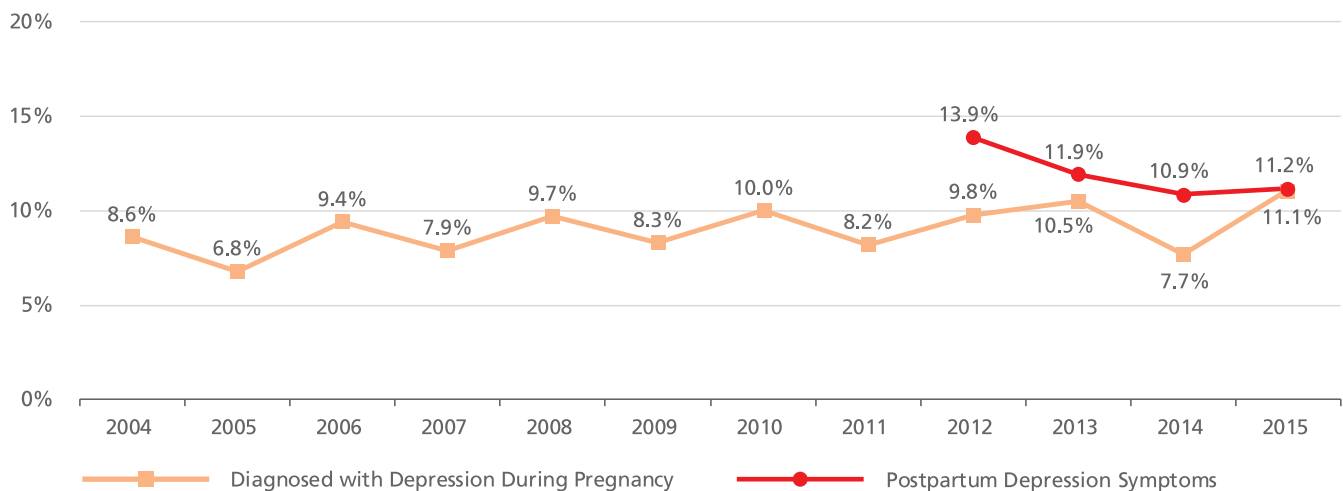
## Healthy People 2020 Target

Healthy People 2020 does not identify targets for depression during pregnancy or postpartum depression symptoms.

## Prevalence and Trends, 2004-2015

The proportion of Rhode Island mothers who were **diagnosed with depression during pregnancy** increased significantly from 8.6% in 2004 to 11.1% in 2015 (p-value less than 0.05). The proportion of Rhode Island mothers who reported **postpartum depression symptoms (PDS)** ranged from 10.9% to 13.9% during 2012-2015. However, the linear trend for reporting postpartum depression symptoms was not statistically significant. The postpartum depression questions were changed in Phase 7, so the previous year data are not comparable with the 2012-2015 (Phase 7) data and are not reported here.

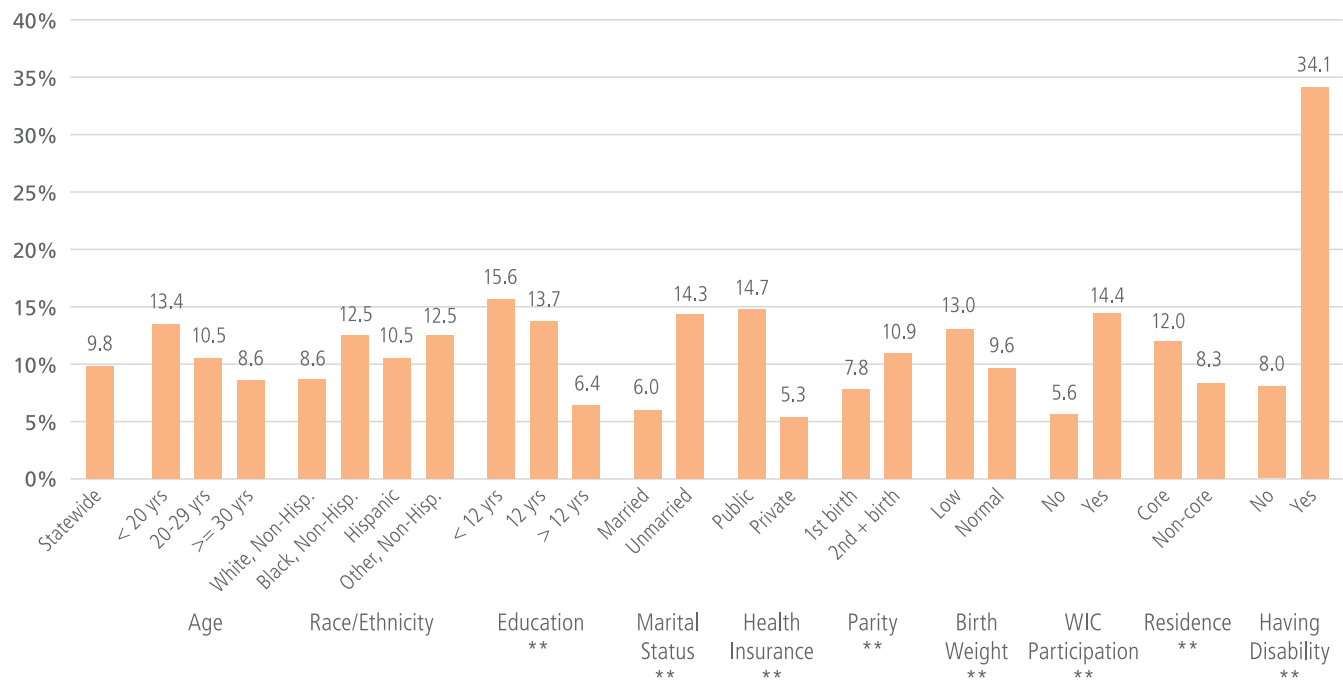
**FIGURE 10-1: DEPRESSION DURING AND AFTER PREGNANCY BY YEAR, RHODE ISLAND, 2004-2015**



# Demographic Characteristics: Depression During Pregnancy, 2012-2015

- » The overall prevalence of Rhode Island mothers diagnosed with depression during pregnancy was 9.8%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with being diagnosed with depression during pregnancy included education level, marital status, health insurance type, parity, birth weight, participation in the WIC program, core city residence, and self-reported disability status.
- » Mothers who were unmarried (14.3%), had less than 12 years of education (15.6%), had public health insurance (14.7%), delivered their second or later child (10.9%), had a low birth weight baby (13.0%), participated in the WIC program (14.4%), resided in a core city (12.0%), and had a self-reported disability (34.1%) had a higher prevalence of being diagnosed with depression during pregnancy compared with their counterparts.

**FIGURE 10-2: DIAGNOSED WITH DEPRESSION DURING PREGNANCY BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**

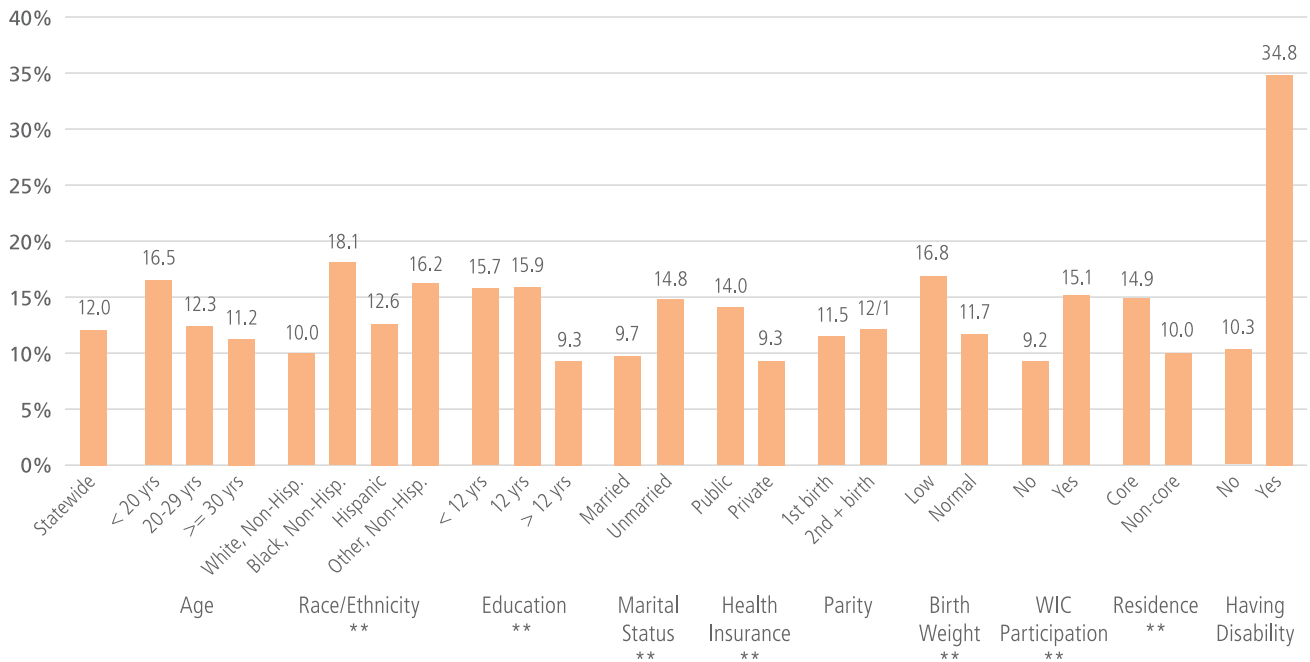


\* p-value < 0.05    \*\*p-value < 0.01

# Demographic Characteristics: Postpartum Depression Symptoms (PDS), 2012-2015

- » The overall prevalence of Rhode Island mothers reporting PDS was 12.0%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with PDS included race/ethnicity, education level, marital status, health insurance type, birth weight, participation in the WIC program, core city residence, and self-reported disability status.
- » Mothers who were Black Non-Hispanic (18.1%), were unmarried (14.8%), had 12 years of education (15.9%), had public health insurance (14.0%), delivered a low birth weight baby (16.8%), participated in the WIC program (15.1%), resided in a core city (14.9%), and had a self-reported disability (34.8%) had a higher prevalence of PDS compared with their counterparts.

**FIGURE 10-3: POSTPARTUM DEPRESSION SYMPTOMS BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**



\* p-value < 0.05    \*\*p-value < 0.01

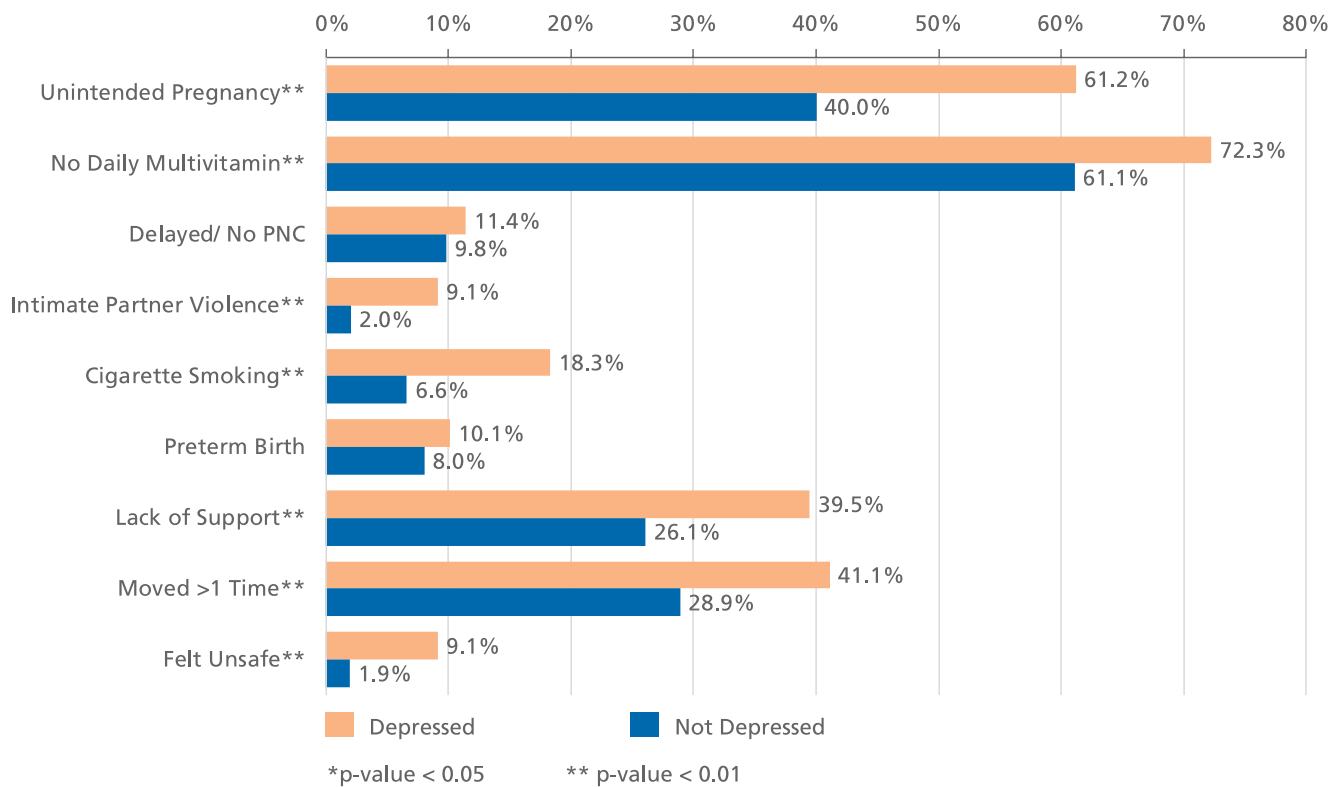


# Risk Behaviors and Outcomes by Depression During Pregnancy, 2012-2015

Mothers diagnosed with depression during pregnancy, compared to mothers not diagnosed with depression, were significantly (p-value less than 0.05) more likely to report that:

- » Their pregnancy was unintended (61.2% versus 40.0%).
- » They did not take multi-vitamins daily in the month prior to pregnancy (72.3% versus 61.1%).
- » They experienced intimate partner violence during the 12 months before pregnancy or during pregnancy (9.1% versus 2.0%).
- » They smoked cigarettes during their pregnancy (18.3% versus 6.6%).
- » They lacked some social support since delivery (39.5% versus 26.1%).
- » They moved more than one time in the last three years (41.1% versus 28.9%).
- » They felt unsafe in their neighborhood in the 12 months before their baby was born (9.1% versus 1.9%).

**FIGURE 10-4: RISK BEHAVIORS AND OUTCOMES BY DEPRESSION DURING PREGNANCY, RHODE ISLAND, 2012-2015**

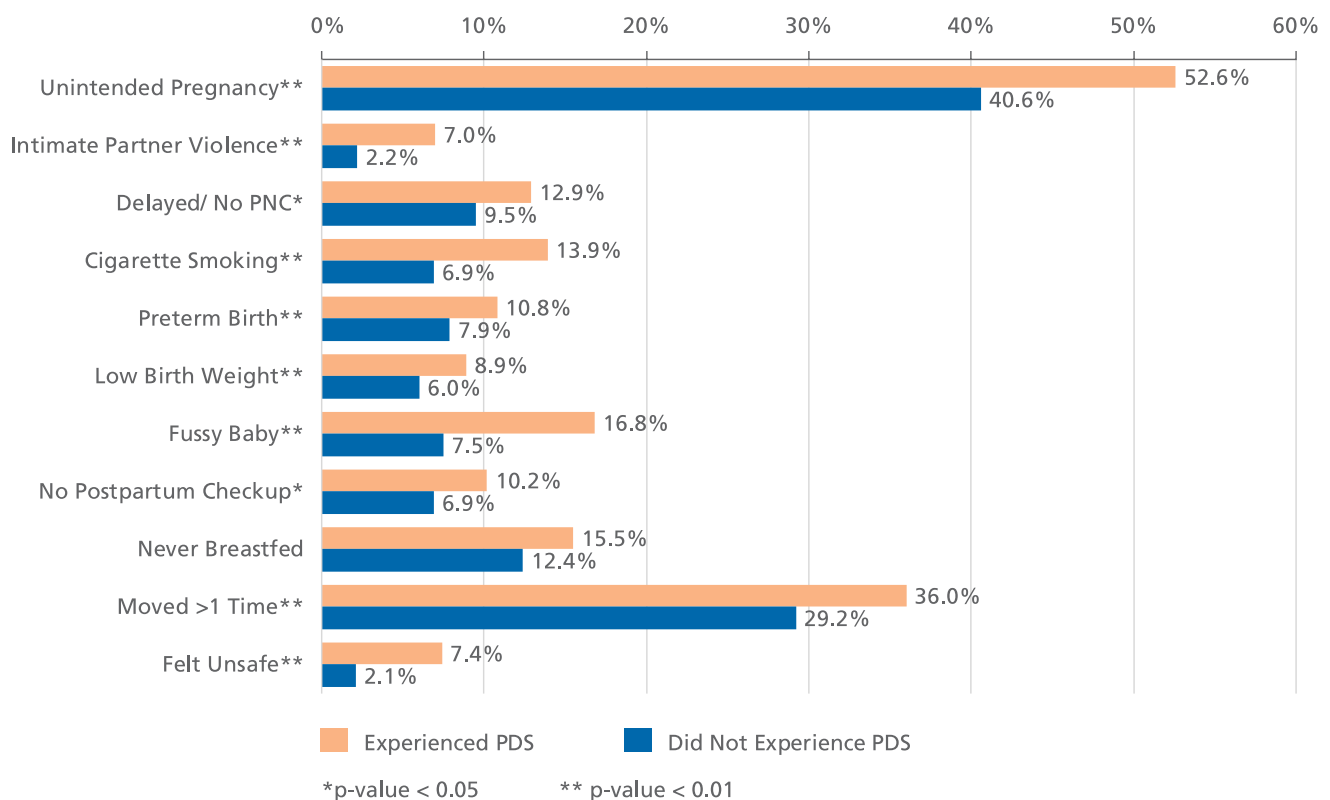


# Risk Behaviors and Outcomes by Postpartum Depression Symptoms (PDS), 2012-2015

Mothers who experienced PDS, compared to mothers who did not experience PDS, were significantly (p-value less than 0.05) more likely to report that:

- » Their pregnancy was unintended (52.6% versus 40.6%).
- » They experienced intimate partner violence during the 12 months before pregnancy or during pregnancy (7.0% versus 2.2%).
- » They had delayed or no prenatal care (PNC) visits (12.9% versus 9.5%).
- » They smoked cigarettes during their pregnancy (13.9% versus 6.9%).
- » They had a preterm birth (10.8% versus 7.9%).
- » They had a low birth weight baby (8.9% versus 6.0%).
- » They had a fussy baby (16.8% versus 7.5%). (This question refers to a mother’s perception about how easy it is to calm her baby when the baby is crying or fussing.)
- » They did not have a postpartum checkup since the new baby was born (10.2% versus 6.9%).
- » They moved more than once in the last three years (36.0% versus 29.2%).
- » They felt unsafe in their neighborhood in the 12 months before their baby was born (7.4% versus 2.1%).

**FIGURE 10-5: RISK BEHAVIORS AND OUTCOMES BY POSTPARTUM DEPRESSION SYMPTOMS (PDS), RHODE ISLAND, 2012-2015**



## References

<sup>29</sup> Centers for Disease Control and Prevention (CDC). Reproductive Health, Depression Among Women. [www.cdc.gov/reproductivehealth/Depression/index.htm](http://www.cdc.gov/reproductivehealth/Depression/index.htm)

<sup>30</sup> Centers for Disease Control and Prevention (CDC). Reproductive Health, Pregnancy Complications. [www.cdc.gov/reproductivehealth/MaternalInfantHealth/PregComplications.htm](http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PregComplications.htm)

## Related Publications

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Dumont D, Monteiro K. Perinatal Mental Distress in Rhode Island: Data to Guide Decision-Making. *Rhode Island Medical Journal*, December 2015:53-56. Available from: <http://www.rimed.org/rimedicaljournal/2015/12/2015-12-53-health-dumont.pdf>



# 11. LOW BIRTH WEIGHT

## Definition and Significance

Babies born weighing less than five pounds eight ounces (2,500 grams) are considered low birth weight.<sup>31</sup> Low birth weight is a major determinant of mortality, morbidity, and disability in infancy and childhood.<sup>32</sup> It also has a long-term effect on health outcomes in adult life.<sup>32</sup> Low birth weight affects one in every 12 babies in the United States.<sup>31</sup> Two main reasons for low birth weight babies are premature birth and fetal growth restriction.<sup>31</sup>

The birth weight of an infant in the PRAMS yearly file is collected from the State’s Center for Vital Records and is used to determine the low birth weight status of the infant.<sup>b</sup>

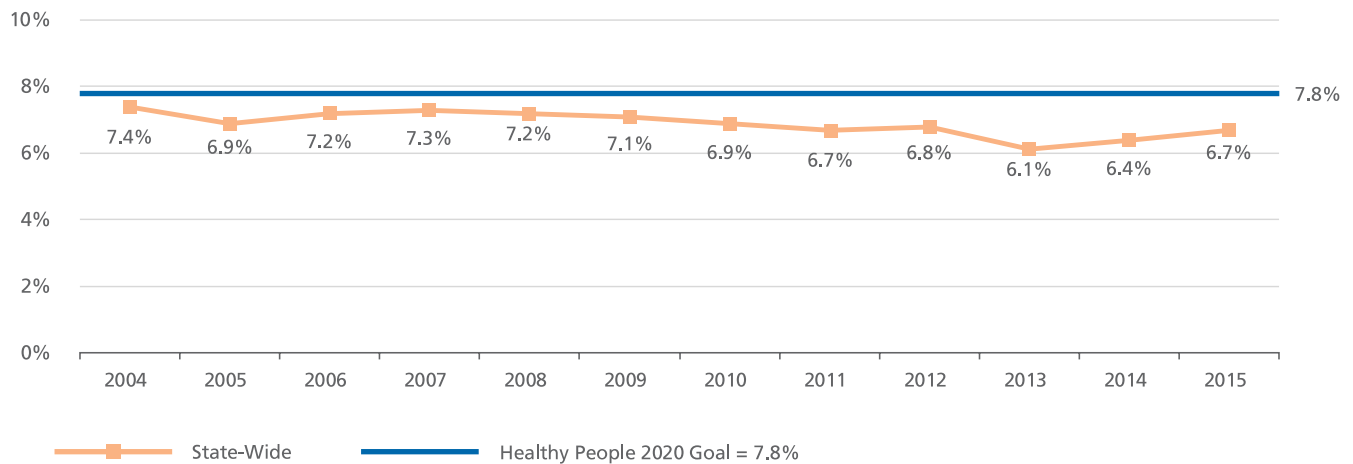
## Healthy People 2020 Target

MICH-8.1: Reduce low birth weight (LBW) to 7.8% of live births.<sup>33</sup>

## Prevalence and Trends, 2004-2015

The proportion of Rhode Island mothers who had a low birth weight baby decreased significantly from 7.4% in 2004 to 6.7% in 2015 (p-value less than 0.001). The Healthy People 2020 goal of reducing low birth weight to 7.8% of live births<sup>33</sup> has been achieved since 2002, when Rhode Island started to collect the PRAMS data.

**FIGURE 11-1: MOTHERS WITH A LOW BIRTH WEIGHT BABY BY YEAR, RHODE ISLAND, 2004-2015**



<sup>b</sup> The data shown here reflect the proportion of mothers with a low birth weight baby, which differs from the proportion of low birth weight babies reported in the State’s Center for Vital Records data. For example, a woman delivering multiples (twins, triplets) is counted once in the PRAMS data file, and information on low birth weight and other measures is collected for only one of her babies. When using data from the Center for Vital Records, all individual infants are counted.



## Demographic Characteristics, 2012-2015

- » The overall prevalence of Rhode Island mothers having a low birth weight baby was 6.5%
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with having a low birth weight baby included age, race/ethnicity, education level, marital status, health insurance type, parity, participation in the WIC program, core city residence, and self-reported disability status.
- » Mothers who were younger than 20 (8.1%), Black non-Hispanic (10.8%), were unmarried (7.9%), had less than 12 years of education (8.4%), had public health insurance (7.5%), gave birth to their first child (7.0%), participated in the WIC program (7.6%), resided in a core city (7.9%), and had a self-reported disability (8.9%) had a higher prevalence of having a low birth weight baby compared with their counterparts.

**FIGURE 11-2: MOTHERS WITH A LOW BIRTH WEIGHT BABY BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**

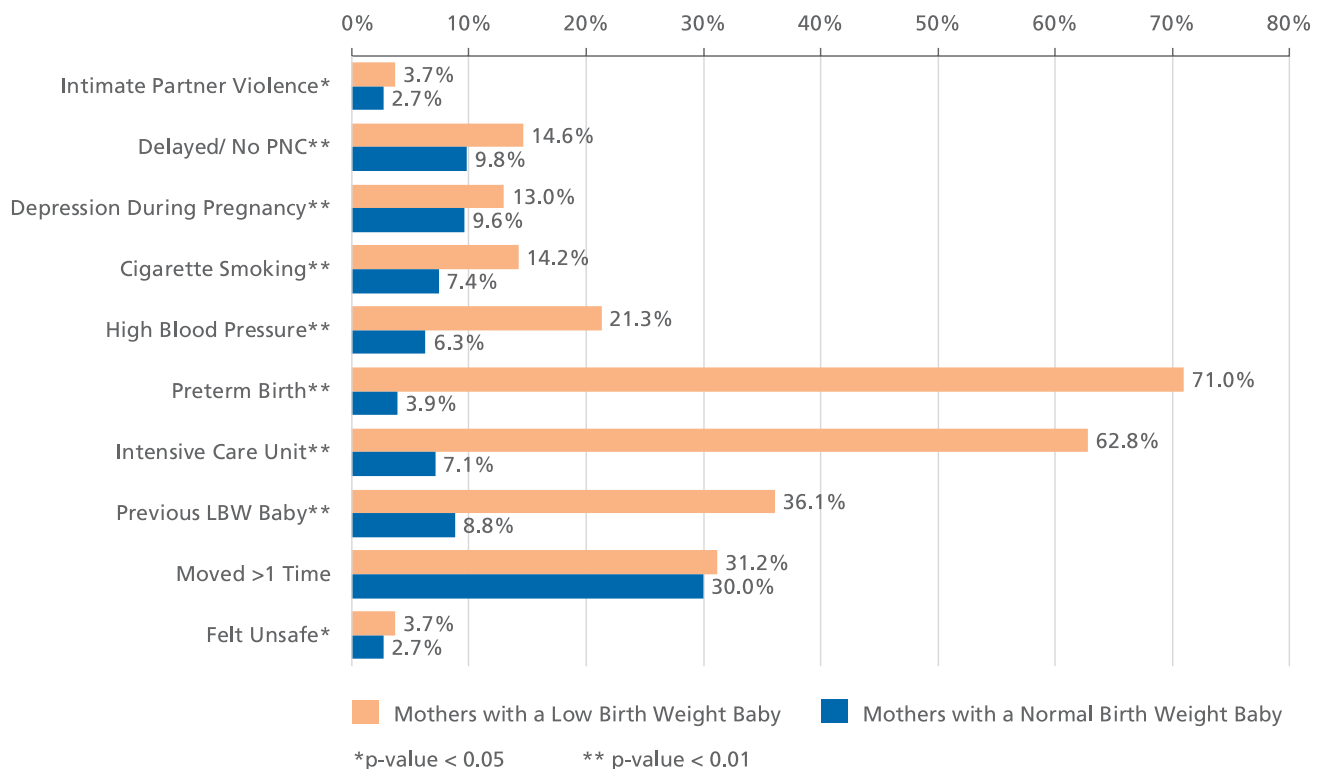


## Risk Behaviors and Outcomes by Birth Weight Status, 2012-2015

Mothers who had a low birth weight baby, compared to mothers who had a normal birth weight baby, were significantly (p-value less than 0.05) more likely to report that:

- » They experienced intimate partner violence during the 12 months before pregnancy or during pregnancy (3.7% versus 2.7%).
- » They had delayed or no prenatal care (PNC) visits (14.6% versus 9.8%).
- » They were diagnosed with depression during their pregnancy (13.0% versus 9.6%).
- » They smoked cigarettes during their pregnancy (14.2% versus 7.4%).
- » They had high blood pressure or hypertension before their pregnancy (21.3% versus 6.3%).
- » They had a preterm birth (71.0% versus 3.9%).
- » Their baby was put in an intensive care unit after the baby was born (62.8% versus 7.1%).
- » Their previous baby born just before this new one was a low birth weight baby (36.1% versus 8.8%: excluded first-time mothers, resulting in a smaller sample size for analysis).
- » They felt unsafe in their neighborhood in the 12 months before their baby was born (3.7% versus 2.7%).

**FIGURE 11-3: RISK BEHAVIORS AND OUTCOMES BY BIRTH WEIGHT STATUS, RHODE ISLAND, 2012-2015**



## References

<sup>31</sup> March of Dimes. Your Premature Baby. [www.marchofdimes.com/baby/low-birthweight.aspx](http://www.marchofdimes.com/baby/low-birthweight.aspx)

<sup>32</sup> World Health Organization, Nutrition, Feto-maternal nutrition and low birth weight. [www.who.int/nutrition/topics/feto\\_maternal/en/index.html](http://www.who.int/nutrition/topics/feto_maternal/en/index.html)

<sup>33</sup> US Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Healthy People 2020, Maternal, Infant, and Child Health. [www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives](http://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives)



## 12. PRETERM BIRTH

### Definition and Significance

Preterm birth is the birth of an infant that occurs before 37 weeks of gestation.<sup>34,35</sup> Preterm babies are at an increased risk of death in the first few days of life and are at risk for several adverse health outcomes, including visual and hearing impairments and intellectual and learning disabilities.<sup>34,35</sup> The CDC has reported that in 2015, preterm birth and low birth weight accounted for about 17% of all infant deaths.<sup>34</sup> The most significant risk factors for a preterm birth include having a previous preterm pregnancy, being pregnant with multiples, or having uterine or cervical problems.<sup>34,36</sup> In the United States, about one in 10 babies are born prematurely each year.<sup>34,35</sup>

The PRAMS dataset includes the physician's estimate of gestational age of the infant, which is collected from the State's Center for Vital Records and is used to determine preterm birth in this data book.<sup>c</sup>

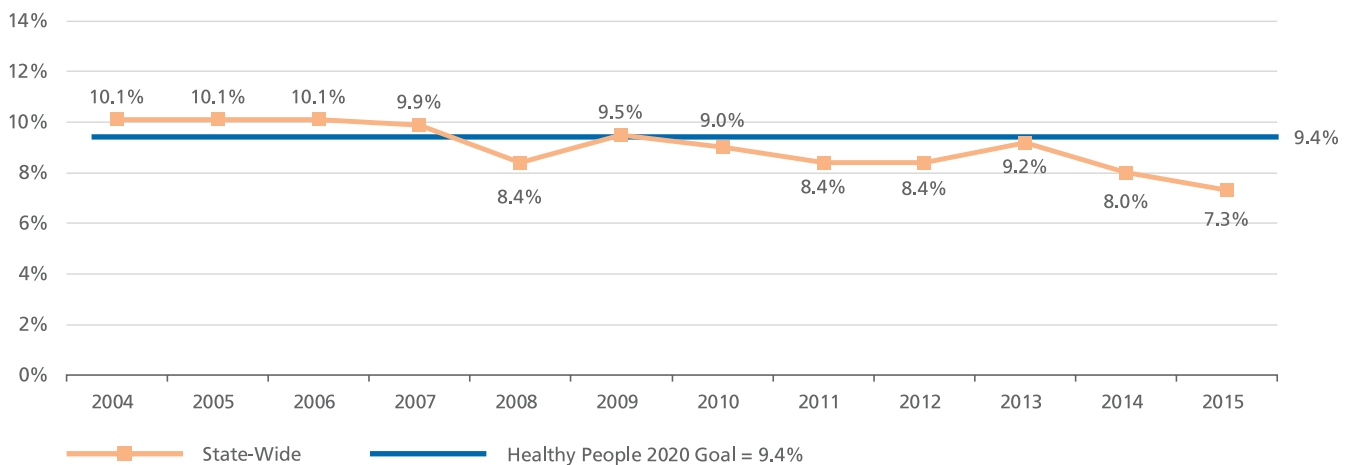
### Healthy People 2020 Target

MICH-9.1: Reduce preterm births to 9.4% of live births.<sup>37</sup>

### Prevalence and Trends, 2004-2015

The proportion of Rhode Island mothers who had a preterm birth decreased significantly from 10.1% in 2004 to 7.3% in 2015 (p-value less than 0.001). The Healthy People 2020 goal of reducing preterm births to 9.4% of live births<sup>37</sup> has been achieved since 2010.

**FIGURE 12-1: MOTHERS WITH A PRETERM BIRTH BY YEAR, RHODE ISLAND, 2004-2015**

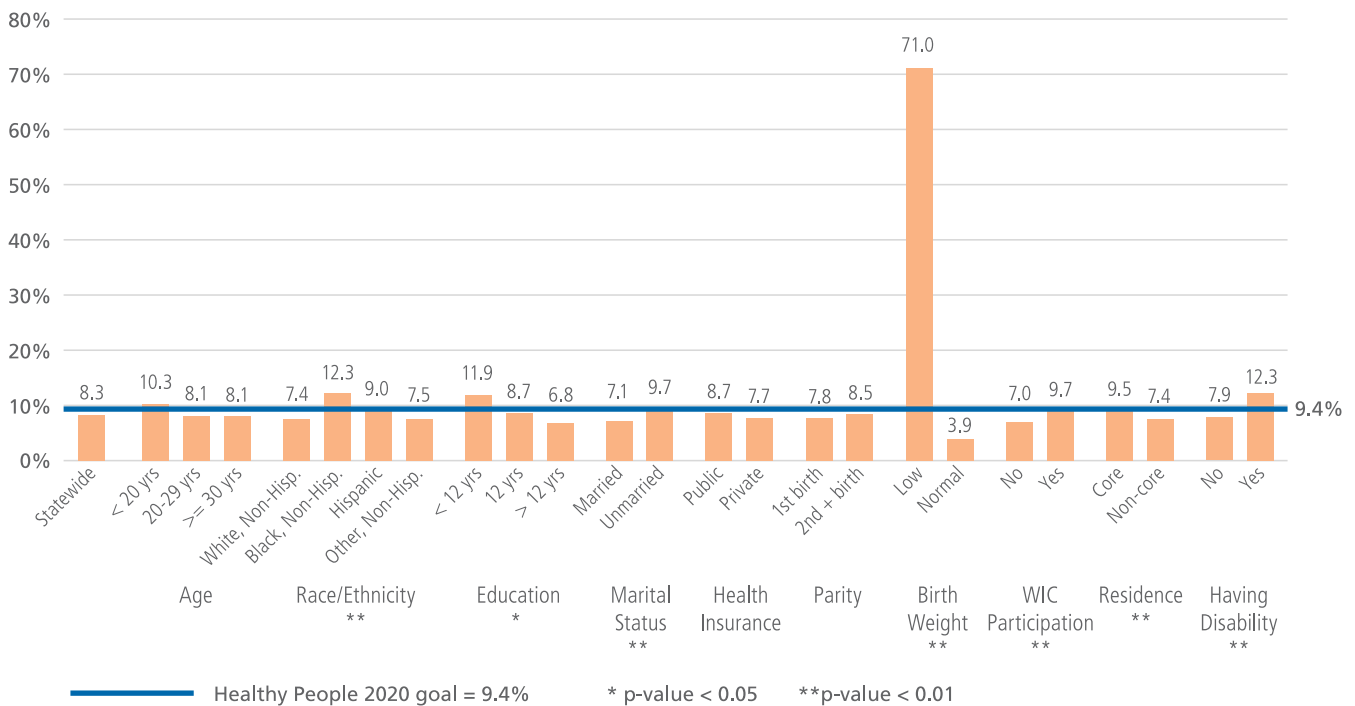


<sup>c</sup> The data shown here reflect the proportion of mothers with a preterm birth, which differs from the proportion of preterm babies reported in the State's Center for Vital Records data. For example, a woman delivering multiples (twins, triplets) is counted once in the PRAMS data file, and information on prematurity and other measures is collected for only one of her babies. When using data from the Center for Vital Records, all individual infants are counted.

## Demographic Characteristics, 2012-2015

- » The overall prevalence of Rhode Island mothers having a preterm birth was 8.3%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with having a preterm birth included race/ethnicity, education level, marital status, birth weight, participation in the WIC program, core city residence, and self-reported disability status.
- » Mothers who were Black non-Hispanic (12.3%), were unmarried (9.7%), had less than 12 years of education (11.9%), had a low birth weight baby (71.0%), participated in the WIC program (9.7%), resided in a core city (9.5%), and had a self-reported disability (12.3%) had a higher prevalence of having a preterm birth compared with their counterparts.

**FIGURE 12-2: MOTHERS WITH A PRETERM BIRTH BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**

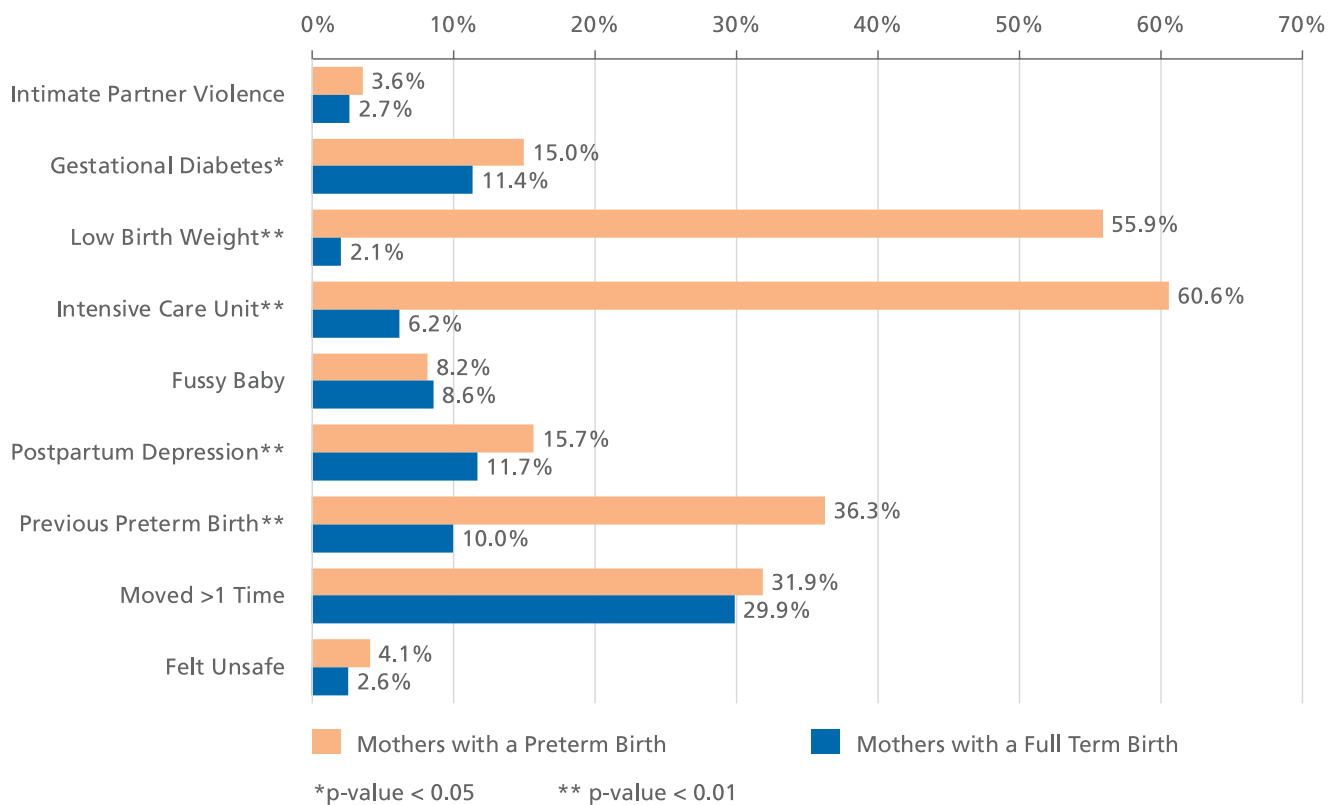


## Risk Behaviors and Outcomes by Birth Term Status, 2012-2015

Mothers who had a preterm birth, compared to mothers who had a full-term birth, were significantly (p-value less than 0.05) more likely to report that:

- » They had high blood sugar (diabetes) that started during this pregnancy (gestational diabetes) (15.0% versus 11.4%).
- » They had a low birth weight baby (55.9% versus 2.1%).
- » Their baby was put in an intensive care unit after the baby was born (60.6% versus 6.2%).
- » They had postpartum depression symptoms (15.7% versus 11.7%).
- » Their previous baby born just before this new one was a preterm birth (36.3% versus 10.0%: excluded first-time mothers, resulting in a smaller sample size for analysis).

**FIGURE 12-3: RISK BEHAVIORS AND OUTCOMES BY BIRTH TERM STATUS, RHODE ISLAND, 2012-2015**



## References

<sup>34</sup> Centers for Disease Control and Prevention. Reproductive Health, Preterm Birth.

[www.cdc.gov/reproductivehealth/MaternalInfantHealth/PretermBirth.htm](http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PretermBirth.htm)

<sup>35</sup> March of Dimes. Premature Babies. [www.marchofdimes.org/complications/premature-babies.aspx](http://www.marchofdimes.org/complications/premature-babies.aspx)

<sup>36</sup> March of Dimes. Preterm Labor and Premature Birth: Are you at risk?

[www.marchofdimes.org/complications/preterm-labor-and-premature-birth-are-you-at-risk.aspx](http://www.marchofdimes.org/complications/preterm-labor-and-premature-birth-are-you-at-risk.aspx)

<sup>37</sup> US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020, Maternal, Infant, and Child Health.

[www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives](http://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives)



# 13. BREASTFEEDING

## Definition and Significance

The World Health Organization (WHO) recommends exclusive breastfeeding up to six months of age, with continued breastfeeding along with appropriate complementary foods up to age two or beyond.<sup>38</sup> Breastfeeding is beneficial to both mothers and their babies and is linked to a wide range of positive health outcomes.<sup>39,40</sup> Breastfeeding reduces the risk of babies getting various infectious diseases, including ear infections and diarrhea.<sup>40</sup> It also reduces the risk of overweight and obesity in children. Mothers who breastfeed their babies return to their pre-pregnancy weight faster, and breastfeeding also decreases the risk of breast and ovarian cancers.<sup>40</sup> Moreover, breastfeeding mothers experience less postpartum bleeding.<sup>40</sup> According to the CDC, among infants born in 2016 in the United States, 81.1% were ever breastfed, and 51.8% were still being breastfed at six months of age.<sup>41</sup>

The PRAMS survey asks mothers whether they ever breastfed or pumped breast milk to feed their baby after delivery. It also asks mothers about whether they were still breastfeeding at the time of the survey and about the barriers to breastfeeding.

## Healthy People 2020 Target

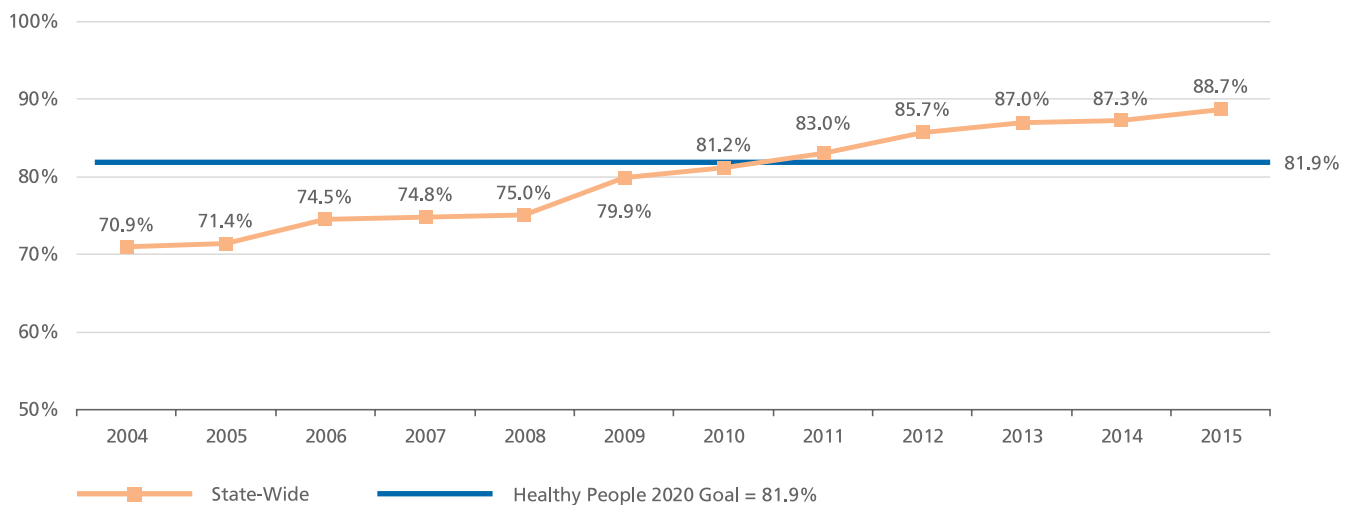
MICH-21.1: Increase the proportion of infants who are ever breastfed to 81.9%.<sup>42</sup>

MICH-21.2: Increase the proportion of infants who are breastfed at six months to 60.6%.<sup>42</sup>

## Prevalence and Trends: Ever Breastfed, 2004-2015

The proportion of Rhode Island mothers who ever breastfed or pumped breast milk to feed their new baby after delivery increased significantly from 70.9% in 2004 to 88.7% in 2015 (p-value less than 0.001). The Healthy People 2020 goal of increasing the proportion of infants who are ever breastfed to 81.9%<sup>42</sup> has been achieved since 2011.

**FIGURE 13-1: EVER BREASTFED BY YEAR, RHODE ISLAND, 2004-2015**

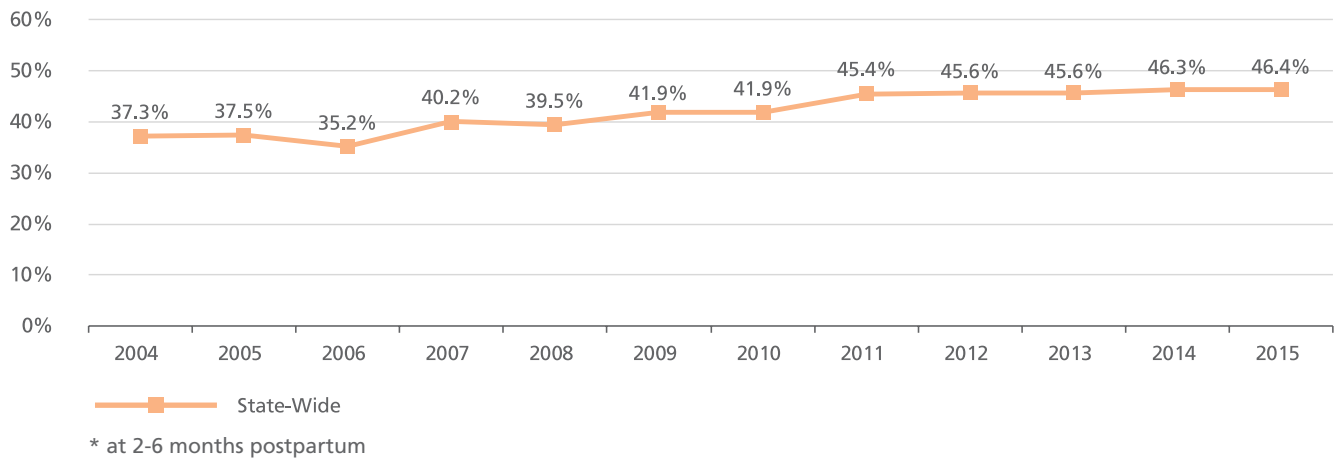




## Prevalence and Trends: Current Breastfeeding, 2004-2015

The proportion of Rhode Island mothers who were still breastfeeding or pumping breast milk for their new baby at the time of the survey (usually two to six months postpartum) increased significantly from 37.3% in 2004 to 46.4% in 2015 (p-value less than 0.001). The Healthy People 2020 objective of MICH-21.2 has a different time frame from this data book's measurement, and the data in Figure 13-2 should not be compared with it.

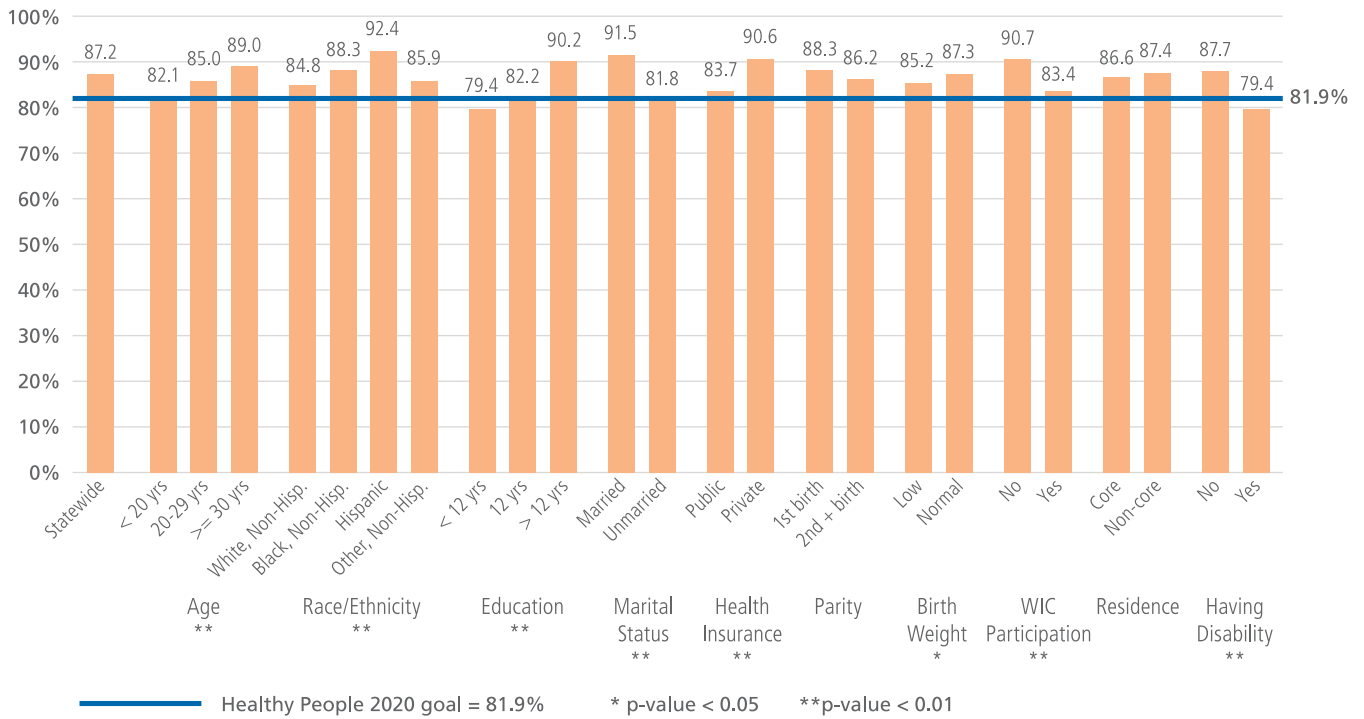
**FIGURE 13-2: CURRENT BREASTFEEDING\* BY YEAR, RHODE ISLAND, 2004-2015**



## Demographic Characteristics: Ever Breastfed, 2012-2015

- » The overall prevalence of Rhode Island mothers who ever breastfed or pumped breast milk to feed their new baby was 87.2%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with ever breastfeeding included age, race/ethnicity, education level, marital status, health insurance type, birth weight, participation in the WIC program, and self-reported disability status
- » Mothers who were younger than 20 (82.1%), White non-Hispanic (84.8%), were unmarried (81.8%), had less than 12 years of education (79.4%), had public health insurance (83.7%), had a low birth weight baby (85.2%), participated in the WIC program (83.4%), and had a self-reported disability (79.4%) had a lower prevalence of ever breastfeeding compared with their counterparts.

**FIGURE 13-3: EVER BREASTFED BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**

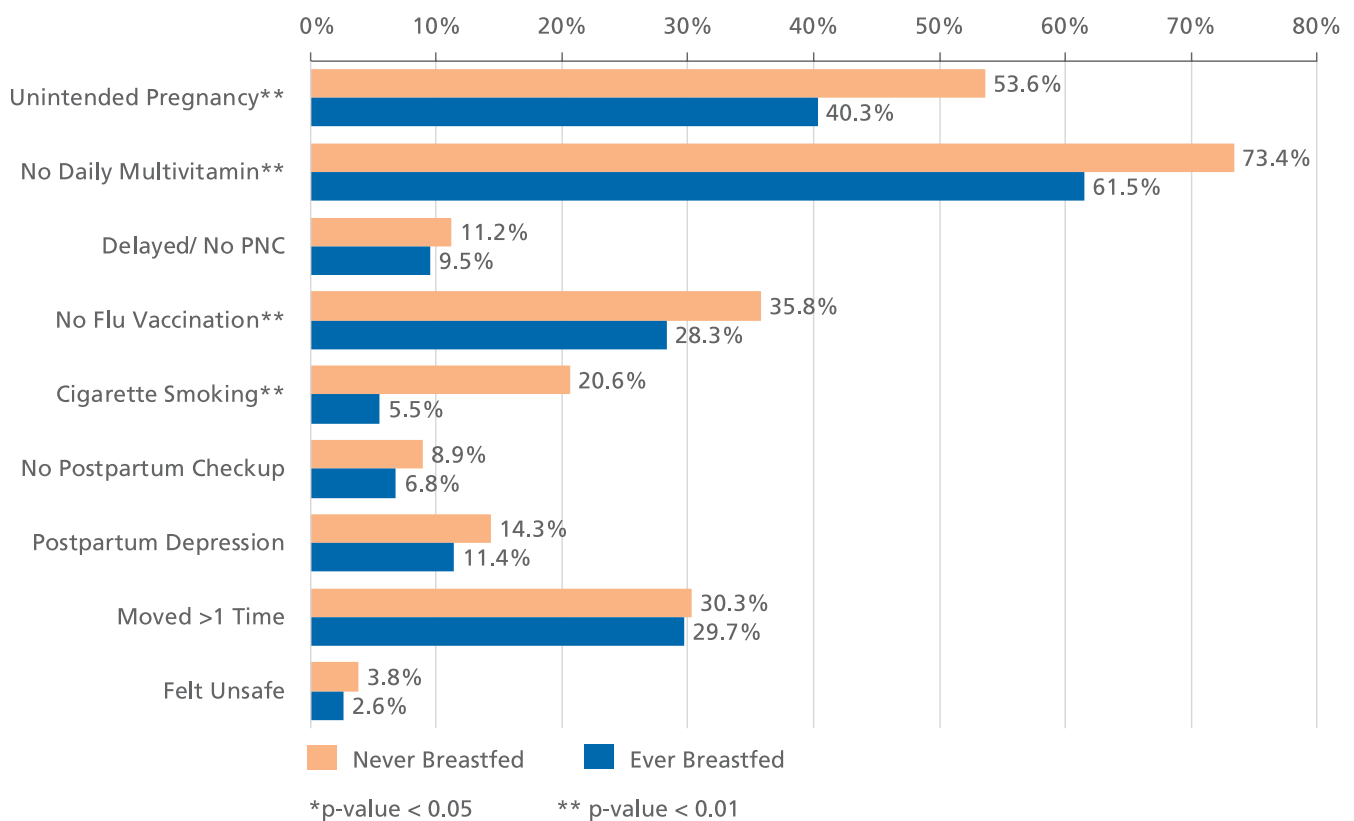


## Risk Behaviors and Outcomes by Breastfeeding Status, 2012-2015

Mothers who never breastfed their new baby, compared to mothers who ever breastfed, were significantly (p-value less than 0.05) more likely to report that:

- » Their pregnancy was unintended (53.6% versus 40.3%).
- » They did not take multi-vitamins daily in the month prior to pregnancy (73.4% versus 61.5%).
- » They did not get a flu vaccination during the 12 months before the delivery of their new baby (35.8% versus 28.3%).
- » They smoked cigarettes during their pregnancy (20.6% versus 5.5%).

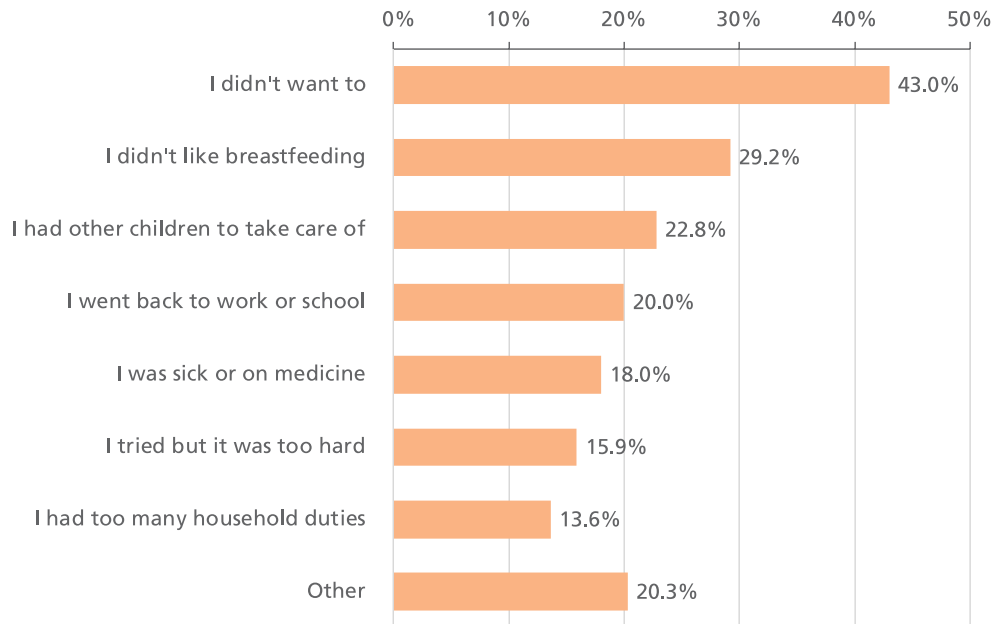
**FIGURE 13-4: RISK BEHAVIORS AND OUTCOMES BY BREASTFEEDING STATUS, RHODE ISLAND, 2012-2015**



## Reasons for Not Breastfeeding, 2012-2015

The PRAMS survey asks about barriers to breastfeeding, and the question is designed to allow the mothers to select all barriers that applied. Among mothers who never breastfed, 43.0% reported that they did not want to breastfeed; 29.2% reported that they did not like breastfeeding; and 22.8% reported that they had other children to take care of.

**FIGURE 13-5: REASONS FOR NOT BREASTFEEDING, RHODE ISLAND, 2012-2015**



## References

<sup>38</sup> World Health Organization. Health Topics: Breastfeeding.  
[www.who.int/topics/breastfeeding/en/](http://www.who.int/topics/breastfeeding/en/)

<sup>39</sup> Centers for Disease Control and Prevention (CDC). Breastfeeding.  
[www.cdc.gov/breastfeeding](http://www.cdc.gov/breastfeeding)

<sup>40</sup> American Academy of Pediatrics. Breastfeeding Initiatives, AAP Policy on Breastfeeding and the Use of Human Milk.  
<http://pediatrics.aappublications.org/content/129/3/e827.full#ref-1>

<sup>41</sup> Centers for Disease Control and Prevention (CDC). Breastfeeding Report Card—United States, 2016.  
<https://www.cdc.gov/breastfeeding/pdf/2016breastfeedingreportcard.pdf>

<sup>42</sup> US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020, Maternal, Infant, and Child Health.  
[www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives](http://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives)



# 14. INFANT SAFE SLEEP PRACTICES

## Definition and Significance

Positioning a baby to sleep on the back (supine) has been recommended by the American Academy of Pediatrics (AAP) since 1992 to reduce the risk of Sudden Unexpected Infant Death (SUID).<sup>43</sup> In 2016, about 3,600 babies in the US died suddenly and unexpectedly.<sup>44</sup> The AAP also recommends that infants sleep in the same room with their parents without bed-sharing, or co-sleeping.<sup>45</sup>

The PRAMS survey asks mothers in which position they most often lay their baby down to sleep. The response options include *side*, *back*, and *stomach*, with some mothers selecting more than one option. Mothers who selected more than one option were excluded from the analyses in this edition. The PRAMS survey also asks mothers how often their new baby sleeps in the same bed with her or anyone else. Response options include *always*, *often*, *sometimes*, *rarely*, and *never*. Mothers who indicated that their baby bed-shared *always*, *often*, or *sometimes* were considered to engage in co-sleeping.

## Healthy People 2020 Target

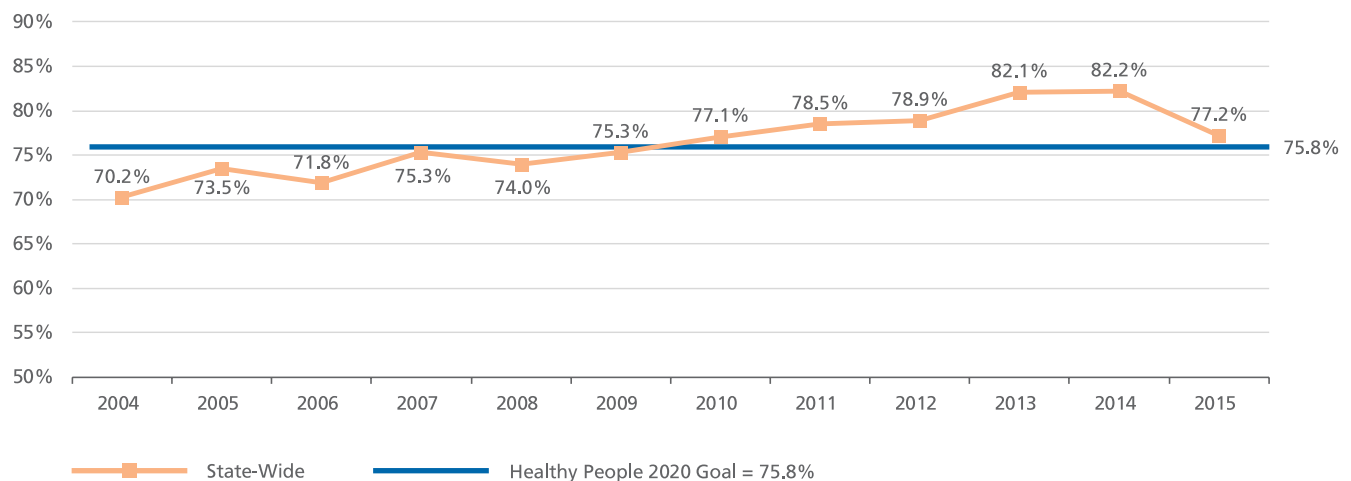
MICH-20: Increase the proportion of infants who are put to sleep on their backs to 75.8%.<sup>46</sup>

Healthy People 2020 does not identify a target for co-sleeping.

## Prevalence and Trends: Infant Sleep Position, 2004-2015

The proportion of Rhode Island mothers who placed their infants to sleep only on their backs increased significantly from 70.2% in 2004 to 77.2% in 2015 (p-value less than 0.001). The Healthy People 2020 goal of increasing the proportion of infants who are put to sleep on their backs to 75.8%<sup>46</sup> has been achieved since 2010.

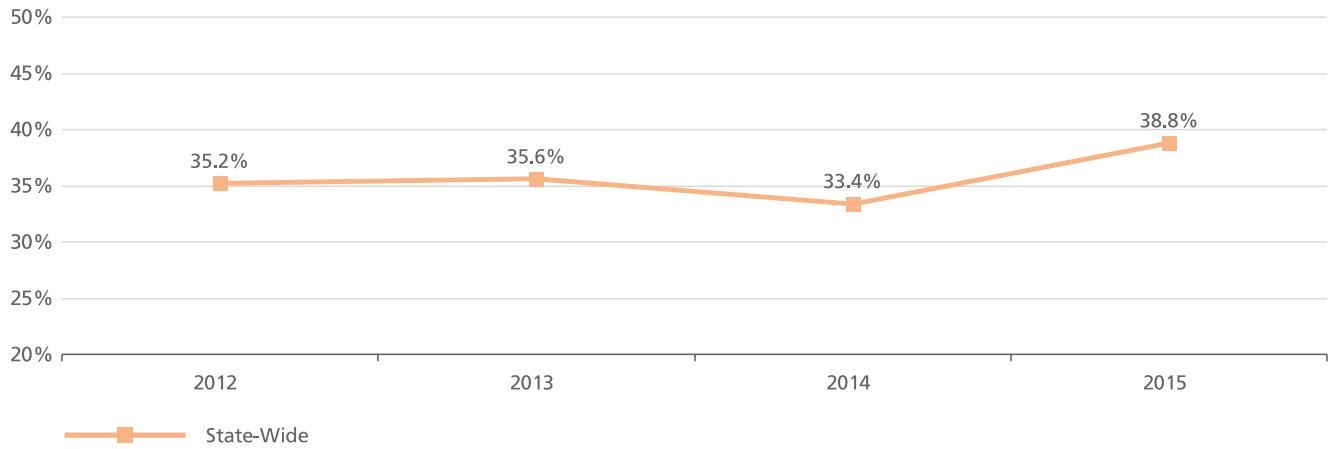
**FIGURE 14-1: INFANTS LAID TO SLEEP ON THEIR BACKS BY YEAR, RHODE ISLAND, 2004-2015**



## Prevalence and Trends: Co-sleeping, 2012-2015

The proportion of Rhode Island mothers who reported co-sleeping with their infants ranged from 33.4% in 2014 to 38.8% in 2015. There was no significant linear trend in this proportion between 2012 and 2015. The co-sleeping question was included in the Phase 7 survey (2012-2015) for the first time, so the previous year data are not available and are not reported here.

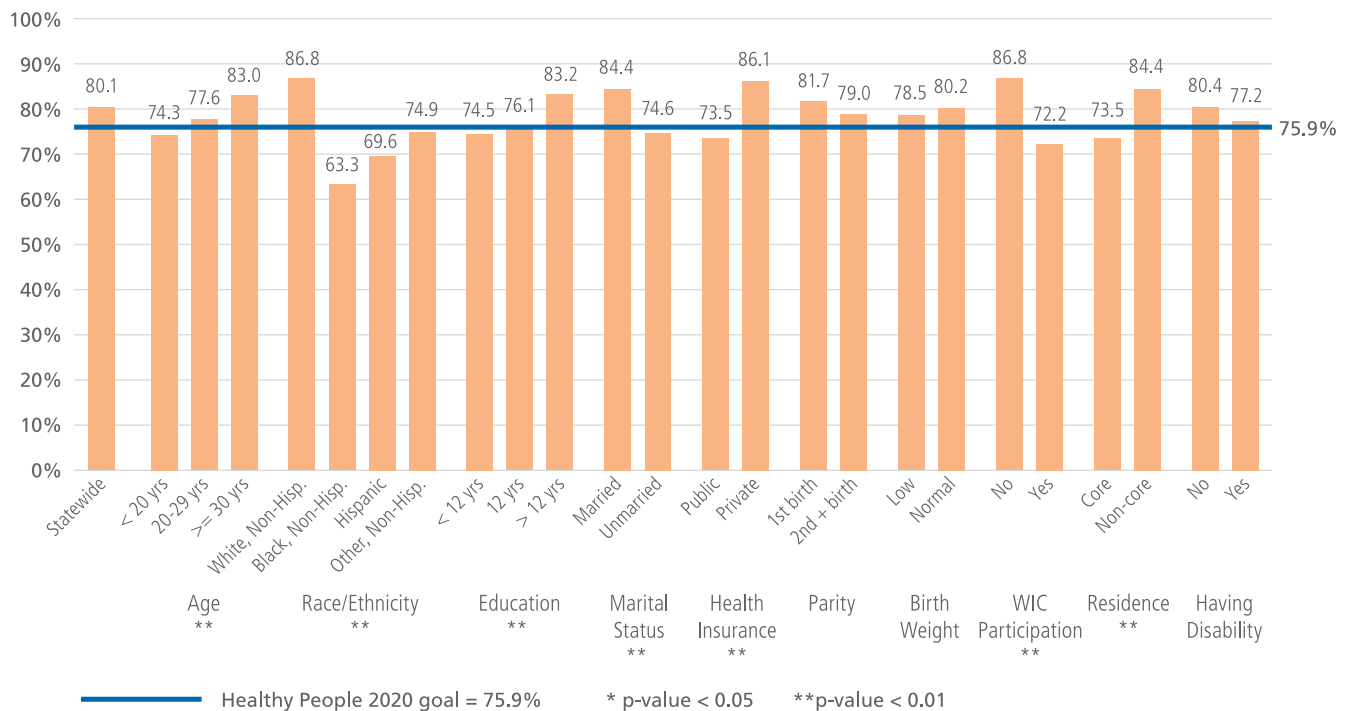
**FIGURE 14-2: CO-SLEEPING BY YEAR, RHODE ISLAND, 2012-2015**



## Demographic Characteristics: Infant Sleep Position, 2012-2015

- » The overall prevalence of Rhode Island mothers placing their infants to sleep on their backs was 80.1%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with placing infants to sleep on their backs included age, race/ethnicity, education level, marital status, health insurance type, participation in the WIC program, and core city residence.
- » Mothers who were 30 or older (83.0%), White non-Hispanic (86.8%), were married (84.4%), had more than 12 years of education (83.2%), had private health insurance (86.1%), did not participate in the WIC program (86.8%), and resided in a non-core city (84.4%) had a higher prevalence of placing infants to sleep on their backs compared with their counterparts.

**FIGURE 14-3: INFANTS LAID TO SLEEP ON THEIR BACKS BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**

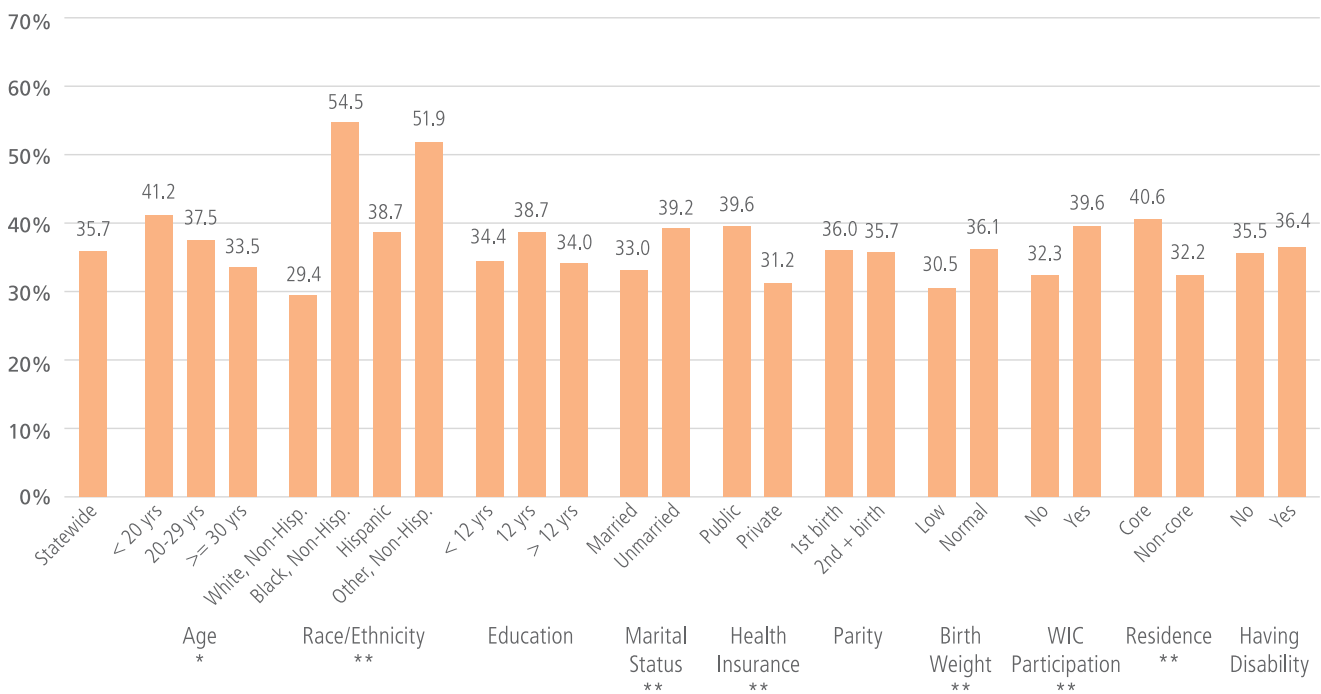




## Demographic Characteristics: Co-Sleeping, 2012-2015

- » The overall prevalence of Rhode Island mothers reporting co-sleeping with their infants was 35.7%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with co-sleeping included age, race/ethnicity, marital status, health insurance type, birth weight, participation in the WIC program, and core city residence.
- » Mothers who were 20 or younger (41.2%), Black non-Hispanic (54.6%), were unmarried (39.2%), had public health insurance (39.6%), had a normal birth weight baby (36.1%), participated in the WIC program (39.6%), and resided in a core city (40.6%) had a higher prevalence of co-sleeping compared with their counterparts.

**FIGURE 14-4: CO-SLEEPING BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**



\* p-value < 0.05

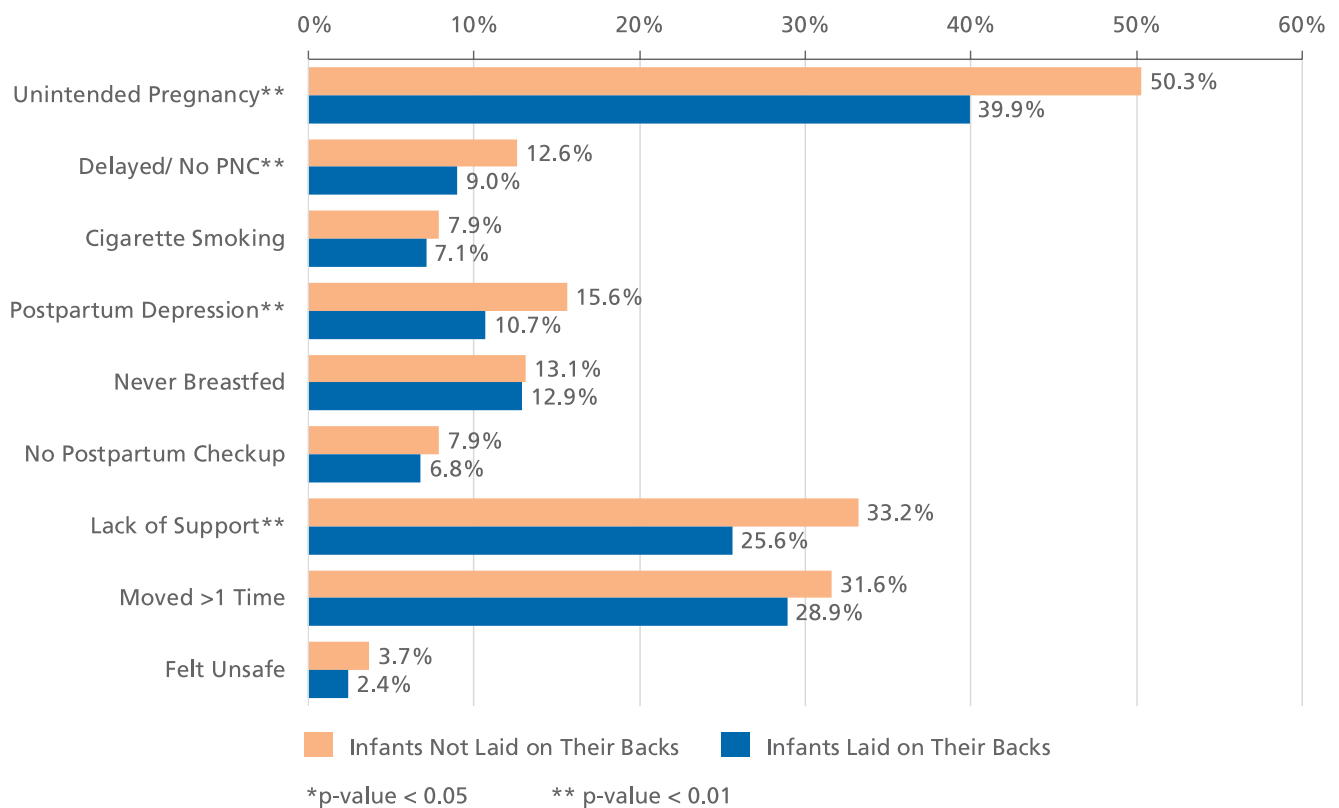
\*\*p-value < 0.01

## Risk Behaviors and Outcomes by Infant Sleep Position, 2012-2015

Mothers who did not place their infants to sleep on their backs, compared to mothers who placed their infants to sleep on their backs, were significantly (p-value less than 0.05) more likely to report that:

- » Their pregnancy was unintended (50.3% versus 39.9%).
- » They had delayed or no prenatal care (PNC) visits (12.6% versus 9.0%).
- » They had postpartum depression symptoms (15.6% versus 10.7%).
- » They lacked some social support since delivery (33.2% versus 25.6%).

**FIGURE 14-5: RISK BEHAVIORS AND OUTCOMES BY INFANT SLEEP POSITION, RHODE ISLAND, 2012-2015**



## Risk Behaviors and Outcomes by Co-Sleeping Status, 2012-2015

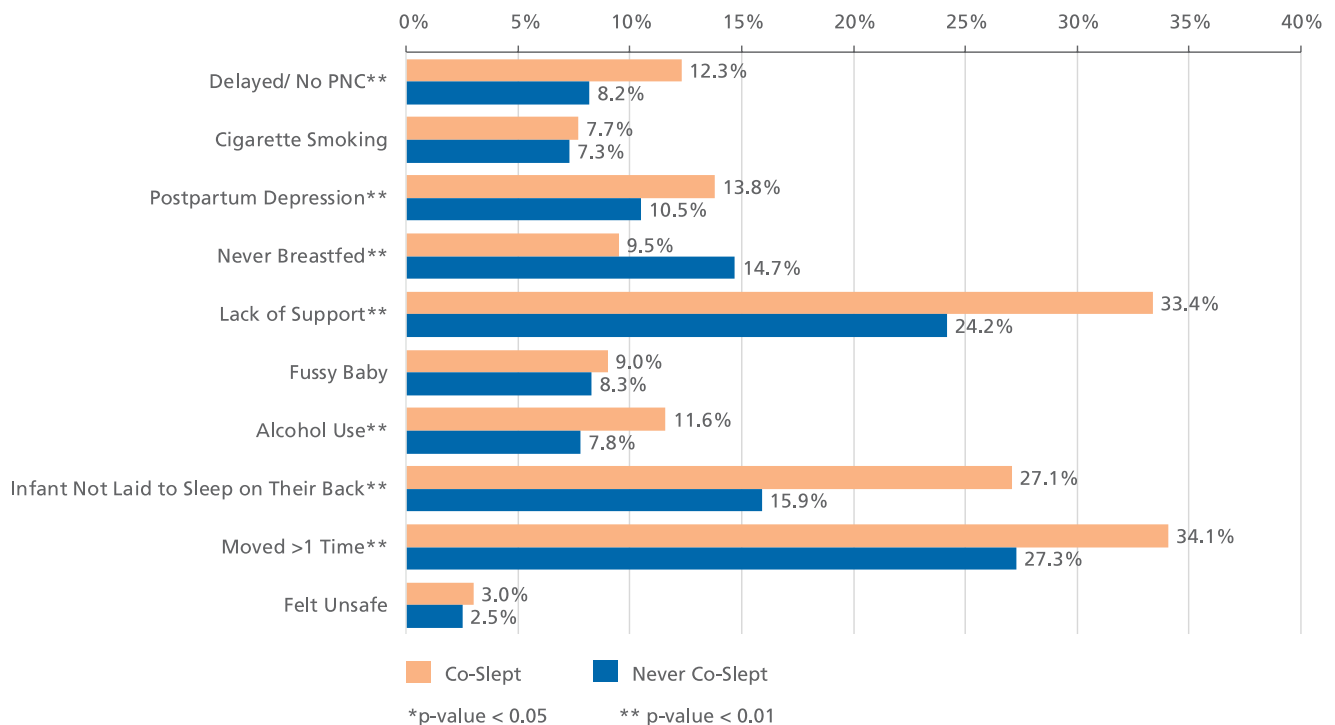
Mothers who reported co-sleeping with their infants, compared to mothers who never co-slept, were significantly (p-value less than 0.05) MORE likely to report that:

- » They had delayed or no prenatal care (PNC) visits (12.3% versus 8.2%).
- » They had postpartum depression symptoms (13.8% versus 10.5%).
- » They lacked some social support since delivery (33.4% versus 24.2%).
- » They used alcohol during pregnancy (11.6% versus 7.8%).
- » They did not lay their infant to sleep on their back (27.1% versus 15.9%).
- » They moved more than one time in the last three years (34.1% versus 27.3%).

However, mothers who reported co-sleeping with their infants, compared to mothers who never co-slept, were significantly (p-value less than 0.05) LESS likely to report that:

- » They never breastfed their infants (9.5% versus 14.7%).

**FIGURE 14-6: RISK BEHAVIORS AND OUTCOMES BY CO-SLEEPING STATUS, RHODE ISLAND, 2012-2015**



## References

<sup>43</sup> American Academy of Pediatrics Task Force on Infant Sleep Position and Sudden Infant Death Syndrome. Changing concepts of sudden infant death syndrome: implications for infant sleeping environment and sleep position. *Pediatrics* 2000; 105(3 Part 1):650–656.

<http://pediatrics.aappublications.org/content/pediatrics/105/3/650.full.pdf>

<sup>44</sup> Centers for Disease Control and Prevention (CDC). Sudden Unexpected Infant Death and Sudden Infant Death Syndrome. [www.cdc.gov/sids](http://www.cdc.gov/sids)

<sup>45</sup> Moon, R. Y. SIDS and Other Sleep-Related Infant Deaths: Evidence Base for 2016 Updated Recommendations for a Safe Infant Sleeping Environment. *Pediatrics*, October 2016.

<http://pediatrics.aappublications.org/content/early/2016/10/20/peds.2016-2938#rhs>

<sup>46</sup> US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020, Maternal, Infant, and Child Health.

[www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives](http://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives)

## Related Publication

Kim H, Cain R, Viner-Brown S, Campagna K, Roach C. Racial Disparities in Infant Sleep Position in Rhode Island. *Rhode Island Medical Journal*, 53-55, March 2014. Available from:

[www.rimed.org/rimedicaljournal/2014/03/2014-03-53-health-sleep-position.pdf](http://www.rimed.org/rimedicaljournal/2014/03/2014-03-53-health-sleep-position.pdf)





# 15. POSTPARTUM CONTRACEPTION USE

## Definition and Significance

Postpartum contraception is recommended to prevent unintended pregnancy during the postpartum period, as it is possible to become pregnant soon after having a baby.<sup>47</sup> Postpartum contraception is also important to avoid negative outcomes related to short birth intervals, such as preterm birth.<sup>48</sup> From 2004-2006, the CDC estimated that 88% of postpartum women reported using at least one contraceptive method, 61.7% reported using highly effective contraception, and 20% used moderately effective contraception.<sup>49</sup> Highly and moderately effective contraception options include male or female sterilization, birth control pill, injection, contraceptive implant, contraceptive patch or vaginal ring, and intrauterine device (IUD).

The PRAMS survey asks whether respondents are doing anything now to keep from getting pregnant, among those using postpartum birth control, what kind of birth control respondents or their husbands or partners are using now to keep from getting pregnant, and among respondents not using birth control, their reasons for not doing anything to keep from getting pregnant.

## Healthy People 2020 Target

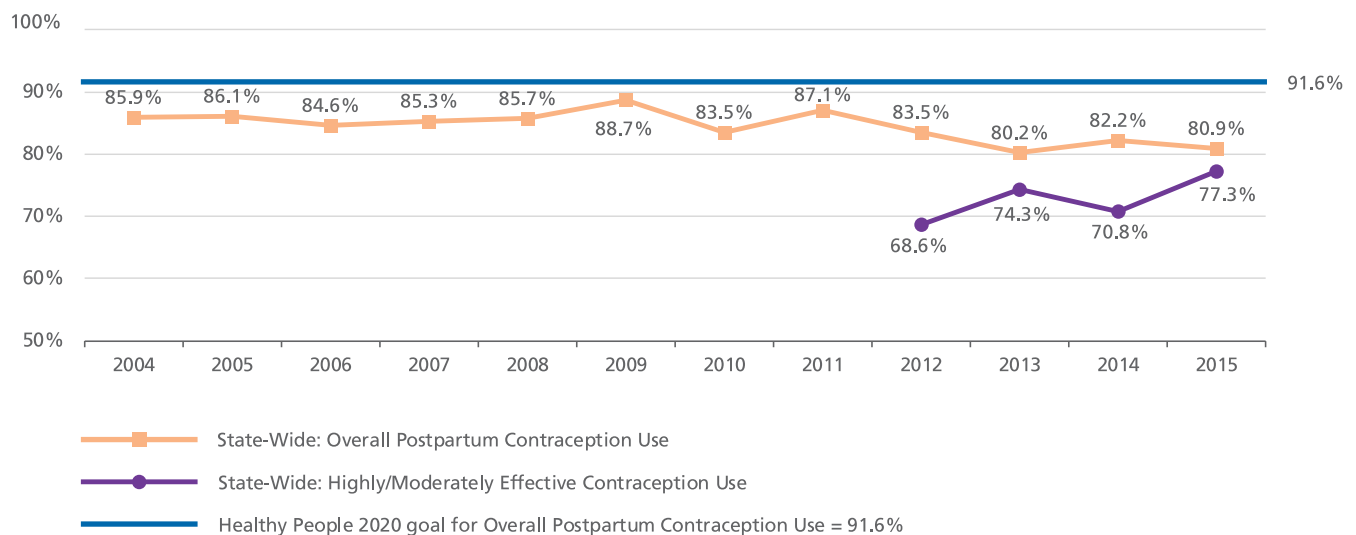
FP-6: Increase the proportion of females at risk of unintended pregnancy or their partners who use contraception at most recent sexual intercourse to 91.6%.<sup>50</sup>

## Prevalence and Trends: Postpartum Contraception Use, 2004-2015

The proportion of Rhode Island mothers who used contraception at the time of the survey decreased significantly from 85.9% in 2004 to 80.9% in 2015 (p-value less than 0.001). The Healthy People 2020 goal to increase the proportion of females using contraception to 91.6%<sup>50</sup> has not been achieved.

Among those women who used any postpartum contraceptive methods at the time of the survey, the proportion of Rhode Island mothers who used highly or moderately effective birth control methods increased significantly from 68.6% in 2012 to 77.3% in 2015 (p-value less than 0.01). The postpartum contraception questions were slightly changed in phase 7, so the 2004-2011 data on the use of highly or moderately effective contraception methods are not comparable with the 2012-2015 data and are not reported here.

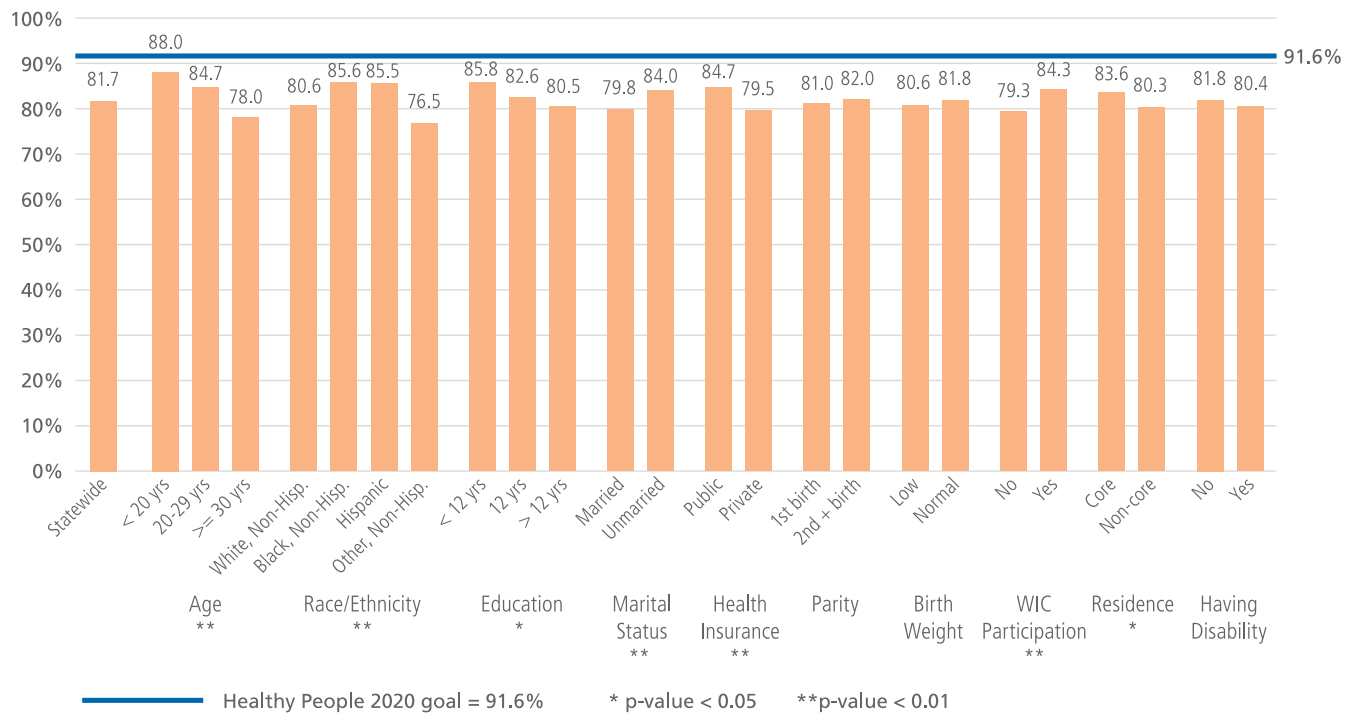
**FIGURE 15-1: POSTPARTUM CONTRACEPTION USE BY YEAR, RHODE ISLAND, 2004-2015**



# Demographic Characteristics: Postpartum Contraception Use, 2012-2015

- » The overall prevalence of Rhode Island mothers who reported using postpartum contraception was 81.7%.
- » Demographic characteristics that were significantly (p-value less than 0.05) associated with using postpartum contraception included age, race/ethnicity, education level, marital status, health insurance type, participation in the WIC program, and core city residence.
- » Mothers who were younger than 20 (88.0%), Black non-Hispanic (85.6%) and Hispanic (85.5%), had less than 12 years of education (85.8%), were unmarried (84.0%), had public health insurance (84.7%), participated in the WIC program (84.3%), and resided in a core city (83.6%) had a higher prevalence of using postpartum contraception compared with their counterparts.

**FIGURE 15-2: POSTPARTUM CONTRACEPTION USE BY DEMOGRAPHIC CHARACTERISTICS, RHODE ISLAND, 2012-2015**



# Risk Behaviors and Outcomes by Postpartum Contraception Use, 2012-2015

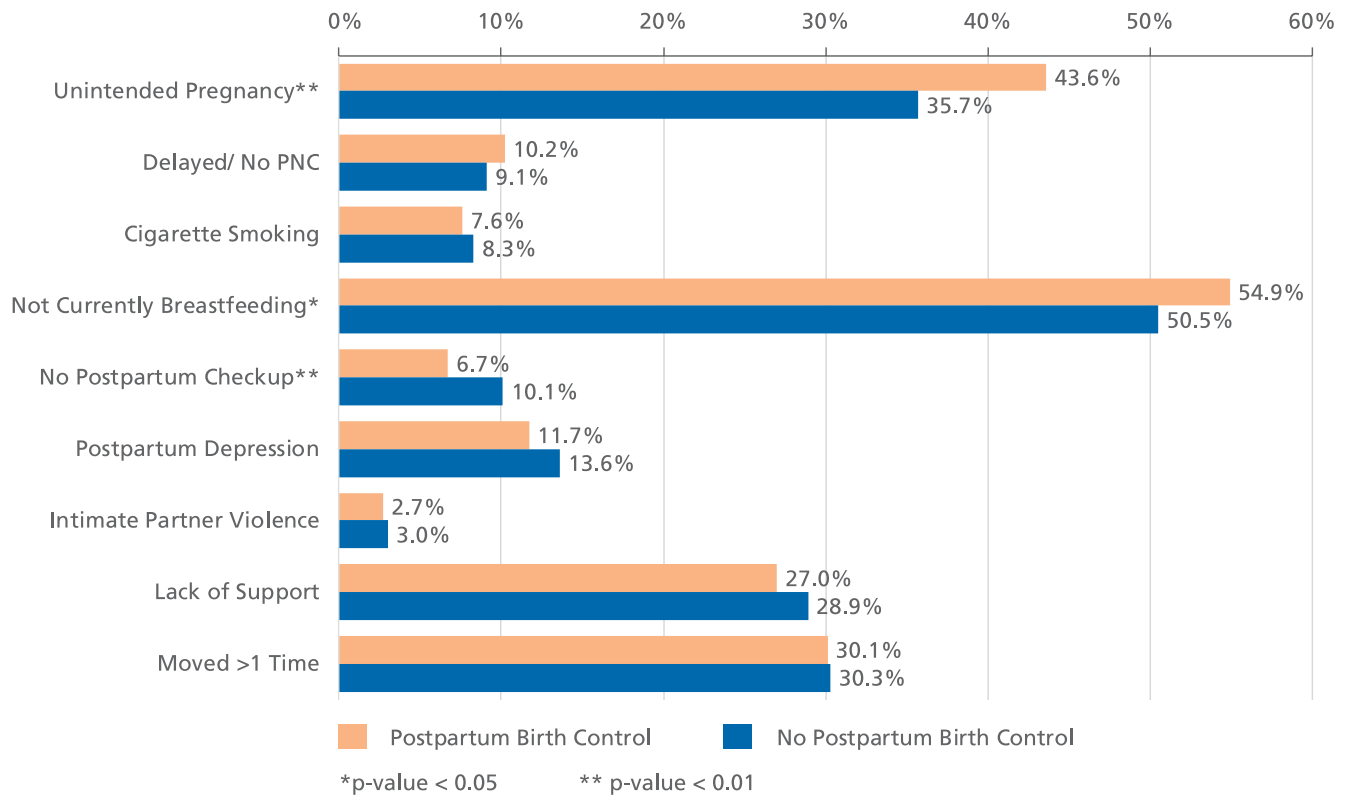
Mothers who reported using postpartum contraception, compared to mothers who did not, were significantly (p-value less than 0.05) MORE likely to report that:

- » They had an unintended pregnancy (43.6% versus 35.7%).
- » They were not breastfeeding at the time of the survey (54.9% versus 50.5%).

However, mothers who reported using postpartum contraception, compared to mothers who did not, were significantly (p-value less than 0.05) LESS likely to report that:

- » They did not have a postpartum checkup (6.7% versus 10.1%).

**FIGURE 15-3: RISK BEHAVIORS AND OUTCOMES BY POSTPARTUM CONTRACEPTION USE, RHODE ISLAND, 2012-2015**

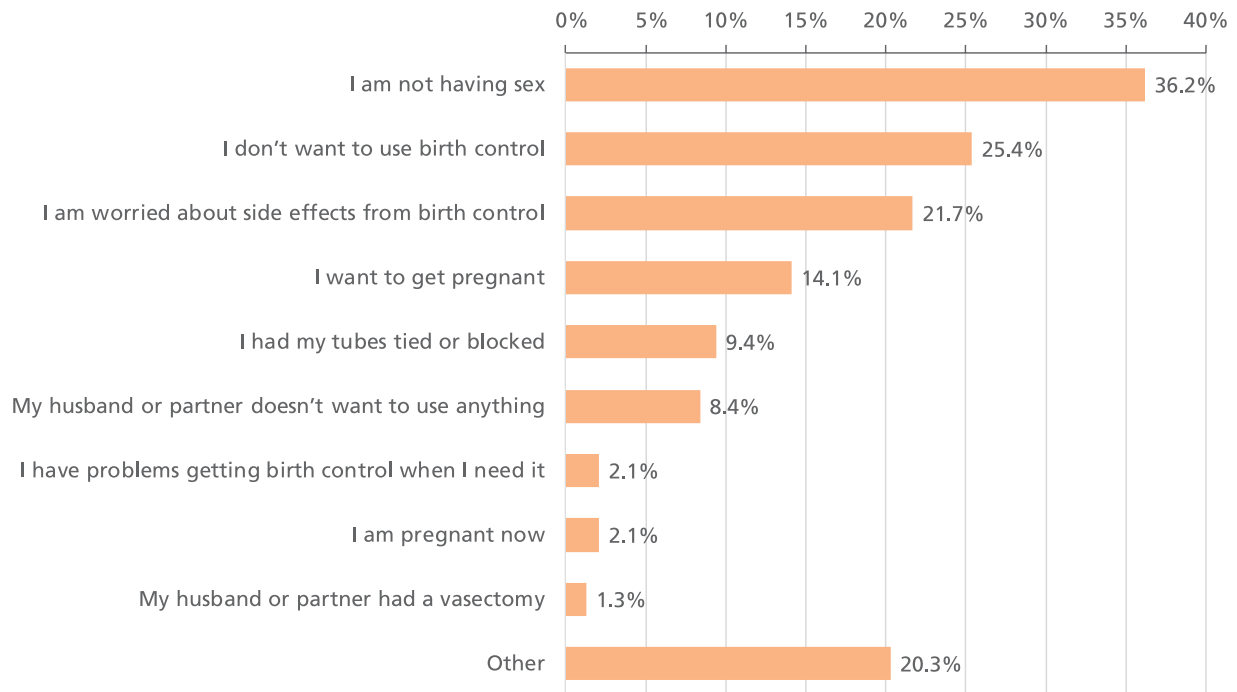




## Reasons for Not Using Postpartum Contraception, 2012-2015

The PRAMS survey asks about the reasons for not using postpartum contraception, among those who reported not doing anything to keep from getting pregnant. Among mothers who were not doing anything to keep from getting pregnant at the time of the survey, 36.2% reported that they were not having sex, 25.4% reported that they did not want to use birth control, 21.7% reported that they were worried about the side effects from birth control, and 14.1% reported that they wanted to get pregnant.

**FIGURE 15-4: REASONS FOR NOT USING POSTPARTUM CONTRACEPTION, RHODE ISLAND, 2012-2015**



## References

<sup>47</sup> American College of Obstetricians and Gynecologists: Postpartum Birth Control FAQ.

[www.acog.org/Patients/FAQs/Postpartum-Birth-Control#why](http://www.acog.org/Patients/FAQs/Postpartum-Birth-Control#why)

<sup>48</sup> Short Interpregnancy Intervals in 2014: Differences by Maternal Demographic Characteristics.

[www.cdc.gov/nchs/products/databriefs/db240.htm](http://www.cdc.gov/nchs/products/databriefs/db240.htm)

<sup>49</sup> Contraceptive Use Among Postpartum Women --- 12 States and New York City, 2004--2006.

[www.cdc.gov/mmwr/preview/mmwrhtml/mm5830a1.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5830a1.htm)

<sup>50</sup> U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020, Family Planning.

[www.healthypeople.gov/2020/topics-objectives/topic/family-planning/objectives](http://www.healthypeople.gov/2020/topics-objectives/topic/family-planning/objectives)

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Adia A, Matos Q, Monteiro K, Kim H. The Association Between Postpartum Healthcare Encounters and Contraceptive Use among Rhode Island Mothers, 2012-2015. *Rhode Island Medical Journal*, April 2018:29-32. [www.rimed.org/rimedicaljournal/2018/04/2018-04-29-health-adia.pdf](http://www.rimed.org/rimedicaljournal/2018/04/2018-04-29-health-adia.pdf)

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- <sup>1</sup> Centers for Disease Control and Prevention (CDC). Pregnancy Risk Assessment Monitoring System (PRAMS): Home. [www.cdc.gov/prams](http://www.cdc.gov/prams)
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# APPENDIX A.

## Rhode Island PRAMS Population, 2015

CHARACTERISTIC	POPULATION*		PRAMS SURVEY		
	SIZE	PERCENT	RESPONDENTS	WEIGHTED PERCENT	95% CI
<b>Total</b>	10,232	100	1,252	100	---
<b>Age, Years</b>					
Younger than 20	505	4.9	37	4.0	2.8-5.6
20-24	1,846	18.0	153	16.4	14.0-19.2
25-34	5,981	58.5	638	59.7	56.4-63.0
35 or older	1,900	18.6	217	19.8	17.3-22.6
<b>Race / Ethnicity</b>					
White Non-Hispanic	5,793	56.9	599	56.6	53.2-60.0
Black Non-Hispanic	672	6.6	83	6.1	4.7-7.9
Hispanic	2,506	24.6	246	26.3	23.3-29.4
American Indian	32	0.3	4	0.3	0.1-1.1
Asian / Pacific Islander	523	5.1	56	5.4	4.0-7.1
Other / Mixed	651	6.4	54	5.3	4.0-7.1
<b>Hispanic Ethnicity</b>					
Yes	2,506	24.6	246	26.3	23.3-29.4
No	7,661	75.4	797	73.7	70.6-76.7
<b>Education, Years</b>					
Less than 12	1,194	13.3	111	13.4	11.1-16.2
12	1,920	21.4	175	20.6	17.8-23.8
More than 12	5,866	65.3	644	66.0	62.4-69.4
<b>Marital Status</b>					
Married	5,589	54.7	614	54.2	50.8-57.5
Unmarried	4,627	45.3	431	45.8	42.5-49.2
<b>Birth Weight</b>					
Low Birth Weight (< 2500 g)	682	6.7	338	6.6	6.5-6.8
Normal Birth Weight (≥ 2500 g)	9,546	93.3	706	93.4	93.2-93.5
<b>Parity</b>					
First birth	4,208	41.7	442	41.0	37.7-44.3
Second or later	5,878	58.3	591	59.0	55.7-62.3

\*Data Source: Rhode Island Vital Records Birth File, 2015

## APPENDIX B.

### Data Details

The PRAMS survey questionnaire and detailed data tables are hyperlinked below in the electronic version of this data book. Click on a name to go to the questionnaire or tables. Please note that each data table appears on a separate sheet in the hyperlinked worksheet. You can click the tabs at the bottom of the worksheet to move between tables.

- » Rhode Island PRAMS Phase 7 Questionnaire  
<https://drive.google.com/drive/folders/0BzKqONbop97jZmJJZ3ZCNVNVNjg>
- » Detailed Data Tables for Each Topic  
[www.health.ri.gov/data/prams2012-2015](http://www.health.ri.gov/data/prams2012-2015)







**Pregnancy Risk Assessment Monitoring System (PRAMS)**  
3 Capitol Hill, Room 407, Providence, RI 02908  
Health Information Line: 401-222-5960 / RI Relay 711  
[www.health.ri.gov/prams](http://www.health.ri.gov/prams)



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