



# Focus on Trends in Perinatal Health Status Indicators

Among Maryland Women Giving Birth 2006 to 2011

January 2014



By reviewing data trends from PRAMS, states can “monitor changes in health status, and measure progress towards goals in improving the health of mothers and infants”.

Centers for Disease Control and Prevention (CDC)

## Introduction

This report presents Maryland state data from the PRAMS survey for 2006 to 2011 births. Most of the Healthy People 2020 (HP2020) perinatal objectives were chosen for presentation because they represent key indicators of maternal and infant health before, during and after pregnancy.

Important factors such as binge drinking before and during pregnancy could not be included because the definition of a binge episode in the PRAMS survey was changed for 2009 births and afterwards, making comparisons with data from before 2009 not consistent. Survey questions about other factors such as postpartum depression, binge drinking, physical abuse, and oral health, were changed between 2008 and 2009—also making comparisons not relevant.

A few additional pre-pregnancy risk factors besides those in HP 2020 have also been included in Table I. Data are reported by prevalence.

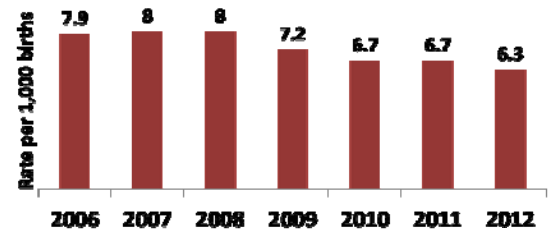
## Maryland Data

The Centers for Disease Control and Prevention (CDC) provides every PRAMS state with an annual weighted dataset of that state’s PRAMS survey responses. This weighting process ensures that the state’s data are representative of all the postpartum mothers who reside and deliver in that state.

## Trends in Perinatal Health Factors

The infant mortality rate in Maryland has generally been decreasing since 2006, reaching its lowest rate ever in 2012—6.3 deaths per 1,000 live births (Figure 1). The CDC initiated PRAMS to look for associations between infant mortality and perinatal health.

Figure 1. Infant Mortality Rate, Maryland 2006-2012



Source: Vital Statistics Administration 2013

The PRAMS data presented in this brief are reported year by year for the past six years. Although Maryland PRAMS is especially interested in the most recent year’s data, we also aggregated the most recent three years of data (2009-2011 births) and compared it with the previous three-year interval (2006-2008 births) (Table I).



Table I. Perinatal Factors, Maryland, 2006-2011

Factor	2006	2007	2008	2009	2010	2011	2006- 2008	2009- 2011	Change
	%	%	%	%	%	%	%	%	%
<b>Preconception</b>									
†Folic acid use, month before pregnancy	31.9	30.3	29.8	32.0	32.9	30.1	30.6	31.6	3.3
Obese BMI, just before pregnancy	20.0	15.5	18.6	22.2	21.7	23.2	18.0	22.4	24.4*
†Overweight/obese BMI, just before pregnancy	48.9	44.4	47.8	47.1	49.0	48.4	47.0	48.2	2.6
†Unintended pregnancy	40.3	43.4	42.4	45.5	44.2	45.8	42.0	45.2	7.6*
†Cigarette smoking	15.1	17.5	19.1	17.3	18.9	19.9	17.2	18.7	8.7
†Alcohol use	48.7	50.6	52.8	55.0	53.5	56.5	50.7	55.0	28.2*
<b>Prenatal</b>									
†Early (1st trimester) prenatal care initiation	74.4	76.2	78.4	78.9	77.8	81.5‡	76.3	79.4‡	4.1*
†Cigarette smoking	7.8	9.3	10.9	9.1	9.3	7.0	9.3	8.5	-8.6
†Alcohol use	7.3	7.4	8.8	9.9	8.9	8.9	7.8	9.2	17.9
Hypertensive disorders	9.7	10.0	10.3	10.7	10.3	9.8	10.0	10.3	3.0
Gestational diabetes	9.4	7.7	10.6	10.1	9.0	11.0	9.2	10.1	9.8
HIV, tested	73.8	68.9	73.3	73.4	72.7	69.3	72.0	71.8	-0.3
<b>Postpartum</b>									
†Breastfeeding initiation	81.1	79.0	81.2	84.3†	81.1	85.1‡	80.4	83.5‡	3.9*
†Infant back sleep position	68.9	70.6	69.2	73.5	71.5	77.0‡	69.6	74.0	6.3*
Cigarette smoking	11.8	13.3	14.1	13.4	13.7	12.4	13.1	13.2	0.8

\*Statistically significant,  $p < 0.05$ 

†Healthy People 2020 objective topic

‡Healthy People 2020 objective met

## Trends

The following trends were noted from 2006-2011 births (Table 1):

### Improving trends

**Initiation of prenatal care**  
**Infant back sleep position**  
**Breastfeeding initiation**  
**Cigarette smoking during pregnancy**

More Maryland mothers than ever before reported starting prenatal care during the first trimester of pregnancy. Among women who delivered in 2011, 82% received care during the first trimester of pregnancy (up from 74% in 2006).

Other record highs for Maryland 2011 births were the rates of breastfeeding (85%) and mothers placing their infants to sleep on their backs (77%). A decade ago, only 72% reported breastfeeding and 63% placed their infants to sleep on their back. Both of these behaviors have a positive impact on the health of babies.

The prevalence of cigarette smoking during pregnancy was the lowest ever reported in 2011 (7%), however the change in rates from 2006-2008 to 2009-2011 was not statistically significant

### Concerning trends

**Obese BMI, pre-pregnancy**  
**Unintended pregnancy**  
**Alcohol use, pre/during pregnancy**  
**Cigarette smoking, pre-pregnancy**  
**Gestational diabetes**

For 2011 births, more women than ever before (23%) reported that they were at an obese BMI just before pregnancy. Twenty-two percent of women reported being obese pre-pregnancy for delivery years 2009-2011, 24% higher than for 2006-2008 when 18% of women reported that they were obese before pregnancy.

The rate of unintended pregnancy after a live birth in 2011 was the highest ever reported (46%).

The consumption of alcohol three months before pregnancy reached the

highest level in the past decade. Alcohol use just before pregnancy may be an indicator of drinking during the critical period early in pregnancy before a woman may be aware that she is pregnant.

Also of concern, though not statistically significant, pre-pregnancy cigarette smoking and gestational diabetes reached record high rates in 2011. Compared to 2006-2008, rates for alcohol use during pregnancy were 18% higher in 2009-2011 (not statistically significant).

### No improvement

**Folic acid use, pre-pregnancy**  
**Cigarette smoking, postpartum**

Although rates of pre-pregnancy consumption of a multivitamin with folic acid and postpartum cigarette smoking did not worsen, there was essentially no improvement.

## Summary

In 2011, Healthy People 2020 objectives were met for 1st trimester initiation of prenatal care, breastfeeding initiation and infant back sleep position. These factors also showed significantly positive trends in improvement.

Gestational diabetes and preconception factors such as unintended pregnancy, alcohol use, folic acid use, and obese BMI, showed worsening or non-improving trends.

Although rates for smoking during pregnancy were the lowest ever reported in 2011, smoking rates before pregnancy were high and postpartum rates remained unchanged.

Rates of hypertensive disorders during pregnancy and HIV testing generally remained unchanged from 2006 to 2011.

Tracking the status of perinatal factors over several years can help to inform state programs about important trends. These trends can be useful in creating, maintaining or changing policies to improve maternal and child health in Maryland.

*“Before I got pregnant, I was drinking heavily but as soon as I found out I was pregnant, I stopped.”*

*“I went to my ob a week after I found out I was pregnant.”*

*“I didn't want to be pregnant. Not then or ever. I have heart problems and high blood pressure so this put me in a high risk category. I got blood clots after 6 weeks. It made for a lot of complications.”*

*“I always place her to sleep on her back...had plenty of back to sleep advice from my doctor.”*

*“I'm breastfeeding so I won't become pregnant. Hope that's not one of those urban myths.”*

PRAMS mothers



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## PRAMS Methodology

Data included in this report were collected through the Pregnancy Risk Assessment Monitoring System (PRAMS), a surveillance system established by the Centers for Disease Control and Prevention (CDC) to obtain information about maternal behaviors and experiences that may be associated with adverse pregnancy outcomes.

In Maryland, the collection of PRAMS data is a collaborative effort of the Department of Health and Mental Hygiene and the CDC.

Each month, a sample of approximately 200 Maryland women who have recently delivered live born infants are surveyed by mail or by telephone, and responses are weighted to make the results representative of all Maryland births.

This report is based on the responses of 9,646 Maryland mothers who delivered live born infants between January 1, 2006 and December 31, 2011 and were surveyed two to nine months after delivery.

## Limitations of Report

PRAMS data are retrospective and therefore subject to recall bias. It is also based on the mother's perception of events and may not be completely accurate.

Studies have shown that surveys of maternal smoking and alcohol use may underestimate the prevalence of these behaviors by a significant amount, due to factors related to social desirability.

This report presents only basic associations between maternal risk factors and infant sleep practices. Unexamined interrelationships among variables are not described and could explain some of the findings in the report.

## Resources

Healthy People  
U.S. Department of Health and Human Services  
<http://www.healthypeople.gov/2020/default.aspx>



Maryland Department of Health and Mental Hygiene  
Center for Maternal and Child Health • Vital Statistics Administration

Martin O'Malley, Governor; Anthony G. Brown, Lieutenant Governor; Joshua M. Sharfstein, M.D., Secretary

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