Pregnancy Risk Assessment Monitoring System

PRAMS Report
2008

Michigan Department of Community Health

MDCH
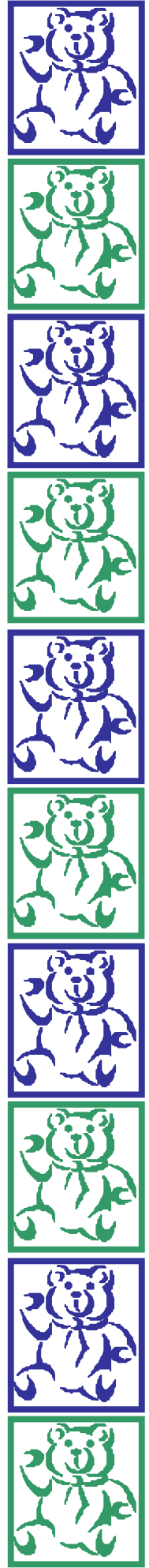
Jennifer M. Granholm, Governor
Janet Olszewski, Director

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Executive Summary

The 2008 Pregnancy Risk Assessment Monitoring System (PRAMS) is a population-based survey of mothers who delivered a live infant in that year; mothers are selected at random to participate in the survey and results are intended to be generalizable to Michigan resident mothers of live born infants overall. The topics included in this survey were selected based on their relevance to maternal and infant morbidity and mortality.

Key PRAMS Findings:

- Approximately 16% of women delivering a live birth in 2008 had less than a high school education, which decreased from 33% in 2007; the prevalence women reporting some college education increased from 16.4% in 2007 to 30.4% in 2008.

- Over 42% of women indicated that they had an unintended pregnancy in 2008.

- Prior to pregnancy, 46% of women reported using contraception; withdrawal was the most popular pregnancy prevention strategy at 42%.

- Approximately 8% of infants were of low birth weight (<2,500 grams), of whom 19% were very low birth weight (<1,500 grams).

- Nearly one out of four women reported entering prenatal care after the first trimester or not at all; the most common barriers to first trimester prenatal care entry included 'did not have Medicaid card', 'keep pregnancy secret', and 'doctor/HMO would not start care earlier'.

- Approximately 27% of women did not initiate breastfeeding.

- More than 31% of women breastfed for longer than one week but had discontinued by time of survey; common reasons cited for stopping breastfeeding include 'not producing enough milk' (25%), 'had to return to work/school' (18%), and 'needed another person to feed the infant' (18%).

- One in six women reported smoking during the last three months of pregnancy.

- Over 7% of women indicated that they drank alcohol during pregnancy.

- While 94% of women reported receiving information about placing their babies to sleep on their backs, only 72% reported doing so.

- Approximately one in five women reported always/almost always sharing their bed with their baby. The majority of women (71%) cited the hospital nurse as their primary source of sleep information.

- Slightly less than 3% of women reported experiencing physical abuse during pregnancy; the named abuser was primarily the woman's ex-husband/ex-partner (88%).

- Nearly 85% of women reported receiving prenatal HIV counseling, 75% of whom went on to be screened for HIV during pregnancy.

- More than 37% of women were unaware of the benefits of prenatal folic acid supplementation; 28% of respondents indicated that they consumed a multivitamin daily in the month prior to pregnancy.

- Over 78% of income-eligible mothers enrolled in WIC services during pregnancy, and 89% enrolled after delivery.

- While 26% of women indicated they needed dental care during pregnancy, only 61% of those who needed it actually sought care.

Introduction

The Pregnancy Risk Assessment Monitoring System (PRAMS) is a surveillance program conducted through collaboration between the Centers for Disease Control and Prevention (CDC) and state health departments. In Michigan, PRAMS is an ongoing population-based survey of Michigan resident postpartum mothers who delivered live births. The state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy collected by PRAMS are used to develop, implement, and evaluate maternal and infant health intervention programs intended to reduce the rates of infant mortality, low birth weight, and other adverse birth outcomes. The data are also used to monitor progress towards both national and state pregnancy-related health objectives, including increasing the rate of prenatal care in the first trimester to 90% and reducing maternal smoking during pregnancy.

This report addresses a variety of topics, including, but not limited to, low birthweight births, contraceptive use, pregnancy intention, health insurance, prenatal care (PNC), breastfeeding, alcohol and tobacco use, violence against women, folic acid awareness, and participation in the Women, Infants and Children Food Supplementation Program (WIC).

More than 1,600 postpartum Michigan resident women were surveyed in 2008, based on a stratified random sampling methodology (more information on sampling is provided on Apendix A). While PRAMS initially consists of a mailed survey, if there is no response to the original or subsequent mailings, then telephone contacts are made and a phone questionnaire conducted.

Throughout this report, selected maternal and child health indicators are presented graphically with detailed explanations. PRAMS data are intended to be representative of Michigan resident women whose pregnancies resulted in live births. Therefore, all results presented have been weighted to provide estimates that are reflective of women who had a live birth in 2008 (see Appendix A for further information on weighting). Since PRAMS only surveys women with a live birth and does not include pregnancies that end in fetal death, abortion or miscarriage, caution is advised when interpreting and generalizing the results to all <u>pregnant</u> women. Results with their 95% confidence intervals (CI) are also presented along with demographic characteristic breakdowns in appended tables (see Appendix B).

Maternal Demographics

Definition:

Information about maternal demographic characteristics (maternal age, race/ethnicity, education and marital status) was obtained from the birth file, while data such as income and pre-pregnancy insurance status were gathered via the PRAMS questionnaire. Two questions regarding pre-pregnancy insurance status were asked of all respondents:

> *Question #1: Just before you got pregnant, did you have health insurance? (Do not count Medicaid)*
> _No
> _Yes

> *Question #2: Just before you got pregnant, were you on Medicaid?*
> _No
> _Yes

Women who answered 'Yes' to question #1 <u>and</u> 'No' to question #2 were classified as having private insurance prior to pregnancy. Women who answered 'Yes' to question #2 were classified as participating in Medicaid prior to pregnancy. Women who answered 'No' to both questions #1 and #2 were classified as uninsured prior to pregnancy.

Results:

 In Michigan, the largest proportion of births was to women 25-29 years of age (Figure #1). Non-Hispanic white women accounted for over 74% of the study population in 2008. Non-Hispanic blacks (19.1%) were the most prevalent minority group (Figure #2), and the proportion of births to this group was significantly higher than the 17.7% that occurred in 2007. Approximately 16% of women had less than a high school education, which decreased from 33% in 2007. Women reporting some college education increased from 16.4% in 2007 to 30.4% in 2008. A college degree or beyond was reported in 26.9% of women (Figure #3). At the time of the survey, the majority of women reported being married (59.2%) (Figure #4). Prior to pregnancy, 18.5% reported being uninsured and 18% responded that they were on Medicaid (Figure #5).

Public Health Implications:

In 2008, nearly 1 in 6 women delivering a live birth in Michigan had less than a high school diploma/GED, which is a 50% decrease from 2007. This could be the results of all efforts to target women during adolescence to educate them about pregnancy, including areas outside of a scholastic atmosphere. However, attention should continue to be given to these population groups through tartegeted activities, including the dissemination of educational materials with appropriate reading comprehension level.

Slightly less than one in five women had no health insurance prior to becoming pregnant. Thus, access to prenatal care remains an important issue, and strategies must be developed to not only identify these women early and refer them accordingly, but to also inform them of available services and programs.

Reference Table: #1
(See Appendix B)

Maternal Demographics

Figure 1:

Prevalence of maternal age,

2008 MI PRAMS

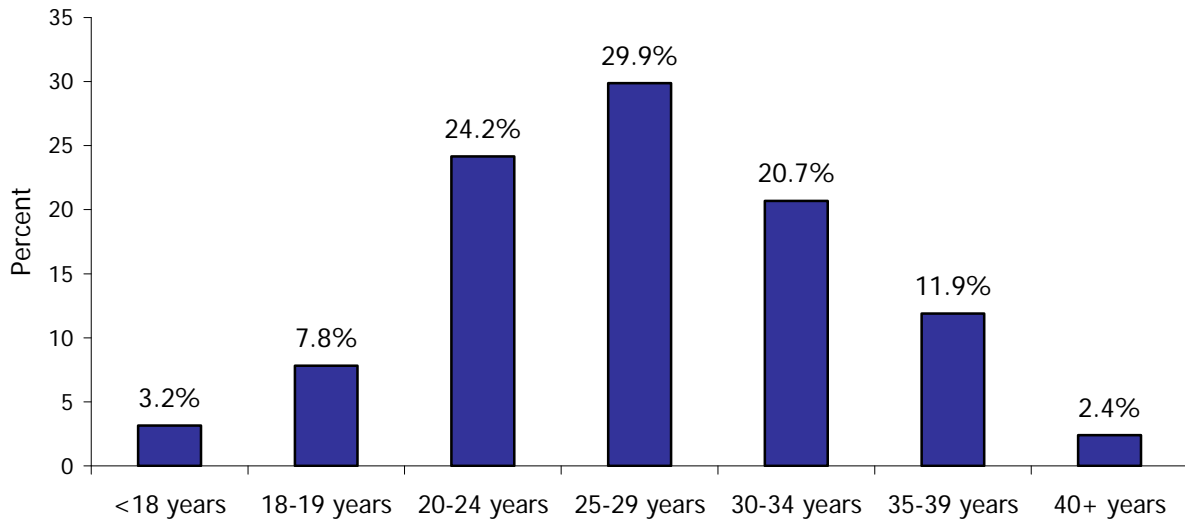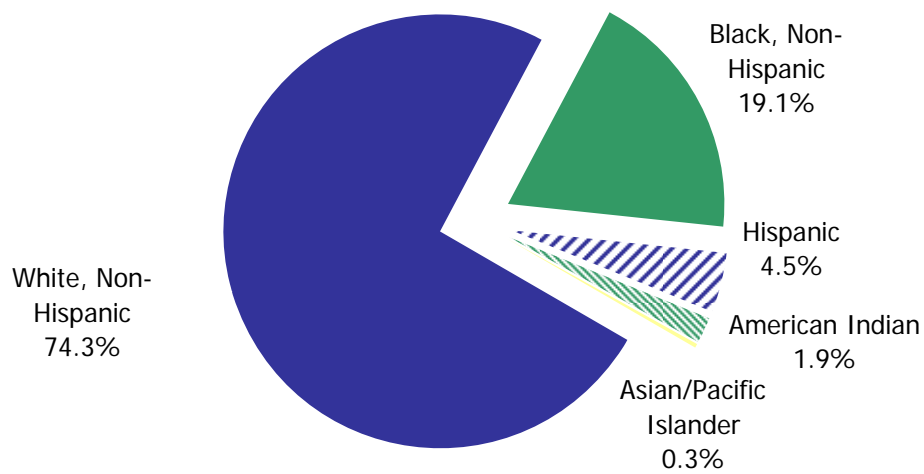**Figure 2:**

Prevalence of maternal race/ethnicity,

2008 MI PRAMS

Maternal Demographics

Figure 3:

Prevalence of maternal education,

2008 MI PRAMS

Figure 4:
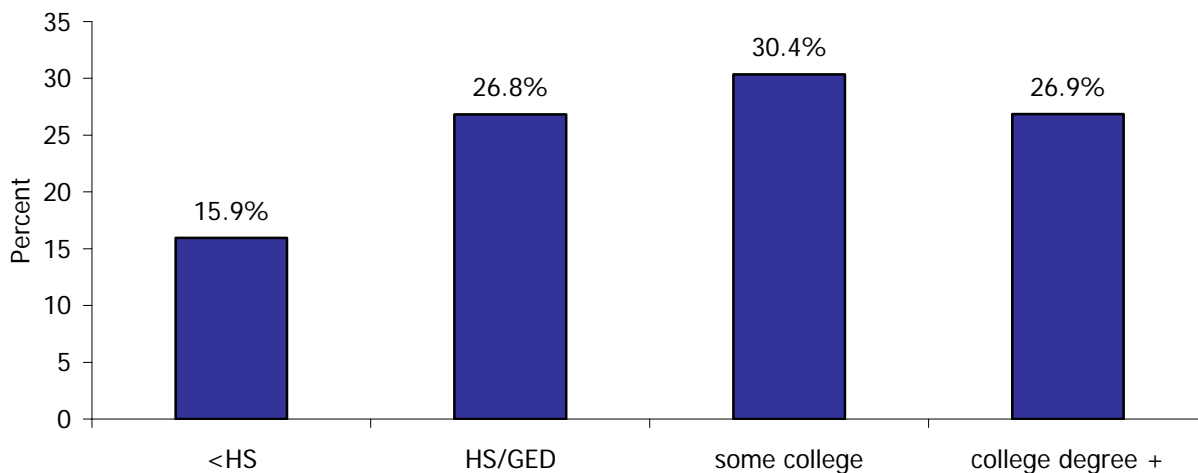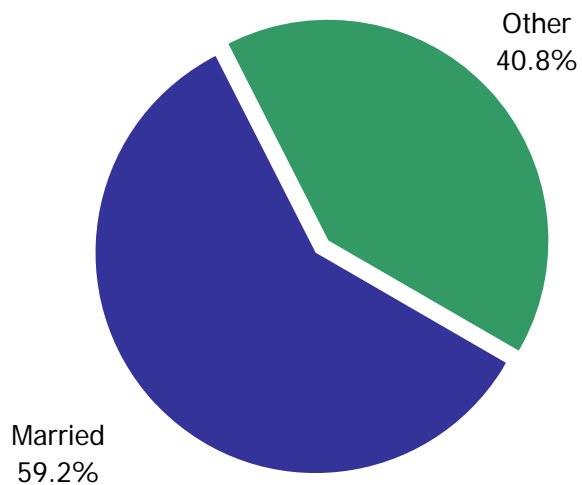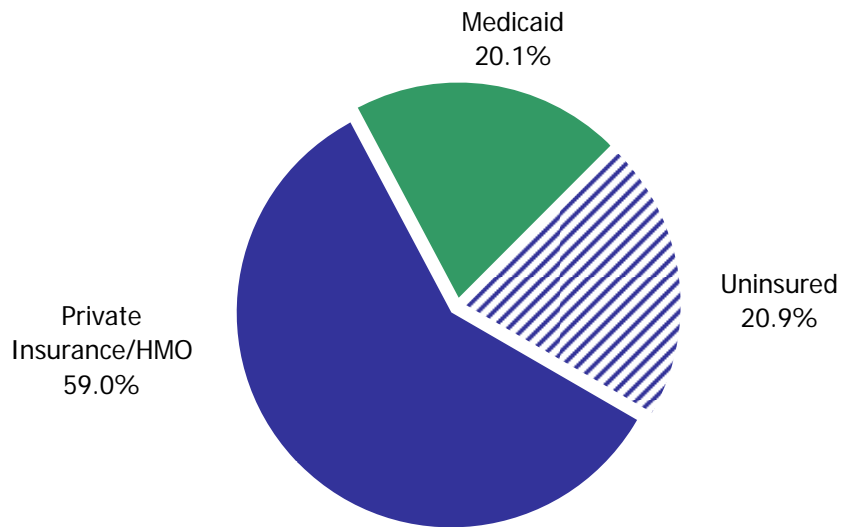
Prevalence of marital status,

2008 MI PRAMS

Maternal Demographics

Figure 5:

Prevalence of insurance status prior to pregnancy,

2008 MI PRAMS

Medicaid
20.1%

Uninsured
20.9%

Private
Insurance/HMO
59.0%

Unintended Pregnancy

Definition:

Information regarding pregnancy intention was derived from the following question:

> *Question #10: Thinking back to just before you got pregnant, how did you feel about becoming pregnant?*
> *_I wanted to be pregnant sooner*
> *_I wanted to be pregnant later*
> *_I wanted to be pregnant then*
> *_I didn't want to be pregnant then or at any time in the future*

An intended pregnancy was one in which the mother answered that she wanted to be pregnant then or sooner. Women who wanted to be pregnant later or not at all were classified as having an unintended pregnancy. Unintended pregnancy was further subdivided into two categories: mistimed pregnancies and unwanted pregnancies. Mistimed pregnancies are those in which the mother wanted to be pregnant later than the time she became pregnant. Unwanted pregnancies are those in which the mother did not want to be pregnant then or any time in the future.

Results:

In 2008, almost 43% of women who delivered a live birth reported that they had an unintended pregnancy, with 73.4% of them reporting mistimed pregnancies (Figure #6). When stratified by race/ethnicity, unintended pregnancy was found to be most prevalent in non-Hispanic blacks (69.0%), followed by Hispanics (48.5%) and non-Hispanic whites (36.9%) (Figure #7). Non-Hispanic blacks demonstrated an increase in the proportion of unintended pregnancies from the 2007 estimate of 64.7%, while the proportion decreased in Hispanics (down from 68.0% in 2007). Both maternal age and educational status were directly proportional to pregnancy intendedness. Among women aged 35 to 39 years, the proportion of unindended pregnacies decreased from 34.2% in 2007 to 25.0% in 2008. A decrease was also found in women with at least a college degree (26.4% in 2007 vs. 20.2% in 2008). However, there was an increase from 55.6% in 2007 to 66.1% in 2008 among women with less than a high school diploma.

In addition, uninsured women were the most likely to report an unintended pregnancy (54.0%), although this was lower than the 2007 estimate of 62.6% (Figure #10). Of the 46.1% of women with an unintended pregnancy who did not use contraception, 26.9% reported that they did not mind getting pregnant (a decrease from 33.2% in 2007) (Figure #11). Several other groups also showed significant decreases from 2007 estimates of contraception non-use: women aged 25 to 29 (61.3% in 2007 vs. 50.2% in 2008), Hispanic women (70.8% vs. 31.0%), women with at least a college degree (53.1% vs. 47.1%), and women with private health insurance (53.1% vs. 47.1%). Of the almost 54% of women who had an unintended pregnancy and reported using contraception, the methods/practices most frequently associated with conception were withdrawal (42.1%), condoms (26.8%), and birth control pills (19.3%) (Figure #12).

Public Health Implications:

Socio-economically vulnerable groups of women, including those under the age of 25 years, racial/ethnic minorities, those with limited education (<high school), and women with no health isurance or those on Medicaid experienced higher rates of unintended pregnancy. Nearly half (46.1%) of women with an unintended pregnancy reported not using contraception,

underscoring the need for education about family planning and the benefits of contraceptive use.

Considering that those with an unintended pregnancy used three of the most common methods/practices of pregnancy prevention,--withdrawal, condoms, and birth control pills--we can conclude that both women and their partners were either uninformed or misunderstood the proper use of these methods. Of particular note is the large proportion of unintended pregnancies resulting from use of 'withdrawal' (42.1%). It is essential that sex education programs stress that using withdrawal as a way to avoid pregnancy is much less effective than barrier or hormonal methods of contraception. Careful consideration of the most appropriate method(s) for an individual needs to be addressed through educational materials and health care provider interaction. Furthermore, family planning services must be available to socio-economically vulnerable women at greatest risk of unintended pregnancies.

In Michigan, several strategies have been implemented under the **Blueprint for Preventing Unintended Pregnancies** initiative. **Plan First!** is a program initiated in July of 2006, through which MDCH expanded access to family planning for women age 19-44 years of age. It covers women with an income up to 185% of the poverty level who are not eligible for Medicaid and would otherwise not have medical coverage for these services. **Talk Early, Talk Often** is a program aimed at parents of middle school-aged children; it consistes of no-cost 90 minute workshops providing parents the necessary skills to facilitate conversation with their children about abstinence and sexuality. The program began in October of 2005 and surveys from participating parents have been overwhelmingly positive. The Governor has also called upon the legislature to require health plans that cover prescription drugs to also cover contraceptives in an initiative called **Contraceptive Equity.** Lastly, the **Clinical Guideline for Preventing Unintended Pregnancy in Adults** challenges health care providers to engage their male and female patients of childbearing age in the crucial issue of family planning, while offering support through user-friendly resources.

Reference Tables: #2 - #5

Unintended Pregnancy

Figure 6:

Prevalence of intended and unintended pregnancies and types of unintended pregnancies,
2008 MI PRAMS
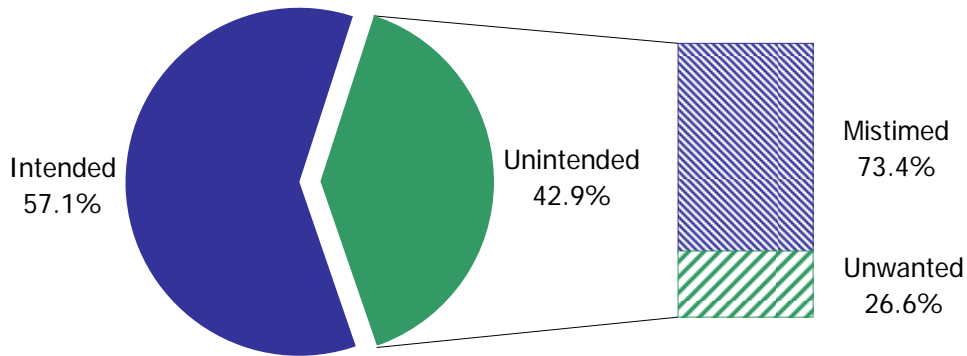
Figure 7:

Prevalence of intended and unintended pregnancies by maternal race/ethnicity,
2008 MI PRAMS*
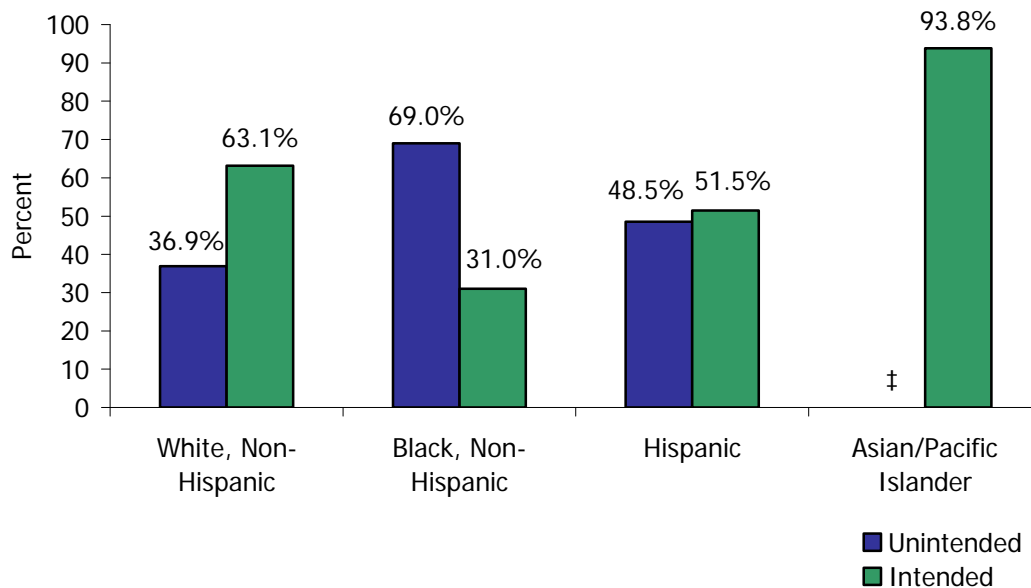
*American Indian/Alaskan Native not shown due to small sample size
‡ Data not shown due to small sample size

Unintended Pregnancy

Figure 8:

Prevalence of intended and unintended pregnancies by maternal age,

2008 MI PRAMS
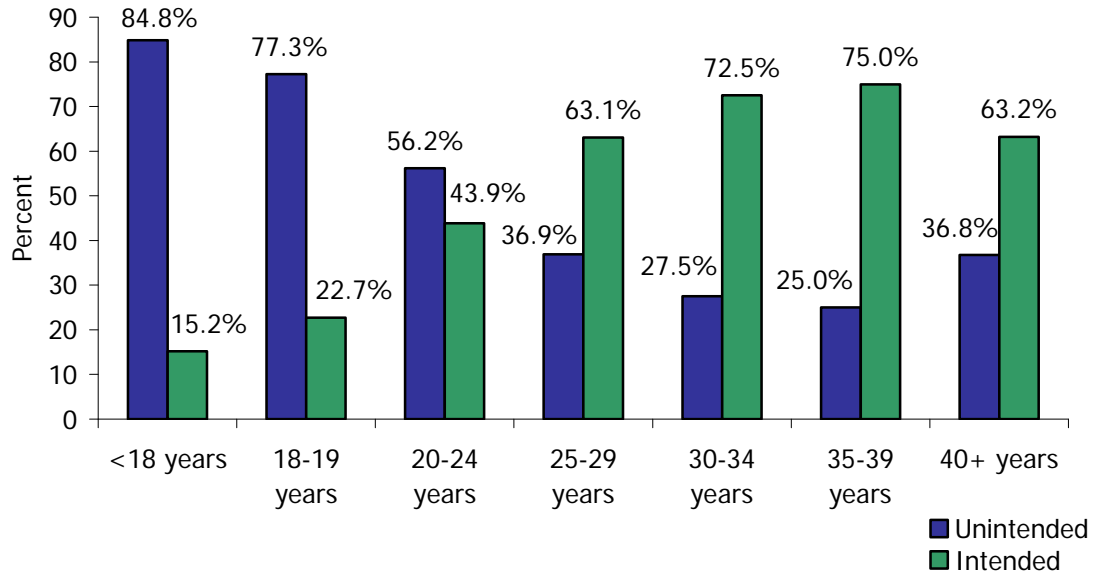
Figure 9:

Prevalence of intended and unintended pregnancies by maternal education,
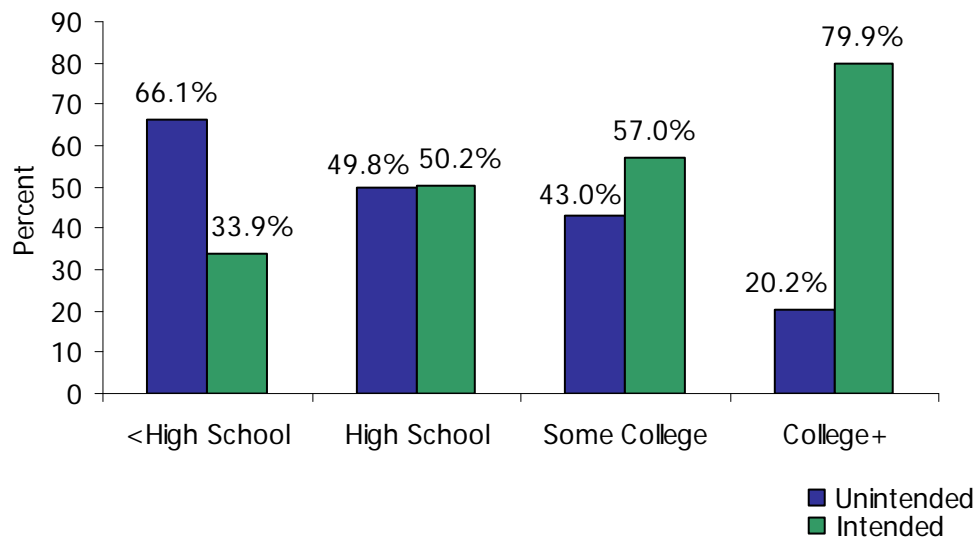
2008 MI PRAMS

Unintended Pregnancy

Figure 10:

Prevalence of intended and unintended pregnancies by maternal pre-pregnancy insurance status,
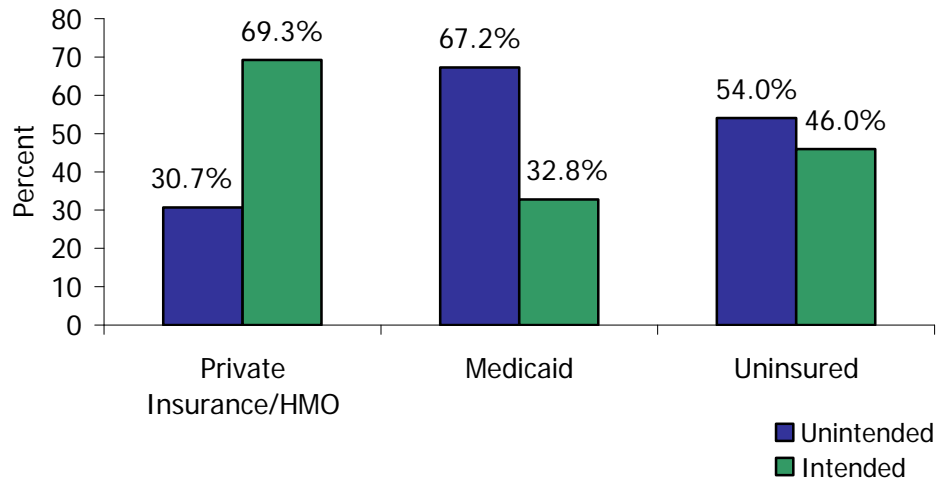
2008 MI PRAMS

Figure 11:

Prevalence of pre-pregnancy contraception use among women with an unintended pregnancy,
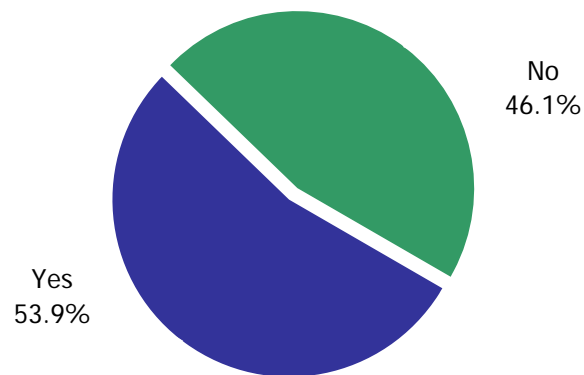
2008 MI PRAMS

Unintended Pregnancy

Figure 12:

Method of pre-pregnancy contraception among women with an unintended pregnancy,
2008 MI PRAMS
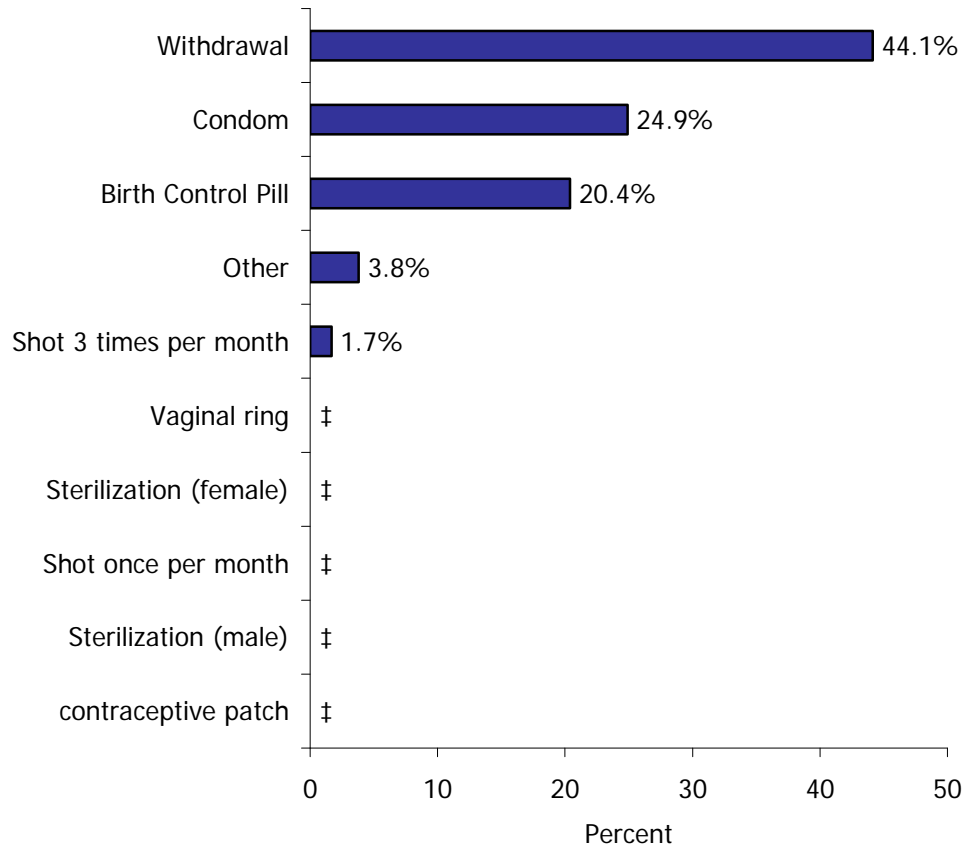
‡ Data not shown due to small sample size

Contraception

<u>Definition:</u>

Women were asked several questions regarding their use of contraception prior to and following their pregnancy. All women surveyed were asked the following question:

> *Question #12: When you got pregnant with your new baby, were you or your husband or partner doing anything to keep from getting pregnant?*
> _No
> _Yes

Those who answered 'No' to question #12 were asked question #13:

> *Question #13: What were you or your husband or partner's reasons for not doing anything to keep from getting pregnant?*
> _I didn't mind if I got pregnant
> _I thought I could not get pregnant at that time
> _I had side effects from the birth control method I was using
> _I had problems getting birth control when I needed it
> _I thought my husband or partner was sterile
> _My husband or partner didn't want to use anything
> _Other

Those who answered 'Yes' to question #12 skipped question #13 and answered question #14:

> *Question #14: When you got pregnant with your new baby, what were you or your husband or partner doing to keep from getting pregnant?*
> _Tubes tied or closed (female sterilization)
> _Vasectomy (male sterilization)
> _Pill
> _Condoms
> _Shot once a month (Lunelle®)
> _Shot once every 3 months (Depo-Provera®)
> _Contraceptive patch (OrthoEvra®)
> _Diaphragm, cervical cap, or sponge
> _Cervical ring (NuvaRing® or others)
> _IUD (including Mirena®)
> _Rhythm method or natural family planning
> _Withdrawal (pulling out)
> _Not having sex (abstinence)
> _Other

To gather information on the use of postpartum contraception, respondents were asked the following:

> *Question #58: Are you, your husband or partner doing anything now to keep from getting pregnant?*
> _No
> _Yes

Women who answered 'No' were asked an additional question:

Question #59: What are you and your husband or partner's reasons for not doing anything to keep from getting pregnant now?
_ *I am not having sex*
_*I want to get pregnant*
_*I don't want to use birth control*
_*My husband or partner doesn't want to use anything*
_*I don't think I can get pregnant*
_*I can't pay for birth control*
_*I am pregnant now*
_*Other*

Results:

Less than half of the 2008 respondents (46.2%) reported using contraception prior to pregnancy (Figure #13). Women under age 18 had the highest prevalence of contraception use at 47.7%, and women aged 35 to 39 had the lowest (42.5%) (Figure #14). Black non-Hispanic women showed the lowest percent of contraceptive use (42.2%), followed by non-Hispanic white women (46.4%). Hispanic women not only had the highest prevalence of contraceptive use (69.0%), but the group also showed a significant increase from 2007 (29.2%). Contraceptive use was highest among college-educated women (56.7%) and those with private insurance (52.9%); these two groups also indicated increased contraceptive use from the 2007 estimates (43.7% and 46.9%, respectively). Conversely, the rate of contraception use was lowest among women with less than a high school education (40.3%) and those enrolled in Medicaid (40.5%) (Figure #16).

During the postpartum period, 85.0% of women reported contraceptive use (Figure #20). Contraceptive use was highest among women under the age of 18 (92.3%) and lowest among women aged 30 to 34 (79.8%) (Figure #21). Women in the 18 to 19 age group demonstrated a significant increase in postpartum contraceptive use from 2007 (76.5%) to 2008 (88.8%). Contraceptive use did not differ substantially by race/ethnicity or educational level (Figures #22-23).

The most commonly cited reasons for contraceptive non-use in the postpartum period were 'other' (27%), 'not having sex' (25.2%), and 'did not want to use birth control' (19.5%) (Figure #25). Women reported 'not having sex' as a reason more than twice as often in 2008, compared to 2007 (13.3%), but reported 'pregnant now' less than half as often (7.1% in 2007 vs. 2.3% in 2008).

Public Health Implications:

Overall, the prevalence of postpartum contraceptive use remained approximately the same from 2007 to 2008. Of note, the highest rate was seen among women under the age of 18 years. The highest rates of contraceptive non-use prior to pregnancy and postpartum were seen among women with less than a high school education. Health care professionals have the unique opportunity to teach women during the prenatal period about the value of postpartum contraceptive use and PRAMS results indicate the importance of such efforts. Providing family planning counseling on the choice and proper use of contraceptive method is very important, as it can help prevent short interpregnancy intervals, which are associated with adverse maternal and infant health outcomes.

These results suggest that contraceptive counseling offered by health care providers during both the prenatal and postpartum periods is important to prepare and support women for the use in the postpartum period. Discussions about birth spacing and contraceptive use by health care providers at the appropriate times (preconception, prenatal, postpartum/interconception) may help address these issues.

<u>Reference Tables</u>: #6 - #10

Contraception

Figure 13:

Prevalence of contraceptive use prior to pregnancy,

2008 MI PRAMS

No
46.2%

Yes
53.8%
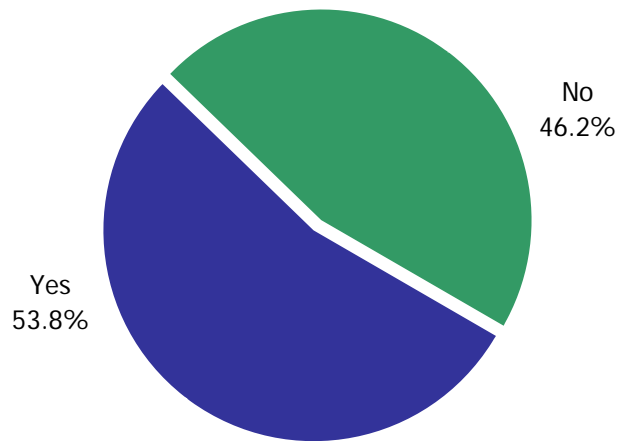
Figure 14:

Prevalence of contraceptive use prior to pregnancy by maternal age,

2008 MI PRAMS

- ■ Did Not Use Contraception
- ■ Used Contraception
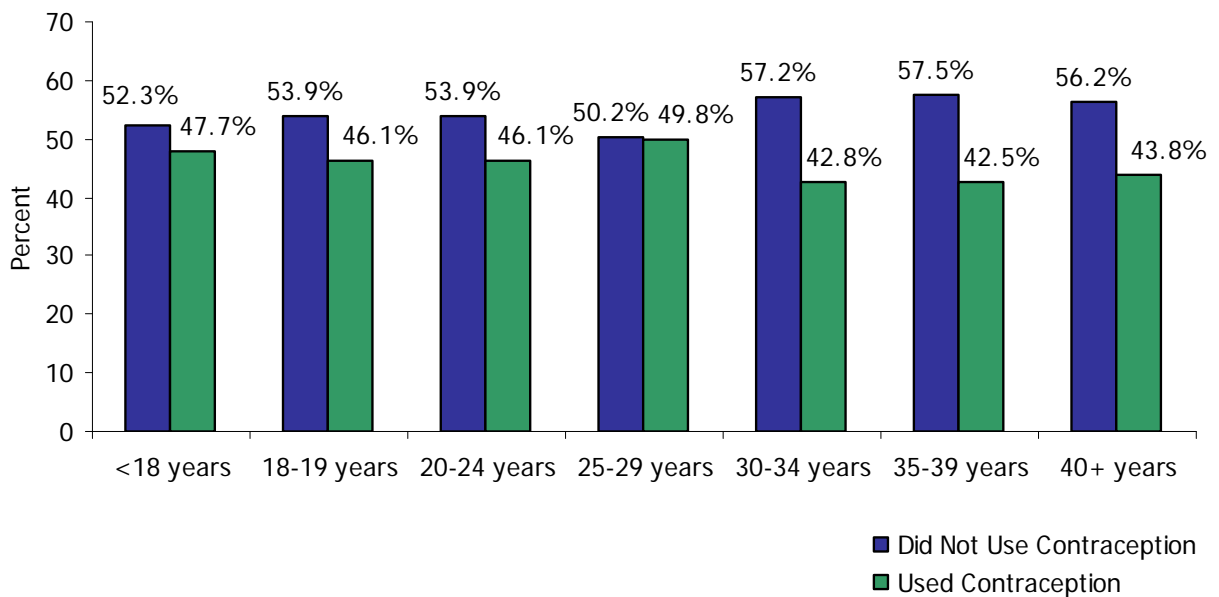
Contraception

Figure 15:

Prevalence of contraceptive use prior to pregnancy by maternal race/ethnicity*,
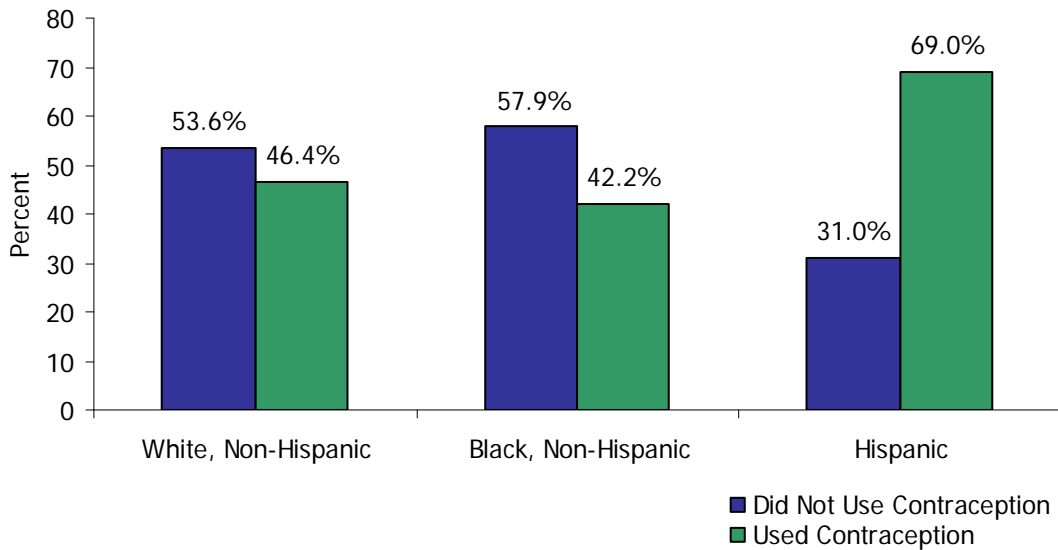
2008 MI PRAMS

*Statistics for American Indian/Alaskan Native and Asian/PI omitted due to small sample sizes

Figure 16:

Prevalence of contraceptive use prior to pregnancy by maternal education,
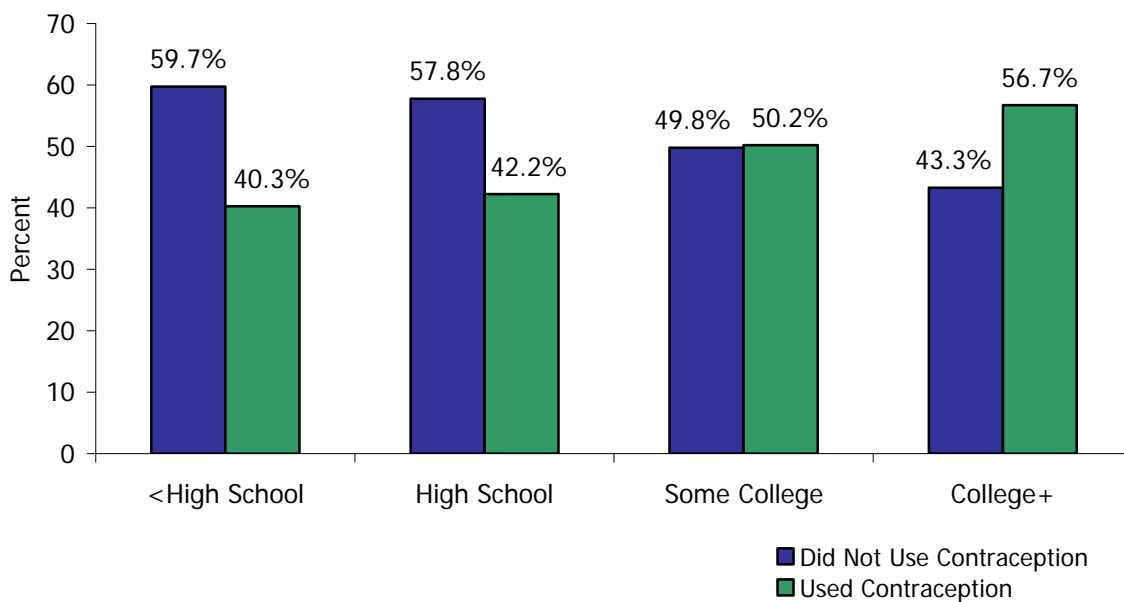
2008 MI PRAMS

Contraception

Figure 17:

Prevalence of contraceptive use prior to pregnancy by insurance status,
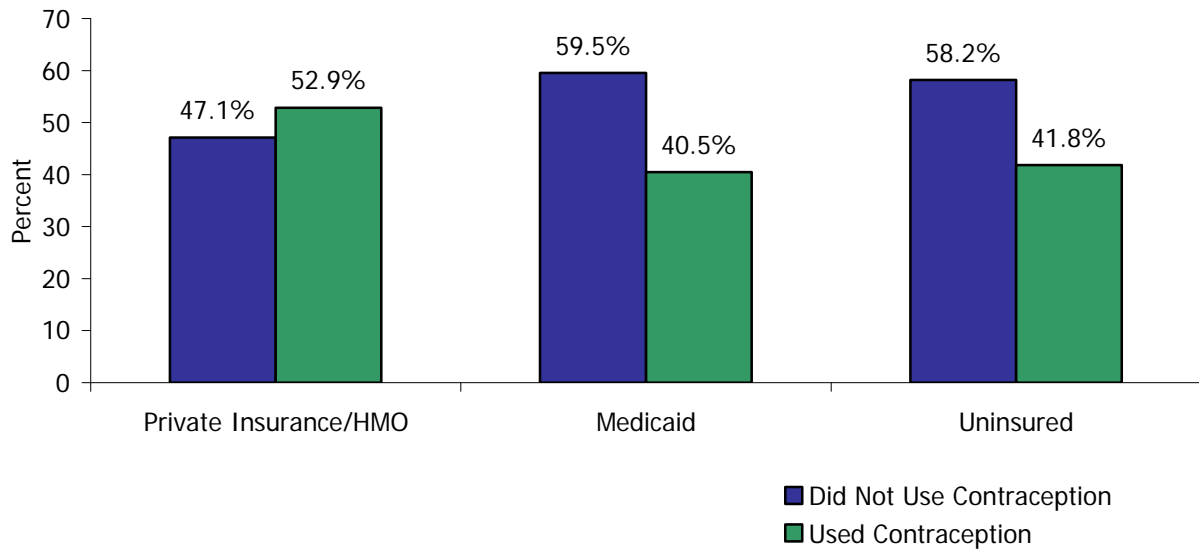
2008 MI PRAMS

Contraception

Figure 18:

Method of contraception among women prior to pregnancy,
2008 MI PRAMS
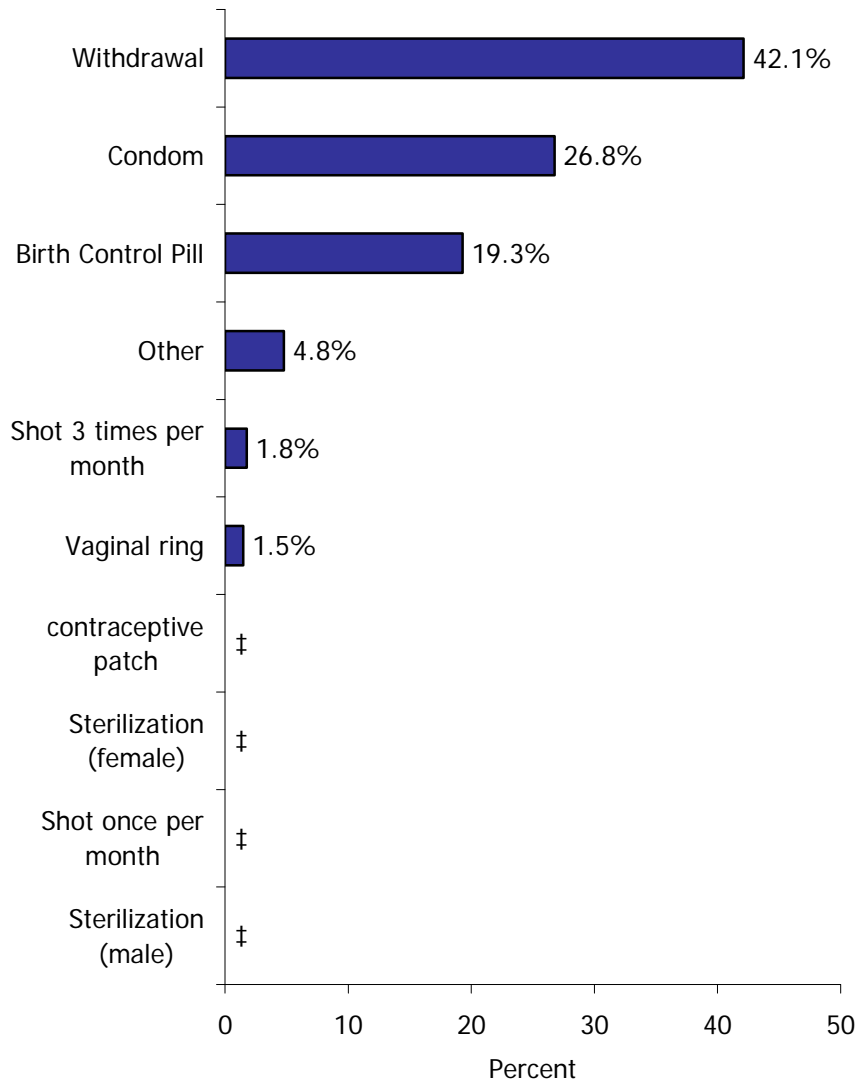
‡ Data not shown due to small sample size

Contraception

Figure 19:

Reasons for not using a contraceptive method prior to pregnancy,
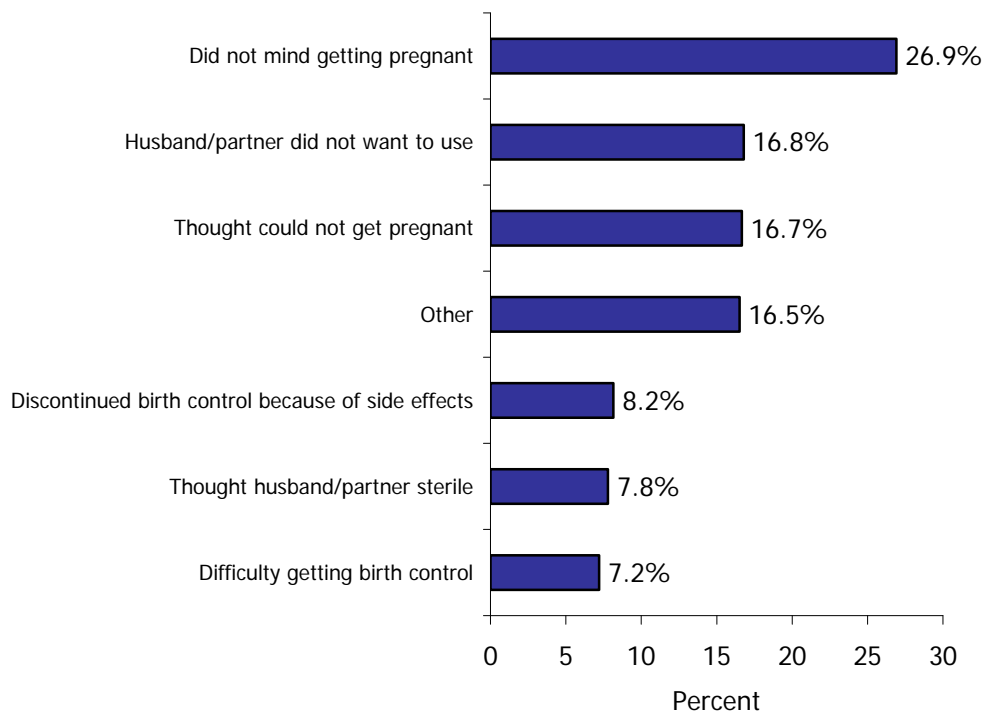
2008 MI PRAMS

Contraception

Figure 20:

Prevalence of contraception use during the postpartum period

2008 MI PRAMS

Did Not Use
Contraception
15.0%

Used
Contraception
85.0%
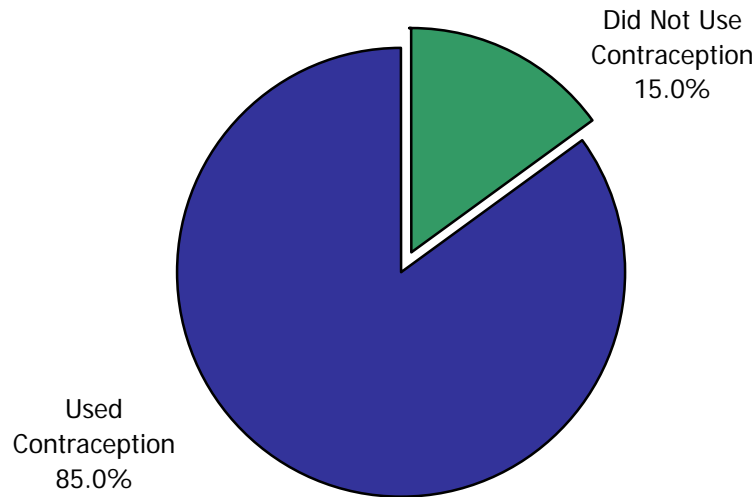
Figure 21:

Prevalence of contraception use during the postpartum period by maternal age,

2008 MI PRAMS

Age group	Did Not Use Contraception	Used Contraception
<18 years	7.8%	92.3%
18-19 years	11.2%	88.8%
20-24 years	15.1%	84.9%
25-29 years	12.3%	87.7%
30-34 years	20.2%	79.8%
35-39 years	16.6%	83.4%
40+ years	18.0%	82.0%

■ Did Not Use Contraception
■ Used Contraception

Contraception

Figure 22:

Prevalence of contraception use during the postpartum period by maternal race/ethnicity*,
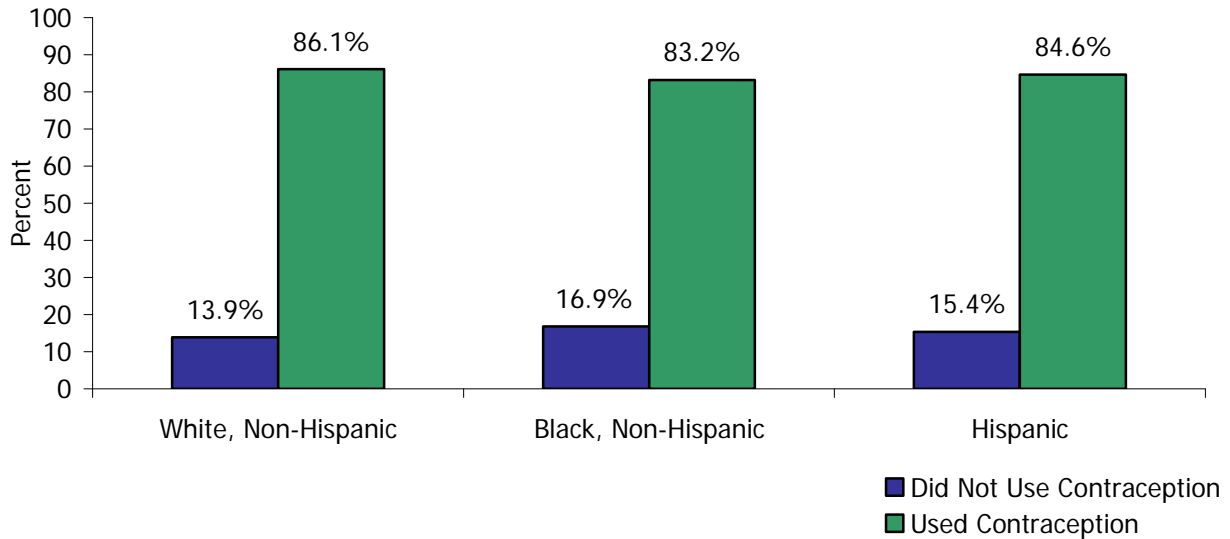
2008 MI PRAMS

*Statistics not shown for Asian/PI and American Indian/Alaskan Native due to small sample sizes

Figure 23:

Prevalence of contraception use during the postpartum period by maternal education,
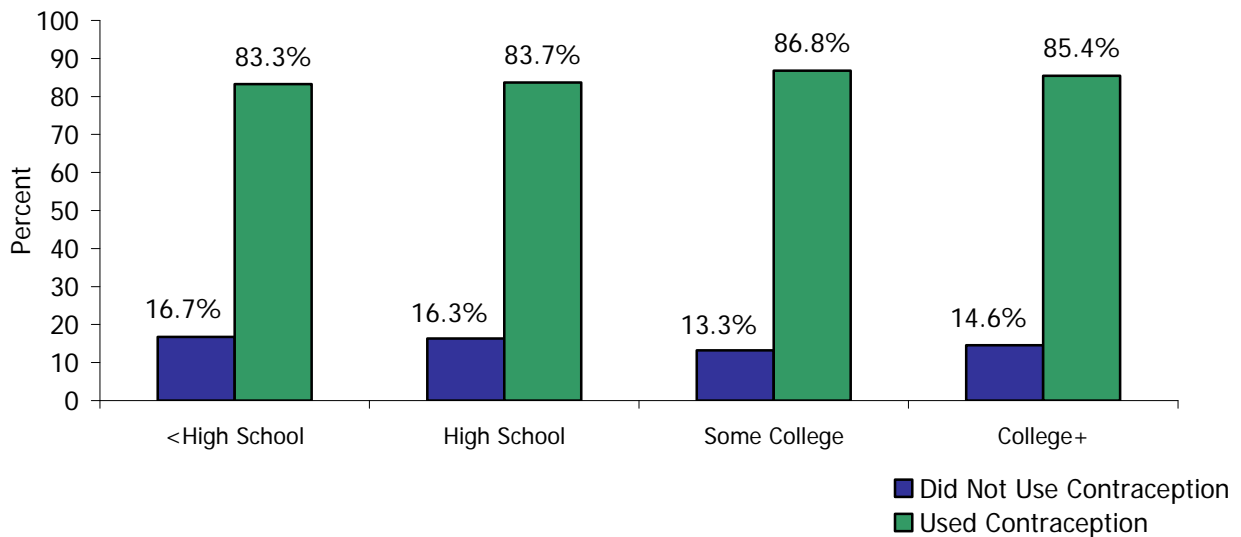
2008 MI PRAMS

Contraception

Figure 24:

Use of contraception during postpartum by discussion with health care worker during prenatal care,
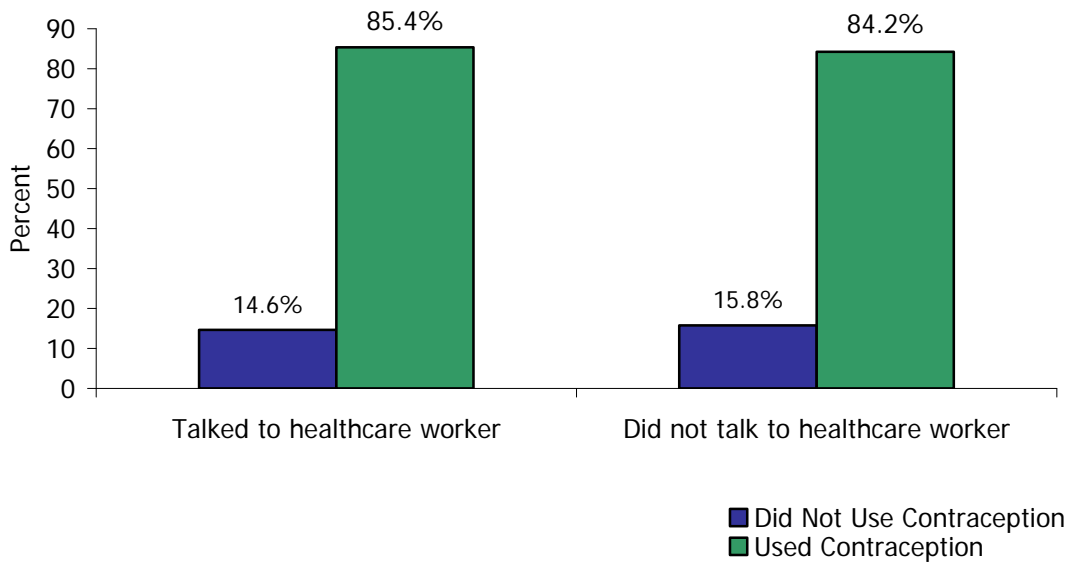
2008 MI PRAMS

Contraception

Figure 25:

Reasons for not using a contraceptive method postpartum

2008 MI PRAMS
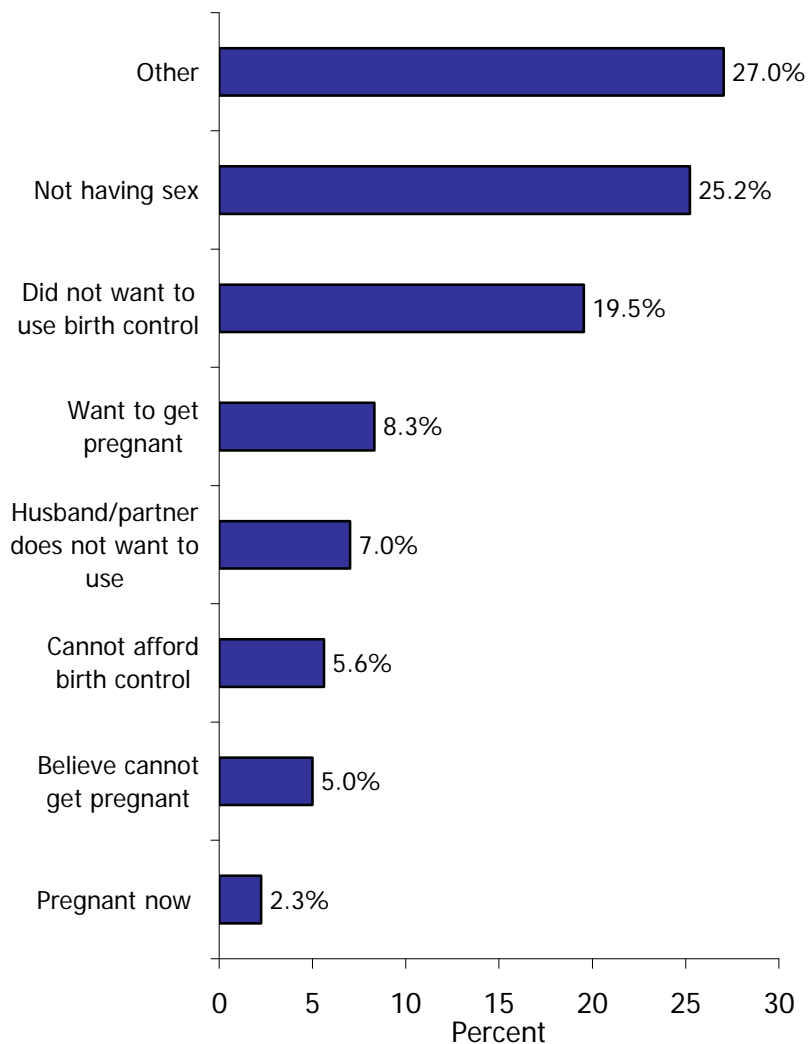
Low Birthweight

Definition:

Birthweight data was derived from information on the birth certificate; infants were classified as 'low birthweight' if they weighed less than 2500 grams (5.51 lbs) at birth and as 'normal birth weight' if they weighed 2500 grams or more at birth. Low birth weight infants were further subdivided into 'moderate low birthweight' (weight=1500-2499 grams or 3.31-5.50 lbs at birth) and 'very low birth weight' (weight <1500 grams or 3.31 lbs at birth).

Results:

Among the 117,676 live births in 2008 (PRAMS weighted estimate), nearly 8% weighed less than 2,500 grams (low birthweight), of which 81.2% were of moderate low birthweight (1,500-2,499 grams) and 18.8% were of very low birthweight (<1,500 grams) (Figure #26). The prevalence of low birthweight infants varied by selected maternal characteristics. Specifically, the highest prevalence was seen in women less than 18 years of age (12.5%), while the lowest was seen in women 25-29 years old (6.8%) (Figure #27). Women aged 18 to 19 showed a decrease from 12.5% in 2007 to 7.7% in 2008; however, the opposite was found in women aged 20-24: the percent of low birthweight babies in this group rose from 6.9% in 2007 to 8.9% in 2008. The prevalence of low birthweight infants was highest among Asian/Pacific Islanders, although the confidence interval is wide (13.8%, CI: 4.2-23.5%). Non-Hispanic white women had the lowest propo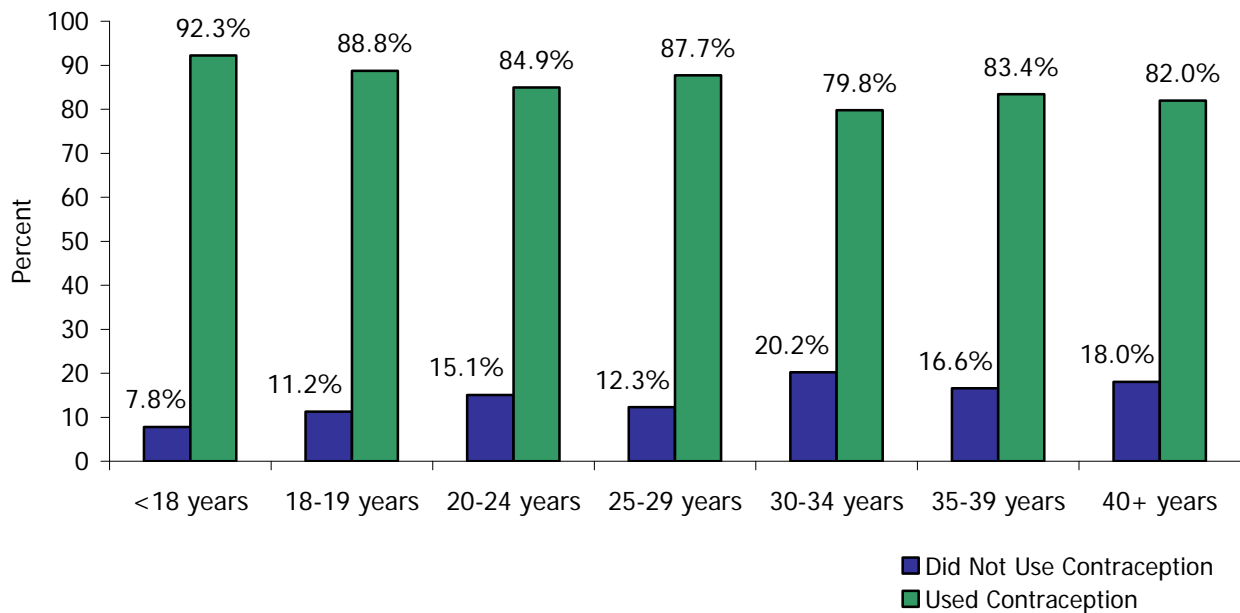rtion of low birthweight infants (6.3%) (Figure #28). Women with less than a high school education reported the highest prevalence of low birthweight infants (12.8%), which was significantly higher than the estimate for 2007 (7.7%); the rate of low birthweight births decreased with increasing educational attainment (Figure # 29). Medicaid recipients reported the highest prevalence of low birthweight births (12.1%) followed by women who were uninsured (8.6%) (Figure #30). Of note, over 71% of low birthweight infants were preterm (less than 37 weeks gestation) (Figure #31).

Other known risk factors for having a low birthweight infant, such as pregnancy intention and smoking status, were analyzed. Women who had an unintended pregnancy had a slightly higher proportion of low birthweight infants as women with an intended pregnancy (8.4% vs. 7.1%) (Figure #32). The prevalence of low birthweight was higher among the unwanted pregnancies versus the mistimed pregnancies (Figure #33). Women who reported smoking during pregnancy had a significantly higher proportion of low birthweight infants (11.9%) when compared to non-smokers (6.9%) (Figure #34).

Public Health Implications:

The women at the greatest risk for delivering a low birthweight infant were less than 18 years of age, non-Hispanic black race, had less than a high school education, and were of low socio-economic status as measured by Medicaid enrollment. Efforts targeted at reducing early labor and low birthweight infants through increased counseling about the risks associated with these issues are necessary, especially for socio-economically vulnerable populations. Education about preventive measures that can be taken to avoid these issues, such as quitting smoking during pregnancy, should also be addressed.

Reference Tables: #11- #14

Low Birthweight

Figure 26:

Prevalence of infant birthweight and types of low birthweight,

2008 MI PRAMS

Low Birth
Weight
7.8%

Moderately Low
Birth Weight
81.2%

Very Low Birth
Weight
18.8%

Normal Birth
Weight
92.2%
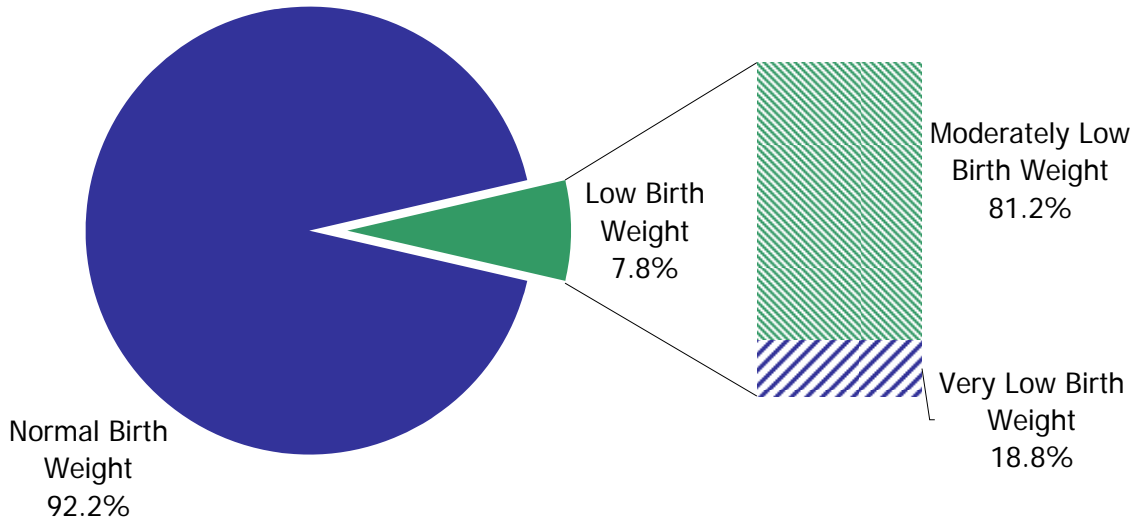
Figure 27:

Prevalence of low birthweight by maternal age,

2008 MI PRAMS

12.5%

7.7%

8.9%

6.8%

7.1%

7.6%

9.1%

Percent

<18 years	18-19 years	20-24 years	25-29 years	30-34 years	35-39 years	40+ years

Low Birthweight

Figure 28:

Prevalence of low birthweight by maternal race/ethnicity*,
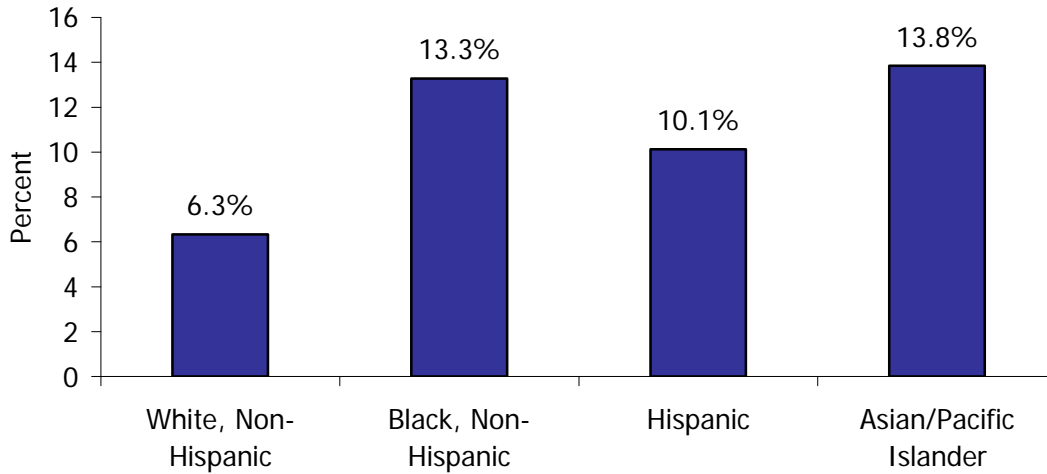
2008 MI PRAMS

*Statistics not shown for American Indian/Alaskan Native due to small sample size

Figure 29:

Prevalence of low birthweight by maternal education,
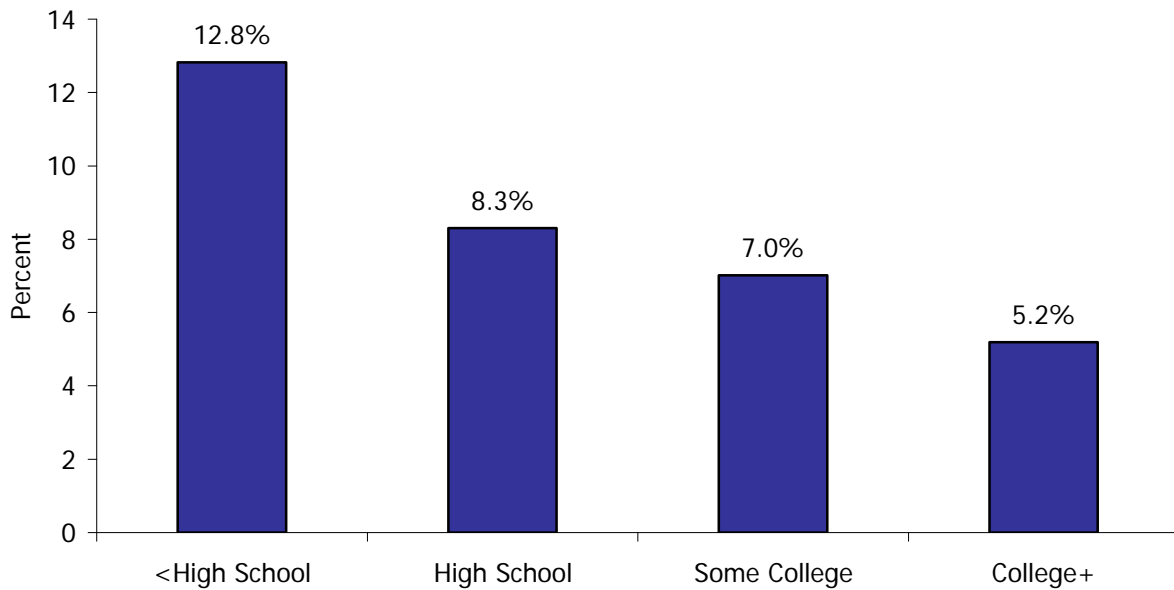
2008 MI PRAMS

Low Birthweight

Figure 30:

Prevalence of low birthweight by maternal pre-pregnancy insurance status,
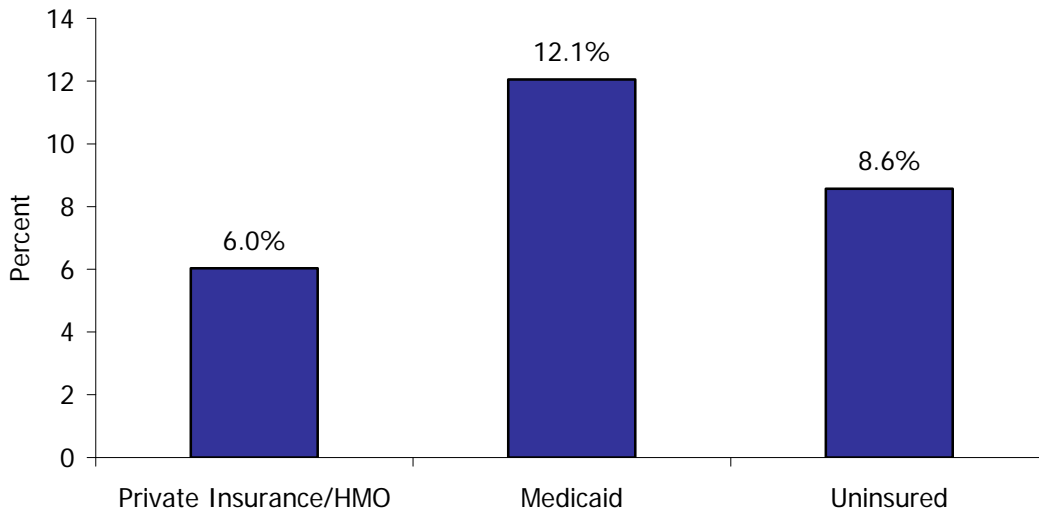
2008 MI PRAMS

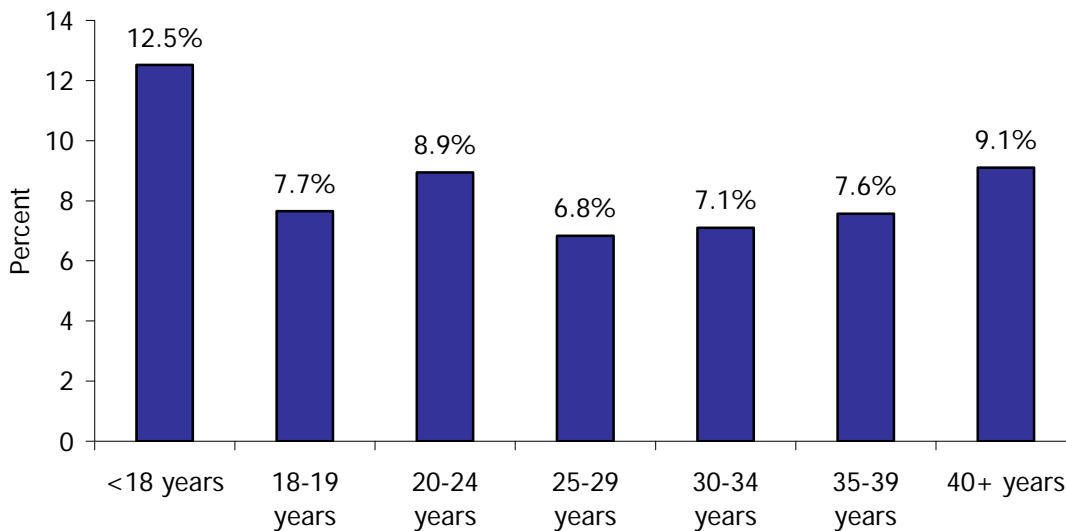**Figure 31:**

Prevalence of low birthweight by gestational age,

2008 MI PRAMS

26
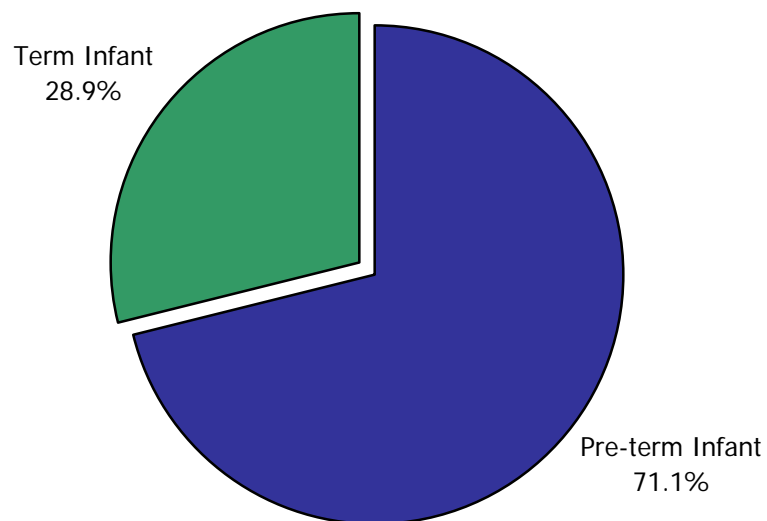
Low Birthweight

Figure 32:

Prevalence of low birthweight by pregnancy intention
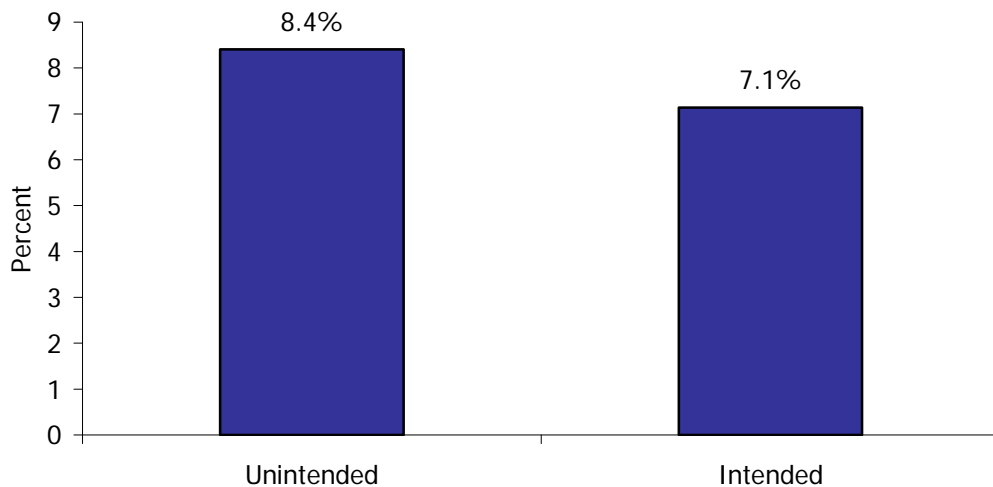
2008 MI PRAMS

Figure 33:

Prevalence of low birthweight by pregnancy intention type,

2008 MI PRAMS
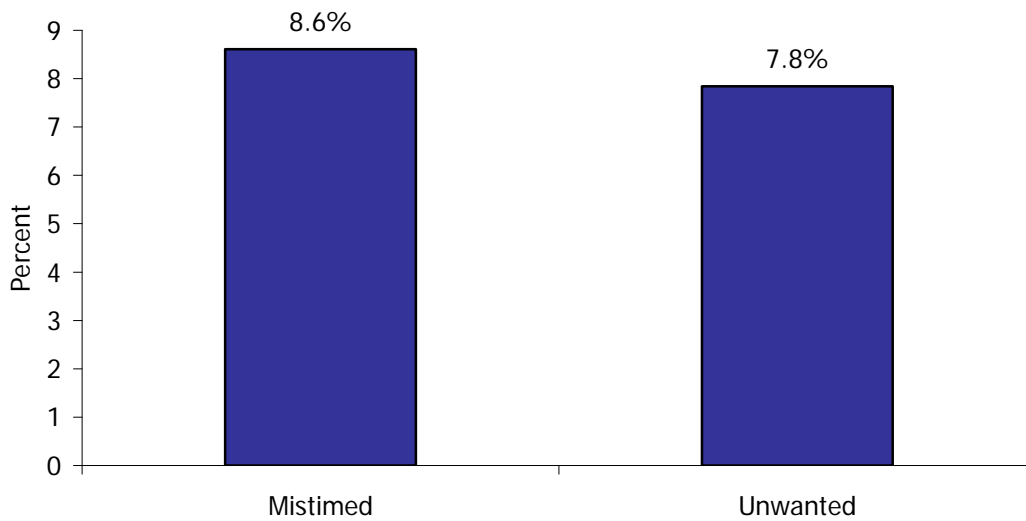
Low Birthweight

Figure 34:

Prevalence of low birthweight by smoking status during pregnancy,

2008 MI PRAMS
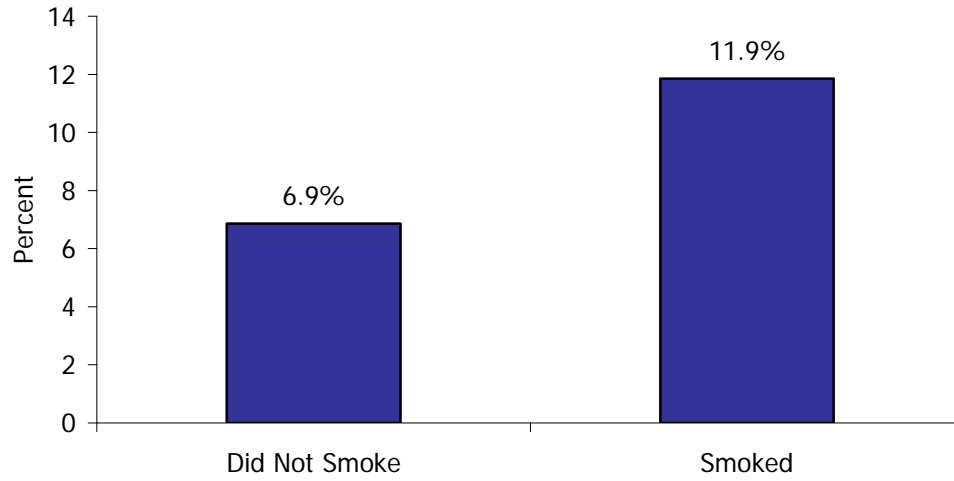
Prenatal Care

Definition:

Several questions in the PRAMS questionnaire are devoted to the topic of prenatal care (PNC). The first question ascertains when care was initiated.

> *Question #16: How many weeks or months pregnant were you when you had your first visit for prenatal care? (Do not count a visit that was only for a pregnancy test or only for WIC [the special supplemental nutrition program for Women, Infants, and Children].)*
> > *_weeks*
> > *_months*
> > *_ I did not go for prenatal care*

Women who indicated that they entered prenatal care by the twelfth week (by the end of the third month) of their pregnancy were coded as initiating care in the first trimester. Those who entered care between the thirteenth and twenty-fourth week (fourth through sixth month) of their pregnancy were coded as entering care in the second trimester. Women entering PNC after their twenty-fourth week (seventh month), entered care in their third trimester.   Women who were coded as having 'No PNC' indicated they did not go for prenatal care during their pregnancy. Women surveyed for PRAMS were also asked about their satisfaction with the time they entered care.

> *Question #17: Did you get prenatal care as early in your pregnancy as you wanted?*
> > *_No*
> > *_Yes*
> > *_I did not want prenatal care*

Women who responded 'No' were said to have entered care later than they desired and those who answered 'Yes' as early as they desired. Those women who entered PNC after their first trimester and who entered later than they desired were asked to identify barriers they felt prevented them from obtaining care when they desired.

> *Question #18: Here is a list of problems some women can have getting prenatal care. For each item, circle Y (Yes) if it was a problem for you during your most recent pregnancy or circle N (No) if it was not a problem or did not apply to you.*
> > *_I couldn't get an appointment when I wanted one*
> > *_ I didn't have enough money or insurance to pay for my visits*
> > *_ I had no way to get to the clinic or doctor's office*
> > *_ I couldn't take time off from work*
> > *_The doctor or my health plan would not start care as early as I wanted*
> > *_ I didn't have my Medicaid card*
> > *_ I had no one to take care of my children*
> > *_I had too many other things going on*
> > *_I didn't want anyone to know I was pregnant*
> > *_Other*

Information on method of payment for care, among women who obtained care, was gleaned from responses to question #19:

Question# 19: How was your prenatal care paid for?
 _Medicaid or Medicaid HMO
 _MOMS Program
 _Personal Income (cash, check, or credit card)
 _Health insurance or HMO
 _Other

Information regarding health education during prenatal care visits was derived from question #20, which asked women to indicate the topics they discussed with a healthcare professional during any of their visits.

 Question #20: During any of your prenatal care visits, did a doctor, nurse, or health care worker talk with you about any of the things listed below? (Please count only discussions, not reading materials or videos)
 _How smoking during pregnancy could affect your baby
 _Breastfeeding your baby
 _How drinking alcohol during pregnancy could affect your baby
 _Using a seatbelt during your pregnancy
 _Birth control methods to use after your pregnancy
 _Medicines that are safe to take during your pregnancy
 _How using illegal drugs could affect your baby
 _Doing tests to screen for birth defects or diseases that run in your family
 _What to do if your labor starts early
 _Getting your blood tested for HIV (the virus that causes AIDS)
 _Physical abuse to women by their husbands or partners

Results:

In 2008, over 77% of women reported entering prenatal care (PNC) in the first trimester (Figure #35). However, women less than 18 years old and women aged 18-19 years had the lowest proportion of first trimester entry into PNC (43.9% and 62.4%, respectively) (Figure #36). Non-Hispanic black women had the lowest percent of entry into PNC in the first trimester (66.3%), followed by Hispanic women (67.4%) (Figure #37). Non-Hispanic white women had the highest proportion of entry into PNC during the first trimester (79.7%), but it was significantly lower than the estimate for 2007 (83.0%). Entry into PNC during the first trimester was directly related to maternal education: those with at least a college education reported entering PNC during the first trimester most often (89.8%), while women reporting less than a high school education had the lowest proportion (59.5%) and showed a significant decline since 2007 (73.5%) (Figure #38). Furthermore, women who were uninsured and those who were Medicaid recipients entered PNC in the first trimester less often (65.1% and 63.8%, respectively) than women with private insurance (86.0%) (Figure #39). Women reporting an intended pregnancy entered prenatal care in the first trimester more often than those reporting an unintended pregnancy (84.7% vs. 67.7%, respectively) (Figure #40).

The majority of women (79.8%) reported being satisfied with their time of entry into PNC (Table #18, page B14), although this was a decrease from the 2007 estimate of 82.3%. Futhermore, it is known that women face barriers that may affect the time of entry into prenatal care. Among the women who entered prenatal care later than desired, over 31% reported one barrier to entry, over 24% reported two barriers to entry, and 12% reported three barriers to entry. The three most frequently cited barriers to PNC entry were 'did not have Medicaid card' (18.0%), 'keep

pregnancy a secret' (16.5%), 'doctor/HMO would not start care earlier' (12.6% and an increase from the 2007 figure of 8.3%), and 'other' (12.4%) (Figure #41). 'Could not pay for appointment' was given as a reason by 5.4% of unsatisfied women, compared to 8.9% in 2007.

The most common payer source for prenatal care reported by PRAMS respondents was private insurance (56.0%), followed by Medicaid (36.0%), and the MOMS program (2.7%) (Figure #42).

Prenatal care visits present an opportunity for healthcare professionals to educate and advise women about various health and pregnancy related issues. Over 80% of women reported the following topics being discussed with them during at least one of their prenatal care visits: safe medications, HIV/AIDS testing, early labor, breastfeeding, screening for birth defects, and postpartum contraceptive use. The least likely topics discussed were seatbelt use during pregnancy and domestic abuse (Figure #43), although more women reported speaking with their doctor about domestic abuse in 2008 (55.7%) than in 2007 (51.9%).

Public Health Implications:

Although the majority of women sought prenatal care in the first trimester, those who entered later or not at all are of concern. The top three reasons for starting care after the first trimester or not at all were 'keep pregnancy secret, 'did not have Medicaid card', and 'doctor/HMO would not start care earlier'. The latter two reasons are barriers that may be addressed through community-based interventions that could be effective in developing and/or improving access to care. Also, education of pregnant women on important issues related to their pregnancy may be delayed or missed altogether for those who experience late entry into PNC. Continued collaboration is needed between public health professionals and health care providers to explore and improve access to care during the first trimester of pregnancy.

Reference Tables: #15-#22

Prenatal Care

Figure 35:

Trimester of entry into prenatal care,

2008 MI PRAMS

1st trimester
77.2%

2nd trimester
20.0%

3rd trimester
1.7%

No PNC
1.2%
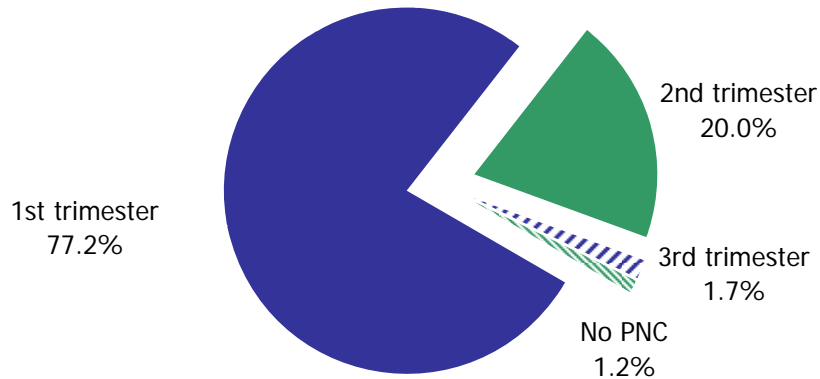
Figure 36:

Entry into prenatal care after the first trimester or not at all by maternal age,

2008 MI PRAMS

1st trimester

After 1st trimester/Not at all
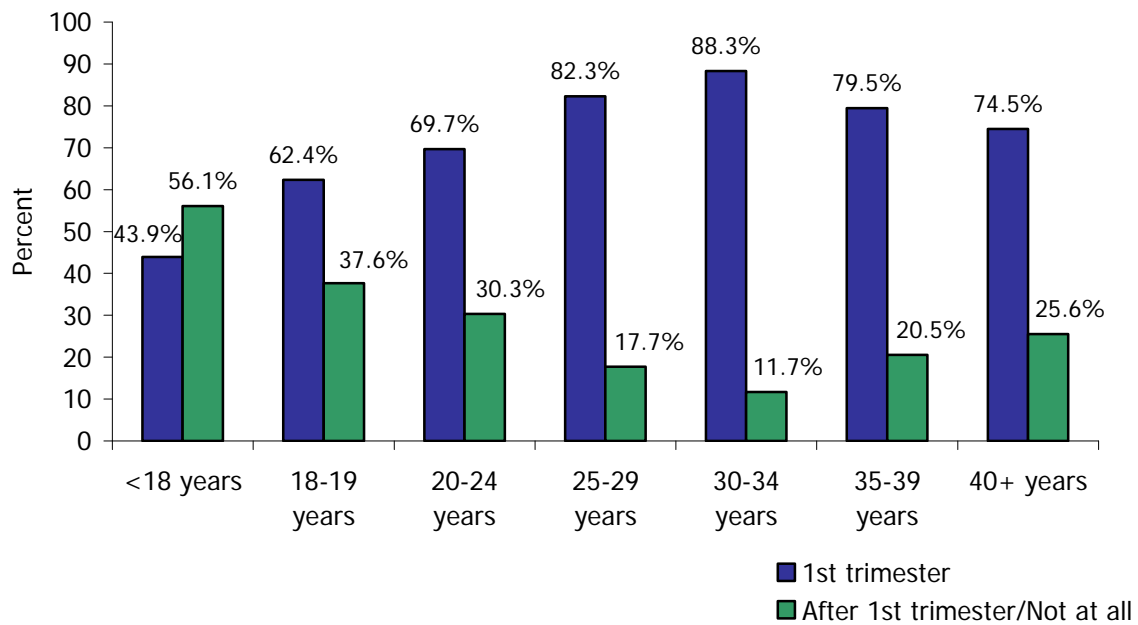
Prenatal Care

Figure 37:

Entry into prenatal care after the first trimester or not at all by maternal race/ethnicity*,
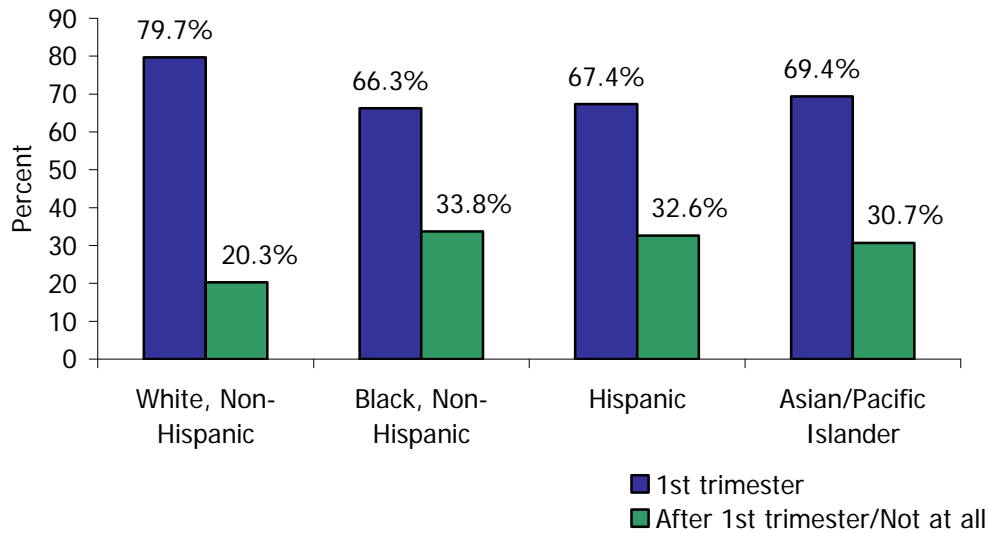
2008 MI PRAMS

*Statistics not shown for American Indian/Alaskan Native due to small sample size

Figure 38:

Entry into prenatal care after the first trimester or not at all by maternal education,
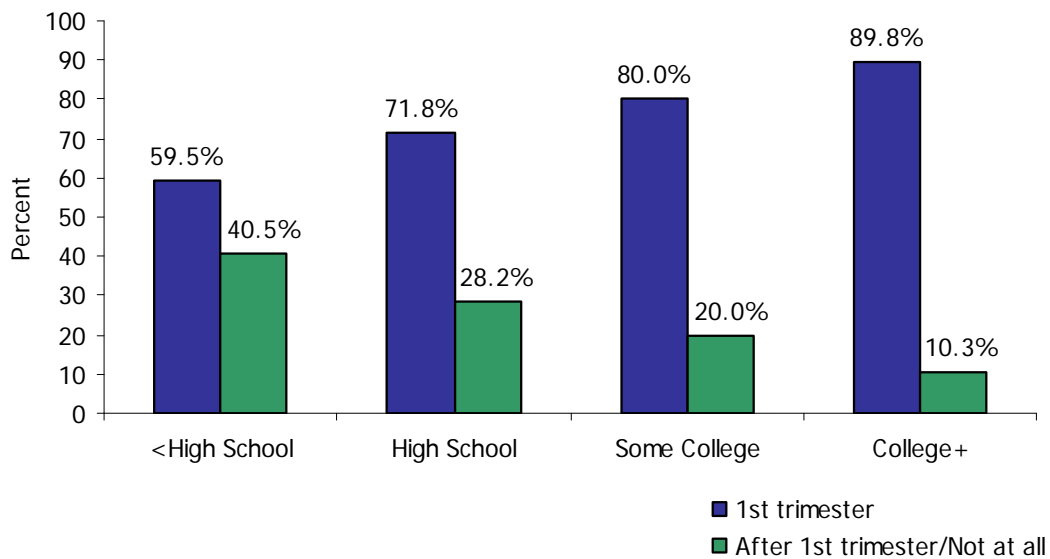
2008 MI PRAMS

Prenatal Care

Figure 39:

Entry into prenatal care after the first trimester or not at all by pre-pregnancy insurance status,
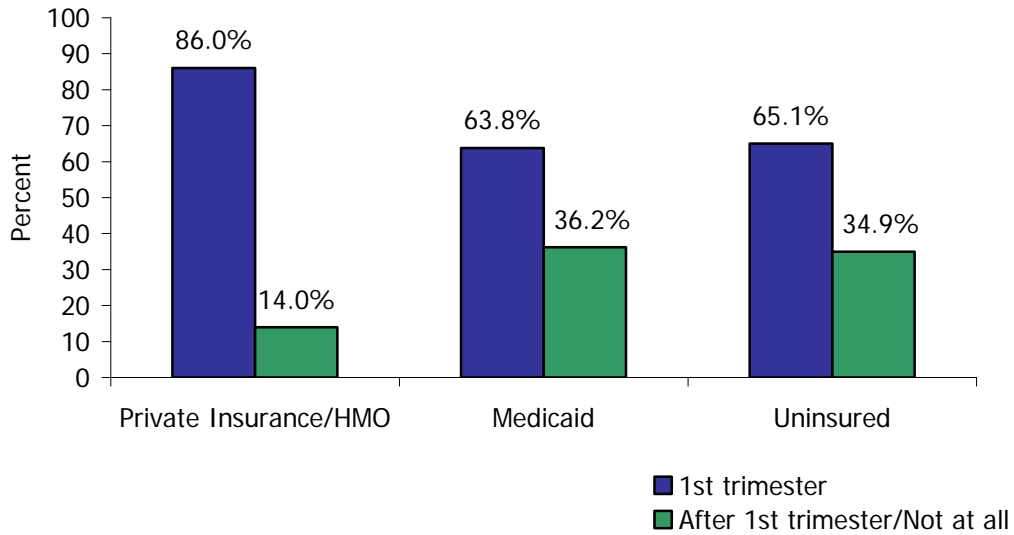
2008 MI PRAMS

Figure 40:

Entry into prenatal care by pregnancy intention,
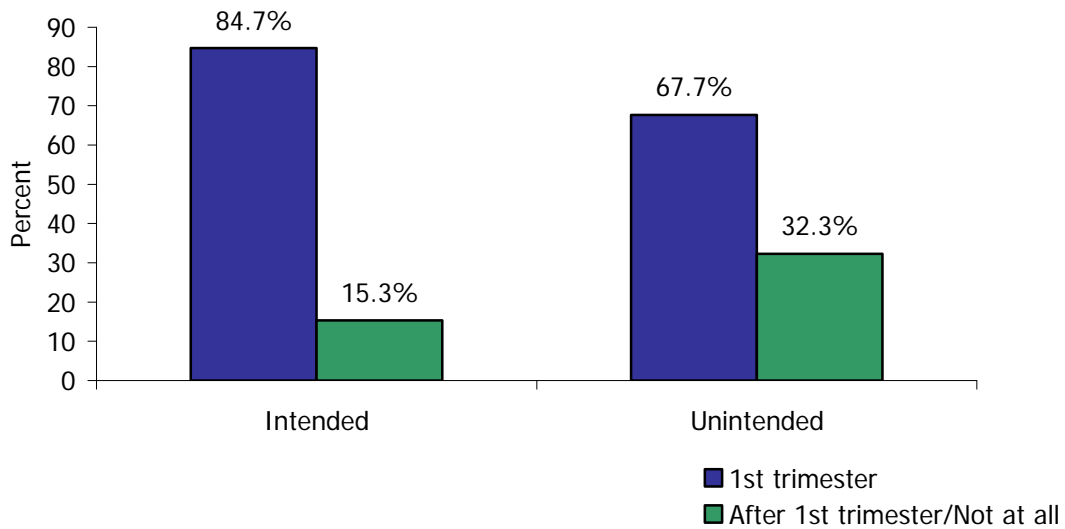
2008 MI PRAMS

Prenatal Care

Figure 41:

Number and type of barriers to prenatal care,

2008 MI PRAMS
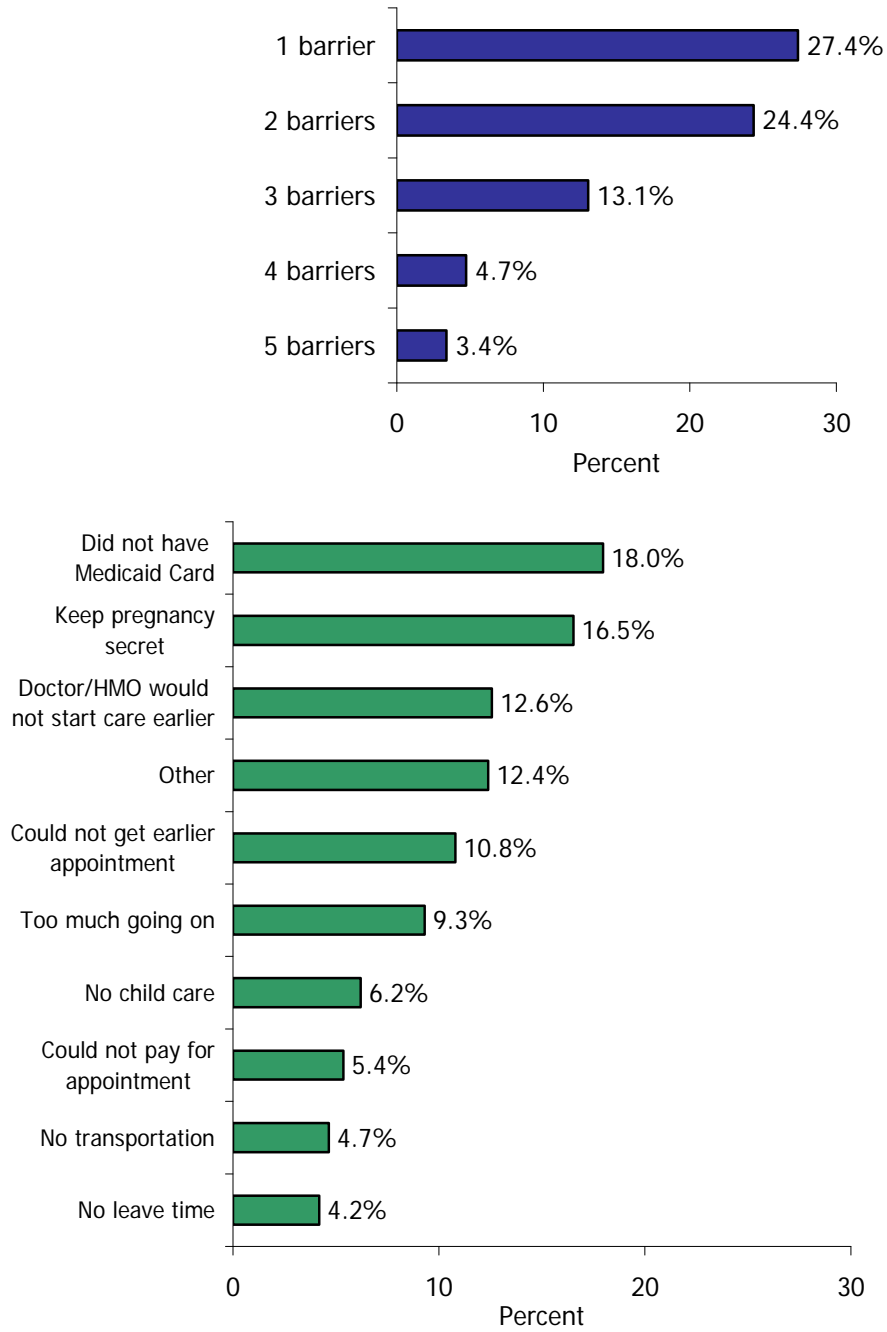
Prenatal Care

Figure 42:

Sources of payment for prenatal care,
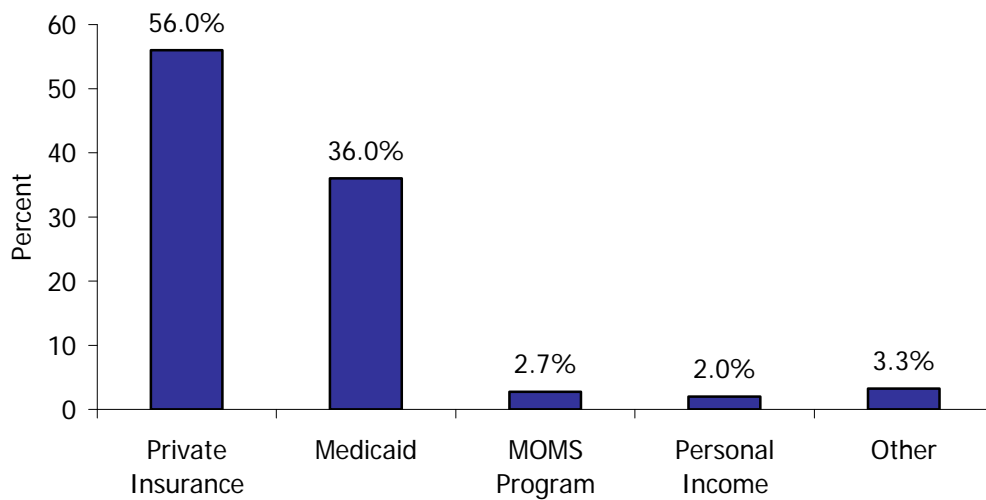
2008 MI PRAMS

Prenatal Care

Figure 43:

Topics discussed with a health care professional during prenatal care,

2008 MI PRAMS
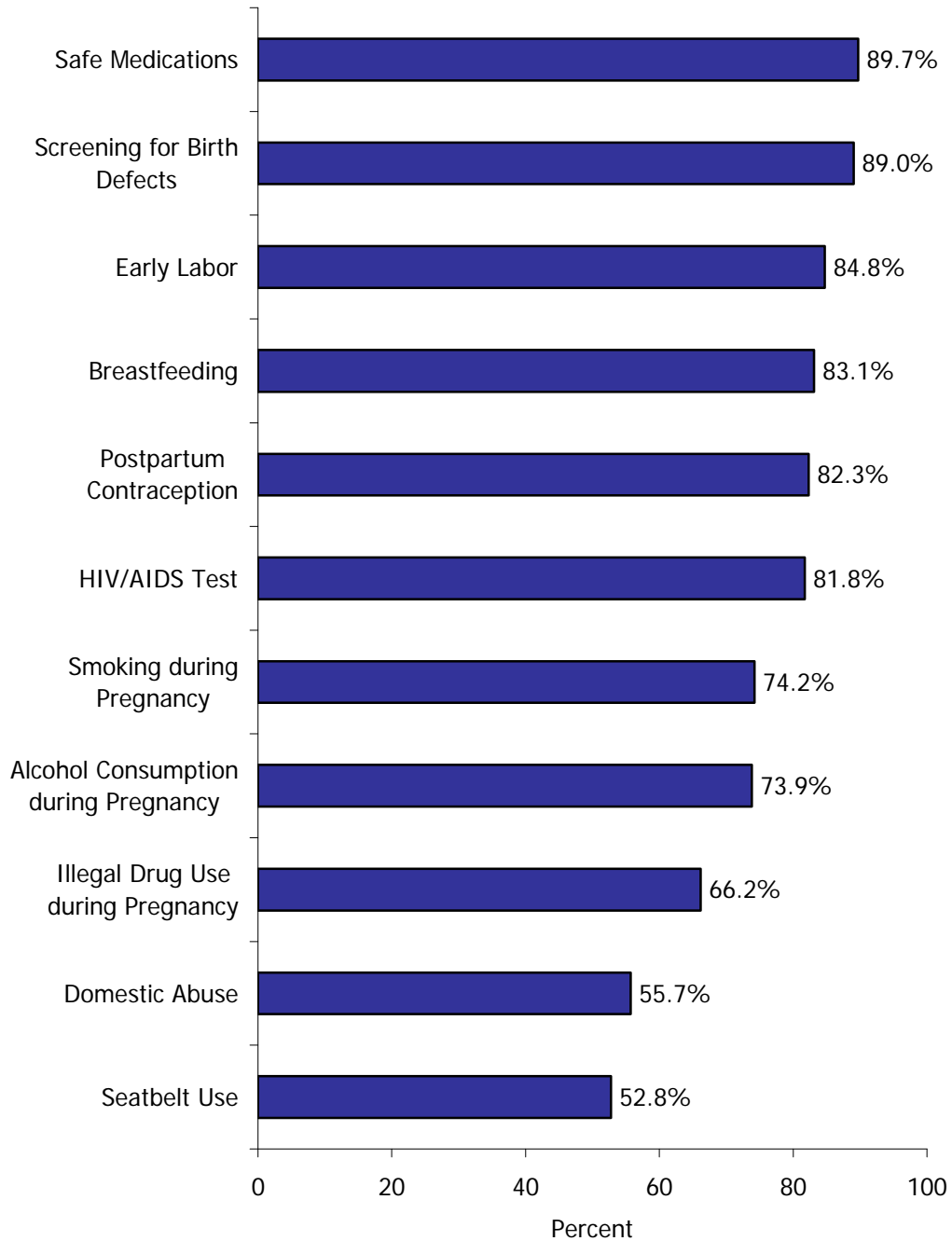
Breastfeeding

Definition:

Seven questions in the Phase 5 PRAMS questionnaire address the topic of breastfeeding. The following question gathers information on breastfeeding intention:

> *Question #44: During your most recent pregnancy, what did you think about breastfeeding your new baby?*
> _*I knew I would breastfeed*
> _*I thought I might breastfeed*
> _*I knew I would not breastfeed*
> _*I didn't know what to do about breastfeeding*

Women who responded that they knew they were going to breastfeed were considered, "intending to breastfeed." Women who responded that they were not going to breastfeed were classified as, "intending not to breastfeed." Women who either thought they may breastfeed or didn't know what to do about breastfeeding were classified as being "unsure about breastfeeding".

Information regarding breastfeeding initiation and duration was derived from questions #45 to #47, and #49.

> *Question #45: Did you ever breastfeed or pump breast milk to feed your new baby after delivery?*
> _*No*
> _*Yes*

Those who answered Yes to question #45 were asked:

> *Question #46: Are you still breastfeeding or feeding pumped breast milk to your new baby?*
> _*No*
> _*Yes*

Those who answered No to question #46 were asked:

> *Question #47: How many weeks or months did you breastfeed or pump breast milk to feed your baby?*
> _*# weeks*
> _*# months*
> _*Less than 1 week*

> *Question #48: What were your reasons for stopping breastfeeding?*
> _*My baby had difficulty nursing*
> _*Breast milk alone did not satisfy my baby*
> _*I thought my baby was not gaining enough weight*
> _*My baby became sick and could not breastfeed*
> _*My nipples were sore, cracked, or bleeding*
> _*I thought I was not producing enough milk*
> _*I had too many household duties*
> _*I felt it was the right time to stop breastfeeding*

_I got sick and could not breastfeed
_I went back to work or school
_I wanted or needed someone else to feed the baby
_My baby was jaundiced (yellowing of the skin or whites of the eyes)
_Other

Question #49: How old was your baby the first time you fed him or her anything besides breast milk (Include formula, baby food, juice, cow's milk, water, sugar water, or anything else you feed your baby)?
 _# weeks
 _# months
_My baby was less than a week old
_I have not fed my baby anything besides breastmilk

Results:

Before delivery, the majority of women planned to breastfeed (58.4%), while 19.2% thought that they may breastfeed, and 20.0% planned not to breastfeed (Figure # 45). At the time surveyed (two to six months postpartum), only 34.2% of women were still breastfeeding their infants. Women who breastfed for more than one week but had stopped breastfeeding at the time of survey accounted for 34.5% of the respondents, while 26.8% reported not breastfeeding at all (Figure #46).

Breastfeeding was directly correlated with maternal age. Less than half (45.5%) of the women under age 18 reported breastfeeding, while more than 79% of the women over the age of 25 years reported breastfeeding (Figure #47). Non-Hispanic black women were the least likely (59.3%) to report ever breastfeeding (Figure #48). Women with a college degree or higher are more likely to report breastfeeding (85%). Conversely, women without a high school diploma reported the lowest rate at 46.4% (Figure #49), but this was a significant increase over the 2007 estimate of 34.2%.

Among women who breastfed their infants, those under 18 years of age breastfed for an average of 5.3 weeks, while those in the age group of 35-39 years breastfed an average of 8.3 weeks (Figure #50), which was an increase over the 2007 average of 6.5 weeks. Breastfeeding duration did not significantly vary by racial/ethnic group, with the exception of Asian/Pacific Islanders breastfeeding twice as long (14.1 weeks) than other racial/ethnic groups (Figure #51). In addition, women with a college degree or higher reported breastfeeding their infants for the longest period (8.4 weeks) (Figure #52). The most frequently reported barriers to breastfeeding continuation were 'other' at 24.0%, the mother 'thought she was not producing enough milk' (18.4%), and 'had to return to work or school' (18.1%) (Figure #53).

Public Health Implications:

UNICEF, in collaboration with the World Health Organization, launched the Baby-Friendly Hospital Initiative in 1991, which consists of ten steps a birthing center can take to help promote exclusive breastfeeding. Information can be found at the UNICEF website at http://www.unicef.org/nutrition/index_24806.html. As of August March 2010, the United States had 96 Baby-Friendly hospitals and birth centers.

A novel randomized clinical trial by Michael Kramer and colleagues* in Belarus showed that women whose hospital was randomized to the breastfeeding intervention that followed the UNICEF initiative breastfed exclusively for a significantly longer duration and their infants had

a significant reduction in risk of gastrointestinal tract infections and of atopic eczema. More recent research by Plenge-Bonig, et al** has confirmed a protective effect of breastfeeding on gastroenteritis caused by rotavirus infection, particularly for infants less than six months of age.

Health care providers should stress the benefits of breastfeeding to pregnant women prenatally and postnatally, especially to those populations where breastfeeding is less prevalent such as younger women and those of non-Hispanic black race. The WIC program, available to low-income women, strongly encourages breastfeeding by providing feeding specialists to answer questions and breastfeeding peer counselors to make home visits if needed. This type of support should be made available to all new mothers in the hospital to give assistance and discuss the common barriers of breastfeeding, which may increase the number of women initiating breastfeeding and increase the duration of breastfeeding.

*Kramer MS, Chalmers B, Hodnett ED, et al. Promotion of Breastfeeding Intervention Trial (PROBIT): A randomized trial in the Republic of Belarus. JAMA 2001; 285(4): 413-20.

** Plenge-Bonig A, Soto-Ramirez N, Karmaus W, et al. Breastfeeding protects against acute gastroenteritis due to rotovirus in infants. Eur J Pediatr 2010; Epub ahead of print.

Reference Tables: #23- #28

Breastfeeding

Figure 45:

Pre-delivery breastfeeding planning,

2008 MI PRAMS

Unsure about breastfeeding
2.5%

Planned not to breastfeed
20.0%

Planned to breastfeed
58.4%
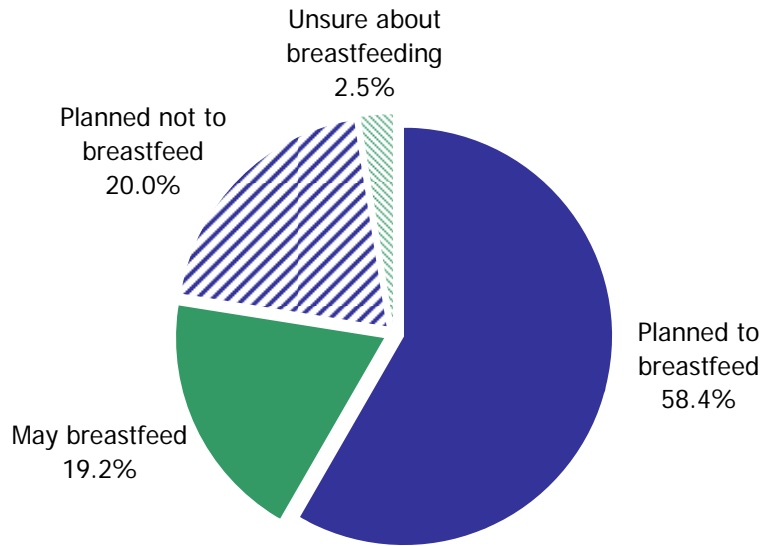
May breastfeed
19.2%

Figure 46:

Prevalence of breastfeeding behavior,

2008 MI PRAMS

Breastfed for >1 week, but concluded
34.5%

Breastfeeding when surveyed
34.2%

Breastfed for <1 week
4.5%

Did not breastfeed
26.8%
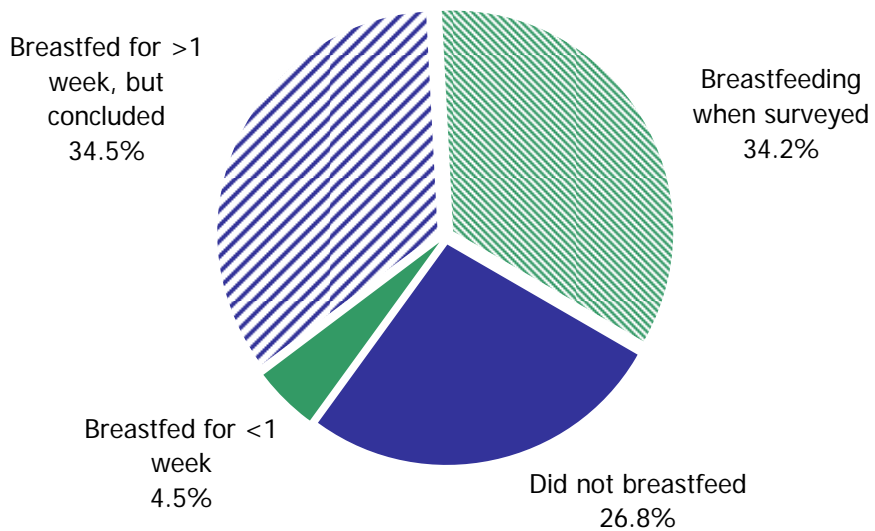
Breastfeeding

Figure 47:

Prevalence of women who breastfed ever by maternal age,

2008 MI PRAMS
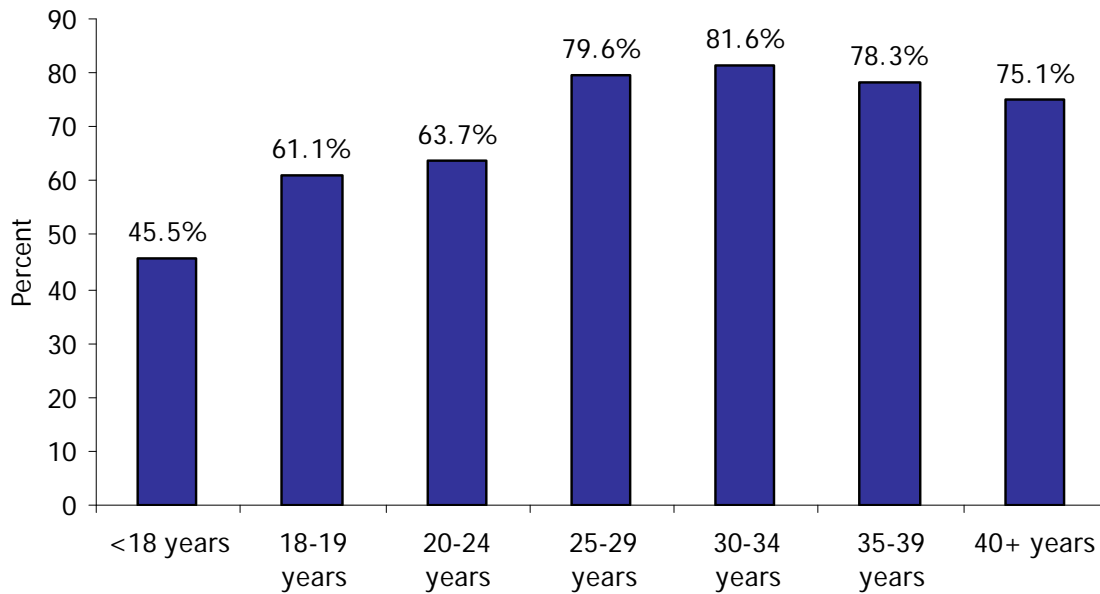
Figure 48:

Prevalence of women who breastfed ever by maternal race*,

2008 MI PRAMS
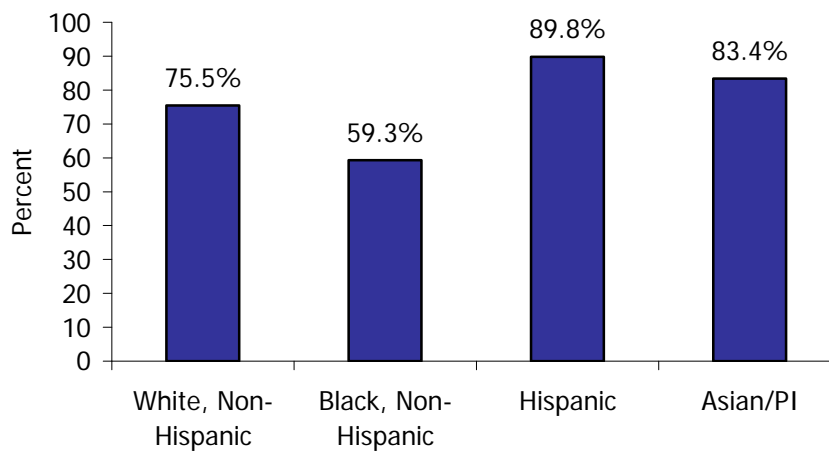
*Statistics not shown for American Indian/Alaskan Native due to small sample size

Breastfeeding

Figure 49:

Prevalence of women who ever breastfed by maternal education,
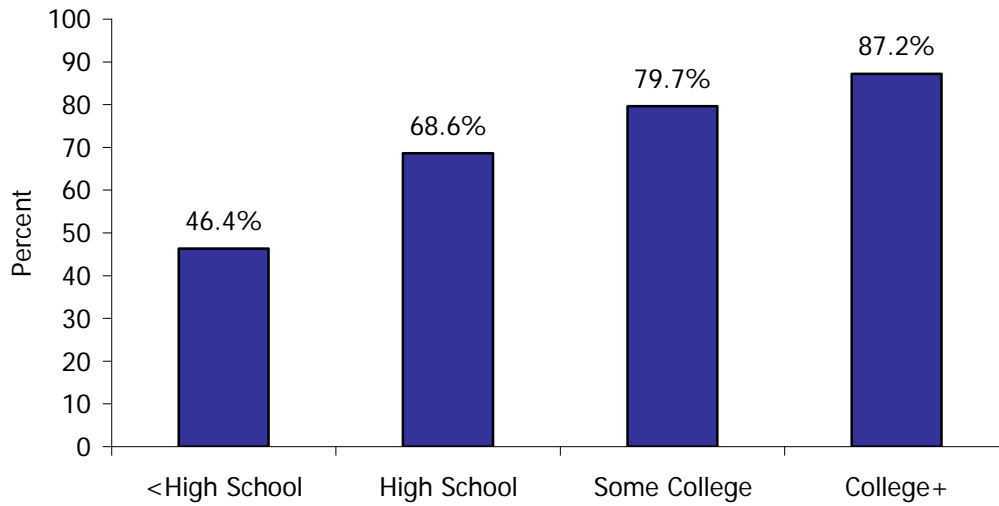
2008 MI PRAMS

Figure 50:

Average breastfeeding duration, among women who breastfed for longer than a week, but discontinued breastfeeding before surveyed (2 to 4 months after delivery) by maternal age,

2008 MI PRAMS
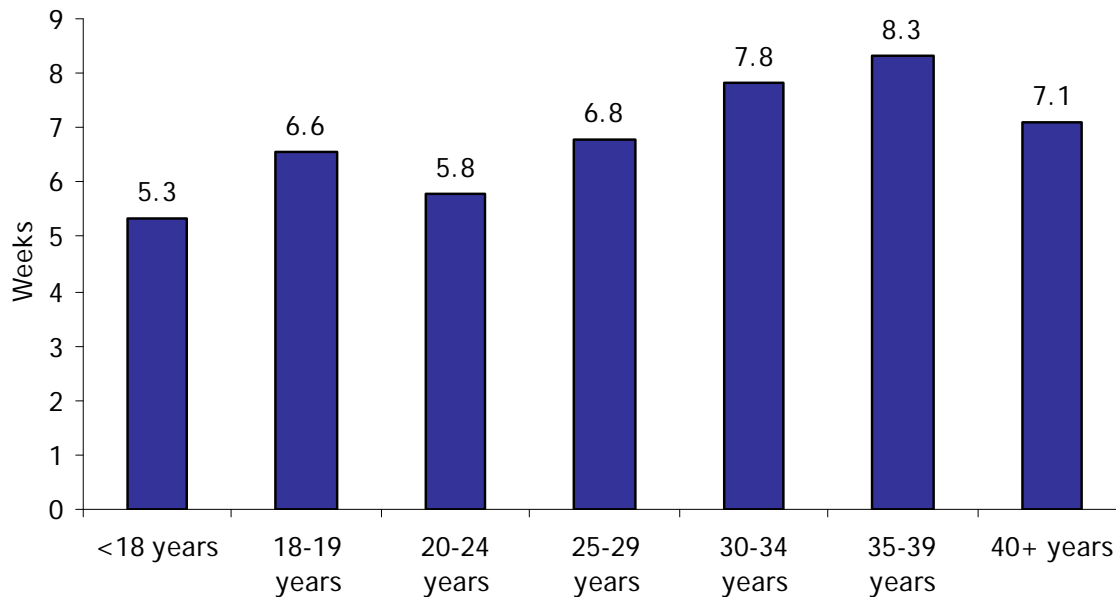
Breastfeeding

Figure 51:

Average breastfeeding duration, among women who breastfed for longer than a week, but discontinued breastfeeding before surveyed, by maternal race/ethnicity*,

2008 MI PRAMS
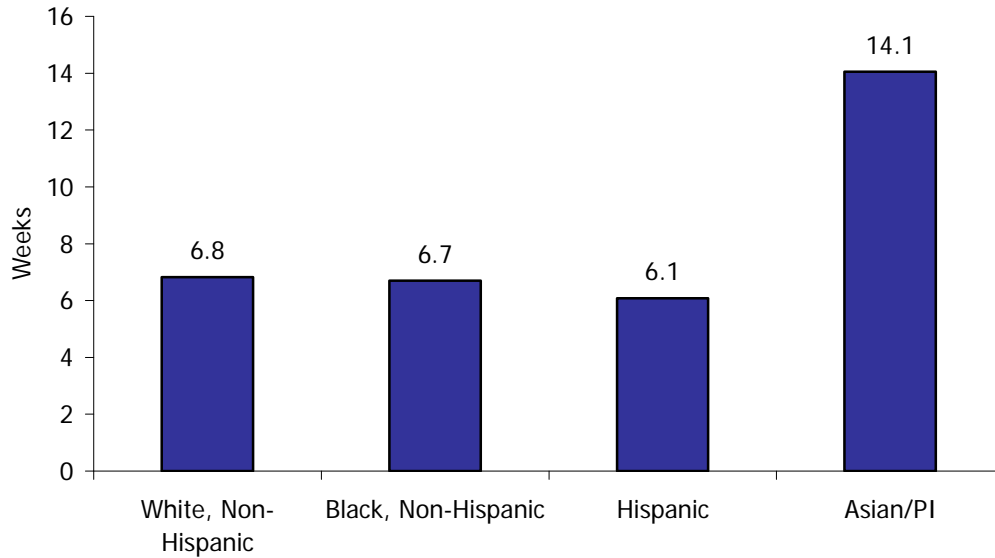
*Data for American Indian/Alaskan Native not shown due to small sample size

Figure 52:

Average breastfeeding duration, among women who breastfed for longer than a week, but discontinued breastfeeding before surveyed, by maternal education,
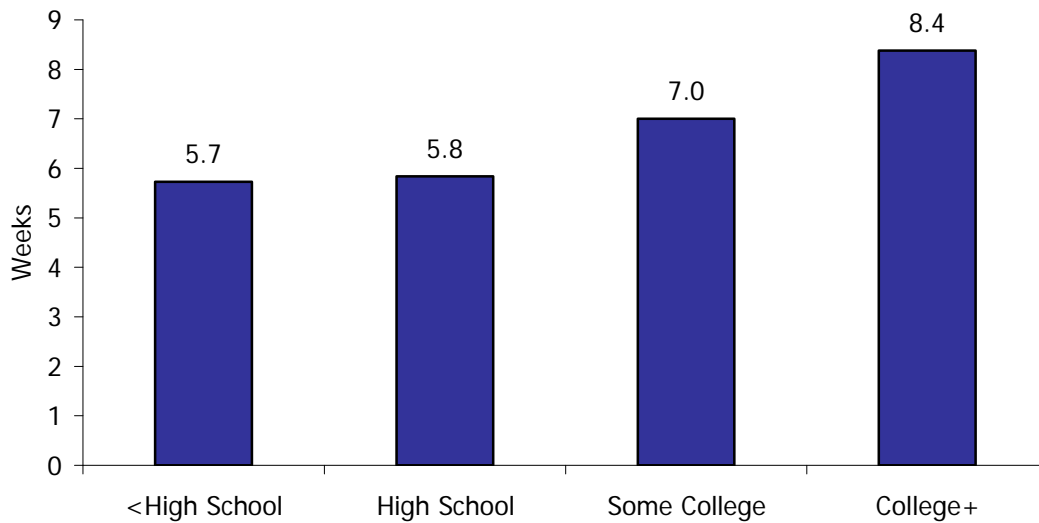
2008 MI PRAMS

Breastfeeding

Figure 53:

Barriers to breastfeeding continuation among women who breastfed for longer than a week, but discontinued breastfeeding before surveyed,

2008 MI PRAMS

Barrier	Percent
Other	24.9%
Thought was not producing enough milk	18.4%
Had to return to work/school	18.1%
Needed another person to feed the infant	10.0%
Nipples became sore, cracked, or bleeding	6.4%
Felt it was time to discontinue	5.2%
Infant had difficulty nursing	3.9%
Breastmilk did not satisfy infant	3.5%
Too many household duties	3.5%
Mother became sick and could not nurse	3.3%
Thought infant was not gaining enough weight	1.7%
Infant became sick and could not nurse	1.2%

Percent

Substance Abuse: Tobacco

<u>Definition:</u>

An initial question, question #25, was asked to differentiate women who have recently smoked and women who had not.

Question #25: Have you smoked at least 100 cigarettes in the past 2 years?
_No
_Yes

Women who answered 'No' to question #25 skipped the rest of the maternal smoking questions. Women who answered 'Yes' to question #25 were asked the following three questions:

Question #26: In the 3 months before you got pregnant, how many cigarettes did you smoke on an average day? (a pack has 20 cigarettes)
_41 cigarettes or more
_21 to 40 cigarettes
_11 to 20 cigarettes
_6 to 10 cigarettes
_1 to 5 cigarettes
_Less than 1 cigarette
_None (0 cigarettes)

Question #27: In the last 3 months of your pregnancy, how many cigarettes did you smoke on an average day?
_41 cigarettes or more
_21 to 40 cigarettes
_11 to 20 cigarettes
_6 to 10 cigarettes
_1 to 5 cigarettes
_Less than 1 cigarette
_None (0 cigarettes)

Question #28: How many cigarettes or packs of cigarettes do you smoke on an average day now?
_41 cigarettes or more
_21 to 40 cigarettes
_11 to 20 cigarettes
_6 to 10 cigarettes
_1 to 5 cigarettes
_Less than 1 cigarette
_None (0 cigarettes)

A nonsmoker was defined as a woman who was not smoking during either period of time, including women who answered no to question #25. A smoker who quit was a woman who indicated that she smoked during the initial time period, but was not smoking during the second time period. A smoker (reduced # cigarettes) was a woman who indicated that she smoked during the initial time period, but reduced the number of cigarettes in the second period. A smoker (# cigarettes same or more) is defined as a woman who indicated that she smoked during the initial time period, but maintained or increased the number cigarettes in the second

period. Nonsmoker who began smoking was a woman who reported not smoking during the first time period, but who indicated smoking in the second. When analyzing women who smoked in the last three months of their pregnancy, women who indicated that they did not smoke then or who indicated that they did not smoke at all were categorized as not smoking in the last three months of their pregnancy. Women who reported smoking cigarettes, regardless of the amount, were classified as smokers. Smoking behaviors were compared as such: during pregnancy with behavior before pregnancy, postpartum behavior with smoking during pregnancy, and postpartum behavior with pre-pregnancy behavior.

Results:

A majority of PRAMS respondents reported not smoking prior to pregnancy (73.0%). Among the women who reported smoking prior to pregnancy, 11.1% had quit, 11.0% had reduced the number of cigarettes smoked, and less than 5% smoked the same or more cigarettes during pregnancy (Figure #55); however, the prevalence of smokers who quit during pregnancy increased from 1.4% in 2007. In general, the proportion of women who smoked during pregnancy decreased with age (Figure #56). Non-Hispanic white women were more likely to report smoking during the last three months of pregnancy (16.1%) compared to non-Hispanic black women (12.8%). Women who earned a high school diploma had the highest prevalence of smoking in the last three months of pregnancy (23.7%), while women with a college degree had the lowest rate (2.1%) (Figure #58). Notably, the percentage of women who did not reveive a high school diploma and reported smoking was in 2008 (19.9%) than in 2007 (23.3%). In addition, women who were ever on Medicaid had a higher prevalence of smoking than women who were never on Medicaid (25.5% vs. 6.2%, respectively) (Figure #59).

Smoking cessationduring pregnancy did not lead to permanent abstinence for every smoker. While the majority of women remained non-smokers after pregnancy, 14.0% reported that they smoked the same number or more cigarettes after their pregnancy, when compared to their pre-pregnancy behavior. Further, the percentage of smokers who quit was reduced from 11.1% (Figure #55) during pregnancy to only 4.7% after pregnancy (Figure #60); the percentage of women that reduced the number of cigarettes smoked during pregnancy also declined from 12.1% to 7.9% in the postpartum period.

Smoking behaviors also changed when compared to 2007 estimates: nonsmokers decreased from 77.0% to 72.9%, and nonsmokers who began postpartum also decreased from 8.1% to 0.2%. Conversely, the proportion of smokers who quit during pregnancy and did not relapse postpartum rose from 0.8% to 4.7%, as did the number of smokers who reduced their number of cigarettes and did not increase them postpartum (0.8% in 2007 vs. 8.3% in 2008).

Public Health Implications:

It is well known that smoking during pregnancy has been associated with many adverse pregnancy outcomes. Providers should identify pregnant women who smoke and offer resources and information about smoking cessation programs like the Michigan guide 'Planning to Quit: Quit Kit', which can be found at http://www.michigan.gov/tobacco. These programs should also target women who are more likely to smoke such as those less than 25 years of age, non-Hispanic white women, and women with less than a high school education, as well as smokers who plan to conceive.

Reference Tables: #29- #34

Substance Abuse: Tobacco

Figure 55:

Prevalence of smoking behavior during pregnancy (compared with pre-pregnancy behavior),

2008 MI PRAMS

Smoker who quit
11.1%

Smoker
(reduced # of
cigarettes)
11.0%

Nonsmoker
73.1%

Smoker (same #
of cigarettes)
4.8%
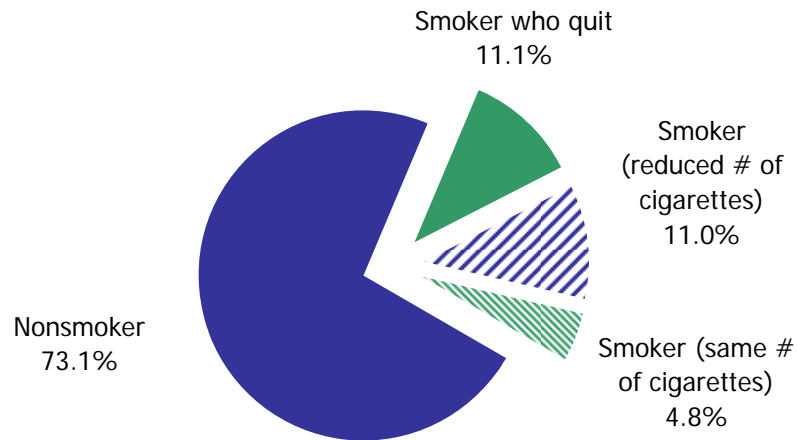
Figure 56:

Prevalence of smoking status in the last three months of pregnancy by maternal age,
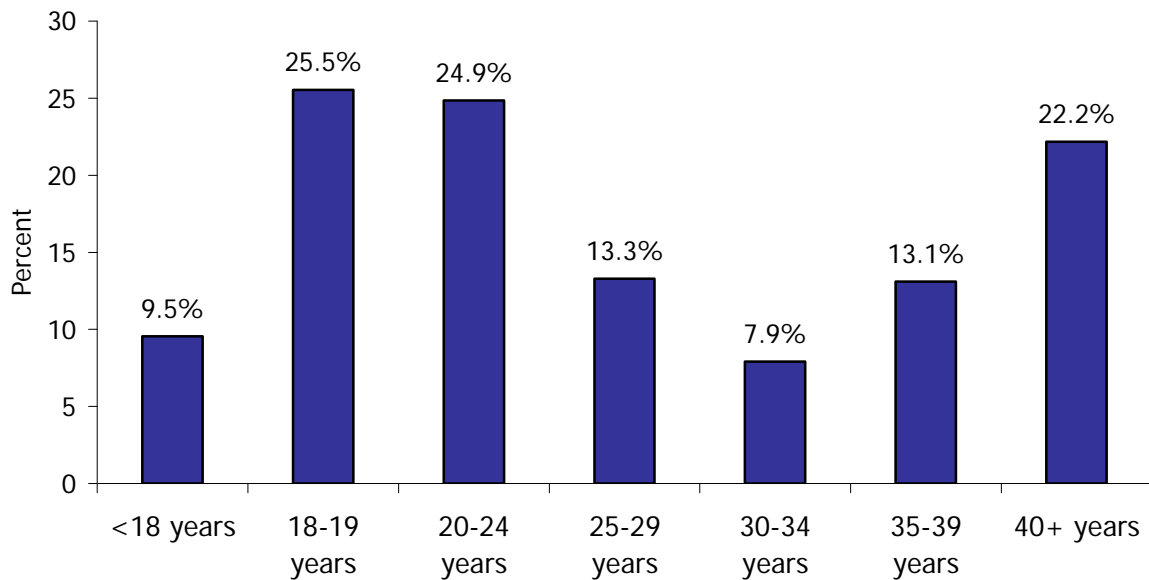
2008 MI PRAMS

Substance Abuse: Tobacco

Figure 57:

Prevalence of smoking behavior in the last three months of pregnancy by maternal race/ethnicity*,
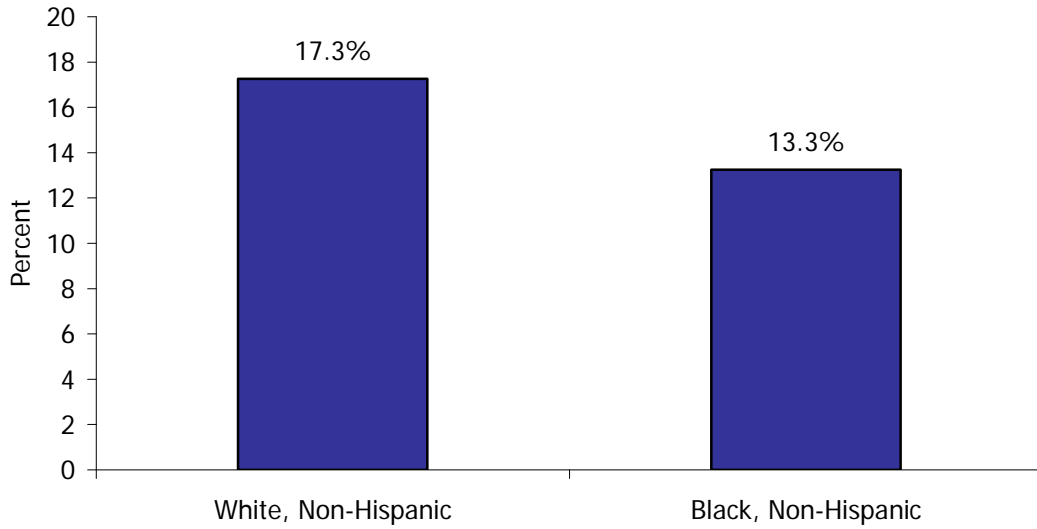
2008 MI PRAMS

*Data for Hispanic, Asian/PI, and American Indian/Alaskan Native not shown due to small sample sizes.

Figure 58:

Prevalence of smoking behavior in the last three months of pregnancy by maternal education,
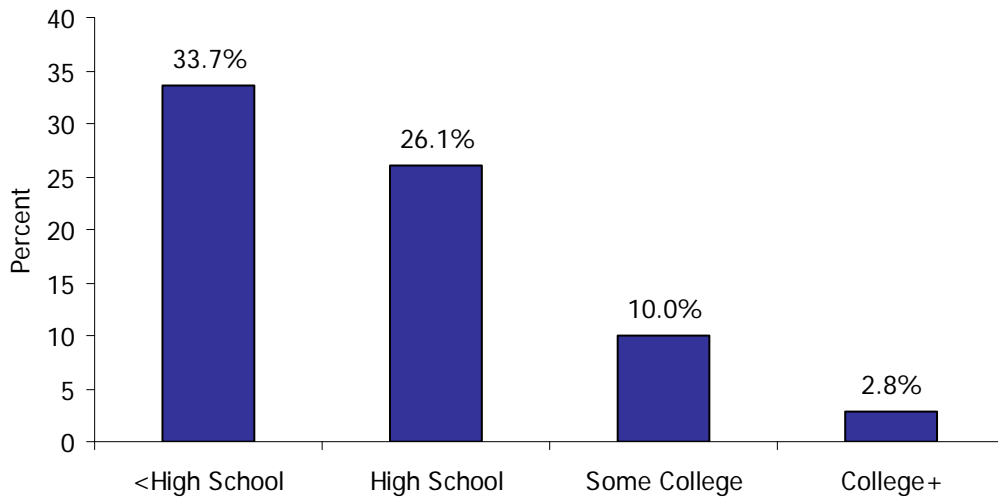
2008 MI PRAMS

Substance Abuse: Tobacco

Figure 59:

Prevalence of smoking in the last three months of pregnancy by Medicaid participation,

2008 MI PRAMS
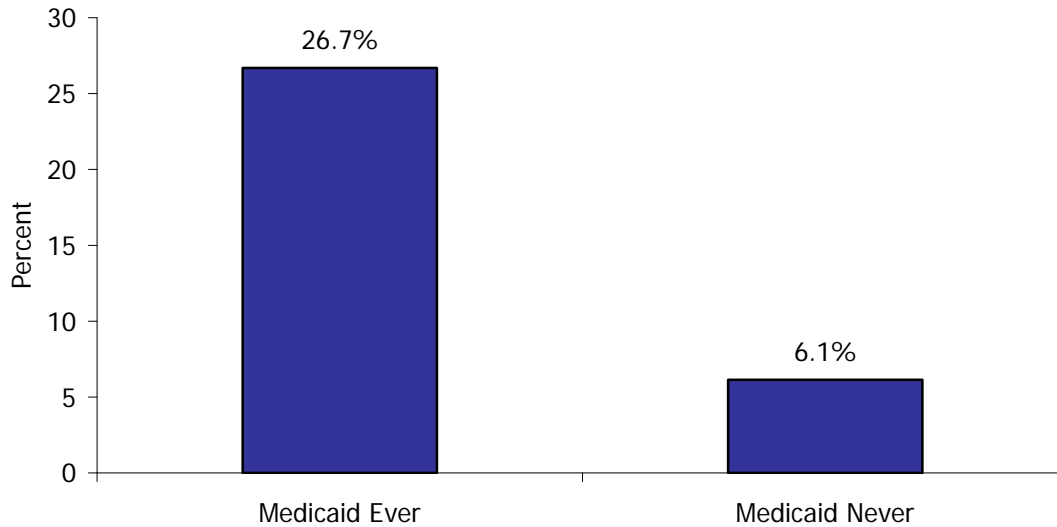
Figure 60:

Prevalence of smoking behavior in the postpartum period (compared with pre-pregnancy behavior),

2008 MI PRAMS
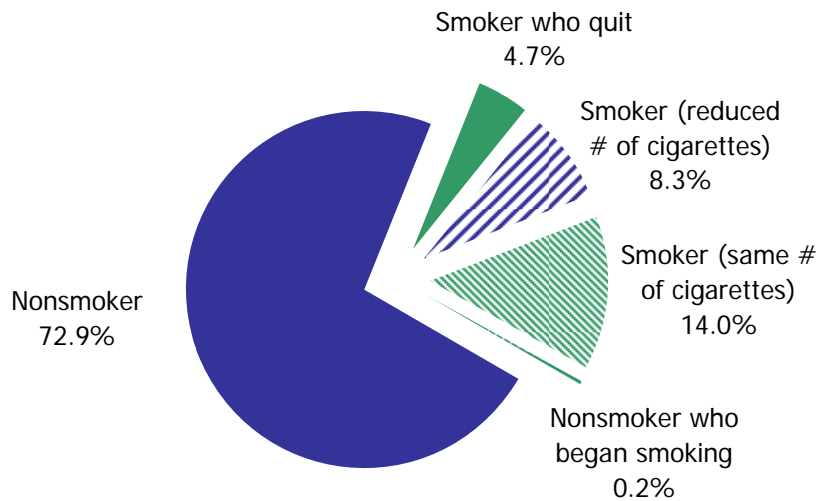
Substance Abuse: Alcohol

<u>Definition:</u>

Information on alcohol consumption and binge drinking are the focus of five questions on the PRAMS questionnaire. Question #29 was used to screen for drinking behavior.

Question #29: Have you had any alcoholic drinks in the past 2 years? (a drink is one glass of wine, wine cooler, can or bottle of beer, shot of liquor, or mixed drink)
__No
__Yes

Women who responded 'No' to that question skipped the rest of the alcohol consumption questions. Women who responded 'Yes' were asked the following questions:

*Question #30a: **During the 3 months before** you got pregnant, how many alcoholic drinks did you have in an average week?*
__14 drinks or more a week
__7 to 13 drinks a week
__4 to 6 drinks a week
__1 to 3 drinks a week
__Less than 1 drink a week
__I didn't drink then

*Question #30b: **During the 3 months before** you got pregnant, how many times a week did you drink 5 alcoholic drinks or more in one sitting?*
__6 or more times
__4 to 5 times
__2 to 3 times
__1 time
__I didn't have 5 drinks or more in 1 sitting
__I didn't drink then

*Question #31a: **During the last 3 months** of your pregnancy, how many alcoholic drinks did you have in an average week?*
__14 drinks or more a week
__7 to 13 drinks a week
__4 to 6 drinks a week
__1 to 3 drinks a week
__Less than 1 drink a week
__I didn't drink then

*Question #31b: **During the last 3 months** of your pregnancy, how many times a week did you drink 5 alcoholic drinks or more in one sitting?*
__6 or more times
__4 to 5 times
__2 to 3 times
__1 time
__I didn't have 5 drinks or more in 1 sitting
__I didn't drink then

Results:

During pregnancy, 37.8% of women reported no alcohol use in the past two years, and over 7% reported drinking alcohol. More than half (54.4%) of the women reported quitting drinking during pregnancy. More than 3% of women reduced the number of drinks while 4.3% consumed the same number of drinks or more during pregnancy (Figure #61).

Public Health Implications:

Although a small proportion of women reported drinking during pregnancy, these fetuses are exposed to the risk of Fetal Alcohol syndrome (FAS) at birth due to any alcohol consumption. Health care providers should continue to screen all women for alcohol consumption. Also, continuing to educate women during prenatal care about this syndrome and provide support may help in reducing the number of women who continue to drink alcohol during pregnancy despite the warnings.

The Michigan Department of Community Health's Fetal Alcohol Syndrome (FAS) program strives to reduce the number of children born in Michigan with FAS. The program has three main components: 1) five multidisciplinary teams called Centers of Excellence diagnose children and provide initial care planning, 2) eleven community projects provide community outreach and education, and 3) training and consultation to assist collaborative agencies in their work. This work is guided and assisted by FAS steering committees and community networking to increase awareness of FAS and the importance of its prevention; implement outreach, screening and referrals to diagnostic services; and assist with providing therapeutic and social supportive services to families and children with FAS.

A state Fetal Alcohol Spectrum Disorders (FASD) Task Force was formed in 2005 to advise the program. Strategic planning was conducted in 2008 and the task force has met quarterly since then to implement goals and objectives of the plan. Task Force members consist of representatives from Michigan's Departments of Community Health, Education, Human Services, and Corrections, as well as various advocacy organizations and parents.

Reference Tables: #35

Substance Abuse: Alcohol

Figure 61:

Prevalence of alcohol consumption during pregnancy (compared with pre-pregnancy behavior),

2008 MI PRAMS

Drinker who quit
54.4%

Drinker (reduced
# of drinks)
3.1%

Drinker (# of
drinks same or
more)
4.3%

Nondrinker who
began drinking
0.4%

Nondrinker
37.8%
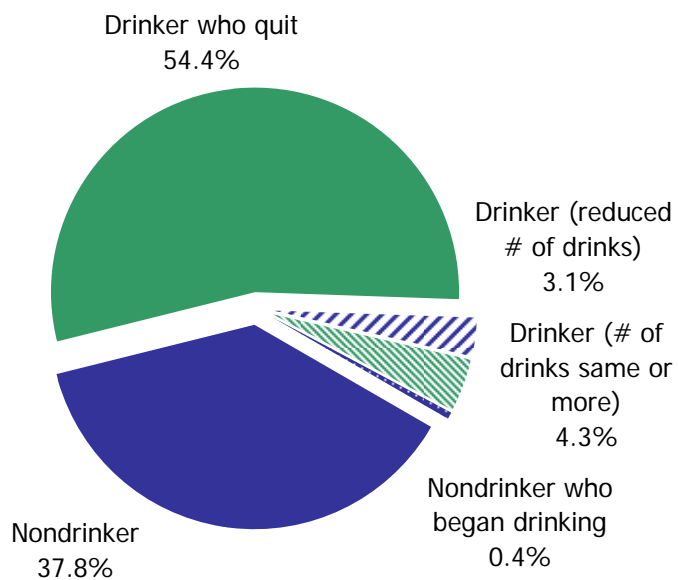
Infant Sleep

Definition:

Information regarding infant sleeping behavior is captured by two questions: one addresses sleeping position, and the other addresses bed sharing. Bed sharing is defined as an infant sharing the same sleep surface as another person. Question #54, asks women whose infants were alive at the time the survey was administered:

> *Question #51: How do you most often lay your baby down to sleep now?*
>   *_On his or her side*
>   *_On his or her back*
>   *_On his or her stomach*

Details on bed sharing practice were also asked of women whose infants were alive at the time surveyed. This topic is addressed by the following:

> *Question #52: How often does your new baby sleep in the same bed with you or anyone else?*
>   *_Always*
>   *_Often*
>   *_Sometimes*
>   *_Rarely*
>   *_Never*

Infants were classified as "Never bed shared" if mother responded that they never/rarely slept in the same bed with someone else. Mothers who indicated that their infant sometimes bed shared, were classified as, "Sometimes bed shared." Mothers of infants classified as "Always/almost always bed shared," indicated that their infant always or often slept in the same bed with someone else.

Information on the nature and source of infant sleep information was obtained by the following questions.

> *Question #74. During your most recent pregnancy or after your new baby was born, did you receive any information or advice on the following?*
>   *_Placing your baby in a crib or portable crib to sleep*
>   *_Placing your baby on his or her back to sleep*
>   *_Placing your baby on a firm mattress*
>   *_Placing your baby to sleep without pillows, bumper pads, plush blankets, or stuffed toys*
>   *_I did not receive any information on where, how, or on what my new baby should sleep*

Respondents who selected any option except the last, were then asked:

> *Question #75. From whom or where did you get the information or advice that you received?*
>   *_Your mother*
>   *_Your grandmother*
>   *_Other family member or friend*

_TV or radio
_A home health visitor
_Your hospital nurse
_Your obstetrician or midwife
_Your baby's doctor
_Other

Results:

During 2008, 68.9% of women reported placing their infants to sleep on their backs, 14.0% on their stomachs, and 10.6% on their sides (Figure #62). Women 18-19 years of age were the least likely to report placing infants to sleep on their backs (58.4%) (Figure #63), and this figure declined significantly from 70.4% in 2007. Non-Hispanic black women were the least likely racial/ethnic group to report placing infants to sleep on their backs (56.1%). The prevalence of 'back sleeping' position was at or above 70% for non-Hispanic whites, Hispanics, and Asian/Pacific Islanders (Figure #64). The prevalence of back sleeping position was lower among less educated women (Figure #65). Women who had never been on Medicaid reported a higher rate of placing infants in the back sleeping position when compared to women who had ever been on Medicaid (Figure #66).

Approximately 20% of the PRAMS respondents reported always/almost always sharing their bed with their infants (Figure #67). Women under age 18 were most likely to engage in exclusive bed sharing (31.7%) (Figure #68). When stratified by race/ethnicity, non-Hispanic black women had the highest prevalence of always/almost always bed sharing at 35.4% (Figure #69). Further, non-Hispanic white women had the lowest prevalence, with 15.2% indicating always/almost always bed sharing (Figure #70).

Nearly all (94.4%) of the respondents reported receiving information on placing their babies on their backs to sleep (Figure #71). Approximately 3% reported not receiving any infant sleep related information. Among women who reported receiving infant sleep information, approximately 71.2% reported their hospital nurse as the source of such information (Figure #72).

Public Health Implications:

In November of 2005, the American Academy of Pediatrics (AAP) published its revised recommendations on Infant Safe Sleep Practices, based on the Task Force findings on Sudden Infant Death Syndrome.* The AAP recommends a separate but proximal sleep environment for infants under the age of one. The Academy recognized that "the evidence is growing that bed-sharing, as practiced in the United States and other Western Countries, is more hazardous than the infant sleeping on a separate sleep surface . . . Infants may be brought into bed for nursing or comforting but should be returned to their own crib or bassinet when the parent is ready to return to sleep." In addition to the recommendation for no bed-sharing, the Academy reinforced its position on exclusive back sleeping, firm sleep surface with no extra bedding or soft objects in the crib, no smoking during pregnancy or around the infant, and avoiding overheating infants as measures to reduce SIDS and Sudden Unexpected Infant deaths. The AAP further stressed that public education should be intensified for secondary caregivers (child care providers, grandparents, foster parents and babysitters), and that health professionals need to implement these recommendations at every possible encounter with expectant and new parents.

A recent study by Fern Hauk** explored the reasons that mothers choose or not choose to bring their infant to bed with them throughout the first year of life. The authors found the three most common reasons that mothers cited for bringing the infant into bed were to calm a fussy infant, to help the infant and/or the mother sleep, and to facilitate breastfeeding. "Health providers need to engage in discussions with their patients to better understand the reasons for the choices they are making with regard to sleeping practices and to ensure that they understand the risks and benefits associated with these practices," conclude the authors.

Although safe sleep practices should be encouraged among all women, the Michigan PRAMS data suggests that educational messages should be directed more to those least likely to place their infant to sleep on their back (less than 20 year old and non-Hispanic Black) and those most likely to report always/almost always bed sharing (less than 25 year old, non-Hispanic Black, with less than a high school education).

* AAP Task Force on Sudden Infant Death Syndrome. AAP Policy Statement: The Changing Concept of Sudden Infant Death Syndrome: Diagnostic Coding Shifts, Controversies Regarding the Sleep Environment, and New Variables to consider in Reducing Risk. *Pediatrics* 122(5):1245-1255.

**Hauck F, Signore C, Fein SB, et al. 2008. Infant sleeping arrangements and practices during the first year of life. *Pediatrics* 122(Supplement 2):S113-S120.

<u>Reference Tables</u>: #36- #39b

Infant Sleep

Figure 62:

Prevalence of infant sleep position,

2008 MI PRAMS

Prone/Stomach
15.0%

Side
11.3%

Supine/Back
73.7%

Figure 63:

Prevalence of infant sleep position by maternal age,

2008 MI PRAMS

‡Data not shown due to small sample size
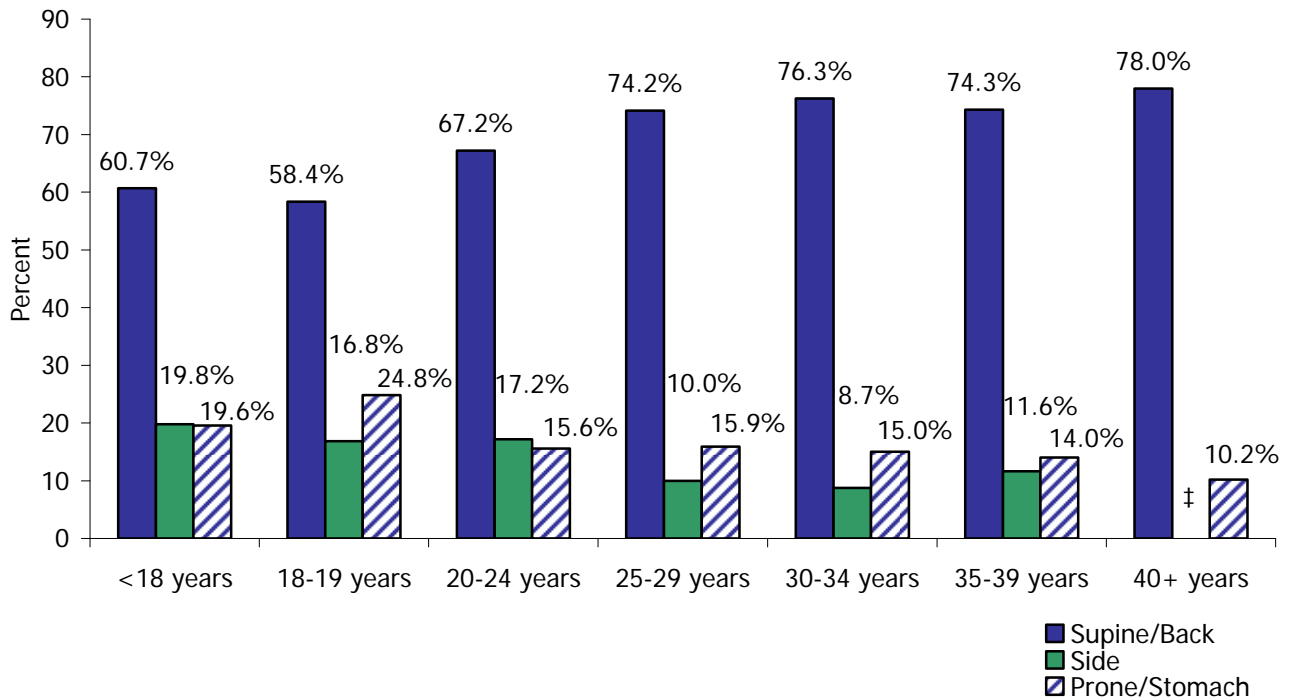
Infant Sleep

Figure 64:

Prevalence of infant sleep position by maternal race/ethnicity*,
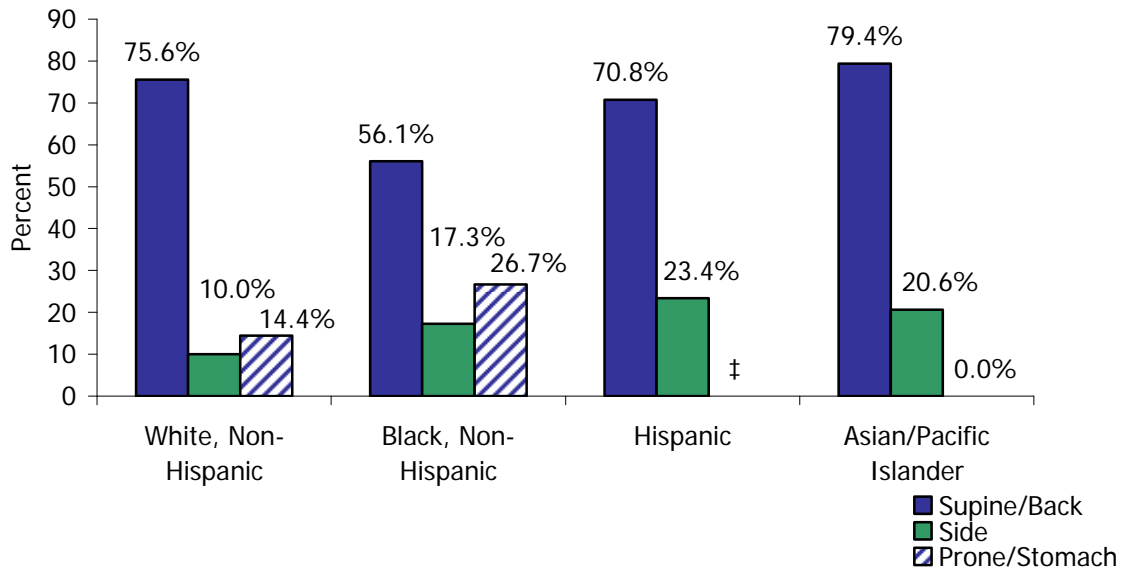
2008 MI PRAMS

*Statistics for American Indian/Alaskan Native not shown due to small sample size
‡Data not shown due to small sample size

Figure 65:

Prevalence of infant sleep position by maternal education,
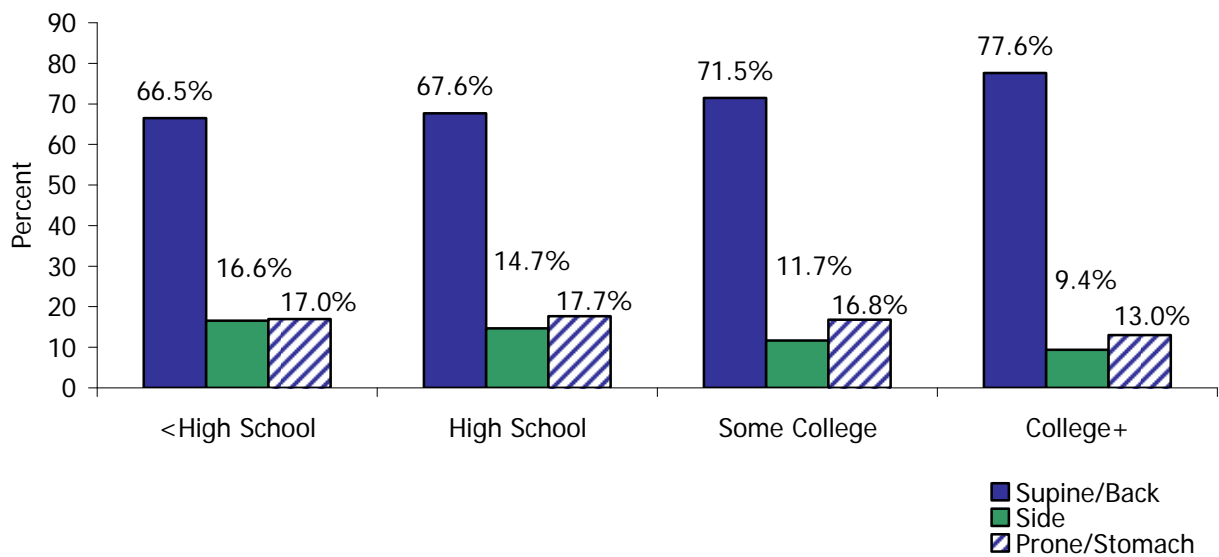
2008 MI PRAMS

Infant Sleep

Figure 66:

Prevalence of infant sleep position by maternal insurance status,
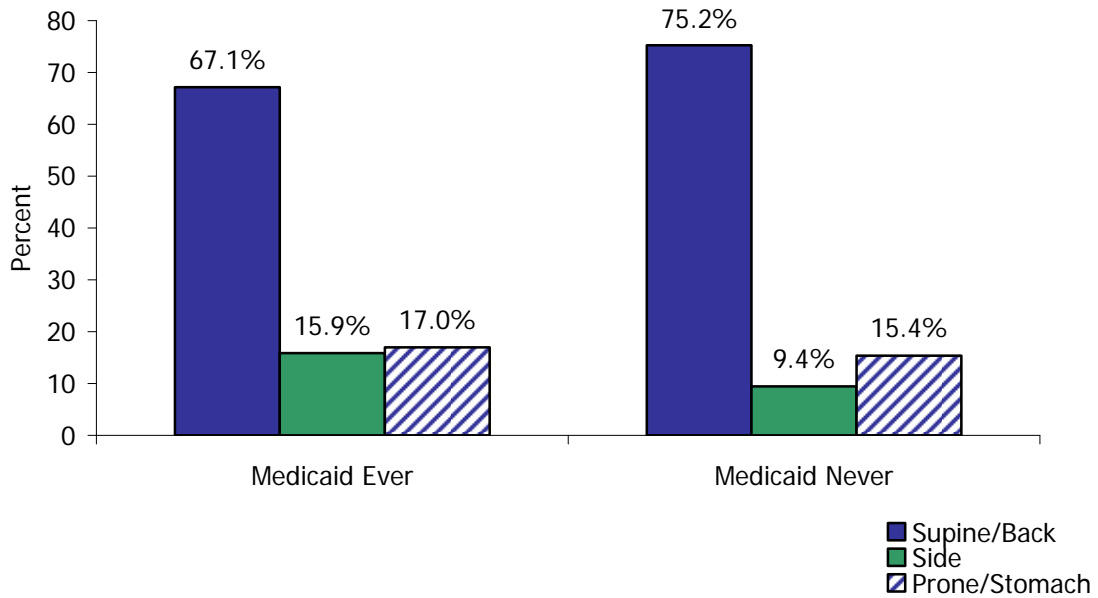
2008 MI PRAMS

Figure 67:

Prevalence of infant bed sharing,
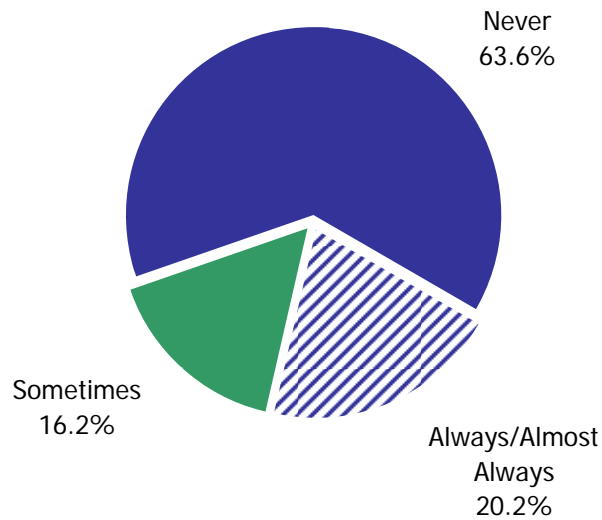
2008 MI PRAMS

Infant Sleep

Figure 68:

Prevalence of infant bed sharing by maternal age,

2008 MI PRAMS
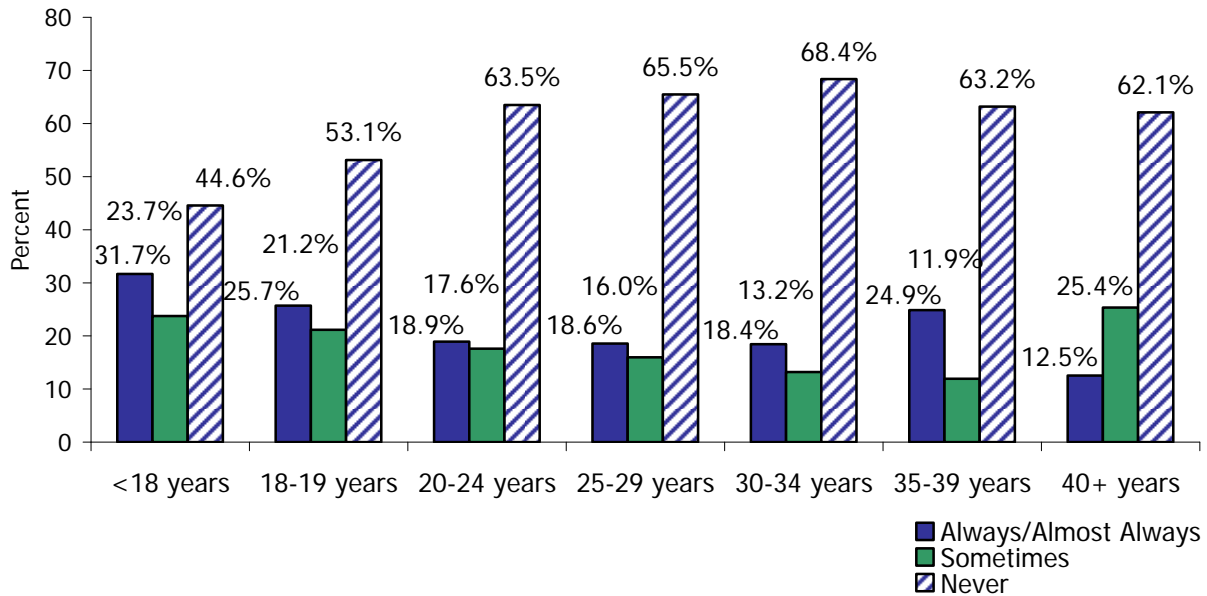
Figure 69:

Prevalence of infant bed sharing by maternal race/ethnicity*,
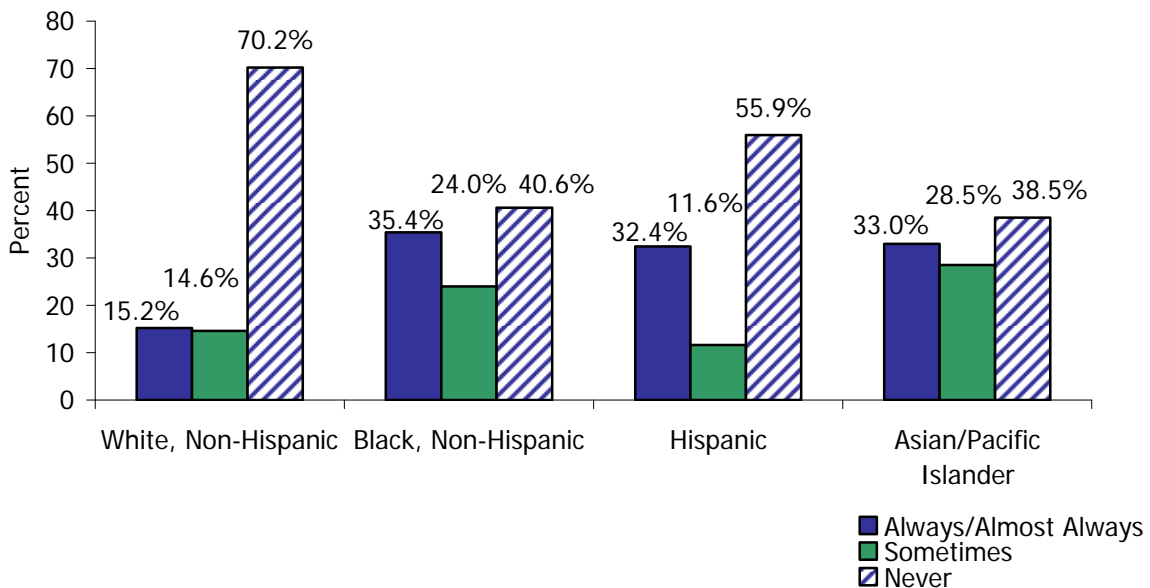
2008 MI PRAMS

*Statistics for American Indian/Alaskan Native not shown due to small sample size

Infant Sleep

Figure 70:

Prevalence of infant bed sharing by maternal education,
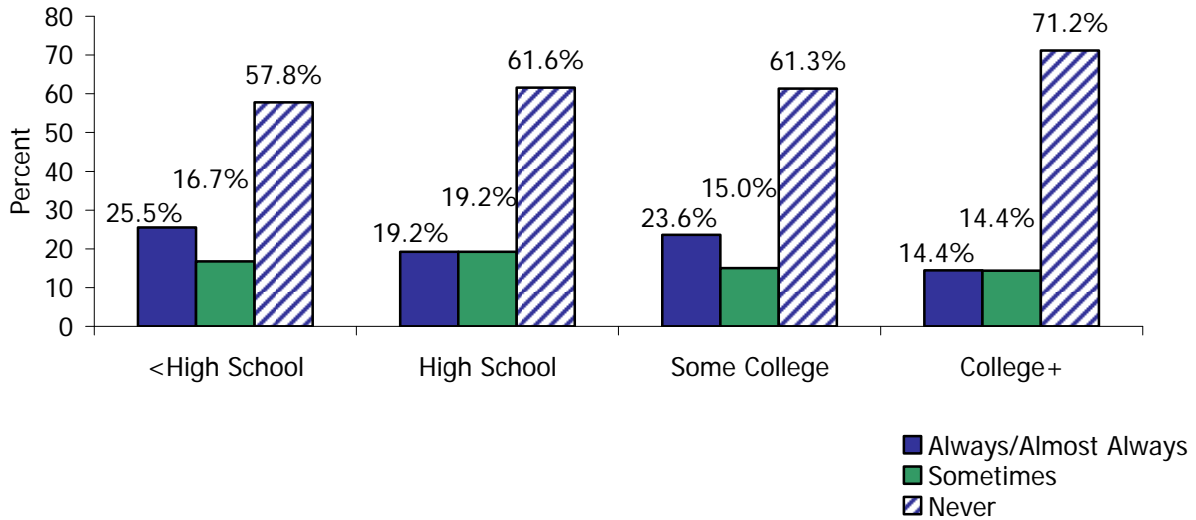
2008 MI PRAMS

Figure 71:

Prevalence of infant sleep information,
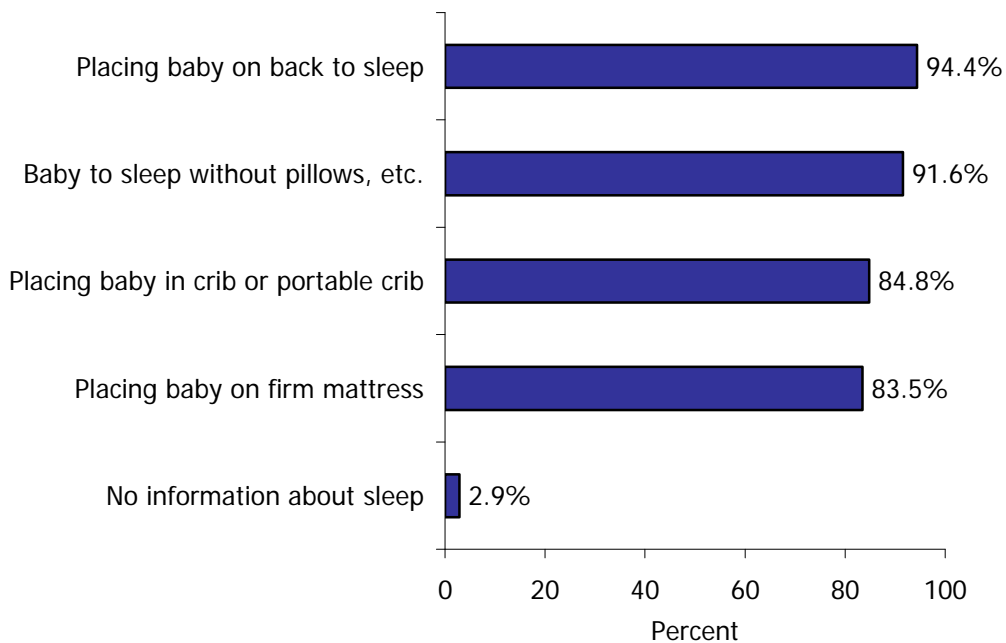
2008 MI PRAMS

Figure 72:

Source of infant sleep information,

2008 MI PRAMS
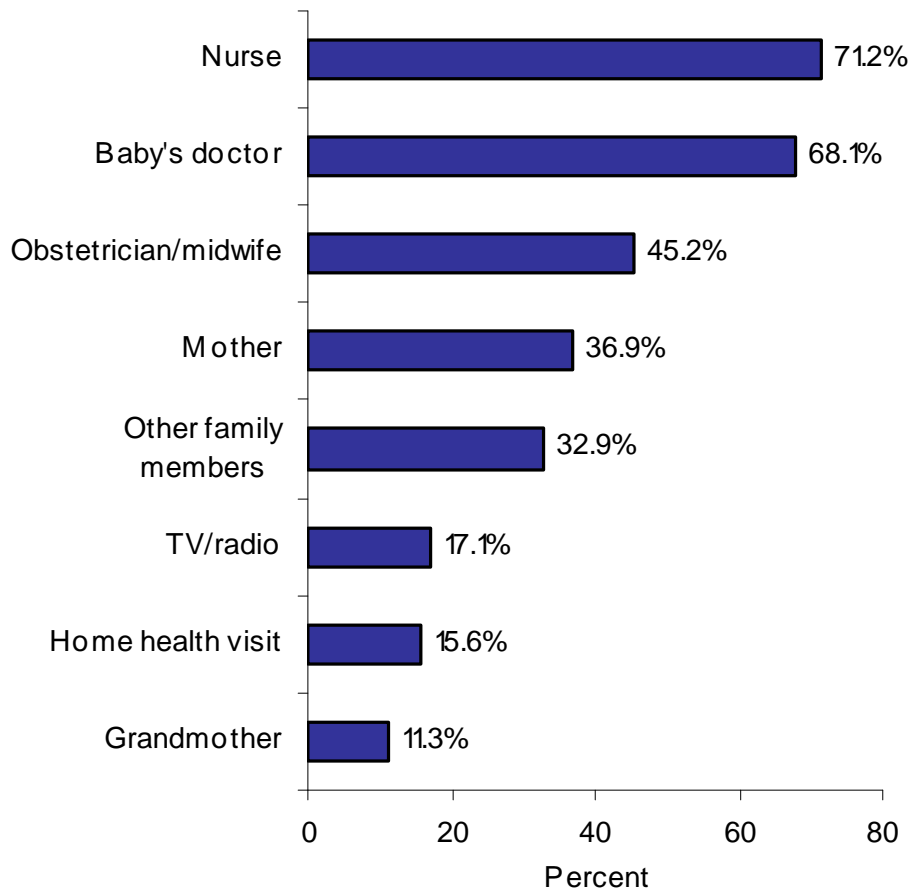
Violence Against Women

Definition:

Information regarding abuse, both physical and verbal, was derived from six questions asked of all women surveyed for PRAMS.

Women classified as being abused prior to pregnancy responded 'Yes' to either Questions #33a or #33b, which ask:

> *Question #33a: During the 12 months before you got pregnant, did an ex-husband or ex-partner push, hit, slap, kick, choke, or physically hurt you in any other way?*
> _No
> _Yes

> *Question #33b: During the 12 months before you got pregnant, were you physically hurt in any way by your husband or partner?*
> _No
> _Yes

Women classified as being abused during pregnancy responded 'Yes' to either Questions #34a or #34b, which ask:

> *Question #34a: During your most recent pregnancy, did an ex-husband or ex-partner push, hit, slap, kick, choke, or physically hurt you in any other way?*
> _No
> _Yes

> *Question #34b: During your most recent pregnancy, were you physically hurt in any way by your husband or partner?*
> _No
> _Yes

The issue of verbal abuse was addressed in question #67. Women were classified as experiencing verbal abuse or not experiencing verbal abuse depending on their response to option 'g':

> *Question #67: This question is about things that may have happened during the 12 months before your new baby was born.*
> g. *You were repeatedly called names, told you were worthless, ugly, or verbally threatened by your partner or someone important to you.*
> _No
> _Yes

Results:

Among PRAMS respondents, 5.4% reported experiencing physical abuse in the year prior to delivery, with the woman's ex-husband/ex-partner being named the abuser in nearly 88% of the cases (Figure #73). A similar picture was presented during pregnancy, with 2.9% of women reporting physical abuse (Figure #74). In addition, approximately 6.8% of women reported being verbally abused in the year prior to delivery (Figure #75).

Public Health Implications:

A small, yet unacceptable, percentage of women reported physical or verbal abuse. While the rate of physical or verbal abuse has remained somewhat steady since 2004, ranging from 5% to 7%, the proportion of abusers identified as an ex-husband/ex-partner has significantly increased since 2004: from 48.1% to 59.6% in 2005, to 64.7% in 2006, to 82.3% in 2007, and to 87.9% in 2008. Thus, the intervention efforts aimed towards domestic abuse prevention should be enhanced to thus reduce the rate of violence during pregnancy. Standardized screening tools used by providers during prenatal care for all women would help identify those who are victims of abuse. These women can then be referred to appropriate services.

Reference Tables: #40- #44

Violence Against Women

Figure 73:

Prevalence of pre-pregnancy physical abuse and abuser,

2008 MI PRAMS

Not Abused
94.6%

Abused
5.6%

Abused by ex-
husband/ex-
partner
87.9%

Abused by
husband/partner
‡
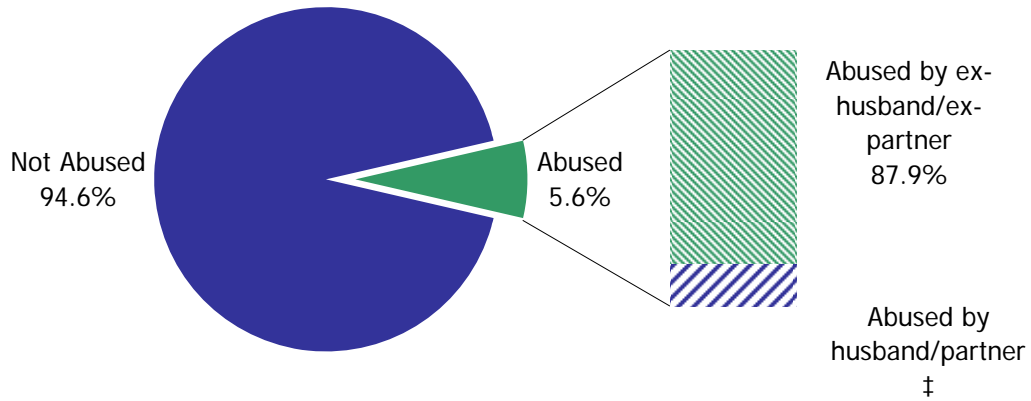
‡Data not shown due to small sample size

Figure 74:

Prevalence of physical abuse during pregnancy and abuser,

2008 MI PRAMS

Not Abused
94.6%

Abused
2.9%

Abused by ex-
husband/ex-
partner
87.7%

Abused by
husband/partner
‡
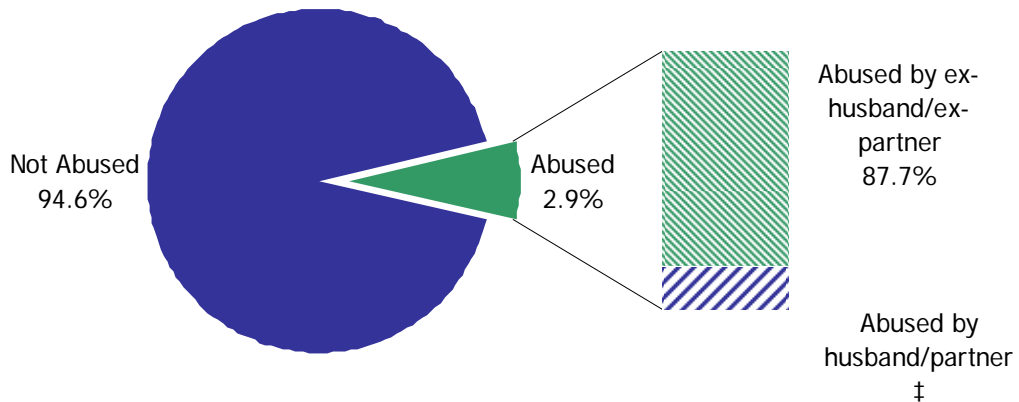
‡Data not shown due to small sample size

Violence Against Women

Figure 75:

Prevalence of verbal abuse in the year prior to delivery,

2008 MI PRAMS

Not Verbally
Abused
93.2%

Verbally Abused
6.8%
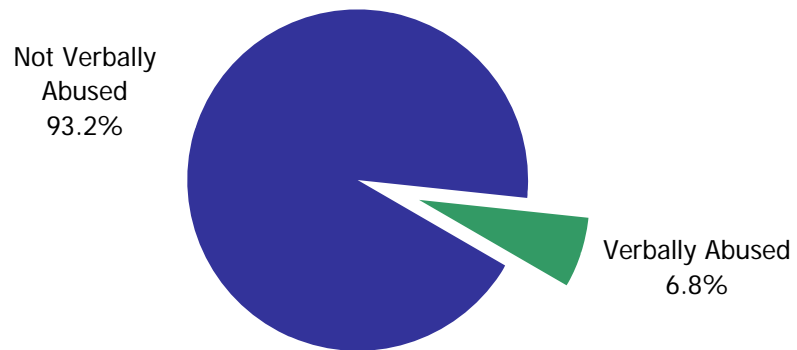
HIV

Definition:

Treating HIV-infected pregnant women can reduce the risk for perinatal transmission by two thirds. In 1995, the US Public Health Service recommended routine HIV counseling and voluntary testing of pregnant women.* Two questions in the PRAMS questionnaire gather information on HIV counseling and testing:

> *Question #20: During any of your prenatal care visits, did a doctor, nurse, or other health care worker talk with you about any of the things listed below?*
> *j. Getting tested for HIV (the virus that causes AIDS)*

> *Question #21. At any time during your most recent pregnancy or delivery, did you have a test for HIV (the virus that causes AIDS)?*

Results:

In 2008, over 84% of women reported receiving HIV counseling during prenatal care (Figure #76). Among these respondents, 74.4% reported actually being tested for HIV. Conversely, only 25.0% of women who were not counseled received testing (Figure #76). Figure #77 shows that HIV testing was greatest (90.0%) among women aged 18 to 19, while only 57.6% of women aged 30 to 34 years were tested. Non-Hispanic black women were more likely (89.1%) to receive HIV testing (Figure #78), while Asian/Pacific Islanders were least likely (60.3%). Women with less than a high school education had the highest proportion (82.0%) of HIV testing, followed by those with a high school diploma (73.5%), those with some college education (67.9%), and finally, those with a college degree or higher (52.7%) (Figure #79). Women with Medicaid coverage also had the highest proportion of HIV testing (Figure #80).

Public Health Implications:

Over 15% of women reported not having a discussion about HIV testing during prenatal care, which highlights the need for healthcare workers to engage in discussion about this topic with all women.

Further, the proportion tested of those counseled was much higher than those who were not counseled. Counseling by healthcare providers about prenatal HIV testing should be, and is, associated with the percentage of women who are tested. However, further research is needed on the content of healthcare provider discussions on this topic and the other factors that may motivate providers not to test all pregnant women for HIV (see below).

In 2008, the CDC released revised recommendations for HIV testing in pregnant women which included HIV testing to be a mandatory part of prenatal screening, notifying patients that testing will be done and allowing pregnant women to opt-out rather than asking for consent, not requiring a written consent to perform testing, and repeat screening in the third trimester for geographic areas with elevated rates of HIV infection.* Educating providers about these recommendations is essential to achieving the goal of 100% perinatal screening, and working toward implementing these recommendations through policies would help to prevent vertical transmission of HIV by identifying infected women and starting them on a timely treatment regimen.

* Branson B., Handsfield H., Lampe M., et al., Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. MMWR 2008; 5, RR-14.

HIV

Figure 76:

Prevalence of prenatal HIV counseling and testing,

2008 MI PRAMS

Was not tested for
HIV prenatally
25.6%

Was tested for
HIV prenatally
74.4%

Discussed HIV prenatally 84.6% | **Did not discuss HIV prenatally 15.4%**

Was tested for
HIV perinatally
25.0%

Was not tested
for HIV
perinatally
75.0%
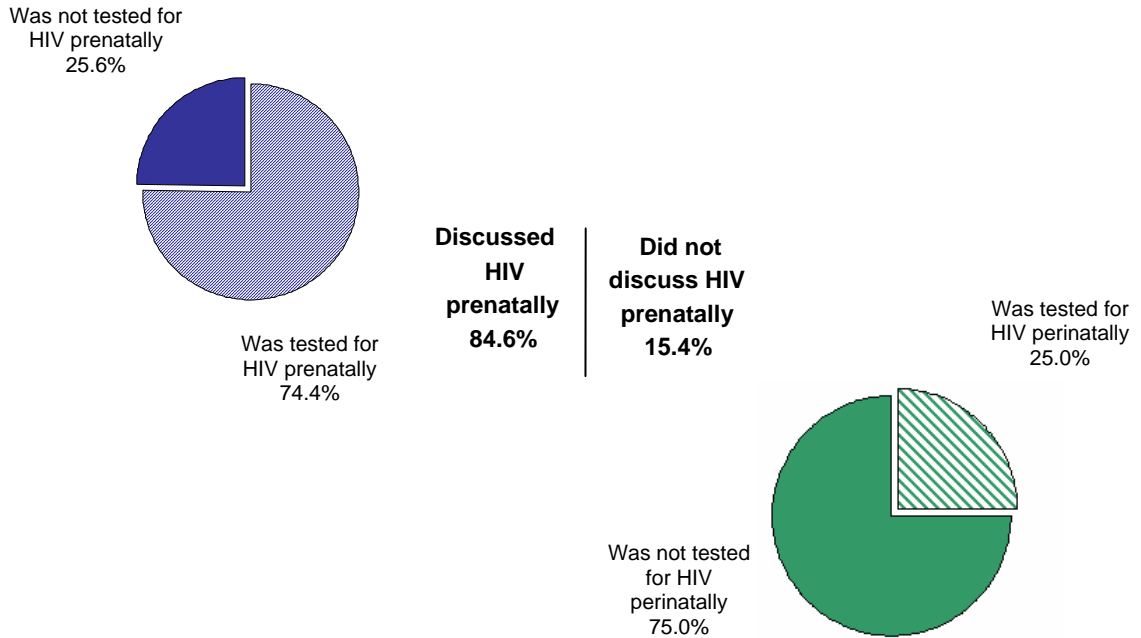
Figure 77:

Prevalence of prenatal HIV test status by maternal age,

2008 MI PRAMS
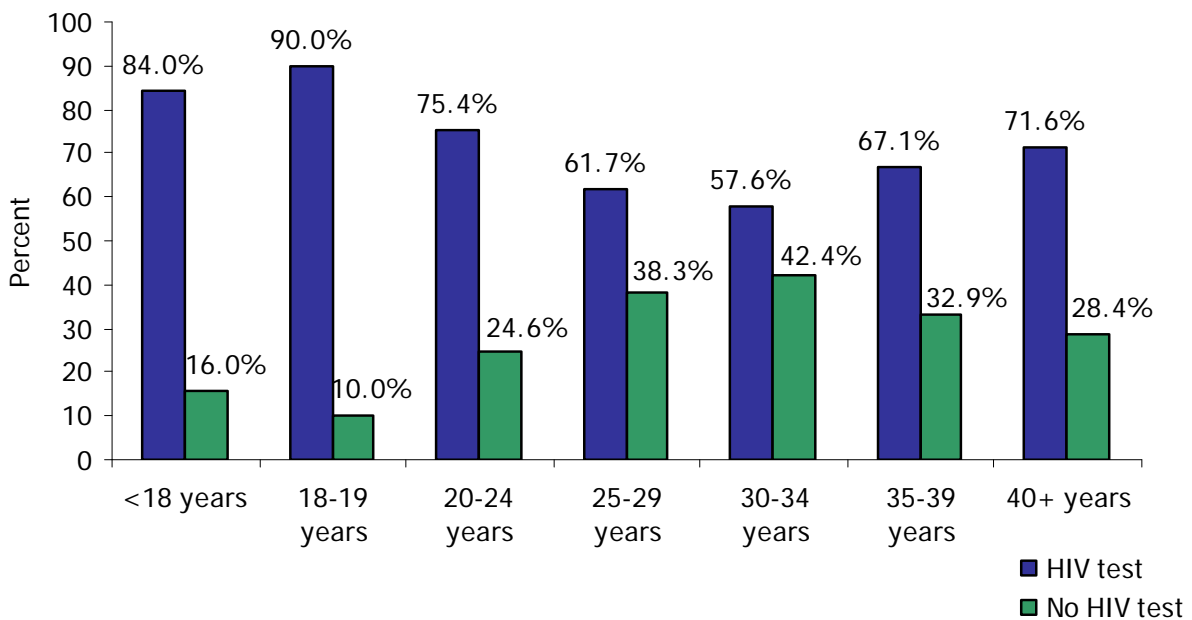
■ HIV test
■ No HIV test

HIV

Figure 78:

Prevalence of prenatal HIV test status by maternal race/ethnicity*,
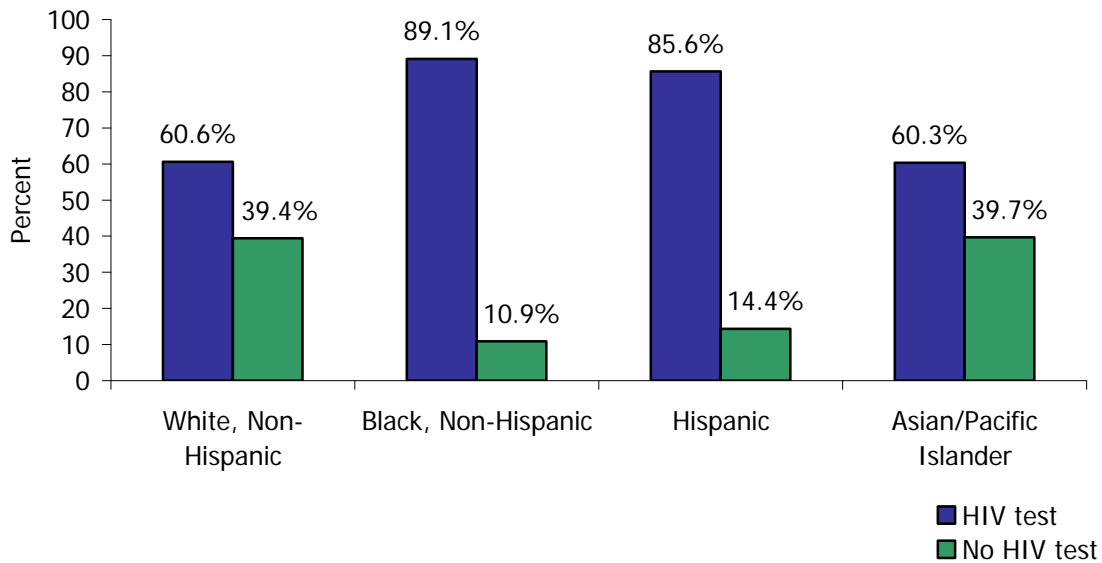
2008 MI PRAMS

*Statistics for American Indian/Alaskan Native not shown due to small sample size

Figure 79:

Prevalence of prenatal HIV test status by maternal education,
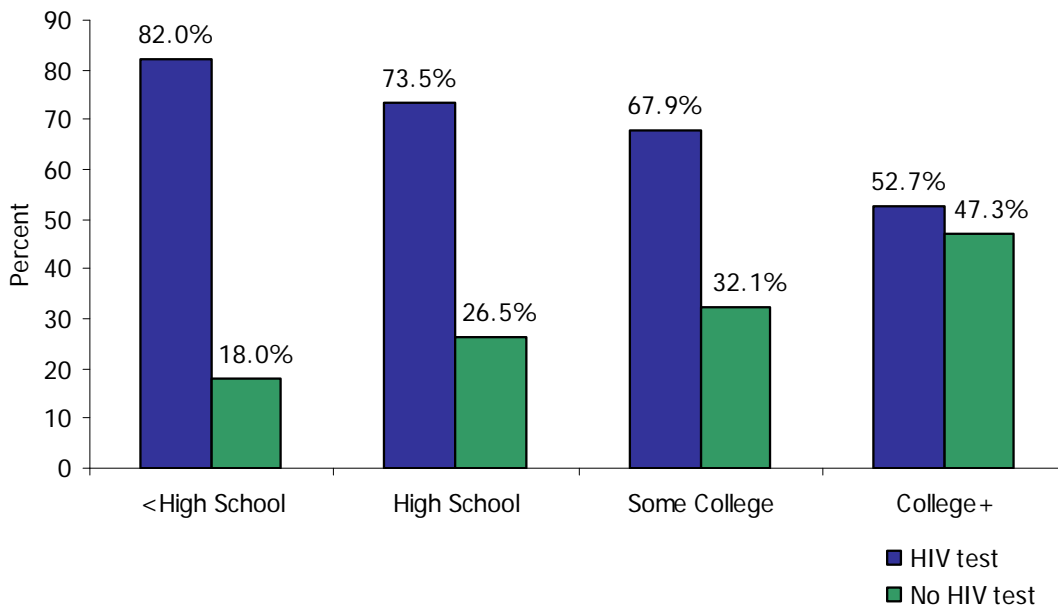
2008 MI PRAMS

HIV

Figure 80:

Prevalence of prenatal HIV test status by maternal pre-pregnancy insurance status,

2008 MI PRAMS
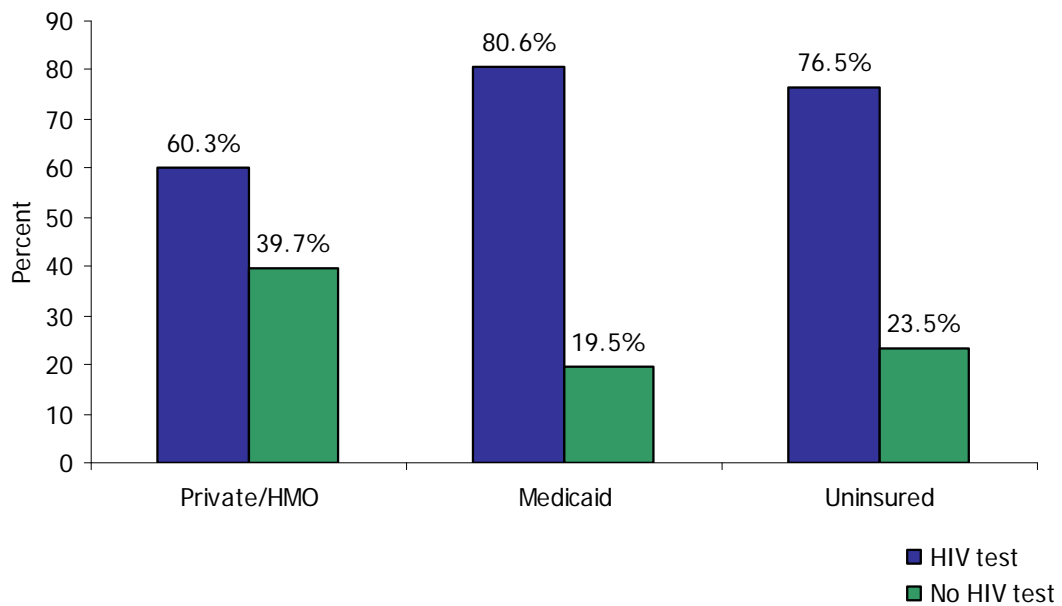
Folic Acid Awareness

Definition:

Folic acid deficiency has been shown to increase the risk of birth defects, particularly neural tube defects. One question in the PRAMS questionnaire asked about the respondents' awareness of the benefits of folic acid prior to pregnancy:

> *Question #64: Before you became pregnant with your new baby, did either of the following things happen?*
> *_You heard or read that taking the vitamin folic acid or foods that contain it (orange juice, citrus fruits, broccoli, green leafy vegetables, and fortified cereal) could prevent some birth defects.*
> *_Your doctor or nurse instructed you on how to get enough folic acid*

The respondent was considered having an awareness of the benefits of folic acid if she responded "Yes" to hearing or reading that taking folic acid could prevent some birth defects. Only if she responded "Yes" when asked whether she was instructed by a doctor or nurse about folic acid, was she considered knowledgeable of the benefits and the appropriate amount of folic acid to consume. Although no question directly addresses the consumption of folic acid, question #3 of the survey was used to approximate folic acid consumption.

> *Question #3: During the month before you got pregnant with your new baby, how many times a week did you take a multivitamin or a prenatal vitamin? These are pills that contain many different vitamins and minerals?*
> *_I didn't take a multivitamin or a prenatal vitamin at all*
> *_1-3 times a week*
> *_4-6 times a week*
> *_Every day of the week*

Women who indicated that they took a multivitamin everyday were classified as having, "consumed an appropriate amount." Those women who took a multivitamin 1-6 times a week were considered as having, "consumed less than appropriate amount of folic acid" and those who did not take any multivitamin were categorized as having, "consumed no folic acid."

Results:

Approximately 59% of women were aware and reported being instructed by a healthcare professional about the importance of folic acid in reducing the risk for birth defects. Another 15.7% were aware but received no instruction, 20.5 % were neither aware nor instructed, and the final 5% of women did not have any prior awareness but were instructed on folic acid by their healthcare provider (Figure #81). The overall proportion of women who reported folic acid awareness (had heard or read about its benefits) declined from 73.3% in 2007 to 62.6%; however, the overall percent of women who were instructed by healthcare professionals during pregnancy about folic acid use increased from 65.5% in 2007 to 73.9%.

Over 57% of women reported that they did not take multivitamins in the month prior to pregnancy, while approximately 27.6% reported taking a daily multivitamin (Figure #82). These figures did not differ significantly from 2007 estimates. The prevalence of daily multivitamin consumption was highest (21.3%) among women who reported to be both aware and instructed by a healthcare professional about the benefits of folic acid, although this number

decreased from 39.4% in 2007. The proportion of daily vitamin consumers who were aware but not instructed on folic acid use also declined from 23.3% in 2007 to 16.9% in 2008.

Public Health Implications:

The recommended dose of folic acid is 400 μg/day. The majority of women reported being aware, being instructed, or both about the benefits of folic acid, but the largest proportion of respondents also reported not taking a daily multivitamin. Continued education and more encouragement from health care providers about the importance of receiving the recommended dose of folic acid through daily multivitamin consumption is needed. More research is also needed to better understand the reasons/beliefs/barriers of why women of reproductive age fail to take multivitamins. Emphasis on multivitamin use during the preconception period is also important for healthcare providers, as most women do not know they are pregnant until the critical period for folic acid's protective effect against birth defects has passed.

Reference Tables: #45- #49b

Folic Acid Awareness

Figure 81:

Prevalence of folic acid awareness and/or instruction,

2008 MI PRAMS

Neither aware
nor instructed
20.5%

Instructed, but
not aware
5.0%

Aware, but not
instructed
15.7%

Aware and
instructed
58.8%
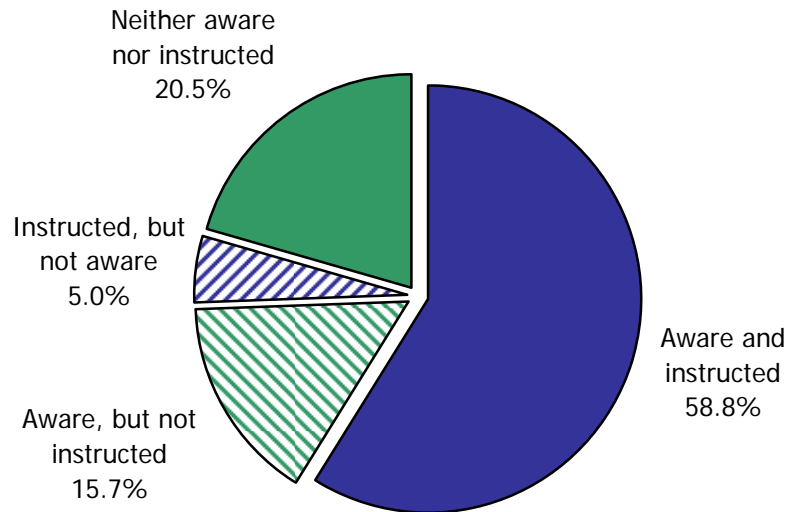
Figure 82:

Frequency of consumption of a multivitamin in the month prior to pregnancy,

2008 MI PRAMS

Daily
27.6%

4-6 times per
week
6.3%

1-3 times per
week
8.7%

No multivitamin
57.5%
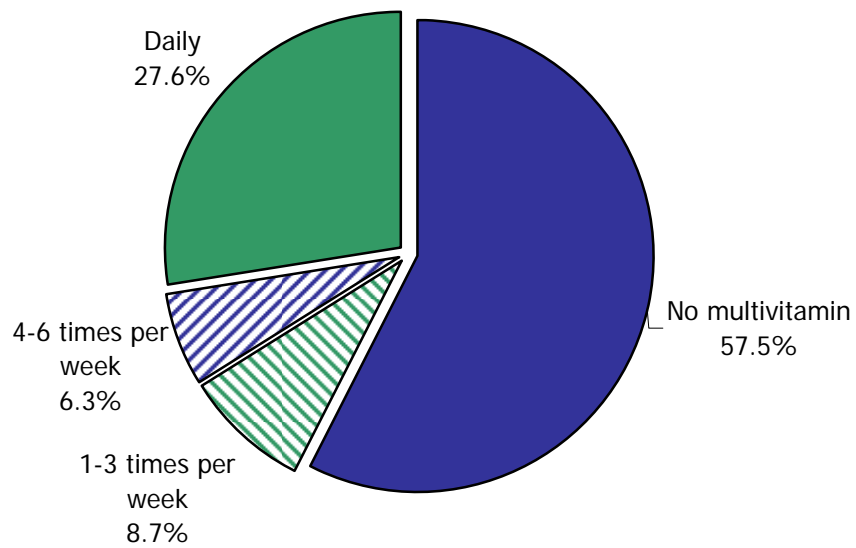
Folic Acid Awareness

Figure 83:

Consumption of a multivitamin in the month before pregnancy by

awareness of / instruction about folic acid,

2008 MI PRAMS

‡ Data not shown due to small sample size.
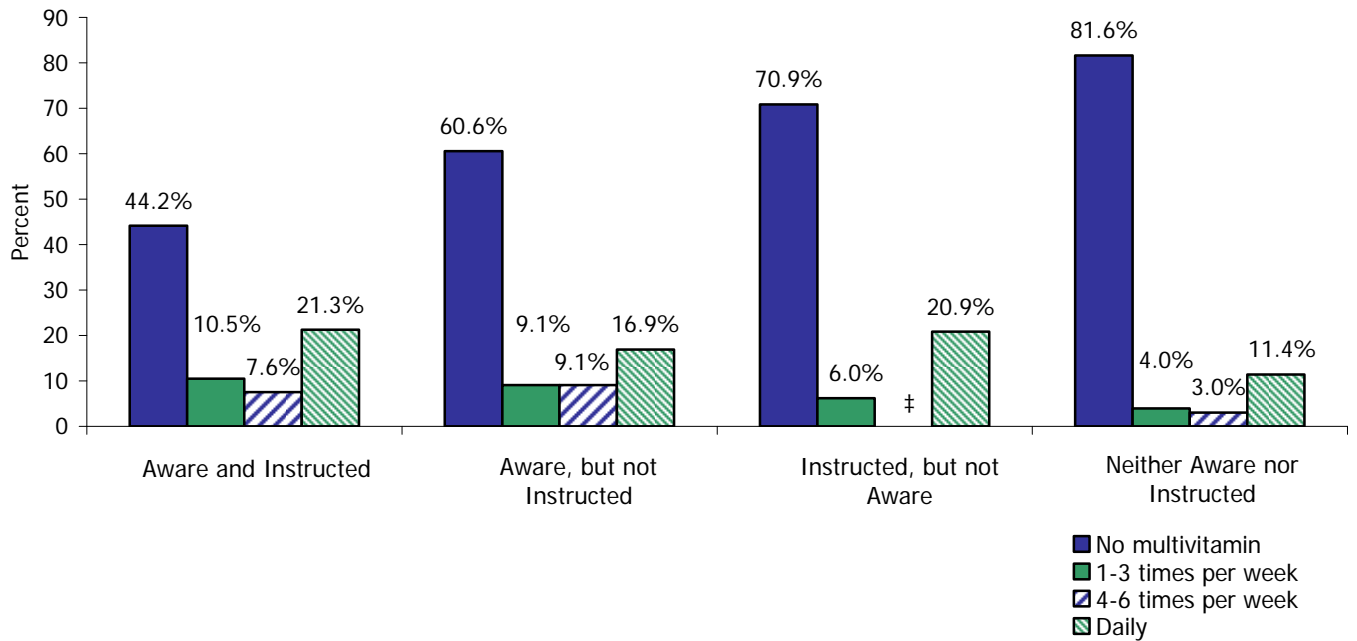
WIC Participation

Definition:

Three questions regarding the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) were asked of women completing the PRAMS survey. The first of these questions (Question #22) identifies women who participated in WIC during their pregnancy.

Question #22: During your pregnancy, were you on WIC (the Special Supplemental Nutrition Program for Women, Infants, and Children)?
_No
_Yes

Women were categorized as either participating in WIC during pregnancy or not participating in WIC during their pregnancy. Regardless of their answer, however, all women were asked an additional WIC question. Information on infant's participation in WIC was gathered from answers to question #76:

Question #76: Since your new baby was born, have you used WIC services for your new baby?
_No
_Yes

Only women who responded 'No' to #76 were asked question #77.

Question #77: Why wasn't your new baby enrolled in WIC?
_My baby was not eligible
_I didn't know about WIC
_I didn't want to enroll my baby
_Other

Not every pregnant and postpartum woman surveyed by PRAMS is eligible to participate in WIC. There are income and nutritional risk criteria for enrollment in Michigan's WIC: participants must be pregnant or postpartum, reside in Michigan, be at or below 185% of the Poverty Income Guideline (or participate in another state-administered program that utilizes the same income guideline), and be classified by a health professional as "nutritionally at risk." Analysis was restricted to women who participated in Medicaid prior to pregnancy, had Medicaid-paid prenatal care, Medicaid-paid delivery, or received federal assistance as part of their income in the year prior to delivery as income criteria to identify those who were potentially eligible for WIC.

Results:

Among women who met the WIC income requirements, 18.7% did not participate in WIC during their pregnancy (Figure #84). During the postpartum period, 11.0% of eligible women reported that they did not use WIC services for their new baby (Figure #85). Most women (34.8%) reported 'Do not want to enroll infant' as their reason for not participating in WIC followed by 'Other' as the second most prevalent (33.3%) reason for not enrolling their infant (Figure #86).

<u>Public Health Implications:</u>

Based on the PRAMS survey, Michigan's WIC program served more than three quarters of women who were identified as potentially eligible in 2008. This data should be used with caution, as the information obtained from the PRAMS questionnaire is limited to self-reporting, and the method PRAMS utilizes to define eligibility does not include the full eligibility criteria used by the WIC program. Private and public health care providers provide referrals to WIC, and the program itself continues its efforts to reach the most at-risk populations. Further, assessment of women who reported 'Other' as their reason for not participating in WIC may help develop more effective programs to reach this group. A similar recommendation is proposed for the sub-group who reported 'Do not want to enroll infant.'

<u>Reference Tables</u>: #50- #52

WIC Participation

Figure 84:

Participation in WIC during pregnancy among income eligible women,

2008 MI PRAMS

Enrolled
81.3%

Not Enrolled
18.7%
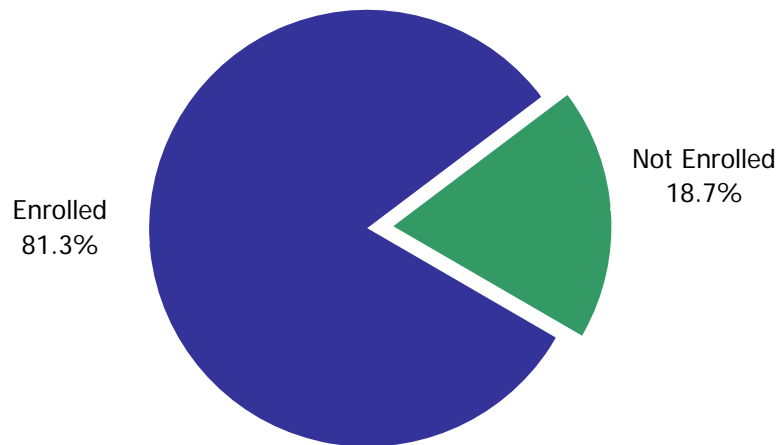
Figure 85:

Prevalence of WIC usage for infants among income eligible women,

2008 MI PRAMS

Not Enrolled
11.0%

Enrolled
89.0%
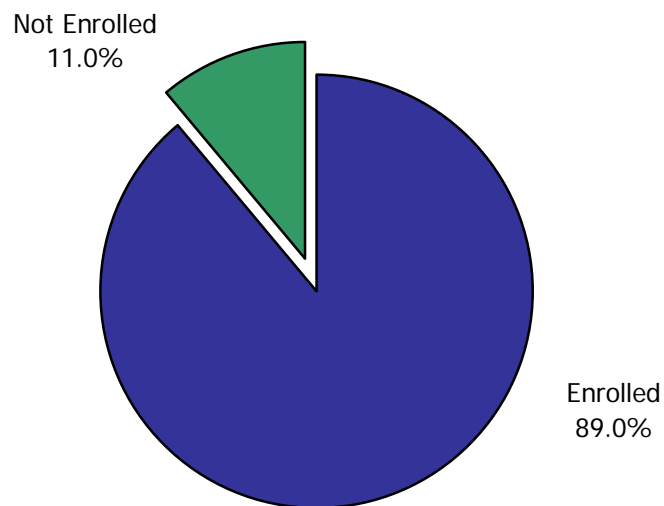
WIC Participation

Figure 86:

Reasons for infant non-participation in WIC among income eligible women,

2008 MI PRAMS
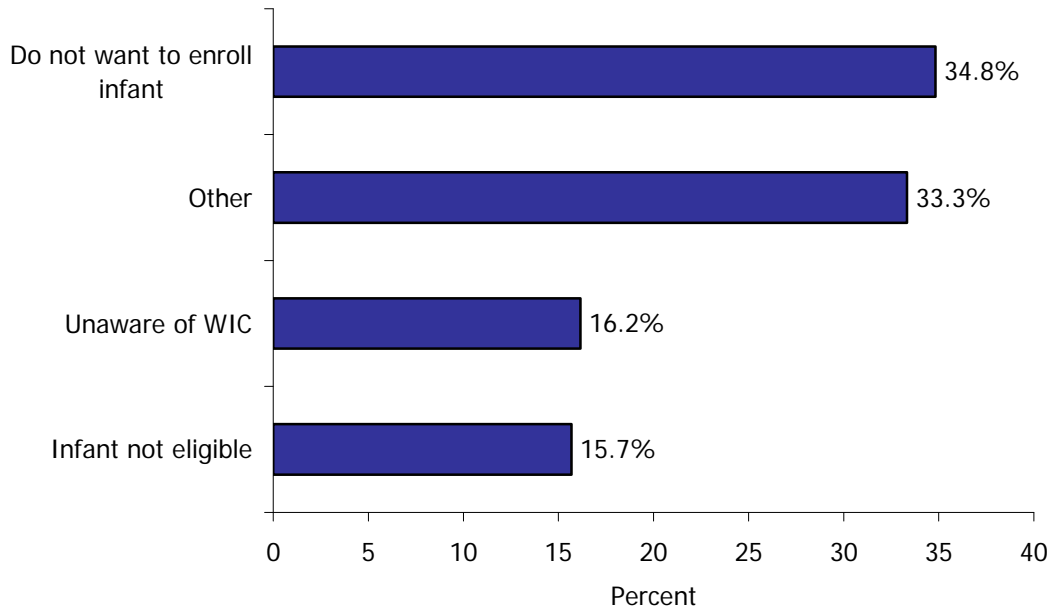
Oral Health

Definition:

Three questions were used to assess the oral health of women completing the PRAMS survey. The first of these questions (Question #78) asked about women's care of their teeth during their most recent pregnancy.

Question #78: This question is about the care of your teeth during your most recent pregnancy.
   _I needed to see a dentist for a problem
   _I went to a dentist or dental clinic
   _A dental or other health care worker talked with me about how to care for my teeth and gums

Women were then asked:

Question #79: Have you ever had your teeth cleaned by a dentist or dental hygienist?
   _No
   _Yes

Only women who responded 'Yes' to #79 were asked:

Question #80: When did you have your teeth cleaned by a dentist or dental hygienist?
   _Before my most recent pregnancy
   _During my most recent pregnancy
   _After my most recent pregnancy

Results:

Over a quarter (26.4%) of all women surveyed indicated a need for dental care during their most recent pregnancy (Figure #87). Among those who reported that they needed care, 38.5% did not seek dental care. Results for respondents' lifetime prevalence for ever/never having had their teeth cleaned are presented in Figures #88 and #89. Women who were uninsured were more likely (11.0%) to report that they never had their teeth cleaned, followed by those on Medicaid (10.3%) (Figure #88). Of note, women who uninsured were over seven times more likely to report that they never had their teeth cleaned (11.0%), compared to those who had private health insurance (1.5%). Women who had less than a high school education were almost three times more likely to report that they never had their teeth cleaned (10.9%), compared to their peers with a college degree or higher (3.3%) (Figure #89).

Public Health Implications:

In 2008, over 38% of the women reporting a need for dental care did not seek it, indicating that there are major barriers to dental care. The women most likely to not seek needed care were socio-economically disadvantaged. Oral health programs should be aimed at those without private health insurance and further assessment of the barriers to oral health care are needed.

Oral Health

Figure 87:

Prevalence of dental care need and dental care sought,

2008 MI PRAMS

Did not need
dental care
73.6%

Needed dental
care 26.4%

Did not
seek care
38.5%

Sought care
61.5%
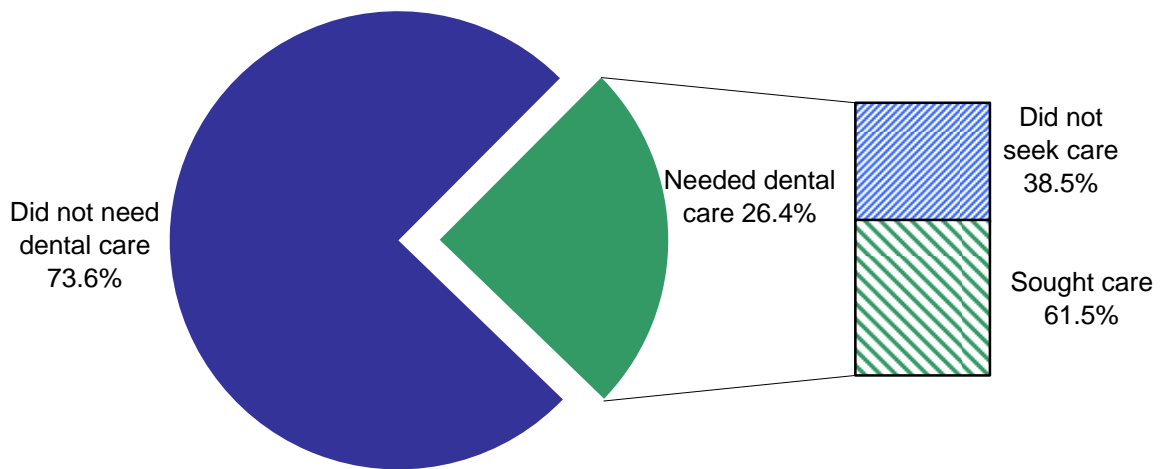
Figure 88:

Prevalence of dental care never/ever by maternal pre-pregnancy insurance status,

2008 MI PRAMS

98.5%

89.7%

89.0%

1.5%

10.3%

11.0%

Private/HMO

Medicaid

Uninsured

Percent

■ Never had teeth cleaned
■ Ever Had teeth cleaned

Oral Health

Figure 89:

Prevalence of dental care never/ever by maternal education,

2008 MI PRAMS

■ Never had teeth cleaned
■ Ever Had teeth cleaned

Table of Figures

Appendix A: Methodology and Weighting

Methodology

The Pregnancy Risk Assessment Monitoring System (PRAMS) is a population-based survey that is part of the Centers for Disease Control and Prevention (CDC) initiative to reduce infant mortality and low birthweight births. The Michigan Department of Community Health (MDCH), under the auspices of the CDC, conducted the data collection for the 2008 Michigan PRAMS. Software developed by the CDC was used to manage the sample, enforce protocol, and enter data.

PRAMS surveys mothers who have delivered a live born infant within a calendar year. Natality information, collected by MDCH's Division of Vital Records and Health Statistics, is the most complete single source of information regarding the live births of Michigan residents and serves as the sampling frame from which PRAMS selects survey respondents. Mothers who had delivered a live born infant who subsequently died are included in the sampling frame. Also, only one infant of a multiple gestation is included in the sampling frame unless the gestation includes four or more siblings. In that instance, all of the infants are excluded from the sampling frame. Other exclusions include: out-of-state births to residents, in-state births to nonresidents, missing information, delayed or early processing of birth certificates, adopted infants, and surrogate births. Oversampling is utilized to gather a sufficient number of responses among small subpopulations within the state.   For 2008, Michigan oversampled for women who had delivered low birthweight infants.

PRAMS is a stratified random sample. Stratification permits both separate estimates of subgroups of interest and permits comparisons across these subgroups. In 2008, the sample was stratified by infant birthweight (Low or Normal), black race (black, non-black), and geographic region (SE Region, All Other Areas). Each calendar month a sample is drawn from the births recorded in the month prior. Once the sample has been identified, the information is forwarded to the Michigan State University (MSU) Office of Survey Research, which is subcontracted by MDCH to conduct the survey.

PRAMS utilizes a mixed-mode methodology in order to gather information from women selected to participate in the survey. This combination mail/telephone survey methodology, based on the research of Don Dilman, is utilized in order to maximize response rates. Women are first notified of the PRAMS survey and then sent the questionnaire, via mail. If the mother has not responded after three attempts by mail, she is then contacted by telephone and has the opportunity to participate in the PRAMS survey via telephone. From a total of 2,628 women

who were selected from the sampling frame to participate, 1,619 (61.6%, unweighted) women were surveyed. The demographic characteristics of these women are depicted in the section entitled, 'Maternal Demographics'.

The questionnaire consists of two parts. First, there are core questions, developed by the CDC, that appear on all states' surveys. Second, there are state-added questions that are tailored to each state's needs. Topics addressed in the PRAMS core questionnaire include barriers to and content of prenatal care, obstetric history, maternal use of alcohol and tobacco, physical abuse, contraception, economic status, maternal stress, and early infant development and health status. Some state-added questions provide additional insight on topics already addressed in the core questionnaire, including content of prenatal care, contraception, and physical abuse. Other questions address different topics, including social support and services, mental health, and injury prevention. Topics addressed by the state-added questions include: racism, mental health, mental/emotional abuse, and pre-pregnancy contraception.

Weighting

After the data collection is concluded, mothers' responses are linked to their corresponding birth certificate data. The linked PRAMS response/birth certificate dataset is then sent to the CDC for weighting. Weighting allows public health professionals and researchers to estimate the statistics for the entire state's population of women who delivered a live born infant from data gathered from a sample of mothers in that population. In PRAMS there are three weighting components that are adjusted for: sample design, nonresponse, and omissions in the sampling frame. Nonresponse adjustment factors attempt to compensate for the tendency of women having certain characteristics (such as being unmarried or of lower education) to respond at lower rates than women without those characteristics. The rationale for applying nonresponse weights is the assumption that nonrespondents would have provided similar answers to respondents' answers for that stratum and adjustment category.

Interpretation of Results

As with all surveys, PRAMS is not free of sampling error. The 95% confidence intervals are included in order to quantify this error and to clarify the degree of certainty in the estimates.

As stated earlier, the 2008 Michigan sample was stratified by infant birthweight (Low or Normal), black race (black, non-black), and geographic region (SE region and All Other Areas). The information in this report was weighted to estimate the characteristics for the entire cohort of women delivering a live born infant in 2008. The overall weighted response rate was 67.4%. The response rate for each of the strata is as follows:

- All LBW: 61.4%
- Southeast Region/Black/Non-LBW: 49.0%
- Southeast Region/Non-Black/Non-LBW: 68.0%
- All Other Regoins/Black/Non-LBW: 55.6%
- All Other Regions/Non-Black/Non-LBW: 73.9%

Only the sample from the Southeast Region/Non-Black/Non-LBW and All Other Regions/Non-Black/Non-LBW strata had response rates above the 65% that the CDC regards as the epidemiologically valid threshold for PRAMS. Analysis to the other strata may result in potentially biased estimates. Consequently, the information regarding these strata must be viewed with caution.

Appendix B: Detailed Tables

Table 1:
Selected demographic characteristics,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,619	117,676			
Maternal age (years)					
<18 years	83	3,719	3.2	2.3	4.0
18-19 years	138	9,206	7.8	6.3	9.3
20-24 years	412	28,429	24.2	21.7	26.6
25-29 years	437	35,165	29.9	27.2	32.5
30-34 years	328	24,344	20.7	18.4	23.0
35-39 years	180	13,999	11.9	10.1	13.7
40+ years	41	2,813	2.4	1.6	3.2
Race/Ethnicity					
White, Non-Hispanic	824	81,545	74.3	72.7	76.0
Black, Non-Hispanic	633	20,934	19.1	18.4	19.8
Hispanic	49	4,890	4.5	3.1	5.8
American Indian	25	2,067	1.9	1.1	2.7
Asian/Pacific Islander	4	269	0.3	0.0	0.5
Maternal Education					
<High School	280	18,549	15.9	13.8	18.1
High School/GED	442	31,231	26.8	24.3	29.4
Some College	503	35,334	30.4	27.8	33.0
College Degree +	381	31,265	26.9	24.4	29.4
Marital Status					
Married	821	69,662	59.2	56.5	61.9
Un-married	798	48,014	40.8	38.1	43.5
Pre-Pregnancy Insurance Status					
Private Insurance/HMO	855	68,999	59.0	56.3	61.8
Medicaid	429	23,506	20.1	18.0	22.2
Uninsured	323	24,403	20.9	18.5	23.3

2008 MI PRAMS

Table 2:
Prevalence of intended and unintended pregnancies,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,599	116,647			
Intended	822	66,645	57.1	54.3	59.9
Unintended*	777	50,003	42.9	40.1	45.7
					2008 MI PRAMS

*Unintended Pregancy: Wanted to become pregnant later or did not want to be pregnant at all

Table 3:
Prevalence of types of unintended pregnancies,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	777	50,003			
Type of Unintended Pregnancy					
Mistimed*	562	36,718	73.4	69.6	77.2
Unwanted**	215	13,285	26.6	22.8	30.4
					2008 MI PRAMS

*Mistimed: Wanted to become pregnant later

**Unwanted: Did not want to be pregnant then or in the future

Table 4:
Prevalence of contraceptive use and methods among unintended pregnancies,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	716	45,828	100.0		
Contraceptive Use					
No	371	24,697	53.9	49.5	58.3
Yes	345	21,131	46.1	41.7	50.5
Contraceptive Method					
Withdrawal	137	10,315	44.1	37.8	50.5
Condom	105	5,820	24.9	19.7	30.1
Birth Control Pill	67	4,767	20.4	15.2	25.6
Other	12	890	3.8	1.4	6.2
Shot 3 times per month	8	393	1.7	0.3	3.1
Vaginal ring	5	344	‡	‡	‡
Sterilization (female)	5	212	‡	‡	‡
Shot once per month	4	237	‡	‡	‡
Sterilization (male)	4	345	‡	‡	‡
contraceptive patch	3	47	‡	‡	‡

2008 MI PRAMS

‡ Data not shown due to small sample size

Table 5:
Prevalence of pregnancy intention by maternal demographic characteristics,
2008 MI PRAMS

	Unintended Pregnancy					Intended Pregnancy				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	777	50,003	42.9	40.1	45.7	822	66,645	57.1	54.3	59.9
Maternal age (years)										
<18 years	73	3,156	84.8	73.4	96.3	10	564	15.2	3.7	26.6
18-19 years	107	6,971	77.3	68.6	85.9	29	2,051	22.7	14.1	31.4
20-24 years	250	15,841	56.2	50.3	62.0	157	12,369	43.9	38.0	49.7
25-29 years	185	12,907	36.9	31.8	42.1	248	22,040	63.1	57.9	68.2
30-34 years	108	6,675	27.5	22.1	32.9	216	17,589	72.5	67.1	77.9
35-39 years	41	3,424	25.0	17.6	32.4	135	10,262	75.0	67.6	82.4
40+ years	13	1,030	36.8	19.4	54.2	27	1,770	63.2	45.8	80.6
Race/Ethnicity										
White, Non-Hispanic	288	29,835	36.9	33.3	40.4	528	51,094	63.1	59.6	66.7
Black, Non-Hispanic	423	14,245	69.0	65.0	72.9	199	6,407	31.0	27.1	35.0
Hispanic	24	2,374	48.5	33.1	64.0	25	2,517	51.5	36.0	66.9
Asian/Pacific Islander	2	‡	‡	‡	‡	23	1,939	93.8	84.4	103.2
American Indian	3	‡	‡	‡	‡	1	‡	‡	‡	‡
Maternal Education										
<High School	202	12,227	66.1	58.9	73.3	76	6,265	33.9	26.7	41.1
High School	245	15,350	49.8	44.1	55.5	190	15,495	50.2	44.5	55.9
Some College	238	14,984	43.0	38.0	48.1	256	19,826	57.0	51.9	62.0
College+	80	6,287	20.2	15.8	24.5	299	24,917	79.9	75.5	84.2
Marital Status										
Married	212	17,673	25.4	22.1	28.8	601	51,816	74.6	71.2	77.9
Other	565	32,329	68.6	64.5	72.6	221	14,829	31.4	27.4	35.5
Pre-Pregnancy Insurance Status										
Private Insurance/HMO	284	21,070	30.7	27.3	34.2	564	47,517	69.3	65.8	72.7
Medicaid	300	15,548	67.2	61.4	73.0	121	7,586	32.8	27.0	38.6
Uninsured	188	13,100	54.0	47.5	60.6	132	11,142	46.0	39.4	52.5

2008 MI PRAMS

‡ Data not shown due to small sample size

Table 6:
Prevalence of contraceptive use prior to pregnancy by maternal demographic characteristics,
2008 MI PRAMS

	Did Not Use Contraception					Used Contraception				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	508	33,494	53.8	49.9	57.6	423	28,800	46.2	42.4	50.1
Maternal age (years)										
<18 years	33	1,441	52.3	36.2	68.5	31	1,313	47.7	31.5	63.8
18-19 years	60	4,174	53.9	42.8	64.9	53	3,572	46.1	35.1	57.2
20-24 years	152	9,908	53.9	46.8	60.9	132	8,481	46.1	39.1	53.2
25-29 years	116	8,132	50.2	42.4	58.0	108	8,072	49.8	42.0	57.6
30-34 years	86	5,374	57.2	47.4	67.0	58	4,027	42.8	33.0	52.6
35-39 years	48	3,565	57.5	44.9	70.1	32	2,633	42.5	29.9	55.1
40+ years	13	900	56.2	32.4	80.0	9	702	43.8	20.0	67.6
Race/Ethnicity										
White, Non-Hispanic	195	20,654	53.6	48.2	59.0	173	17,854	46.4	41.0	51.8
Black, Non-Hispanic	272	9,396	57.9	53.0	62.7	209	6,846	42.2	37.3	47.0
Hispanic	14	962	31.0	14.1	47.9	18	2,143	69.0	52.1	85.9
Asian/Pacific Islander	0	0	-	-	-	3	‡	‡	‡	‡
American Indian	0	0	-	-	-	3	‡	‡	‡	‡
Maternal Education										
<High School	127	8,088	59.7	51.3	68.1	82	5,451	40.3	31.9	48.7
High School	188	11,880	57.8	50.9	64.6	127	8,689	42.2	35.4	49.1
Some College	140	9,174	49.8	42.9	56.7	145	9,243	50.2	43.3	57.1
College+	48	3,790	43.3	33.0	53.6	63	4,968	56.7	46.5	67.0
Pre-Pregnancy Insurance Status										
Private Insurance/HMO	178	12,923	47.1	41.2	53.0	187	14,491	52.9	47.0	58.8
Medicaid	198	10,319	59.5	52.7	66.3	130	7,014	40.5	33.7	47.3
Uninsured	129	10,014	58.2	50.6	65.8	103	7,195	41.8	34.2	49.4

2008 MI PRAMS

‡ Data not shown due to small sample size

Table 7:
Reasons for contraceptive nonuse prior to pregnancy,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Reasons					
Did not mind getting pregnant	112	8,862	26.9	22.1	31.7
Husband/partner did not want to use	99	5,527	16.8	12.9	20.7
Thought could not get pregnant	93	5,489	16.7	12.8	20.5
Other	72	5,441	16.5	12.5	20.6
Discontinued birth control because of side effects	45	2,685	8.2	5.4	10.9
Thought husband/partner sterile	39	2,565	7.8	5.0	10.6
Difficulty getting birth control	36	2,373	7.2	4.5	10.0
					2008 MI PRAMS

Table 8:
Contraceptive method used prior to pregnancy,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Contraceptive Method					
Withdrawal	153	11,538	42.1	36.3	48.0
Condom	122	7,329	26.8	21.7	31.8
Birth Control Pill	72	5,283	19.3	14.5	24.0
Other	17	1,310	4.8	2.3	7.3
Shot 3 times per month	11	484	1.8	0.5	3.0
Vaginal ring	8	404	1.5	0.2	2.7
Contraceptive patch	5	‡	‡	‡	‡
Sterilization (female)	5	‡	‡	‡	‡
Shot once per month	4	‡	‡	‡	‡
Sterilization (male)	4	‡	‡	‡	‡
					2008 MI PRAMS

‡ Data not shown due to small sample size

Table 9:
Prevalence of contraceptive use postpartum by maternal demographic characteristics, 2008 MI PRAMS

	Did not use contraception					Used contraception				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	249	17,532	15.0	13.0	17.0	1,353	99,145	85.0	83.0	87.0
Maternal age (years)										
<18 years	9	282	7.8	2.2	13.3	71	3,356	92.3	86.7	97.8
18-19 years	18	1,015	11.2	5.2	17.2	118	8,014	88.8	82.8	94.8
20-24 years	59	4,226	15.1	10.9	19.3	346	23,842	84.9	80.7	89.1
25-29 years	53	4,318	12.3	8.8	15.8	383	30,812	87.7	84.2	91.2
30-34 years	68	4,887	20.2	15.3	25.2	258	19,266	79.8	74.8	84.7
35-39 years	32	2,308	16.6	10.5	22.7	147	11,594	83.4	77.3	89.5
40+ years	10	497	18.0	4.7	31.3	30	2,262	82.0	68.7	95.3
Race/Ethnicity										
White, Non-Hispanic	122	11,252	13.9	11.4	16.3	699	69,899	86.1	83.5	88.4
Black, Non-Hispanic	98	3,451	16.9	13.5	20.2	522	17,034	83.2	79.6	86.2
Hispanic	6	752	15.4	6.9	30.8	43	4,139	84.6	69.2	93.1
Asian/Pacific Islander	8	704	36.8	15.2	58.4	3	‡	‡	‡	‡
American Indian	0	-	-	-	-	3	‡	‡	‡	‡
Maternal Education										
<High School	53	3,038	16.7	12.1	22.6	222	15,119	83.3	77.4	87.9
High School	65	5,043	16.3	12.5	21.1	371	25,854	83.7	78.9	87.6
Some College	74	4,665	13.3	10.3	17.0	425	30,531	86.8	83.1	89.7
College+	54	4,546	14.6	11.1	19.0	325	26,586	85.4	81.0	88.9
Prenatal Contraception Counseling										
Talked to healthcare worker	196	13,797	14.6	12.4	16.9	1,123	80,415	85.4	83.1	87.6
Did not talk to healthcare worker	44	3,182	15.8	10.8	20.7	199	16,999	84.2	79.3	89.2

2008 MI PRAMS

Discussed contraception with a doctor, nurse, or other health professional during prenatal care visit. Does not include educational literature or videos

‡ Data not shown due to small sample size

Table 10:
Reasons for contraceptive nonuse postpartum,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Reasons					
Other	66	4,719	27.0	20.5	33.6
Not having sex	62	4,403	25.2	18.8	31.7
Did not want to use birth control	45	3,411	19.5	13.6	25.5
Want to get pregnant	19	1,450	8.3	4.2	12.5
Husband/partner does not want to use	20	1,225	7.0	3.5	10.6
Cannot afford birth control	13	979	5.6	2.1	9.1
Believe cannot get pregnant	10	870	5.0	1.6	8.3
Pregnant now	8	393	2.3	0.2	4.3
					2008 MI PRAMS

Table 11:
Prevalence of infant birthweight,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Prevalence by LBW					
Total	1,619	117,676			
NBW	1,349	108,518	92.2	92.0	92.4
LBW*	270	9,158	7.8	7.6	8.0
Prevalence by LBW Type					
Total	270	9,158			
mLBW**	218	7,440	81.2	76.6	85.9
vLBW***	52	1,718	18.8	14.1	23.4
					2007 MI PRAMS

*LBW: Birthweight below 2500 grams

**Birthweight between 1500 to 2500 grams

***Birthweight below 1500 grams

Table 12:
Prevalence of birth weight by pregnancy intention,
2008 MI PRAMS

	Low Birthweight					Normal Birthweight				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Unintended Pregnancy										
Total	264	8,963	7.7	7.4	7.9	822	66,645	100.0	100.0	100.0
Unintended	117	4,203	8.4	7.2	9.6	660	45,800	91.6	90.4	92.8
Intended	147	4,760	7.1	6.3	8.0	675	61,885	92.9	92.0	93.7
Unintended Pregnancy Type										
Total	117	4,203	8.4	7.2	9.6	660	45,800	91.6	90.4	92.8
Mistimed	88	3,162	8.6	7.1	10.2	474	33,556	91.4	90.0	92.8
Unwanted	29	1,041	7.8	5.0	10.6	186	12,244	92.2	89.4	95.0

2008 MI PRAMS

Table 13:
Infant birthweight by maternal demographic characteristics,
2008 MI PRAMS

	Low Birthweight					Normal Birthweight				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	270	9,158	7.8	7.6	8.0	1,349	108,518	92.2	92.0	92.4
Maternal age (years)										
<18 years	11	466	12.5	5.3	19.7	72	3,254	87.5	80.3	94.7
18-19 years	19	705	7.7	4.2	11.1	119	8,501	92.4	88.9	95.8
20-24 years	72	2,543	8.9	7.1	10.8	340	25,886	91.1	89.2	92.9
25-29 years	72	2,402	6.8	5.4	8.2	365	32,763	93.2	91.8	94.6
30-34 years	54	1,729	7.1	5.3	8.9	274	22,616	92.9	91.1	94.7
35-39 years	34	1,059	7.6	5.1	10.1	146	12,940	92.4	89.9	94.9
40+ years	8	256	9.1	2.7	15.5	33	2,557	90.9	84.5	97.3
Race/Ethnicity										
White, Non-Hispanic	162	5,159	6.3	5.7	7.0	662	76,386	93.7	93.1	94.3
Black, Non-Hispanic	72	2,781	13.3	11.0	15.6	561	18,153	86.7	84.4	89.0
Hispanic	13	495	10.1	4.4	15.9	36	4,395	89.9	84.1	95.6
Asian/Pacific Islander	9	286	13.8	4.2	23.5	16	1,780	86.2	76.5	95.8
American Indian	2	‡	‡	‡	‡	2	‡	‡	‡	‡
Maternal Education										
<High School	55	2,378	12.8	9.7	16.0	225	16,171	87.2	84.0	90.3
High School	76	2,592	8.3	6.6	10.0	366	28,640	91.7	90.0	93.4
Some College	83	2,478	7.0	5.7	8.3	420	32,856	93.0	91.7	94.3
College+	54	1,622	5.2	3.9	6.4	327	29,643	94.8	93.6	96.1
Marital Status										
Married	135	4,264	6.1	5.4	6.9	686	65,397	93.9	93.1	94.6
Un-married	135	4,894	10.2	8.9	11.5	663	43,120	89.8	88.5	91.1
Pre-Pregnancy Insurance Status										
Private Insurance/HMO	132	4,160	6.0	5.3	6.8	723	64,839	94.0	93.2	94.7
Medicaid	75	2,834	12.1	9.6	14.5	354	20,672	88.0	85.5	90.4
Uninsured	61	2,090	8.6	6.5	10.6	262	22,312	91.4	89.4	93.5

2008 MI PRAMS

‡ Data not shown due to small sample size

Table 14:
Prevalence of low birthweight by gestational age,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	270	9,158			
Gestational Age					
Pre-term infant*	174	5,839	71.1	65.3	76.3
Term infant**	96	3,319	28.9	23.7	34.7
2007 MI PRAMS					

*Pre-term infant: Gestational age < 37 weeks

**Term infant: Gestational age >= 37 weeks

Table 15:
Trimester of entry into prenatal care,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	600	116,518			
Entry into Prenatal Care					
1st trimester	1,214	89,968	77.2	74.8	79.6
2nd trimester	326	23,241	20.0	17.6	22.3
3rd trimester	33	1,961	1.7	0.9	2.4
No PNC	27	1,348	1.2	0.6	1.7
					2008 MI PRAMS

Table 16:
Trimester of entry into prenatal care by maternal demographic characteristics,
2008 MI PRAMS

	1st Trimester					After 1st Trimester/Not at all				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,214	89,968	77.2	74.8	79.6	386	26,549	22.8	20.4	25.2
Maternal age (years)										
<18 years	39	1,577	43.9	29.4	58.3	41	2,016	56.1	41.7	70.6
18-19 years	82	5,677	62.4	52.5	72.2	53	3,426	37.6	27.8	47.5
20-24 years	280	19,693	69.7	64.3	75.1	128	8,563	30.3	24.9	35.7
25-29 years	359	28,554	82.3	78.0	86.5	73	6,153	17.7	13.5	22.0
30-34 years	281	21,365	88.3	84.4	92.2	45	2,828	11.7	7.8	15.6
35-39 years	143	11,007	79.5	72.6	86.3	35	2,845	20.5	13.7	27.4
40+ years	30	2,094	74.5	58.7	90.2	11	719	25.6	9.8	41.3
Race/Ethnicity										
White, Non-Hispanic	664	64,377	79.7	76.6	82.7	151	16,416	20.3	17.3	23.4
Black, Non-Hispanic	420	13,600	66.3	62.1	70.4	203	6,927	33.8	29.6	37.9
Hispanic	35	3,294	67.4	52.6	82.2	14	1,596	32.6	17.9	47.4
Asian/Pacific Islander	19	1,433	69.4	48.5	90.3	6	633	30.7	9.7	51.5
American Indian	3	‡	‡	‡	‡	1	‡	‡	‡	‡
Maternal Education										
<High School	164	10,817	59.5	52.3	66.8	110	7,351	40.5	33.2	47.8
High School	304	22,135	71.8	66.7	76.9	130	8,705	28.2	23.1	33.3
Some College	395	28,270	80.0	76.0	84.0	108	7,064	20.0	16.0	24.0
College+	341	27,713	89.8	86.3	93.2	35	3,165	10.3	6.8	13.7
Pre-Pregnancy Insurance Status										
Private Insurance/HMO	731	58,975	86.0	83.4	88.7	118	9,589	14.0	11.3	16.6
Medicaid	267	14,697	63.8	58.0	69.7	154	8,330	36.2	30.3	42.0
Uninsured	209	15,752	65.1	58.8	71.3	111	8,460	34.9	28.7	41.2

2008 MI PRAMS

‡ Data not shown due to small sample size

Table 17:
Trimester of entry into prenatal care by pregnancy intention,
2008 MI PRAMS

	1st Trimester					After 1st Trimester/Not at all				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Intended	687	55,745	84.7	81.8	87.5	125	10,090	15.3	12.5	18.2
Unintended	512	33,616	67.7	63.7	71.7	256	16,038	32.3	28.3	36.3
										2008 MI PRAMS

Table 18:
Satisfaction with trimester of entry into prenatal care,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,607	117,031			
Satisfaction with Time of Entry					
No	338	22,419	19.2	16.9	21.4
Yes	1,258	93,405	79.8	77.5	82.1
					2008 MI PRAMS

Table 19:
Number of barriers to care experienced by women who were not satisfied with the trimester of entry into prenatal care,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	327	22,082			
Number of Barriers					
1 barrier	91	6,045	27.4	21.6	33.2
2 barriers	76	5,379	24.4	18.8	30.0
3 barriers	43	2,881	13.1	8.6	17.5
4 barriers	17	1,046	4.7	2.0	7.5
5 barriers	10	746	3.4	1.0	5.8
6 barriers	4	‡	‡	‡	‡
7 barriers	2	‡	‡	‡	‡
					2008 MI PRAMS

‡ Data not shown due to small sample size

Table 20:
Types of barriers to care experienced by women who were not satisfied
with the trimester of entry into prenatal care,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Types of Barriers					
Did not have Medicaid Card	75	6,132	18.0	13.8	22.1
Keep pregnancy secret	97	5,640	16.5	12.7	20.4
Doctor/HMO would not start care earlier	57	4,293	12.6	9.1	16.0
Other	63	4,229	12.4	8.9	15.9
Could not get earlier appointment	49	3,686	10.8	7.5	14.1
Too much going on	54	3,175	9.3	6.3	12.3
No child care	28	2,119	6.2	3.5	8.9
Could not pay for appointment	24	1,829	5.4	2.9	7.8
No transportation	29	1,586	4.7	2.5	6.8
No leave time	22	1,430	4.2	2.1	6.2
					2008 MI PRAMS

Table 21:
Sources of payment for prenatal care,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Sources of Payment					
Private Insurance	795	64,302	56.0	53.2	58.8
Medicaid	648	41,320	36.0	33.3	38.7
MOMS Program	40	3,146	2.7	1.7	3.7
Personal Income	31	2,278	2.0	1.2	2.8
Other	48	3,747	3.3	2.2	4.4
					2008 MI PRAMS

Table 22:
Topics discussed during any prenatal care visit (literature and videos excluded),
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Topics Discussed					
Safe Medications	1,414	103,119	89.7	87.9	91.5
Screening for Birth Defects	1,405	102,630	89.0	87.2	90.9
Early Labor	1,348	97,463	84.8	82.6	86.9
Breastfeeding	1,342	95,652	83.1	81.0	85.3
Postpartum Contraception	1,328	94,855	82.3	80.1	84.6
HIV/AIDS Test	1,321	93,654	81.8	79.5	84.0
Smoking during Pregnancy	1,218	85,321	74.2	71.7	76.8
Alcohol Consumption during Pregnancy	1,216	84,995	73.9	71.3	76.4
Illegal Drug Use during Pregnancy	1,094	76,092	66.2	63.4	68.9
Domestic Abuse	931	64,021	55.7	52.9	58.6
Seatbelt Use	879	60,446	52.8	49.9	55.7
					2008 MI PRAMS

Table 23:
Breastfeeding intention prior to delivery,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,563	114,532			
Plan					
Planned to breastfeed	852	66,842	58.4	55.5	61.2
May Breastfeed	314	21,931	19.2	16.9	21.4
Planned not to breastfeed	353	22,956	20.0	17.7	22.3
Unsure about breastfeeding	44	2,803	2.5	1.6	3.3
					2008 MI PRAMS

Table 24:
Breastfeeding initiation,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,563	114,568			
Breastfeeding Initiation					
Yes	1,104	84,112	73.4	70.9	76.0
No	459	30,456	26.6	24.0	29.1
					2008 MI PRAMS

Table 25:
Breastfeeding duration,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,550	113,731			
Breastfeeding Duration					
Did not breastfeed	459	30,456	26.8	24.2	29.3
Breastfed for <1 week	77	5,102	4.5	3.3	5.7
Breastfed for >1 week, but concluded	565	39,275	34.5	31.8	37.3
Breastfeeding when surveyed	449	38,898	34.2	31.4	37.0
					2008 MI PRAMS

Table 26a:
Prevalence of breastfeeding duration by maternal demographic characteristics,
2008 MI PRAMS

| | **Did not breastfeed** | | | | | **Breastfed for <1 week** | | | | |
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	459	30,456	26.8	24.2	29.3	77	5,102	4.5	3.4	5.9
Maternal age (years)										
<18 years	41	1,901	54.8	39.7	69.9	5	‡	‡	‡	‡
18-19 years	54	3,504	38.9	28.9	48.9	14	1,010	11.2	4.5	17.9
20-24 years	151	10,019	36.4	30.7	42.1	19	836	3.0	1.1	4.9
25-29 years	90	6,941	20.5	16.0	24.9	19	1,392	4.1	1.9	6.3
30-34 years	70	4,387	18.8	14.0	23.6	10	835	3.6	1.2	5.9
35-39 years	41	3,010	21.9	15.7	29.6	8	494	3.6	0.6	6.6
40+ years	12	694	25.9	10.2	41.5	2	‡	‡	‡	‡
Race/Ethnicity										
White, Non-Hispanic	186	19,648	24.7	21.4	28.0	30	3,077	3.9	2.4	5.3
Black, Non-Hispanic	244	8,069	41.2	36.8	45.6	38	1,142	5.8	3.8	7.9
Hispanic	5	‡	‡	‡	‡	5	‡	‡	‡	‡
Asian/Pacific Islander	5	‡	‡	‡	‡	0	-	-	-	-
American Indian	2	‡	‡	‡	‡	0	-	-	-	-
Education										
<High School	145	9,073	54.0	46.2	61.7	17	1,506	9.0	4.1	13.8
High School	156	9,650	31.8	26.5	37.1	24	1,304	4.3	2.1	6.5
Some College	107	7,078	20.5	16.4	24.6	22	1,158	3.4	1.6	5.1
College+	46	3,946	12.8	9.1	16.6	13	1,080	3.5	1.5	5.6
Marital Status										
Married	132	11,017	16.2	13.3	19.1	26	2,146	3.2	1.8	4.5
Un-married	327	19,440	42.4	38.1	46.8	51	2,956	6.5	4.3	8.7

2008 MI PRAMS

‡ Data not shown due to small sample size

Table 26b:
Prevalence of breastfeeding duration by maternal demographic characteristics,
2008 MI PRAMS

	Breastfed for >1 week, but concluded					Breastfeeding when surveyed				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	565	39,275	34.5	31.8	37.3	449	38,898	34.2	31.5	37.0
Maternal age (years)										
<18 years	28	1,260	36.3	21.8	50.8	1	‡	‡	‡	‡
18-19 years	53	3,736	41.5	31.4	51.5	11	762	8.5	2.8	14.1
20-24 years	153	10,496	38.1	32.4	43.8	74	6,199	22.5	17.4	27.6
25-29 years	150	10,851	32.0	27.0	37.0	161	14,715	43.4	38.0	48.8
30-34 years	106	7,396	31.7	25.8	37.5	126	10,751	46.0	39.6	52.4
35-39 years	61	4,585	33.4	25.6	41.2	65	5,658	41.2	32.8	49.5
40+ years	14	951	35.4	18.3	52.5	11	768	28.6	12.4	44.8
Race/Ethnicity										
White, Non-Hispanic	283	26,067	32.8	29.4	36.2	299	30,731	38.6	35.1	42.2
Black, Non-Hispanic	219	7,385	37.7	33.4	42.1	94	2,982	15.2	12.1	18.4
Hispanic	23	2,451	51.9	36.2	67.6	14	1,365	28.9	14.5	43.3
Asian/Pacific Islander	9	806	41.3	18.9	63.6	10	805	41.2	19.4	63.0
American Indian	2	‡	‡	‡	‡	0	-	-	-	-
Education										
<High School	67	4,092	24.3	17.9	30.8	22	2,143	12.7	7.1	18.4
High School	171	12,746	42.0	36.2	47.7	75	6,682	22.0	17.0	27.0
Some College	201	13,218	38.3	33.4	43.2	158	13,059	37.8	32.8	42.9
College+	123	8,979	29.2	24.2	34.1	191	16,773	54.5	49.0	60.0
Marital Status										
Married	281	22,372	32.9	29.3	36.5	357	32,397	47.7	43.8	51.5
Un-married	284	16,903	36.9	32.7	41.1	92	6,501	14.2	11.1	17.3

2008 MI PRAMS

‡ Data not shown due to small sample size

Table 27:
Average breastfeeding duration, in weeks, among women who breastfed for longer than 1 week, but had discontinued before being surveyed,
2008 MI PRAMS

	Breastfed for >1 week, but concluded				
	Sample Frequency (n)	Weighted Frequency (N)	Average (weeks)	Lower confidence interval	Upper confidence interval
Total	565	39,275			
Maternal age (years)					
<18 years	28	1,260	5.3	3.5	7.2
18-19 years	53	3,736	6.6	4.4	8.7
20-24 years	153	10,496	5.8	4.9	6.6
25-29 years	150	10,851	6.8	5.8	7.8
30-34 years	106	7,396	7.8	6.6	9.1
35-39 years	61	4,585	8.3	6.8	9.8
40+ years	14	951	7.1	4.3	9.9
Race/Ethnicity					
White, Non-Hispanic	283	26,067	6.8	6.2	7.5
Black, Non-Hispanic	219	7,385	6.7	6.0	7.4
Hispanic	23	2,451	6.1	3.6	8.5
Asian/PI	9	806	14.1	8.4	19.7
American Indian	2	‡	‡	‡	‡
Education					
<High School	67	4,092	5.7	4.3	7.2
High School	171	12,746	5.8	5.0	6.7
Some College	201	13,218	7.0	6.1	7.9
College+	123	8,979	8.4	7.2	9.6
Marital Status					
Married	281	22,372	7.8	7.0	8.6
Un-married	284	16,903	5.6	4.9	6.2

2008 MI PRAMS

Table 28:
Barriers to breastfeeding continuation among women who had discontinued breastfeeding before being surveyed,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Barriers					
Other	134	9,714	24.9	20.6	29.1
Thought was not producing enough milk	101	7,184	18.4	14.6	22.2
Had to return to work/school	109	7,083	18.1	14.4	21.8
Needed another person to feed the infant	59	3,924	10.0	7.1	13.0
Nipples became sore, cracked, or bleeding	29	2,498	6.4	3.8	8.9
Felt it was time to discontinue	30	2,015	5.2	3.1	7.2
Infant had difficulty nursing	22	1,516	3.9	2.0	5.7
Breastmilk did not satisfy infant	21	1,380	3.5	1.8	5.3
Too many household duties	20	1,348	3.5	1.6	5.3
Mother became sick and could not nurse	21	1,281	3.3	1.6	4.9
Thought infant was not gaining enough weight	9	655	1.7	0.5	2.9
Infant became sick and could not nurse	7	472	1.2	0.1	2.3

2008 MI PRAMS

Table 29:
Smoking status during pregnancy (compared with pre-pregnancy smoking),
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,600	116,684			
Smoking Status					
Nonsmoker	1,212	85,212	73.0	70.4	75.6
Smoker who quit	148	12,903	11.1	9.2	13.0
Smoker (reduced # of cigarettes)	161	12,838	11.0	9.1	12.9
Smoker (same # of cigarettes)	78	5,634	4.8	3.6	6.1
Nonsmoker Resumed	1	‡	‡	‡	‡
					2008 MI PRAMS

‡ Data not shown due to small sample size

Table 30:
Smoking status in the last three months of pregnancy,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,601	116,814			
Smoking Status					
Smoked	241	18,699	16.0	13.8	18.2
Did not smoke	1,360	98,115	84.0	81.8	86.2
					2008 MI PRAMS

Table 31:
Smoking status in the last three months of pregnancy by maternal demographic characteristics,
2008 MI PRAMS

	Did not smoke					Smoked				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,360	98,115	84.0	81.7	86.0	241	18,699	16.0	14.0	18.3
Maternal age (years)										
<18 years	69	3,251	90.5	84.1	96.8	10	343	9.5	3.2	15.9
18-19 years	112	6,839	74.5	65.2	83.7	25	2,346	25.5	16.3	34.8
20-24 years	328	21,209	75.2	69.8	80.5	80	7,013	24.9	19.5	30.2
25-29 years	371	30,279	86.7	83.0	90.4	61	4,641	13.3	9.6	17.0
30-34 years	291	22,210	92.1	88.9	95.2	34	1,907	7.9	4.8	11.1
35-39 years	158	12,165	86.9	81.1	92.7	22	1,834	13.1	7.3	18.9
40+ years	31	2,162	77.8	62.8	92.9	9	616	22.2	7.1	37.2
Race/Ethnicity										
White, Non-Hispanic	675	67,070	82.7	79.9	85.6	144	13,989	17.3	14.4	20.1
Black, Non-Hispanic	544	17,873	86.8	83.8	89.7	77	2,729	13.3	10.3	16.2
Hispanic	45	4,633	95.6	89.6	101.6	3	‡	‡	‡	‡
Asian/Pacific Islander	25	2,067	100.0	100.0	100.0	0	-	-	-	-
American Indian	3	‡	‡	‡	‡	1	‡	‡	‡	‡
Education										
<High School	193	12,191	66.3	59.3	73.4	82	6,189	33.7	26.6	40.7
High School	342	22,919	73.9	68.8	79.1	95	8,085	26.1	20.9	31.2
Some College	444	31,575	90.0	87.0	93.0	53	3,505	10.0	7.0	13.0
College+	369	30,189	97.2	95.4	99.0	10	867	2.8	1.0	4.6
Medicaid Status										
Medicaid Ever	668	40,925	73.3	69.6	73.3	195	14,893	26.7	22.9	30.4
Medicaid Never	685	56,667	93.9	91.9	93.9	43	3,701	6.1	4.2	8.1

2008 MI PRAMS

‡ Data not shown due to small sample size

Table 32:
Infant birth weight by maternal smoking status in the last three months of pregnancy,
2008 MI PRAMS

	Low Birthweight					Normal Birthweight				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	265	8,946	7.7	7.4	7.9	1,336	107,868	92.3	92.1	92.6
Smoking Status										
Smoked	63	2,216	11.9	9.3	15.0	178	16,483	88.2	85.0	90.7
Did not smoke	202	6,730	6.9	6.4	7.4	1,158	91,385	93.6	92.6	93.6
										2008 MI PRAMS

Table 33:
Smoking status in the postpartum period
(compared with pre-pregnancy smoking),
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,601	116,703			
Smoking Status					
Nonsmoker	1,207	85,049	72.9	70.3	75.5
Smoker who quit	62	5,454	4.7	3.4	6.0
Smoker (reduced # of cigarettes)	107	9,653	8.3	6.6	10.0
Smoker (same # of cigarettes)	219	16,286	14.0	11.9	16.0
Nonsmoker who began smoking	6	260	0.2	0.0	0.4
					2008 MI PRAMS

Table 34:
Smoking status in the postpartum period
(compared with pregnancy smoking),
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,600	116,684			
Smoking Status					
Nonsmoker	1,259	89,697	76.9	74.4	79.4
Smoker who quit	10	805	0.7	0.2	1.2
Smoker (reduced # of cigarettes)	17	1,527	1.3	0.6	2.0
Smoker (same # of cigarettes)	213	16,237	13.9	11.9	16.0
Nonsmoker who began smoking	101	8,418	7.2	5.6	8.8

2008 MI PRAMS

Table 35:
Alcohol consumption during pregnancy
(compared with pre-pregnancy drinking),
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,592	115,776			
Alcohol Consumption					
Nondrinker	710	43,783	37.8	35.1	40.6
Drinker who quit	774	62,932	54.4	51.5	57.2
Drinker (reduced # of drinks)	40	3,598	3.1	2.1	4.1
Drinker (# of drinks same or more)	63	4,967	4.3	3.1	5.5
Nondrinker who began drinking	5	‡	‡	‡	‡

2008 MI PRAMS

‡ Data not shown due to small sample size

Table 36:
Prevalence of infant sleep position,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,526	112,793			
Sleep Position					
Supine/Back	1,044	80,599	71.5	68.9	74.0
Prone/Stomach	282	18,113	16.1	14.0	18.1
Side	200	14,081	12.5	10.6	14.4
					2008 MI PRAMS

Table 37a:
Prevalence of infant sleep position by maternal demographic characteristics, 2008 MI PRAMS

	Supine/Back					Side				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,044	80,599	71.5	68.8	74.0	200	14,081	12.5	10.7	14.6
Maternal age (years)										
<18 years	42	2,075	60.7	45.9	75.4	10	677	19.8	5.8	33.7
18-19 years	76	5,030	58.4	48.0	68.7	19	1,450	16.8	8.9	24.8
20-24 years	250	17,933	67.2	61.6	72.9	63	4,584	17.2	12.6	21.8
25-29 years	297	25,293	74.2	69.5	78.8	51	3,392	10.0	6.9	13.0
30-34 years	221	17,912	76.3	71.0	81.5	32	2,054	8.7	5.2	12.3
35-39 years	129	10,186	74.3	67.1	81.6	20	1,594	11.6	6.2	17.0
40+ years	29	2,169	78.0	64.1	91.8	5	‡	‡	‡	‡
Race/Ethnicity										
White, Non-Hispanic	606	59,972	75.6	72.4	78.8	75	7,940	10.0	7.8	12.3
Black, Non-Hispanic	333	10,565	56.1	51.6	60.6	95	3,251	17.3	13.8	20.7
Hispanic	36	3,442	70.8	56.4	85.2	9	1,138	23.4	9.8	37.0
Asian/Pacific Islander	18	1,528	79.4	62.7	96.1	6	397	20.6	3.9	37.3
American Indian	2	‡	‡	‡	‡	1	‡	‡	‡	‡
Education										
<High School	158	11,129	66.5	59.2	73.7	41	2,775	16.6	10.7	22.4
High School	270	20,062	67.6	62.2	73.0	59	4,354	14.7	10.5	18.8
Some College	328	24,682	71.5	66.9	76.0	63	4,035	11.7	8.5	14.9
College+	279	23,771	77.6	73.1	82.2	36	2,863	9.4	6.1	12.6
Medicaid Status										
Medicaid Ever	520	35,485	67.1	63.1	70.9	129	8,386	15.9	13.0	19.2
Medicaid Never	518	44,677	75.2	71.6	78.6	70	5,598	9.4	7.3	12.1

2008 MI PRAMS

‡ Data not shown due to small sample size

Table 37b:
Prevalence of infant sleep position by maternal demographic characteristics,
2008 MI PRAMS

	Prone/Stomach				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	282	18,113	16.1	14.1	18.2
Maternal age (years)					
<18 years	22	669	19.6	10.3	28.8
18-19 years	31	2,138	24.8	15.8	33.8
20-24 years	68	4,156	15.6	11.3	19.8
25-29 years	72	5,418	15.9	12.0	19.8
30-34 years	57	3,526	15.0	10.8	19.3
35-39 years	26	1,922	14.0	8.3	19.8
40+ years	6	283	10.2	1.3	19.0
Race/Ethnicity					
White, Non-Hispanic	114	11,445	14.4	11.8	17.0
Black, Non-Hispanic	147	5,020	26.7	22.6	30.7
Hispanic	3	‡	‡	‡	‡
Asian/Pacific Islander	0	-	-	-	-
American Indian	0	-	-	-	-
Education					
<High School	50	2,842	17.0	11.4	22.5
High School	85	5,245	17.7	13.4	22.0
Some College	90	5,808	16.8	13.1	20.5
College+	55	3,984	13.0	9.4	16.6
Medicaid Status					
Medicaid Ever	164	8,989	17.0	14.2	20.2
Medicaid Never	118	9,124	15.4	12.7	18.5

2008 MI PRAMS

Table #38:
Prevalence of infant bed sharing,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,619	117,676			
Bed Sharing					
Never	919	74,856	63.6	61.0	66.3
Sometimes	299	19,034	16.2	14.1	18.2
Always/Almost Always	401	23,786	20.2	18.0	22.4
					2008 MI PRAMS

Table 39a:
Prevalence of infant bed sharing by maternal demographic characteristics,
2008 MI PRAMS

	Always/Almost Always					Sometimes				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	401	23,786	20.2	18.1	22.5	299	19,034	16.2	14.2	18.3
Maternal age (years)										
<18 years	32	1,179	31.7	19.4	44.0	20	883	23.7	11.6	35.9
18-19 years	48	2,368	25.7	17.7	33.7	26	1,949	21.2	12.9	29.4
20-24 years	102	5,384	18.9	14.6	23.2	75	4,997	17.6	13.2	22.0
25-29 years	95	6,531	18.6	14.5	22.6	78	5,607	16.0	12.1	19.7
30-34 years	72	4,487	18.4	13.8	23.0	63	3,213	13.2	9.4	17.0
35-39 years	44	3,485	24.9	17.7	32.1	27	1,671	11.9	6.8	17.0
40+ years	8	352	12.5	2.9	22.1	10	714	25.4	10.1	40.7
Race/Ethnicity										
White, Non-Hispanic	133	12,388	15.2	12.6	17.8	126	11,916	14.6	12.0	17.2
Black, Non-Hispanic	224	7,413	35.4	31.3	39.5	147	5,023	24.0	20.3	27.7
Hispanic	13	1,586	32.4	17.5	47.4	9	569	11.6	3.0	20.3
Asian/Pacific Islander	9	681	33.0	12.5	53.4	6	589	28.5	8.4	48.6
American Indian	0	-	-	-	-	0	-	-	-	-
Education										
<High School	87	4,733	25.5	19.5	31.6	58	3,103	16.7	11.7	21.8
High School	113	5,997	19.2	15.1	23.3	90	6,006	19.2	14.8	23.6
Some College	137	8,346	23.6	19.4	27.8	84	5,313	15.0	11.5	18.6
College+	62	4,515	14.4	10.7	18.2	65	4,504	14.4	10.7	18.1
Insurance Status										
Medicaid Ever	260	14,107	25.0	21.8	28.6	169	9,481	16.8	14.1	20.0
Medicaid Never	137	9,541	15.7	13.1	18.8	129	9,499	15.7	13.0	18.7

2008 MI PRAMS

Table 39b:
Prevalence of infant bed sharing by maternal demographic characteristics,
2008 MI PRAMS

	Never				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	919	74,856	63.6	60.9	66.2
Maternal age (years)					
<18 years	31	1,658	44.6	30.0	59.1
18-19 years	64	4,889	53.1	43.2	63.1
20-24 years	235	18,048	63.5	58.0	69.0
25-29 years	264	23,027	65.5	60.5	70.5
30-34 years	193	16,644	68.4	62.9	73.9
35-39 years	109	8,843	63.2	55.2	71.1
40+ years	23	1,747	62.1	45.4	78.8
Race/Ethnicity					
White, Non-Hispanic	565	57,242	70.2	66.9	73.5
Black, Non-Hispanic	262	8,497	40.6	36.4	44.8
Hispanic	27	2,735	55.9	40.5	71.3
Asian/Pacific Islander	10	796	38.5	17.4	59.6
American Indian	4	‡	‡	‡	‡
Education					
<High School	135	10,714	57.8	50.7	64.8
High School	239	19,228	61.6	56.2	67.0
Some College	282	21,675	61.3	56.5	66.2
College+	254	22,246	71.2	66.3	76.0
Insurance Status					
Medicaid Ever	446	32,749	58.1	54.2	62.0
Medicaid Never	467	41,626	68.6	64.9	72.1

2008 MI PRAMS

‡ Data not shown due to small sample size

Table 40:
Prevalence of physical abuse prior to pregnancy,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,600	116,576			
Physically Abused					
Not Abused	1,507	110,300	94.6	93.3	95.9
Abused	93	6,276	5.4	4.1	6.7
					2008 MI PRAMS

Table 41:
Person inflicting abuse among women abused prior to pregnancy,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	57	3,359			
Abuser					
Abused by husband/partner	4	‡	‡	‡	‡
Abused by ex-husband/ex-partner	53	2,950	87.9	75.6	100.0
					2008 MI PRAMS

Table 42:
Prevalence of physical abuse during pregnancy,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,558	113,694			
Physically Abused					
Not Abused	1,503	110,373	97.1	96.1	98.0
Abused	55	3,321	2.9	2.0	3.9
					2008 MI PRAMS

Table 43:
Person inflicting abuse among women abused during pregnancy,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	55	3,321			
Abuser					
Abused by husband/partner	4	‡	‡	‡	‡
Abused by ex-husband/ex-partner	51	2,913	87.7	69.3	95.8
					2008 MI PRAMS

‡ Data not shown due to small sample size

Table 44:
Prevalence of verbal abuse in the year prior to delivery,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,589	115,997			
Verbally Abused					
Not Verbally Abused	1,483	108,147	93.2	91.7	94.7
Verbally Abused	106	7,850	6.8	5.3	8.3
					2008 MI PRAMS

Table 45:
Prevalence of women hearing or reading about folic acid and its benefits,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,472	108,685			
Heard/read about folic acid					
Yes	917	68,005	62.6	59.7	65.5
No	555	40,679	37.4	34.5	40.3
					2008 MI PRAMS

Table 46:
Prevalence of women instructed, by a health care professional on the appropriate amount of folic acid to consume,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,474	108,274			
Instructed by healthcare professional					
Yes	1,053	80,027	73.9	71.3	76.5
No	421	28,248	26.1	23.5	28.7
					2008 MI PRAMS

Table 47:
Prevalence of multivitamin consumption in the month prior to pregnancy,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,613	117,249			
Multivitamin Consumption					
No multivitamin	943	67,394	57.5	54.7	60.3
1-3 times per week	148	10,139	8.7	7.1	10.2
4-6 times per week	90	7,344	6.3	4.9	7.6
Daily	432	32,372	27.6	25.1	30.2
					2008 MI PRAMS

Table 48:
Prevalence of folic acid awareness and/or instruction by a health care professional,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	1,404	103,727			
Awareness of folic acid/Instructed by heathcare professional					
Aware and Instructed	804	61,031	58.8	55.8	61.8
Aware, but not instructed	212	16,322	15.7	13.5	18.0
Instructed, but not aware	86	5,130	5.0	3.7	6.2
Neither instructed or aware	302	21,245	20.5	18.0	22.9

2008 MI PRAMS

Table 49a:
Multivitamin consumption in the month prior to pregnancy by folic acid awareness and/or instruction by a
healthcare professional,
2008 MI PRAMS

	No multivitamin					1-3 times per week				
	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	800	57,669	55.8	52.7	58.7	129	9,011	8.7	7.2	10.6
Awareness of folic acid/Instructed by heathcare professional										
Aware and Instructed	371	26,888	44.2	40.2	48.1	85	6,378	10.5	8.0	12.9
Aware, but not instructed	124	9,814	60.6	53.0	68.2	23	1,473	9.1	4.9	13.3
Instructed, but not aware	61	3,634	70.9	59.4	82.3	6	318	6	0.3	12.1
Neither instructed or aware	244	17,333	81.6	76.4	86.7	15	841	4.0	1.6	6.4

2008 MI PRAMS

Table 49b:
Multivitamin consumption in the month prior to pregnancy by folic acid awareness and/or instruction by a healthcare professional,
2008 MI PRAMS

	4-6 times per week					Daily				
	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total	81	6,828	6.6	5.2	8.3	389	29,923	28.9	26.3	31.8
Awareness of folic acid/Instructed by heathcare professional										
Aware and Instructed	53	4,609	7.6	5.5	9.6	46	3,441	21.3	14.9	25.1
Aware, but not instructed	17	1,468	9.1	4.6	13.6	25	1,343	16.9	13.1	23.2
Instructed, but not aware	3	‡	‡	‡	‡	16	1,070	20.9	10.4	31.3
Neither instructed or aware	8	644	3.0	0.6	5.5	35	2,427	11.4	7.2	15.7

2008 MI PRAMS

‡ Data not shown due to small sample size

Table 50:
Prevalence of WIC participation during pregnancy among income eligible women,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total*	905	58663			
WIC Participation During Pregnancy					
Yes	749	47682	81.3	78.2	84.4
No	156	10981	18.7	15.6	21.8

2008 MI PRAMS

*Total = Number of women found to be income eligible for WIC. Women who participated in Medicaid prior to pregnancy, had Medicaid-paid prenatal care, Medicaid-paid delivery, or received federal income asisstance were classified as being income eligible for WIC.

Table 51:
Prevalence of WIC participation postpartum among income eligible women,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Total*	878	57159			
WIC Participation - Infant					
Enrolled	801	50853	89.0	86.3	91.6
Not Enrolled	77	6307	11.0	8.4	13.7
					2008 MI PRAMS

*Total = Number of women found to be <u>income</u> eligible for WIC. Women who participated in Medicaid prior to pregnancy, had Medicaid-paid prenatal care, Medicaid-paid delivery, or received federeal income asisstance were classified as being income eligible for WIC.

Table 52:
Reason for nonparticipation among income eligible women, who's infant did not participate in WIC,
2008 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	Lower confidence interval	Upper confidence interval
Reasons*					
Do not want to enroll infant	21	2091	34.8	22.0	47.6
Other	25	2002	33.3	20.9	45.8
Unaware of WIC	11	970	16.2	6.5	25.8
Infant not eligible	12	942	15.7	6.2	25.2
					2008 MI PRAMS

*Analysis restricted to women who were found to be <u>income</u> eligible for WIC and whose infant did not participate in WIC. Women who participated in Medicaid prior to pregnancy, had Medicaid-paid prenatal care, Medicaid-paid delivery, or received federal income assistance were classified as being income eligible for WIC.

Michigan Department of Community Health

M DCH

Jennifer M. Granholm, Governor
Janet Olszewski, Director