

Preconception Health in Michigan

Reproductive Health and Family Planning

Overview of Preconception Health

Why is Preconception Health Important?



Preconception health refers to the health and well-being of women prior to becoming pregnant either for the first time or with subsequent pregnancies. Improving the

preconception health of women can improve maternal and infant health outcomes.^{1,2,3}

Preconception health encompasses biomedical, behavioral, and social factors. In 2011, 40% of Michigan mothers delivering live births reported that the pregnancy was unintended (PRAMS, 2011). Additionally, many women do not seek prenatal care until eight weeks of gestation or later, at which time the period that carries the highest risk for the fetus has already passed.³ Education and awareness of improved health of all women of reproductive age can help improve future pregnancy outcomes.

Preconception Health Indicators



A national committee of state program leaders and epidemiologists has identified broad health domains related to preconception health, and has proposed specific

health indicators based on currently measurable data for women of reproductive age.² Indicators are used to monitor public health status and help assess progress toward national and state goals.

The information in these factsheets encompasses the Reproductive Health and Family Planning domain:

- Previous Preterm Birth
- Interpregnancy Intervals less than 18 months
- Unintended Pregnancy
- Postpartum Contraceptive Use

For information regarding data sources, please reference the "Preconception Health in Michigan: Reproductive Health and Family Planning" factsheet subtitled "Data Sources."

Healthy People 2020 Goals



The Healthy People 2020 (HP 2020) Goals are a set of science-based goals created by a national multi-disciplinary group with the objective of improving the health and well-being of all people in the United States.³ In these factsheets, the HP 2020 Goal is represented by a dashed line and an arrow demonstrating whether it is more desirable to be above or below the goal.

References

1. Centers for Disease Control and Prevention. Recommendations to improve preconception health and health care—United States. *MMWR* 2006; 55(RR06):1-23
2. Broussard DL, et al. Core state preconception health indicators: a voluntary, multi-state selection process. *Matern. Child Health J.* 2011; 15(2):158-168.
3. United States Department of Health and Human Services. "Healthy People 2020." 2013. Available online: <http://www.healthypeople.gov/2020/default.aspx>. Accessed May 10, 2013.

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Summary



Reproductive health and family planning are important contributing factors in improving the well-being of mothers and babies. Maternal and child health affects future generations and helps determine public health challenges.¹

Preconception care, interconception care, and family planning services improve reproductive health and help reduce the risk of maternal and infant mortality and complications during pregnancy. Quality care also increases healthy outcomes for infants, mothers, and families.²

Preterm birth, interpregnancy intervals, and unintended pregnancy are significant health indicators categorized under reproductive health and family planning. These indicators are impacted by multiple sociodemographic factors such as age, race, education, income, and insurance coverage.² Data are collected by the Michigan Pregnancy Risk Assessment Monitoring System (PRAMS) and the Michigan Department of Community Health Division for Vital Records and Health Statistics and studied annually to assess the progress and needs in Michigan in regards to reproductive health and family planning.

References

1. U.S. Department of Health and Human Services (2013). Family Planning - Healthy People. Retrieved February 25, 2014, from <http://healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=13>
2. U.S. Department of Health and Human Services (2013). Maternal, Infant, and Child Health - Healthy People. Retrieved March 10, 2014, from <http://healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=26>

Figure 1: Prevalence of women aged 18-44 years who self-reported a live birth and an **unintended pregnancy, an interpregnancy interval less than 18 months, or their previous birth was more than three weeks premature** (MI PRAMS, 2011[^] & MI Live Birth File*, 2012)

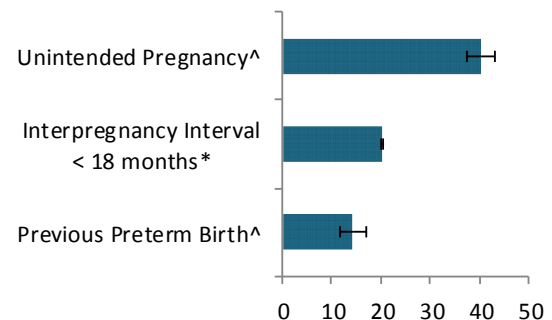
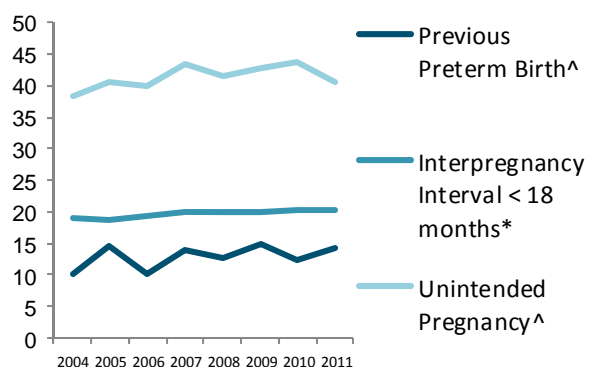


Figure 2: Trends of women aged 18-44 years who self-reported a live birth and an **unintended pregnancy, an interpregnancy interval less than 18 months, or their previous live birth was more than three weeks premature** from 2004-2011 (MI PRAMS and MI Live Birth File)



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Previous Preterm Birth

Overview: Preterm birth is defined as a baby born less than 37 weeks gestation. Babies who are born premature are at greater risk for infant mortality, neurological disorders and cognitive challenges later in life.² Preterm birth has also been associated with an increased risk of subsequent preterm birth and complications, and poor outcomes for both mother and baby.¹ All of the causes behind preterm birth are not clear, but they are believed to be associated with socioeconomic status, prenatal care, maternal risk behaviors, infection, nutrition, preconception stress, and/or genetics.²

Preconception Health Indicator: Percentage of women aged 18-44 years having a live birth who had their previous live birth more than 3 weeks premature

Questions asked to PRAMS survey participants:

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

If 'yes':

2. Was the baby just before your new one born more than 3 weeks before its due date?

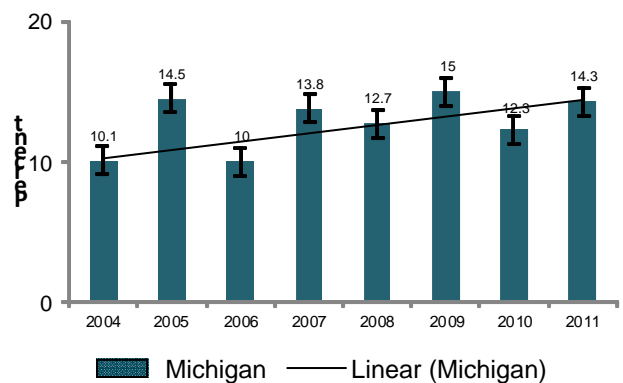
Women who answered 'yes' to both questions were classified as having a previous preterm birth.

HP 2020 Goal: Reduce total preterm births to 11.4%



Trends Over Time: The incidence of previous live birth born preterm increased by 42% among PRAMS respondents from 2004 to 2011

Figure 1: Trend of women in MI aged 18-44 who self-reported a live birth and have had a **previous live birth born preterm** (MI PRAMS, 2004-2011)



References

1. CDC Division of Reproductive Health (2013). National Prematurity Awareness Month | CDC Features. Retrieved February 25, 2014, from <http://www.cdc.gov/Features/PrematureBirth/>
2. Martin, J.A., Osterman M.J.K., Sutton P.D. (2010). Are preterm births on the decline in the United States? Recent data from the National Statistics System. NCHS data brief, no. 39. Hyattsville, MD: National Center for Health Statistics.
3. U.S. Department of Health and Human Services (2013). Family Planning - Healthy People. Retrieved February 25, 2014, from <http://healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=13>

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Previous Preterm Birth

Figure 2: Prevalence of **previous live birth born preterm^a** among MI women by age (MI PRAMS, 2011)

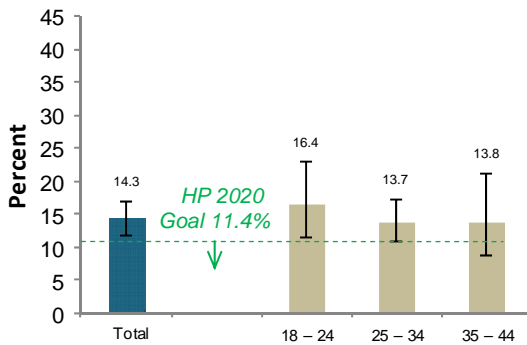


Figure 3: Prevalence of **previous live birth born preterm^a** among MI women by race (MI PRAMS, 2011)

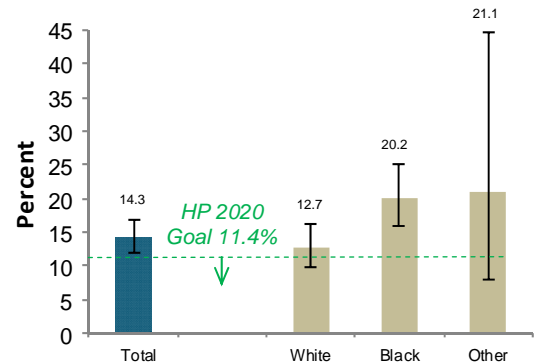


Figure 4: Prevalence of **previous live birth born preterm^a** among MI women by education (MI PRAMS, 2011)

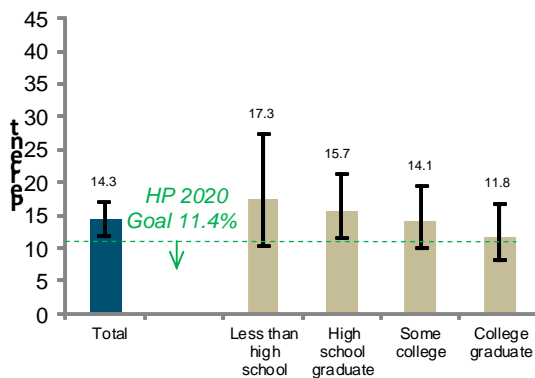


Figure 5: Prevalence of **previous live birth born preterm^a** among MI women by income (MI PRAMS, 2011)

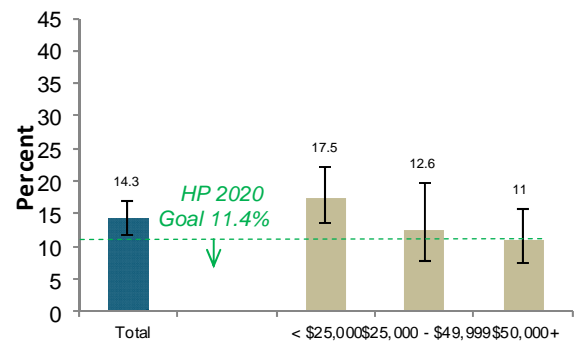
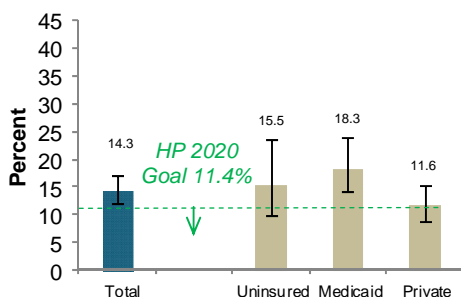


Figure 6: Prevalence of **previous live birth born preterm^a** among MI women by type of health insurance (MI PRAMS, 2011)



Key Points:

- **Groups of women who have significantly exceeded the HP 2020 goal include:**
 - Women aged 18-24
 - Non-Hispanic, black women
 - Women with a high school diploma or lower educational attainment
 - Women with a household income less than \$25,000/yr
 - Women who are insured by Medicaid

^aAmong women aged 18-44 years, who had a live birth in 2011 that was not their first live birth and who reported having their last live birth more than three weeks before the due date.

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Interpregnancy Interval

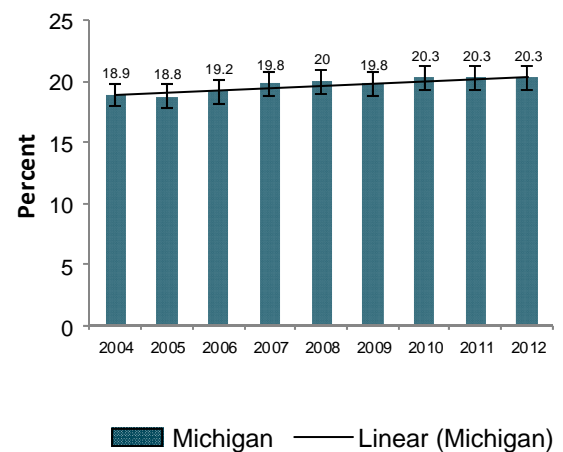
Overview: Interpregnancy interval refers to the time between the end of a woman's previous pregnancy to the last normal menses occurring before the start of the next pregnancy.¹ Short interpregnancy intervals are associated with higher rates of adverse birth outcomes, such as preterm birth, low birth weight, and small for gestational age. There are also negative maternal outcomes associated with short intervals including folate depletion and other nutritional deficiencies, which is a plausible cause of the association between short intervals and poor outcomes for the birth.^{3,2} Studies show that interpregnancy intervals of 18-23 months had the lowest risks of negative birth outcomes.⁴ Family planning and prenatal care play an important role in the timing between pregnancies. There is strong evidence that indicates that the greater the exposure to prenatal care during the first pregnancy, the more likely the optimal spacing between the next pregnancy.³

Preconception Health Indicator: Percentage of women having a live birth who had less than an 18 month birth interval

Healthy People 2020 Goal: Reduce the proportion of pregnancies conceived within 18 months of previous birth to 29.8%

Trends Over Time: The prevalence of live births with an interpregnancy interval less than 18 months has increased approximately 7% from 2004 to 2012.

Figure 1: Trend of interpregnancy interval less than 18 months among women aged 18-44 (MI Live Birth File, 2004- 2012).



References

1. Conde-Agudelo, A., Rosas-Bermudez, A., Kafury-Goeta, A. (2006). Birth spacing and risk of adverse perinatal outcomes: A meta-analysis. *The Journal of the American Medical Association*, 295(15), 1809-1823.
2. Smits L.J.M. & Essed, G.G.M. (2001). Short interpregnancy intervals and unfavorable pregnancy outcome: Role of folate depletion. *Lancet*, 358, 2074-2077.
3. Teitler, J. O., Das, D., Kruse, L., & Reichman, N. E. (2012). Prenatal care and subsequent birth intervals. *Perspectives on Sexual and Reproductive Health*, 44(1), 13-21.
4. Zhu, B. P., Rolfs, R. T., Nangle, B. E., & Horan, J. M. (1999). Effect of the interval between pregnancies on perinatal outcomes. *The New England Journal of Medicine*, 340(8), 589-594.

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Interpregnancy Interval

Figure 2: Prevalence of **interpregnancy interval less than 18 months^a** among MI women by age (MI Live Birth File, 2012)

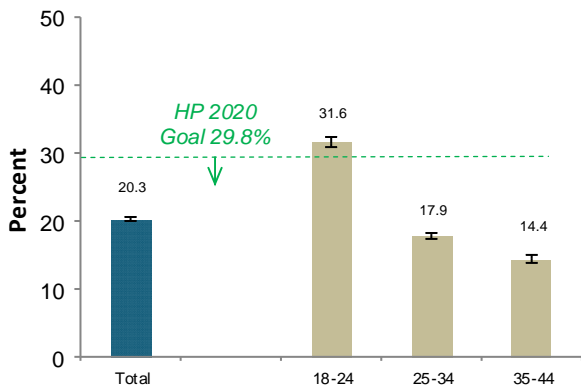


Figure 3: Prevalence of **interpregnancy interval less than 18 months^a** among MI women by race (MI Live Birth File, 2012)

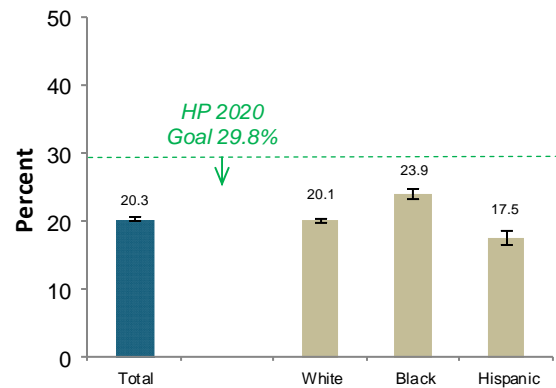
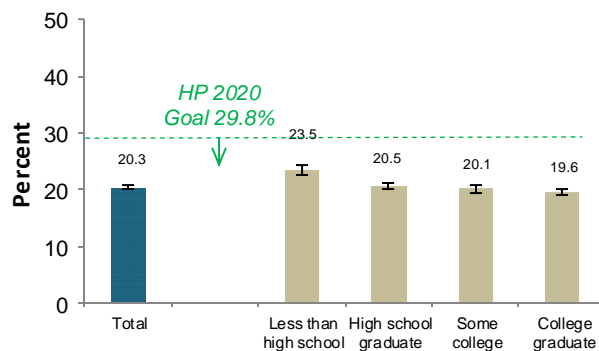


Figure 4: Prevalence of **interpregnancy interval less than 18 months^a** among MI women by education (MI Live Birth File, 2010)



Key Points:

- Groups of women who have met the HP 2020 goal for interpregnancy intervals less than 18 months include:
 - Women aged 25-44
 - White, Black, and Hispanic women
 - Women with all levels of educational attainment

^aAmong women aged 18-44 years, who had a previous live birth.

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Pregnancy Intention/Wantedness

Overview: Pregnancy intention/wantedness measures the number of women who have experienced an unintended pregnancy, which includes pregnancies that are mistimed and unwanted.² There are many reasons for both child and mother as to why it is important to promote the prevention of unintended pregnancy. It is more likely that with an unintended pregnancy, a mother will wait longer to seek the appropriate prenatal care and continue to smoke and drink further into the pregnancy, which puts the child at risk for low birth weight and birth defects.^{1,2,3} Also, the mother is at greater risk to suffer within an abusive relationship and forego career and educational plans.¹ Pregnancy intention and wantedness, on the other hand, provides many contributions to birth outcomes, such as necessary testing for STI's, folic acid supplementation, and the opportunity to make healthy lifestyle choices including smoking and alcohol cessation, exercise and healthy diet.³

Preconception Health Indicator: Percentage of women having a live birth who reported having an unintended pregnancy

Questions asked to PRAMS survey participants:

1. 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

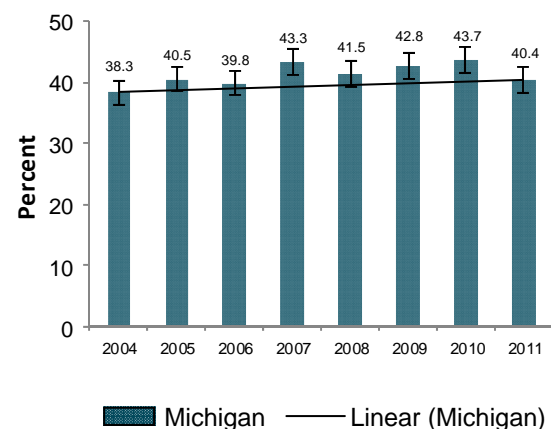


Women who wanted to be pregnant later or not at all were classified as having an unintended pregnancy.

Healthy People 2020 Goal: Increase the proportion of pregnancies that are wanted to 56%

Trends Over Time: Prevalence of unintended pregnancy increased 5.5% among MI PRAMS respondents from 2004 to 2011, but has remained lower than the Healthy People 2020 goal

Figure 1: Trend of unintended pregnancy among women aged 18-44 (MI PRAMS, 2004-2011)



References

- Cleland, K., Peipert, J. A., Westhoff, C., Spear, S., & Trussell, J. (2011). Family planning as a cost-saving preventive health service. *The New England Journal of Medicine*, 37, 1-3. doi:10.1056/NEJMP1104373
- Healthy People 2020 (2013). Family planning. Retrieved February 25, 2014, from <http://healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=13>
- Taylor, D., & James, E. A. (2011). An evidence-based guideline for unintended pregnancy prevention. *J Obstet Gynecol Neonatal Nurse*, 40(6), 782-793. doi:10.1111/j.1552-6909.2011.01296.x

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Pregnancy Intention/Wantedness

Figure 2: Prevalence of unintended pregnancy^a among MI women by age (MI PRAMS, 2011)

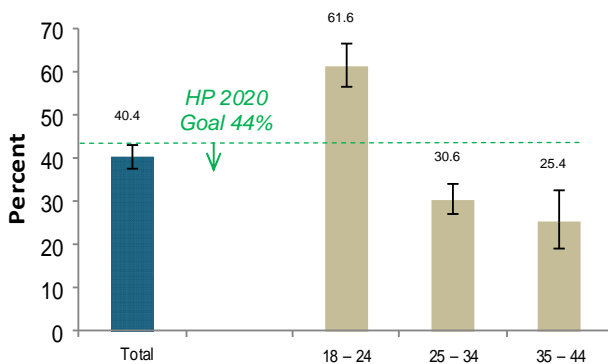


Figure 3: Prevalence of unintended pregnancy^a among MI women by race (MI PRAMS, 2011)

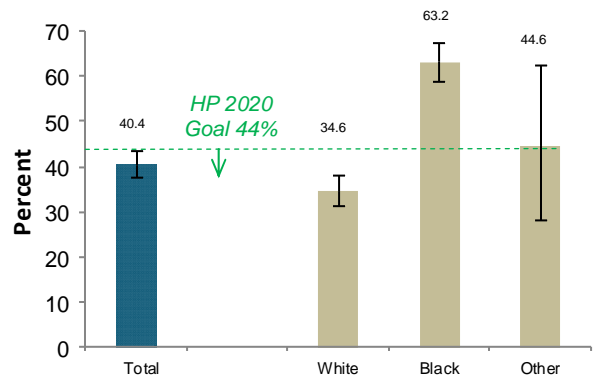


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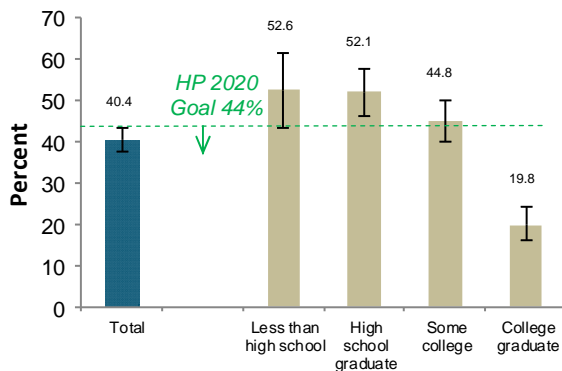


Figure 5: Prevalence of unintended pregnancy^a among MI women by income (MI PRAMS, 2011)

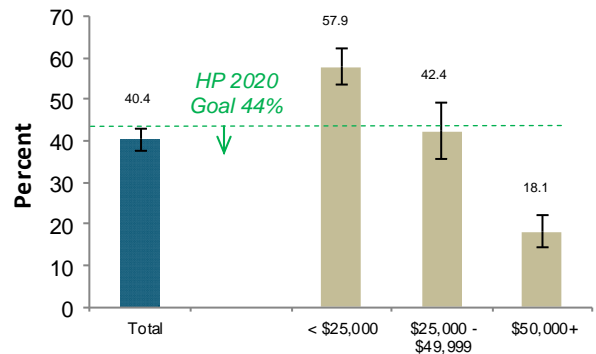
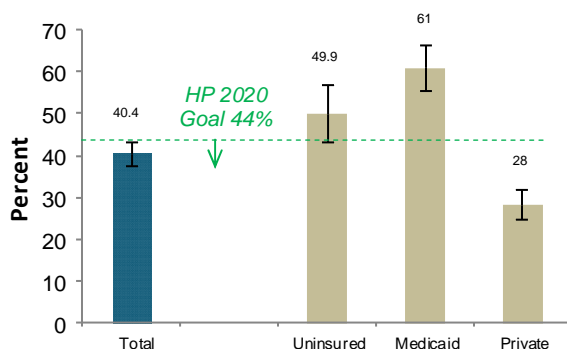


Figure 6: Prevalence of unintended pregnancy^a among MI women by type of health insurance (MI PRAMS, 2011)



Key Points:

- The prevalence of unintended pregnancy significantly exceeded the HP 2020 goal of reducing unintended pregnancies to 44% among:
 - Women aged 18-24
 - Non-Hispanic, black women
 - Women with a high school diploma or lower educational attainment
 - Women with a household income less than \$25,000/yr
 - Women who are uninsured or insured by Medicaid

^aAmong women aged 18-44 years, who had a live birth in 2011 the proportion who reported not wanting to be pregnant just before conception, plus those who reported not wanting to be pregnant ever.

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Contraception

Overview: The correct and consistent use of contraception is a method of reducing unintended pregnancy and short pregnancy intervals.² When a couple chooses to forego contraceptive methods, they have an 85% chance of conceiving within one year. Fifty-two percent of pregnancies that are not intended occur among 10.7% of women who do not use contraception.¹ Cost, method-related difficulties, cultural norms, and a lack of reproductive health care for men contribute to the reasoning behind why women and couples do not use contraception.⁵ However, the promotion of effective contraception counseling from provider to patient has proven to be an important factor in decreasing unintended pregnancy.⁴

Physician counseling regarding contraceptive health is also important for women and couples who are in the postpartum period, especially for those who have had a previous unintended pregnancy or poor pregnancy outcome. Men and women of reproductive age should be encouraged to create reproductive life plans to help prevent unintended pregnancy and short pregnancy intervals.³

Healthy People 2020 Goal: Increase the proportion of females or their partners at risk of unintended pregnancy who used contraception at most recent sexual intercourse to 91.6%

Preconception Health Indicator: Percentage of women having a live birth who were not trying to get pregnant at the time of conception and neither they nor their partner were doing anything to prevent pregnancy

Questions asked to PRAMS survey participants:

1. When you got pregnant with your new baby, were you trying to become pregnant?
2. When you got pregnant with your new baby, were you or your husband or partner doing anything to keep from getting pregnant?

Women who answered 'no' to both questions were included in the numerator to determine this indicator.

References

1. Cleland, K., Peipert, J. A., Westhoff, C., Spear, S., & Trussell, J. (2011). Family planning as a cost-saving preventive health service. *The New England Journal of Medicine*, 37, 1-3. doi:10.1056/NEJMP1104373
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5. Taylor, D., & James, E. A. (2011). An evidence-based guideline for unintended pregnancy prevention. *J Obstet Gynecol Neonatal Nurse*, 40(6), 782-793. doi:10.1111/j.1552-6909.2011.01296.x

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Preconception Health Indicator: Percentage of women who have had a live birth who reported that they or their husband or partner were currently doing something to keep from getting pregnant

Questions asked to PRAMS survey participants:

1. Are you or your husband or partner currently doing anything to keep from getting pregnant?



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Preconception Contraceptive Non-use

Figure 1: Prevalence of **preconception contraceptive non-use^a** among MI women by age (MI PRAMS, 2011)

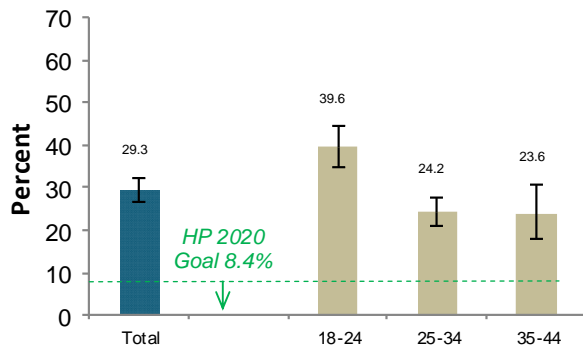


Figure 2: Prevalence of **preconception contraceptive non-use^a** among MI women by race (MI PRAMS, 2011)

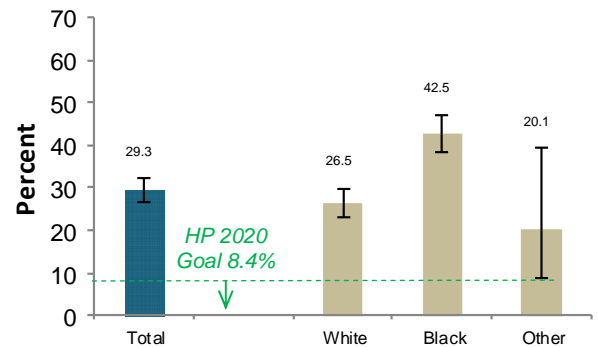


Figure 3: Prevalence of **preconception contraceptive non-use^a** among MI women by education (MI PRAMS, 2011)

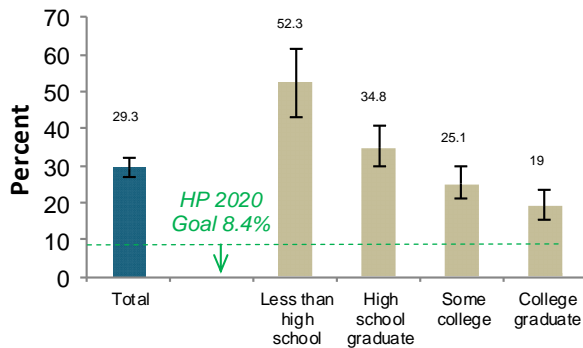


Figure 4: Prevalence of **preconception contraceptive non-use^a** among MI women by income (MI PRAMS, 2011)

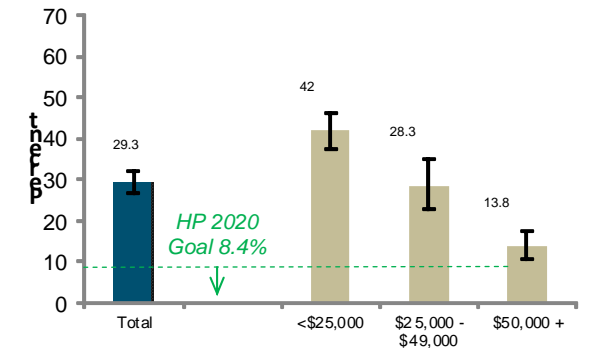
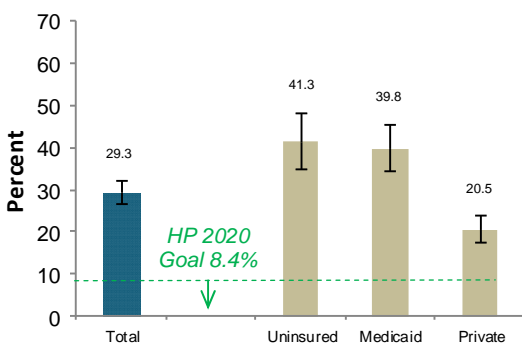


Figure 5: Prevalence of **preconception contraceptive non-use^a** among MI women by type of health insurance (MI PRAMS, 2011)



Key Points:

- All groups of women significantly exceeded the HP 2020 goal of 8.4% but are highest among:
 - Women aged 18-24
 - Non-Hispanic, black women
 - Women with less than a high school diploma
 - Women with a household income less than \$25,000/yr
 - Women who are uninsured or insured by Medicaid

^aAmong women aged 18-44 years, who had a live birth in 2011, the proportion who reported not trying to get pregnant at conception and also that neither they nor their husband/partner were doing anything to keep from getting pregnant at time of conception.

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Postpartum Contraceptive Use

Figure 1: Prevalence of **postpartum contraceptive use^a** among MI women by age (MI PRAMS, 2011)

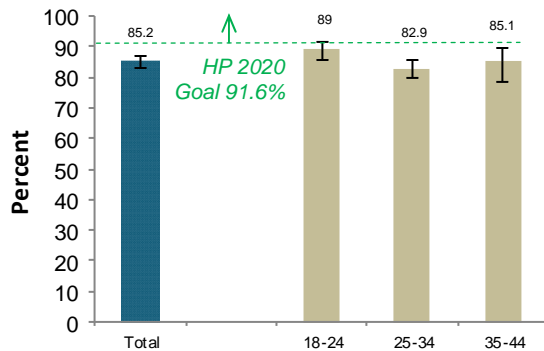


Figure 2: Prevalence of **postpartum contraceptive use^a** among MI women by race (MI PRAMS, 2011)

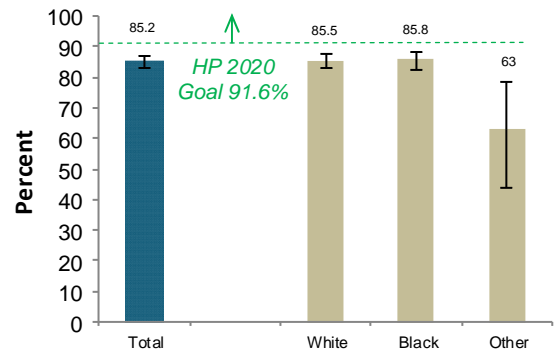


Figure 3: Prevalence of **postpartum contraceptive use^a** among MI women by education (MI PRAMS, 2011)

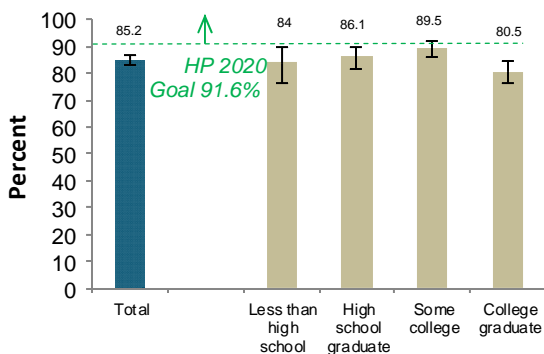


Figure 4: Prevalence of **postpartum contraceptive use^a** among MI women by income (MI PRAMS, 2011)

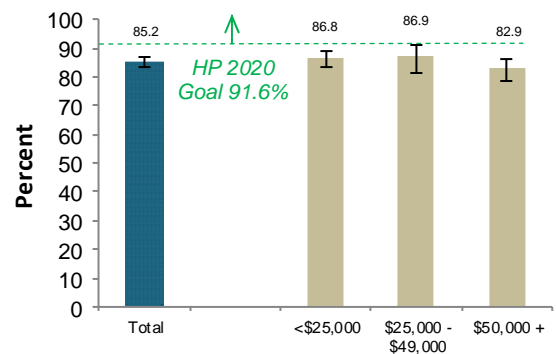
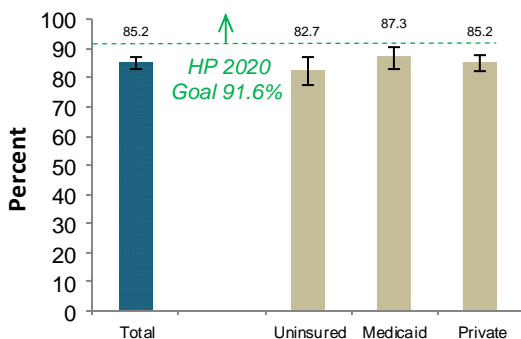


Figure 5: Prevalence of **postpartum contraceptive use^a** among MI women by type of health insurance (MI PRAMS, 2011)



Key Points:

- All groups of women are lower than the HP 2020 goal of contraceptive use, but those significantly lower include:
 - College graduates
 - Women who are neither white or black

^aAmong women aged 18-44 years, who had a live birth in 2011, the proportion who reported either they or their husband/partner were doing something to keep from getting pregnant after their previous birth.

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Data Sources

Michigan Pregnancy Risk Assessment

Monitoring System (MI-PRAMS)



PRAMS is a joint effort of the CDC and state health departments, and is available in 40 states and New York City.² It is a mailed questionnaire sent to a stratified, random sample of women with a live birth in the previous 2-6 months², gathering data on maternal attitudes, experiences, health behaviors and conditions, and health care access.¹ Telephone follow-up is conducted for women who do not respond by mail. Data are self-reported and subject to recall bias.¹ However, yearly findings can be applied to 98% of residents who deliver a live birth in Michigan.³

Michigan Live Birth File

Data from the Michigan Live Birth File is available through the Division for Vital Records and Health Statistics department. Records of births, deaths, and marriages that occurred in Michigan were filed with the state beginning in 1867. Vital records files can provide statistical data on many maternal and child health topics, such as live births, low birth weight, maternal morbidity, and many others.⁴



References

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