

**Michigan Preconception Health Indicators
Division of Genomics, Perinatal Health and Chronic Disease Epidemiology**



**PRECONCEPTION HEALTH STATUS OF WOMEN IN MICHIGAN:
PRELIMINARY TABLES**

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INTRODUCTION

By the time prenatal care begins, even if during the first trimester, it is often too late to prevent many unfavorable outcomes for mother and baby. Preconception health is about women's health before becoming pregnant either for the first time or more than once. The goal of preconception health is to promote and assure a balanced combination of the best medical care, healthy behaviors, strong support, and safe environments at home and at work. Reducing physical, emotional, mental and oral health risk factors and improving health during the reproductive age is a public health priority. Thus, poor birth outcomes and complications of mothers and infants can be avoided.¹

Examples of unfavorable outcomes are as follows:

- In 2010 8.4% of Michigan babies were born with low birthweight;²
- One in ten Michigan infants were born preterm (< 37 weeks gestation);²
- Half (50.9%) of mothers giving birth in Michigan during 2010 had Body Mass Index (BMI) classified as overweight or obese;³
- Infant mortality (per 1,000 births) is 2.6 times higher among Black infants (14.2) than White infants (5.5) in 2010 in Michigan.⁴

Past efforts to reduce infant mortality and improve birth outcomes have focused on prenatal health and neonatal care, resulting in some reduction of poor outcomes. Yet the rates of adverse events (such as infant mortality and premature birth) remain high, often with significant racial disparities and exceeding Healthy People 2010 objectives. Various studies and epidemiological analyses proved that the health of women prior to pregnancy is the key to improving maternal and infant health. The Centers for Disease Control and Prevention (CDC) in collaboration with other national partners published ten recommendations to improve preconception health.¹ However, implementing these recommendations requires accurate monitoring of preconception health in women of reproductive age. This can be accomplished only by having well defined indicators. Several states including Michigan formed a national group that defined a list of indicators that could be used for the surveillance of health among women of reproductive age and for monitoring the effectiveness of interventions.⁵

RECOMMENDED INDICATORS

Each indicator was evaluated on five criteria: public health importance, policy/program importance, data availability, data quality, and the complexity of calculating the indicator. The group selected 45 indicators among 10 preconception health domains (see below) to be limited to women aged 18 to 44 years.

PRECONCEPTION HEALTH DOMAINS

- GENERAL HEALTH STATUS
- SOCIAL DETERMINANTS OF HEALTH
- HEALTH CARE
- REPRODUCTIVE HEALTH & FAMILY PLANNING
- TOBACCO, ALCOHOL, & SUBSTANCE USE
- NUTRITION & PHYSICAL ACTIVITY
- MENTAL HEALTH
- EMOTIONAL & SOCIAL SUPPORT
- CHRONIC CONDITIONS
- INFECTIONS

The following tables outline the preconception health status of Michigan women ages 18-44 years for the most recent year for each data source. Wherever possible, analysis by race/ethnicity, age/group, education, income and health insurance status is also included. To view tables for each domain CTRL click on the domain name.

This report was prepared by the Division of Genomics, Perinatal Health, and Chronic Disease Epidemiology.

DATA SOURCES

Michigan Behavioral Risk Factor Surveillance System (MiBRFSS) The MiBRFSS conducted by the Michigan Department of Community Health (MDCH) in cooperation with the CDC, collects information on health behaviors, preventive health practices and health care access among Michigan adults 18 years of age and older. Data are self-reported, selected from a random digit dialing phone survey and may be subject to recall or reporting bias, as behaviors may change over time and recall of events, health conditions and behaviors may diminish. However, the sampling and statistical methods used ensure that the survey provides a timely and accurate estimate of the health of MI adults.”

Due to significant changes in the BRFSS methodology, the 2011 estimates within

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these tables should not be compared to Michigan BRFSS estimates from previous years.

Pregnancy risk assessment monitoring system (PRAMS) for Michigan PRAMS is a joint collaboration between CDC and MDCH. A population-based survey of Michigan resident mothers who delivered a live infant, PRAMS is essential for monitoring maternal attitudes, experiences, health behaviors, health conditions and access to care before, during and after pregnancy. Data is self-reported two to six months after delivery and may be subject to reporting or recall bias, behaviors may change over time and the ability to recall preconception events, health and behaviors may decrease. However, the sampling methods used ensure findings can be applied to approximately 98% of the state's population of women who have delivered a live-born infant each year.

Both MiBRFSS and PRAMS not only provide state-specific data for many preconception health indicators, but also allow comparison among different states.

Michigan Division for Vital Records & Health Statistics (MDCH-VR), Michigan Disease Surveillance System (MDSS), and the American Community Survey (ACS) are additional data sources. MDCH-VR collects and disseminates vital record data (including birth certificate data for the State of Michigan). MDSS is a web-based communicable disease surveillance system developed for the State of Michigan. The ACS is conducted by the Census Bureau and provides estimates of poverty level as well as the denominator for sexually transmitted infection rates.

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Indicator #1:

Domain: General Health Status and Life Satisfaction		
Sub-domain: Self-rated Health		
2011 Michigan BRFSS		
Demographic Characteristics	General Health, Excellent, Very Good or Good^a	
	%	95% Confidence Interval
Total	86.9	(84.4-89.0)
Age		
18 - 24	91.5	(87.3-94.4)
25 - 34	85.4	(80.7-89.0)
35 - 44	84.8	(80.5-88.2)
Race		
White	88.1	(85.4-90.5)
Black	80.1	(72.8-85.9)
Other	87.1	(77.2-93.1)
Education		
Less than high school	76.1	(64.5-84.9)
High school graduate	80.9	(75.5-85.4)
Some college	87.7	(83.5-91.0)
College graduate	95.9	(93.5-97.4)
Household Income		
< \$25,000	75.9	(70.3-80.7)
\$25,000 - \$49,999	88.9	(83.7-92.6)
\$50,000+	93.5	(89.7-96.0)
Health Insurance		
Health Insurance	88.3	(85.6-90.5)
No Health Insurance	81.0	(74.3-86.2)
^a Among adult women aged 18-44 years, the proportion who reported that their health, in general, was excellent, very good or good.		

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Indicator #2:

Domain: Social Determinants of Health		
Sub-domain: Education		
2011 Michigan BRFSS		
Demographic Characteristics	High School Education/GED or Greater^a	
	%	95% Confidence Interval
Total	88.5	(85.5-90.9)
Age		
18 – 24	86.0	(78.9-91.0)
25 – 34	87.3	(81.8-91.3)
35 – 44	91.5	(87.6-94.2)
Race		
White	89.0	(85.6-91.6)
Black	88.6	(79.8-93.8)
Other	83.3	(66.7-92.5)
Household Income		
< \$25,000	80.0	(73.7-85.1)
\$25,000 - \$49,999	93.3	(87.3-96.6)
\$50,000+	98.4	(93.9-99.6)
Health Insurance		
Health Insurance	90.3	(87.1-92.7)
No Health Insurance	81.0	(72.8-87.2)
^a Among adult women aged 18-44 years, the proportion who reported having a high school education/GED or greater.		

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Indicator #3:

Domain: Social Determinants of Health		
Sub-domain: Poverty		
2008-2010 ACS Michigan PUMS^a		
Demographic Characteristics	Income at or below 200% of the Federal poverty threshold^b	
	%	95% Confidence Interval
Total	39.1	(39.0-39.2)
Age		
18 - 24	48.1	(48.0-48.2)
25 - 34	40.9	(40.8-40.5)
35 - 44	31.0	(20.9-31.1)
Race		
White	34.5	(34.4-34.6)
Black	59.4	(59.2-59.6)
Other	42.4	(42.1-42.7)
Education		
Less than high school	69.7	(69.5-69.9)
High school graduate	50.2	(50.0-50.4)
Some college	40.8	(40.7-40.9)
College graduate	14.7	(14.6-14.8)
^a American community Survey Public Use Microdata Set U.S. Census http://dataferrett.census.gov/		
^b Women ages 18-44 years		

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Indicator #4:

Domain: Health Care		
Sub-domain: Access to and Utilization of Health Care		
2011 Michigan BRFSS		
Demographic Characteristics	Health Care Coverage^a	
	%	95% Confidence Interval
Total	80.1	(77.3-82.6)
Age		
18 – 24	79.4	(73.1-84.5)
25 – 34	78.4	(73.6-82.6)
35 – 44	82.2	(78.1-85.6)
Race		
White	80.8	(77.7-83.6)
Black	76.1	(68.5-82.4)
Other	84.3	(71.2-92.1)
Education		
Less than high school	67.4	(54.7-78.0)
High school graduate	74.4	(68.2-79.7)
Some college	80.7	(76.3-84.5)
College graduate	90.0	(86.9-92.5)
Household Income		
< \$25,000	70.6	(64.8-75.8)
\$25,000 - \$49,999	76.8	(70.6-82.0)
\$50,000+	94.1	(91.2-96.1)
^a Among adult women aged 18-44 years, the proportion who reported having health care coverage, including health insurance, prepaid plans such as HMOs, or government plans, such as Medicare.		

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Indicator #5:

Domain: Health Care		
Sub-domain: Access to and Utilization of Health Care		
2009 Michigan PRAMS		
Demographic Characteristics	Pre-pregnancy health care coverage^a	
	%	95% Confidence Interval
Total	80.7	(78.2-83.0)
Age		
18 - 24	72.0	(67.1-76.5)
25 - 34	83.5	(80.2-86.4)
35 - 44	88.9	(82.6-93.1)
Race		
White	80.9	(77.8-83.6)
Black	83.4	(80.0-86.2)
Other	82.4	(63.6-92.6)
Education		
Less than high school	78.6	(69.6-85.5)
High school graduate	71.0	(65.6-75.9)
Some college	75.9	(71.3-80.0)
College graduate	97.8	(95.5-98.9)
Household Income		
< \$25,000	66.8	(62.4-70.9)
\$25,000 - \$49,999	80.8	(74.8-85.6)
\$50,000+	97.8	(95.6-98.9)
^a Among women aged 18-44 years, who had a live birth in 2009, the proportion who reported having health insurance (including Medicaid) during the month before conception.		

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Indicator #6:

Domain: Health Care		
Sub-domain: Access to and Utilization of Health Care		
2011 Michigan BRFSS		
Demographic Characteristics	Had Routine Checkup in Past Year^a	
	%	95% Confidence Interval
Total	62.1	(58.9-65.3)
Age		
18 – 24	63.5	(56.4-70.1)
25 – 34	62.0	(56.7-67.1)
35 – 44	61.2	(56.4-65.9)
Race		
White	58.2	(54.5-61.9)
Black	76.6	(69.0-82.8)
Other	71.9	(60.1-81.2)
Education		
Less than high school	58.0	(45.3-69.7)
High school graduate	59.8	(53.0-66.3)
Some college	60.5	(55.1-65.8)
College graduate	68.7	(64.2-72.9)
Household Income		
< \$25,000	59.6	(53.5-65.4)
\$25,000 - \$49,999	58.2	(51.2-64.8)
\$50,000+	65.8	(60.4-70.7)
Health Insurance		
Health Insurance	67.8	(64.2-71.1)
No Health Insurance	39.2	(32.1-46.8)

^a Among adult women aged 18-44 years, the proportion who reported having had a routine checkup in the past year.

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Indicator #7:

Domain: Health Care		
Sub-domain: Access to and Utilization of Health Care		
2009 Michigan PRAMS		
Demographic Characteristics	Had a Postpartum Checkup^a	
	%	95% Confidence Interval
Total	88.0	(85.9-89.8)
Age		
18 - 24	84.0	(79.9-87.5)
25 - 34	89.9	(87.3-92.1)
35 - 44	88.9	(82.5-93.1)
Race		
White	89.4	(86.9-91.5)
Black	82.8	(79.4-85.8)
Other	91.4	(71.7-97.8)
Education		
Less than high school	80.3	(71.9-86.7)
High school graduate	82.4	(77.8-86.3)
Some college	89.7	(86.2-92.3)
College graduate	95.0	(92.1-96.9)
Insurance		
Uninsured	78.5	(72.2-83.7)
Medicaid	81.0	(76.0-85.2)
Private	94.2	(92.1-95.8)
Household Income		
< \$25,000	66.8	(62.4-70.9)
\$25,000 - \$49,999	80.8	(74.8-85.6)
\$50,000+	97.8	(95.6-98.9)
^a Among women aged 18-44 years, who had a live birth in 2009, the proportion who reported having a postpartum checkup about 6 weeks after giving birth.		

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Indicator #8:

Domain: Health Care		
Sub-domain: Access to Dental Care		
2009 Michigan PRAMS		
Demographic Characteristics	Had a Dental Checkup^a	
	%	95% Confidence Interval
Total	58.0	(55.1-60.9)
Age		
18 - 24	48.2	(43.0-53.4)
25 - 34	60.4	(56.4-64.3)
35 - 44	70.4	(63.0-76.8)
Race		
White	62.3	(58.7-65.8)
Black	46.2	(42.1-50.3)
Other	40.0	(23.9-58.5)
Education		
Less than high school	37.4	(28.8-46.8)
High school graduate	47.6	(42.1-53.1)
Some college	58.3	(53.3-63.2)
College graduate	77.2	(72.3-81.5)
Insurance		
Uninsured	33.4	(27.2-40.3)
Medicaid	42.9	(37.3-48.7)
Private	73.4	(69.8-76.8)
Household Income		
< \$25,000	42.3	(38.0-46.8)
\$25,000 - \$49,999	55.3	(48.5-61.9)
\$50,000+	80.6	(76.2-84.3)
^a Among women aged 18-44 years, who had a live birth in 2009, the proportion who reported having their teeth cleaned within 12 months before they got pregnant.		

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Indicator #9:

Domain: Health Care		
Sub-domain: Reproductive Health Care		
2010 Michigan BRFSS		
Demographic Characteristics	Had Appropriately Timed Pap Test^a	
	%	95% Confidence Interval
Total	82.9	(79.1-86.2)
Age		
18 – 24	60.1	(50.3-69.2)
25 – 34	92.7	(88.1-95.5)
35 – 44	92.4	(89.4-94.6)
Race		
White	82.6	(78.1-86.3)
Black	95.0	(90.8-97.4)
Other	66.5	(49.8-79.9)
Education		
Less than high school	--- ^b	--- ^b
High school graduate	71.0	(61.4-79.0)
Some college	83.2	(76.5-88.3)
College graduate	92.6	(87.5-95.8)
Household Income		
< \$25,000	80.8	(72.9-86.9)
\$25,000 - \$49,999	79.5	(69.2-87.0)
\$50,000+	92.0	(87.1-95.2)
Health Insurance		
Health Insurance	86.2	(82.2-89.4)
No Health Insurance	69.1	(57.2-78.8)
^a Among adult women aged 18-44 years, the proportion who reported having had a Pap test within the previous three years. ^b Insufficient sample size (N < 50).		

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Indicator #10:

Domain: Health Care		
Sub-domain: Content & Quality of Care		
2009 Michigan PRAMS		
Demographic Characteristics	Received Preconception counseling ^a	
	%	95% Confidence Interval
Total	30.6	(27.9-33.3)
Age		
18 - 24	25.3	(21.1-30.0)
25 - 34	32.7	(29.1-36.6)
35 - 44	33.7	(26.8-41.4)
Race		
White	31.4	(28.2-34.9)
Black	29.1	(25.4-33.0)
Other	23.7	(11.1-43.4)
Education		
Less than high school	31.0	(23.1-40.2)
High school graduate	23.4	(19.1-28.3)
Some college	25.8	(21.7-30.4)
College graduate	43.1	(37.6-48.7)
Insurance		
Uninsured	13.2	(9.3-18.5)
Medicaid	32.6	(27.4-38.2)
Private	35.9	(32.2-39.8)
Household Income		
< \$25,000	23.4	(19.9-27.2)
\$25,000 - \$49,999	21.6	(16.5-27.6)
\$50,000+	46.3	(41.2-51.5)
^a Among women aged 18-44 years, who had a live birth in 2009, the proportion who reported receiving preconception counseling about healthy lifestyle behaviors & prevention strategies from a healthcare provider.		

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Indicator #11:

Domain: Reproductive Health & Family Planning		
Sub-domain: Previous Preterm Birth		
2010 Michigan Live Birth File		
Demographic Characteristics	Women (18-44 yrs old) having a live birth who had a previous preterm birth^a	
	%	95% Confidence Interval
Total	1.8	(1.7-1.9)
Age		
18 - 24	1.2	(1.1-1.4)
25 - 34	2.0	(1.9-2.1)
35 - 44	2.3	(2.0-2.5)
Race		
White	1.8	(1.7-1.8)
Black	2.0	(1.8-2.2)
Hispanic	2.0	(1.7-2.4)
Other	1.5	(1.2-1.8)
Education		
Less than high school	1.7	(1.2-2.1)
High school graduate	2.4	(2.1-2.7)
Some college	1.8	(1.7-1)
College graduate	1.5	(1.3-1.6)
Insurance		
Private Insurance	1.5	(1.4-1.6)
Medicaid	2.1	(2.0-2.3)
Self-Pay	2.7	(1.9-3.6)
Other	3.8	(2.5-5.2)
^a Michigan Residents		

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Indicator #12:

Domain: Reproductive Health and Family Planning		
Sub-domain: Previous Preterm Birth		
2009 Michigan PRAMS		
Demographic Characteristics	Previous live birth born premature^a	
	%	95% Confidence Interval
Total	15.0	(12.6-17.9)
Age		
18 - 24	15.3	(10.7-21.4)
25 - 34	15.6	(12.4-19.5)
35 - 44	12.7	(8.1-19.3)
Race		
White	13.9	(11.0-17.4)
Black	19.1	(15.3-23.7)
Other	20.0	(7.4-44.1)
Education		
Less than high school	15.0	(8.5-25.1)
High school graduate	17.0	(12.4-22.8)
Some college	14.7	(10.6-19.9)
College graduate	13.8	(9.6-19.4)
Insurance		
Uninsured	6.7	(3.5-12.3)
Medicaid	18.9	(14.2-24.7)
Private	15.2	(11.8-19.2)
Income		
<\$25,000	15.9	(12.3-20.3)
\$25,000-\$49,000	12.5	(8.1-18.9)
\$50,000+	15.4	(11.2-20.7)

^aAmong women aged 18-44 years, who had a live birth in 2009 that was not their first live birth, the proportion who reported having their last live birth more than three weeks before the due date.

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Indicator #13: Percentage of women who experienced a miscarriage, fetal death or stillbirth in the 12 months prior to getting pregnant with their most recent live born infant - Data not collected in MI PRAMS Survey

Indicator #14:

Domain: Reproductive Health Family Planning		
Sub-domain: Inter pregnancy interval interval/birth spacing		
2010 Michigan Live Birth File		
Demographic Characteristics	Women (18-44 yrs old) having a live birth who had an Interpregnancy interval/birth interval less than 18 months^a	
	%	95% Confidence Interval
Total	33.9	(33.6-34.3)
Age		
18 - 24	42.8	(42.1-43.5)
25 - 34	32.4	(32.0-32.9)
35 - 44	26.2	(25.4-27.0)
Race		
White	36.0	(35.6-36.5)
Black	28.9	(28.1-29.6)
Hispanic	30.7	(29.5-31.9)
Other	29.9	(28.5-31.3)
Education		
Less than high school	32.8	(30.9-34.8)
High school graduate	35.1	(34.1-36.1)
Some college	32.2	(31.8-32.7)
College graduate	37.6	(37.0-38.3)
Insurance		
Private Insurance	33.8	(33.3-34.2)
Medicaid	34.0	(33.5-34.5)
Self-Pay	38.5	(35.7-41.3)
Other	28.4	(24.6-32.1)
^a Interval of less than 18 months between this pregnancy and a previous live birth or fetal death among women who reported a previous live birth or fetal death		

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Indicator #15:

Domain: Reproductive Health and Family Planning		
Sub-domain: Pregnancy Intention/Wantedness		
2009 Michigan PRAMS		
Demographic Characteristics	Unintended or Unwanted Pregnancy^a	
	%	95% Confidence Interval
Total	42.8	(40.0-45.7)
Age		
18-24	62.9	(57.6-67.8)
35-34	35.2	(31.5-39.1)
35-44	28.9	(22.3-36.5)
Race		
White	39.0	(35.5-42.6)
Black	61.1	(56.9-65.0)
Other	29.8	(15.3-50.0)
Education		
<HS	60.3	(50.7-69.2)
HS Grad	50.0	(44.5-55.5)
Some College	44.9	(40.0-50.0)
College Grad	25.8	(21.2-31.0)
Insurance		
Uninsured	53.3	(46.3-60.1)
Medicaid	60.4	(54.6-66.0)
Private	32.0	(28.4-35.8)
Income		
<\$25,000	59.3	(54.9-63.6)
\$25,000-\$49,000	39.5	(33.2-46.2)
\$50,000+	23.8	(19.7-28.4)
^a Among women aged 18-44 years, who had a live birth in 2009, 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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Indicator #16:

Domain: Reproductive Health and Family Planning		
Sub-domain: Contraception (Access, Availability, and Use)		
2009 Michigan PRAMS		
Demographic Characteristics	Pre-pregnancy contraception use and not trying to get pregnant^a	
	%	95% Confidence Interval
Total	30.4	(27.8-33.2)
Age		
18-24	40.7	(35.6-45.9)
35-34	26.6	(23.2-30.4)
35-44	23.1	(17.2-30.3)
Race		
White	27.1	(23.9-30.5)
Black	44.4	(40.3-48.7)
Other	--- ^b	--- ^b
Education		
<HS	45.5	(36.2-55.1)
HS Grad	39.8	(34.5-45.4)
Some College	28.6	(24.3-33.4)
College Grad	16.5	(12.7-21.1)
Insurance		
Uninsured	42.3	(35.6-49.4)
Medicaid	43.7	(38.0-49.5)
Private	21.1	(17.9-24.5)
Income		
<\$25,000	42.0	(37.7-46.5)
\$25,000-\$49,000	31.7	(25.6-38.4)
\$50,000+	13.4	(10.2-17.4)
^a Among women aged 18-44 years, who had a live birth in 2009, the proportion who reported not trying to get pregnant at conception and also that neither they nor their husbands/partners were doing anything to keep from getting pregnant at time of conception. [‡] Data not shown due to small sample size.		

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Indicator #17:

Domain: Reproductive Health and Family Planning		
Sub-domain: Contraception (Access, Availability, and Use)		
2009 Michigan PRAMS		
Demographic Characteristics	Postpartum contraception use^a	
	%	95% Confidence Interval
Total	86.2	(84.0-88.1)
Age		
18 - 24	88.4	(40.2-52.1)
25 - 34	85.6	(41.2-53.4)
35 - 44	84.0	(32.7-54.8)
Race		
White	87.0	(41.9-52.2)
Black	83.6	(36.9-47.1)
Other	81.8	--- ^b
Education		
Less than high school	83.8	(29.3-48.3)
High school graduate	86.1	(35.6-49.2)
Some college	87.3	(43.3-57.0)
College graduate	86.7	(47.0-67.3)
Insurance		
Uninsured	84.3	(35.8-46.2)
Medicaid	85.8	(45.9-63.6)
Private	87.4	(42.1-60.2)
Income		
<\$25,000	86.0	(46.5-58.3)
\$25,000-\$49,000	87.4	(33.8-48.4)
\$50,000+	86.1	(34.4-49.6)
^a Among women aged 18-44 years, who had a live birth in 2009, the proportion who reported either they or their husbands/partners are currently something to keep from getting pregnant. ^b Data not shown due to small sample size.		

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Indicator #18:

Domain: Reproductive Health and Family Planning		
Sub-domain: Use of Assisted Reproductive Technology		
2009 Michigan PRAMS		
Demographic Characteristics	Infertility Treatment ^a	
	%	95% Confidence Interval
Total	4.0	(3.0-5.3)
Age		
18 - 24	1.3	(0.6-3.1)
25 - 34	4.0	(2.7-5.9)
35 - 44	9.7	(5.9-15.4)
Race		
White	4.8	(3.5-6.5)
Black	1.0	(0.4-2.3)
Other	10.4	(3.6-26.5)
Education		
Less than high school	---b	---b
High school graduate	1.0	(0.4-2.3)
Some college	10.4	(3.6-26.5)
College graduate	8.8	(6.1-12.5)
Insurance		
Uninsured	---b	---b
Medicaid	---b	---b
Private	6.4	(4.7-8.7)
Income		
<\$25,000	1.0	(0.5-2.3)
\$25,000-\$49,000	3.4	(1.6-6.9)
\$50,000+	8.7	(6.2-12.0)
^a Among women aged 18-44 years, who had a live birth in 2009, the proportion who reported using fertility drugs or received medical procedures from a doctor or nurse. ^b Data not shown due to small sample size.		

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Indicator #19:

Domain: Tobacco, Alcohol and Substance Abuse		
Sub-domain: Smoking		
2011 Michigan BRFSS		
Demographic Characteristics	Current Smoking^a	
	%	95% Confidence Interval
Total	23.9	(21.2-26.8)
Age		
18 – 24	18.8	(14.0-24.7)
25 – 34	26.6	(22.0-31.9)
35 – 44	25.2	(21.1-29.8)
Race		
White	25.3	(22.1-28.7)
Black	20.9	(15.0-28.3)
Other	18.3	(10.6-29.7)
Education		
Less than high school	43.6	(31.7-56.3)
High school graduate	33.0	(27.2-39.4)
Some college	22.3	(18.3-26.9)
College graduate	9.2	(6.9-12.0)
Household Income		
< \$25,000	32.7	(27.3-38.6)
\$25,000 - \$49,999	27.5	(21.8-34.0)
\$50,000+	14.5	(10.9-19.0)
Health Insurance		
Health Insurance	21.9	(19.0-25.1)
No Health Insurance	32.3	(25.8-39.6)
^a Among adult women aged 18-44 years, the proportion who reported that they had ever smoked at least 100 cigarettes (5 packs) in their life and that they smoke cigarettes now, either every day or on some days.		

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Indicator #20:

Domain: Tobacco, Alcohol, and Substance Use		
Sub-domain: Smoking		
2009 Michigan PRAMS		
Demographic Characteristics	Pre-pregnancy smoking^a	
	%	95% Confidence Interval
Total	33.1	(30.3-36.0)
Age		
18 - 24	46.3	(41.1-51.6)
25 - 34	29.6	(26.1-33.4)
35 - 44	18.5	(13.1-25.4)
Race		
White	34.9	(31.5-38.5)
Black	30.5	(26.8-34.5)
Other	---b	---b
Education		
Less than high school	53.3	(43.8-62.5)
High school graduate	44.6	(39.1-50.2)
Some college	33.8	(29.2-38.8)
College graduate	12.4	(9.1-16.6)
Insurance		
Uninsured	48.8	(41.9-55.7)
Medicaid	51.8	(46.1-57.6)
Private	19.9	(16.8-23.3)
Income		
<\$25,000	48.4	(44.0-52.8)
\$25,000-\$49,000	32.5	(26.5-39.1)
\$50,000+	13.7	(10.5-17.7)
^a Among women aged 18-44 years, who had a live birth in 2009, the proportion who reported smoking more than zero cigarettes per day during the 3 months before conception. [‡] Data not shown due to small sample size.		

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Indicator #21:

Domain: Tobacco, Alcohol and Substance Abuse		
Sub-domain: Alcohol Consumption		
2011 Michigan BRFSS		
Demographic Characteristics	Heavy Drinking^a	
	%	95% Confidence Interval
Total	6.2	(4.9-8.0)
Age		
18 – 24	9.4	(6.1-14.3)
25 – 34	6.0	(3.9-9.1)
35 – 44	4.2	(2.7-6.3)
Race		
White	6.7	(5.1-8.8)
Black	4.4	(2.0-9.1)
Other	6.0	(2.2-15.3)
Education		
Less than high school	2.1	(0.4-11.2)
High school graduate	6.5	(3.9-10.7)
Some college	7.6	(5.2-11.0)
College graduate	5.7	(3.8-8.5)
Household Income		
< \$25,000	6.1	(3.8-9.7)
\$25,000 - \$49,999	5.0	(3.1-7.9)
\$50,000+	7.6	(5.1-11.1)
Health Insurance		
Health Insurance	6.2	(4.7-8.2)
No Health Insurance	6.5	(4.0-10.5)
^a Among adult women aged 18-44 years, the proportion who reported consuming an average of more than two alcoholic drinks per day for men or more than one per day for women in the previous month.		

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Indicator #22:

Domain: Tobacco, Alcohol and Substance Abuse		
Sub-domain: Alcohol Consumption		
2011 Michigan BRFSS		
Demographic Characteristics	Binge Drinking^a	
	%	95% Confidence Interval
Total	18.8	(16.4-21.5)
Age		
18 – 24	23.7	(18.3-30.0)
25 – 34	19.4	(15.5-24.1)
35 – 44	14.8	(11.8-18.5)
Race		
White	20.5	(17.7-23.6)
Black	14.0	(9.2-20.8)
Other	11.9	(6.2-21.6)
Education		
Less than high school	11.5	(5.3-23.2)
High school graduate	16.9	(12.6-22.2)
Some college	21.3	(17.1-26.2)
College graduate	20.1	(16.5-24.3)
Household Income		
< \$25,000	18.8	(14.5-24.0)
\$25,000 - \$49,999	18.4	(13.8-24.1)
\$50,000+	21.3	(17.3-26.1)
Health Insurance		
Health Insurance	19.4	(16.6-22.4)
No Health Insurance	17.2	(12.7-23.0)
^a Among adult women aged 18-44 years, the proportion who reported consuming four or more drinks per occasion at least once in the previous month.		

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Indicator #23:

Domain: Tobacco, Alcohol, and Substance Use		
Sub-domain: Alcohol Consumption		
2009 Michigan PRAMS		
Demographic Characteristics	Pre-pregnancy alcohol consumption (any)^a	
	%	95% Confidence Interval
Total	66.2	63.4-68.9
Age		
18 - 24	61.8	(51.5-61.5)
25 - 34	69.4	(62.3-69.9)
35 - 44	63.4	(57.5-71.6)
Race		
White	71.6	(65.3-71.9)
Black	51.7	(40.8-49.8)
Other	35.4	(6.2-32.2)
Education		
Less than high school	58.0	(38.3-55.1)
High school graduate	58.8	(54.5-65.5)
Some college	68.7	(60.0-69.5)
College graduate	75.0	(65.8-75.7)
Insurance		
Uninsured	66.4	(49.7-58.8)
Medicaid	55.1	(58.7-71.1)
Private	70.7	(68.1-76.8)
Income		
<\$25,000	61.1	(66.5-73.4)
\$25,000-\$49,000	70.1	(38.5-51.5)
\$50,000+	73.3	(51.5-64.4)
^a Among women aged 18-44 years, who had a live birth in 2009, the proportion who reported drinking any drinks per week during the 3 months before conception.		

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Indicator #24:

Domain: Tobacco, Alcohol, and Substance Use		
Sub-domain: Alcohol Consumption		
2009 Michigan PRAMS		
Demographic Characteristics	Pre-pregnancy binge drinking^a	
	%	95% Confidence Interval
Total	48.4	(44.7-52.1)
Age		
18 - 24	53.9	(47.0-60.6)
25 - 34	49.0	(44.1-53.9)
35 - 44	34.7	(26.0-44.5)
Race		
White	48.4	(44.1-52.7)
Black	44.9	(39.3-50.7)
Other	--b	--b
Education		
Less than high school	63.0	(50.0-74.3)
High school graduate	51.0	(43.6-58.4)
Some college	50.8	(44.7-56.9)
College graduate	38.5	(32.3-45.1)
Insurance		
Uninsured	56.4	(47.9-64.6)
Medicaid	58.0	(49.8-65.7)
Private	42.4	(37.8-47.2)
Income		
<\$25,000	58.0	(52.2-63.5)
\$25,000-\$49,000	48.9	(40.9-57.0)
\$50,000+	37.8	(32.1-43.9)
^a Among women aged 18-44 years, who had a live birth in 2009, the proportion who reported drinking 5 or more drinks in one sitting on at least one occasion during the 3 months before conception. ^b Data not shown due to small sample size.		

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Indicator #25:

Domain: Tobacco, Alcohol, and Substance Use		
Sub-domain: Secondhand Smoke Exposure		
2009 Michigan PRAMS		
Demographic Characteristics	Household Smoking^a	
	%	95% Confidence Interval
Total	9.9	(8.3-11.8)
Age		
18 - 24	18.9	(15.1-23.3)
25 - 34	6.6	(4.9-8.9)
35 - 44	3.3	(1.7-6.4)
Race		
White	8.7	(6.8-11.1)
Black	18.3	(15.3-21.7)
Other	0.0	
Education		
Less than high school	18.6	(12.7-26.4)
High school graduate	15.7	(12.1-20.2)
Some college	8.6	(6.3-11.7)
College graduate	1.3	(0.5-3.3)
Insurance		
Uninsured	16.0	(11.4-21.8)
Medicaid	18.9	(14.9-23.6)
Private	4.3	(3.0-6.3)
Income		
<\$25,000	17.0	(14.0-20.5)
\$25,000-\$49,000	6.3	(3.8-10.3)
\$50,000+	2.6	(1.3-5.0)
<p>^aAmong women aged 18-44 years, who had a live birth in 2009, the proportion who reported that smoking is currently allowed in their home.</p>		

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Indicator #26:

Domain: Nutrition and Physical Activity		
Sub-domain: Fruit and Vegetable Consumption		
2011 Michigan BRFSS		
Demographic Characteristics	Adequate Fruit & Vegetable Consumption^a	
	%	95% Confidence Interval
Total	22.1	(19.4-25.0)
Age		
18 – 24	21.2	(15.7-27.9)
25 – 34	27.4	(22.9-32.4)
35 – 44	17.9	(14.3-22.2)
Race		
White	20.6	(17.8-23.8)
Black	29.8	(22.1-38.8)
Other	23.8	(14.0-37.4)
Education		
Less than high school	20.9	(11.8-34.4)
High school graduate	16.7	(12.2-22.4)
Some college	23.6	(19.1-28.8)
College graduate	25.4	(21.5-29.8)
Household Income		
< \$25,000	19.3	(15.0-24.5)
\$25,000 - \$49,999	19.6	(14.4-25.9)
\$50,000+	27.7	(23.0-32.9)
Health Insurance		
Health Insurance	22.4	(19.4-25.7)
No Health Insurance	21.4	(15.7-28.5)
^a Among adult women aged 18-44 years, the proportion whose total reported consumption of fruits (including juice) and vegetables was at least five times per day.		

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Indicator #27:

Domain: Nutrition and Physical Activity		
Sub-domain: Overweight and Obesity		
2011 Michigan BRFSS		
Demographic Characteristics	Overweight^a	
	%	95% Confidence Interval
Total	26.8	(23.9-30.0)
Age		
18 – 24	23.3	(17.6-30.3)
25 – 34	27.7	(23.1-33.0)
35 – 44	28.7	(24.3-33.5)
Race		
White	26.3	(23.0-29.8)
Black	29.5	(22.1-38.1)
Other	27.6	(17.0-41.4)
Education		
Less than high school	26.6	(16.7-39.6)
High school graduate	29.3	(23.2-36.2)
Some college	25.3	(20.6-30.6)
College graduate	27.0	(23.0-31.5)
Household Income		
< \$25,000	24.6	(19.7-30.4)
\$25,000 - \$49,999	31.6	(25.2-38.7)
\$50,000+	28.0	(23.4-33.2)
Health Insurance		
Health Insurance	28.1	(24.7-31.6)
No Health Insurance	22.6	(17.0-29.4)

Note: BMI, body mass index, is defined as weight (in kilograms) divided by height (in meters) squared [weight in kg/ (height in meters)²]. Weight and height were self-reported. Pregnant women were excluded.
^a Among adult women aged 18-44 years, the proportion of whose BMI was greater than or equal to 25.0, but less than 30.0.

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Domain: Nutrition and Physical Activity Sub-domain: Overweight and Obesity 2011 Michigan BRFSS		
Demographic Characteristics	Obesity^a	
	%	95% Confidence Interval
Total	28.7	(25.6-31.9)
Age		
18 – 24	19.2	(14.0-25.8)
25 – 34	34.5	(29.3-40.2)
35 – 44	30.6	(26.0-35.6)
Race		
White	25.6	(22.3-29.2)
Black	46.0	(37.4-54.7)
Other	22.2	(12.3-36.7)
Education		
Less than high school	39.7	(27.5-53.3)
High school graduate	29.7	(24.0-36.1)
Some college	30.9	(25.8-36.5)
College graduate	20.1	(16.4-24.4)
Household Income		
< \$25,000	37.2	(31.4-43.5)
\$25,000 - \$49,999	29.2	(23.0-36.2)
\$50,000+	21.1	(16.9-26.0)
Health Insurance		
Health Insurance	25.6	(22.4-29.0)
No Health Insurance	41.1	(33.5-49.1)
<p>Note: BMI, body mass index, is defined as weight (in kilograms) divided by height (in meters) squared [weight in kg/ (height in meters)²]. Weight and height were self-reported. Pregnant women were excluded.</p> <p>^a Among adult women aged 18-44 years, the proportion whose BMI was greater than or equal to 30.0.</p>		

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Indicator #28:

Domain: Nutrition and Physical Activity		
Sub-domain: Obesity and Overweight		
2008 Michigan PRAMS		
Demographic Characteristics	Pre-pregnancy overweight^a	
	%	95% Confidence Interval
Total	24.0	(21.6-26.6)
Age		
18 - 24	20.9	(17.0-25.5)
25 - 34	26.3	(22.9-30.0)
35 - 44	21.9	(16.2-28.8)
Race		
White	25.2	(22.1-28.5)
Black	23.6	(20.3-27.2)
Other	--b	--b
Education		
Less than high school	25.4	(18.1-34.6)
High school graduate	21.3	(17.1-26.1)
Some college	25.2	(21.1-29.8)
College graduate	25.2	(20.6-30.3)
Health Insurance		
Uninsured	25.8	(20.2-32.2)
Medicaid	20.7	(16.5-25.6)
Private	24.6	(21.3-28.2)
Household Income		
< \$25,000	23.5	(20.0-27.4)
\$25,000 - \$49,999	20.3	(15.4-26.4)
\$50,000+	27.6	(23.3-32.5)
^a Among women aged 18-44 years, who had a live birth in 2009; the proportion who had a calculated BMI was ≥ 25 and < 30 , based on self-reported weight at conception and height. ^b Data not shown due to small sample size.		

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Domain: Nutrition and Physical Activity		
Sub-domain: Obesity and Overweight		
2008 Michigan PRAMS		
Demographic Characteristics	Pre-pregnancy obese^a	
	%	95% Confidence Interval
Total	22.1	(19.8-24.6)
Age		
18 - 24	18.2	(14.7-22.4)
25 - 34	22.3	(19.2-25.8)
35 - 44	29.7	(23.3-37.0)
Race		
White	20.1	(17.3-23.2)
Black	32.3	(28.5-36.3)
Other	*	*
Education		
Less than high school	17.7	(11.9-25.5)
High school graduate	28.0	(23.4-33.1)
Some college	25.7	(21.6-30.3)
College graduate	13.5	(10.1-17.7)
Health Insurance		
Uninsured	24.1	(18.7-30.5)
Medicaid	25.9	(21.3-31.1)
Private	20.1	(17.1-23.3)
Household Income		
< \$25,000	25.0	(21.4-29.0)
\$25,000 - \$49,999	28.7	(23.2-34.8)
\$50,000+	15.6	(12.2-19.7)
^a Among women aged 18-44 years, who had a live birth in 2009, the proportion who had a calculated BMI of at least 30, based on self-reported weight at conception and height. ^b Data not shown due to small sample size.		

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Indicator #29:

Domain: Nutrition and Physical Activity		
Sub-domain: Folic Acid Supplementation		
2009 Michigan PRAMS		
Demographic Characteristics	Pre-pregnancy, daily consumption of multivitamin/prenatal vitamin^a	
	%	95% Confidence Interval
Total	27.6	(25.0-30.3)
Age		
18 - 24	14.8	(11.6-18.7)
25 - 34	32.5	(28.9-36.4)
35 - 44	36.1	(29.0-43.9)
Race		
White	30.1	(26.9-33.5)
Black	17.5	(14.6-20.8)
Other	30.3	(16.6-48.6)
Education		
Less than high school	13.8	(8.7-21.2)
High school graduate	17.2	(13.4-21.8)
Some college	26.7	(22.5-31.5)
College graduate	45.3	(39.8-50.9)
Insurance		
Uninsured	11.6	(8.0-16.6)
Medicaid	18.5	(14.4-23.4)
Private	36.8	(33.0-40.6)
Income		
<\$25,000	14.1	(11.3-17.4)
\$25,000-\$49,000	25.2	(19.8-31.5)
\$50,000+	45.4	(40.3-50.5)
^a Among women aged 18-44 years, who had a live birth in 2009, the proportion who reported taking a multivitamin or prenatal vitamin daily during the month before conception. This is measure is a proxy for Pre-pregnancy folic acid consumption.		

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Indicator #30:

Domain: Nutrition and Physical Activity Sub-domain: Exercise and Physical Activity 2011 Michigan BRFSS		
Demographic Characteristics	Adequate Physical Activity^a	
	%	95% Confidence Interval
Total	18.7	(16.3-21.3)
Age		
18 – 24	20.6	(15.4-26.8)
25 – 34	18.3	(14.6-22.8)
35 – 44	17.6	(14.3-21.5)
Race		
White	20.7	(17.8-23.9)
Black	11.6	(7.6-17.3)
Other	12.1	(7.0-20.2)
Education		
Less than high school	8.8	(3.8-19.1)
High school graduate	13.0	(8.9-18.6)
Some college	19.6	(15.6-24.3)
College graduate	26.3	(22.2-30.9)
Household Income		
< \$25,000	11.5	(8.4-15.7)
\$25,000 - \$49,999	17.0	(12.6-22.7)
\$50,000+	22.4	(18.3-27.1)
Health Insurance		
Health Insurance	19.5	(16.8-22.5)
No Health Insurance	13.9	(9.5-19.8)
^a Among adults who participate in some form of leisure-time physical activity, the proportion who reported that they do either moderate physical activities for at least 150 minutes per week, vigorous physical activities for at least 75 minutes per week, or an equivalent combination of moderate and vigorous physical activities and also participate in muscle strengthening activities on two or more days per week.		

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Domain: Nutrition and Physical Activity		
Sub-domain: Exercise and Physical Activity		
2011 Michigan BRFSS		
Demographic Characteristics	Adequate Aerobic Physical Activity (≥ 150 minutes / week)^a	
	%	95% Confidence Interval
Total	53.1	(49.7-56.4)
Age		
18 – 24	54.7	(47.3-62.0)
25 – 34	55.1	(49.6-60.4)
35 – 44	50.0	(45.0-55.0)
Race		
White	55.6	(51.8-59.4)
Black	44.3	(35.7-53.3)
Other	45.0	(32.5-58.2)
Education		
Less than high school	43.7	(31.0-57.2)
High school graduate	51.9	(45.0-58.6)
Some college	52.9	(47.2-58.5)
College graduate	58.2	(53.4-62.9)
Household Income		
< \$25,000	44.1	(38.1-50.3)
\$25,000 - \$49,999	51.5	(44.4-58.5)
\$50,000+	61.9	(56.5-67.0)
Health Insurance		
Health Insurance	54.4	(50.6-58.1)
No Health Insurance	47.0	(39.5-54.7)
^a Among adults who participate in some form of leisure-time physical activity, the proportion who reported that they do either moderate physical activities for at least 150 minutes per week, vigorous physical activities for at least 75 minutes per week, or an equivalent combination of moderate and vigorous physical activities.		

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Domain: Nutrition and Physical Activity		
Sub-domain: Exercise and Physical Activity		
2011 Michigan BRFSS		
Demographic Characteristics	Adequate Muscle Strengthening (≥ 2 days / week)^a	
	%	95% Confidence Interval
Total	26.2	(23.5-29.2)
Age		
18 – 24	28.1	(22.1-34.9)
25 – 34	24.0	(19.8-28.7)
35 – 44	26.9	(22.8-31.5)
Race		
White	27.3	(24.1-30.8)
Black	21.0	(15.0-28.5)
Other	23.4	(14.6-35.4)
Education		
Less than high school	14.9	(8.1-25.6)
High school graduate	18.4	(13.7-24.3)
Some college	27.8	(23.0-33.2)
College graduate	35.3	(30.8-40.1)
Household Income		
< \$25,000	20.4	(15.9-25.6)
\$25,000 - \$49,999	25.7	(20.0-32.3)
\$50,000+	29.1	(24.6-34.0)
Health Insurance		
Health Insurance	27.3	(24.1-30.6)
No Health Insurance	20.9	(15.7-27.3)
^a Among adults who participate in some form of leisure-time physical activity, the proportion who reported that they do muscle strengthening activities on two or more days per week.		

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Indicator #31:

Domain: Mental Health		
Sub-domain: General Mental Distress		
2011 Michigan BRFSS		
Demographic Characteristics	Poor Mental Health^a	
	%	95% Confidence Interval
Total	18.1	(15.6-20.9)
Age		
18 – 24	20.3	(15.2-26.4)
25 – 34	13.3	(9.9-17.6)
35 – 44	20.9	(16.9-25.5)
Race		
White	19.3	(16.4-22.6)
Black	15.6	(10.5-22.6)
Other	11.4	(6.3-19.7)
Education		
Less than high school	30.8	(20.4-43.5)
High school graduate	19.6	(14.9-25.4)
Some college	20.3	(16.1-25.1)
College graduate	8.3	(6.1-11.2)
Household Income		
< \$25,000	28.5	(23.3-34.4)
\$25,000 - \$49,999	11.1	(7.8-15.6)
\$50,000+	12.5	(9.0-17.0)
Health Insurance		
Health Insurance	16.8	(14.1-19.9)
No Health Insurance	23.8	(18.0-30.7)

^a Among adult women aged 18-44 years, the proportion who reported 14 or more days of poor mental health, which includes stress, depression, and problems with emotions, during the past 30 days.

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Indicator #32:

Domain: Mental Health		
Sub-domain: Anxiety and Depression		
2009 Michigan PRAMS		
Demographic Characteristics	Checked or treated for anxiety or depression ^a	
	%	95% Confidence Interval
Total	15.1	(13.0-17.4)
Age		
18 - 24	19.3	(15.3-24.0)
25 - 34	12.6	(10.2-15.5)
35 - 44	15.2	(10.1-22.2)
Race		
White	15.6	(13.1-18.5)
Black	11.5	(9.1-14.4)
Other	--b	
Education		
Less than high school	24.1	(16.8-33.2)
High school graduate	15.6	(11.9-20.2)
Some college	16.4	(12.9-20.6)
College graduate	9.2	(6.4-13.1)
Health Insurance		
Uninsured	14.3	(10.1-20.0)
Medicaid	26.2	(21.2-31.9)
Private	10.9	(8.6-13.7)
Household Income		
< \$25,000	19.5	(16.1-23.4)
\$25,000 - \$49,999	15.8	(11.5-21.4)
\$50,000+	8.6	(6.1-12.1)
^a Among women aged 18-44 years, who had a live birth in 2009, the proportion who reported being checked or treated for anxiety or depression during the 12 months prior to pregnancy. ^b Data not shown due to small sample size.		

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Indicator #33:

Domain: Mental Health		
Sub-domain: Postpartum Depression		
2009 Michigan PRAMS		
Demographic Characteristics	Postpartum Depression ^a	
	%	95% Confidence Interval
Total	12.0	(10.2-14.0)
Age		
18 - 24	15.4	(12.0-19.6)
25 - 34	10.5	(8.3-13.2)
35 - 44	10.2	(6.4-16.0)
Race		
White	11.8	(9.6-14.3)
Black	12.6	(10.1-15.6)
Other	--b	--b
Education		
Less than high school	16.4	(10.7-24.5)
High school graduate	12.8	(9.5-17.0)
Some college	14.8	(11.6-18.8)
College graduate	6.1	(3.9-9.4)
Health Insurance		
Uninsured	16.7	(12.0-22.7)
Medicaid	16.4	(12.5-21.1)
Private	8.6	(6.6-11.1)
Household Income		
< \$25,000	16.6	(13.6-20.2)
\$25,000 - \$49,999	11.8	(8.1-16.9)
\$50,000+	6.8	(4.5-9.9)
^a Among women aged 18-44 years, who had a live birth in 2009, the proportion who experienced depressive symptoms after pregnancy. ^b Data not shown due to small sample size.		

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Indicator #34:

Domain: Emotional and Social Support		
Sub-domain: Domestic Abuse (Physical and Mental)		
2009 Michigan PRAMS		
Demographic Characteristics	Pre-pregnancy physical abuse^a	
	%	95% Confidence Interval
Total	2.9	(2.1-4.0)
Age		
18 - 24	6.0	(3.9-9.0)
25 - 34	1.7	(1.0-2.9)
35 - 44	--b	--b
Race		
White	2.4	(1.5-3.8)
Black	5.6	(4.0-7.8)
Other	--b	--b
Education		
Less than high school	6.2	(3.1-12.1)
High school graduate	4.5	(2.7-7.4)
Some college	2.3	(1.3-3.9)
College graduate	--b	--b
Insurance		
Uninsured	4.1	(2.1-7.8)
Medicaid	6.5	(4.3-9.8)
Private	1.1	(0.5-2.3)
Household Income		
< \$25,000	5.0	(3.5-7.2)
\$25,000 - \$49,999		
\$50,000+		
^a Among women aged 18-44 years, who had a live birth in 2009, the proportion who reported being pushed, hit, slapped, kicked, choked, or physically hurt in any other way by a partner or ex-partner during the 12 months before pregnancy. ^b Data not shown due to small sample size.		

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Indicator #35: Pre-pregnancy mental abuse. Indicator dropped from the PRAMS Phase 6 survey (2009-2011)

Indicator #36:

Domain: Emotional and Social Support		
Sub-domain: Adequacy of Support		
2010 Michigan BRFSS*		
Demographic Characteristics	Always, Usually or Sometimes Receive the Social and Emotional Support that is Needed^a	
	%	95% Confidence Interval
Total	94.1	(91.8-95.8)
Age		
18 – 24	91.8	(83.7-96.1)
25 – 34	95.1	(91.7-97.1)
35 – 44	95.0	(92.7-96.5)
Race		
White	95.1	(92.3-96.9)
Black	94.8	(91.3-97.0)
Other	85.2	(71.4-93.0)
Education		
Less than high school	81.2	(62.4-91.9)
High school graduate	93.0	(87.9-96.1)
Some college	93.2	(88.2-96.2)
College graduate	97.9	(95.7-99.0)
Household Income		
< \$25,000	84.0	(75.8-89.8)
\$25,000 - \$49,999	96.9	(93.4-98.6)
\$50,000+	98.4	(96.7-99.3)
Health Insurance		
Health Insurance	96.1	(94.6-97.3)
No Health Insurance	83.0	(71.1-90.6)
^a Among adult women aged 18-44 years, the proportion who reported either "Always," "Usually" or "Sometimes" to the following question: "How often do you get the social and emotional support you need?" * Question was eliminated from the 2011 survey		

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Indicator #37: Percentage of women having a live birth who reported that they had adequate social and emotional support available to them after delivering their baby - Data not collected in MI PRAMS survey

Indicator #38:

Domain: Chronic Conditions		
Sub-domain: Diabetes		
2011 Michigan BRFSS		
Demographic Characteristics	Ever Told Diabetes^a	
	%	95% Confidence Interval
Total	3.3	(2.2-4.8)
Age		
18 – 24	0.3	(0.1-1.7)
25 – 34	2.9	(1.5-5.6)
35 – 44	5.8	(3.5-9.3)
Race		
White	2.8	(1.7-4.6)
Black	6.4	(3.3-11.9)
Other	1.8	(0.5-5.7)
Education		
Less than high school	4.0	(1.5-10.6)
High school graduate	3.9	(2.0-7.6)
Some college	3.4	(1.6-6.8)
College graduate	2.1	(1.0-4.3)
Household Income		
< \$25,000	4.5	(2.6-7.8)
\$25,000 - \$49,999	2.9	(1.4-6.2)
\$50,000+	2.7	(1.1-6.4)
Health Insurance		
Health Insurance	3.1	(1.9-4.9)
No Health Insurance	3.9	(1.8-8.0)
^a Among adult women aged 18-44 years, the proportion who reported that they were ever told by a doctor that they have diabetes. Women who had been told they have prediabetes or who had diabetes only during pregnancy were classified as not having been diagnosed.		

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Indicator #39:

Domain: Chronic Conditions		
Sub-domain: Diabetes		
2009 Michigan PRAMS		
Demographic Characteristics	Pre-pregnancy Diabetes^a	
	%	95% Confidence Interval
Total	2.7	(1.9-3.8)
Age		
18 - 24	2.5	(1.2-4.8)
25 - 34	2.6	(1.6-4.2)
35 - 44	3.3	(1.3-8.1)
Race		
White	2.3	(1.4-3.7)
Black	3.9	(2.5-5.9)
Other	--b	--b
Education		
Less than high school	4.4	(1.7-10.9)
High school graduate	4.1	(2.5-6.8)
Some college	1.5	(0.6-3.4)
College graduate	1.6	(0.7-3.9)
Insurance		
Uninsured	--b	--b
Medicaid	6.9	(4.4-10.8)
Private	1.4	(0.7-2.6)
Household Income		
< \$25,000	3.6	(2.3-5.7)
\$25,000 - \$49,999	2.4	(1.0-5.8)
\$50,000+	1.7	(0.7-3.8)
<p>^aAmong women aged 18-44 years, who had a live birth in 2009, the proportion who reported that before their most recent pregnancy that they had been told by a health care provider that they had Type I or Type II diabetes.</p> <p>^bData not shown due to small sample size.</p>		

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Indicator #40:

Domain: Chronic Conditions		
Sub-domain: Hypertension		
2011 Michigan BRFSS		
Demographic Characteristics	Ever Told High Blood Pressure^a	
	%	95% Confidence Interval
Total	11.8	(9.9-14.1)
Age		
18 – 24	5.5	(3.2-9.6)
25 – 34	11.1	(8.1-15.1)
35 – 44	17.2	(13.6-21.6)
Race		
White	11.5	(9.3-14.3)
Black	16.1	(11.2-22.6)
Other	6.2	(2.9-12.9)
Education		
Less than high school	15.0	(8.3-25.6)
High school graduate	15.2	(11.0-20.6)
Some college	10.9	(7.9-14.9)
College graduate	8.6	(6.3-11.7)
Household Income		
< \$25,000	15.5	(11.7-20.4)
\$25,000 - \$49,999	8.9	(5.7-13.7)
\$50,000+	11.2	(8.0-15.4)
Health Insurance		
Health Insurance	10.8	(8.7-13.2)
No Health Insurance	16.0	(11.1-22.5)
^a Among adult women aged 18-44 years, the proportion who reported that they were ever told by a doctor that they have high blood pressure (HBP). Women who had HBP only during pregnancy or who were borderline hypertensive were considered to not have been diagnosed.		

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Indicator #41:

Domain: Chronic Conditions		
Sub-domain: Hypertension		
2009 Michigan PRAMS		
Demographic Characteristics	Pre-pregnancy Hypertension^a	
	%	95% Confidence Interval
Total	4.3	(3.3-5.5)
Age		
18 - 24	3.4	(2.0-5.5)
25 - 34	3.6	(2.5-5.2)
35 - 44	8.7	(5.4-13.8)
Race		
White	3.3	(2.3-4.9)
Black	9.1	(7.0-11.8)
Other	--b	
Education		
Less than high school	4.5	(2.2-9.2)
High school graduate	5.6	(3.8-8.3)
Some college	5.5	(3.7-8.2)
College graduate	1.5	(0.6-3.5)
Insurance		
Uninsured	3.1	(1.5-6.3)
Medicaid	6.3	(4.4-9.1)
Private	3.8	(2.6-5.6)
Household Income		
< \$25,000	5.5	(3.9-7.7)
\$25,000 - \$49,999	4.8	(2.8-8.1)
\$50,000+	2.6	(1.4-4.8)
<p>^aAmong women aged 18-44 years, who had a live birth in 2009, the proportion who reported that they had hypertension 3 months before their most recent pregnancy.</p> <p>^bData not shown due to small sample size.</p>		

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Indicator #42:

Domain: Chronic Conditions		
Sub-domain: Asthma		
2011 Michigan BRFSS		
Demographic Characteristics	Current Asthma^a	
	%	95% Confidence Interval
Total	12.3	(10.3-14.8)
Age		
18 – 24	13.2	(9.0-19.0)
25 – 34	13.5	(10.1-18.0)
35 – 44	10.6	(7.9-14.0)
Race		
White	12.3	(9.9-15.1)
Black	13.3	(8.6-20.0)
Other	10.2	(3.8-24.7)
Education		
Less than high school	22.1	(13.0-35.0)
High school graduate	13.1	(9.1-18.3)
Some college	10.4	(7.6-14.1)
College graduate	9.9	(7.5-12.9)
Household Income		
< \$25,000	15.8	(11.9-20.6)
\$25,000 - \$49,999	9.5	(6.0-14.8)
\$50,000+	9.1	(6.3-12.9)
Health Insurance		
Health Insurance	11.9	(9.6-14.6)
No Health Insurance	13.3	(9.0-19.4)
^a Among adult women aged 18-44 years, the proportion who reported that they were ever told by a doctor, nurse, or other health care professional that they had asthma and they still have asthma.		

Indicator #43: Percentage of women having a live birth who were tested for HIV within a year prior to their most recent pregnancy - Data not collected in MI PRAMS survey

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Indicator #44:

Domain: Infections		
Sub-domain: Sexually Transmitted Infections		
2011 MDSS		
Demographic Characteristics	Rate of chlamydia women aged 18-44	
	Rate per 100,000^a	95% Confidence Interval
Total	1705	(1686-1725)
Age		
18 - 24	4701	(4641-4761)
25 - 34	955	(930-980)
35 - 44	155	(145-164)
Race		
White	546	(534-559)
Black	3447	(3379-3515)
Hispanic	741	(684-798)
^a Based on United States Census, 2010		

Domain: Infections		
Sub-domain: Sexually Transmitted Infections		
2011 MDSS		
Demographic Characteristics	Rate of gonorrhea women aged 18-44	
	Rate per 100,000^a	95% Confidence Interval
Total	361	(352-370)
Age		
18 - 24	914	(887-947)
25 - 34	243	(231-256)
35 - 44	55	(49-61)
Race		
White	65	(61-70)
Black	967	(930-1003)
Hispanic	106	(85-128)
^a Based on United States Census, 2010		

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Domain: Infections		
Sub-domain: Sexually Transmitted Infections		
2011 MDSS		
Demographic Characteristics	Rate of syphilis women aged 18-44	
	Rate per 100,000^a	95% Confidence Interval
Total	6.6	(5.3-7.8)
Age		
18 - 24	7.1	(4.7-9.5)
25 - 34	6.7	(4.6-8.8)
35 - 44	6.1	(4.2-7.9)
Race		
White	1.2	(0.6-1.8)
Black	32.5	(25.8-39.2)
Hispanic	6.9	(1.4-12.5)
^a Based on United States Census, 2010		

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Indicator #45:

Domain: Infections		
Sub-domain: Immunizations		
2011 Michigan BRFSS		
Demographic Characteristics	Had Flu Vaccine Within the Past Year^a	
	%	95% Confidence Interval
Total	30.0	(27.0-33.2)
Age		
18 – 24	26.2	(20.1-33.4)
25 – 34	30.3	(25.7-35.4)
35 – 44	32.4	(27.8-37.4)
Race		
White	30.8	(27.4-34.4)
Black	20.3	(14.3-28.0)
Other	44.8	(31.8-58.6)
Education		
Less than high school	28.0	(17.7-41.4)
High school graduate	25.3	(19.5-32.0)
Some college	32.3	(27.2-37.8)
College graduate	31.9	(27.7-36.4)
Household Income		
< \$25,000	25.6	(20.4-31.5)
\$25,000 - \$49,999	27.8	(22.1-34.4)
\$50,000+	39.1	(33.9-44.6)
Health Insurance		
Health Insurance	33.5	(30.0-37.1)
No Health Insurance	16.7	(11.6-23.5)

^a Among adult women aged 18-44 years, the proportion who reported that they had a flu vaccine, either by an injection in the arm or sprayed in the nose during the past 12 months.

REFERENCES

1. CDC/ASTR preconception care work group. Johnson K., Posner S., et al. Recommendations to improve preconception health and health care—United States. *MMWR* 2006 55:1-23
2. Michigan Department of Community Health (MDCH) Division for Vital Records & Health Statistics (2012) State Natality Tables: Characteristics of the mother and the infant, as a percentage of live births, Michigan Residents, 2010. Infant Characteristics. Accessed on August 19, 2012 at <http://www.mdch.state.mi.us/pha/osr/CHI/Births/frame.html>
3. MDCH Division for Vital Records & Health Statistics (2012) Percent of singleton births by mother's BMI at start of pregnancy, and maternal weight gain by percent of Mother's BMI Classification by Race and Hispanic or Arabic Ancestry, Michigan Residents, 2010 accessed on August 19, 2012 at <http://www.mdch.state.mi.us/pha/osr/Natality/WeightGainPer.asp>
4. MDCH Division for Vital Records & Health Statistics (2012) Table 2: Number of infant deaths, live births and infant death rates by race, Michigan Residents, 1970-2010. Accessed at <http://www.mdch.state.mi.us/pha/osr/InDxMain/Tab2.asp> on August 19, 2012
5. Broussard, D, Sappenfield WB., Fussman, C, Kroelinger, DG, Grigorescu, V (2020) Core state preconception health indicators: a voluntary, multi-state selection process. *Maternal Child Health J.* published online March 12, 2010