



preconception  
health domains



## General Health Status and Life Satisfaction

A1: Women who report good, very good or excellent health, 2004-2008.

### Public Health Importance:

Self-rated health, while subjective, has been found to be a reliable indicator of overall happiness and well-being<sup>3</sup>. There is a known correlation between self-reported poor health and risk for morbidity and mortality. People who report being in good or excellent health are more likely to be educated, have health insurance, be physically active and have a more positive outlook<sup>4</sup>.

### Ohio:

- Overall, 90 percent of women of reproductive age in Ohio reported being in good or excellent health.
- As education increased, so too did the percentage of women with high self-rated health.
- Good or excellent health was reported more often from married women, women with health coverage and white women.

### Related Healthy People 2010 Objective(s):

*Overarching goal:* 1. To increase quality and years of healthy life.



<sup>3</sup> Hennessy CH, Moriarty DG, Zack MM, et al. Measuring Health-Related Quality of Life for Public Health Surveillance. *Pub Health Rep* 1994; 109:665-72.

<sup>4</sup> Phillips LJ, Hammock RL, Blanton JM. Predictors of Self-Rated Health Status among Texas Residents. *Prev Chronic Dis* October 2005; Vol. 2, No. 4. Available from: [http://www.cdc.gov/pccd/issues/2005/oct/04\\_0147.htm](http://www.cdc.gov/pccd/issues/2005/oct/04_0147.htm).

Percentage of Women Ages 18 to 44 Who Reported Being in Good, Very Good, or Excellent Health, 2004–2008.

n = 8,515

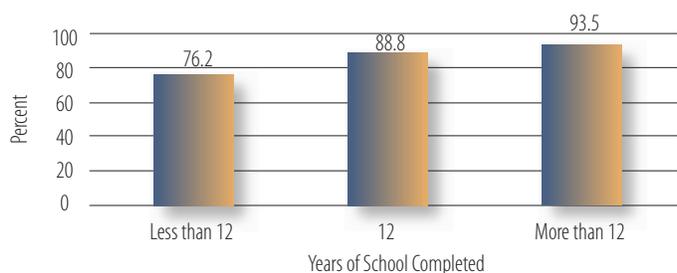
Characteristics	%	95% CI*
<b>Women 18 - 44</b>	<b>90.8</b>	<b>89.7-91.9</b>
<b>Age</b>		
18-24	93.3	91.1-95.5
25-34	91.6	89.9-93.2
35-44	88.5	86.7-90.3
<b>Race/Ethnicity</b>		
Non-Hispanic White	92.4	91.3-93.5
Non-Hispanic Black	81.2	77.1-85.3
Hispanic	83.6	73.7-93.6
Non-Hispanic Other	88.7	83.4-94.0
<b>Marital Status</b>		
Married	93.6	92.4-94.7
Unmarried	87.3	85.3-89.3
<b>Education</b>		
Less than 12 years	76.2	70.0-82.4
12 years	88.8	86.9-90.7
More than 12 years	93.5	92.2-94.8
<b>County Type</b>		
Appalachian	89.2	86.5-92.0
Metropolitan	90.9	89.5-92.3
Rural, non-Appalachian	88.9	84.9-92.8
Suburban	93.5	91.4-95.7
<b>Health Plan Status</b>		
Have a health plan	92.5	91.5-93.4
No health plan	80.6	75.9-85.3

\*CI stands for Confidence Interval. See Technical Notes for detailed definition.

Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



Women Ages 18 to 44 Who Reported Being in Good, Very Good, or Excellent Health, by Education, Ohio 2004–2008.



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Social Determinants of Health

### B1: Women with a high school education/GED or greater, 2004-2008.

#### Public Health Importance:

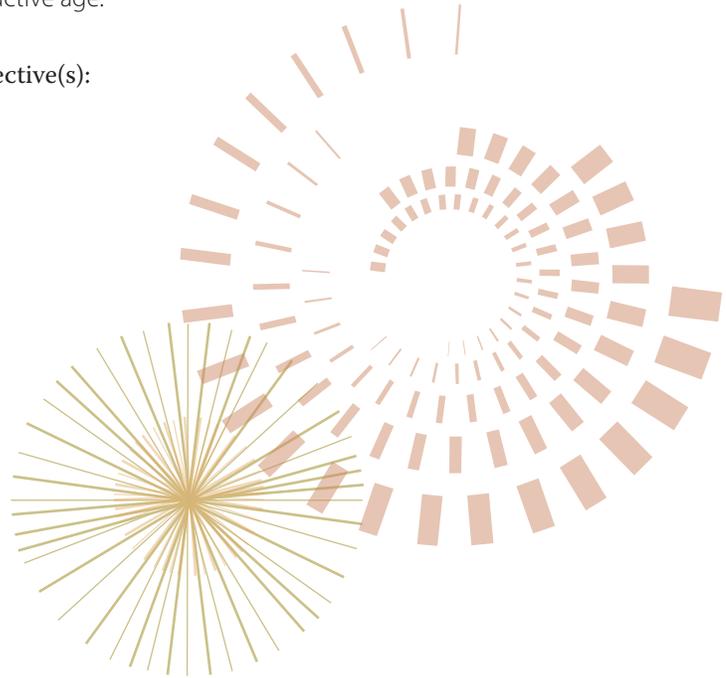
Socioeconomic status (SES) is a strong indicator of health status<sup>5</sup>. Education is frequently used as a measure of SES because it is readily available and has been repeatedly associated with health outcomes<sup>6</sup>. Lower education limits possibilities for employment, which often results in decreased income and therefore a higher risk of poverty<sup>7</sup>. Women with a low income are at greater risk of poor health outcomes such as higher stress, preterm delivery and poor intrauterine growth<sup>7</sup>.

#### Ohio:

- ✿ Twelve or more years of education was reported more frequently among married women and women with health coverage.
- ✿ A higher percentage of white women reported having at least 12 years of education than black or Hispanic women.
- ✿ The percentage of women with a high school education or greater increased with age among women of reproductive age.

#### Related Healthy People 2010 Objective(s):

None.



<sup>5</sup> Bloomberg L, Meyers J, Braverman MT. The Importance of Social Interaction: A New Perspective on Social Epidemiology, Social Risk Factors, and Health. *Health Educ Q* 1994; 21: 447-463.

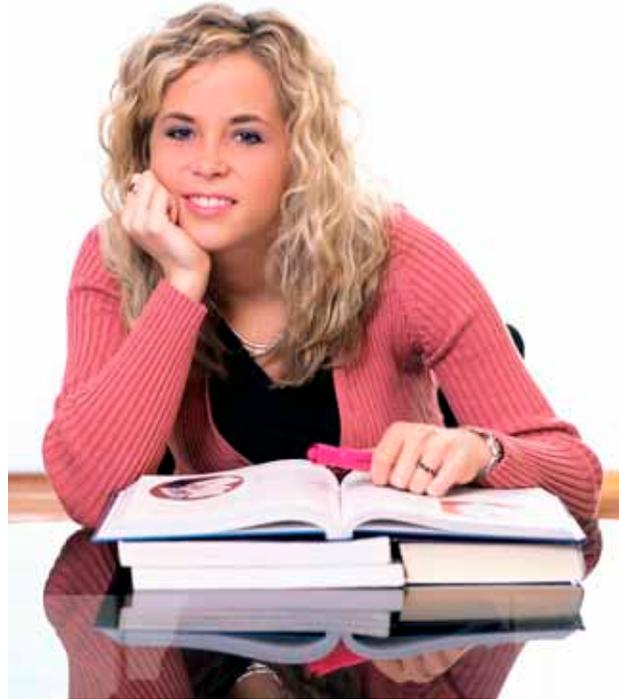
<sup>6</sup> Krieger N, Williams DR, Moss NE. Measuring Social Class in US Public Health Research: Concepts, Methodologies, and Guidelines. *Annu Rev Public Health* 1997; 18: 341-78.

<sup>7</sup> Kramer MS, Seguin L, Lydon J, Goulet L. Socio-economic Disparities in Pregnancy Outcome: Why Do the Poor Fare So Poorly. *Paediatr Perinat Epidemiol* 2000; 14: 194-210.

Percentage of Women Ages 18 to 44  
Who Report Having a High School  
Education/GED or Higher, 2004–2008.

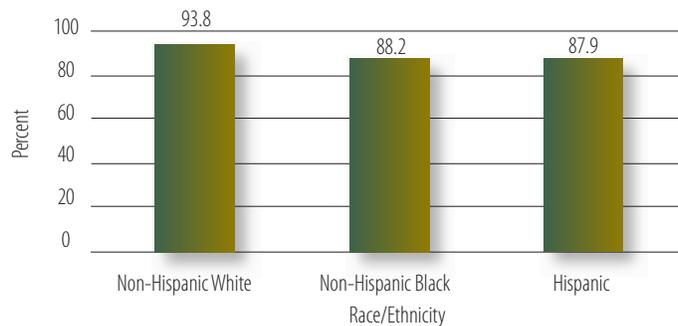
n = 8,544

Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>93.0</b>	<b>92.0-94.1</b>
<b>Age</b>		
18-24	87.8	84.7-90.9
25-34	94.3	92.8-95.7
35-44	95.3	94.2-96.4
<b>Race/Ethnicity</b>		
Non-Hispanic White	93.8	92.7-94.8
Non-Hispanic Black	88.2	84.0-92.4
Hispanic	87.9	80.6-95.3
Non-Hispanic Other	92.5	87.5-97.5
<b>Marital Status</b>		
Married	95.5	94.3-96.7
Unmarried	89.8	87.9-91.6
<b>County Type</b>		
Appalachian	93.9	91.8-95.9
Metropolitan	93.4	92.1-94.8
Rural, non-Appalachian	91.2	87.6-94.8
Suburban	93.1	90.4-95.8
<b>Health Plan Status</b>		
Have a health plan	94.3	93.4-95.3
No health plan	85.8	81.8-89.7



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

Women Ages 18 to 44 Who Reported Having a High School  
Education/GED or Higher, by Race, Ohio 2004–2008.



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Health Care

### C1: Women who currently have some type of health care coverage,\* 2004-2008.

#### Public Health Importance:

Women without health care coverage are less likely to seek preventive care. Routine visits with a health care provider are an important part of preconception care. Primary care visits provide the opportunity to counsel women about risk reduction, and allow proper diagnosis and management of chronic diseases<sup>8</sup>. Identifying low income women without adequate health insurance and referring them for financial assistance will increase preventive and preconception care and improve health outcomes<sup>8</sup>.

#### Ohio:

-  Overall, 86 percent of women of reproductive age in Ohio reported having health coverage. This falls short of the Healthy People 2010 objective of 100 percent.
-  Young women between the ages of 18 and 24 were less likely to have health coverage than women who were 25 years of age and older.
-  Women with 12 or more years of education reported a higher percentage of health care coverage than women with less than 12 years of school.
-  Married women were more likely than unmarried women to report having current health coverage.
-  Women living in Appalachian counties were less likely to report having health care coverage than women residing in metropolitan, rural, or suburban counties.

#### Related Healthy People 2010 Objective(s):

- 1-1. Increase the proportion of persons with health insurance. Target: 100%.

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\*Having health care coverage is defined by respondents answering “yes” to the following question: “Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?”

<sup>8</sup> Centers for Disease Control and Prevention. Preconception and Interconception Health Status of Women Who Recently Gave Birth to a Live-Born Infant – Pregnancy Risk Assessment Monitoring System (PRAMS), United States, 26 Reporting Areas, 2004. MMWR. December 14, 2007. 56(SS10): 1-35.  
<http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5610a1.htm>.

Percentage of Women Ages 18 to 44 Who Report Having Some Type of Health Care Coverage, 2004–2008.

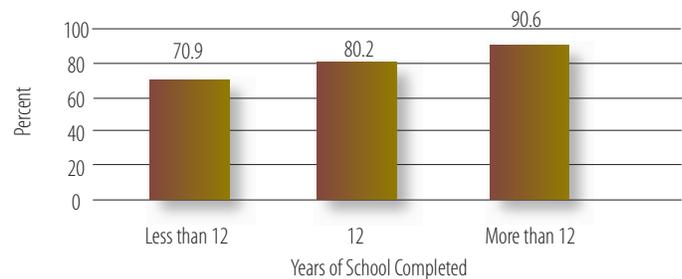
n = 8,523

Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>86.0</b>	<b>84.5-87.4</b>
<b>Age</b>		
18-24	78.1	74.0-82.2
25-34	87.8	85.8-89.9
35-44	89.2	87.6-90.9
<b>Race/Ethnicity</b>		
Non-Hispanic White	86.5	85.0-88.1
Non-Hispanic Black	87.0	83.4-90.5
Hispanic	77.3	67.7-86.8
Non-Hispanic Other	77.7	69.4-86.0
<b>Marital Status</b>		
Married	90.8	89.3-92.3
Unmarried	79.8	77.1-82.4
<b>Education</b>		
Less than 12 years	70.9	63.7-78.1
12 years	80.2	77.4-83.0
More than 12 years	90.6	89.0-92.2
<b>County Type</b>		
Appalachian	82.4	78.6-86.1
Metropolitan	87.6	85.9-89.3
Rural, non-Appalachian	85.0	80.5-89.5
Suburban	87.4	83.6-91.3

Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



Women Ages 18 to 44 Who Reported Having Health Care Coverage, by Education, Ohio 2004–2008.



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Health Care

### C2: Women having a live birth who had health care coverage during the month prior to pregnancy, 2006-2008.

#### Public Health Importance:

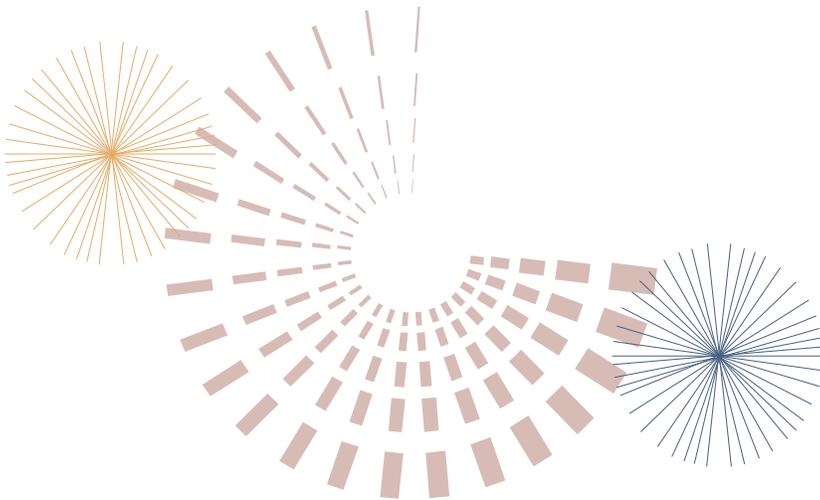
Access to preventive care is vital to improving the health of women before conception. Women without health coverage have greater difficulty obtaining care before they become pregnant, increasing the risk of poor outcomes for both the mother and the infant. In order for preconception interventions to be successful, women must have adequate health coverage to access medical services<sup>9</sup>.

#### Ohio:

- ✿ Roughly three-quarters of mothers in Ohio reported having some type of health insurance before pregnancy, which does not meet the Healthy People 2010 objective of 100 percent.
- ✿ Married women and women with 12 or more years of education were more likely to be insured than unmarried women or women with less than 12 years of education.
- ✿ The percentage of women with health coverage in the month before pregnancy improved as age increased.
- ✿ Women living in Appalachian counties had a lower percentage of health care coverage in the month before pregnancy than women living in other county types.

#### Related Healthy People 2010 Objective(s):

1-1. Increase the proportion of persons with health insurance. Target: 100%.



<sup>9</sup> Centers for Disease Control and Prevention. Preconception and Interconception Health Status of Women Who Recently Gave Birth to a Live-Born Infant – Pregnancy Risk Assessment Monitoring System (PRAMS), United States, 26 Reporting Areas, 2004. MMWR, December 14, 2007. 56(SS10): 1-35.  
<http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5610a1.htm>.

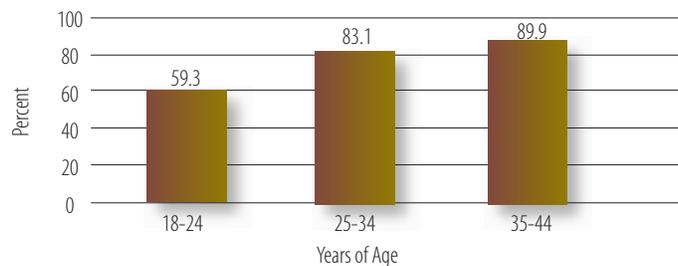
Percentage of Women Ages 18 to 44 Having a Live Birth Who Had Some Type of Health Insurance Before Pregnancy, 2006–2008.

n= 4344

Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>75.8</b>	<b>73.9 – 77.5</b>
<b>Age</b>		
18-24	59.3	55.8 – 62.7
25-34	83.1	80.9 – 85.1
35-44	89.9	85.9 – 92.9
<b>Race/Ethnicity</b>		
Non-Hispanic White	76.8	74.6 – 78.8
Non-Hispanic Black	75.2	72.4 – 77.8
Hispanic	58.8	46.5 – 70.0
Non-Hispanic Other	73.0	63.0 – 81.1
<b>Marital Status</b>		
Married	86.1	84.1 – 87.9
Unmarried	59.4	56.2 – 62.5
<b>Education</b>		
Less than 12 years	52.7	46.8 – 58.6
12 years	63.7	59.8 – 67.3
More than 12 years	87.6	85.9 – 89.2
<b>County Type</b>		
Appalachian	67.2	61.9 – 72.1
Metropolitan	78.3	76.0 – 80.5
Rural, non-Appalachian	73.6	68.2 – 78.4
Suburban	77.8	73.1 – 81.9



Women Who Reported Having Some Type of Health Insurance Before Pregnancy, By Age, Ohio 2006–2008.



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Health Care

### C3: Women who had a routine checkup in the last year, 2004-2008.

#### Public Health Importance:

In 2005, it was estimated that 38.5 million people in the United States did not have a usual source of health care<sup>10</sup>. Studies have shown that people who have a usual source of medical care receive preventive care earlier and more often than those who do not have routine medical care<sup>11</sup>. Annual routine checkups give women the opportunity to be screened for existing medical conditions and have any risky behaviors addressed before they become pregnant. Early diagnosis and treatment of chronic conditions improves overall health and well-being and leads to better pregnancy and birth outcomes.

#### Ohio:

- ✿ Approximately 61 percent of women of reproductive age in Ohio reported having a routine checkup in the last year.
- ✿ Ohio women with health care coverage were more likely to report having a routine checkup than women without a health plan. This is not surprising since women with health care coverage generally have better access to medical providers and preventive care.
- ✿ Black women in Ohio reported receiving a routine checkup more often than women of other races.

#### Related Healthy People 2010 Objective(s):

- 1-2. Increase the proportion of insured persons with coverage for clinical preventive services.
- 1-4. Increase the proportion of persons who have a specific source of ongoing care.
- 1-5. Increase the proportion of persons with a usual primary care provider. Target: 85%.

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<sup>10</sup> National Center for Health Statistics. Centers for Disease Control and Prevention. National Health Interview Survey, 2005. Accessed On-line via the Commonwealth Fund's Performance Snapshots: Usual Source of Care and Receipt of Preventive Care. <http://www.cmf.org/snapshots>.

<sup>11</sup> Ettner SL. The Timing of Preventive Services for Women and Children: The Effect of Having a Usual Source of Care. *Am J Public Health* 1996; 86:1748-1754.

### Percentage of Women Ages 18 to 44 Who Reported Having A Routine Checkup Within the Past Year, 2004–2008.

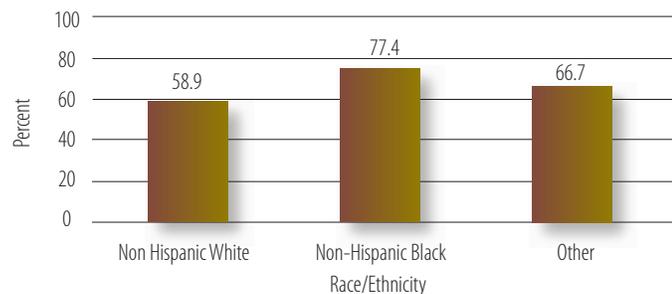
n= 6,651

Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>61.4</b>	<b>59.4-63.4</b>
<b>Age</b>		
18-24	63.1	57.6-68.6
25-34	60.6	57.6-63.6
35-44	61.0	58.6-63.5
<b>Race/Ethnicity</b>		
Non-Hispanic White	58.9	56.7-61.2
Non-Hispanic Black	77.4	71.4-83.3
Hispanic	*	*
Other	66.7	58.6-74.8
<b>Marital Status</b>		
Married	59.4	57.0-61.8
Unmarried	64.3	60.9-67.6
<b>Education</b>		
Less than 12 years	57.7	48.9-66.4
12 years	59.8	56.0-63.7
More than 12 years	62.6	60.2-65.0
<b>County Type</b>		
Appalachian	59.1	54.0-64.1
Metropolitan	63.7	61.1-66.2
Rural, non-Appalachian	58.6	52.5-64.8
Suburban	60.3	55.0-65.6
<b>Health Plan Status</b>		
Have a health plan	64.6	62.5-66.7
No health plan	41.4	35.4-47.3

\* Sample size insufficient for meaningful analysis

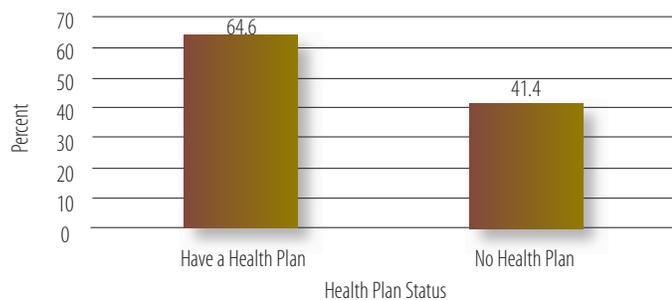
Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

#### Women Ages 18 to 44 Who Reported Having a Routine Checkup in the Past Year, By Race, Ohio, 2004-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

#### Women Ages 18 to 44 Who Reported Having a Routine Checkup in the Past Year, By Health Plan, Ohio, 2004-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Health Care

### C4: Women having a live birth who had a postpartum checkup, 2006-2008.

#### Public Health Importance:

A postpartum visit is an important part of care for maternal and child health. This visit allows the health of the mother as well as the infant's progress to be assessed. Any complications can be addressed and topics such as contraception and the family's well-being can be discussed<sup>12</sup>. Receiving a postpartum checkup indicates adequate access to health care and leads to better health outcomes for mother and infant<sup>13</sup>.

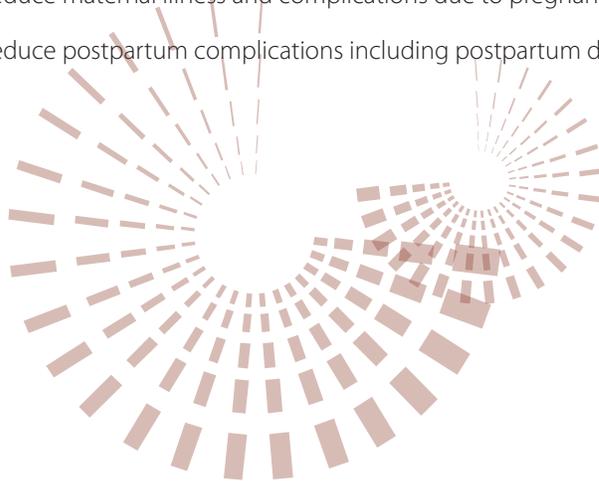
#### Ohio:

- ✿ Approximately 90 percent of mothers between the ages of 18 and 44 in Ohio reported having a postpartum checkup.
- ✿ White women in Ohio were more likely to have a postpartum checkup than black women.
- ✿ Ohio women on Medicaid did not receive a postpartum checkup as often as those not on Medicaid.
- ✿ Married mothers and those with 12 or more years of education were also more likely to have a checkup following childbirth.

#### Related Healthy People 2010 Objective(s):

16-5. Reduce maternal illness and complications due to pregnancy.

16-5c. Reduce postpartum complications including postpartum depression.



<sup>12</sup> Kogan Michael, Leary Mary, Schaetzel Thomas P. Factors Associated with Postpartum Care Among Massachusetts Users of the Maternal and Infant Care Program. *Family Planning Perspectives*. 1990. 128-130.

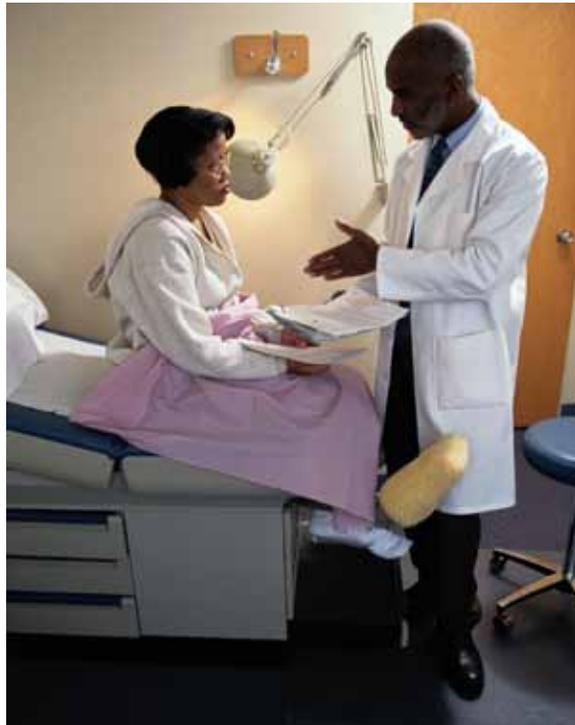
<sup>13</sup> Centers for Disease Control and Prevention. Preconception and Interconception Health Status of Women Who Recently Gave Birth to a Live-Born Infant – Pregnancy Risk Assessment Monitoring System (PRAMS), United States, 26 Reporting Areas, 2004. *MMWR*. December 14, 2007. 56(SS10): 1-35. <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5610a1.htm>.

Percentage of Women Ages 18 to 44 Having a Live Birth Who Received a Postpartum Checkup, 2006–2008.

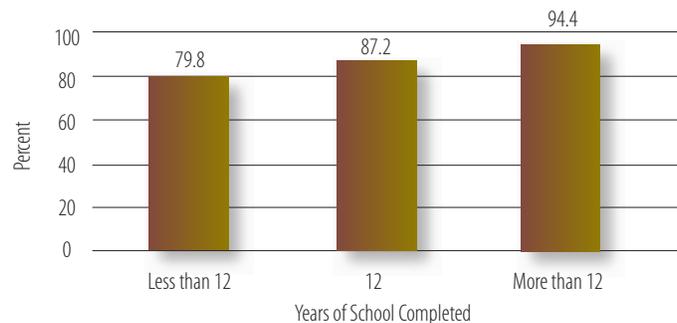
n= 4242

Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>90.2</b>	<b>88.9 - 91.3</b>
<b>Age</b>		
18-24	86.5	83.8 - 88.8
25-34	92.2	90.6 - 93.5
35-44	91.8	88.4 - 94.2
<b>Race/Ethnicity</b>		
Non-Hispanic White	91.1	89.6 - 92.4
Non-Hispanic Black	86.6	84.2 - 88.6
Hispanic	89.5	80.3 - 94.7
Non-Hispanic Other	86.2	77.8 - 91.8
<b>Marital Status</b>		
Married	92.7	91.2 - 94.0
Unmarried	86.0	83.6 - 88.1
<b>Education</b>		
Less than 12 years	79.8	74.6 - 84.1
12 years	87.2	84.4 - 89.5
More than 12 years	94.4	93.1 - 95.4
<b>County Type</b>		
Appalachian	89.1	85.1 - 92.1
Metropolitan	90.0	88.3 - 91.5
Rural, non-Appalachian	92.1	88.7 - 94.6
Suburban	90.2	86.6 - 92.9
<b>Medicaid Status</b>		
Medicaid	85.8	83.4 - 87.8
Non-Medicaid	93.3	91.9 - 94.5

Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



Women Ages 18 to 44 Who Had a Postpartum Checkup, By Education Ohio, 2004-2008



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Health Care

### C5: Women having a live birth who had their teeth cleaned during the 12 months prior to pregnancy, 2006-2008.

#### Public Health Importance:

The hormonal changes women experience during pregnancy are known to have an effect on oral health, making periodontal infections more common<sup>14</sup>. Recent studies have shown that periodontal disease can have an adverse effect on the developing fetus and has been associated with premature birth and/or low birth weight of the infant<sup>15</sup>. Good oral hygiene and regular cleanings by a dentist or dental hygienist during pregnancy are recommended to improve the health of both mother and infant<sup>14</sup>.

#### Ohio:

- ✿ More than 84 percent of Ohio women between the ages of 18 and 44 reported having a professional dental cleaning. This exceeds the Healthy People 2010 objective of 56 percent.
- ✿ Disparities were seen among several groups of women in Ohio. Young women ages 18 to 24 and those with 12 or less years of education were more likely to report that they did not have a dental cleaning before pregnancy.
- ✿ Black and Hispanic women and women who have received Medicaid were also at greater risk for missed dental cleanings.
- ✿ Inadequate medical coverage may be one reason for not having routine dental care.

#### Related Healthy People 2010 Objective(s):

21-10. Increase the proportion of children and adults who use the oral health care system each year. Target: 56%.

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<sup>14</sup> Gaffield ML, Gilbert BJ, Malvitz DM, Romaguera R. Oral Health During Pregnancy: An Analysis of Information Collected by the Pregnancy Risk Assessment Monitoring System. *J Am Dent Assoc* 2001; 132:1009-1016.

<sup>15</sup> New York State Department of Health. Oral Health Care During Pregnancy and Early Childhood Practice Guidelines. August 2006. <http://www.health.state.ny.us/publications/0824.pdf>.

**Percentage of Women Ages 18 to 44  
Having a Live Birth Who Had Their  
Teeth Cleaned Before Pregnancy,  
\* 2006–2008.**

n= 3836

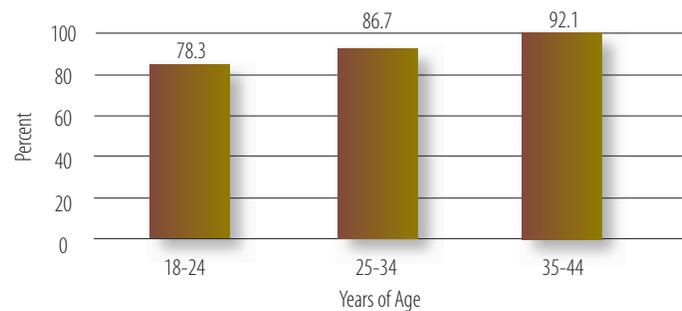
Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>84.5</b>	<b>82.9 - 86.0</b>
<b>Age</b>		
18-24	78.3	75.0 - 81.3
25-34	86.7	84.6 - 88.5
35-44	92.1	88.8 - 94.6
<b>Race/Ethnicity</b>		
Non-Hispanic White	85.9	84.0 - 87.6
Non-Hispanic Black	79.3	76.5 - 81.9
Hispanic	77.5	63.9 - 87.0
Non-Hispanic Other	80.1	68.9 - 88.0
<b>Marital Status</b>		
Married	88.4	86.5 - 90.0
Unmarried	78.1	75.1 - 80.8
<b>Education</b>		
Less than 12 years	72.4	66.1 - 77.9
12 years	80.8	77.3 - 83.8
More than 12 years	89.3	87.6 - 90.8
<b>County Type</b>		
Appalachian	84.1	79.7 - 87.7
Metropolitan	85.5	83.4 - 87.4
Rural, non-Appalachian	80.9	75.9 - 85.0
Suburban	86.6	82.5 - 89.9
<b>Medicaid Status</b>		
Medicaid	76.8	73.8 - 79.5
Non-Medicaid	89.9	88.1 - 91.4

\*No time period specified

Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



**Women Who Had Their Teeth Cleaned  
Before Pregnancy, By Age, Ohio, 2006-2008**



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Health Care

### C6: Women who had a Pap test within the past three years,\* 2004-2008.

#### Public Health Importance:

At one time, cervical cancer caused more deaths than any other cancer among women in the United States<sup>16</sup>. While a significant decline in cases of cervical cancer has been seen in recent years, it remains an important public health issue<sup>17</sup>. In 2006 alone, 11,982 women in the United States were diagnosed and another 3,976 died from cervical cancer<sup>16</sup>. The most effective diagnostic test is the Papanicolaou (Pap) test. This test looks for changes in cervical cells that could indicate cervical cancer<sup>17</sup>. Most cervical cancers are caused by the human papillomavirus, which is often asymptomatic and infects as many as 26.8 percent of women between the ages of 14 and 59<sup>18</sup>. Receiving regular Pap tests increases the likelihood that abnormal cervical cells will be detected and treated before they become cancerous.

#### Ohio:

- ✿ More than 86 percent of Ohio women of reproductive age reported having a Pap test within the past three years, which is slightly less than the Healthy People 2010 target of 90 percent.
- ✿ Among Ohio women who have had a Pap test within the past three years, little difference was seen between black and white women or between women living in Appalachian, rural, metropolitan and suburban counties.
- ✿ Ohio women between the ages of 25 and 44 were more likely to report having a recent Pap test than women 18 to 24 years of age.
- ✿ A greater percentage of women with health care coverage had a Pap test in the previous three years than women without health insurance. This is likely due to the difficulty and expense of accessing routine care without a health plan.

#### Related Healthy People 2010 Objective(s):

3-11. Increase the proportion of women who receive a Pap test.

3-11a. Women aged  $\geq 18$  years who have ever received a Pap test. Target: 97%.

3-11b. Women aged  $\geq 18$  year who have received a Pap test within the preceding 3 years.  
Target: 90%.

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\*Includes only women with an intact cervix

<sup>16</sup> Centers for Disease Control and Prevention. Gynecologic Cancers – Cervical Cancer Statistics. Accessed Online October 13, 2010. Available at: <http://www.cdc.gov/cancer/cervical/statistics/>.

<sup>17</sup> National Cancer Institute. A Snapshot of Cervical Cancer. Accessed Online October 13, 2010. Available at: <http://www.cancer.gov/aboutnci/servingpeople/snapshots/cervical.pdf>.

<sup>18</sup> National Cancer Institute. Study Estimates Overall HPV Prevalence in U.S. Women. Accessed Online October 13, 2010. Available at: <http://www.cancer.gov/cancertopics/causes/hpv/hpv-prevalence0308> and <http://www.cancer.gov/cancertopics/factsheet/Risk/HPV>.

### Percentage of Women Ages 18 to 44 Who Reported Having a Pap Test Within the Past 3 Years, 2004–2008.

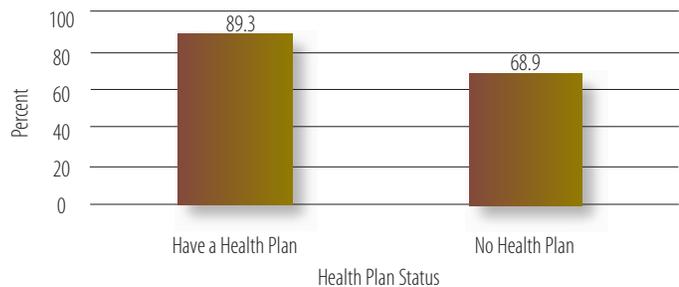
n = 5,142

Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>86.5</b>	<b>84.5-88.5</b>
<b>Age</b>		
18-24	76.8	70.9-82.8
25-34	91.7	89.5-93.9
35-44	88.3	86.2-90.4
<b>Race/Ethnicity</b>		
Non-Hispanic White	86.3	84.0-88.6
Non-Hispanic Black	89.1	84.6-93.6
Hispanic	*	*
Non-Hispanic Other	86.0	78.4-93.6
<b>Marital Status</b>		
Married	91.7	90.0-93.4
Unmarried	79.8	76.0-83.7
<b>Education</b>		
Less than 12 years	79.5	71.5-87.4
12 years	81.9	77.6-86.2
More than 12 years	89.3	87.1-91.6
<b>County Type</b>		
Appalachian	86.5	82.1-90.9
Metropolitan	87.6	85.1-90.1
Rural, non-Appalachian	85.8	80.0-91.6
Suburban	83.9	77.6-90.2
<b>Health Plan Status</b>		
Have a health plan	89.3	87.3-91.3
No health plan	68.9	61.6-76.1

\* Sample size insufficient for meaningful analysis or half CI > 10

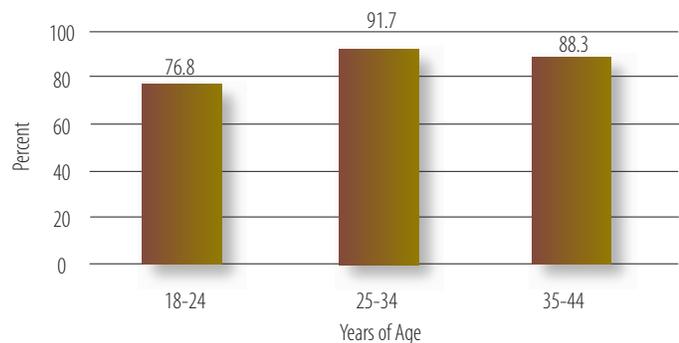
Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

### Women Ages 18 to 44 Who Reported Having a Pap Test Within the Past 3 Years, By Health Plan Status, Ohio, 2004-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

### Women Who Reported Having a Pap Test Within the Past 3 Years, By Age, Ohio, 2004-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Health Care

### C7: Women having a live birth who received preconception counseling about healthy lifestyle behaviors and prevention strategies from a health care provider prior to pregnancy, 2006-2008.

#### Public Health Importance:

According to a 2004 survey by the CDC, approximately 84 percent of women between the ages of 18 and 44 had at least one health care visit in the last year<sup>19</sup>. Each visit provides an opportunity to identify problems and promote healthy behaviors. Research has indicated that women who receive preconception counseling are more likely to reduce risky behaviors and have more complete knowledge about having a healthy pregnancy than women who did not receive such counseling from a provider<sup>20</sup>.

#### Ohio:

-  Only about one-quarter of Ohio mothers reported having preconception counseling with a health care provider.
-  Mothers between the ages of 18 and 24 and unmarried women were less likely to report such a conversation.
-  Mothers who have not received Medicaid were more likely to receive preconception counseling than mothers who have had Medicaid.
-  The relatively few mothers who receive preconception counseling may be due to the significant percentage of pregnancies in Ohio that are unintended.

#### Related Healthy People 2010 Objective(s):

- 1-3. Increase the proportion of persons appropriately counseled about health behaviors.
- 16-16. Increase the proportion of pregnancies begun with the optimum folic acid level.
- 16-17. Increase abstinence from alcohol, cigarettes and illicit drug use among pregnant women.

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<sup>19</sup> Centers for Disease Control and Prevention. Centers for Disease Control and Prevention. Recommendations to Improve Preconception Health and Health Care — United States: A Report of the CDC/ATSDR Preconception Care Work Group and the Select Panel on Preconception Care. MMWR 2006;55(No. RR-6)

<sup>20</sup> Elsinga J, de Jong-Potjer L, van der Pal-de Bruin K, et al. The Effect of Preconception Counseling on Lifestyle and Other Behavior Before and During Pregnancy. Women's Health Issues 2008; 18S: S117-S125.

**Percentage of Mothers Ages 18 to 44 Having a Live Birth Who Had a Conversation Before Pregnancy with Providers About How to Have a Healthy Pregnancy, 2006–2008.**

n= 4347

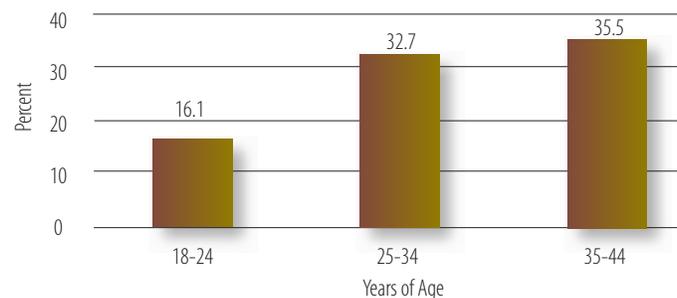
Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>27.4</b>	<b>25.7 - 29.2</b>
<b>Age</b>		
18-24	16.1	13.8 - 18.7
25-34	32.7	30.3 - 35.3
35-44	35.5	30.5 - 40.8
<b>Race/Ethnicity</b>		
Non-Hispanic White	27.6	25.6 - 29.8
Non-Hispanic Black	22.7	20.3 - 25.4
Hispanic	*	*
Non-Hispanic Other	31.6	23.4 - 41.1
<b>Marital Status</b>		
Married	36.4	34.0 - 38.9
Unmarried	13.2	11.3 - 15.4
<b>Education</b>		
Less than 12 years	17.7	13.8 - 22.5
12 years	17.0	14.4 - 19.9
More than 12 years	35.1	32.7 - 37.5
<b>County Type</b>		
Appalachian	23.9	19.8 - 28.6
Metropolitan	29.5	27.2 - 31.9
Rural, non-Appalachian	25.1	20.8 - 30.0
Suburban	26.2	22.1 - 30.8
<b>Medicaid Status</b>		
Medicaid	14.7	12.8 - 17.0
Non-Medicaid	36.5	34.1 - 39.1

\* Sample size insufficient for meaningful analysis

Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



**Women Who Reported Talking with a Provider Before Pregnancy About How to Have a Healthy Pregnancy, By Age, Ohio, 2006-2007**



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Reproductive Health and Family Planning

### D2: Women having a live birth who had their previous live birth more than three weeks before the due date,\* 2006-2008.

#### Public Health Importance:

Decreasing preterm births is an important part of improving health for women and infants in the United States. Infants born before 37 completed weeks of gestation are at an increased risk for intellectual and developmental disabilities as well as long-term medical problems<sup>21</sup>. Although the cause of preterm delivery is not always known, studies have shown that women who have had one preterm birth are more likely to have another preterm delivery with their next pregnancy<sup>22</sup>.

#### Ohio:

- ✿ Among Ohio mothers with a previous live birth, those between the ages of 18 and 24 and those who are unmarried reported a higher percentage of previous preterm births.
- ✿ Mothers on Medicaid were also more likely to have had a previous preterm birth than those not on Medicaid.
- ✿ Mothers living in Appalachian counties were slightly more likely to have had a previous preterm birth than mothers living in metropolitan, suburban, or rural counties.

#### Related Healthy People 2010 Objective(s):

Reduce preterm births.

Targets: 7.6% for all preterm births; 6.4% for births at 32 to 36 weeks gestation; 1.1% for births at less than 32 weeks gestation.



\*The PRAMS survey asks if *the birth before the most recent birth* was more than 3 weeks before the due date.

<sup>21</sup> National Institutes of Health. Eunice Kennedy Shriver National Institute of Child Health and Human Development. Preventing Preterm Birth. August 13, 2007.  
[http://www.nichd.nih.gov/news/resources/spotlight/081307\\_preterm\\_birth\\_progesterone.cfm](http://www.nichd.nih.gov/news/resources/spotlight/081307_preterm_birth_progesterone.cfm)

<sup>22</sup> Adams M, Elam-Evans L, Wilson H, Gilbert D. Rates of and Factors Associated with Recurrence of Preterm Delivery. JAMA 2000; 283: 1591-1596.

Percentage of Women Ages 18 to 44 Having a Live Birth Who Had a Previous Preterm Birth (Among Those with a Previous Birth), 2006–2008.

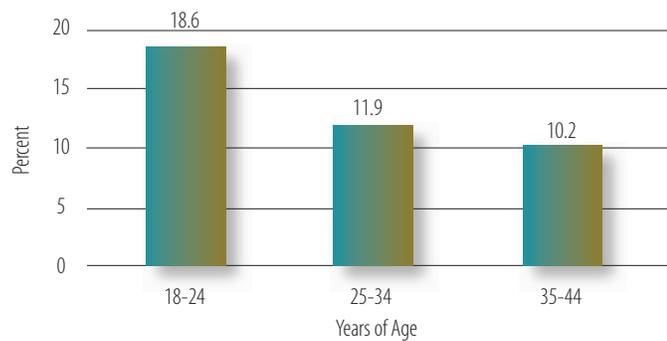
n= 2443

Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>13.3</b>	<b>11.6 - 15.1</b>
<b>Age</b>		
18-24	18.6	14.7 - 23.2
25-34	11.9	9.9 - 14.2
35-44	10.2	7.1 - 14.3
<b>Race/Ethnicity</b>		
Non-Hispanic White	12.8	10.9 - 15.1
Non-Hispanic Black	15.7	13.2 - 18.6
Hispanic	*	*
Non-Hispanic Other	*	*
<b>Marital Status</b>		
Married	10.9	9.0 - 13.1
Unmarried	18.0	14.9 - 21.5
<b>Education</b>		
Less than 12 years	18.2	13.2 - 24.5
12 years	16.2	12.9 - 20.2
More than 12 years	10.2	8.5 - 12.3
<b>County Type</b>		
Appalachian	15.2	11.2 - 21.1
Metropolitan	14.0	11.8 - 16.5
Rural, non-Appalachian	11.8	7.9 - 17.2
Suburban	10.6	7.3 - 15.2
<b>Medicaid Status</b>		
Medicaid	16.6	13.9 - 19.7
Non-Medicaid	10.8	8.9 - 13.1

\* Sample size insufficient for meaningful analysis

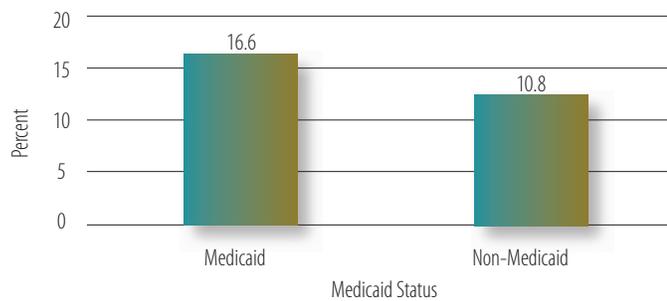
Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

Women Having a Live Birth Whose Previous Birth was Preterm, By Age, Ohio, 2006-2008



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

Women Ages 18 to 44 Having a Live Birth Whose Previous Birth was Preterm, By Medicaid Status, Ohio, 2006-2008



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Reproductive Health and Family Planning

### D4: Women having a live birth who had less than 18 months between their previous live birth and the start of the most recent pregnancy, 2006-2008.

#### Public Health Importance:

Interpregnancy periods less than 18 months have been associated with poor birth outcomes including low birth weight and infant morbidity and mortality<sup>23</sup>. Even after adjusting for other risk factors, studies have shown that the likelihood of preterm delivery increases with short interpregnancy periods<sup>24</sup>. The cause of the association between narrow birth spacing and poor health outcomes is not entirely understood, but postpartum conditions such as maternal nutritional depletion and stress seem to be related<sup>23</sup>. These risks highlight the need for medical providers to counsel women about reproductive planning and encourage an adequate amount of time between pregnancies.

#### Ohio:

-  Young women between the ages of 18 and 24 had a higher percentage of mothers with short interpregnancy periods than other age groups.
-  As the education of mothers increased, the percentage with less than 18 months between pregnancies decreased.
-  Unmarried mothers also comprised a higher percentage of births with a short interpregnancy period than married mothers.

#### Related Healthy People 2010 Objective(s):

- 9-2. Reduce the proportion of births occurring within 24 months of a previous birth.  
Target: 6%.

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<sup>23</sup> Centers for Disease Control and Prevention. 2002 PRAMS Surveillance Report: Multistate Exhibits Postpartum Contraceptive Use. August 2006. Accessed Online October 13, 2010. Available at: <http://www.cdc.gov/PRAMS/2002PRAMSSurvReport/MultiStateExhibits/Multistates18.htm>.

<sup>24</sup> DeFranco E, Stamilio D, Boslaugh S, Gross G, Muglia L. A Short Interpregnancy Interval is a Risk Factor for Preterm Birth and its Recurrence. *Am J Obstet Gynecol* 2007; 197:264e261-e266.

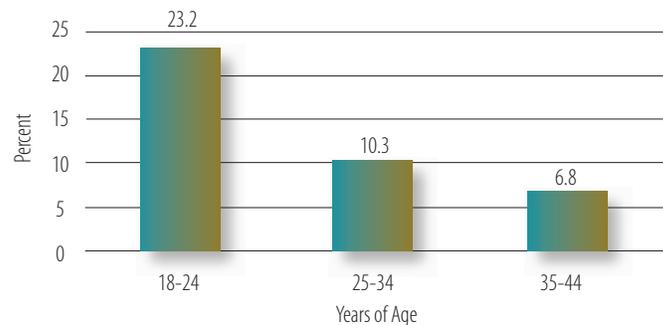
Percentage of Women Ages  
18 to 44 with Less Than 18 Months  
Between Previous and Current Birth,  
2006–2008.

n=230,733

Characteristics	No.	%
<b>Mothers Age 18-44</b>	<b>30,529</b>	<b>13.2</b>
<b>Age</b>		
18-24	14,316	23.2
25-34	13,755	10.3
35-44	2,458	6.8
<b>Race/Ethnicity</b>		
Non-Hispanic White	22,408	12.5
Non-Hispanic Black	6,084	16.8
Hispanic	1,562	14.9
Non-Hispanic Other	475	10.6
<b>Marital Status</b>		
Married	16,600	11.1
Unmarried	13,929	17.1
<b>Education</b>		
Less than 12 years	8,034	20.6
12 years	9,679	15.0
More than 12 years	12,527	10.0
<b>County Type</b>		
Appalachian	5,773	13.9
Metropolitan	16,452	13.5
Rural, non-Appalachian	4,101	11.7
Suburban	4,203	12.9



Women With Less Than 18 Months Between  
Previous and Current Birth, By Age, Ohio, 2006-2008



Source: 2006 – 2008 Vital Statistics, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Reproductive Health and Family Planning

### D5: Women having a live birth who reported having an unintended or unwanted pregnancy, 2006-2008.

#### Public Health Importance:

Approximately 49 percent of live births in the United States are the result of an unwanted or mistimed pregnancy<sup>25</sup>. Unintended pregnancies have been associated with high risk maternal behaviors such as smoking and alcohol use during pregnancy<sup>26</sup>. These behaviors can adversely affect the health of the mother and the infant. Encouraging providers to address high risk behaviors and discuss family planning for every woman of reproductive age is an important step in decreasing the number of unintended pregnancies<sup>27</sup>.

#### Ohio:

-  About 45 percent of pregnancies were unintended in Ohio. This puts Ohio below the Healthy People 2010 target of 70 percent of pregnancies being intended.
-  Black mothers in Ohio were at a greater risk than white mothers for having an unintended pregnancy.
-  Over 65 percent of pregnancies where the mother was between 18 and 24 years of age were unintended. This number decreased by almost half for women in older age groups.
-  Unmarried mothers were more than twice as likely to report having an unintended pregnancy as married mothers.
-  Women on Medicaid and those with 12 or less years of education also experienced unintended pregnancies more often.

#### Related Healthy People 2010 Objective(s):

- 9-1 Increase the proportion of pregnancies that are intended.  
Target: 70% of all pregnancies will be intended.

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<sup>25</sup> Mohllajee AP, Curtis KM, Morrow B, et al. Pregnancy Intention and Its Relationship to Birth and Maternal Outcomes. *Obstet Gynecol* 2007; 109: 678-686.

<sup>26</sup> D'Angelo DV, Gilbert BC, Rochat RW, et al. Differences between Mistimed and Unwanted Pregnancies among Women Who Have Live Births. *Perspect Sex Repro Health* 2007; 36:192-197.

<sup>27</sup> Moos M-K, Dunlop AL, Jack BW, et al. Healthier Women, Healthier Reproductive Outcomes: Recommendations for the Routine Care of All Women of Reproductive Age. *Am J Obstet Gynecol* 2008; 199(6 Suppl 2):S280-89.

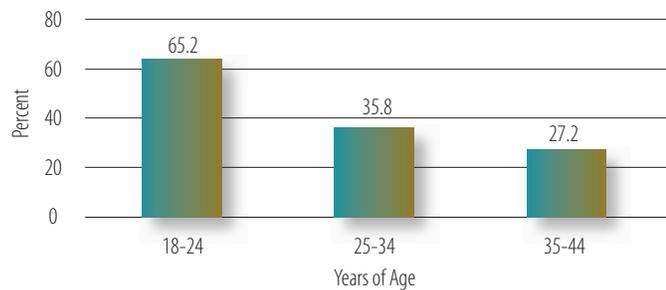
Percentage of Women Ages 18 to 44 Having a Live Birth Who Reported Having an Unintended Pregnancy 2006–2008.

n= 4252

Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>45.0</b>	<b>43.0 - 47.0</b>
<b>Age</b>		
18-24	65.2	61.7 - 68.5
25-34	35.8	33.3 - 38.5
35-44	27.2	22.7 - 32.3
<b>Race/Ethnicity</b>		
Non-Hispanic White	39.8	37.5 - 42.2
Non-Hispanic Black	69.0	66.1 - 71.8
Hispanic	54.9	42.9 - 66.3
Non-Hispanic Other	46.3	36.9 - 56.1
<b>Marital Status</b>		
Married	29.5	27.2 - 32.0
Unmarried	69.2	66.1 - 72.1
<b>Education</b>		
Less than 12 years	58.8	52.6 - 64.6
12 years	56.1	52.2 - 60.0
More than 12 years	35.7	33.3 - 38.1
<b>County Type</b>		
Appalachian	42.5	37.4 - 47.9
Metropolitan	47.7	45.1 - 50.3
Rural, non-Appalachian	41.0	35.6 - 46.6
Suburban	41.2	36.2 - 46.3
<b>Medicaid Status</b>		
Medicaid	64.4	61.3 - 67.4
Non-Medicaid	30.9	28.6 - 33.4

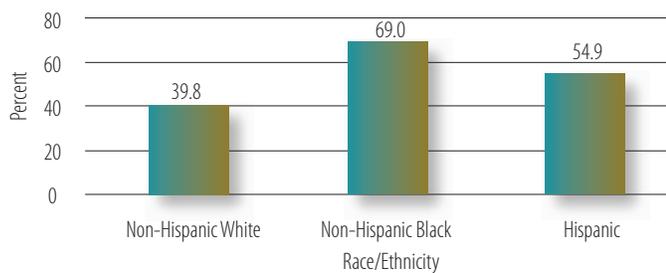
Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

Women Having a Live Birth Reported Having an Unintended Pregnancy, By Age, Ohio, 2006-2008



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

Women Ages 18 to 44 Having a Live Birth Who Reported Having an Unintended Pregnancy, By Race, Ohio, 2006-2008



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Reproductive Health and Family Planning

**D6: Women having a live birth who were not trying to get pregnant at the time of conception and neither they nor their husbands or partners were doing anything to keep from getting pregnant, 2006-2008.**

### Public Health Importance:

Women not using contraceptives have a higher risk of unintended pregnancy. Studies have shown that adolescents and women of low socioeconomic status are among those least likely to use contraception<sup>28</sup>. Over 40 percent of unintended pregnancies in the United States end in abortion<sup>28</sup>. Identifying the women most at risk for an unintended pregnancy and providing education and resources about contraception use can help to reduce the stress and poor health outcomes that can result from an unintended or mistimed pregnancy. Increasing the use of appropriate contraceptives and family planning among women of reproductive age is an important step in decreasing the rate of unintended pregnancies.

### Ohio:

-  Ohio mothers with 12 or less years of education who were not trying to get pregnant, most frequently reported not using contraceptives at the time of conception.
-  Unmarried women were slightly more likely to report not using contraceptives than married women.
-  Mothers living in rural Ohio counties more often reported not using contraceptives at the time of conception even though they were not trying to get pregnant, especially when compared to mothers in suburban counties.

### Related Healthy People 2010 Objective(s):

- 9-3. Increase the proportion of females at risk of unintended pregnancy (and their partners) who use contraception. Target: 100%.

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<sup>28</sup> Finer L, Henshaw, S.K. Disparities in Rates of Unintended Pregnancy in the United States, 1994 and 2001. *Perspect Sex Repro Health* 2006; 32(2): 90-96.

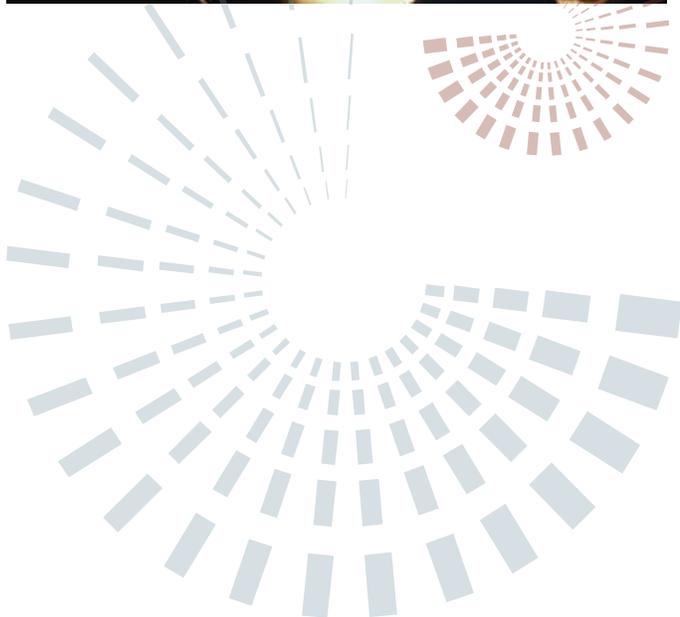
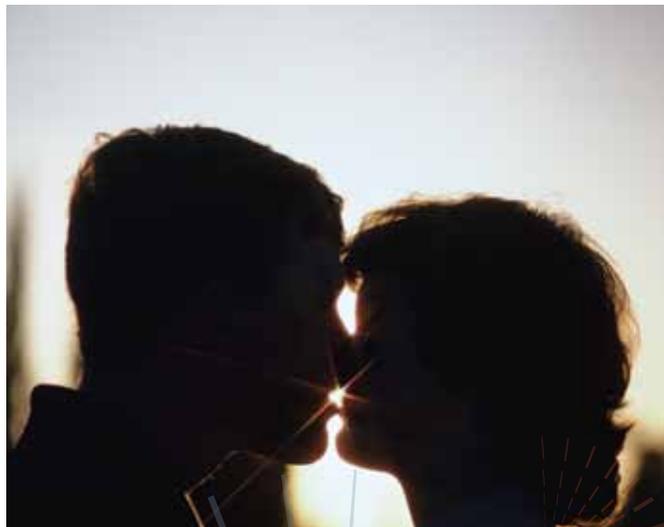
**Percentage of Women  
Ages 18 to 44 Having a Live Birth  
Who Were Not Trying to Get  
Pregnant at the Time of Conception  
and Neither They nor Their Partners  
Were Using Any Contraceptive Method  
to Keep from Getting Pregnant,  
2006–2008.**

n= 2429

Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>57.1</b>	<b>54.3 - 59.8</b>
<b>Age</b>		
18-24	59.5	55.4 - 63.5
25-34	53.3	49.1 - 57.3
35-44	62.2	54.1 - 69.6
<b>Race/Ethnicity</b>		
Non-Hispanic White	57.3	53.8 - 60.7
Non-Hispanic Black	57.3	53.6 - 60.8
Hispanic	*	*
Non-Hispanic Other	56.3	42.4 - 69.3
<b>Marital Status</b>		
Married	54.1	49.8 - 58.4
Unmarried	59.3	55.8 - 62.7
<b>Education</b>		
Less than 12 years	66.1	59.4 - 72.2
12 years	62.8	58.1 - 67.2
More than 12 years	48.6	44.8 - 52.4
<b>County Type</b>		
Appalachian	60.9	53.6 - 67.7
Metropolitan	56.3	52.8 - 59.7
Rural, non-Appalachian	65.3	57.5 - 72.4
Suburban	47.1	39.6 - 54.7
<b>Medicaid Status</b>		
Medicaid	59.5	55.9 - 63.0
Non-Medicaid	53.8	49.7 - 58.0

\* Sample size insufficient for meaningful analysis

Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



## Reproductive Health and Family Planning

**D7: Women having a live birth who reported that they or their husbands or partners were currently doing something to keep from getting pregnant, 2006-2008.**

### Public Health Importance:

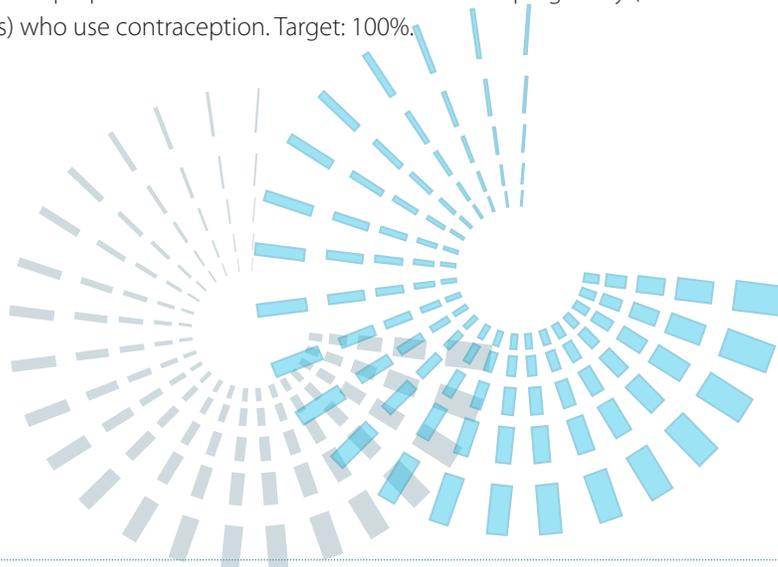
Interpregnancy intervals less than 18 months have been shown to increase the risk for adverse birth outcomes such as low birth weight and preterm delivery<sup>29</sup>. While the reasons for this are not entirely understood, one reason may be that there is inadequate time for the mother's body to recover between pregnancies<sup>29</sup>. Encouraging the use of contraceptives and proper family planning for women and their partners post-partum is important to improve maternal health and pregnancy outcomes<sup>30</sup>.

### Ohio:

- ✿ Approximately 83 percent of mothers in Ohio reported current contraceptive use.
- ✿ Mothers with more than 12 years of education and those who were unmarried were slightly more likely to report currently using contraceptives.

### Related Healthy People 2010 Objective(s):

- 9-2. Reduce the proportion of births occurring within 24 months of a previous birth. Target: 6%.
- 9-3. Increase the proportion of females at risk of unintended pregnancy (and their partners) who use contraception. Target: 100%.



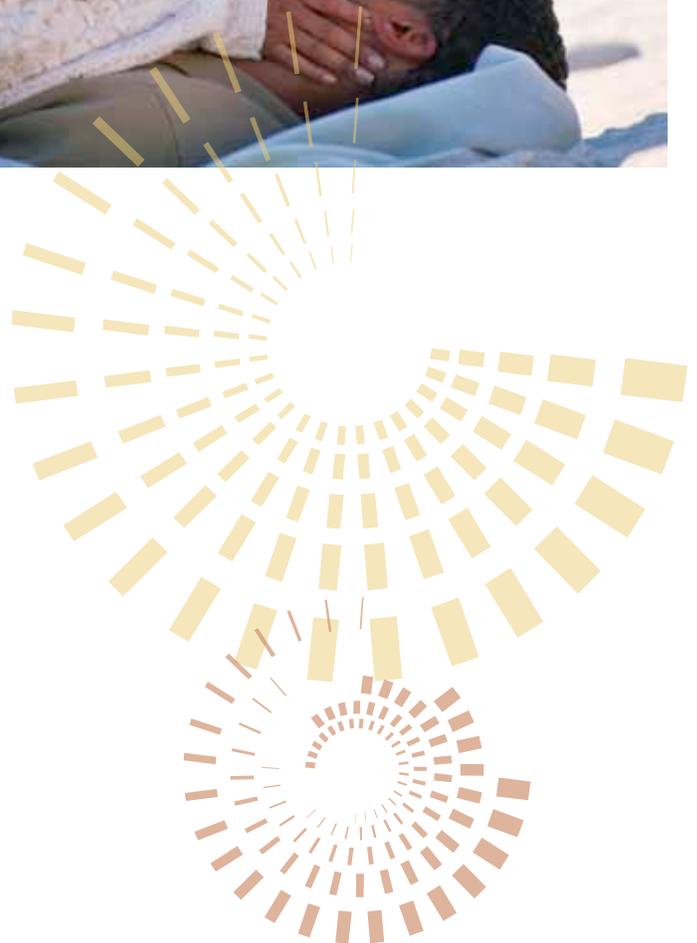
<sup>29</sup> Conde-Agudelo A, Rosas-Bermudez A, Kafury-Goeta A. Birth Spacing Risk of Adverse Perinatal Outcomes: A Meta-Analysis. *JAMA* 2006; 295: 1809-1823.

<sup>30</sup> Moos M-K, Dunlop AL, Jack BW, et al. Healthier Women, Healthier Reproductive Outcomes: Recommendations for the Routine Care of All Women of Reproductive Age. *Am J Obstet Gynecol* 2008; 199(6 Suppl 2):S280-89.

Percentage of Women Ages 18 to 44 Having a Live Birth Who Reported They or Their Partners Were Currently Using Some Contraceptive Method, 2006–2008.

n= 4221

Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>83.2</b>	<b>81.6 - 84.7</b>
<b>Age</b>		
18-24	84.6	81.7 - 87.0
25-34	83.5	81.3 - 85.4
35-44	78.1	73.0 - 82.4
<b>Race/Ethnicity</b>		
Non-Hispanic White	83.3	81.4 - 85.0
Non-Hispanic Black	83.2	80.6 - 85.4
Hispanic	89.6	79.3 - 95.1
Non-Hispanic Other	77.1	67.7 - 84.4
<b>Marital Status</b>		
Married	82.1	80.0 - 84.0
Unmarried	84.8	82.3 - 87.0
<b>Education</b>		
Less than 12 years	74.5	68.6 - 79.6
12 years	83.0	79.9 - 85.7
More than 12 years	85.4	83.5 - 87.0
<b>County Type</b>		
Appalachian	81.1	76.4 - 85.1
Metropolitan	84.0	81.9 - 85.8
Rural, non-Appalachian	81.8	77.1 - 85.7
Suburban	83.7	79.5 - 87.1
<b>Medicaid Status</b>		
Medicaid	84.1	81.6 - 86.3
Non-Medicaid	82.5	80.4 - 84.5



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Reproductive Health and Family Planning

### D8: Women having a live birth who used fertility drugs or received any medical procedures from a doctor, nurse or other health care worker to help them get pregnant, 2006-2008.

#### Public Health Importance:

The 2002 National Survey of Family Growth found that 11.8 percent of women between the ages of 15 and 44 reported difficulty conceiving and 7.3 million women in this age group reported using infertility services<sup>31</sup>. The use of Assisted Reproductive Technology (ART) has increased significantly in recent decades. This, in addition to higher success rates, has led to a steady increase in the number of infants born through ART in the United States each year<sup>32</sup>. Women seeking infertility treatment should receive the same extensive preconception counseling as women without fertility problems. Medical providers should also emphasize the risks associated with ART and address issues such as obesity, smoking, and alcohol use that could lead to poor birth outcomes<sup>33</sup>.

#### Ohio:

-  Slightly less than one percent of women with a live birth in Ohio reported using fertility treatments to conceive.
-  Married women were more likely to have used ART than unmarried women.
-  Women with more than 12 years of school reported using fertility treatments much more frequently than women with 12 or less years of education.
-  As age increased, the percentage of women who reported using ART to get pregnant also increased.

#### Related Healthy People 2010 Objective(s):

None.

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<sup>31</sup> Chandra A, Martinez GM, Mosher WD, Abma JC, Jones J. Fertility, Family Planning, and Reproductive Health of U.S. Women: Data from the 2002 National Survey of Family Growth. National Center for Health Statistics. Vital Health Stat 23(25). 2005.

<sup>32</sup> Wright FC, Schieve LA, Reynolds MA, et al. Assisted Reproductive Technology Surveillance—United States, 2002. MMWR Surveill Summ 2005; 54:1-24.

<sup>33</sup> Grainger DA, Frazier LM, Rowland CA. Preconception Care and Treatment with Assisted Reproductive Technologies. Matern Child Health J 2006; 10 (5 Suppl):S161-4.

Percentage of Women Ages 18 to 44 Having a Live Birth Who Used Fertility Drugs or Any Medical Procedure From a Health Care Provider to Help Them Get Pregnant, 2006–2008.

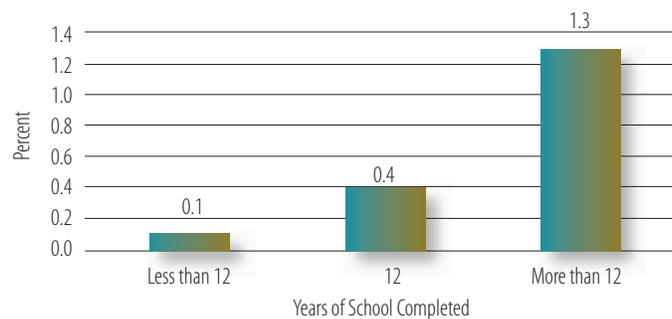
n=415,145

Characteristics	No.	%
<b>Mothers Age 18-44</b>	<b>3,482</b>	<b>0.8</b>
<b>Age</b>		
18-24	168	0.1
25-34	2,202	1.0
35-44	1,112	2.2
<b>Race/Ethnicity</b>		
Non-Hispanic White	3,190	1.0
Non-Hispanic Black	119	0.2
Hispanic	65	0.4
Non-Hispanic Other	108	1.1
<b>Marital Status</b>		
Married	3,259	1.3
Unmarried	223	0.1
<b>Education</b>		
Less than 12 years	61	0.1
12 years	423	0.4
More than 12 years	2,986	1.3
<b>County Type</b>		
Appalachian	343	0.5
Metropolitan	2,006	0.9
Rural, non-Appalachian	666	1.0
Suburban	467	0.8

Source: 2006 – 2008 Vital Statistics, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



Women Ages 18 to 44 Who Used Fertility Drugs or Other Medical Procedure to Get Pregnant, By Education, Ohio, 2006-2008



Source: 2006 – 2008 Vital Statistics, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Tobacco, Alcohol and Substance Use—Smoking

E1: Women who currently smoke every day or some days,\* 2004-2008.

### Public Health Importance:

Cigarette smoking is responsible for 178,000 deaths among women in the United States every year<sup>34</sup>. Women who smoke have a higher risk of cancer as well as infertility, low birthweight and preterm delivery<sup>34</sup>. According to the CDC, approximately 18 percent of pregnant women between the ages of 15 and 44 smoke cigarettes, while 30 percent of women in this age group who are not pregnant smoke<sup>34</sup>. It is important for medical providers to encourage women to stop smoking before they become pregnant to prevent poor maternal and infant outcomes. One positive trend: the number of people smoking, as well as exposure to secondhand smoke has declined in recent years. The number of homes in the United States that do not allow smoking has been increasing steadily. Forty-three percent of households reported smoking was not allowed in the early 1990's. This figure jumped to 72 percent in 2003<sup>35</sup>. Smoking is still an important public health problem and interventions should continue to prevent its harmful effects.

### Ohio:

- ✿ Overall, about 27 percent of Ohio women between 18 and 44 years of age reported currently smoking. This is much higher than the Healthy People 2010 target of 12 percent.
- ✿ Education was associated with smoking among Ohio women. As education increased, the percentage of women who reported smoking decreased.
- ✿ Married women and women with health care coverage were less likely to be current smokers than unmarried women and women without health care coverage.

### Related Healthy People 2010 Objective(s):

27-1a. Reduce cigarette smoking by adults 18 and older. Target: 12%.

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\**Current Smoker* is defined as a person who has smoked at least 100 cigarettes in their lifetime and who now smoke cigarettes every day or some days.

<sup>34</sup>Centers for Disease Control and Prevention. Smoking and Tobacco Use – Women and Tobacco. May 29, 2009. Accessed Online October 13, 2010. Available at: [http://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/populations/women/](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/populations/women/).

<sup>35</sup>Centers for Disease Control and Prevention. Disparities in Secondhand Smoke Exposure - United States, 1988-1994 and 1999-2004. MMWR. July 11, 2008; 57(27); 744-747.

Percentage of Women  
Ages 18 to 44 Who  
Reported Currently Smoking  
Every Day or Some Days,  
2004–2008.

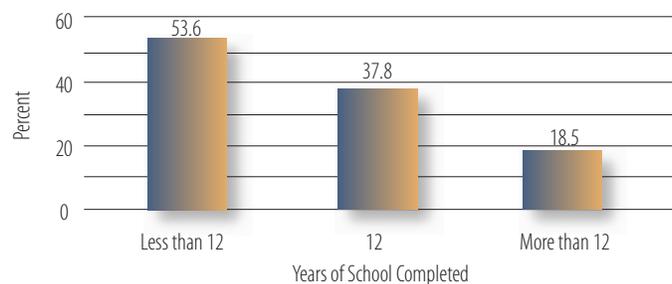
n = 8,537

Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>27.1</b>	<b>25.4-28.7</b>
<b>Age</b>		
18-24	27.4	23.3-31.6
25-34	26.4	23.8-29.0
35-44	27.4	25.1-29.7
<b>Race/Ethnicity</b>		
Non-Hispanic White	27.3	25.4-29.2
Non-Hispanic Black	27.0	22.4-31.7
Hispanic	24.0	14.8-33.2
Non-Hispanic Other	24.3	17.4-31.2
<b>Marital Status</b>		
Married	20.9	19.0-22.9
Unmarried	35.0	32.1-37.9
<b>Education</b>		
Less than 12 years	53.6	45.8-61.4
12 years	37.8	34.4-41.1
More than 12 years	18.5	16.7-20.4
<b>County Type</b>		
Appalachian	31.3	26.7-36.0
Metropolitan	25.7	23.4-28.0
Rural, non-Appalachian	20.3	16.0-24.6
Suburban	25.8	21.1-30.6
<b>Health Plan Status</b>		
Have a health plan	24.2	22.5-25.9
No health plan	44.6	39.1-50.2

Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



Women Ages 18-44 Who Reported That They Are  
Current Smokers, By Education, Ohio, 2004-2008



Source: 2006 – 2008 Vital Statistics, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Tobacco, Alcohol and Substance Use—Smoking

**E2: Women having a live birth who smoked cigarettes during the three months prior to pregnancy, 2006-2008.**

**Public Health Importance:**

Cigarette smoking before and during pregnancy has been associated with many adverse birth outcomes including low birth weight, preterm delivery, premature rupture of membranes, and sudden infant death syndrome (SIDS)<sup>36</sup>. Women who smoke before, during or after pregnancy are at an increased risk for illness themselves as well as compromising the health of the child. Smoking cessation counseling has been found to increase the likelihood that a pregnant woman stops smoking<sup>37</sup>. Because of this providers should screen women of reproductive age for tobacco use and encourage them to quit before they become pregnant.

**Ohio:**

- ✿ Forty-five percent of mothers ages 18 to 24 reported smoking before pregnancy. In contrast, approximately 15 percent of mothers who were 35 to 44 years of age reported smoking during this time period.
- ✿ Mothers on Medicaid were more than twice as likely to report smoking before pregnancy as those not receiving Medicaid.
- ✿ Mothers living in Appalachian counties and those who were unmarried were also more likely to report smoking in the three months prior to pregnancy.

**Related Healthy People 2010 Objective(s):**

- 16-17. Increase abstinence from alcohol, cigarettes, and illicit drugs among pregnant women. Target for cigarette smoking: 99%.
- 27-1a. Reduce cigarette smoking by adults 18 and older. Target: 12%.

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<sup>36</sup>Centers for Disease Control and Prevention. Smoking Prevalence among Women of Reproductive Age—United States, 2006. MMWR. August 8, 2008; 57(31); 849-852.  
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5731a2.htm>.

<sup>37</sup>Centers for Disease Control and Prevention. Preventing Smoking and Exposure to Secondhand Smoke before, during and after Pregnancy. July 2007.  
<http://www.cdc.gov/NCCDPHP/publications/factsheets/Prevention/pdf/smoking.pdf>.

Percentage of Women Ages 18 to 44 Having a Live Birth Who Smoked Cigarettes During the Three Months Prior to Pregnancy, 2006–2008.

n= 4209

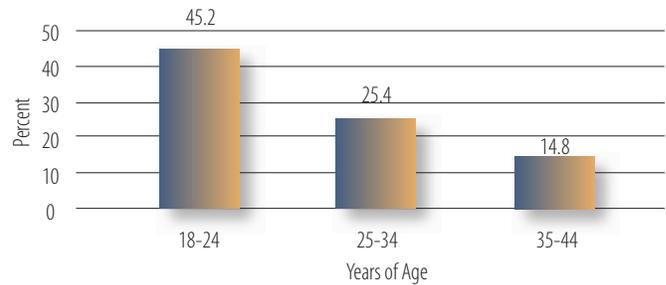
Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>30.9</b>	<b>29.0 - 32.8</b>
<b>Age</b>		
18-24	45.2	41.6 - 48.7
25-34	25.4	23.1 - 27.9
35-44	14.8	11.5 - 19.0
<b>Race/Ethnicity</b>		
Non-Hispanic White	33.0	30.7 - 35.3
Non-Hispanic Black	23.4	20.8 - 26.2
Hispanic	*	*
Non-Hispanic Other	26.6	18.5 - 36.7
<b>Marital Status</b>		
Married	19.7	17.7 - 21.9
Unmarried	48.5	45.3 - 51.7
<b>Education</b>		
Less than 12 years	46.3	40.3 - 52.4
12 years	44.2	40.3 - 48.1
More than 12 years	19.8	17.9 - 22.0
<b>County Type</b>		
Appalachian	37.8	32.7 - 43.1
Metropolitan	28.6	26.2 - 31.1
Rural, non-Appalachian	33.4	28.4 - 38.8
Suburban	27.5	23.0 - 32.4
<b>Medicaid Status</b>		
Medicaid	47.0	43.9 - 50.2
Non-Medicaid	19.1	17.1 - 21.3

\* Sample size insufficient for meaningful analysis

Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

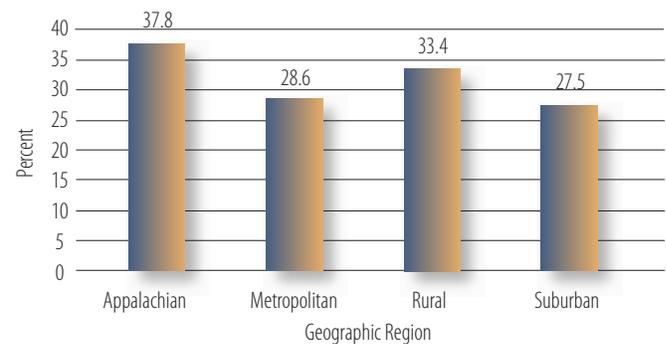


Women Who Reported Smoking in the 3 Months Before Pregnancy, By Age, Ohio 2006-2008



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

Women Ages 18 to 44 Who Reported Smoking in the 3 Months Before Pregnancy, By County Type, Ohio 2006-2008



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Tobacco, Alcohol and Substance Use —Alcohol Consumption

E3: Women who participated in heavy drinking\* within the past month, 2004-2008.

### Public Health Importance:

Alcohol consumption during pregnancy has been shown to lead to problems such as birth defects, developmental disabilities and abortion<sup>38</sup>. Because women are unlikely to realize they are pregnant for several weeks, alcohol use before pregnancy is a strong indicator of alcohol use during early pregnancy. This is especially concerning since heavy drinking (on average more than one drink per day) and binge drinking (four or more drinks at a time) between three and eight weeks gestation lead to an increased risk of Fetal Alcohol Syndrome (FAS)<sup>39</sup>. Infants with FAS often have mental retardation, facial anomalies and low growth rates<sup>39</sup>. No amount of alcohol is known to be safe to consume during pregnancy. Health care providers should counsel women of reproductive age about their alcohol use to avoid FAS and other alcohol-related problems.

### Ohio:

-  Approximately five percent of Ohio women between the ages of 18 and 44 reported heavy alcohol use within the past month.
-  Unmarried women were more likely to report heavy drinking than married women.
-  A larger percentage of young women reported drinking heavily than women in older age groups. As age increased, the percentage of women who reported heavy drinking decreased.

### Related Healthy People 2010 Objective(s):

26-13. Reduce the proportion of adults who exceed guidelines for low-risk drinking.  
Target: 50%. Exceeding the guidelines for females is drinking more than 7 drinks per week or binge drinking (4 or more drinks per occasion).

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\*BRFSS defines heavy drinking for women as an average of more than one drink per day during the past 30 days

<sup>38</sup> Centers for Disease Control and Prevention. Alcohol Consumption among Women Who are Pregnant or Might Become Pregnant—United States 2002. MMWR December 24, 2004. 53(50); 1178-81.

<sup>39</sup> Williams L, Morrow B, Shulman H, Stephens R, D'Angelo D, Fowler CI. PRAMS 2002 Surveillance Report. Atlanta, GA: Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2006.  
<http://www.cdc.gov/prams/2002pramssurvreport/PDF/2k2PRAMS.pdf>

Percentage of Women  
Ages 18 to 44  
Who Reported Participating in  
Heavy Drinking Within the  
Past Month, 2004–2008.

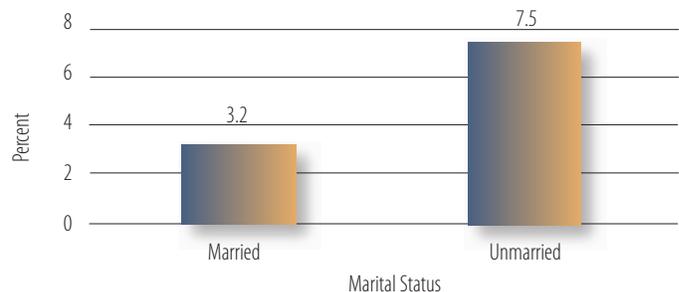
n = 8,387

Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>5.2</b>	<b>4.4-6.0</b>
<b>Age</b>		
18-24	6.6	4.5-8.8
25-34	5.0	3.6-6.3
35-44	4.4	3.5-5.4
<b>Race/Ethnicity</b>		
Non-Hispanic White	5.4	4.5-6.3
Non-Hispanic Black	5.1	2.5-7.8
Hispanic	2.4	0.5-4.2
Non-Hispanic Other	3.0	1.0-5.1
<b>Marital Status</b>		
Married	3.2	2.5-3.9
Unmarried	7.5	5.9-9.0
<b>Education</b>		
Less than 12 years	2.5	1.0-4.0
12 years	6.8	5.0-8.7
More than 12 years	4.6	3.7-5.5
<b>County Type</b>		
Appalachian	4.2	2.4-5.9
Metropolitan	5.0	4.0-6.0
Rural, non-Appalachian	4.8	2.7-6.9
Suburban	7.3	4.4-10.3
<b>Health Plan Status</b>		
Have a health plan	4.9	4.1-5.8
No health plan	6.7	4.2-9.2

Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



Women Ages 18 to 44 Who Reported Heavy Drinking in the Past Month, By Marital Status, Ohio, 2004-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Tobacco, Alcohol and Substance Use —Alcohol Consumption

E4: Women who participated in binge drinking\* on at least one occasion in the past month, 2004-2008.

### Public Health Importance:

Binge drinking (consuming 4 or more drinks on one occasion) during pregnancy is a known risk factor for Fetal Alcohol Syndrome (FAS), low birth weight, and birth defects<sup>40</sup>. While heavy alcohol use has been repeatedly shown to be a risk factor for many poor birth outcomes, no amount of alcohol is considered safe to consume during pregnancy<sup>40</sup>. According to the 2002 National Survey on Drug Use and Health, three percent of pregnant women reported binge drinking<sup>40</sup>. Recent studies have indicated that the number of women who drink during pregnancy has not changed significantly since the early 1990's. From 1991 through 2005, an average of 12.2 percent of women in the United States reported that they consumed any alcohol during pregnancy<sup>41</sup>. Nationally, binge drinking is more common among pregnant women who are employed and also among pregnant women who are unmarried<sup>41</sup>.

### Ohio:

- ✿ Overall, about 16 percent of Ohio women of reproductive age reported binge drinking. This is more than double the Healthy People 2010 target of six percent.
- ✿ Binge drinking was reported almost twice as frequently in unmarried women as it was in married women.
- ✿ Ohio women with 12 or more years of education were slightly more likely to participate in binge drinking than women with less than 12 years of education.

### Related Healthy People 2010 Objective(s):

26-11c. Reduce the proportion of adults (those 18 years and older) engaging in binge drinking of alcoholic beverages during the past month.

Target: 6%.

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\*BRFSS defines binge drinking for women as more than 4 drinks on one occasion

<sup>40</sup> Centers for Disease Control and Prevention. 2002 PRAMS Surveillance Report: Multi-state Exhibits. August 23, 2006. <http://www.cdc.gov/prams/2002PRAMSSurvReport/MultiStateExhibits/Multistates12.htm>.

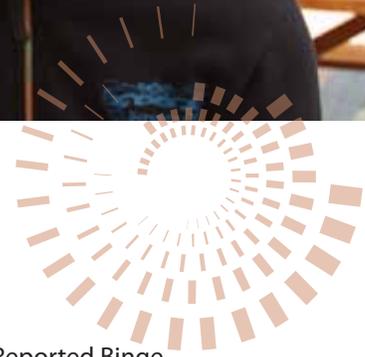
<sup>41</sup> Centers for Disease Control and Prevention. Alcohol Use Among Pregnant and Nonpregnant Women of Childbearing Age — United States, 1991–2005. MMWR. May 22, 2009; 58(19): 529-532.

Percentage of Women  
Ages 18 to 44 Who Reported  
Participating in Binge Drinking,  
2004–2008.

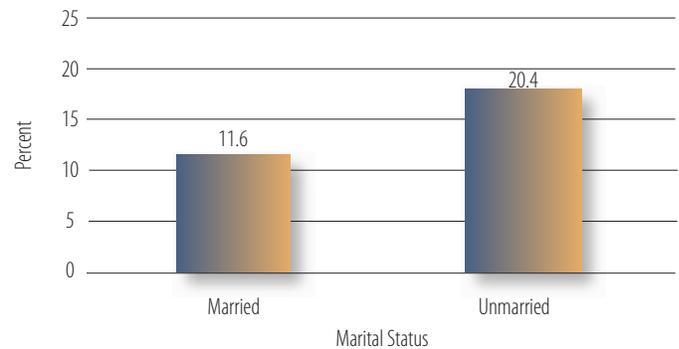
n = 8,442

Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>15.6</b>	<b>14.2-16.9</b>
<b>Age</b>		
18-24	19.1	15.6-22.7
25-34	16.5	14.3-18.7
35-44	12.4	10.8-14.0
<b>Race/Ethnicity</b>		
Non-Hispanic White	16.2	14.7-17.7
Non-Hispanic Black	13.8	9.1-18.5
Hispanic	9.4	3.2-15.7
Non-Hispanic Other	11.0	6.0-16.0
<b>Marital Status</b>		
Married	11.6	10.1-13.2
Unmarried	20.4	18.1-22.8
<b>Education</b>		
Less than 12 years	13.3	7.5-19.0
12 years	16.4	13.7-19.0
More than 12 years	15.4	13.8-17.0
<b>County Type</b>		
Appalachian	13.6	10.6-16.6
Metropolitan	17.1	15.2-18.9
Rural, non-Appalachian	13.1	9.4-16.7
Suburban	15.2	11.4-18.9
<b>Health Plan Status</b>		
Have a health plan	15.3	13.9-16.8
No health plan	17.0	13.2-20.8

Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



Women Ages 18 to 44 Who Reported Binge Drinking, By Marital Status, Ohio, 2004-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Tobacco, Alcohol and Substance Use —Alcohol Consumption

**E5: Women having a live birth who drank any amount of alcohol during the three months prior to pregnancy, 2006-2008.**

### **Public Health Importance:**

Women who drink alcohol during pregnancy have an increased risk of poor birth outcomes such as low birth weight and birth defects<sup>42</sup>. Because women are unlikely to realize they are pregnant for several weeks, alcohol use before pregnancy is a strong indicator of alcohol use during early pregnancy. The U.S. Surgeon General states that no amount of alcohol is safe during pregnancy<sup>43</sup>. Women of reproductive age should be screened by providers about their alcohol use and counseled about the risks of consuming alcohol during pregnancy<sup>42</sup>. This is especially important given that a significant number of pregnancies are unplanned.

### **Ohio:**

- ✿ About 58 percent of Ohio mothers reported drinking any amount of alcohol just prior to pregnancy. The Healthy People 2010 target is for 94 percent of pregnant women to abstain from alcohol. Given that alcohol use before pregnancy is likely to continue into early pregnancy, Ohio has not met this objective.
- ✿ White mothers in Ohio were more likely to report alcohol consumption in the three months prior to pregnancy than mothers of other races.
- ✿ Mothers who have not received Medicaid reported consuming alcohol in the three months before pregnancy more often than those who have received Medicaid.

### **Related Healthy People 2010 Objective(s):**

16-17a. Increase abstinence from alcohol, tobacco, and illicit drugs among pregnant women. Target for alcohol: 94%. Although this measure would presumably be applied during pregnancy, drinking patterns before pregnancy tend to continue into early pregnancy.

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<sup>42</sup> Centers for Disease Control and Prevention. Alcohol Use among Pregnant and Nonpregnant Women of Childbearing Age – United States, 1991-2005. *MMWR*. May 2, 2009; 58(19): 529-532.

<sup>43</sup> Surgeon General's Advisory on Alcohol Use in Pregnancy. Feb 21, 2005.

<http://www.surgeongeneral.gov/pressreleases/sg02222005.html>.

Percentage of Women Ages 18 to 44 Having a Live Birth Who Consumed Alcohol During the Three Months Prior to Pregnancy, 2006–2008.

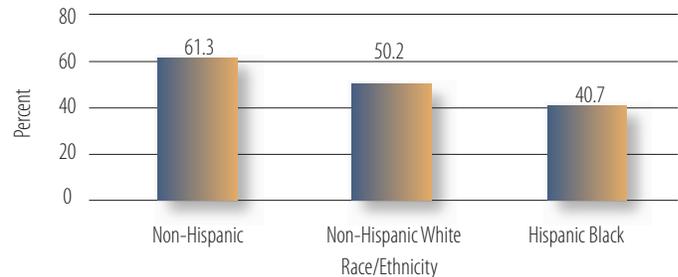
n= 4191

Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>58.2</b>	<b>56.1 - 60.1</b>
<b>Age</b>		
18-24	55.8	52.2 - 59.3
25-34	59.5	56.7 - 62.2
35-44	59.1	53.5 - 64.4
<b>Race/Ethnicity</b>		
Non-Hispanic White	61.3	58.9 - 63.6
Non-Hispanic Black	50.2	47.0 - 53.4
Hispanic	40.7	29.4 - 53.1
Non-Hispanic Other	44.1	34.6 - 54.1
<b>Marital Status</b>		
Married	57.0	54.4 - 59.6
Unmarried	60.0	56.8 - 63.1
<b>Education</b>		
Less than 12 years	40.4	34.6 - 46.5
12 years	52.9	49.0 - 56.7
More than 12 years	65.7	63.3 - 68.1
<b>County Type</b>		
Appalachian	53.8	48.4 - 59.1
Metropolitan	59.0	56.4 - 61.6
Rural, non-Appalachian	59.8	54.2 - 65.1
Suburban	58.5	53.3 - 63.5
<b>Medicaid Status</b>		
Medicaid	53.9	50.7 - 57.0
Non-Medicaid	61.3	58.6 - 63.8

Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



Women Ages 18 to 44 Who Report Alcohol Use in the 3 Months Before Pregnancy, By Race, 2006-2008



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Tobacco, Alcohol and Substance Use —Alcohol Consumption

**E6: Women having a live birth who participated in binge drinking\* (among those who drink) during the three months prior to pregnancy, 2006-2008.**

### Public Health Importance:

Alcohol is the most common substance used by women of reproductive age<sup>44</sup>. Preconception alcohol use is a strong indicator of alcohol use during pregnancy, and binge drinking (more than four drinks in one sitting for women) leads to a higher risk of Fetal Alcohol Spectrum Disorders (FASD) and Sudden Infant Death Syndrome<sup>45</sup>. Fetal Alcohol Syndrome is the most serious form of FASD and causes birth defects and mental retardation<sup>45</sup>. Providers are encouraged to screen women who are pregnant or planning to become pregnant for alcohol use and abuse and recommend appropriate interventions to prevent poor outcomes for both mother and infant<sup>44</sup>.

### Ohio:

- ✿ Among Ohio mothers who reported alcohol use in the three months prior to pregnancy, nearly 33 percent reported binge drinking.
- ✿ As age increased, the frequency of binge drinking among Ohio mothers in the three months before pregnancy decreased.
- ✿ A higher risk of binge drinking prior to pregnancy (among those who drink) was seen among unmarried mothers, those on Medicaid, and those who were white.
- ✿ Targeting these groups of women for education and prevention messages is necessary to decrease binge drinking among pregnant Ohio women and improve birth outcomes.

### Related Healthy People 2010 Objective(s):

16-17b. Increase abstinence from alcohol, tobacco, and illicit drug use among pregnant women. Target for binge drinking: 100%. Although this measure would presumably be applied during pregnancy, drinking patterns before pregnancy tend to continue into early pregnancy.

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\*PRAMS defines binge drinking for women as four or more drinks in one sitting

<sup>44</sup> Floyd RL, Jack BW, Cefalo R, et al. The Clinical Content of Preconception Care: Alcohol, Tobacco, and Illicit Drug Exposures. *Am J Obstet Gynecol* 2008; 199 (6 Suppl B):S333-S339.

<sup>45</sup> Centers for Disease Control and Prevention. Fact Sheets. Excessive Alcohol Use and Risks to Women's Health. Web. September 28, 2010. <http://www.cdc.gov/alcohol/fact-sheets/womens-health.htm>.

**Percentage of Women  
Ages 18 to 44 Having a Live Birth  
Who Participated in Binge Drinking  
(Among Those Who Drink)  
During the 3 Months Prior to  
Pregnancy, 2006–2008.**

n= 2900

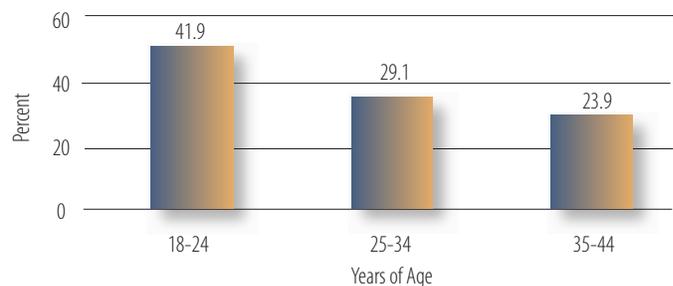
Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>32.7</b>	<b>30.5 - 35.0</b>
<b>Age</b>		
18-24	41.9	37.7 - 46.2
25-34	29.1	26.3 - 32.1
35-44	23.9	18.8 - 29.9
<b>Race/Ethnicity</b>		
Non-Hispanic White	34.3	31.8 - 37.0
Non-Hispanic Black	27.3	23.7 - 31.1
Hispanic	*	*
Non-Hispanic Other	*	*
<b>Marital Status</b>		
Married	25.0	22.4 - 27.7
Unmarried	44.3	40.5 - 48.1
<b>Education</b>		
Less than 12 years	38.2	30.5 - 46.5
12 years	38.7	34.1 - 43.4
More than 12 years	29.0	26.4 - 31.7
<b>County Type</b>		
Appalachian	31.8	26.2 - 37.9
Metropolitan	32.7	29.8 - 35.8
Rural, non-Appalachian	35.3	29.5 - 41.5
Suburban	30.1	24.8 - 35.9
<b>Medicaid Status</b>		
Medicaid	40.5	36.8 - 44.4
Non-Medicaid	27.6	25.0 - 30.4

\* Sample size insufficient for meaningful analysis

Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



**Women Who Reported Binge Drinking (Among Those Who Drink) in the 3 Months Before Pregnancy, By Age, Ohio, 2006-2008**



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Tobacco, Alcohol and Substance Use —Secondhand Smoke Exposure

**E7: Women having a live birth who reported that smoking is currently allowed in their home, 2006-2008.**

### **Public Health Importance:**

Infants who are exposed to secondhand smoke are at an increased risk for bronchitis, asthma, pneumonia and SIDS among other medical problems<sup>46</sup>. The number of homes in the United States that do not allow smoking has been increasing steadily. Forty-three percent of households reported smoking was not allowed in the early 1990's. This figure jumped to 72 percent in 2003<sup>47</sup>. However, secondhand smoke is still a significant public health issue. Pregnant women and women considering becoming pregnant should be counseled about exposure to cigarette smoke in order to improve both maternal and child health.

### **Ohio:**

- ✿ Ohio has seen a decreasing trend in the number of mothers that allow smoking in their home. This falls in line with the Healthy People 2010 objective to reduce the proportion of nonsmokers who are exposed to secondhand smoke. Only seven percent of mothers reported that smoking was allowed in their home from 2006 to 2008.
- ✿ In 2000, 16.9 percent of mothers reported allowing smoking in their home. By 2008, this number dropped to 6.5 percent. Some of this decrease may be due to social desirability bias. As smoking becomes a less acceptable behavior in society, mothers may tend to respond in a manner they believe will be viewed positively by others.
- ✿ Unmarried mothers in Ohio were over two times more likely to allow smoking in their home than married mothers.
- ✿ The percentage of homes that allow smoking was also higher for white mothers, younger women between the ages of 18 and 24, and mothers on Medicaid.

### **Related Healthy People 2010 Objective(s):**

27-10. Reduce the proportion of nonsmokers exposed to environmental tobacco smoke. Target: 45%.

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<sup>46</sup> Centers for Disease Control and Prevention. Preventing Smoking and Exposure to Secondhand Smoke before, during and after Pregnancy. July 2007.  
<http://www.cdc.gov/NCCDPHP/publications/factsheets/Prevention/pdf/smoking.pdf>

<sup>47</sup> Centers for Disease Control and Prevention. Disparities in Secondhand Smoke Exposure - United States, 1988-1994 and 1999-2004. MMWR. July 11, 2008; 57(27); 744-747.

**Percentage of Women  
Ages 18 to 44 Having a Live Birth  
Who Reported That Smoking is  
Currently Allowed in Their Home,  
2006–2008.**

n= 4008

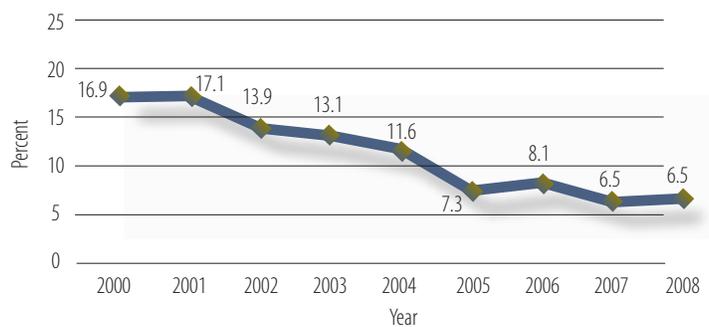
Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>7.0</b>	<b>6.0 - 8.2</b>
<b>Age</b>		
18-24	10.7	8.6 - 13.3
25-34	5.2	4.0 - 6.6
35-44	*	*
<b>Race/Ethnicity</b>		
Non-Hispanic White	7.4	6.2 - 8.8
Non-Hispanic Black	4.8	3.6 - 6.3
Hispanic	*	*
Non-Hispanic Other	*	*
<b>Marital Status</b>		
Married	5.0	3.9 - 6.3
Unmarried	10.5	8.5 - 12.8
<b>Education</b>		
Less than 12 years	12.5	8.8 - 17.5
12 years	8.9	6.8 - 11.5
More than 12 years	4.9	3.9 - 6.2
<b>County Type</b>		
Appalachian	8.4	5.8 - 12.1
Metropolitan	6.4	5.1 - 8.0
Rural, non-Appalachian	8.5	5.8 - 12.3
Suburban	*	*
<b>Medicaid Status</b>		
Medicaid	11.1	9.1 - 13.4
Non-Medicaid	4.1	3.2 - 5.3

\* Sample size insufficient for meaningful analysis

Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



**Percentage of Women Ages 18 to 44 Having a Live Birth  
Who Allow Smoking in Their Home, 2000–2008.**



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Nutrition and Physical Activity —Fruit and Vegetable Consumption

F1: Women who consume fruits and vegetables at least five times per day, 2004-2008.

### Public Health Importance:

Diets that incorporate an adequate amount of fruits and vegetables lower the risk of chronic medical conditions and improve overall health<sup>48</sup>. A diet that includes at least five servings of fruits and vegetables each day is important for women of reproductive age to obtain the proper amount of vitamins and minerals<sup>49</sup>. Women with good nutrition before pregnancy are more likely to have a healthier pregnancy and more positive birth outcomes<sup>50</sup>. Risks of poor maternal nutritional status include poor fetal and placental growth<sup>50</sup>.

### Ohio:

-  Less than one quarter of women 18 to 44 years of age in Ohio consumed 5 servings of fruits and vegetables each day.
-  As education increased, so did the percentage of women who reported eating the recommended 5 servings.
-  Medical providers should educate and encourage women of reproductive age to increase their daily intake of fruits and vegetables. In addition, fresh produce should be available and affordable in all areas of the state.

### Related Healthy People 2010 Objective(s):

- 19-5. Increase the proportion of persons aged 2 years and older who consume at least two daily servings of fruit. Target: 75%.
- 19-6. Increase the proportion of persons aged 2 years and older who consume at least three daily servings of vegetables, with at least one-third being dark green or orange vegetables. Target: 50%.

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<sup>48</sup>Centers for Disease Control and Prevention. Prevalence of Fruit and Vegetable Consumption and Physical Activity by Race/Ethnicity---United States, 2005. MMWR. April 6, 2007; 56(13); 301-304. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5613a2.htm>.

<sup>49</sup>US Department of Health and Human Services, US Department of Agriculture. Dietary Guidelines for Americans, 2005. 6th ed. Washington, DC: US Government Printing Office; 2005. Available at <http://www.health.gov/dietaryguidelines>.

<sup>50</sup>Fowles ER. What's a Pregnant Woman to Eat? A Review of Current USDA Dietary Guidelines and MyPyramid. J Perinat Educ 2006; 15:28-33.

Percentage of Women Ages 18 to 44 Who Reported Consuming Fruits and Vegetables at Least 5 Times per Day, 2004–2008.

n = 3,539

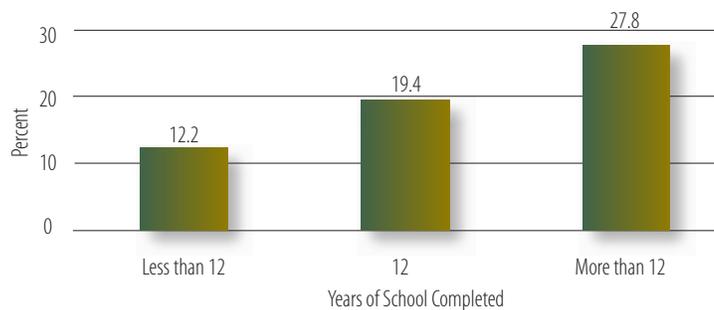
Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>23.9</b>	<b>21.9-26.0</b>
<b>Age</b>		
18-24	22.7	17.2-28.1
25-34	26.0	22.6-29.4
35-44	22.8	20.2-25.4
<b>Race/Ethnicity</b>		
Non-Hispanic White	23.7	21.4-26.0
Non-Hispanic Black	28.2	21.8-34.5
Hispanic	11.7	4.7-18.8
Non-Hispanic Other	*	*
<b>Marital Status</b>		
Married	24.9	22.3-27.4
Unmarried	22.6	19.1-26.1
<b>Education</b>		
Less than 12 years	12.2	6.0-18.3
12 years	19.4	15.7-23.1
More than 12 years	27.8	25.1-30.4
<b>County Type</b>		
Appalachian	24.2	19.1-29.4
Metropolitan	24.9	22.2-27.6
Rural, non-Appalachian	20.1	14.3-25.9
Suburban	24.6	18.6-30.6
<b>Health Plan Status</b>		
Have a health plan	24.6	22.3-26.8
No health plan	21.4	15.7-27.2

\* Sample size insufficient for meaningful analysis or half CI > 10

Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



Women Ages 18 to 44 Who Consume at Least 5 Fruits/Vegetables Daily, By Education, Ohio, 2004-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Nutrition and Physical Activity —Obesity and Overweight

**F2: Women who are overweight or obese based on BMI**  
(Overweight = BMI  $\geq 25$  kg/m<sup>2</sup> but less than 30 kg/m<sup>2</sup>.  
Obese = BMI  $\geq 30$  kg/m<sup>2</sup>.), 2004-2008.

### Public Health Importance:

Recent statistics indicate that more than 60 percent of women of reproductive age in the United States are either overweight or obese<sup>51</sup>. Women who are overweight are more likely to progress to being obese. Obesity for women who are not pregnant has many well known risk factors, but pregnant women who are obese are also at risk for many other complications. These risks include birth defects, gestational diabetes, preeclampsia, and gestational hypertension among others<sup>52</sup>. Pre-pregnancy obesity has increased substantially in recent years. A 2007 study of data from the Pregnancy Risk Assessment Monitoring System found that pre-pregnancy obesity increased from 13 percent in 1993-1994 to 22 percent in 2002-2003. The study found that women who were black, had a high school education, or had high parity had the greatest occurrence of pre-pregnancy obesity<sup>53</sup>. Women who are overweight or obese should be counseled by a health care provider in order to reach a healthy weight and to improve overall health before pregnancy occurs.

### Ohio:

- ✿ Approximately one quarter of Ohio women 18 to 44 years of age were overweight based on BMI. Another 24 percent were obese. Ohio did not meet the Healthy People 2010 objective in either case.
- ✿ Black women were much more likely to report being obese (40.1 percent) than white women (22.0 percent). This difference was not as pronounced when looking at overweight women. 27.7 percent of black women and 24.4 percent of white women were overweight.
- ✿ Women in Appalachian counties were more likely to report being obese than women living in other county types.

### Related Healthy People 2010 Objective(s):

- 19-1. Increase the proportion of adults who are at a healthy weight. Target: 60%.
- 19-2. Reduce the proportion of adults who are obese. Target: 15%.

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<sup>51</sup> Sarwer DB, Allison KC, Gibbons LM, Markowitz JT, Nelson DB. Pregnancy and Obesity: A Review and Agenda for Future Research. *J Womens Health (Larchmt)* 2006; 15:720-33.

<sup>52</sup> Centers for Disease Control and Prevention. Maternal and Infant Health Research: Pregnancy Complications. May 2009. Accessed Online October 19, 2010. Available at <http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/PregComplications.htm>.

<sup>53</sup> Kim SY, Dietz PM, England L, Morrow B, Callaghan WM. Trends in Pre-Pregnancy Obesity in Nine States, 1993-2003. *Obesity (Silver Spring)*. 2007 Apr; 15(4): 986-93.

Percentage of Women Ages 18 to 44 Who are Overweight Based on BMI, 2004–2008.

n = 8,082

Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>25.1</b>	<b>23.4-26.7</b>
<b>Age</b>		
18-24	20.9	17.0-24.7
25-34	24.6	22.0-27.2
35-44	28.2	25.9-30.6
<b>Race/Ethnicity</b>		
Non-Hispanic White	24.4	22.6-26.2
Non-Hispanic Black	27.7	23.0-32.4
Hispanic	*	*
Non-Hispanic Other	27.5	19.2-35.9
<b>Marital Status</b>		
Married	26.1	24.0-28.2
Unmarried	23.6	21.0-26.2
<b>Education</b>		
Less than 12 years	21.4	15.2-27.6
12 years	27.1	24.0-30.2
More than 12 years	24.4	22.4-26.4
<b>County Type</b>		
Appalachian	22.7	18.8-26.6
Metropolitan	25.7	23.6-27.9
Rural, non-Appalachian	24.1	19.3-28.9
Suburban	26.1	21.5-30.7
<b>Health Plan Status</b>		
Have a health plan	25.2	23.4-26.9
No health plan	24.7	19.8-29.6

\* Sample size insufficient for meaningful analysis or half CI > 10

Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

Percentage of Women Ages 18 to 44 Who are Obese Based on BMI, 2004–2008.

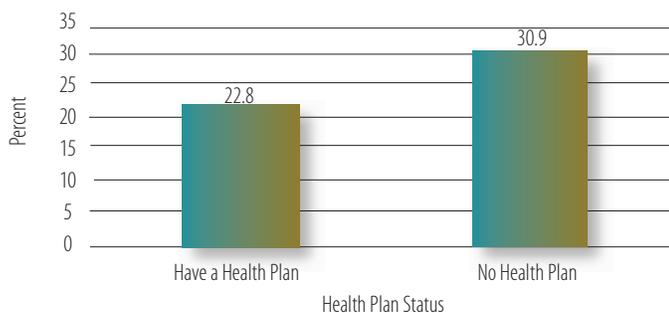
n = 8,082

Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>24.0</b>	<b>22.3-25.6</b>
<b>Age</b>		
18-24	18.2	14.1-22.3
25-34	25.3	22.7-28.0
35-44	26.5	24.3-28.7
<b>Race/Ethnicity</b>		
Non-Hispanic White	22.0	20.2-23.8
Non-Hispanic Black	40.1	34.6-45.5
Hispanic	*	*
Non-Hispanic Other	25.1	16.4-33.8
<b>Marital Status</b>		
Married	23.3	21.2-25.4
Unmarried	24.8	22.1-27.5
<b>Education</b>		
Less than 12 years	33.9	26.0-41.8
12 years	26.1	23.0-29.2
More than 12 years	21.9	19.9-23.8
<b>County Type</b>		
Appalachian	30.0	25.5-34.5
Metropolitan	22.6	20.6-24.7
Rural, non-Appalachian	22.9	18.1-27.8
Suburban	22.0	17.6-26.4
<b>Health Plan Status</b>		
Have a health plan	22.8	21.1-24.5
No health plan	30.9	25.3-36.5

\* Sample size insufficient for meaningful analysis or half CI > 10

Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

Women Ages 18 to 44 Who Reported Being Obese, By Health Plan Status, Ohio, 2004-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Nutrition and Physical Activity —Obesity and Overweight

F3: Women having a live birth who were overweight or obese based on BMI at the time they became pregnant (Overweight = BMI  $\geq 25$  kg/m<sup>2</sup> but less than 30 kg/m<sup>2</sup>. Obese=BMI  $\geq 30$  kg/m<sup>2</sup>.), 2006-2008.

### Public Health Importance:

As the number of overweight and obese persons in the United States increases, so too does the number of overweight and obese women entering pregnancy. Approximately 33 percent of women in the United States are considered obese<sup>54</sup>. Overweight and obese women are more likely to enter the pregnancy with chronic medical conditions and experience additional problems in the years following pregnancy. Obese women are more likely to have a baby with neural tube defects and heart defects among other problems at birth<sup>55</sup>.

### Ohio:

-  Women in Ohio who were overweight or obese prior to pregnancy increased from 37 percent in 2000 to 45 percent in 2008. This trend is not surprising given that the overweight and obesity rates in the United States have been climbing.
-  The percentage of overweight or obese mothers increased with increasing age.
-  Black mothers were also more likely to report being overweight or obese before their pregnancy than mothers of other races.

### Related Healthy People 2010 Objective(s):

- 19-1. Increase the proportion of adults who are at a healthy weight. Target: 60%.
- 19-2. Reduce the proportion of adults who are obese. Target: 15%.

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<sup>54</sup>National Research Council and Institute of Medicine. (2007). *Influence of Pregnancy Weight on Maternal and Child Health. Workshop Report*. Committee on the Impact of Pregnancy Weight on Maternal and Child Health. Washington, DC: The National Academies Press.

<sup>55</sup>Watkins ML, Rasmussen SA, Honein MA, Botto LD, Moore CA. Maternal Obesity and Risk for Birth Defects. *Pediatrics* 2003;111:1152-8.

**Percentage of Women  
Ages 18 to 44 Having a Live Birth  
Who Were Overweight or Obese  
Before Pregnancy, 2006–2008.**

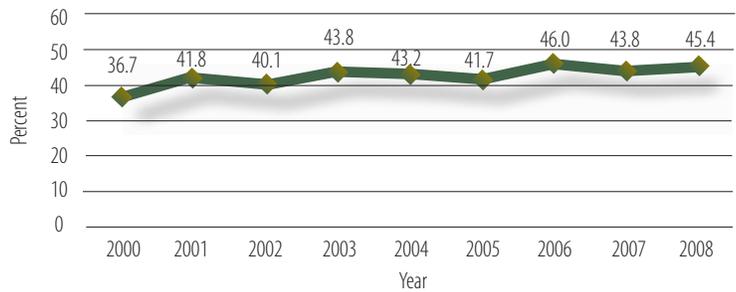
n= 4308

Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>45.1</b>	<b>43.1 - 47.1</b>
<b>Age</b>		
18-24	41.2	37.9 - 44.7
25-34	46.1	43.4 - 48.8
35-44	51.4	46.0 - 56.8
<b>Race/Ethnicity</b>		
Non-Hispanic White	43.6	41.3 - 46.0
Non-Hispanic Black	57.5	54.4 - 60.6
Hispanic	45.8	34.2 - 57.8
Non-Hispanic Other	30.2	22.1 - 39.6
<b>Marital Status</b>		
Married	44.4	41.8 - 47.0
Unmarried	46.2	43.1 - 49.4
<b>Education</b>		
Less than 12 years	44.7	38.9 - 50.6
12 years	48.3	44.4 - 52.1
More than 12 years	43.8	41.3 - 46.3
<b>County Type</b>		
Appalachian	46.5	41.2 - 51.8
Metropolitan	45.3	42.7 - 47.9
Rural, non-Appalachian	46.7	41.2 - 52.3
Suburban	42.3	37.4 - 47.4
<b>Medicaid Status</b>		
Medicaid	45.0	41.9 - 48.1
Non-Medicaid	45.1	42.5 - 47.7

Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



**Women Ages 18 to 44 Having a Live Birth Who Were  
Overweight or Obese Prior to Pregnancy, Ohio, 2000-2008**



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Nutrition and Physical Activity —Folic Acid Supplementation

**F4: Women having a live birth who took a multi-vitamin, prenatal vitamin or a folic acid supplement every day of the month prior to pregnancy, 2006-2008.**

### Public Health Importance:

Folic acid is a B-complex vitamin found in green leafy vegetables, legumes, and other fortified foods. In order to prevent neural tube defects such as spina bifida, it is important that women receive the recommended 400 µg of folic acid each day prior to and during pregnancy<sup>56</sup>. Due to the difficulty in consuming enough folic acid from diet alone, a multi-vitamin or folic acid supplement is generally recommended for women of reproductive age<sup>56</sup>. Nationally, non-Hispanic black and Hispanic women are less likely than white women to consume enough folic acid each day<sup>56</sup>.

### Ohio:

-  Less than one-third of Ohio mothers reported taking a multi-vitamin daily in the month before pregnancy. This is significantly less than the Healthy People 2010 target of 80 percent.
-  Daily multi-vitamin use among mothers 18 to 24 years of age was less than half that of mothers in older age groups.
-  About 30 percent of white mothers reported taking a multi-vitamin daily, while only 19 percent of black mothers reported the same behavior.
-  Mothers living in Appalachian counties were less likely to report daily multi-vitamin use than mothers living in other areas of Ohio.

### Related Healthy People 2010 Objective(s):

16-16a. Consumption of at least 400µg of folic acid each day from fortified foods or dietary supplements by nonpregnant women aged 15 to 44 years. Target: 80%.

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<sup>56</sup> Yang QH, Carter HK, Mulinare J, Berry RJ, Friedman JM, Erickson JD. Race-ethnicity Differences in Folic Acid Intake in Women of Childbearing Age in the United States After Folic Acid Fortification: Findings from the National Health and Nutrition Examination Survey, 2001-2002. *Am J Clin Nutr* 2007; 85:1409-1416.

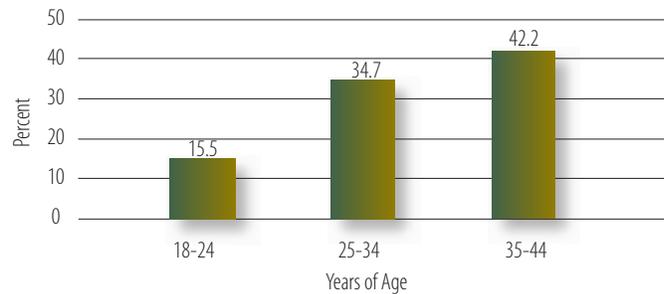
**Percentage of Women  
Ages 18 to 44 Having a Live Birth  
Who Took a Multi-vitamin,  
Prenatal Vitamin or Folic Acid  
Supplement Every Day of the Month  
Prior to Pregnancy, 2006–2008.**

n= 4351

Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>29.0</b>	<b>27.2 - 30.8</b>
<b>Age</b>		
18-24	15.5	13.1 - 18.2
25-34	34.7	32.1 - 37.3
35-44	42.2	37.0 - 47.7
<b>Race/Ethnicity</b>		
Non-Hispanic White	30.9	28.8 - 33.1
Non-Hispanic Black	18.9	16.7 - 21.5
Hispanic	36.8	26.2 - 48.9
Non-Hispanic Other	24.0	17.1 - 32.5
<b>Marital Status</b>		
Married	37.8	35.3 - 40.3
Unmarried	15.2	13.1 - 17.6
<b>Education</b>		
Less than 12 years	20.4	16.1 - 25.6
12 years	18.5	15.7 - 21.6
More than 12 years	36.8	34.4 - 39.3
<b>County Type</b>		
Appalachian	23.3	19.2 - 27.9
Metropolitan	29.9	27.6 - 32.4
Rural, non-Appalachian	30.3	25.6 - 35.5
Suburban	32.0	27.5 - 36.9
<b>Medicaid Status</b>		
Medicaid	16.2	14.1 - 18.6
Non-Medicaid	38.3	35.8 - 40.8

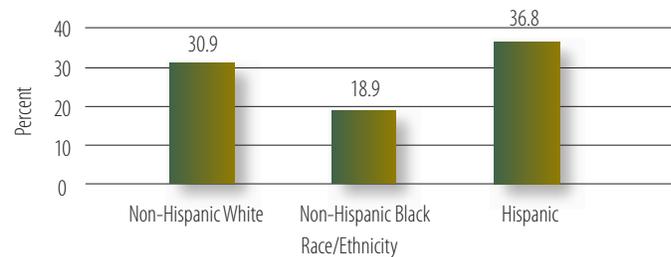
Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

**Women Who Reported Taking a Multi-Vitamin Every Day  
of the Month Prior to Pregnancy, By Age, Ohio, 2006-2008**



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

**Women Ages 18 to 44 Who Reported  
Taking a Multi-Vitamin Every Day of the Month  
Prior to Pregnancy, By Race, Ohio, 2006-2008**



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



## Nutrition and Physical Activity —Exercise/Physical Activity

F5: Women who participated in enough moderate and/or vigorous physical activity on average per week to meet the recommended levels of physical activity,\* 2004-2008.

### Public Health Importance:

Physical activity is important for women of reproductive age to maintain a healthy weight and prevent conditions such as hypertension, diabetes and heart disease. Women who exercise regularly are less likely to be obese and will therefore have a decreased risk of poor pregnancy outcomes such as birth defects and preterm delivery<sup>57</sup>. Medical providers should encourage women of reproductive age to incorporate exercise into their daily routine in order to improve both maternal and infant health<sup>58</sup>.

### Ohio:

-  Almost 54 percent of Ohio women reported getting the recommended amount of exercise each week. While this may be slightly over-reported due to social desirability bias, Ohio does meet and exceed the Healthy People 2010 target of 30 percent.
-  Younger women between 18 and 24 years of age more often reported getting an adequate amount of physical activity.
-  Women with health care coverage were more likely to report meeting physical activity recommendations than women without a health plan.

### Related Healthy People 2010 Objective(s):

- 22-1. Reduce the proportion of adults who engage in no leisure-time physical activity. Target: 20%.
- 22-2. Increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day. Target: 30%.

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\*BRFSS defines insufficient physical activity as a failure to meet recommended guidelines for physical activity, which are defined as moderate activity for 30 or more minutes per day on 5 or more days per week or vigorous physical activity for 20 or more minutes per day on 3 or more days per week.

<sup>57</sup> Moos MK, Dunlop A, Jack B, et al. Healthier Women, Healthier Reproductive Outcomes: Recommendations for the Routine Care of All Women of Reproductive Age. *Am J Obstet Gynecol* 2008; 199 (6 Suppl B):S280-S289.

<sup>58</sup> Gardiner P, Nelson L, Shellhaas C, et al. The Clinical Content of Preconception Care: Nutrition and Dietary Supplements. *Am J Obstet Gynecol* 2008; 199 (6 Suppl B):S345-356.

Percentage of Women Ages 18 to 44  
Who Met the Recommended Level of  
Physical Activity (2004 – 2008).

n=3,402

Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>53.8</b>	<b>51.3-56.3</b>
<b>Age</b>		
18-24	58.1	51.4-64.7
25-34	53.5	49.7-57.4
35-44	51.4	48.2-54.7
<b>Race/Ethnicity</b>		
Non-Hispanic White	54.9	52.2-57.7
Non-Hispanic Black	48.9	41.4-56.3
Hispanic	*	*
Non-Hispanic Other	*	*
<b>Marital Status</b>		
Married	52.7	49.7-55.8
Unmarried	55.2	51.0-59.5
<b>Education</b>		
Less than 12 years	*	*
12 years	52.3	47.6-57.0
More than 12 years	54.5	51.5-57.5
<b>County Type</b>		
Appalachian	57.5	51.2-63.8
Metropolitan	54.4	51.2-57.6
Rural, non-Appalachian	48.9	41.0-56.8
Suburban	53.6	47.0-60.3
<b>Health Plan Status</b>		
Have a health plan	54.6	52.0-57.3
No health plan	48.5	41.1-55.9

\* Sample size insufficient for meaningful analysis or half CI > 10

Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



## Mental Health—General Mental Distress

**G1: Women who report that their mental health was not good for at least 14 out of the past 30 days, 2004-2008.**

### Public Health Importance:

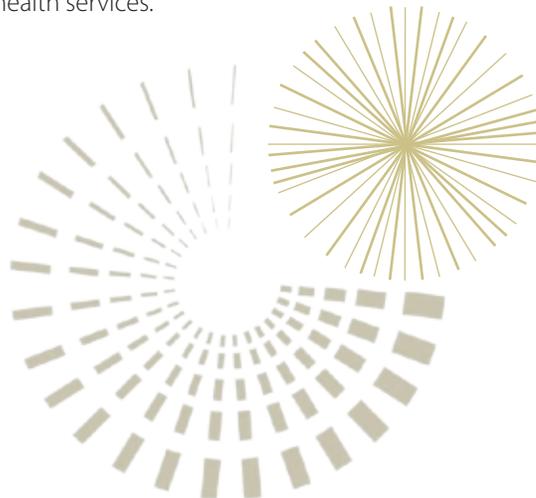
Poor mental health is a significant burden, causing distress and lack of functionality for those affected. Conditions such as depression affect women more frequently than men and can have a serious impact on both home and professional life<sup>59</sup>. Treating chronic mental illnesses before pregnancy is an important part of preconception health and improving maternal and infant health outcomes.

### Ohio:

- ✿ Approximately 16 percent of women 18 to 44 years of age in Ohio reported being in poor mental health.
- ✿ Women between the ages of 18 and 24 and those with less than 12 years of education more often reported being in poor mental health.
- ✿ Women living in Appalachian and rural counties had a slightly higher risk of poor mental health than women in metropolitan or suburban counties.
- ✿ Married women were less likely to report that their mental health was not good when compared with unmarried women.

### Related Healthy People 2010 Objective(s):

*Overall goal:* Improve mental health and ensure access to appropriate, quality mental health services.



<sup>59</sup> Centers for Disease Control and Prevention. NCHS Data Brief. Depression in the United States Household Population, 2005-2006. 2008 Sept; No. 7. Accessed Online October 19, 2010. Available at <http://www.cdc.gov/nchs/data/databriefs/db07.htm>

Percentage of Women  
Ages 18 to 44  
Who Reported Being  
in Poor Mental Health  
for at Least 14 Out of the  
Past 30 Days, 2004–2008.

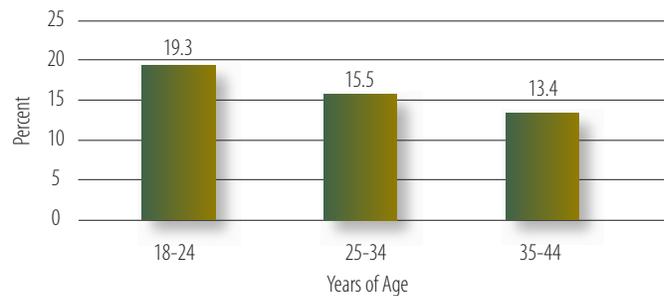
n = 8,461

Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>15.6</b>	<b>14.1-17.1</b>
<b>Age</b>		
18-24	19.3	15.0-23.5
25-34	15.5	13.3-17.7
35-44	13.4	11.6-15.2
<b>Race/Ethnicity</b>		
Non-Hispanic White	15.2	13.5-16.9
Non-Hispanic Black	19.6	15.0-24.2
Hispanic	14.4	6.0-22.9
Non-Hispanic Other	14.0	7.2-20.8
<b>Marital Status</b>		
Married	11.8	10.0-13.5
Unmarried	20.4	17.8-23.0
<b>Education</b>		
Less than 12 years	26.4	19.3-33.5
12 years	17.8	15.1-20.4
More than 12 years	13.3	11.4-15.2
<b>County Type</b>		
Appalachian	18.6	14.6-22.6
Metropolitan	15.2	13.2-17.1
Rural, non-Appalachian	18.6	13.1-24.0
Suburban	11.5	8.4-14.6
<b>Health Plan Status</b>		
Have a health plan	13.9	12.4-15.4
No health plan	26.5	21.0-31.9

Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



Women Who Reported Poor Mental Health on at Least 14 of the Past 30 Days, By Age, Ohio, 2006-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Mental Health—Postpartum Depression

### G3: Women having a live birth who experienced depressive symptoms after pregnancy, 2006-2008.

#### Public Health Importance:

Approximately one in ten women is depressed at some point during the year following pregnancy<sup>60</sup>. Studies have shown that women diagnosed with depression before pregnancy have a higher risk of experiencing postpartum depression in the year following pregnancy<sup>61</sup>. Women with postpartum depression have been shown to interact with their infant less (through play or talking) and are also less likely to continue breastfeeding<sup>61</sup>. Identifying women at high risk for depression in the preconception period is an important part of the process of improving the interaction among family members and the health and safety of mother and infant.

#### Ohio:

-  Unmarried mothers in Ohio were more than twice as likely to report symptoms of depression after pregnancy as married mothers.
-  As education increased, the percentage of mothers reporting postpartum depression decreased.
-  Black women and women who were unmarried also had a higher risk of experiencing postpartum depression.
-  Women using Medicaid were more likely to report depressive symptoms after pregnancy when compared with women not on Medicaid.

#### Related Healthy People 2010 Objective(s):

16-5.c. Reduction in postpartum complications, including postpartum depression.

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<sup>60</sup> Dietz PM, Williams SB, Callaghan WM, et al. Clinically Identified Maternal Depression before, during, and after Pregnancies Ending in Live Births. *Am J Psychiatry* 2007; 164:1515-20.

<sup>61</sup> McLearn KT, Minkovitz CS, Strobino DM, et al. Maternal Depressive Symptoms at 2 to 4 Months Postpartum and Early Parenting Practices. *Arch Pediatr Adolesc Med* 2006; 160:279-84.

Percentage of Women  
Ages 18 to 44 Having a Live Birth  
Who Experienced Symptoms  
of Depression after Pregnancy,  
2006–2008.

n= 4199

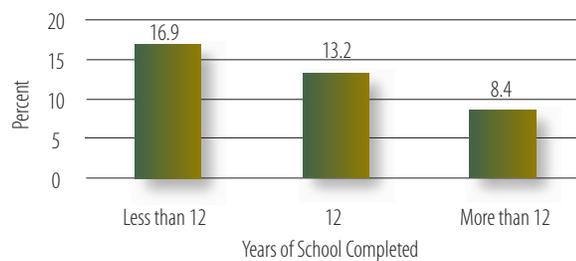
Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>11.1</b>	<b>9.9 - 12.4</b>
<b>Age</b>		
18-24	15.1	12.7 - 17.8
25-34	9.2	7.8 - 10.9
35-44	8.0	5.6 - 11.3
<b>Race/Ethnicity</b>		
Non-Hispanic White	10.4	9.0 - 12.0
Non-Hispanic Black	15.2	13.0 - 17.6
Hispanic	*	*
Non-Hispanic Other	*	*
<b>Marital Status</b>		
Married	7.0	5.8 - 8.4
Unmarried	17.6	15.2 - 20.2
<b>Education</b>		
Less than 12 years	16.9	12.9 - 21.8
12 years	13.2	10.8 - 16.1
More than 12 years	8.4	7.1 - 9.9
<b>County Type</b>		
Appalachian	12.0	9.0 - 15.8
Metropolitan	10.8	9.4 - 12.5
Rural, non-Appalachian	8.4	5.9 - 12.0
Suburban	12.7	9.5 - 16.9
<b>Medicaid Status</b>		
Medicaid	17.1	14.8 - 19.6
Non-Medicaid	6.8	5.6 - 8.2

\* Sample size insufficient for meaningful analysis

Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



Women Ages 18 to 44 Who Reported Symptoms of Postpartum Depression, By Education, Ohio, 2006-2008



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Emotional and Social Support —Domestic Abuse (Physical and Mental)

**H1: Women having a live birth who were physically abused by their partner during the 12 months prior to pregnancy, 2006-2008.**

**Public Health Importance:**

Physical abuse prior to pregnancy is linked with late entry into prenatal care and is indicative of physical abuse during pregnancy<sup>62</sup>. Women who report physical abuse by a partner or spouse before they become pregnant are more likely to experience hypertension, preterm birth, have a low birth weight infant and have more hospital visits than women who report they were not abused in this time period<sup>63</sup>. Pregnant women and women of reproductive age should be screened by medical providers for signs of physical abuse and offered appropriate counseling and assistance to ensure their safety.

**Ohio:**

-  Mothers 18 to 24 years of age in Ohio were four times more likely than mothers 25 to 34 years of age to report being physically abused prior to their pregnancy.
-  Similar increases in physical abuse were seen among black mothers, those who were unmarried, mothers with 12 or less years of education, and mothers who have received Medicaid.
-  Counseling and education for Ohio women in these high risk groups are important to identify and prevent incidents of physical abuse.

**Related Healthy People 2010 Objective(s):**

- 15-34. Reduce the rate of physical assault by current or former intimate partners.  
Target: 3.3 physical assaults per 1,000 persons aged 12 years and older.
- 15-37. Reduce physical assaults. Target: 13.6 physical assaults per 1,000 persons aged 12 years older.

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<sup>62</sup> Centers for Disease Control and Prevention. Monitoring Progress Toward Achieving Maternal and Infant Healthy People 2010 Objectives – 19 States, Pregnancy Risk Assessment Monitoring System (PRAMS), 2000-2003. MMWR. October 6, 2006; 55(SS09); 1-11.

<sup>63</sup> Silverman JG, Decker MR, Reed E, Raj A. Intimate Partner Violence Victimization Prior to and during Pregnancy among Women Residing in 26 U.S. States: Associations with Maternal and Neonatal Health. Am J Obstet Gynecol 2006; 195: 140-148.

Percentage of Women  
Ages 18 to 44  
Having a Live Birth Who Were  
Physically Abused By  
Their Husband/Partner  
during the 12 Months  
Prior to Pregnancy, 2006–2008.

n= 4262

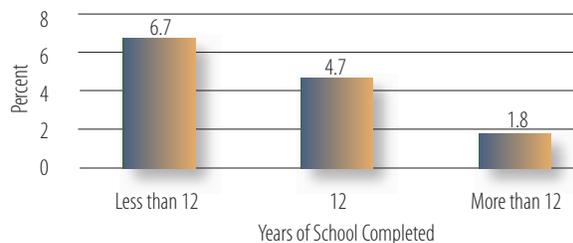
Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>3.3</b>	<b>2.7 - 4.0</b>
<b>Age</b>		
18-24	6.0	4.6 - 7.8
25-34	2.0	1.4 - 2.9
35-44	*	*
<b>Race/Ethnicity</b>		
Non-Hispanic White	2.7	2.0 - 3.6
Non-Hispanic Black	6.7	5.3 - 8.5
Hispanic	*	*
Non-Hispanic Other	*	*
<b>Marital Status</b>		
Married	1.4	0.9 - 2.1
Unmarried	6.4	5.1 - 8.1
<b>Education</b>		
Less than 12 years	6.7	4.3 - 10.3
12 years	4.7	3.4 - 6.5
More than 12 years	1.8	1.3 - 2.5
<b>County Type</b>		
Appalachian	*	*
Metropolitan	3.8	3.0 - 4.9
Rural, non-Appalachian	*	*
Suburban	*	*
<b>Medicaid Status</b>		
Medicaid	6.1	4.8 - 7.7
Non-Medicaid	1.2	0.8 - 1.9

\* Sample size insufficient for meaningful analysis

Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



Women Ages 18 to 44 Who Reported Being Physically Abused by Their Partner Before Pregnancy, By Education, Ohio, 2006-2008



Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Emotional and Social Support —Adequacy of Support

H3: Women who always or usually get the social and emotional support they need, 2004-2008.

### Public Health Importance:

Little is known about the direct effects of inadequate social and emotional support on birth outcomes, but stress and lack of support may contribute to negative health behaviors such as smoking<sup>64</sup>. Mothers with a lack of support are also more likely to have poor self-reported overall health<sup>65</sup>. Factors such as tiredness, stress, and depression could result from inadequate social and emotional support, affecting women's ability to care for themselves as well as their infant. Providing assistance to women who do not have enough support before they become pregnant could lead to better overall health and well-being for mother and infant.

### Ohio:

-  As education increased among Ohio women between the ages of 18 and 44, so too did the percentage that reported having adequate social and emotional support.
-  Women who were white and those who were married were more likely to report receiving the support they need.
-  Women living in Appalachian and metropolitan counties were less likely to report adequate social and emotional support than women living in rural and suburban counties.
-  Having health care coverage also increased the likelihood that women in Ohio receive the needed social and emotional support.

### Related Healthy People 2010 Objective(s):

None.

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<sup>64</sup> Hoffman S, Hatch M. Stress, Social Support and Pregnancy Outcome: A Reassessment Based on Recent Research. *Paediatr Perinat Epidemiol* 1996; 10:380-405.

<sup>65</sup> Schytt E, Waldenstrom U. Risk Factors for Poor Self-Rated Health in Women at 2 Months and 1 Year after Childbirth. *J Womens Health* 2007; 16:390-405.

Percentage of Women Ages 18 to 44 Who Reported Always or Usually Get the Social and Emotional Support They Need, 2004–2008.

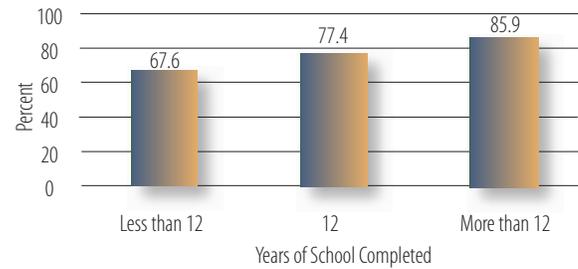
n =6,542

Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>82.1</b>	<b>80.5-83.6</b>
<b>Age</b>		
18-24	80.2	76.1-84.2
25-34	82.8	80.5-85.1
35-44	82.6	80.5-84.6
<b>Race/Ethnicity</b>		
Non-Hispanic White	84.1	82.5-85.7
Non-Hispanic Black	68.3	62.5-74.1
Hispanic	*	*
Non-Hispanic Other	75.0	67.8-82.2
<b>Marital Status</b>		
Married	86.7	85.0-88.5
Unmarried	76.1	73.4-78.8
<b>Education</b>		
Less than 12 years	67.6	59.2-76.0
12 years	77.4	74.3-80.4
More than 12 years	85.9	84.2-87.6
<b>County Type</b>		
Appalachian	79.7	75.8-83.6
Metropolitan	80.8	78.7-82.9
Rural, non-Appalachian	85.2	81.1-89.2
Suburban	86.6	83.2-90.0
<b>Health Plan Status</b>		
Have a health plan	84.2	82.7-85.8
No health plan	68.0	62.4-73.6

\* Sample size insufficient for meaningful analysis or half CI > 10

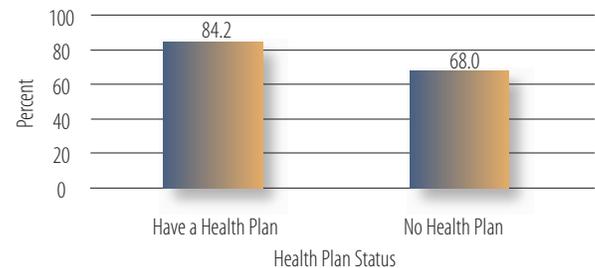
Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

Women Ages 18 to 44 Who Reported Always/Usually Getting the Social and Emotional Support Needed, By Education, Ohio, 2006-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

Women Ages 18 to 44 Who Reported Always/Usually Getting the Social and Emotional Support Needed By Health Plan Status, Ohio, 2004-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Chronic Conditions—Diabetes

### I1: Women who have ever been told by a health care provider that they had diabetes including gestational diabetes, 2004-2008.

#### Public Health Importance:

An estimated nine million women in the United States have diabetes<sup>66</sup>. Women with diabetes have an increased risk of kidney failure, cardiovascular disease and blindness. Racial disparities are also evident: diabetes is the fourth leading cause of death for non-white women<sup>67</sup>. Birth defects and other poor outcomes for mother and infant could result if diabetes is not controlled in a woman who is pregnant.

Women with unmanaged gestational diabetes are at risk for macrosomia and delivery complications<sup>67</sup>. It is important for women with diabetes to work closely with a health care provider before becoming pregnant to make sure the diabetes is well controlled and to make sure that her health as well as that of her infant's will not be compromised.

#### Ohio:

- ✿ As age increased, the percentage of women who reported that they had diabetes or gestational diabetes also increased in Ohio.
- ✿ Black women in Ohio were more likely to report having diabetes or gestational diabetes than women of other races.
- ✿ Women with less than 12 years of education reported having diabetes or gestational diabetes more often than those with 12 or more years of education.

#### Related Healthy People 2010 Objective(s):

- 5-4. Increase the proportion of adults with diabetes whose condition has been diagnosed. Target: 80%
- 5-8. Decrease the proportion of women with gestational diabetes.

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<sup>67</sup> Department of Health and Human Services. Call to Action: The National Public Health Initiative on Diabetes and Women's Health. Atlanta, GA: Department of Health and Human Services, Centers for Disease Control and Prevention, 2004. Available at <http://www.cdc.gov/diabetes/pubs/pdf/calltoaction.pdf>

<sup>68</sup> Centers for Disease Control and Prevention. Diabetes and Pregnancy. 2009 Nov. Accessed Online October 19, 2010. Available at <http://www.cdc.gov/Features/DiabetesPregnancy/>.

Percentage of Women  
Ages 18 to 44 Who Have  
Ever Been Told By a Health  
Care Provider That They  
Have Diabetes Including  
Gestational Diabetes, 2004–2008.

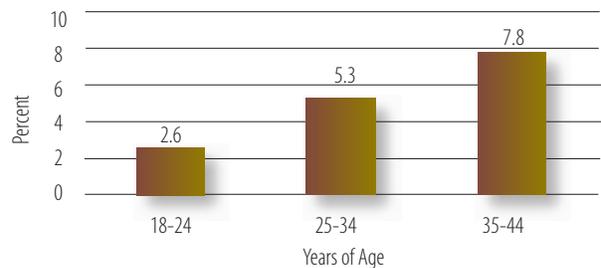
n = 8,548

Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>5.6</b>	<b>4.8-6.4</b>
<b>Age</b>		
18-24	2.6	1.2-4.0
25-34	5.3	4.2-6.5
35-44	7.8	6.4-9.1
<b>Race/Ethnicity</b>		
Non -Hispanic White	5.1	4.3-5.9
Non-Hispanic Black	8.5	6.0-11.0
Hispanic	4.0	1.8-6.1
Non-Hispanic Other	8.3	3.3-13.3
<b>Marital Status</b>		
Married	6.4	5.3-7.6
Unmarried	4.4	3.4-5.4
<b>Education</b>		
Less than 12 years	11.3	6.4-16.2
12 years	5.4	4.1-6.8
More than 12 years	5.0	4.2-5.9
<b>County Type</b>		
Appalachian	7.2	4.9-9.4
Metropolitan	5.3	4.4-6.2
Rural, non-Appalachian	6.7	4.2-9.2
Suburban	3.9	2.0-5.8
<b>Health Plan Status</b>		
Have a health plan	5.5	4.7-6.3
No health plan	6.6	4.0-9.1

Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



Women Ages 18 to 44 Who Reported Having Diabetes, Including Gestational Diabetes, By Age, Ohio, 2004-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Chronic Conditions—Diabetes

**I2: Women having a live birth who before their most recent pregnancy had ever been told by a health care provider that they had Type I or Type II diabetes, 2006-2008.**

**Public Health Importance:**

Approximately 1.9 million women between the ages of 18 and 44 in the United States are known to have diabetes<sup>68</sup>. This number has the potential to increase as the overweight and obesity rates climb. Women with diabetes are at a greater risk for pregnancy complications and the infant is more likely to have birth defects and other adverse conditions<sup>69</sup>. Preconception care should emphasize control of medical conditions and inform women of any risks regarding possible complications and impacts on the health of the fetus. Research has shown that diabetic women who see a health care provider regularly before pregnancy and consistently control blood glucose levels greatly reduce the risk of poor pregnancy and birth outcomes<sup>69</sup>.

Ohio:

-  About three percent of Ohio mothers reported having Type I or Type II diabetes before pregnancy.
-  Among mothers in Ohio, pre-existing diabetes was reported more often in black women than white women.
-  Mothers who were between 35 and 44 years of age, those with less than 12 years of education and those who have received Medicaid were more likely to have had diabetes diagnosed before pregnancy.

**Related Healthy People 2010 Objective(s):**

- 5-1. Increase the proportion of persons with diabetes who receive formal diabetes education. Target: 60%.
- 5-2. Prevent diabetes.
- 5-4. Increase the proportion of adults with diabetes whose condition has been diagnosed.
- 5-8. Decrease the proportion of pregnant women with gestational diabetes.

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<sup>68</sup> Dunlop AL, Jack BW, Bottalico JN, et al. The Clinical Content of Preconception Care: Women with Chronic Medical Conditions. *Am J Obstet Gynecol* 2008 Dec;1996 (Suppl B):S310-27.

<sup>69</sup> Centers for Disease Control and Prevention. Pregnancy Complications and Perinatal Outcomes among Women with Diabetes — North Carolina, 1989-1990. *MMWR*, Nov. 05, 1993 / 42(43):847-51.

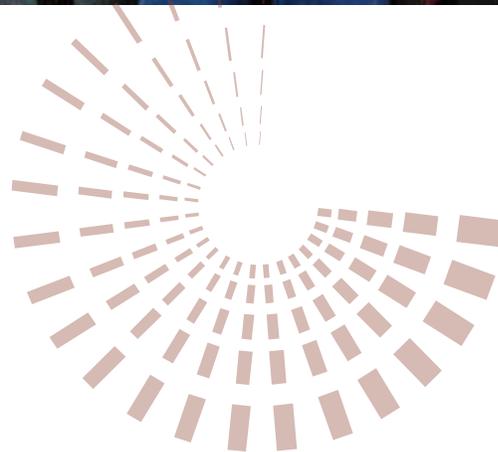
Percentage of Women Ages 18 to 44 Having a Live Birth Who Were Ever Told By a Provider Before Their Pregnancy That They Have Type I or Type II Diabetes, 2006–2008.

n= 4256

Characteristics	%	95% CI
<b>Mothers Age 18-44</b>	<b>2.6</b>	<b>2.0 - 3.3</b>
<b>Age</b>		
18-24	2.3	1.4 - 3.6
25-34	2.3	1.6 - 3.3
35-44	4.7	2.9 - 7.3
<b>Race/Ethnicity</b>		
Non-Hispanic White	2.4	1.7 - 3.3
Non-Hispanic Black	4.3	3.2 - 5.7
Hispanic	*	*
Non-Hispanic Other	*	*
<b>Marital Status</b>		
Married	2.1	1.5 - 3.0
Unmarried	3.2	2.3 - 4.6
<b>Education</b>		
Less than 12 years	5.3	3.1 - 8.9
12 years	2.5	1.6 - 4.0
More than 12 years	1.9	1.4 - 2.7
<b>County Type</b>		
Appalachian	*	*
Metropolitan	3.1	2.3 - 4.2
Rural, non-Appalachian	*	*
Suburban	*	*
<b>Medicaid Status</b>		
Medicaid	3.6	2.6 - 5.1
Non-Medicaid	1.8	1.2 - 2.6

\* Sample size insufficient for meaningful analysis

Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



## Chronic Conditions—Hypertension

**I3: Women who have ever been told by a health care provider that they had hypertension including hypertension during pregnancy, 2004-2008.**

### Public Health Importance:

According to a 2002 national survey by the U.S. Department of Health and Human Services, three percent of women of reproductive age have chronic hypertension<sup>70</sup>. Hypertension during pregnancy is associated with complications such as pre-eclampsia and eclampsia, kidney deterioration, and an increased risk for preterm delivery and placental abruption<sup>71</sup>. Women diagnosed with hypertension while pregnant must be monitored closely for pre-eclampsia and decreased fetal growth<sup>71</sup>. Women of reproductive age with chronic hypertension should work closely with a health care provider to manage their condition and avoid serious complications during future pregnancies.

### Ohio:

- ✿ 11 percent of women of reproductive age reported ever being diagnosed with hypertension in Ohio. This meets the Healthy People 2010 objective to reduce the proportion of adults with high blood pressure to 16 percent.
- ✿ A marked increase in diagnoses of hypertension was seen among Ohio women as age increased.
- ✿ Black women were more likely to be diagnosed with hypertension than white or Hispanic women.
- ✿ Women with less than 12 years of education made up a slightly higher percentage of those with hypertension than women with 12 or more years of education.

### Related Healthy People 2010 Objective(s):

12-9. Reduce the proportion of adults with high blood pressure. Target: 16%.

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<sup>70</sup> Dunlop AL, Jack BW, Bottalico JN, et al. The Clinical Content of Preconception Care: Women with Chronic Medical Conditions. *Am J Obstet Gynecol* 2008 Dec;199(6 Suppl B):S310-27.

<sup>71</sup> Report of the National High Blood Pressure Education Program Working Group on High Blood Pressure in Pregnancy. *Am J Obstet Gynecol* 2000; 183:S1-22.

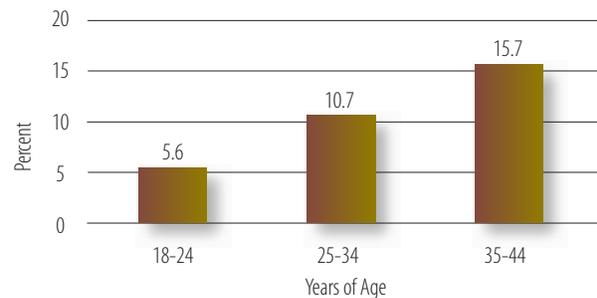
Percentage of Women  
Ages 18 to 44 Who Have  
Ever Been Told By a Health  
Care Provider That They Have  
Hypertension, Including  
Gestational Hypertension,  
2004-2008.

n = 5,275

Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>11.4</b>	<b>10.0-12.8</b>
<b>Age</b>		
18-24	5.6	3.3-7.9
25-34	10.7	8.4-13.1
35-44	15.7	13.3-18.0
<b>Race/Ethnicity</b>		
Non-Hispanic White	10.4	8.9-11.9
Non-Hispanic Black	18.9	14.7-23.2
Hispanic	6.5	1.4-11.5
Non-Hispanic Other	16.6	6.7-26.4
<b>Marital Status</b>		
Married	11.4	9.5-13.4
Unmarried	11.3	9.3-13.3
<b>Education</b>		
Less than 12 years	13.5	7.4-19.6
12 years	11.5	9.1-13.8
More than 12 years	11.1	9.3-12.9
<b>County Type</b>		
Appalachian	14.0	10.2-17.8
Metropolitan	11.7	10.0-13.5
Rural, non-Appalachian	11.7	7.0-16.3
Suburban	7.8	4.4-11.1
<b>Health Plan Status</b>		
Have a health plan	10.9	9.5-12.2
No health plan	14.8	9.8-19.8

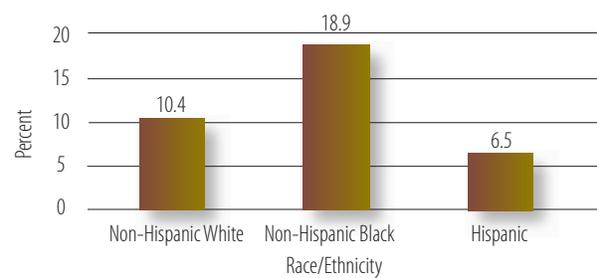
Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

Women Who Reported Having Hypertension Including  
Gestational Hypertension, By Age, Ohio, 2004-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

Women Ages 18 to 44 Who Reported Having Hypertension,  
Including Gestational Hypertension, By Age, Ohio, 2004-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Chronic Conditions—Asthma

### I5 Women who currently have asthma, 2004-2008.

#### Public Health Importance:

In the United States, 9.4 percent of women of reproductive age are affected by asthma and roughly 30 percent of these women experience more severe symptoms during pregnancy<sup>72</sup>. Uncontrolled asthma before pregnancy can lead to complications such as hypertension, low birth weight and preterm delivery<sup>73</sup>. Women with mild or well-controlled asthma have a substantially lower risk of complications than those whose asthma is not controlled<sup>73</sup>. Because asthma symptoms can worsen during a pregnancy, women of reproductive age with chronic asthma should work with a medical provider to ensure that the condition is properly managed with minimal symptoms before becoming pregnant.

#### Ohio:

-  Approximately 12 percent of women of reproductive age in Ohio reported currently having asthma.
-  The percentage of women having asthma did not differ notably across age groups.
-  Women with less than 12 years of education had a strikingly higher percentage of asthma diagnoses than women with 12 or more years of education.

#### Related Healthy People 2010 Objective(s):

- 24-1. Reduce asthma deaths.
- 24-2. Reduce hospitalizations for asthma.
- 24-3. Reduce hospital emergency department visits for asthma.
- 24-4. Reduce activity limitations among persons with asthma.
- 24-6. Increase the proportion of persons with asthma who receive formal patient education as an essential part of the management of their condition.
- 24-7. Increase the proportion of persons with asthma who receive appropriate asthma care.
- 4-7a. Increase the proportion of persons with asthma who receive written asthma management plans from their health care provider.

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<sup>72</sup> Dunlop AL, Jack BW, Bottalico JN, et al. The Clinical Content of Preconception Care: Women with Chronic Medical Conditions. *Am J Obstet Gynecol* 2008 Dec; 199(6 Suppl B):S310-27.

<sup>73</sup> Schatz, M. (Edited by Queenan JT, Spong CY, Lockwood CJ). *Asthma. Management of High Risk Pregnancy — An Evidence-Based Approach*. Blackwell Publishing Ltd. 5th Edition. 2007; 23: 192-200.

Percentage of Women  
Ages 18 to 44 Who Reported  
Currently Having Asthma,  
2004–2008.

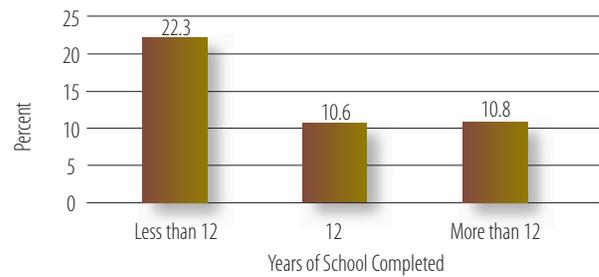
n = 8,482

Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>11.5</b>	<b>10.3-12.8</b>
<b>Age</b>		
18-24	11.9	8.8-15.1
25-34	11.1	9.4-12.8
35-44	11.7	9.9-13.5
<b>Race/Ethnicity</b>		
Non-Hispanic White	11.1	9.8-12.5
Non-Hispanic Black	14.0	10.0-18.0
Hispanic	10.8	3.3-18.3
Non-Hispanic Other	13.5	7.8-19.1
<b>Marital Status</b>		
Married	10.0	8.5-11.4
Unmarried	13.5	11.4-15.6
<b>Education</b>		
Less than 12 years	22.3	15.6-29.0
12 years	10.6	8.7-12.5
More than 12 years	10.8	9.2-12.3
<b>County Type</b>		
Appalachian	10.7	8.0-13.4
Metropolitan	11.9	10.3-13.6
Rural, non-Appalachian	12.7	8.6-16.7
Suburban	10.3	7.3-13.3
<b>Health Plan Status</b>		
Have a health plan	11.3	10.0-12.6
No health plan	12.9	8.8-16.9

Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.



Women Ages 18 to 44 Who Reported Currently Having  
Asthma, By Education, Ohio, 2004-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

## Infections—Sexually Transmitted Infections

### J2: Rates of chlamydia, gonorrhea, and syphilis (cases per 100,000 women aged 18-44 years), 2006-2008.

#### Public Health Importance:

With approximately 2.8 million cases estimated to occur in the United States every year, chlamydia is the most widespread bacterial STD in the country<sup>74</sup>. Young women are disproportionately affected: more than half of the chlamydia cases reported to the CDC each year are women between the ages of 15 and 25<sup>75</sup>.

Gonorrhea is the second most common STD and over 350,000 new infections were reported in 2006 in the United States; although this is believed to be only about half of the infections that actually occur<sup>75</sup>. Cases of gonorrhea did decline dramatically after 1975 when the national gonorrhea control program was implemented, but antibiotic-resistant strains of the bacteria are emerging, raising concerns about the cost and effectiveness of treatment<sup>75</sup>. Left untreated, chlamydia and gonorrhea can lead to pelvic inflammatory disease, ectopic pregnancy, and infertility<sup>74-75</sup>.

Syphilis is of great concern for women of reproductive age. Up to 40 percent of pregnancies among women with untreated syphilis result in fetal death<sup>75</sup>. Eighty percent of women who had untreated syphilis within four years of becoming pregnant will transmit the disease to the fetus<sup>75</sup>. Risks to the infant include brain damage, blindness, and bone deformities<sup>75</sup>.

#### Ohio:

-  Chlamydia, gonorrhea and syphilis rates in Ohio are all higher than the Healthy People 2010 goal.
-  Chlamydia rates have increased slightly among women of reproductive age in Ohio in the last several years. Metropolitan counties had the highest reported rates of chlamydia. Younger women had a much higher risk of being diagnosed with chlamydia. The chlamydia rate for women ages 18 to 24 is more than four times the rate of women between the ages of 25 and 34. Black and Hispanic women were also disproportionately affected by chlamydia.
-  Similar trends were evident among women diagnosed with gonorrhea in Ohio. Black and Hispanic women as well as those living in metropolitan counties had much higher rates of diagnoses than white women and those living in other county types. Younger women also had a higher rate of gonorrhea diagnoses.
-  Syphilis rates have more than doubled among women between the ages of 18 and 24 in recent years—from 5.5 in 2006 to 12.1 in 2008. Rates have increased among all women of reproductive age however, and an increasing trend is observed among all races from 2006—2008. Black women had an especially high number of syphilis cases when compared to white and Hispanic women.

**Related Healthy People 2010 Objective(s):**

- 25-1. Reduce the proportion of adolescents and young adults with Chlamydia trachomatis infections. Target: 3%.
- 25-2. Reduce gonorrhea. Target: 19 new cases per 100,000 population.
- 25-3. Eliminate sustained domestic transmission of primary and secondary syphilis. Target: 0.2 cases per 100,000 population.

<sup>74</sup>Centers for Disease Control and Prevention. Chlamydia Screening among Sexually Active Young Female Enrollees of Health Plans—United States, 2000 – 2007. MMWR. 2009 Apr 17; 58(14): 362-365.

<sup>75</sup>Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance, 2006. Atlanta, GA: U.S. Department of Health and Human Services, November 2007.

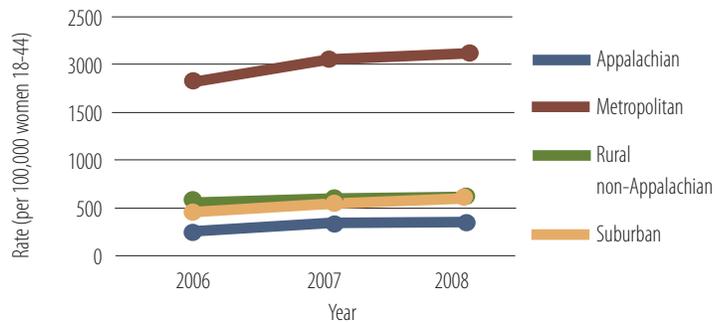
**Rate of Chlamydia Diagnoses<sup>1</sup>  
Among Women Ages 18 to 44, 2006–2008.**

Characteristics	No. of Cases	Rate <sup>2</sup>
<b>Age</b>		
18-24	58755	3698.4
25-34	17248	784.8
35-44	2478	102.7
<b>Race/Ethnicity</b>		
Non-Hispanic White	13055	258.5
Non-Hispanic Black	14747	1786.5
Hispanic	1597	908.4
Other <sup>3</sup>	49082	-
<b>County Type</b>		
Appalachian	6017	368.8
Metropolitan	56279	2009.3
Rural, non-Appalachian	4744	619.4
Suburban	5728	572.3
Other/Unknown	5713	-

(1) Date of diagnosis is defined as the date the specimen was collected by the provider.  
 (2) Rates are shown per 100,000 women ages 18-44 and were calculated using census estimates for that year.  
 (3) Cases are included in the Other race category if multiple races are chosen or if the case did not fit into any of the listed categories. Small numbers are unstable and should be interpreted with caution. Provisional data. Numbers subject to change when additional information is gained.

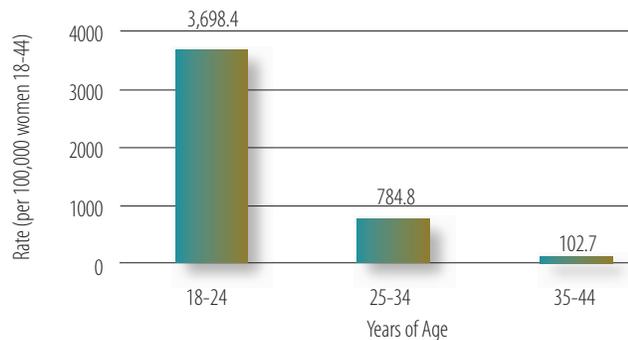
Source: 2006 – 2008 STD Surveillance, Ohio Department of Health. Data reported as of October 8, 2010.

**Chlamydia Diagnoses Among Women,  
Ages 18 to 44, By County Type, Ohio 2006-2008**



Source: 2006 – 2008 STD Surveillance, Ohio Department of Health. Data reported as of October 8, 2010.

**Chlamydia Diagnoses Among Women,  
By Age, Ohio, 2006-2008**



Source: 2006 – 2008 STD Surveillance, Ohio Department of Health. Data reported as of October 8, 2010.

## Infections—Sexually Transmitted Infections

Rate of Gonorrhea Diagnoses<sup>1</sup> Among Women  
Ages 18 to 44, 2006–2008.

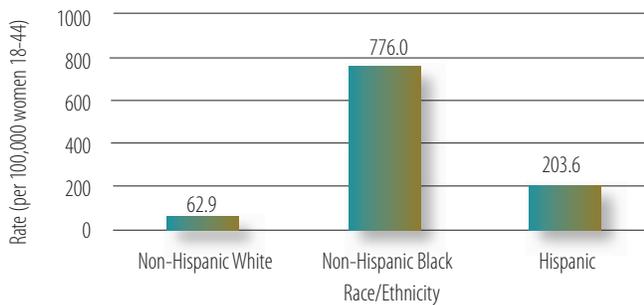
Characteristics	No. of Cases	Rate <sup>2</sup>
<b>Age</b>		
18–24	16,698	1051.1
25–34	6826	310.6
35–44	1502	62.3
<b>Race/Ethnicity</b>		
Non-Hispanic White	3175	62.9
Non-Hispanic Black	6406	776
Hispanic	358	203.6
Other <sup>3</sup>	15,087	-
<b>County Type</b>		
Appalachian	1073	65.8
Metropolitan	20,074	716.7
Rural, non-Appalachian	975	127.3
Suburban	1254	125.3
Other/Unknown	1650	-

(1) Date of diagnosis is defined as the date the specimen was collected by the provider.  
 (2) Rates are shown per 100,000 women ages 18–44 and were calculated using census estimates for that year.  
 (3) Cases are included in the Other race category if multiple races are chosen or if the case did not fit into any of the listed categories. Small numbers are unstable and should be interpreted with caution. Provisional data. Numbers subject to change when additional information is gained.

Source: 2006–2008 STD Surveillance, Ohio Department of Health. Data reported as of October 8, 2010.



Gonorrhea Diagnoses Among Women Ages 18–44,  
By Race, Ohio, 2006–2008

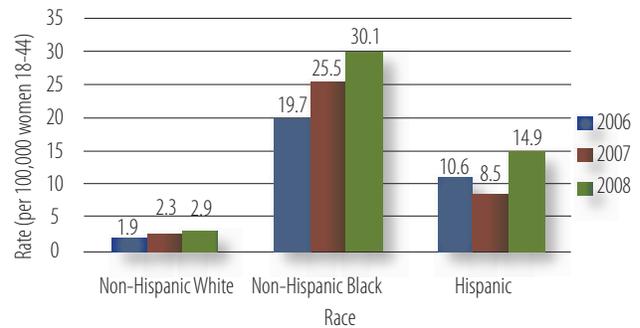


Source: 2006–2008 STD Surveillance, Ohio Department of Health. Data reported as of October 8, 2010.

### Rate of Syphilis Diagnoses<sup>1</sup> Among Women Ages 18 to 44, 2006-2008.

Characteristics	No. of Cases	Rate <sup>2</sup>
<b>Age</b>		
18-24	147	9.3
25-34	146	6.6
35-44	102	4.2
<b>Race/Ethnicity</b>		
Non-Hispanic White	119	2.4
Non-Hispanic Black	207	25.1
Hispanic	20	11.4
Other <sup>3</sup>	49	-
<b>Marital Status</b>		
Married	49	-
Unmarried	281	-
Unknown	63	-
<b>County Type</b>		
Appalachian	21	1.3
Metropolitan	333	11.9
Rural, non-Appalachian	6	0.8
Suburban	34	3.4
Other/Unknown	1	-

### Syphilis Diagnoses Among Women Ages 18 to 44, By Race, Ohio, 2006 - 2008



Source: 2006 - 2008 STD Surveillance, Ohio Department of Health. Data reported as of October 8, 2010.

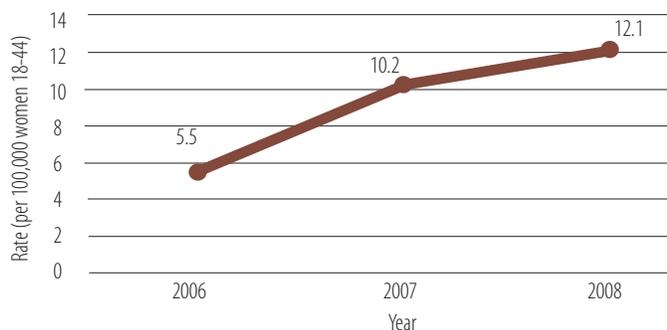
(1) Date of diagnosis is defined as the date the specimen was collected by the provider.

(2) Rates are shown per 100,000 women ages 18-44 and were calculated using census estimates for that year.

(3) Cases are included in the Other race category if multiple races are chosen or if the case did not fit into any of the listed categories. Small numbers are unstable and should be interpreted with caution. Provisional data. Numbers subject to change when additional information is gained.

Source: 2006 - 2008 STD Surveillance, Ohio Department of Health. Data reported as of October 8, 2010.

### Syphilis Diagnoses Among Women Ages 18 to 24, By Year, Ohio



Source: 2006 - 2008 STD Surveillance, Ohio Department of Health. Data reported as of October 8, 2010.

## Infections—Immunizations

### J3: Women who received an influenza vaccination within the past year, 2004-2008.

#### Public Health Importance:

Pregnant women have an increased risk of serious complications from influenza including hospitalization and death. The greater risk may result from the increased heart rate, decreased lung capacity and changes to the immune system that occur during pregnancy<sup>76</sup>. Severe influenza can also result in preterm delivery<sup>77</sup>. The CDC recommends that women who will be beyond the first trimester of pregnancy during influenza season as well as those with pre-existing chronic medical conditions be vaccinated for influenza to protect both mother and infant from potentially severe complications<sup>76</sup>.

#### Ohio:

- ✿ 21 percent of women of reproductive age reported receiving an influenza vaccine within the past year. This is far less than the Healthy People 2010 goal of 60 percent of adults.
- ✿ White women were more likely to have had an influenza vaccine in the past year than women of non-Hispanic black and Hispanic races.
- ✿ Unmarried women were less likely to have been vaccinated for influenza than married women.
- ✿ Women with health care coverage were more likely to have received an influenza vaccine than women without a health plan.
- ✿ A higher percentage of influenza vaccinations were reported among women with more than 12 years of education compared to those with less than or equal to 12 years of education.

#### Related Healthy People 2010 Objective(s):

14-29. Increase the proportion of adults who are vaccinated annually against influenza.  
Target: 60%.

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<sup>76</sup> Centers for Disease Control and Prevention. Prevention and Control of Influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2003; 52(RR-8):7-10. Available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5208a1.htm>.

<sup>77</sup> Centers for Disease Control and Prevention. Pregnant Women and Influenza. 2010 Aug 30. Accessed Online October 20, 2010. Available at <http://www.cdc.gov/flu/protect/vaccine/pregnant.htm>

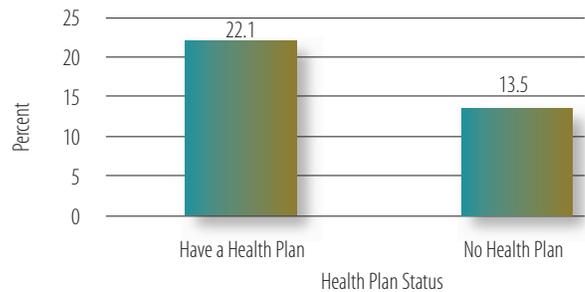
Percentage of Women Ages 18 to 44 Who Received an Influenza Vaccination Within the Past Year, 2004–2008.

n = 8,536

Characteristics	%	95% CI
<b>Women 18 - 44</b>	<b>20.9</b>	<b>19.4-22.4</b>
<b>Age</b>		
18-24	18.7	15.1-22.4
25-34	20.2	17.9-22.5
35-44	23.0	20.9-25.2
<b>Race/Ethnicity</b>		
Non -Hispanic White	21.2	19.6-22.9
Non-Hispanic Black	16.7	13.4-20.0
Hispanic	19.7	9.7-29.7
Non-Hispanic Other	26.3	17.9-34.7
<b>Marital Status</b>		
Married	22.0	20.1-23.8
Unmarried	19.5	17.1-21.9
<b>Education</b>		
Less than 12 years	15.4	9.8-20.9
12 years	15.7	13.2-18.2
More than 12 years	24.3	22.3-26.2
<b>County Type</b>		
Appalachian	19.0	15.4-22.5
Metropolitan	21.9	19.9-23.8
Rural, non-Appalachian	22.7	17.7-27.7
Suburban	18.5	14.9-22.1
<b>Health Plan Status</b>		
Have a health plan	22.1	20.5-23.7
No health plan	13.5	9.5-17.6

Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

Women Ages 18 to 44 Who Reported Having a Flu Vaccine Within the Past Year By Health Plan Status, Ohio, 2004-2008



Source: 2004-2008 Ohio Behavioral Risk Factor Surveillance System, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, October 2010.

