

Indicator:	Current Health Care Coverage (C1)
Domain:	Health Care
Sub-domain:	Access to and Utilization of Health Care
Demographic group:	Women aged 18 to 44 years.
Data resource:	Behavioral Risk Factor Surveillance System (BRFSS). http://www.cdc.gov/BRFSS/
Data availability:	Core item - available in all states annually.
Numerator:	Female respondents aged 18-44 years who reported that they currently had some kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare.
Denominator:	Female respondents aged 18-44 years who reported that they did or did not currently have some kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare (excluding unknowns and refusals).
Measures of frequency:	Crude annual prevalence and 95% confidence interval, weighted using the BRFSS methodology (to compensate for unequal probabilities of selection, and adjust for non-response and telephone non-coverage).
Period of case definition:	Current.
Significance:	In order to achieve optimal preconception health, women of childbearing age need access to preventive health care services at all times, not just during or shortly before pregnancy. Consistent access to care is especially critical for women of reproductive age with chronic medical conditions such as diabetes or hypertension. Lack of health care coverage has been widely associated with decreased use of preventive health services, delay in seeking medical care, and poor health status. ¹⁻² In describing the clinical content of preconception care, the Clinical Work Group of the Select Panel on Preconception Care workgroup recommends that providers ask all women of childbearing age about their health insurance coverage status and their usual source of care, and refer women without adequate coverage to social services or other agencies as appropriate. ³

Limitations of indicator: Studies indicate a high degree of validity for self-reported health insurance data from BRFSS although reliability studies are lacking.⁴ It cannot be ruled out that some respondents might interpret “health care coverage” to include health care available to them despite lacking insurance (e.g. through free clinics or emergency room care that they cannot and do not pay for).

Related Healthy People

2010 Objective(s): 1-1. Increase the proportion of persons with health insurance.
Target: 100%.

References:

1. Weissman JS, Stern R, Fielding SL, Epstein AM. Delayed access to health care: risk factors, reasons, and consequences. *Ann Intern Med* 1991;114:325-31.
2. Centers for Disease Control and Prevention. Health insurance coverage and receipt of preventive health services -- United States, 1993. *MMWR* 1995; 44:219-25.
3. Jack B, Atrash H, Coonrod D, Moos M-K, O'Donnell J, Johnson K. The clinical content of preconception care: an overview and preparation of this supplement. *Am J Obstet Gynecol* 2008; 199 (6 Suppl B):S266-S279.
4. Nelson DE, Holtzman D, Bolen J, Stanwyck CA, Mack KA. Reliability and validity of measures from the Behavioral Risk Factor Surveillance System (BRFSS). *Soc Prev Med* 2001; 46 Suppl 1:S3-S42.

Indicator:	Health Insurance Coverage Before Pregnancy (C2)
Domain	Health Care
Sub-domain	Access to and Utilization of Health Care
Demographic group:	Women aged 18-44 years having a live birth.
Data resource:	Pregnancy Risk Assessment Monitoring System (PRAMS). http://www.cdc.gov/prams/
Data availability:	Core item - available in all PRAMS states annually.
Numerator:	Respondents aged 18-44 years who reported that they had health insurance coverage during the month before they became pregnant. All response options qualify as having health insurance coverage with the exception of “I did not have any health insurance”.
Denominator:	Respondents aged 18-44 years who reported that they did or did not have health insurance coverage during the month before they became pregnant (excluding unknowns and refusals).
Measures of frequency:	Crude annual prevalence and 95% confidence interval, weighted using the PRAMS methodology (to compensate for oversampling or other differences between the sampled strata and the population, as well as non-response and non-coverage).
Period of case definition:	One month before the pregnancy resulting in the most recent live birth.
Significance:	In order to achieve optimal preconception health, women of childbearing age need access to preventive health care services at all times, especially if they are planning pregnancy. Consistent access to care is especially critical for women of reproductive age with chronic medical conditions such as diabetes or hypertension. Lack of health care coverage has been widely associated with decreased use of preventive health services, delay in seeking medical care, and poor health status. ¹⁻² During 2003, one third of women with low incomes, half of women with disabilities, and 18% of non-elderly women (<age 65) did not have health insurance. ³ In describing the clinical content of preconception care, the Clinical Work Group of the Select Panel on Preconception Care recommends that providers ask all women of childbearing age about their health insurance coverage and their

usual source of care, and refer women without adequate coverage to social services or other agencies as appropriate.⁴

Limitations of indicator: A previous study examining the validity of source of health insurance using BRFSS data, revealed source misclassification in which respondents primarily had difficulty identifying whether coverage was received through their own or another person's employer.⁵ However, this type of bias would only be of concern if it were of interest to know the specific source of health insurance coverage.

Related Healthy People 2010 Objective(s): 1-1. Increase the proportion of persons with health insurance. Target: 100%.

References:

1. Weissman JS, Stern R, Fielding SL, Epstein AM. Delayed access to health care: risk factors, reasons, and consequences. *Ann Intern Med* 1991;114:325-31.
2. CDC. Health insurance coverage and receipt of preventive health services -- United States, 1993. *MMWR* 1995; 44:219-25.
3. Kaiser Family Foundation. Women's health insurance coverage. Washington, DC: Kaiser Family Foundation; 2004.
4. Jack B, Atrash H, Coonrod D, Moos M-K, O'Donnell J, Johnson K. The clinical content of preconception care: an overview and preparation of this supplement. *Am J Obstet Gynecol* 2008; 199 (6 Suppl B): S266-S279.
5. Nelson DE, Holtzman D, Bolen J, Stanwyck CA, Mack KA. Reliability and validity of measures from the Behavioral Risk Factor Surveillance System (BRFSS). *Soc Prev Med* 2001; 46 Suppl 1:S3-S42.

Indicator:	Timeliness of Routine Health Care Checkup (C3)
Domain:	Health Care
Sub-domain:	Access to and Utilization of Health Care
Demographic group:	Women aged 18 to 44 years.
Data resource:	Behavioral Risk Factor Surveillance System (BRFSS). http://www.cdc.gov/BRFSS/
Data availability:	Core item - available in all states annually.
Numerator:	Female respondents aged 18-44 years who reported that they had visited a doctor for a routine checkup within the past year.
Denominator:	Female respondents aged 18-44 years who reported that they had or had not visited a doctor for a routine checkup within the past year (excluding unknowns and refusals).
Measures of frequency:	Crude annual prevalence and 95% confidence interval, weighted using the BRFSS methodology (to compensate for unequal probabilities of selection, and adjust for non-response and telephone non-coverage).
Period of case definition:	Previous year.
Significance:	Currently, more than 40 million persons have no particular doctor's office, clinic, health center, or other place where they go for health care advice. ¹⁻² People with a usual source of health care are more likely than those without a usual source of care to receive a variety of preventive health care services. Data from the 2005 National Health Interview Survey indicate that 22% of women aged 18 to 24 and 14% of women aged 25-44 had no usual source of care. ³ The relatively high rate among women in this age group is concerning given their need for routine gynecological visits where preconception health promotion might occur.
Limitations of indicator:	Reliability of this BRFSS item has been found to be moderate and the validity low. ⁴ It is possible that respondents may include visits for injuries or routine checkups for chronic conditions such as asthma or diabetes rather than limiting their response only to general physical exams.

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%.

References:

1. Moy E, Bartman BA, and Weir MR. Access to hypertensive care: Effects of income, insurance, and source of care. Arch Intern Med 1995; 155:1497-1502.
2. 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.
3. 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.cmwf.org/snapshots>
4. Nelson DE, Holtzman D, Bolen J, Stanwyck CA, Mack KA. Reliability and validity of measures from the Behavioral Risk Factor Surveillance System (BRFSS). Soc Prev Med 2001; 46 Suppl 1:S3-S42.

Indicator:	Postpartum Checkup (C4)
Domain	Health Care
Sub-domain	Access to and Utilization of Health Care
Demographic group:	Women aged 18-44 years having a live birth.
Data resource:	Pregnancy Risk Assessment Monitoring System (PRAMS) http://www.cdc.gov/prams/
Data availability:	Standard item - available in select PRAMS states annually.
Numerator:	Respondents aged 18-44 years who reported that they had a postpartum checkup.
Denominator:	Respondents aged 18-44 years who reported that they had or did not have a postpartum checkup (excluding unknowns and refusals).
Measures of frequency:	Crude annual prevalence and 95% confidence interval, weighted using the PRAMS methodology (to compensate for oversampling or other differences between the sampled strata and the population, as well as non-response and non-coverage).
Period of case definition:	Approximately six weeks after the most recent live birth.
Significance:	The postpartum checkup provides a health care provider with an opportunity to assess a woman's physical recovery and emotional well-being following delivery. The postpartum visit is an optimal time to conduct interconception assessment and provide counseling related to risk factors such as preterm labor, diabetes, hypertension, substance abuse, and mental health issues, which may affect subsequent pregnancies.¹ However, attendance at the postpartum visit is generally poor, especially among some groups that may be at a higher risk for poor pregnancy outcomes.² A large multi-state study using PRAMS data showed the prevalence of postpartum checkups were lowest among women who were non-White, aged less than 35 years, and reported an intended pregnancy.^{2,3}
Limitations of indicator:	It is not possible to assess barriers to having a postpartum checkup. In addition, some respondents may consider a health care visit for some other reason (e.g., to monitor a chronic health condition or to treat a specific illness or injury) as a postpartum checkup.
Related Healthy People 2010 Objective(s):	16-5. Reduce maternal illness and complications due to pregnancy; 16-5c. Postpartum complications including postpartum depression.

References:

1. American College of Obstetricians and Gynecologists. ACOG technical bulletin. Preconception Care. Number 313 - Sept. 2005. Compendium of Selected Publications, Volume 1: committee opinions and policy statements, pp.214-215.
2. Kogan MD, Leary M, Schaetzel T. Factors associated with postpartum care among Massachusetts users of the maternal and infant care program. Family Plan Perspect 1990; 22: 128-30.
3. D'Angelo D, Williams L, Morrow B, et al. 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. MMWR 2007; 56(SS10): 1-35.

Indicator: **Preventive Dental Care Before Pregnancy (C5)**

Domain	Health Care
Sub-domain	Access to Dental Care
Demographic group:	Women aged 18-44 years having a live birth.
Data resource:	Pregnancy Risk Assessment Monitoring System (PRAMS). http://www.cdc.gov/prams/
Data availability:	Core item - available in all PRAMS states annually.
Numerator:	Respondents aged 18-44 years who reported that they had their teeth cleaned by a dentist or dental hygienist in the 12 months before their most recent pregnancy.
Denominator:	Respondents aged 18-44 years who reported that they did or did not have their teeth cleaned by a dentist or dental hygienist in the 12 months before their most recent pregnancy (excluding unknowns and refusals).
Measures of frequency:	Crude annual prevalence and 95% confidence interval, weighted using the PRAMS methodology (to compensate for oversampling or other differences between the sampled strata and the population, as well as non-response and non-coverage).
Period of case definition:	During the 12 months before the pregnancy resulting in the most recent live birth.
Significance:	The American Academy of Periodontology recommends that women have a periodontal evaluation before pregnancy and that they maintain good oral hygiene during pregnancy. ¹ High C-reactive protein levels, found in women with periodontitis, have been associated with adverse pregnancy outcomes, such as preterm labor. ^{2,3} However, studies from PRAMS states reveal that a quarter or more of pregnant women may need dental care during their pregnancy but nearly half do not seek the care that they need. ⁴⁻⁶
Limitations of indicator:	Routine dental cleaning is often limited to women who have dental insurance, those who can otherwise afford it, and those who consider dental care to be a health priority.
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%.

References:

1. American Academy of Periodontology. AAP statement on the periodontal management of the pregnant patient. Vol. 2005, 2005.
2. Pitiphat W, Joshipura KJ, Rich-Edwards JW, Williams PL, Douglass CW, Gillman MW. Periodontitis and plasma C-reactive protein during pregnancy. *J Periodontol* 2006; 77:821-5.
3. Pitiphat W, Gillman MW, Joshipura KJ, Williams PL, Douglass CW, Rich-Edwards JW. Plasma C-reactive protein in early pregnancy and preterm delivery. *Am J Epidemiol* 2005; 162:1108-13.
4. Brooks K, El Reda D, Grigorescu V, Kirk G. Michigan Department of Community Health. "Oral Health During Pregnancy." MI PRAMS Delivery. Volume 6, Number 2. Family and Community Health, Michigan Department of Community Health, May 2007.
5. Lydon-Rochelle M, Krakowiak P, Hujoel PP, Peters RM. Dental care use and self-reported dental problems in relation to pregnancy. *Am J Public Health* 2004; 94: 765-771.
6. 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.

Indicator:	Recent Pap Smear (C6)
Domain:	Health Care
Sub-domain:	Reproductive Health Care
Demographic group:	Women aged 18 to 44 years
Data resource:	Behavioral Risk Factor Surveillance System (BRFSS) http://www.cdc.gov/BRFSS/
Data availability:	Rotating core item – available in all states in odd years; Optional item – available in select states in even years
Numerator:	Female respondents aged 18-44 years who reported that they had a Pap smear within the previous year, 2 years, or 3 years.
Denominator:	Female respondents aged 18-44 years who reported that they did or did not have a Pap smear within the previous year, 2 years, 3 years, 5 years, or 5 or more years (excluding unknowns and refusals).
Measures of frequency:	Crude prevalence and 95% confidence interval, weighted using the BRFSS methodology (to compensate for unequal probabilities of selection, and adjust for non-response and telephone non-coverage).
Period of case definition:	Within the past 3 years.
Significance:	Approximately 40%-60% of cervical cancer deaths can be prevented by increased use of the Pap smear and effective, timely treatment. Almost all cases of cervical cancer are caused by infection with high-risk types of the human papillomavirus (HPV). ¹ The CDC's Select Panel on Preconception Care recommends that women be screened routinely for HPV-associated abnormalities of the cervix and that recommended subgroups receive the HPV vaccine. Use of the vaccine, in conjunction with regular pap screening to detect HPV abnormalities early on, can reduce or eliminate the need for procedures that could decrease cervical competency during pregnancy. ² The office visit during which a Pap test is most often performed, sometimes referred to as the annual exam, is a prime opportunity for the clinician to screen for preconception risk factors and provide treatment or other interventions as necessary.
Limitations of indicator:	Starting Pap smears is recommended at age 21 years or 3 years after the initiation of intercourse. The prevalence of Pap testing may be limited by any changes in age distribution over time, since younger women will have had less opportunity to be in the age-group recommended for the test. The reliability of the BRFSS item assessing having ever had a Pap test is high. Regarding the validity of recall periods for this item, sensitivity is high but specificity is low to moderate with recollection being better with shorter periods of time. ³

Related Healthy People
2010 Objective(s):

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

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

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

References:

1. Utah's Indicator-Based Information System for Public Health; Indicator Profile for Cervical Cancer Screening. Retrieved 10/30/08 at:
http://ibis.health.utah.gov/indicator/view/CervCAScr.UT_US.html
2. Jack B, Atrash H, Coonrod D, Moos M-K, O'Donnell J, Johnson K. The clinical content of preconception care: an overview and preparation of this supplement. Am J Obstet Gynecol 2008; 199(6 Suppl B): S266-S279.
3. Nelson DE, Holtzman D, Bolen J, Stanwyck CA, Mack KA. Reliability and validity of measures from the Behavioral Risk Factor Surveillance System (BRFSS). Soc Prev Med 2001; 46 Suppl 1:S3-42.

Indicator:	Preconception Counseling (C7)
Domain:	Health Care
Sub-domain:	Content and Quality of Care
Demographic group:	Women aged 18-44 years having a live birth
Data resource:	Pregnancy Risk Assessment Monitoring System (PRAMS) http://www.cdc.gov/prams/
Data availability:	Standard item - available in select PRAMS states annually
Numerator:	Respondents aged 18-44 years who reported that a doctor, nurse, or other health care worker talked with them about five or more of 11 lifestyle behaviors and prevention strategies before they got pregnant with their most recent live born infant.
Denominator:	Respondents aged 18-44 years who reported that a doctor, nurse, or other health care worker talk with them about any number of 11 lifestyle behaviors and prevention strategies, including none, before they got pregnant with their most recent live born infant (excluding unknowns and refusals).
Measures of frequency:	Crude annual prevalence and 95% confidence interval, weighted using the PRAMS methodology (to compensate for oversampling or other differences between the sampled strata and the population, as well as non-response and non-coverage).
Period of case definition:	Before the most recent pregnancy resulting in the most recent live birth.
Significance:	Studies have shown improvements in lifestyle behaviors after preconception counseling among women a planning pregnancy. In a study on preconception counseling, women who received counseling by a provider significantly began using folic acid before pregnancy and reduced alcohol consumption in the first three months of pregnancy. ¹ Another study among women planning pregnancy showed that red cell folate levels among women who were folic acid supplement non-users before counseling increased significantly after 4 months while women who were supplement users before counseling remained stable up to 1 year after counseling. ² Tracking knowledge of preconception risks and protective factors is imperative to assure that messages about being at optimal health prior to pregnancy are reaching our intended audiences. Furthermore, surveillance of preconception counseling also serves as a means for monitoring the impact of the CDC's recommended preconception health action step to "increase health provider awareness regarding the importance of addressing preconception health among all women of childbearing age". ³
Limitations of Indicator:	The indicator is limited to women who saw a provider, and also excludes women who experienced a fetal death or had an abortion. Among

respondents who select “none”, it is not possible to distinguish between women who did not see a provider and women who saw a provider but the provider discussed none of the topics. The questionnaire item does not specify the length of time prior to pregnancy that the topics were discussed (e.g., lifetime, six months, one year, etc.)

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.

References:

1. 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.
2. De Weerd S, Thomas C, Cikot, R, et al. Preconception counseling improves folate status of women planning pregnancy. *Obstet Gynecol* 2002; 99: 45-50.
3. Johnson K, Posner SF, Biermann J, et al. 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 Recomm Rep* 2006; Apr 26; 55(R-6):1-23.