Indicator:	**Previous Preterm Birth (D1)**
Domain:	Reproductive Health and Family Planning
Sub-domain:	Previous Preterm Birth
Demographic group:	Women aged 18-44 years having a live birth.
Data resource:	National Vital Statistics System (NVSS) http://www.cdc.gov/nchs/nvss.htm
Data availability:	Birth Certificate data are available for women who have a live birth in all states.
Numerator:	Women aged 18-44 years who had a previous live birth at less than 37 weeks gestation.
Denominator:	Women aged 18-44 years who had a previous live birth (excluding those with missing data).
Measures of frequency:	Crude annual prevalence and 95% confidence interval.
Period of case definition:	The time from onset of menses to the pregnancy resulting in the most recent live birth.
Significance:	In addition to a greater risk of premature birth among women who previously delivered prematurely, women with recurrent preterm births are at higher risk for birth complications and subsequent poor outcomes compared with healthy women.[1-11] Interconceptional behavioral risk factors associated with recurrent preterm birth include narrow birth spacing, weight loss, and smoking during pregnancy.[8, 12-14] In order to focus interconception care programs, states must examine characteristics, risk factors, and behaviors among women who experience recurrent poor outcomes, including premature birth. Additionally, assessment of previous premature birth is recommended by the Select Panel on Preconception Care workgroup in order to determine intervention and treatment prior to subsequent pregnancy.[15]
Limitations of indicator:	This measure assesses the occurrence of any previous preterm birth. Therefore, it is not possible to determine whether the previous preterm birth occurred in the pregnancy just prior to the current live birth or in any other previous live birth.
Related Healthy People	

2010 Objective(s):	16-11. 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.

References:

1. Mercer B, Goldenberg R, Das A, et al. The Preterm Prediction Study: A clinical risk assessment system. Am J Obstet Gynecol 1996; 174(6): 1885-1893.
2. Meis P, Goldenberg R, Mercer B, et al. The Preterm Prediction Study: Risk factors for indicated preterm births. Am J Obstet Gynecol 1998; 178(3): 562-567.
3. Ananth C, Getahun D, Peltier M, Salihu H, Vintzileos A. Recurrence of spontaneous versus medically indicated preterm birth. Am J Obstet Gynecol 2006; 195(3): 643-650.
4. McManemy J, Cooke E, Amon E, Leet T. Recurrence risk for preterm delivery. Am J Obstet Gynecol 2007; 196: 576.e571-576.e577.
5. Mercer B, Goldenberg R, Moawad A, et al. The Preterm Prediction Study: Effect of gestational age and cause of preterm birth on subsequent obstetric outcome. Am J Obstet Gynecol. 1999; 181: 1216-1221.
6. Mazaki-Tovi S, Romero R, Kusanovic J, et al. Recurrent preterm birth. Semin Perinatol 2007; 31: 142-158.
7. Bakketeig L, Hoffman H, Harley E. The tendency to repeat gestational age and birth weight in successive births. Am J Obstet Gynecol 1979; 135: 1086-1103.
8. Cnattingius S, Granath F, Petersson G, Harlow B. The influence of gestational age and smoking habits on the risk of subsequent preterm deliveries. N Engl J Med 2008; 341: 943-948.
9. Odibo A, Talucci M, Berghella V. Prediction of preterm premature rupture of membranes by transvaginal ultrasound features and risk factors in a high-risk population. Ultrasound Obstet Gynecol 2002; 20(3): 245-251.
10. Adams M, Elam-Evans L, Wilson H, Gilbertz D. Rates of and factors associated with recurrence of preterm delivery. JAMA 2000; 283: 1591-1596.
11. Bloom S, Yost N, McIntire D, Leveno K. Recurrence of preterm birth in singleton and twin pregnancies. Obstet Gynecol 2001; 98: 379-385.
12. 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: 264.e261-264.e266.
13. Merlino A, Laffineuse L, Collin M, Mercer B. Impact of weight loss between pregnancies on recurrent preterm birth. Obstet Gynecol 2006; 195: 818-821.
14. Klerman L, Cliver S, Goldenberg R. The impact of short interpregnancy intervals on pregnancy outcomes in a low-income population. Am J Public Health. 1998; 88: 1182-1185.
15. Jack B, Atrash H, Coonrod D, Moos M, 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.

Indicator:	**Previous Preterm Birth (D2)**
Domain:	Reproductive Health and Family Planning
Sub-domain:	Previous Preterm Birth
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 having their previous live birth more than three weeks before the due date.
Denominator:	Respondents aged 18-44 years who reported having a previous live birth (excluding unknowns and refusals).
Measures of frequency:	Crude annual prevalence and 95% confidence interval, weighted using the PRAMS methodology (to compensate for unequal probabilities of selection, and adjust for non-response and telephone non-coverage)
Period of case definition:	The time from delivery of the previous live birth to the pregnancy resulting in the most recent live birth.
Significance:	In addition to a greater risk of premature birth among women who previously delivered prematurely, women with recurrent preterm births are at higher risk for birth complications and subsequent poor outcomes compared with healthy women.[1-11] Interconceptional behavioral risk factors associated with recurrent preterm birth include narrow birth spacing, weight loss, and smoking during pregnancy.[8, 12-14] In order to focus interconception care programs, states must examine characteristics and risk factors among women who experience recurrent poor outcomes, including premature birth. Additionally, assessment of previous premature birth is recommended by the Select Panel on Preconception Care workgroup in order to determine intervention and treatment prior to subsequent pregnancy.[15]
Limitations of indicator:	Data from the PRAMS survey are based on self-report and are not confirmed by physician diagnosis or medical record review. Additionally, PRAMS does not capture behaviors associated with

	the previous preterm birth, only the current preterm delivery. Therefore, behaviors may not be examined longitudinally.
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.

References:

1. Mercer B, Goldenberg R, Das A, et al. The Preterm Prediction Study: A clinical risk assessment system. Am J Obstet Gynecol 1996; 174(6): 1885-1893.
2. Meis P, Goldenberg R, Mercer B, et al. The Preterm Prediction Study: Risk factors for indicated preterm births. Am J Obstet Gynecol 1998; 178(3): 562-567.
3. Ananth C, Getahun D, Peltier M, Salihu H, Vintzileos A. Recurrence of spontaneous versus medically indicated preterm birth. Am J Obstet Gynecol 2006; 195(3): 643-650.
4. McManemy J, Cooke E, Amon E, Leet T. Recurrence risk for preterm delivery. Am J Obstet Gynecol 2007; 196: 576.e571-576.e577.
5. Mercer B, Goldenberg R, Moawad A, et al. The Preterm Prediction Study: Effect of gestational age and cause of preterm birth on subsequent obstetric outcome. Am J Obstet Gynecol 1999; 181: 1216-1221.
6. Mazaki-Tovi S, Romero R, Kusanovic J, et al. Recurrent preterm birth. Semin Perinatol. 2007; 31: 142-158.
7. Bakketeig L, Hoffman H, Harley E. The tendency to repeat gestational age and birth weight in successive births. Am J Obstet Gynecol 1979; 135: 1086-1103.
8. Cnattingius S, Granath F, Petersson G, Harlow B. The influence of gestational age and smoking habits on the risk of subsequent preterm deliveries. N Engl J Med 2008; 341: 943-948.
9. Odibo A, Talucci M, Berghella V. Prediction of preterm premature rupture of membranes by transvaginal ultrasound features and risk factors in a high-risk population. Ultrasound Obstet Gynecol 2002; 20(3): 245-251.
10. Adams M, Elam-Evans L, Wilson H, Gilbertz D. Rates of and factors associated with recurrence of preterm delivery. JAMA 2000; 283: 1591-1596.
11. Bloom S, Yost N, McIntire D, Leveno K. Recurrence of preterm birth in singleton and twin pregnancies. Obstet Gynecol 2001; 98: 379-385.
12. 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; 197:264.e261-264.e266.
13. Merlino A, Laffineuse L, Collin M, Mercer B. Impact of weight loss between pregnancies on recurrent preterm birth. Obstet Gynecol 2006; 195: 818-821.
14. Klerman L, Cliver S, Goldenberg R. The impact of short interpregnancy intervals on pregnancy outcomes in a low-income population. Am J Public Health. 1998; 88: 1182-1185.

15. Jack B, Atrash H, Coonrod D, Moos M, 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.

Indicator:	**Previous miscarriage, fetal death, or stillbirth (D3)**
Domain:	Reproductive Health and Family Planning
Sub-domain:	Prior Fetal Death, Miscarriage, or Stillbirth
Demographic group:	Women 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 having had a previous pregnancy that ended in miscarriage, fetal death, or stillbirth during the 12 months before the pregnancy resulting in the most recent live birth. (Note: Since gestational age and/or fetal weight thresholds vary by state, no definitions to distinguish miscarriage and stillbirth have been provided.)
Denominator:	Respondents aged 18-44 years who reported having had a previous pregnancy (excluding unknowns and refusals). (Note: Primaparous women must be excluded from the denominator. Information on parity is available from the birth certificate.)
Measures of frequency:	Crude annual prevalence and 95% confidence interval, weighted using the PRAMS methodology (to compensate for unequal probabilities of selection, and adjust for non-response and telephone non-coverage)
Period of case definition:	The 12 months before the start of the pregnancy resulting in the most recent live birth.
Significance:	The greatest predictor of a recurrent miscarriage, fetal death, or still birth is a previous pregnancy loss.[1-5] Women who experience an intrauterine death in a previous pregnancy are also more likely to experience a subsequent premature birth and low birth weight delivery.[6] Additionally, these women are more likely to experience pre-eclampsia or placental abruption, and require labor induction or cesarean section. Other risk factors for recurrence of these poor outcomes include older maternal age, conceiving in longer time intervals, and smoking.[5] In order to focus interconception care programs, states must examine characteristics, risk factors, and behaviors of women who experience recurrent poor outcomes, including miscarriage, fetal death, and stillbirth.

	The Clinical Work Group of the Select Panel on Preconception Care recommends that preconception/interconception assessment of fetal death or still birth begin at the time of fetal death or still birth as gestational age at death presents differing risks in subsequent pregnancy.[7]
Limitations of indicator:	Data from the PRAMS survey are based on self-report and are not confirmed by physician diagnosis. Additionally, PRAMS does not capture behaviors associated with the previous miscarriage, fetal death, or stillbirth, only those behaviors associated with the most recent delivery. Therefore, behaviors may not be examined longitudinally.
Related Healthy People 2010 Objective(s):	None.

References:

1. Oyen N, Skjaerven R, Irgens L. Population-based recurrence risk of sudden infant death syndrome compared with other infant and fetal deaths. Am J Epidemiol 1996;144(3): 300-305.
2. Hogberg L, Cnattinguis S. The influence of maternal smoking habits on the risk of subsequent stillbirth: Is there a causal relation? BJOG 2007; 114: 699-704.
3. Surkan P, Stephansson O, Dickman P, Cnattinguis S. Previous preterm and small-for-gestational-age births and the subsequent risk of stillbirth. N Engl J Med 2004; 350: 777-785.
4. Risch H, Weiss N, Clarke E, Miller A. Risk factors for spontaneous abortion and its recurrence. Am J Epidemiol 1988; 128: 420-430.
5. George L, Granath F, Johansson A, Olander B, Cnattingius S. Risks of repeated miscarriage. Paediatr Perinat Epidemiol 2006; 20: 199-126.
6. Black M, Shetty A, Bhattacharya S. Obstetric outcomes subsequent to intrauterine death in the first pregnancy. BJOG 2008; 115(2): 269-274.
7. Stubbefield P, Coonrod D, Reddy U, et al. The clinical content of preconception care: Reproductive history. Am J Obstet Gynecol 2008; 199(6 Suppl 2): S373-S383.

Indicator:	**Inter-pregnancy Interval/Birth Spacing (D4)**
Domain:	Reproductive Health and Family Planning
Sub-domain:	Inter-pregnancy Interval/Birth Spacing
Demographic group:	Women aged 18-44 years having a live birth.
Data resource:	National Vital Statistics System (NVSS) http://www.cdc.gov/nchs/nvss.htm
Data availability:	Birth Certificate data are available in all states for women who have a live birth.
Numerator:	Women aged 18-44 years who had less than 18 months between their previous live birth and the start of the pregnancy resulting in the most recent live birth. The inter-pregnancy interval should be calculated for each woman by subtracting the reported date of the last live birth from the start date of the last normal menses as reported on the birth certificate for the most recent live birth (excluding unknowns).
Denominator:	All women 18-44 years who reported having a previous live birth.
Measures of frequency:	Crude annual prevalence and 95% confidence interval.
Period of case definition:	The time between the previous live birth and the last normal menses occurring before the start of the pregnancy resulting in the most recent live birth.
Significance:	A known benefit of adequate spacing between pregnancies is that it allows for maternal nutrient replenishment. While there is debate about whether lack of replenishment affects subsequent pregnancies, researchers do agree that spacing of less than six months between pregnancies is highly predictive of a subsequent poor birth outcome.[1-4] Additionally, inter-pregnancy intervals of less than 12-18 months, are associated with higher rates of adverse pregnancy outcomes such as uterine rupture, maternal morbidities, preterm birth, low birth weight, and small for gestational age infants.[2-7] An interval of 18 months (at a minimum) to 24 months (optimal) between pregnancies is recognized as being beneficial.[8]
.	
Limitations of indicator:	NVSS provides data on birth spacing among women who deliver live births only; women who miscarry or experience fetal death or stillbirth are not included. And, incomplete information about the

	last menstrual period may pose a problem as it has been shown to impact calculations of other pregnancy-related factors (e.g., gestational age).[9]
Related Healthy People 2010 Objective(s):	9-2. Reduce the proportion of births occurring within 24 months of a previous birth. Target: 6%.

References:

1. Dewey K, Cohen R. Does birth spacing affect maternal or child nutritional status? A systematic literature review. Matern Child Nutr 2007; 3: 151-173.
2. Stamilio D, DeFranco E, Pare E, et al. Short interpregnancy interval: Risk of uterine rupture and complications of vaginal birth after cesarean delivery. Obstet Gyn 2007; 110: 1075-1082.
3. Nabukera S, Wingate M, Kirby R, et al. Interpregnancy interval and subsequent perinatal outcomes among women delaying initiation of childbearing. J Obstet Gynaecol Res 2008; 34: 941-947.
4. 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.
5. Conde-Agudelo A, Rosas-Bermudez A, Kafury-Goeta A. Birth spacing risk of adverse perinatal outcomes: A meta-analysis. JAMA 2006; 295: 1809-1823.
6. Bakewell J, Stockbauer J, Schramm W. Factors associated with repetition of low birthweight: Missouri longitudinal study. Paediatr Perinat Epidemiol 1997; 11 Suppl 1: 119-129.
7. Rodrigues T, Barros H. Short interpregnancy interval and risk of spontaneous preterm delivery. Eur J Obstet Gynecol Reprod Biol. 2008; 136: 184-188.
8. Stubblefield PG, Coonrod DV, Reddy UM, Sayegh R, Nicholson W, Rychlik DF, Jack BW. The clinical content of preconception care: reproductive history. Am J Obstet Gynecol 2008; 199 (6 Suppl 2): S373-S383.
9. David RJ. The quality and completeness of birthweight and gestational age data in computerized birth files. Am J Public Health 1980; 70:964-73.

Indicator:	**Unintended and Unwanted Pregnancies (D5)**
Domain:	Reproductive Health and Family Planning
Sub-domain:	Pregnancy Intention
Demographic group:	Women aged 18-44 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:	Unintended (mistimed or unwanted) pregnancy: Respondents aged 18-44 years who reported that just before they got pregnant with their most recent live born infant, they wanted to be pregnant later or they didn't want to be pregnant then or at anytime in the future. Unwanted pregnancy: Respondents aged 18-44 years who reported that just before they got pregnant with their most recent live born infant, they didn't want to be pregnant then or at anytime in the future.
Denominator:	Respondents aged 18-44 years who reported that they wanted to be pregnant sooner or then, later, or didn't want to be pregnant then or at any time in the future (excluding those with missing data).
Measures of frequency:	Crude annual prevalence and 95% confidence interval, weighted using the PRAMS methodology (to compensate for unequal probabilities of selection, and adjust for non-response and telephone non-coverage)
Period of case definition:	Immediately before becoming pregnant with the most recent live born infant.
Significance:	Nationally, about 49% of all pregnancies are unintended, half of which are estimated to end in abortion.[1,2] Multi-state PRAMS data indicate that 34%-52% of pregnancies resulting in a live birth are unintended.[3] Mistimed, and particularly unwanted pregnancies, have been associated with maternal health behaviors prior to, during, and after pregnancy that can adversely affect birth outcomes, and maternal and infant health.[4,5] These behaviors include later entry to prenatal care, smoking and drinking alcohol during pregnancy, and not breast-feeding.[4] Furthermore, women with unintended pregnancies are more likely to have partners who

	are not supportive of the pregnancy.[4] Unintended pregnancies are by definition unplanned, meaning that a woman with an unintended pregnancy may not be optimally prepared for pregnancy at the time of conception. Since preconception is the only time to prevent unintended pregnancy, the Clinical Work Group of the Select Panel on Preconception Care recommends that during routine care all women of reproductive age be screened for their short- and long-term pregnancy intentions and their risk of conceiving. In addition, it is recommended that providers provide detailed family planning counseling and encouragement to develop a reproductive life plan .[6]
Limitations of indicator:	The PRAMS survey initiates data collection at 2-6 months postpartum, at which time a mother's feelings toward her pregnancy or recall of her feelings just before pregnancy may have changed. In addition, a woman's recall of pregnancy intention at the time of conception may be influenced by experiences during pregnancy, delivery, or the postpartum period. Respondents are not given an opportunity to report ambivalence about pregnancy. Social acceptability may influence how some women report pregnancy intention.
Related Healthy People 2010 Objective(s):	9-1. Increase the proportion of pregnancies that are intended. Target: 70% of all pregnancies will be intended.

References:

1. Finer LB, Henshaw SK. Disparities in rates of unintended pregnancy in the United States, 1994 and 2001. Perspect Sex Repro Health 2006; 38:90-96.
2. Henshaw Sk. Unintended pregnancy in the United States. Fam Plann Perspect 1998; 30:24-29.
3. Centers for Disease Control and Prevention. Pregnancy Risk Assessment Monitoring System (PRAMS): PRAMS and Unintended Pregnancy. (2004). Retrieved August 6, 2008, from http://www.cdc.gov/prams/UP.htm.
4. 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.
5. Mohllajee AP, Curtis KM, Morrow B, et al. Pregnancy intention and its relationship to birth and maternal outcomes. Obstet Gynecol 2007; 109: 678-686.
6. 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.

Indicator:	**Preconception Contraception Use (D6)**
Domain:	Reproductive Health and Family Planning
Sub-domain	Contraception – Access, Availability, and Use
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 they were not trying to get pregnant at the time of conception and also reported that neither they nor their husbands or partners were doing anything to keep from getting pregnant at the time of conception.
Denominator:	Respondents aged 18-44 years who said they were not trying to get pregnant at the time of conception (excluding unknowns and refusals)
Measures of frequency:	Crude annual prevalence and 95% confidence interval, weighted using the PRAMS methodology (to compensate for unequal probabilities of selection, and adjust for non-response and telephone non-coverage)
Period of case definition:	Immediately before becoming pregnant with the most recent live born infant.
Significance:	In 2001, the national unintended pregnancy rate in the U.S. was 49%.[1] About half of unintended pregnancies are estimated to end in abortion.[2] Women with unintended pregnancies are less likely to receive early or adequate prenatal care, are more likely to expose their fetus to harmful substances such as tobacco or alcohol, and are less likely to adopt healthy preconception behaviors such as folic acid supplementation.[3] The Clinical Work Group of the Select Panel on Preconception Care recommends that during routine care all women of reproductive age be screened for their short- and long-term pregnancy intentions and their risk of conceiving. In addition, it is recommended that women receive detailed family planning counseling and encouragement from their health care providers to develop a reproductive life plan.[4]

Limitations of indicator:	Data are self-reported and are subject to misinterpretations of the response options. Data are also subject to non-response bias.
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%.

References:

1. Finer L B, Henshaw S K. Disparities in rates of unintended pregnancy in the United States, 1994 and 2001. Perspect Sex Reprod Health 2006; 38: 90-6.
2. Henshaw SK. Unintended pregnancy in the United States. Fam Plann Perspect 1998; 30:24-29.
3. Committee on Unintended Pregnancy. The Best Intentions: Unintended Pregnancy and the Well-Being of Children and Families, ed. S.S. Brown and L. Eisenberg. 1995. Washington, D.C.: National Academy Press. 380.
4. 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.

Indicator:	**Postpartum Contraception Use (D7)**
Domain:	Reproductive Health and Family Planning
Sub-domain	Contraception – Access, Availability, and Use
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 or their husbands or partners were currently doing something to keep from getting pregnant.
Denominator:	Respondents aged 18-44 years who reported that they or their husbands or partners were doing something or were not doing anything to keep from getting pregnant.
Measures of frequency:	Crude annual prevalence and 95% confidence interval, weighted using the PRAMS methodology (to compensate for unequal probabilities of selection, and adjust for non-response and telephone non-coverage).
Period of case definition:	Current
Significance:	Shorter inter-pregnancy intervals (less than 18-24 months) are associated with higher rates of adverse pregnancy outcomes such as uterine rupture, maternal morbidities, preterm birth, low birth weight, and small for gestational age infants.[1-6] Appropriate family planning, including use of postpartum contraception, is one means of preventing short inter-pregnancy interval as well as unintended pregnancy. The Clinical Work Group of the Select Panel on Preconception Care recommends inclusion of detailed family planning counseling and encouragement to develop a reproductive life plan in preconception care for all women and men of reproductive age.[7,8]
Limitations of indicator:	Data are self-reported and are subject to misinterpretations of the response options. Data are also subject to non-response bias.
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%.

References:

10. Stamilio D, DeFranco E, Pare E, et al. Short interpregnancy interval: Risk of uterine rupture and complications of vaginal birth after cesarean delivery. Obstet Gyn 2007; 110: 1075-1082.
11. Nabukera S, Wingate M, Kirby R, et al. Interpregnancy interval and subsequent perinatal outcomes among women delaying initiation of childbearing. J Obstet Gynaecol Res 2008; 34: 941-947.
12. 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.
13. Conde-Agudelo A, Rosas-Bermudez A, Kafury-Goeta A. Birth spacing risk of adverse perinatal outcomes: A meta-analysis. JAMA 2006; 295: 1809-1823.
14. Bakewell J, Stockbauer J, Schramm W. Factors associated with repetition of low birthweight: Missouri longitudinal study. *Paediatr Perinat Epidemiol* 1997; 11 Suppl 1: 119-129.
15. Rodrigues T, Barros H. Short interpregnancy interval and risk of spontaneous preterm delivery. Eur J Obstet Gynecol Reprod Biol. 2008; 136: 184-188.
16. 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.
17. Frey KA, Navarro SM, Kotelchuck M, Lu MC. The clinical content of preconception care: preconception care for men. Am J Obstet Gynecol 2008; 199(6 Suppl 2):S389-95.

Indicator:	**Use of Assisted Reproductive Technology (D8)**
Domain:	Reproductive Health and Family Planning
Sub-domain:	Use of Assisted Reproductive Technology
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 all PRAMS states annually.
Numerator:	Respondents aged 18-44 years who reported that they used assisted reproductive technology to help them get pregnant with their most recent live born infant.
Denominator:	Respondents aged 18-44 years who reported that they did or did not take any fertility drugs or receive any medical procedures from a doctor, nurse, or other health care worker to help them get 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 unequal probabilities of selection, and adjust for non-response and telephone non-coverage).
Period of case definition:	Time before the most recent pregnancy resulting in a live birth.
Significance:	In the United States, infertility is estimated to affect approximately 10% of couples, and about 1% of births result from pregnancies produced through Assisted Reproductive Technology (ART).[1] It is recommended that couples receiving fertility treatments receive preconception counseling on all topics discussed during preconception counseling for patients without fertility problems, with added counseling addressing ART success rates and risks.[2] A major risk associated with infertility treatment is multiple-birth deliveries, which in 2002 occurred in 53% of live-births resulting from ART.[3] Multiple gestation pregnancies are more likely to result in preterm deliveries and low infant birthweight.[2] In addition, multiple-gestation pregnancies are more likely to result in maternal health complications.[2]

Limitations of indicator:	A validation study exists for an earlier version of the PRAMS questionnaire item ascertaining use of ART for the index pregnancy but subsequent reports have not been released to describe the validity of the most current version of this measure.[4] In that study, over-reporting of ART was determined possibly because respondents considered use of ART for pregnancies other than the most recent live birth and potentially due to consideration of non-ART fertility treatments such as artificial insemination.[4]
Related Healthy People 2010 Objective(s):	None.

References:

1. Stephen EH, Chandra A. Updated projections of infertility in the United States: 1995-2005. Fertil Steril 1998; 70:30-34.
2. Grainger DA, Frazier LM, Rowland CA. Preconception care and treatment with assisted reproductive technologies. Matern Child Health J 2006; 10 (5 Suppl):S161-4.
3. Wright FC, Schieve LA, Reynolds MA, et al. Assisted reproductive technology surveillance—United States, 2002. MMWR Surveill Summ 2005; 54:1-24.
4. Schieve LA, Rosenberg D, Handler A, Rankin K, Reynolds MA. Validity of self-reported use of assisted reproductive technology treatment among women participating in the pregnancy risk assessment monitoring system in five states, 2000. Matern Child Health J 2006; 10:427-31.