Center for Prevention and Health Services

ISSUE Brief

September 2009

Preventing Prematurity and Adverse Birth Outcomes: What Employers Should Know

National Business Group on Health

On an average day in the United States...

- 11,205 babies are born.
- 1,367 babies are born pre-term (less than 37 weeks gestation). Of these, 218 are born very pre-term (less than 32 weeks gestation).
- 888 babies are born with low birth weight (less than 5.5 pounds). Of these, 162 are born with very low birth weight (less than 3.33 pounds).
- 411 babies are born with a birth defect.[1]

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Overview

Prematurity and other adverse birth outcomes (such as low birth weight and birth defects) represent significant costs for employers, and these problems have become more common in recent years. Since 1981, the rate of premature birth has increased by about 30%.[2] One out of every eight babies is now born prematurely.[3]

Pre-term birth costs the United States more than $26 billion each year. In 2007, the average medical costs for a pre-term baby were more than ten

times those for a healthy full-term baby (see Table 1), and the average length of hospital stay of a pre-term infant was more than six times that of a full-term infant.[4]

Table 1. Average Medical Costs, 2007

	Pre-term infant	Full-term infant
Total cost, birth to age one	$49,033	$4,551
Total cost, birth to age one, including mother's medical care	$64,713	$15,047
Average length of hospital stay	14.2 days	2.3 days

Source: March of Dimes. Help reduce cost: The cost to business. Available at: http://www.marchofdimes.com/prematurity/21198_15349.asp. Accessed August 11, 2009.

Premature births also cause significant stress for family members and caregivers, which can lower their productivity in the workplace. Additional costs in lost productivity total an estimated $2,766 per premature infant.[4]

In addition to prematurity, other adverse birth outcomes are problems for employers and employees. Low birth weight affects 8% of all U.S. babies, and 3% have significant birth defects. Each child born with an intellectual disability or comparable condition will incur an extra $1 million in costs over his or her lifetime,[5] in addition to the social and emotional costs to families.[6] About 31% of women who give birth have serious complications.[5] Complications of pregnancy (e.g., gestational diabetes or hypertension) are the second leading cause of short-term disability and the sixth leading cause of long-term disability in the United States.[7]

> Of the four million women who give birth each year in the United States, almost a third have a pregnancy-related complication before, during, or after delivery.[1]

Approximately half the time, the reasons for premature birth are unknown.[3] But prematurity can sometimes be prevented, as can other adverse birth outcomes such as low birth weight, major birth defects and pregnancy complications. Prenatal care, while extremely important, often comes too late to affect these outcomes. For the best possible odds for a full-term pregnancy, employers should provide their employees with the tools they need to become healthy *before* they become pregnant.

The Importance of Preconception Care

> "The main goal of preconception care is to provide health promotion, screening and interventions for women of reproductive age to reduce risk factors that might affect future pregnancies."
> *Source: Centers for Disease Control and Prevention*

Almost half of all pregnancies are unintended,[8] and many women do not know that they are pregnant until several weeks after they have conceived. Prenatal care does not typically begin until week 11 or 12 of a pregnancy, yet it is in the first 4 to 10 weeks after conception that the fetus is most susceptible to developing certain problems.[5] In fact, these early weeks are very important for the overall pregnancy, so it is crucial that women of child-bearing age establish healthy behavior patterns even before they consider having a child.[9]

The following risk factors can increase the odds of a negative birth outcome:[5, 10, 11]

- Chronic diseases
- Infectious diseases
- Genetic conditions
- Some medications, including those for epilepsy and blood thinners as well as certain acne drugs
- Alcohol
- Tobacco
- Exposure to toxic substances or potentially infectious materials at work or home
- Obesity or overweight
- Failure to consume adequate folic acid through multivitamins or diet
- High stress levels

Unfortunately, many women who are either planning to become pregnant soon or do not yet know that they are pregnant are engaging in activities that increase their risk of pregnancy complications, such as drinking and smoking.

In one study, 54.5% of women who were hoping to become pregnant within the next 12 months (and were not using contraception) reported at least one of the following risk factors: frequent drinking, current smoking or the absence of an HIV test. Almost 45% reported that they were not taking vitamins with folic acid, which is an important factor in preventing spine or skull defects in fetuses. Nearly 60% were overweight or obese. Many of these women continued to have risk factors during their pregnancies.[12]

Another study of women who had recently given birth showed that the following behaviors and experiences were fairly common during the preconception period:[13]

- 50.1% used alcohol
- 23.2% used tobacco
- 18.5% experienced at least 4 stressors in the period before pregnancy
- 10.2% had anemia (i.e., poor blood or low iron)
- 6.9% had asthma
- 2.2% had hypertension
- 1.8% had diabetes
- Only 30.3% of respondents received pre-pregnancy health counseling.

There are preconception interventions available that, if delivered before pregnancy as part of routine care, could improve birth outcomes. However, these are not accessible to everyone across the board.[10] In fact, only one in four primary care providers currently provides preconception care for the majority of the women they serve.[5] Some of the barriers to providing preconception care include lack of provider knowledge, lack of patient knowledge or demand for services, and lack of insurance coverage.[14]

The Centers for Disease Control and Prevention lists the following recommendations (among others) to improve preconception health and health care:[15]

- **Individual responsibility across the lifespan.** Each woman, man and couple should be encouraged to have a reproductive life plan.
- **Consumer awareness.** Increase public awareness of the importance of preconception health behaviors and preconception care services by using information and tools appropriate across various ages and literacy levels.
- **Preventive visits.** As part of primary care visits, provide risk assessment and educational and health promotion counseling to all women of childbearing age to reduce reproductive risks and improve pregnancy outcomes.

- **Interventions for identified risks.** Increase the proportion of women who receive interventions as follow-up to preconception risk screening, focusing on high priority interventions (e.g., those with evidence of effectiveness and greatest potential impact).
- **Inter-conception care.** Use the inter-conception period [period between pregnancies] to provide additional intensive interventions to women who have had a previous pregnancy that ended in an adverse outcome (e.g., infant death, fetal loss, birth defects, low birth weight or pre-term birth).
- **Pre-pregnancy checkup.** Offer, as a component of maternity care, one pre-pregnancy visit for women or couples planning pregnancy.
- **Health insurance coverage for women with low incomes.** Increase access to health care services through effective policies and sufficient reimbursement levels for public and private health insurance systems. Include coverage for a full range of clinicians who care for women.
- **Monitoring improvements.** Use data measures to monitor preconception health (e.g., the percentage of women who complete preconception care and postpartum visits).

Research also shows that preconception care is potentially cost-saving and/or cost-effective. For example, for every dollar spent on diabetes preconception care, $1.86 in savings is projected.[16] A 2006 meta-analysis of three prior studies also found that preconception care was cost-saving, primarily due to decreased hospitalization and neonatal intensive care unit costs.[6]

What Can Employers Do?

Employee Education and Supports

- Provide information to employees about the most important interventions for preconception health, including:
  - **Folic acid.** To reduce the risk of birth defects, women of child-bearing age should take 400 mcg of folic acid daily for at least three months before becoming pregnant.[11] Folic acid supplementation has been shown to reduce the occurrence of neural tube defects by two thirds.[17] However, the neural tube closes by the 28th day of gestation, so if a woman waits until she knows she is pregnant to start supplementation, it may be too late.[8]
  - **Tobacco and alcohol cessation.** Stopping alcohol use before pregnancy can prevent fetal alcohol syndrome and other alcohol-related birth defects.[17] Women should know that drinking — whether heavy, moderate, or light — can affect a fetus. Every year, 40,000 babies are born with an alcohol-related birth defect.[18] Tobacco use can also cause pre-term birth, low birth weight and other adverse birth outcomes.[17, 18]

- **Chronic disease management.** It is important that women with chronic health conditions, such as hypothyroidism and diabetes, get these conditions under control before they become pregnant. For example, diabetes management may reduce the three-fold risk of birth defects that diabetic women face. Women with hypothyroidism may need to have their medication adjusted to assist in their infants' neurological development.[17]
- **Discuss medication use with a doctor or pharmacist.** Some medications may be harmful to a fetus. Women who are planning to become pregnant should discuss their use of medications with a provider to determine if they need to switch or discontinue their current medicine.[17]
- **Weight loss as needed.** Reaching a healthy weight before pregnancy reduces the risks of neural tube defects, pre-term delivery, diabetes, cesarean section, and hypertensive and thromboembolic disease.[17]
- **Sexually transmitted infection (STI) treatment.** Women of child-bearing age should be screened and treated for sexually transmitted infections. STI treatment reduces the risk of ectopic pregnancy, fetal death and physical and developmental disabilities. Women with HIV/AIDS should also be counseled about the timing of pregnancy and given information about how to best protect the baby from the virus during birth and the early postpartum period.[17]
- **Vaccinations.** Women should talk to their doctors to determine if they are up to date on all vaccinations. In particular, the rubella vaccine and the hepatitis B vaccine are important for at-risk women because these diseases can be transmitted to the baby during birth.[17]

- Develop checklists of preconception topics for employees to discuss with their health care provider, including family history, lifestyle/behaviors, health screening tests, immunizations and the need for a physical exam.[11]
- Use relevant community or online supports.[4] For example, the March of Dimes has a free tool for employers called "Healthy Babies, Healthy Business" that contains six resources to help employers improve employee health. These include an online community, email access, information that companies can include on their websites, printed health education materials, March of Dimes websites and guidance for employees who have lost a child. "Healthy Babies, Healthy Business" is available at: http://www.marchofdimes.com/hbhb/.

- Educate employees about the importance of having a primary care doctor. Women who have a usual source of care are more likely to receive preventive care,[19] to have access to care,[20] and to receive continuous care, and they have lower rates of hospitalization and lower health care costs.[21, 22] Employers should encourage their employees to choose a primary care physician during open enrollment and should consider partnering with their health plans to communicate with employees who have not chosen a primary care provider.
- Incorporate information about reproductive health into existing materials and/or campaigns, such as those related to diabetes, obesity and other chronic diseases. For an example, see: http://www.marchofdimes.com/files/diabetes3.pdf.
- Respond to health literacy problems. Most health-related material is written at the 10th grade reading level or higher, yet the average reading level in the United States is equivalent to an 8th grade reading level.[23] Employers should avoid complex words and phrases when developing health education materials and should provide examples for clarification whenever possible.
- Educate employees about the risks of late pre-term birth. Late pre-term births (births between 34 and 36 weeks gestation) account for most of the last several decades' increase in pre-term births in the United States.[24] The increase may be due in part to patient convenience factors, such as elective caesarean sections (see below).[25] Although late pre-term babies are often healthier than those born earlier, they still may experience major problems. Late pre-term babies are:[3]
    - Six times more likely than full-term infants to die during the first week of life.
    - Three times more likely than full-term infants to die during the first year of life.
    - More than three times more likely than full-term infants to have cerebral palsy, and slightly more likely to have developmental delays.
- Discourage scheduled caesarean sections (C-section) for late pre-term births. The proportion of C-sections has increased overall in recent years (from 20.7% of all births in 1996 to 27.5% of all births in 2003), but some of the greatest increases have been for babies born between 32 and 36 weeks gestation.[26] C-sections are expensive procedures that carry increased risks and have longer recovery times than vaginal births. While some C-sections are medically necessary, others are performed for the convenience or preference of a patient or provider, or because a woman has had a prior C-section.[27]

A recent audit of UnitedHealthcare-insured infants found that 48% of newborns admitted to the neonatal intensive care unit (NICU) had been delivered by an elective procedure. Many of these procedures took place before the babies were full-term. **A follow-up pilot program that significantly reduced the number of elective deliveries before 39 weeks' gestation led to a 46% decline in the number of NICU admissions.[28]**

- Address racial and ethnic disparities. The chance of having a pre-term birth is much greater for women in some racial/ethnic groups. For example, non-Hispanic black infants have a one in six chance of being born pre-term (compared to one in eight for all infants).[29] Black infants also have a higher chance of being born very pre-term (less than 32 weeks gestation): 4.1% of black infants were born very pre-term in 2004, compared to 1.6% of white infants, 2.2% of Native American infants, and 1.5% of Asian infants.[30] Employers should consider the following measures to address disparities:
  - — Tailor health communications to at-risk populations using information, statistics and photos relevant to that racial/ethnic group.
  - — Partner with health plans to encourage inclusion of culturally competent providers within networks.
  - — Educate employees about the disparities that exist in pre-term birth and especially encourage at-risk mothers to receive preconception and prenatal care.
  - — Work with affinity groups (if available) to discuss health disparities issues related to pre-term birth.

For more information about addressing racial and ethnic health disparities, see *Eliminating Racial and Ethnic Health Disparities: A Business Case Update for Employers* at http://www.businessgrouphealth.org/pdfs/Final%20Draft%20508.pdf.

Benefit Design

- Make certain that benefit plans cover the following preventive services at 100%, with no deductible:[27]
  - — **Unintended pregnancy prevention services.** There should be no limits on counseling services, medications, procedures or devices when provided or prescribed by an approved provider. Covered services should include:
    - All FDA-approved prescription contraceptive methods as well as voluntary sterilization.
    - Pregnancy termination and all related services.
    - Medically appropriate laboratory examinations and tests, counseling services, and patient education.
  - — **Preventive preconception care.** Two preconception visits per calendar year should be covered. Provisions for women with complex case-management needs should also be included (e.g., flex benefits).

  - — **Preventive prenatal care.** For each pregnancy, 20 prenatal care visits and one prenatal pediatric visit should be allowed. Provisions for women with complex case-management needs should also be included (e.g., flex benefits).
  - — **Preventive dental services.** One visit during the preconception period and one visit during pregnancy should be covered for all women.
  - — **Preventive postpartum care.** One postpartum care visit, to be scheduled between 21 and 56 days after delivery, should be covered. Five lactation visits per pregnancy should also be covered.
- Include benefits for tobacco cessation and alcohol/drug screening, counseling and treatment so that women can cease using these substances before they become pregnant.
- Work in partnership with the health plan to educate network providers about the need for preconception care. It is important that primary care providers begin screening and counseling women about risk factors as early as possible in their childbearing years, even if they do not currently intend to become pregnant.
- Consider lower cost-sharing requirements for women who opt to give birth in network facilities that have C-section rates lower than average.[31]

For more information about model maternal and child health benefits, along with tools for employers and employees, please see *Investing in Maternal and Child Health: An Employer's Toolkit*, available at: http://www.businessgrouphealth.org/benefitstopics/et_maternal.cfm.

Wellness and Health Promotion Programs

- Provide incentives (e.g., gift cards) for employees to report their pregnancies as soon as possible so they can be screened for risk factors. Provide a way for women to give this information to a third party, in case they are hesitant about letting their supervisors know they are pregnant.
- Employees (and spouses or dependents as appropriate) who screen positive for high-risk pregnancy should be enrolled in a care management program, and all physician, care manager, and/or nurse recommendations should be followed.
- Employers who have not implemented tobacco-free workplace policies should consider doing so, in order to protect women from secondhand smoke during the preconception and prenatal period.

- Offer wellness programs and incentives to encourage employees to reach a healthy weight before pregnancy. Also consider offering nutrition counseling sessions for women during preconception and throughout the pregnancy and early postpartum period.
- Work in partnership with your health plan, wellness department or Employee Assistance Program (EAP) to provide services and programs on stress reduction, substance abuse treatment and tobacco cessation.

Conclusion

Since many pregnancies are unintended, it is very important for employers to take measures to support women's health throughout their lifespan, with special attention to the reproductive years. It is essential to weave preconception care into routine doctor's visits so that interventions can begin before women are even considering becoming pregnant. Because prenatal care does not typically begin until several weeks into pregnancy, it is not sufficient to ensure healthy babies. Employers can work towards ensuring healthy pregnancies by educating female employees about the impact of various risk factors and by providing supports to help them become as healthy as possible during their childbearing years.

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September 2009

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Acknowledgements:

Preventing Prematurity and Adverse Birth Outcomes: What Employers Should Know was generously funded by Grant #G96MC04447 from the U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. All materials are in the public domain.

About the Center for Prevention and Health Services

Mission: Educate large employers about diseases and health issues in order to protect and promote health and well-being among their employees and beneficiaries as well as control costs.

The Center:

- Identifies strategies and develops tools to address health and benefits issues.
- Translates health research into practical solutions for large employers.
- Provides the national voice for large employers and links them with national expertise and resources.

For more information, e-mail healthservices@businessgrouphealth.org.

Issue Brief

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The Business Group is the only non-profit organization devoted exclusively to representing large employers' perspectives on national health issues and providing solutions to its members' most important health care and health benefits challenges. The Business Group fosters the development of a safe health care delivery system and treatments based on scientific evidence. Members share strategies for controlling costs, improving patient safety and quality of care, increasing productivity and supporting healthy lifestyles.

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