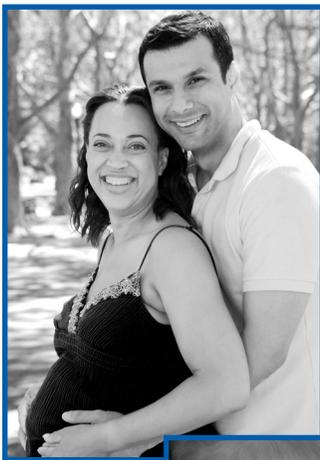




# Safe Motherhood

## Promoting Health for Women Before, During, and After Pregnancy 2008



*“The world looks to us for leadership in demonstrating how to achieve and sustain safe motherhood.  
CDC’s work in safe motherhood is truly where science meets society.”*

*Wanda K. Jones, DrPH  
Deputy Assistant Secretary for Health (Women’s Health)  
Director, Office on Women’s Health, U.S. Public Health Service*

February 2008

## Safeguarding the Health of Mothers

Safe motherhood begins before conception with proper nutrition and a healthy lifestyle. It continues with appropriate prenatal care, the prevention of complications when possible, and the early and effective treatment of any complications.

The ideal results are pregnancy at term without unnecessary interventions, the delivery of a healthy infant, and a healthy postpartum period in a positive environment that supports the physical and emotional needs of the woman, infant, and family.

### Addressing Maternal Mortality and Morbidity

Maternal death continues to be the international standard by which a nation's commitment to women's status and their health can be evaluated. It is the primary measure of whether women can expect to survive complications that arise during pregnancy, delivery, and the postpartum period.

In the United States in 2004, the rate of maternal mortality was 13.1 deaths per 100,000 live births, with great disparities in many racial and ethnic communities. The leading causes of pregnancy-related deaths in the United States are hemorrhage, blood clots, high blood pressure, infection, stroke, amniotic fluid in the bloodstream, and heart muscle disease.

However, mortality is not the only indicator of women's health. In 2001, CDC began working with national and international groups to develop and implement programs for

safe motherhood, including those designed to prevent illness, death, and disability among women of reproductive age.

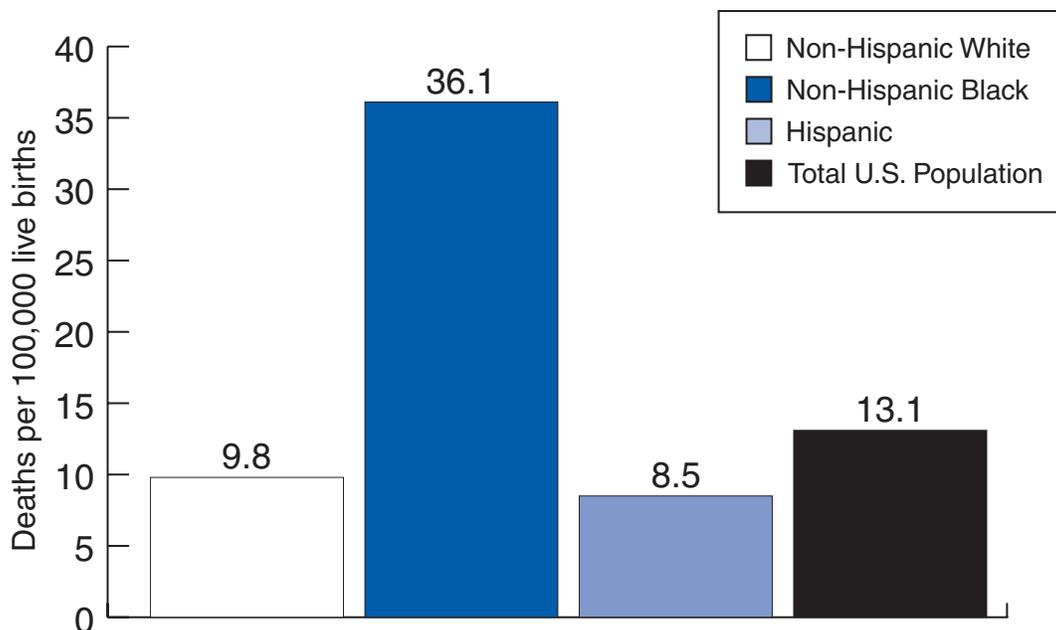
### Sustaining Progress to Prevent Deaths

In the United States, 1 to 2 women die each day of pregnancy complications. From 1900 to 1982, deaths from pregnancy complications in the United States declined sharply. Antibiotics, better obstetric procedures, and control of infections have helped to prevent many deaths over the past century. Despite these advances, studies indicate that as many as half of all deaths from pregnancy complications could be prevented if women had better access to health care, received better quality care, and made positive changes in their health and lifestyle habits. Some people believe that maternal deaths are a rare event. However, maternal mortality rates have not improved in recent years, and deaths continue to occur.

### Racial, Ethnic, and Age Disparities

A woman's race, ethnicity, country of birth, and age can be associated with her risk of dying of pregnancy complications. These same factors may affect her ability to avoid unintended pregnancy, have access to adequate medical care, or learn and successfully practice healthy behaviors. CDC continues to investigate these disparities and to make information available to health care providers, scientists, and the general public to help eliminate these disparities.

**Maternal Mortality Rates by Racial and Ethnic Group, United States, 2004**



\* Annual number of deaths during pregnancy or within 42 days after delivery, per 100,000 live births.  
Source: CDC, National Center for Health Statistics and Division of Reproductive Health.

## CDC's Role in Safe Motherhood

CDC is committed to ensuring that all people, especially those at greater risk for health disparities, will achieve their optimal lifespan with the best possible quality of health in every stage of life. With agency-wide health protection goals that support healthy people in healthy places across all life stages, CDC is setting the agenda to enable people to enjoy a healthy life by delaying death and the onset of illness and disability by accelerating improvements in public health.

To better understand the burden of maternal complications and mortality and to decrease disparities, CDC's Division of Reproductive Health supports national and state-based surveillance systems to monitor trends and investigate health issues; conducts epidemiologic, behavioral, demographic, and health services research; and works with partners to translate research findings into health care practice, public health policy, and health promotion strategies.

### Pregnancy Mortality Surveillance System (PMSS)

CDC works with state health departments and other groups to identify and gather information on pregnancy-related deaths. With its partners, CDC collects data on women who died during or within 1 year of pregnancy. Data are used to describe conditions that lead to death, identify risk factors for pregnancy-related deaths, and identify disparities in death rates. All states, the District of Columbia, and New York City contribute data for this surveillance system. CDC recently used PMSS data to describe associations between violence and pregnancy-related deaths.

### Maternal Mortality Review Committees

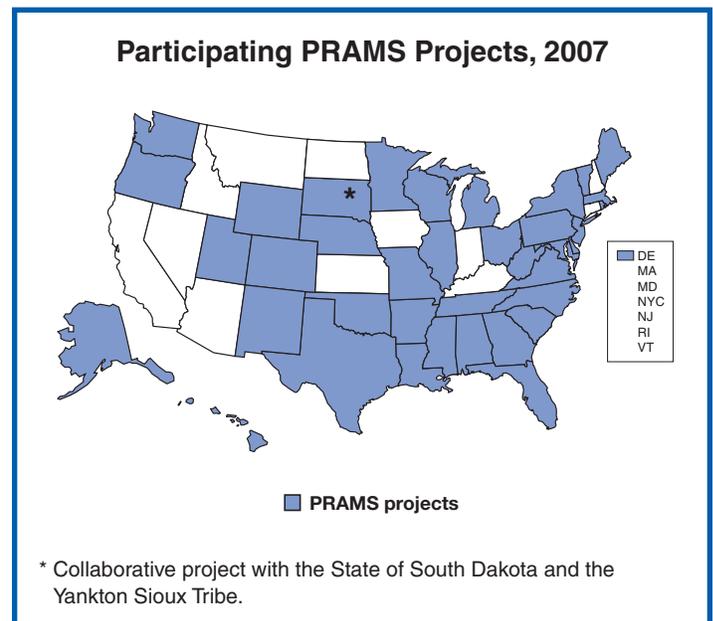
CDC provides technical assistance and expertise to help states establish maternal mortality review committees. CDC collaborated with the Health Resources and Services Administration, the American College of Obstetrics and Gynecologists, the Association of Maternal and Child Health Programs, and representatives of several states to publish best practices for improving maternal mortality review processes and activities. CDC is currently working with its partners to update national and international recommendations for conducting reviews and using data from these reviews to improve safe motherhood programs.

### Pregnancy Risk Assessment Monitoring System (PRAMS)

PRAMS provides information about women's health and health behaviors before, during, and immediately after pregnancy. Data are used to develop indicators of success in improving the health of mothers and their infants. PRAMS data also are used by state officials, researchers, and program

managers to guide decisions on maternal and child health programs, practices, policies, and resources. In some parts of the United States, PRAMS data have been used to describe women's ability to accept and use specific health recommendations, including those related to prenatal care, folic acid use, breastfeeding, HIV testing, and smoking cessation.

PRAMS recently expanded to include 37 states, New York City, and one tribal nation. PRAMS data represent approximately 75% of births in the nation, and most importantly, the experiences of the women who gave birth to these infants.



### Maternal and Child Health Epidemiology Program (MCH-EPI)

This program provides expertise and support to state and local health departments to help them conduct studies to improve public health practice and management. In fiscal year 2007, 8 MCH epidemiologists and 8 MCH fellows were working in public health agencies in 13 states.

### Interactive Atlas of Reproductive Health

CDC publishes the *Interactive Atlas of Reproductive Health*, which presents indicators of reproductive health in a clear, accessible format. This online reference is designed to be used by professionals working in public health and health care as well as by the general public.

The indicators include fertility, health risk factors, maternal health, and infant health. Periodic updates allow users to compare information by age, race, ethnicity, risk, and geographic location. The atlas is available at <http://www.cdc.gov/reproductivehealth/GISAtlas/index.htm>.

## Future Directions for Safe Motherhood Programs

### Preconception Health

In 2006, CDC released a report with guidelines on how health care providers can support women's efforts to achieve and maintain optimal health before, during, and beyond their reproductive lives, regardless of decisions to bear children. These guidelines are intended to help providers prevent death, disease, and disability among their patients. The findings in this report are based on reviews of evidence by experts in medicine and public health. CDC is working with its partners to expand the acceptance and use of these findings and guidelines into everyday practice and health care policy. We also are working to identify how society, economics, genetics, geography, and other factors influence women's health before, during, and after their reproductive years.

### The Burden of Infertility

Safe motherhood embraces the concerns of women who have attempted to conceive naturally without success. In 1996, CDC published its first report on assisted reproductive technology (ART), called *Assisted Reproductive Technology Success Rates*. This report provided a national overview of outcomes at U.S. fertility clinics. CDC has published 10 ART reports over the years, and we continue to monitor trends in the use of ART services and maternal and infant health outcomes. CDC hopes to expand these efforts in the future to respond to a growing demand for information on how to overcome infertility in women and men. In 2008, CDC plans to convene a panel of experts to discuss the public health burden of infertility on families and communities.

### Chronic Diseases and Reproductive Health

An important component of safe motherhood is improving outcomes for women who have or will develop chronic diseases such as diabetes or heart disease during their reproductive years. Recent PRAMS surveys have included questions about diagnosis of diabetes during pregnancy. Women with diabetes must take the disease into account when choosing a contraceptive method or preparing for pregnancy. In the future, CDC plans to devote more attention to gestational diabetes, which is a strong predictor of future type 2 diabetes in many women during and after their reproductive years. CDC also will work with its partners to better understand genetic, metabolic, and other factors that can lead to infertility in women and men. These data and evidence could lead to important breakthroughs for U.S. families.

### Emerging Threats and Safe Motherhood

CDC recognizes that new threats to safe motherhood have emerged in this century. These threats include man-made and natural disasters, as well as emerging infectious diseases. Fortunately, many CDC reproductive health professionals have experience working in emergency settings and complex medical situations. For example, in 2005, CDC staff helped in the aftermath of Hurricane Katrina, when obstetric services were shut down or relocated in some areas. In 2006, CDC staff provided scientific and other assistance in Puerto Rico to help assess the impact of dengue fever on pregnant women. CDC will draw on this experience to help prepare public health professionals for the next emergency, whether it is a threat of monkeypox, anthrax exposure, or natural disaster.

### HIV Prevention and Care

CDC's Division of Reproductive Health will continue its pioneering work into understanding the burden of HIV infection on the reproductive lives of women and men. These efforts will require continued support that delivers evidence about new technologies and strategies to protect those who are not infected. At the same time, important investments need to be made to help people at high risk for infection and women who need to use anti-retroviral drugs before and during their pregnancy. CDC will continue to be involved in microbicide research and other new technologies, reviewing guidelines for contraceptives for people using anti-retroviral drugs and evaluating outcomes of new technologies for HIV prevention.

### CDC's Investment in the Health of Women

CDC will continue to invest resources to ensure safe motherhood for all U.S. women and to overcome disparities in reproductive health. Ongoing activities and research seek answers to questions about differences in health status, risks, and outcomes related to race, ethnicity, age, geography, and other demographic factors. CDC continues to invest in using the behavioral sciences to understand disparities that create or provide protection from health risks. CDC will continue to work with partners to address urgent issues related to safe motherhood, including depression, premature labor and delivery, teenage pregnancy, and reproductive health and violence. We also will work to prevent negative outcomes of pregnancy, including miscarriage, stillbirth, and the sudden, unexpected death of infants.

**For more information, please contact the Centers for Disease Control and Prevention  
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