

Safe Motherhood: Preventing Pregnancy-Related Illness and Death

Approximately 6 million American women become pregnant each year, and over 10,000 give birth each day. Safe motherhood is a vital social and economic investment. It 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 that do occur. It ends with a labor 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.

Pregnancy-Related Deaths—No Decline in Almost 20 Years

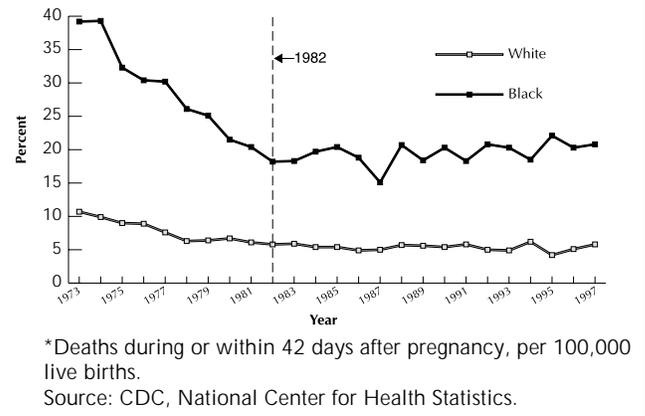
A pregnancy-related death is one that occurs during pregnancy or within 1 year after a pregnancy and is caused by pregnancy-related complications. Each day in the United States, between two and three women die of pregnancy-related causes. Although the risk of dying of pregnancy-related complications has decreased dramatically in the United States over the past 50 years, this risk has not declined since 1982. Over half of all pregnancy-related deaths could be prevented through improved health care access, improved quality of care, and changes in health and lifestyle habits.

The leading causes of pregnancy-related deaths in the United States are

- Hemorrhage.
- Embolism (a blockage in the bloodstream).
- Pregnancy-induced hypertension.
- Sepsis/infection.
- Anesthesia complications.
- Cardiomyopathy (heart muscle disease).

The risk of death due to pregnancy varies greatly among women of different racial and ethnic groups. In particular, black women are four times more likely and Hispanic women are 1.7 times more likely than white women to die of pregnancy-related complications.

Maternal Deaths* Among Black and White Women, United States, 1973–1997



Deaths Only Part of the Picture

Of the 4 million women who give birth in the United States each year, at least 30% have a pregnancy-related complication before, during, or after delivery. These complications can cause long-term health problems even when they do not result in death.

Some of the most common complications of pregnancy are

- Miscarriage.
- Ectopic pregnancy.
- Excessive vomiting.
- Diabetes.
- Hemorrhage.
- Infection.
- Pregnancy-induced hypertension.
- Premature labor.
- Need for a surgical (caesarean) delivery.

Childbirth is the most common reason for hospitalization in the United States, and pregnancies with complications lead to more costly hospitalizations. In the United States, hospitalizations for pregnancy-related complications occurring before—not during or after—delivery account for more than 2 million hospital days of care each year at a cost of more than \$1 billion annually.

CDC's National Leadership

Supporting State-Based Programs

With fiscal year 2000 funds of about \$8 million, CDC will work with states and health partners to translate science into quality care to reduce pregnancy-related complications and deaths. CDC also assists states in determining which women may be at increased risk for pregnancy-related complications and what types of interventions can decrease these risks. By answering such questions, states can implement research-based prevention programs to make motherhood safer. Examples of CDC assistance include the following:

The Pregnancy Risk Assessment Monitoring System (PRAMS)



CDC and state health departments use PRAMS to collect state-specific, population-based data on maternal attitudes and experiences before, during, and immediately after pregnancy. These data can be used to identify groups of women at high risk for health problems, to monitor changes in health status, and to measure progress towards goals in improving the health of mothers and infants.

Maternal and Child Health Epidemiology Program (MCHEP). Through MCHEP, CDC and the Health Resources and Services Administration (HRSA) support state and local health departments in collecting and analyzing information to assess and protect the health of mothers and infants. Seven states, the District of Columbia, and CityMatCH (an organization in Omaha, Nebraska, that assists

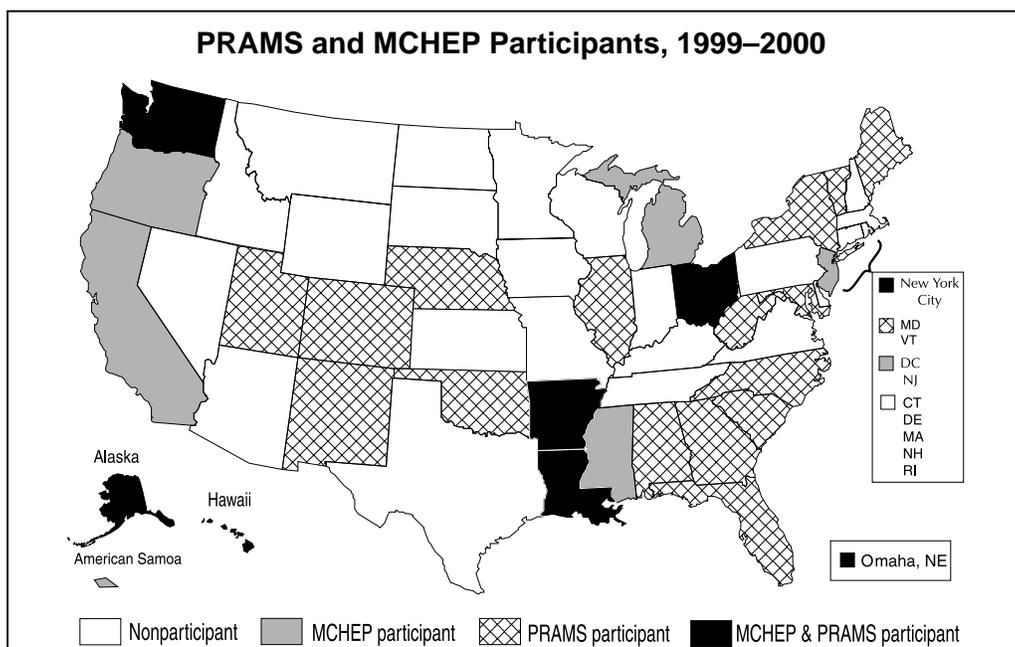
maternal and child health programs in U.S. cities) have MCHEP-sponsored epidemiologists. MCHEP provides financial support for six additional programs, and several other states receive technical assistance but no direct resources. In addition, the annual MCH Epidemiology Conference offers training opportunities and information to professionals in the field.

Monitoring Safe Motherhood: An Essential National Strategy

Data from safe motherhood monitoring are critical for improving health-promotion programs for pregnant women, mothers, and infants. Priorities for safe motherhood monitoring include identifying and investigating all pregnancy-related deaths and gathering information on complications of pregnancy and their causes. CDC uses these data to

- Identify risk factors for maternal illness and death.
- Examine racial disparities in pregnancy-related death rates.
- Define the burden of disease in the population as a whole and in groups of women at higher risk.
- Explore ways to assist women at risk for domestic violence.

CDC's ongoing **Pregnancy Mortality Surveillance System** works with states to monitor pregnancy-related deaths and to identify risk factors for pregnancy-related deaths from specific causes.



Strengthening the Science Base

CDC is analyzing national and state data to learn more about maternal illness during labor and delivery, define trends in surgical deliveries, and identify the factors involved when a woman dies or almost dies of pregnancy-related causes. CDC has research under way to expand on the following innovative activities:

- **Understanding racial and ethnic differences in pregnancy-related deaths.** One of the greatest racial gaps in public health is the fourfold greater risk of pregnancy-related death among black women than among white women. CDC uses national data to analyze the prevalence of death due to pregnancy-related complications among women of different races. Results are being used to target risk factors for these complications among black and Hispanic women.
- **Understanding the risks of domestic violence among pregnant women.** Each year, up to 300,000 pregnant women in the United States are victims of domestic violence; violence is more common among pregnant women than many conditions for which they are routinely screened. CDC provides assistance to projects that focus on the risk of domestic violence among pregnant women and new mothers. In both Alaska and Georgia, for example, PRAMS data identified a high prevalence of domestic violence among new mothers; this information was used to institute recommendations for prenatal screening for domestic violence.
- **Evaluating changes in health care for pregnant women.** In response to changes in many U.S. health care delivery systems and in current medical practices, CDC and its partners are investigating better ways to monitor pregnancy-related illness. Projects include
 - ✓ Examining pregnancy-related illness among Medicaid recipients in Tennessee.
 - ✓ Examining the prevalence of vaginal birth after caesarean section in Georgia.
 - ✓ Characterizing the treatment of ectopic pregnancies in an HMO in California.

- **Limiting illness from infections.** CDC is exploring factors associated with bacterial vaginosis, which can lead to ectopic pregnancy, premature labor, and uterine infections after pregnancy. CDC will also study the association of douching with premature delivery and the design of culturally appropriate interventions to inform women about potential risks.

Expanding Communication and Education

Using various methods to disseminate new knowledge, CDC continues to expand communications activities that focus on

- Ways to make motherhood safer.
- The importance of prenatal care.
- Effective prevention strategies for health care providers to decrease illness and possible death among women during pregnancy.

In addition, CDC builds coalitions with federal, university, state, and health care partners to share knowledge on making motherhood safer. In 1999, CDC sponsored a national conference to explore ways to better understand the magnitude and causes of pregnancy-related illnesses and complications. Also in 1999, responding to requests from health departments for information and technical assistance, CDC and its partners developed *Strategies for the Identification and Review of Pregnancy-Related Deaths in the United States* with the goal of helping states find ways to reduce these deaths.

Building on Accomplishments

Currently, CDC has limited resources to support prevention research and public education on safe motherhood. CDC has developed a 3-year action plan that calls for partnering with federal agencies, states, nonprofit organizations, and community-based groups to address maternal health issues. Working with HRSA, CDC is also preparing the maternal health portion of *Healthy People 2010*, which provides national goals for safe motherhood in the next decade.

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