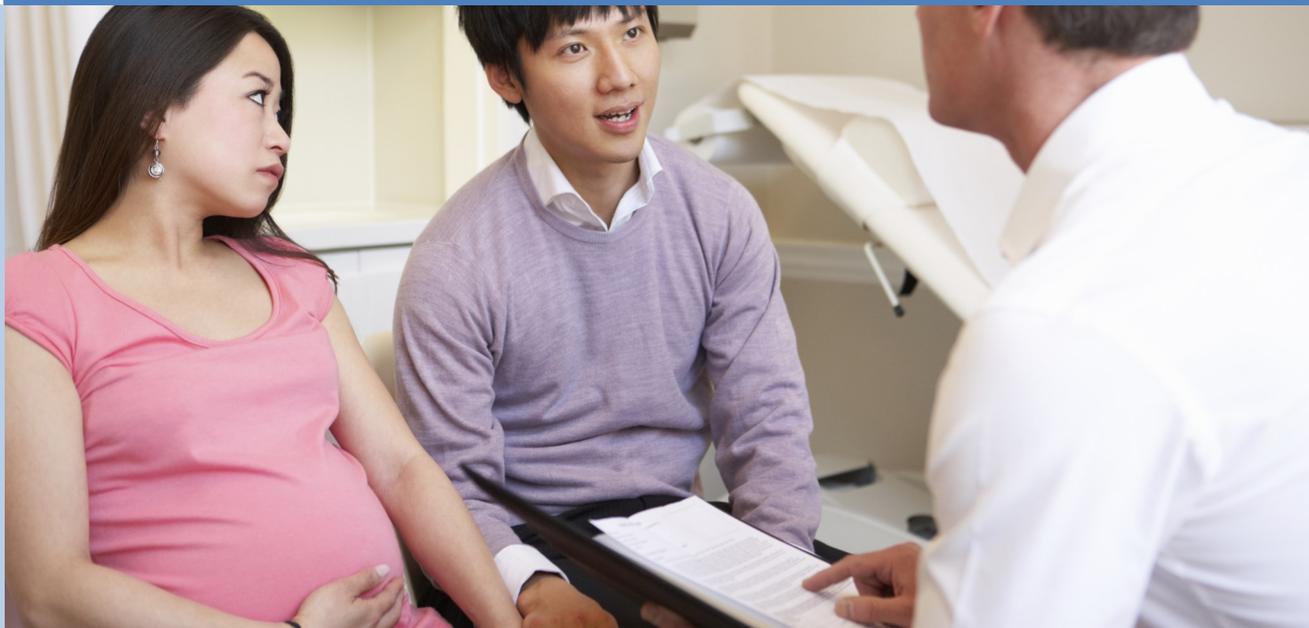




# Pregnancy Associated Mortality Review

# CA-PAMR



PROFILE

**T**he California Pregnancy Associated Mortality Review (CA-PAMR) — a collaborative effort of the Maternal, Child and Adolescent Health (MCAH) Division of the California Department of Public Health (CDPH) and its partners, Stanford University's California Maternal Quality Care Collaborative (CMQCC) and the Public Health Institute (PHI) — is a comprehensive statewide examination of women who died while pregnant or within one year

after pregnancy. This ongoing examination involves the CA-PAMR Committee, an appointed review committee of volunteer health professionals with expertise in maternal-fetal medicine, midwifery, nursing, cardiology, emergency medicine, pathology, mental health, social work and public health. It aims to identify pregnancy-related deaths, causes, contributing factors, and improvement opportunities in maternity care and support.

**ORIGINS:** CA-PAMR was established in 2006 following a dramatic rise in maternal mortality in California from 7.7 deaths per 100,000 live births in 1999 to 16.9 deaths per 100,000 live births in 2006. In collaboration with CMQCC and PHI, CDPH developed a methodological approach to review maternal mortality cases.

**OUR GOALS:** To prevent pregnancy-related deaths, reduce associated disparities, and help women optimize their health prior to, during and after pregnancy. To identify opportunities for improvement and develop data-driven actionable recommendations for change.

**OUR WORK:** To understand and report comprehensive findings of detailed case reviews of maternal deaths.

**OUTCOMES:** Since CA-PAMR has been in place, California has seen a 57 percent decline in maternal mortality, from 16.9 deaths per 100,000 live births in 2006 to 7.3 deaths per 100,000 live births in 2013. African-American women continue to experience a three-to-four times higher risk of maternal mortality than their racial/ethnic counterparts, although the absolute mortality rates were halved from 2005-2007 to 2011-2013.

**FUNDING:** Federal Title V MCH Block Grant.

## KEY DEFINITIONS

### **Pregnancy-associated death:**

The death of a woman while pregnant or within one year of the end of a pregnancy (live birth, stillbirth, ectopic or molar pregnancy, spontaneous or elective abortion) from any cause. Pregnancy-associated deaths are not necessarily pregnancy-related.

### **Pregnancy-related death:**

The death of a woman while pregnant or within one year of the end of a pregnancy related to, or aggravated by, the pregnancy, but not from accidental or incidental causes.

### **Maternal death (or Maternal mortality):**

The death of a woman while pregnant or within 42 days of the end of a pregnancy related to, or aggravated by, the pregnancy or its management, but not from accidental or incidental causes. This is a standard definition used by the World Health Organization and the National Center for Health Statistics.

## RESOURCES:

### **CA-PAMR:**

[cdph.ca.gov/PAMR](http://cdph.ca.gov/PAMR)

**ASTHO State Profile: The California Pregnancy-Associated Mortality Review**  
[astho.org/Maternal-and-Child-Health/The-California-Pregnancy-Associated-Mortality-Review/State-Story/](http://astho.org/Maternal-and-Child-Health/The-California-Pregnancy-Associated-Mortality-Review/State-Story/)

P.O. Box 997420 MS 8300  
Sacramento, CA 95899-7420  
(916) 650-0300  
mchinet@cdph.ca.gov  
www.cdph.ca.gov/pamr  
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## METHODS FOR IMPROVING MATERNAL MORTALITY AND MORBIDITY:

Since 2006, the CA-PAMR team has been identifying and reviewing cases of women who died while pregnant or within one year of the end of pregnancy (live birth, stillbirth, ectopic or molar pregnancy, spontaneous or elective abortion) **from any cause**. These are referred to as pregnancy-associated deaths. Identification of pregnancy-related deaths involves multiple steps.

- ◆ First, hospital discharge data are linked to birth and death certificates to construct pregnancy-associated death cohorts for each birth year.
- ◆ Second, potential pregnancy-related cases are selected, and additional data sources, including investigative reports (e.g., coroner, autopsy, toxicology) and medical records, are gathered and summarized to provide more information about this subset of cases.
- ◆ Next, an appointed CA-PAMR committee of health professionals reviews all potential pregnancy-related cases to determine cause of death, contributing factors, whether the death was pregnancy-related, and improvement opportunities in maternal care and support.
- ◆ Finally, recommendations to prevent or reduce the risk of pregnancy-related deaths are developed and critically reviewed by key stakeholders.

## CA-PAMR REPORT: OBSTETRIC DEATHS IN 2002-2007

### Key Findings:

- ◆ 41% of pregnancy-related obstetric deaths had a good-to-strong chance of preventability.
- ◆ Cardiovascular disease was the leading cause of pregnancy-related death.
- ◆ African-American women continued to experience a three-to-four times higher risk of maternal mortality than their racial/ethnic counterparts.
- ◆ Multiple patient, facility and health care provider factors contributed to pregnancy-related deaths.

### Key Recommendations:

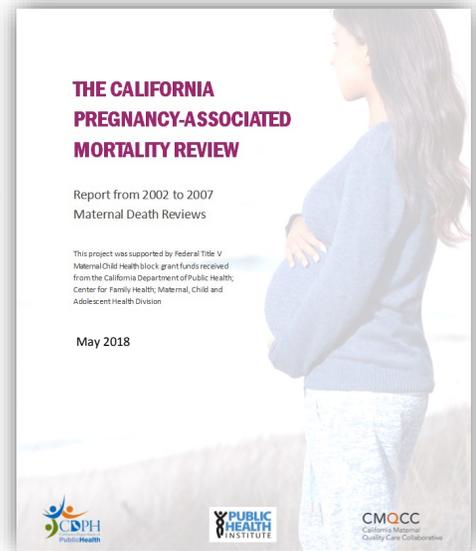
- ◆ Optimize data collection and continue data-driven reviews.
- ◆ Clinicians caring for African-American women need to have a heightened sense of awareness of risk factors prevalent within this group, including cardiovascular symptoms and obesity.
- ◆ Improve provider and hospital care, including standardized protocols, planning and communication, as well as issues of overuse of cesarean sections and induction.
- ◆ Improve communication and coordination within and across hospital departments where pregnant and postpartum women seek care, especially between emergency departments and obstetric departments.

### California Toolkits to Transform Maternity Care:

[cdph.ca.gov/rppc](http://cdph.ca.gov/rppc) | [cmqcc.org/resources-tool-kits/toolkits](http://cmqcc.org/resources-tool-kits/toolkits)

These toolkits are a series of maternity care quality improvement strategies, developed in partnership with CMQCC, with the overarching goal to reduce deaths from preventable causes among pregnant and postpartum women. Toolkits include:

- ◆ Improving Health Care Response to Cardiovascular Disease in Pregnancy and Postpartum
- ◆ Improving Health Care Response to Maternal Venous Thromboembolism
- ◆ Toolkit to Support Vaginal Birth and Reduce Primary Cesareans and Implementation Guide
- ◆ Improving Health Care Response to Obstetric Hemorrhage, V2.0, 2015 (V1.0 released in 2010)
- ◆ Improving Health Care Response to Preeclampsia, 2014
- ◆ Elimination of Non-medically Indicated (Elective) Deliveries Before 39 Weeks Gestational Age, 2010 (Licensed to March of Dimes)



*New CA-PAMR report on obstetric deaths now available on the CDPH website.*