

Maternal Mortality

Maternal Mortality Rates Are Increasing in California

http://www.cmqcc.org/maternal_mortality

Pregnancy-related mortality rates in the state of California have increased significantly in each of the last three years. No one is sure why. In the 1990's California's rates ranged from **5.6 to 10.7 deaths per 100,000** live births, which is consistent with the overall US rate. Beginning in 2000 the rate climbed to 11.1 and in the last three reported years it has **averaged over 14**. Also concerning is a similar rise in the entire US rate. These rates are much higher than the Healthy People **2010 goal of 4.3 maternal deaths per 100,00** live births. **Definitions are critically important** and are reviewed on a [related page](#).

A major project within CMQCC is the first state-wide chart review of maternal deaths to identify the reasons for this increase and to discover opportunities for improvement in medical care ([California Pregnancy-Associated Mortality Review \(CA-PAMR\)](#)). Pregnancy [associated](#) and [related](#) deaths are being reviewed to ensure correct classification of cases. CA-PAMR began with 2002 as that was the closest year that had birth-certificate and death-certificate matched cases.

Pregnancy-related deaths are underreported, and the true number of deaths related to pregnancy might **increase from 30%–150% with active surveillance** (16,31–33). Therefore, improved surveillance and additional research are needed to assess the magnitude of pregnancy-related deaths, further identify potential risk groups, and investigate the causal pathway that led to the death (41).

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Pregnancy-Related Mortality ~ Surveillance — United States, 1991–1999

===ACOG Safe Motherhood Initiative: Triennial Report for New York State

...studies have shown that physicians completing death certificates after a maternal death fail to report that the woman was pregnant or had a recent pregnancy in **fifty percent or more** of the cases. 5, 6, 7

Of the women studied who had a live birth (n=30), **more pregnancy-related deaths occurred following a cesarean section (69.7%) than following a vaginal delivery (21.2%)**.

Of the **33 pregnancy-related deaths reviewed by the Safe Motherhood Initiative (SMI)**, the **leading causes of death were embolism (24.2%)**, PIH (24.2%), hemorrhage (15.2%), and infection (15.2%).

The leading **two causes of death among the portion of the sample that delivered by cesarean section were embolism and Pregnancy-induced Hypertention (26.1%)**.

Embolism

As expected, one of the leading causes of death following a cesarean section of the studied cohort was **embolism**. The SMI data suggest that a risk assessment of women undergoing elective or emergency cesarean section should be performed and prophylaxis instituted, as appropriate.

The table below, taken from the CEMD 1995 Working Party Report on Prophylaxis Against Thromboembolism, and updated by the **2004 Royal College of Obstetricians and Gynaecologists** provides widely used recommendations for risk assessment in caesarean section.

The SMI should work with statewide experts in adverse pregnancy outcomes and maternal mortality to develop and model guidelines, like those published by the CEMD, for the prevention of New York State pregnancy-related deaths due to embolism.

Deaths from Embolism following CS – 7 ~ from Vaginal birth -- 0

Infection	3	2
Hemorrhage	3	2

A review of the 2004 pregnancy-related deaths reported to ACOG via the **Safe Motherhood Initiative** (SMI, n=25) compared to the data identified by Statewide Planning and Research Cooperative System's (SPARCS, n=28) **revealed that ACOG was not notified of 47% of pregnancy-related deaths that occurred in that one calendar year.**†††

Table 4.6 illustrates the most comprehensive one year data analysis currently available in New York State. While the SMI's **active surveillance system reviewed 25 deaths and additional 28 deaths were reported to ACOG through the SPARCS' passive surveillance system, it is estimated that these findings still represent an underreporting of one year data on pregnancy-related deaths in New York State.**

Systems Recommendations:

In the cases of multiple physicians co-managing one patient, documentation must include the written account(s) of face-to-face, verbal discussions at each critical point in time; such as when there is any change in the patients' status, or when there is a change in the patients' management plan.

While Reports of Patient Complications (RPC's) are required to conduct quality assurance and improvement activities with their affiliate hospitals, **maternal mortality is not routinely reviewed or studied in any systematic fashion.** Without a statewide system that prompts RPC's to use the SMI review protocol, review maternal deaths, and share de-identified information, **surveillance will be halted.** **The United Kingdom's Confidential Enquires requires all maternal deaths to be reviewed and all care-givers must participate. Hence, meaningful recommendations on achieving safe motherhood become possible.**

Reporting of maternal deaths is inconsistent in New York State. Findings and recommendations from the SMI will not be meaningful until there is additional, comprehensive

and long-term data available. A statewide system to report de-identified maternal death information to a central repository that incorporates an active (non-punitive) surveillance system should be required. With accurate, long-term information, meaningful obstetric recommendations can be made.

Example of routine repeat C-section resulting in maternal death from post-op wound infection:

[A patient who had a previous Cesarean presented at the hospital] @ 38 weeks gestation with mild contractions every 3-5 minutes. A repeat cesarean was carried out without obstetrical or anesthetic complications. The subcutaneous tissue was irrigated, the skin closed and the patient began a 24 hour course of Clindamycin IV. On post-operative day 3, a physician note indicated a foul smell at the site of incision. The wound was cleaned with peroxide and re-dressed. The patient was taught how to clean the wound, with specific instruction on lifting of excess abdominal flaps of skin. The next day a nursing note documented a foul smell again coming from the inguinal area. The patient was counseled again on cleaning the wound and was discharged. Four days later the patient reported to the clinic to have her staples removed. The wound was cleaned and re-cleaned with peroxide. The patient had no complaints. **Two days later the patient was found dead at her residence.** The final autopsy reported “sepsis related to wound infection and an enlarged heart.”