

# Structure of Pregnancy-Related Mortality Surveillance in the United States

**An excerpt from:** *Strategies to Reduce Pregnancy-Related Deaths: From Identification and Review to Action.*

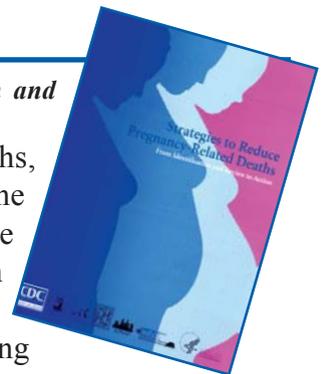
Surveillance is an ongoing process of identifying pregnancy-related deaths, reviewing the factors that led to those deaths, analyzing and interpreting the information gathered, and acting on the results so as to reduce such deaths in the future. The ultimate purpose of this surveillance process is to stimulate action rather than merely to count cases and calculate rates or ratios. All these steps—identification, data collection and analysis, and action—are needed on an ongoing basis in order to justify the effort and reduce pregnancy-related deaths.

For pregnancy-related mortality surveillance to be successful, many people from many groups in many different roles must collaborate. In the United States, pregnancy-related mortality surveillance is a public health function, primarily coordinated by the states, although some large counties and cities also undertake this activity. Clinicians and health care professionals play vital roles in many parts of the surveillance process, as do social service and educational agencies, professional organizations, community groups, and the health care industry. Federal agencies assist in coordinating surveillance activities, providing technical assistance, and compiling national data.

The concept of pregnancy mortality surveillance as an ongoing process with the ultimate purpose of action is an important one. Too often surveillance stops after identifying and counting deaths. However, pregnancy-related mortality surveillance requires all four steps—identification, investigation, analysis, and action—in a continuing fashion to make the effort worthwhile. However, first we provide an overview of the process and the role of the various agencies and health care providers. Pregnancy-related mortality surveillance is usually coordinated by the state health department, frequently by the unit responsible for maternal and child health.

## Identification

Finding as many pregnancy-related deaths as possible is important. Women die at home, in clinics, or in hospitals. They die during pregnancy, while giving birth, or after delivery; they die of complications from childbirth, abortion, or ectopic pregnancy. To have a representative picture of the determinants of maternal death, one needs to have as complete a picture of the women who died as possible. Women who die at home may be different from women who die in referral hospitals. Women who die on labor



This manual addresses issues and tasks that are important for health departments, clinicians, vital statistics personnel, pregnancy-related mortality review committees, legislators, and community groups.

Pregnancy-related mortality surveillance consists of several steps that occur in a more or less sequential fashion. Although each state has its own unique structure, in every state, pregnancy-related mortality surveillance requires similar steps:

Identify pregnancy-related deaths.



Review the medical and non-medical causes of death.



Analyze and interpret the findings.



Act on the findings.

or delivery wards may have different stories from women who die on gynecology wards or emergency rooms. Possible or known pregnancy-related deaths are usually identified by the vital statistics office, although other methods such as computerized data systems and reports from health care providers or surveys may also be used.

## Review

Reviewing data on pregnancy-related deaths is the next step. Information on the medical and non-medical factors that led to the deaths is collected, by the state, a review committee, or an individual or group assigned the task. A pregnancy-related mortality review committee then meets to review and discuss the deaths. Members of these committees come from health departments, clinical medicine, other appropriate agencies and professional organizations, the health care industry, and community groups.

## Analysis and Interpretation

The information collected during the review must be analyzed if it is to be used to reduce maternal deaths. Each case should be individually assessed for the medical and non-medical factors that led to the death, especially the factors that were preventable. The deaths can then be considered as a group in order to find patterns or similar factors. This can be done both quantitatively (i.e., determining whether certain groups of women are more likely to die) and qualitatively (i.e., determining which scenario led to each death).

## Action—The Reason for All the Previous Work

The details of this step depend on the findings of the analysis. Action may include interventions in the community, in the schools, by the health care sector, or by local or state agencies. It is important that people with the ability to make changes are involved in the surveillance process, so that they understand the findings and are ready to act.

Once action is taken, it must be evaluated to see if it was effective. The surveillance process then continues with identification and review of deaths in order to modify and refine the actions needed to make pregnancy safer for women.

## Definition of Terms

Before we can discuss surveillance of pregnancy-related deaths, we must discuss and define our terms. Clear definitions are particularly necessary because of the variety of definitions and terms used by different groups when they discuss mortality related to pregnancy (Box 1).

If we are to understand clearly what is being measured, monitor trends consistently, and compare similar events, terms must be well-defined and understood by everyone involved in the surveillance

### Two Sets of Terms

Having two sets of definitions and terms can be confusing. However, each set has a different purpose.

#### *ICD terms*

- Used by many nations, so they require coding conventions to be applied in a comparable fashion.
- Used to monitor trends and make comparisons.
- Only cause-of-death data from death certificates can be used to identify deaths that meet ICD definitions.

#### *ACOG/CDC terms*

- Used by individual states or cities.
- Used to identify deaths for review and action.
- A variety of data sources, including vital records and hospital data, can be used to identify deaths that meet ACOG/CDC definitions.

*Box 1*

activities. The World Health Organization (WHO), in collaboration with the official vital registration groups from the member countries, periodically develops and publishes a revision of the International Classification of Diseases,<sup>6</sup> which is used throughout the world to classify causes of death. The term traditionally used, including in the United States, to describe deaths caused by pregnancy is maternal mortality, defined in the International Classification of Diseases Ninth Revision (ICD-9)<sup>6</sup> as “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by pregnancy or its management but not from accidental or incidental causes.” This definition is used by the Centers for Disease Control and Prevention’s (CDC’s) National Center for Health Statistics<sup>7</sup> in its calculations of, and official publications on, maternal mortality statistics for the United States.

In 1986, the American College of Obstetricians and Gynecologists (ACOG) and CDC’s Maternal Mortality Study Group developed new terms, to expand those in ICD-9.

These terms are—

- Pregnancy-associated death. The death of a woman while pregnant or within 1 year of termination of pregnancy, irrespective of cause.
- Pregnancy-related death. The death of a woman while pregnant or within 1 year of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by her pregnancy or its management, but not from accidental or incidental causes.

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