

Definitions of Maternal Mortality

Produced by the Population Research Institute

Morbidity versus Mortality

Mortality: rate of death in a population

Example: One person in a town of a hundred people died from a plague; the mortality rate of the plague is 1 out of 100. It is 1%.

Morbidity: rate of incidence in a population

Example: Ten persons in a town of a hundred people currently have the plague; the morbidity rate of the plague is 10 out of 100. It is 10%.

Maternal Mortality Rate versus Ratio

Note: Many sources use the maternal mortality ratio and the maternal mortality rate interchangeably to mean the number of maternal deaths per 100,000 live births. The World Health Organization (WHO), however, distinguishes the two:

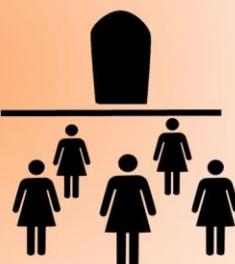
Maternal mortality ratio: the number of maternal deaths per 100,000 *live births*, a measure of the risk of death once a woman has become pregnant.ⁱ

Example: There is town which has 1,000 people. Eleven women in the town become pregnant. One baby miscarries. Ten women give birth to ten live babies. One of the women who gave birth dies due to complications in the pregnancy. The maternal mortality ratio is 1 out of 10. It is 10%.

Mortality: Deaths per a population

Numerator: Deaths

Denominator: Population

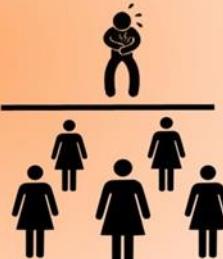


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Morbidity: Incidence per a population

Numerator: Incidence

Denominator: Population



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Maternal mortality ratio: the number of maternal deaths per *live births*

Numerator: Maternal deaths

Denominator: Live births

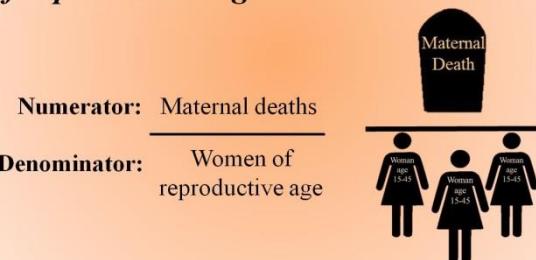


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Maternal mortality rate: the number of maternal deaths (direct and indirect) in a given period per 100,000 **women** of reproductive age during the same time period.ⁱⁱ

Example: There is a town which has 1,000 people. 500 are women. 400 are women of reproductive age. Last year, ten women gave birth to ten live babies. One of the women died due to complications in the pregnancy. The maternal mortality rate is 1 out of 400: it is 0.25%.

Maternal mortality rate:
the number of maternal deaths in a given period per population of **women who are of reproductive age**



Direct versus Indirect Obstetric Death

Direct obstetric deaths: Those deaths resulting from obstetric complications of the pregnant state (pregnancy, labor and puerperium), from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above.ⁱⁱⁱ

Example: A woman dies from preeclampsia or a hemorrhaging.

About three-quarters of maternal deaths in developing countries are direct obstetric deaths.

Direct Obstetric Death: those deaths resulting from:

- obstetric complications of the pregnant state (pregnancy, labor and post-partum)
- interventions, omissions, or incorrect treatment
- or from a chain of events resulting from any of the above.



Indirect obstetric death: those resulting from previous existing disease or disease that developed during pregnancy and which was not due to direct obstetric causes, but which was aggravated by physiologic effects of pregnancy.^{iv}

Example: A woman has diabetes. She becomes pregnant, and her pregnancy exacerbates her diabetes and she dies from diabetes.

Indirect Obstetric Death: those deaths resulting from previous existing disease (or from a disease that developed during pregnancy) and which was *not* due to **direct obstetric causes**, but which was *aggravated by* physiologic effects of pregnancy.



Maternal Death and Similar Definitions

Maternal Death: The death of a woman while pregnant, or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management (from direct or indirect obstetric death), but not from accidental or incidental causes.^v

Example: Last week, there were two deaths. One woman died in labor from hemorrhaging. One woman died in car accident a month after giving birth.

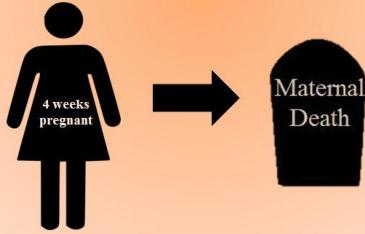
There was one maternal death last week.

Note: The World Health Organization notes that the 42 day period is somewhat arbitrary, and for this reason, they also have the definition of **late maternal death**.

Late Maternal Death: The death of a woman from direct or indirect obstetric causes, more than 42 days but less than one year after the termination of pregnancy.^{vi}

Maternal death: the death of a woman while pregnant, (or within 42 days of termination of pregnancy).

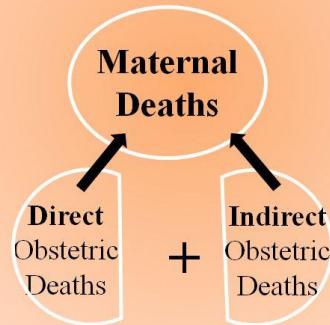
- irrespective of the duration and the site of the pregnancy



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Maternal death: the death of a woman while pregnant, (or within 42 days of termination of pregnancy).

- All maternal deaths are either direct obstetric deaths or indirect obstetric deaths



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Maternal death: the death of a woman while pregnant, (or within 42 days of termination of pregnancy).

Accidental or incidental causes of death are not classified as maternal deaths.



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Lifetime Risk of Maternal Death: the probability of becoming pregnant and the probability of dying as a result of that pregnancy cumulated across a woman's reproductive years is the lifetime risk of maternal death.^{vii}

Note: This is a cohort measure created using a synthetic cohort of available period data.

*Example: There is a town called Fecundaville; it has 1,000 people. Each woman has ten children over her lifetime. The probability of dying from pregnancy is 1 out of 1,000. The lifetime risk of maternal death is 10 * (1/1,000) = 1%.*

*There is a town nearby called Sterilville; it has 1,000 people. Each woman has one child over her lifetime. However, health-care in Sterilville is bad, and the probability of dying from pregnancy is 1 out of 100. The lifetime risk of maternal death is 1 * (1/100) = 1%.*

Pregnancy Related Death: The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death.^{viii}

Example: Last week, there were two deaths in a nearby town. One woman died in labor from hemorrhaging. One woman died in car accident a month after giving birth.

There were two pregnancy related deaths last week.

Death occurring during pregnancy, childbirth and puerperium: the death of a woman while pregnant or within 42 days of termination of pregnancy, *irrespective of the cause of death.*^{ix}

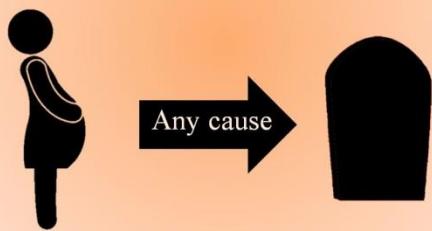
Lifetime risk of maternal death:

The cumulative probability over your whole life of becoming pregnant *and* of dying from the pregnancy.

$$= \text{Summation over all ages of} \left(\begin{array}{c} \text{Age-specific chance of:} \\ \text{Pregnancy} \end{array} \times \begin{array}{c} \text{Age-specific chance of:} \\ \text{Maternal Death} \end{array} \right)$$

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Pregnancy related death: the death of a woman while pregnant (or within 42 days of termination of pregnancy, irrespective of the cause of death).



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ⁱ Hill, Ken, and Yoonjoung Choi. Maternal mortality in 2000: estimates developed by WHO, UNICEF and UNFPA. World Health Organization, 2004.

ⁱⁱ Ibid.

ⁱⁱⁱ International Classification of Diseases (ICD) *International Classification of Diseases*, Volume-2 Instruction Manual. 10th Revision, Geneva, World Health Organization, 2010.

^{iv} Ibid.

^v Ibid.

^{vi} Hill, Ken, and Yoonjoung Choi.

^{vii} Ibid.

^{viii} "Pregnancy-Related Deaths." Centers for Disease Control and Prevention. Centers for Disease Control and Prevention, 07 Mar. 2013. Web. 07 Nov. 2013.

^{ix} International Classification of Diseases (ICD).