



Maternal mortality ratio

Abbreviated name	Maternal mortality ratio
Indicator name	Maternal mortality ratio (per 100 000 live births)
Domain	Health status
Subdomain	Reproductive, maternal, newborn, child and adolescent health
Associated terms	Mortality by cause
Definition	The annual number of female deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, expressed per 100 000 live births, for a specified time period.
Numerator	Number of maternal deaths.
Denominator	Number of live births.
Disaggregation/ additional dimension	Age, place of residence
Method of measurement	<p>The maternal mortality ratio can be calculated by dividing recorded (or estimated) maternal deaths by total recorded (or estimated) live births in the same period and multiplying by 100 000. Measurement requires information on pregnancy status, timing of death (during pregnancy, childbirth, or within 42 days of termination of pregnancy), and cause of death.</p> <p>The maternal mortality ratio can be calculated directly from data collected through vital registration systems, household surveys or other sources. There are often data quality problems, particularly related to the underreporting and misclassification of maternal deaths. Therefore, data are often adjusted in order to take these data quality issues into account.</p> <p>Because maternal mortality is a relatively rare event, large sample sizes are needed if household surveys are used to identify recent maternal deaths in the household (e.g. last year). This may still result in estimates with large confidence intervals, limiting the usefulness for cross-country or over-time comparisons.</p> <p>To reduce sample size requirements, the sisterhood method used in the DHS and multiple indicator surveys (MICS4) measures maternal mortality by asking respondents about the survival of sisters. It should be noted that the sisterhood method results in pregnancy-related mortality: regardless of the cause of death, all deaths occurring during pregnancy, birth or the six weeks following the termination of the pregnancy are included in the numerator of the maternal mortality ratio.</p> <p>Censuses have also included questions about maternal deaths with variable success.</p> <p>Reproductive Age Mortality Studies (RAMOS) is a special study that uses varied sources, depending on the context, to identify all deaths of women of reproductive age and ascertain which of these deaths are maternal or pregnancy-related.</p>
Method of estimation	<p>For facility data-based maternal mortality, the denominator is estimated using population projections.</p> <p>WHO, UNICEF, UNFPA, the United Nations Population Division and The World Bank have developed a method to adjust existing data in order to take into account these data quality issues and ensure the comparability of different data sources. This method involves assessment of data for completeness and, where necessary, adjustment for underreporting and misclassification of deaths as well as development of estimates through statistical modelling for countries with no reliable national level data.</p> <p>Data on maternal mortality and other relevant variables are obtained through databases maintained by WHO, the United Nations Population Division, UNICEF, and The World Bank. Data available from countries varies in terms of source and methods. Given the variability of the sources of data, different methods are used for each data source in order to arrive at country estimates that are comparable and permit regional and global aggregation.</p> <p>Currently, only about one third of all countries/territories have reliable data available and do not need additional estimations. For about half of the countries included in the estimation process, country-reported estimates of maternal mortality are adjusted for the purposes of comparability of the methodologies. For the remainder of countries/territories – those with no appropriate maternal mortality data – a statistical model is employed to predict maternal mortality levels. However, the calculated point estimates with this methodology might not represent the true levels of maternal mortality. It is advised to consider the estimates together with the reported uncertainty margins within which the true levels are known to lie.</p> <p>Predominant type of statistics: predicted.</p>
Measurement frequency	For civil registration: annual. For other sources: every 5 years or more
Monitoring and evaluation framework	Impact
Preferred data sources	Civil registration with high coverage and medical certification of cause of death and regular assessment of misreporting and underreporting
Other possible data sources	Household surveys, population census, sample or sentinel registration systems, special studies
Further information and related links	<p>Indicators for monitoring the Millennium Development Goals: definitions, rationale, concepts and sources. New York (NY): United Nations; 2012 (http://mdgs.un.org/unsd/mi/wiki/MainPage.ashx, accessed 29 March 2015).</p> <p>WHO, UNICEF, UNFPA, The World Bank, United Nations Population Division. Trends in maternal mortality: 1990 to 2013. Geneva: World Health Organization; 2014 (http://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2013/en/, accessed 29 March 2015).</p> <p>World population prospects. New York (NY): United Nations; 2012 (http://esa.un.org/wpp/, accessed 29 March 2015).</p>