

INDICATOR ANALYSIS

MATERNAL MORTALITY RATIO

ANALYSIS CONDUCTED BY FRANCOIS DAUDELIN & VAL PERCIVAL
FOR THE LANCET-SIGHT COMMISSION ON PEACEFUL SOCIETIES THROUGH HEALTH AND GENDER EQUALITY

How is the indicator calculated	<p>Maternal mortality refers to deaths caused by pregnancy or childbirth complications.</p> <p>Maternal mortality ratio is the number of women who die from pregnancy-related causes while pregnant or within 42 days of pregnancy termination per 100,000 live births.</p>
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GLOBAL TRENDS

What are the global patterns for this indicator? Trends, geographic patterns etc.	<p>“From 2000 to 2017, the global maternal mortality ratio declined by 38 per cent – from 342 deaths to 211 deaths per 100,000 live births, according to UN inter-agency estimates. This translates into an average annual rate of reduction of 2.9 per cent. While substantive, this is less than half the 6.4 per cent annual rate needed to achieve the Sustainable Development global goal of 70 maternal deaths per 100,000 live births. There has been significant progress since 2000. Between 2000 and 2017, South Asia achieved the greatest overall percentage reduction in MMR, with a reduction of 59 per cent (from 395 to 163 maternal deaths per 100,000 live births). Sub-Saharan Africa achieved a substantial reduction of 39 per cent of maternal mortality during this period” (1).</p>
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RELEVANCE TO UNDERSTANDING RELATIONSHIPS AMONG GENDER, HEALTH, FRAGILITY/PEACE

How could this indicator contribute to our understanding of how gender, health and fragility and peace influence one another?	At the intersection of gender and health, maternal mortality is an essential indicator of reproductive health.
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UTILITY	
What does the indicator measure?	The indicator is a measure of the quality of reproductive health across all age groups.
What does it <i>not</i> measure - what does it miss?	Does not measure maternal health beyond mortality. Therefore, increases or decreases in maternal morbidity are not considered in this estimation.

AVAILABILITY	
Sources for indicator (CRVS, DHS etc.);	<p>Indicator data are available from the following sources:</p> <ol style="list-style-type: none"> 1. UNICEF's Data Warehouse (country level from 2000-2017): https://data.unicef.org/resources/data_explorer/unicef_f/?ag=UNICEF&df=GLOBAL_DATAFLOW&ver=1.0&dq=.MNCH_MMR..&startPeriod=1970&endPeriod=2021 2. The WHO's Global Health Repository (2000-2017): https://www.who.int/data/gho/data/indicators/indicator-details/GHO/maternal-mortality-ratio-(per-100-000-live-births)
Most recent date available;	2017
Availability across geographic areas;	Limited availability even in high-income countries (Use of modeled estimates to overcome lacking observations).
Availability in conflict affected settings;	Yes, data is available from 2000-2017 in Yemen, South Sudan, Somalia, Libya, Afghanistan, Somalia, DRC and Syria.

GRANULARITY	
<i>Disaggregation at national level</i>	
Data disaggregated by sex;	N/A
Data disaggregated by identity group (race, ethnicity);	No
Data disaggregated by income	No
Data disaggregated by income;	No
Data disaggregated by citizenship;	No
Data disaggregated by migration background.	No
<i>Disaggregation at sub-national level</i>	
Data disaggregated by geographic region;	No
Data disaggregated by identity group (race, ethnicity);	No
Data disaggregated by income.	No
Data disaggregated by age.	No

SOURCES OF BIAS	
What bias can exist with these data?	Underestimation is common based on collection methods and difficulties in assessing data validity and reliability.

VALIDITY	
Clear and accepted international standards for indicator;	This SDG indicator has been classified as a tier 1 indicator by the Inter-agency and Expert Group on SDG Indicators. A tier 1 indicator is described as being conceptually clear with an internationally established methodology (2).
Validity of measurement of indicator generally accepted;	Validity of measurement varies significantly. Household surveys such as the Demographic and Health Surveys (DHS) attempt to measure maternal mortality by asking respondents about survivorship of sisters. However, underestimation is expected in most estimates.

RELIABILITY	
Reliability of indicator generally accepted;	Reliability is largely unknown and varies highly across reporting countries. Caution should be used since the accuracy of estimates varies.

COMPLEXITY	
Enables analysis across time and location.	The use of the same model to produce all estimates makes values comparable across time and location. Comparative analysis should account for uncertainty bounds associated with modelled estimates.

OTHER REFLECTIONS	
Are indicator values imputed/modelled?	Estimation of the maternal mortality ratio is done through the use of a model which relies on real observations based on availability and produces estimates in countries or country-periods with limited information (3). The model makes use of the Gross Domestic Product, the General Fertility Rate and the proportion of births attended by skilled professionals as covariates for estimation. <i>For each country, the degree to which estimates are derived from real data is not specified. Uncertainty bounds presented with estimates on the WHO database should be consulted prior to analysis (4).</i>

References

1. UNICEF. Maternal mortality [Internet]. UNICEF DATA. 2019 [cited 2021 Sep 29]. Available from: <https://data.unicef.org/topic/maternal-health/maternal-mortality/>
2. United Nations Statistics Division. Tier Classification for Global SDG Indicators [Internet]. United Nations Statistics Division; 2020. Available from: https://unstats.un.org/sdgs/files/Tier%20Classification%20of%20SDG%20Indicators_17%20July%202020_web.v2.pdf
3. United Nations Statistics Division. Indicator 3.1.1: Maternal mortality ratio [Internet]. United Nations Statistics Division; 2020. Available from: <https://unstats.un.org/sdgs/metadata/files/Metadata-03-01-01.pdf>
4. World Health Organization. Maternal mortality ratio (per 100 000 live births) [Internet]. The Global Health Observatory. [cited 2021 Sep 29]. Available from: [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/maternal-mortality-ratio-\(per-100-000-live-births\)](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/maternal-mortality-ratio-(per-100-000-live-births))