Maternal Mortality Colombia 2000-2020

Internationally comparable MMR estimates by the Maternal Mortality Inter-Agency Group (MMEIG): WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division

Table 1: Estimates

Year	MMR[a][*][†]	PM[b][*][†]	HIV-related indirect deaths[†]	Live births[c] (Thousands)	Maternal deaths[†]
2000	93 [89, 97]	0.06 [0.06, 0.06]	6	868	804
2005	82 [78, 87]	0.05 [0.05, 0.05]	6	814	666
2010	71 [66, 78]	0.04 [0.04, 0.05]	4	758	535
2015	70 [64, 79]	0.04 [0.04, 0.05]	1	735	515
2020	75 [65, 86]	0.03 [0.03, 0.04]	1	733	548

[a] Maternal mortality ratio (MMR) defined as maternal deaths per 100,000 live births for women of reproductive age (15-49 years).

[b] Proportion maternal (PM) defined as the proportion of all-cause deaths for women of reproductive age (15-49 years) that are due to maternal causes.

[c] UN Population Division, Department of Economic and Social Affairs. World Population Prospects. New York; 2022.

[*] The uncertainty intervals (UI) for all estimates refer to the 80% uncertainty intervals (10th and 90th percentiles of the posterior distributions). This was chosen as opposed to the more standard 95% intervals because of the substantial uncertainty inherent in maternal mortality outcomes.

[†] Figures presented in the table are estimates based on national data, such as surveys or administrative records, or other sources, produced by the international agency when country data for some year(s) is not available, when multiple sources exist, or when there are data quality issues.

Table 2: Estimates

Period	Annual rate reduction[*]	Percent change in MMR[*]
2000, 2020	1.09 [0.32, 1.83]	19.54 [6.14, 30.68]
2010, 2020	-0.72 [-1.66, 1.03]	-7.5 [-18.02, 9.74]

[*] Figures presented in the table are estimates based on national data, such as surveys or administrative records, or other sources, produced by the international agency when country data for some year(s) is not available, when multiple sources exist, or when there are data quality issues.

Data from civil registration vital statistics system (CRVS)

Table 3: Data from civil registration vital statistics system (CRVS)

Study period[*]	Maternal deaths[a]	Female deaths[b]	CRVS adjustment factor[c†]	Sensitivity[d†]	Specificity[e†]	Completeness[f†]	Usability[g]	Maternal deaths not included[h]
[1985, 1986)	716	11241	1.504185	0.6625142	0.9997571	66.83115	0.7525875	NA
[1986, 1987)	618	10476	1.503866	0.6625142	0.9997571	87.77545	0.7721763	NA
[1987, 1988)	645	10678	1.503770	0.6625142	0.9997571	87.68271	0.7889540	NA
[1988, 1989)	579	10512	1.503669	0.6625142	0.9997571	86.72552	0.8364931	NA
[1989, 1990)	564	10850	1.503552	0.6625142	0.9997571	88.83249	0.8377489	NA
[1990, 1991)	538	10386	1.502930	0.6625142	0.9997571	84.15850	0.8426268	NA
[1991, 1992)	503	11038	1.502835	0.6625142	0.9997571	88.10664	0.8435245	NA
[1992, 1993)	461	11128	1.502722	0.6625142	0.9997571	88.24043	0.8082695	NA
[1993, 1994)	471	11230	1.502592	0.6625142	0.9997571	88.32088	0.8110187	NA
[1994, 1995)	453	11109	1.502461	0.6625142	0.9997571	86.01626	0.8119036	NA
[1995, 1996)	407	11177	1.501666	0.6625142	0.9997571	85.70662	0.8118705	NA
[1996, 1997)	427	11431	1.501563	0.6625142	0.9997571	86.21314	0.8041413	NA
[1997, 1998)	414	11222	1.501478	0.6625142	0.9997571	83.52188	0.8074375	NA
[1998, 1999)	663	11336	1.362544	0.7307655	0.9997824	82.82917	0.8253197	NA
[1999, 2000)	659	11923	1.321522	0.7540055	0.9998334	84.21982	0.8331315	NA
[2000, 2001)	748	12141	1.274160	0.7829169	0.9998829	87.03850	0.8451403	NA
[2001, 2002)	671	12303	1.231263	0.8110244	0.9999303	86.84266	0.8479441	NA
[2003, 2004)	526	11973	1.186718	0.8422343	0.9999774	86.71688	0.8452158	NA
[2004, 2005)	532	11627	1.186710	0.8422343	0.9999774	84.86861	0.8394506	NA
[2005, 2006)	489	11452	1.186702	0.8422343	0.9999774	84.43560	0.8302375	NA
[2006, 2007)	494	11291	1.186697	0.8422343	0.9999774	84.14189	0.8231826	NA
[2007, 2008)	478	11099	1.186704	0.8422343	0.9999774	83.50764	0.8317643	NA
[2008, 2009)	412	11065	1.186613	0.8422343	0.9999774	84.36904	0.8341693	NA
[2009, 2010)	460	11418	1.186598	0.8422343	0.9999774	88.38830	0.8344192	NA
[2010, 2011)	438	11141	1.186586	0.8422343	0.9999774	86.62623	0.8355648	NA
[2011, 2012)	434	10791	1.186588	0.8422343	0.9999774	84.71503	0.8264214	NA
[2012, 2013)	428	10668	1.186591	0.8422343	0.9999774	84.50570	0.8282443	NA
[2013, 2014)	354	10498	1.186586	0.8422343	0.9999774	83.49638	0.8259256	NA
[2014, 2015)	350	10609	1.186580	0.8422343	0.9999774	84.74996	0.8319024	NA
[2015, 2016)	352	10758	1.186577	0.8422343	0.9999774	85.94711	0.8326068	NA
[2016, 2017)	325	10893	1.186572	0.8422343	0.9999774	86.90068	0.8378655	NA
[2017, 2018)	333	10873	1.186568	0.8422343	0.9999774	85.23164	0.8409001	NA
[2018, 2019)	290	11311	1.186445	0.8422343	0.9999774	86.42268	0.8389863	NA
[2019, 2020)	324	11641	1.186441	0.8422343	0.9999774	84.80367	0.8421207	NA

Table 3: Data from civil registration vital statistics system (CRVS) *(continued)*

Study period[*]	Maternal deaths[a]	Female deaths[b]	CRVS adjustment factor[c †]	Sensitivity[d †]	Specificity[e †]	Completeness[f †]	Usability[g]	Maternal deaths not included[h]

[a] Maternal deaths from CRVS defined as ICD10 codes O00-O95; O98-O99 Pregnancy, childbirth and the puerperium and A34 Obstetrical tetanus. Late maternal deaths (O96) and those deaths due to sequalae of obstetric complications (O97) are excluded for the purposes of international comparison. WHO. International statistical classification of diseases and related health problems. Geneva; 2010.

[b] Female deaths 15-49 from the Civil Registration and Vital Statistics System (CRVS).

[c] CRVS adjustment factor = adjustment factor to account for the difference between CRVS-reported PM and true PM.

[d] Sensitivty = proportion of correctly classified maternal deaths out of all true maternal deaths.

[e] Specificity = proportion of correctly classified non-maternal deaths out of all true non-maternal deaths.

[f] Completeness = percentage of registered deaths of females of reproductive age.

[g] Usability = percentage of deaths that is estimated to be recorded with a well-defined code; completeness proportion*(1-proportion ill-defined)*100.

[h] Did not meet inclusion criteria due to: 1) low completeness and usability, or 2) other specialized studies are used. Please see next section of the profile for details.

[*] Kindly note the interpretation of notation: for a period [a,b) the observation starts on date a and ends before date b; thus a period covering 1st January 2000 through 31st December 2000 is denoted [2000,2001).

[†] Peterson E, Chou D, Moller A-B, Gemmill A, Say L, Alkema L. Estimating maternal mortality using data from national civil registration vital statistics systems: A Bayesian hierarchical bivariate random walk model to estimate sensitivity and specificity of reporting. arXiv:190908578 [stat] [Internet]. 2019 Sep 18 [cited 2021 Aug 11]; Available from: http://arxiv.org/abs/1909.08578.

Excluded data from CRVS

Table 4: Excluded data from CRVS

Study period[*]	Completeness[a]	Usability[b]	Reason for exclusion
[2002, 2003)	89.03198	85.22838	CRVS overlaps with specialized study

[a] Completeness = percentage of registered deaths of females of reproductive age.
[b] Usability = percentage of deaths that is estimated to be recorded with a well-defined code; completeness proportion*(1-proportion ill-defined)*100.
[*] Kindly note the interpretation of notation: for a period [a,b) the observation starts on date a and ends before date b; thus a period covering 1st January 2000 through 31st December 2000 is denoted [2000,2001).

Data from other sources

Table 5: Data from other sources

Study period[*]	Source	Source type	Maternal deaths[a]	Pregnancy-related deaths[b]	Female deaths, 15-49	Maternal PM[c]	Pregnancy-related PM[d‡]	MMR per 100,000 lb[e]	Adjusted MMR per 100,000 lb	F+[f†]	F-[g†]	U+[h†]
[2002, 2003)	PAHO maternal mortality data set (reflecting communication on data requests collected via questionnaire). November - December, 2018	Specialized study	768	NA	13977	0.0549474	NA	90.24677	90.24677	0	104	101
[2008.08, 2015.08)	DHS 2015 - 2016	Survey	NA	NA	NA	NA	0.0773622	130.77355	119.78649	NA	NA	NA

[a] Maternal deaths defined according to the ICD-10.
[b] Pregnancy-related deaths defined according to ICD-10.
[c] Maternal PM is calculated when deaths are defined as maternal.
[d] Pregnancy-related PM is calculated when reported deaths are defined as pregnancy related deaths.
[e] The MMR in this column is calculated from the PM.
[f] False positive: true non-maternal death which may be incorrectly labeled as a maternal death.
[g] False negative: maternal death which may be incorrectly classified as a non-maternal death.
[h] Maternal deaths not registered in the CRVS.
[*] Kindly note the interpretation of notation: for a period [a,b) the observation starts on date a and ends before date b; thus a period covering 1st January 2000 through 31st December 2000 is denoted [2000,2001).
[†] Calculated from studies which undertake specialized analyses of routine reporting of maternal deaths.
[‡] Survey data has been adjusted by 1.1 for underreporting and standardized by age when obtained using the direct sisterhood method.

Data from studies excluded in regression

No data excluded

Predictor variables used in the model

Table 6: Predictor variables used in the model

Year	GDP[a][*] (Per capita, PPP)	GFR[b] (Per 1000 women ages 15-49)	SBA[c] (%)
2000	9127	80	92
2005	10174	70	96
2010	11981	60	99
2015	13941	60	99
2020	14248	50	99

[a] WHO, MMEIG. Gross domestic product (GDP) per capita measured in purchasing power parity (PPP) equivalent dollars using 2017 as the baseline year were taken from World Bank's World Development Indicators (WDI) database, and in instances supplemented by unofficial estimates derived by MMEIG using growth rates in United Nations GDP data and/or previous MMEIG GDP estimates. Geneva; 2021.

[b] General fertility rate (GFR) from UN Population Division, Department of Economic and Social Affairs. World Population Prospects. New York; 2022.

[c] Skilled Birth Attendant (SBA) from WHO, UNICEF joint SBA database. Geneva; 2022. In some instances, supplemented with unofficial estimates derived by MMEIG. Annual series were estimated by fitting a multilevel time series (AR1) model with region- and country-specific intercepts and slopes.

[*] A 5-year moving average was calculated.

Estimates

(Input data) The following adjustments were applied to maternal deaths depending on the source type:

1. An age-standardization was applied to population based surveys that obtained data from the direct sisterhood method.
2. An upward adjustment of 10% was applied to all input data that were not obtained from CRVS or specialized studies, to account for underreporting.

(Model adjusted data) The following model adjustments were applied to maternal deaths depending on the source type and the definition of reported deaths

1. A model adjustment derived from BMis was applied to maternal deaths obtained from CRVS.
2. A model adjustment was applied to observations of pregnancy-related deaths to remove accidental/incidental (non-maternal) deaths from the count.