Maternal Mortality Turkmenistan 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	26 [22, 31]	0.01 [0.01, 0.02]	0	108	28
2005	17 [14, 20]	0.01 [0.01, 0.01]	0	109	18
2010	9 [7, 11]	0.01 [0, 0.01]	0	133	12
2015	6 [4, 8]	0 [0, 0.01]	0	150	9
2020	5 [3, 9]	0 [0, 0.01]	0	139	7

[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	8.13 [5.29, 10.91]	80.32 [65.3, 88.72]
2010, 2020	5.39 [0.26, 10.54]	41.67 [2.55, 65.15]

[*] 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)	66	1253	1.505512	0.661238	0.999758	80.52699	0.8338960	NA
[1986, 1987)	63	1410	1.505243	0.661238	0.999758	90.44259	0.8432203	NA
[1987, 1988)	61	1307	1.505088	0.661238	0.999758	82.82636	0.8435864	NA
[1988, 1989)	42	1369	1.504710	0.661238	0.999758	87.47604	0.8479349	NA
[1989, 1990)	68	1385	1.503836	0.661238	0.999758	86.29283	0.8466296	NA
[1990, 1991)	53	1306	1.503522	0.661238	0.999758	81.32005	0.8512064	NA
[1991, 1992)	58	1478	1.502558	0.661238	0.999758	90.23199	0.8693558	NA
[1992, 1993)	74	1558	1.501966	0.661238	0.999758	91.97166	0.8918129	NA
[1993, 1994)	58	1666	1.500621	0.661238	0.999758	94.28410	0.9228604	NA
[1994, 1995)	60	1775	1.498706	0.661238	0.999758	96.57236	0.9387202	NA
[1995, 1996)	62	1815	1.497163	0.661238	0.999758	95.22560	0.9542765	NA
[1996, 1997)	49	2065	1.493806	0.661238	0.999758	100.00000	0.9634791	NA
[1997, 1998)	20	2053	1.488995	0.661238	0.999758	99.17874	0.9696093	NA
[1998, 1999)	16	2102	1.485134	0.661238	0.999758	100.00000	0.9711037	NA
[1999, 2000)	16	1960	1.478193	0.661238	0.999758	95.93735	0.9595960	NA
[2000, 2001)	5	2010	1.473702	0.661238	0.999758	98.24047	0.9576355	NA
[2001, 2002)	13	2129	1.469329	0.661238	0.999758	99.20783	0.9471993	NA
[2002, 2003)	25	2189	1.460543	0.661238	0.999758	99.18441	0.9621280	NA
[2003, 2004)	17	2138	1.455619	0.661238	0.999758	96.08989	0.9588534	NA
[2004, 2005)	8	2235	1.450395	0.661238	0.999758	100.00000	0.9691275	NA
[2005, 2006)	12	2330	1.444732	0.661238	0.999758	100.00000	0.9575107	NA
[2006, 2007)	9	2515	1.438283	0.661238	0.999758	100.00000	0.9419483	NA
[2007, 2008)	20	2435	1.431330	0.661238	0.999758	100.00000	0.9232033	NA
[2008, 2009)	12	4700	1.423663	0.661238	0.999758	100.00000	0.9251064	NA
[2009, 2010)	14	2213	1.423899	0.661238	0.999758	100.00000	0.8879349	NA
[2010, 2011)	8	2133	1.415818	0.661238	0.999758	100.00000	0.8818565	NA
[2011, 2012)	4	2167	1.407473	0.661238	0.999758	100.00000	0.8574066	NA
[2012, 2013)	7	2209	1.407317	0.661238	0.999758	100.00000	0.8343142	NA
[2013, 2014)	8	2297	1.399562	0.661238	0.999758	100.00000	0.8141054	NA
[2014, 2015)	4	2200	1.392683	0.661238	0.999758	100.00000	0.8109091	NA

| [2015, 2016) | 5 | 2187 | 1.386258 | 0.661238 | 0.999758 | 100.00000 | 0.8134431 | NA |

[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

No data excluded

Data from other sources

No data available

Data from studies excluded in regression

No data excluded

Predictor variables used in the model

Table 4: Predictor variables used in the model

Year	GDP[a][*] (Per capita, PPP)	GFR[b] (Per 1000 women ages 15-49)	SBA[c] (%)
2000	4482	90	98
2005	5691	80	99
2010	8924	90	100
2015	12931	100	100
2020	15060	90	100

[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.