

# Maternal mortality in 2000-2017

Internationally comparable MMR estimates by the Maternal Mortality Estimation Inter-Agency Group (MMEIG)

WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division

## NORWAY

Year	Maternal mortality ratio (MMR) <sup>a,*</sup>	Maternal deaths <sup>*</sup>	HIV-related indirect maternal deaths <sup>*</sup>	Live births <sup>b</sup>	Proportion of maternal deaths among deaths of female reproductive age (PM, %) <sup>a,*</sup>
	Per 100 000 live births (lb)	Numbers	Numbers	Thousands	
2000	6 [5-7] <sup>c</sup>	3	0	58	<0.1
2005	5 [4-6]	3	0	58	<0.1
2010	4 [3-5]	2	0	60	<0.1
2015	3 [2-3]	2	0	59	<0.1
2017	2 [2-3]	1	0	59	<0.1

<sup>a</sup> MMR and PM are calculated for women 15-49 years.

<sup>b</sup> Live birth data are from United Nations, Population Division. World Population Prospects 2019. New York: UN Population Division, Department of Economic and Social Affairs, 2019.

<sup>c</sup> 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.

<sup>\*</sup> 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.

Annual rate of reduction based on estimated MMR (%)	
2000-2017	5.3 [3.4, 7.8]
2010-2017	6.8 [4.2, 10.4]

## Available data sources

Data from civil registration vital statistics system (CRVS):

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Maternal deaths <sup>c</sup>	1	2	3	2	5	2	5	4	2	0	4
Female deaths <sup>e</sup>	756	732	750	809	779	813	807	791	789	805	789
Adjustment factor <sup>f</sup>	1.38	1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.38	1.38
Sensitivity <sup>g</sup>	0.584	0.584	0.584	0.584	0.584	0.584	0.584	0.584	0.584	0.584	0.584
Specificity <sup>h</sup>	0.9993	0.9993	0.9993	0.9993	0.9993	0.9993	0.9993	0.9993	0.9993	0.9993	0.9993
Completeness <sup>i</sup>	100	100	100	100	100	100	100	100	100	100	100
Usability <sup>j</sup>	98.1	98.4	97.2	97.9	98.2	97.9	97.1	98.6	97.2	97.1	97
Maternal deaths not included <sup>k</sup>	–	–	–	–	–	–	–	–	–	–	–

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Maternal deaths <sup>c</sup>	1	1	4	5	2	3	3	7	0	2	5
Female deaths <sup>e</sup>	791	769	796	789	781	773	715	741	783	731	723
Adjustment factor <sup>f</sup>	1.37	1.37	1.36	1.35	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Sensitivity <sup>g</sup>	0.584	0.584	0.584	0.584	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Specificity <sup>h</sup>	0.9993	0.9993	0.9993	0.9993	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Completeness <sup>i</sup>	100	100	100	100	100	100	100	100	100	100	100
Usability <sup>j</sup>	98	97	97.1	97.3	97.8	95.7	95.7	96.8	95.5	96.6	96.3
Maternal deaths not included <sup>k</sup>	–	–	–	–	–	–	–	–	–	–	–

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Maternal deaths <sup>c</sup>	4	3	1	3	3	0	2	2	0	0	0
Female deaths <sup>e</sup>	699	670	660	662	661	597	602	564	570	566	549
Adjustment factor <sup>f</sup>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Sensitivity <sup>g</sup>	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Specificity <sup>h</sup>	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Completeness <sup>i</sup>	100	100	100	100	100	100	100	100	100	100	100
Usability <sup>j</sup>	94	95.8	95.3	95.2	95.2	94.5	94.2	93.8	92.5	94	94
Maternal deaths not included <sup>k</sup>	–	–	–	–	–	–	–	–	–	–	–

<sup>d</sup> ICD10 codes O00-O95; O98-O99 Pregnancy, childbirth and the puerperium and A34 Obstetrical tetanus; ICD9 codes 630-676 Complications of pregnancy, childbirth and the puerperium.

Late maternal deaths (O96) and those deaths due to sequelae of obstetric complications (O97) are excluded for the purposes of international comparison.

<sup>e</sup> Female deaths data are from Life tables for WHO Member States. World Health Organization, Geneva; 2018.

<sup>f</sup> Please refer to the MMR Report for details available at: [www.who.int/reproductivehealth/publications/maternal-mortality-2017/en/](http://www.who.int/reproductivehealth/publications/maternal-mortality-2017/en/).

<sup>g</sup> Proportion of correctly classified maternal deaths out of all true maternal deaths.

<sup>h</sup> Proportion of correctly classified non-maternal deaths out of all true non-maternal deaths.

<sup>i</sup> Completeness = percentage of registered deaths of females of reproductive age. See Section 3.1.1 in attached technical notes.

<sup>j</sup> Usability = percentage of deaths that is estimated to be recorded with a well-defined code; completeness proportion\*(1-proportion ill-defined)\*100.

<sup>k</sup> 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.

## Available data sources (continued)

**Excluded** data from CRVS:

\*\* Not applicable \*\*

## Available data sources (continued)

Data from other sources:

Study period	Source	Maternal deaths <sup>n</sup>	Pregnancy- related deaths <sup>o</sup>	Female deaths, 15-49	Maternal PM <sup>p</sup>	Pregnancy- related PM <sup>q</sup>	Reported MMR per 100,000 lb	Adjusted MMR per 100,000 lb	F <sup>+</sup> <sup>r,u</sup>	F <sup>-</sup> <sup>s,u</sup>	U <sup>+</sup> <sup>t,u</sup>
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<sup>n</sup> Maternal deaths defined according to the ICD-10.

<sup>o</sup> Pregnancy-related deaths defined according to ICD-10.

<sup>p</sup> Maternal PM is calculated when deaths are defined as "maternal".

<sup>q</sup> Pregnancy-related PM is calculated when reported deaths are defined as pregnancy related deaths.

<sup>r</sup> False positive: true non-maternal death which may be incorrectly labeled as a maternal death.

<sup>s</sup> False negative: maternal death which may be incorrectly classified as a non-maternal death.

<sup>t</sup> Maternal deaths not registered in the CRVS.

<sup>u</sup> Calculated/derived from studies which undertake specialized analyses of routine reporting of maternal deaths.

\*\* No other sources identified \*\*

## Available data sources (continued)

Data from studies **excluded** in regression:

Study period	Citation	Reasons for exclusion
2008-2009	Maternal deaths in Norway 2005-2009	CRVS data used
2009-2010	Maternal deaths in Norway 2005-2009	CRVS data used

## Predictor variables used in the model

Year	GDP per capita, PPP (constant 2011 Int \$) <sup>v</sup>	General Fertility Rate per 1000 women 15-49	Skilled Birth Attendant (% of births)
2000	57793	54	99.0
2005	62631	54	99.0
2010	62957	53	99.0
2015	63906	49	99.0
2017	64664	49	99.0

<sup>v</sup> A 5-year moving average was calculated.

Gross Domestic Product (GDP) per capita measured in purchasing power parity (PPP) equivalent dollars using 2011 as the baseline year were taken from World Bank Group (World Development Indicators published July 30, 2019) supplemented by other sources (e.g. United Nations, the International Monetary Fund, the Organisation for Economic Co-operation and Development, and MMEIG member's estimates) used to inform trends in instances with missing country-years in the World Bank Group data set.

*Source:* World Bank, International Comparison Program Database. July 30, 2019.

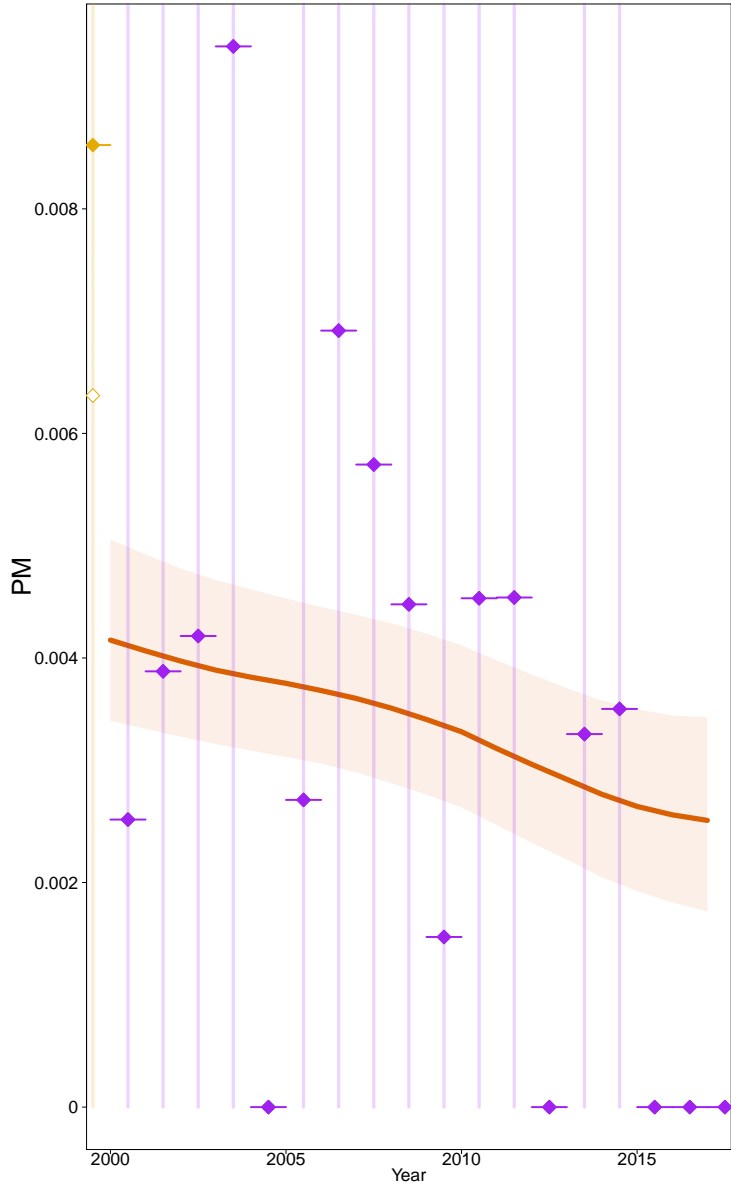
General fertility rate

*Source:* World Population Prospects 2019. New York: UN Population Division, Department of Economic and Social Affairs, 2019.

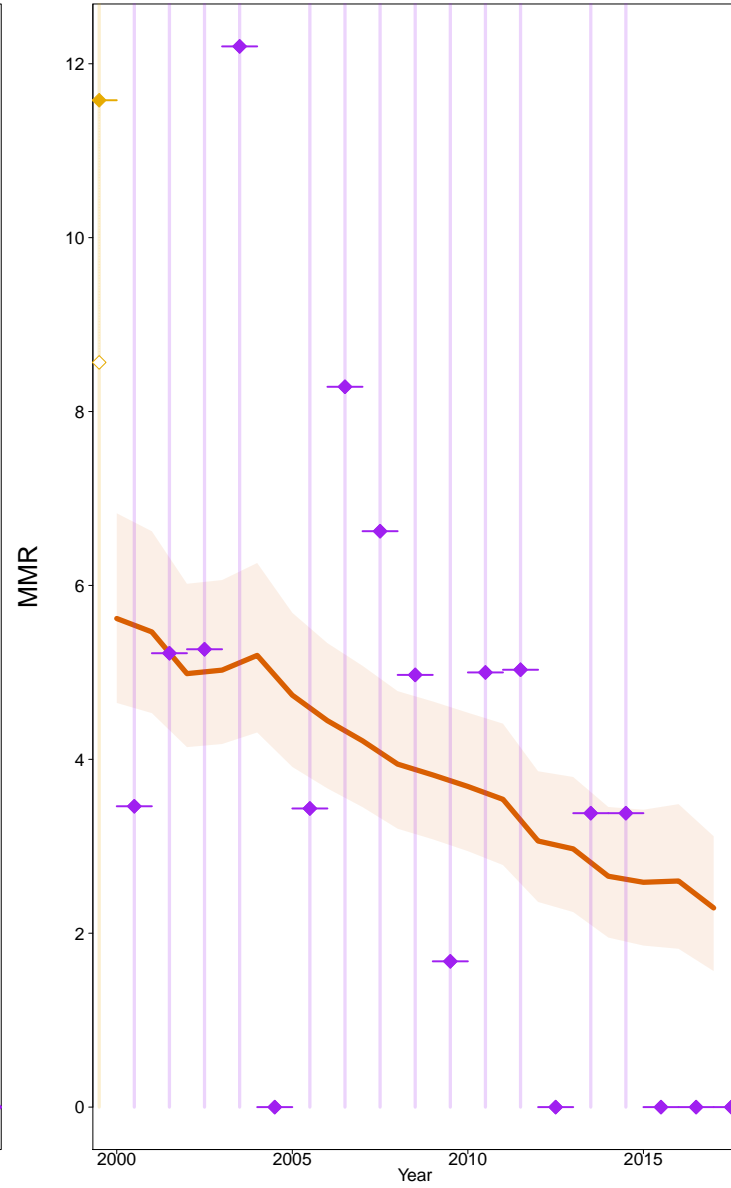
Percentage of births attended by skilled health personnel (doctors, nurses or midwives).

*Source:* WHO, UNICEF. WHO and UNICEF Joint Skilled Birth Attendant (SBA) database. Geneva: WHO; 2019.

Norway



Norway



- Estimates -
- BMat 2019
- - - - -
- ◇ Observed Data
- ◆ Adjusted Data
- Data type -
- ◆ CRVS
- ◆ Spec. studies