

# Trends in Maternal Mortality: 1990 to 2013

Estimates by WHO, UNICEF, UNFPA, The World Bank  
and the United Nations Population Division

Executive Summary



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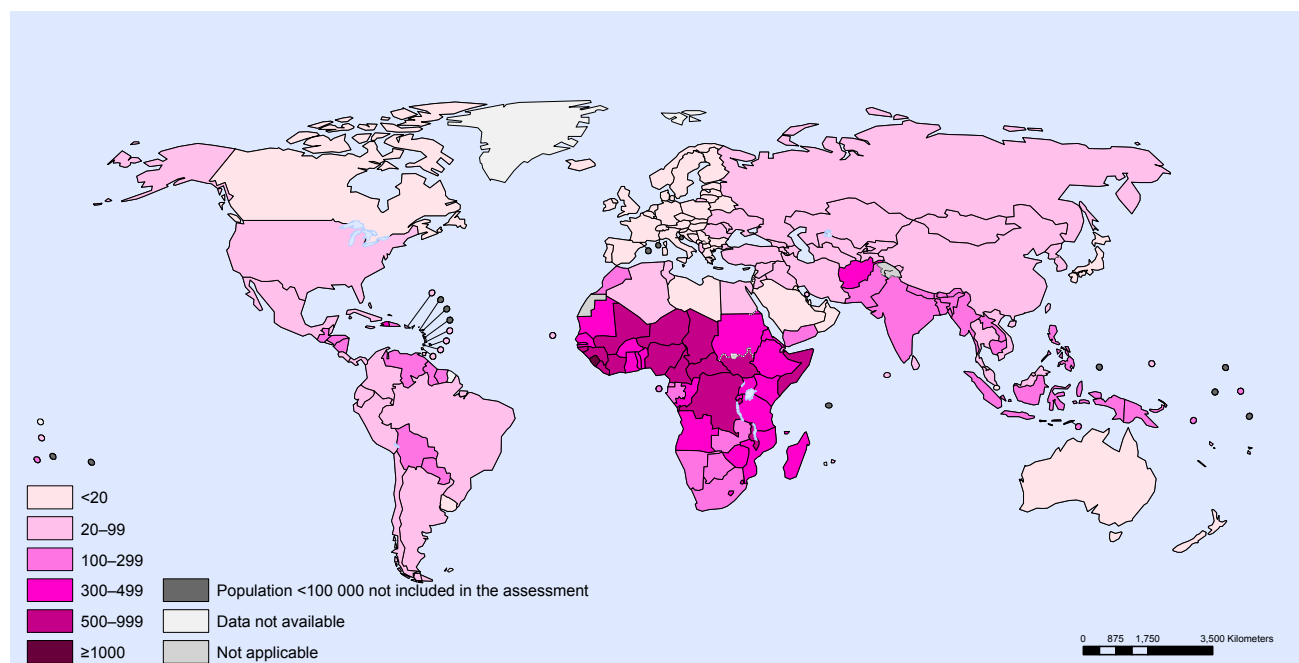
A number of initiatives that commenced in recent years are geared towards achievement of the fifth Millennium Development Goal (MDG5: improving maternal health), particularly following the launch of the Global Strategy for Women's and Children's Health in 2010 by the United Nations (UN) Secretary-General (1). Subsequently, the high-level Commission on Information and Accountability for Women's and Children's Health was established to "determine the most effective international institutional arrangements for global reporting, oversight and accountability on women's and children's health." One of the ten recommendations of the commission was specific to improving measurement of maternal (and child) deaths. This recommendation requires that "by 2015, all countries have taken significant steps to establish a system for registration of births, deaths and causes of death, and have well-functioning health information systems that combine data from facilities, administrative sources and surveys." The first report of the independent Expert Review Group (iERG), established by the commission for overseeing the progress in achievement of the commission's 10 recommendations, indicated insufficient progress in the implementation of the recommendations including the one on 'vital events' reporting (2).

Measuring the MDG5 target of reducing the maternal mortality ratio (MMR) (target 5A) remains a challenge.

Less than 40% of countries have a complete civil registration system with good attribution of cause of death, which is necessary for the accurate measurement of maternal mortality.

Estimates for 2013 are the seventh in a series of analyses by United Nations agencies. The Maternal Mortality Estimation Inter-Agency Group (MMEIG), comprising the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), the United Nations Population Fund (UNFPA), The World Bank and the United Nations Population Division (UNPD), together with teams at the National University of Singapore and the University of California at Berkeley, have been working together to generate internationally comparable MMR estimates. A technical advisory group (TAG) provides additional independent technical guidance. The methods, as well as the data sources for the estimation of MMR, have improved over time. Based on the achievement from the last round of analyses, newly available data collected by MMEIG and obtained during country consultations were incorporated, and trend estimates from 1990 to 2013 were generated. As with the previous round of estimates, the statistical codes and input data required to produce the current estimates are publicly available, underscoring the MMEIG's commitment to open access and transparency.

## Maternal mortality ratio (per 100 000 live births, 2013)



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Data Source: World Health Organization  
Map Production: Health Statistics and Information Systems (HSI)  
World Health Organization

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**Table 1. Estimates of maternal mortality ratio (MMR, maternal deaths per 100 000 live births), number of maternal deaths, and lifetime risk by United Nations Millennium Development Goal region, 2013**

Region	MMR <sup>a</sup>	Range of MMR uncertainty		Number of maternal deaths <sup>a</sup>	Lifetime risk of maternal death, 1 in:	AIDS-attributed MMR	Number of AIDS-related indirect maternal deaths attributed to HIV <sup>a</sup>	Percentage of AIDS-related indirect maternal deaths
		Lower estimate	Upper estimate					
World	210	160	290	289 000	190	5	7500	2.6
Developed regions	16	12	23	2300	3700	0	65	2.8
Developing regions	230	180	320	286 000	160	6	7400	2.6
Northern Africa	69	47	110	2700	500	0	9	0.3
Sub-Saharan Africa	510	380	730	179 000	38	19	6800	3.8
Eastern Asia	33	21	54	6400	1800	0	44	0.7
Eastern Asia excluding China	54	35	97	480	1200	0	1	0.2
Southern Asia	190	130	280	69 000	200	1	340	0.5
Southern Asia excluding India	170	110	270	19 000	210	0	20	0.1
South-eastern Asia	140	98	210	16 000	310	1	110	0.7
Western Asia	74	50	120	3600	450	0	3	0.1
Caucasus and Central Asia	39	31	53	690	940	0	7	0.9
Latin America and the Caribbean	85	66	120	9300	520	1	130	1.4
Latin America	77	59	110	7900	570	1	92	1.2
Caribbean	190	130	310	1400	220	5	39	2.8
Oceania	190	100	380	510	140	2	5	0.9

a The MMR, number of maternal deaths, and lifetime risk have been rounded according to the following scheme: <100, no rounding; 100–999, rounded to nearest 10; 1000–9999, rounded to nearest 100; and >10 000, rounded to nearest 1000.

Globally, there were an estimated 289 000 maternal deaths in 2013, a decline of 45% from 1990. The sub-Saharan Africa region alone accounted for 62% (179 000) of global deaths followed by Southern Asia at 24%. At the country level, the two countries that accounted for one third of all global maternal deaths are India at 17% (50 000) and Nigeria at 14% (40 000). The global MMR in 2013 was 210 maternal deaths per 100 000 live births, down from 380 maternal deaths per 100 000 live births in 1990. The MMR in developing regions (230) was 14 times higher than in developed regions (16). Sub-Saharan Africa has the highest MMR (510). Of the remaining MDG developing regions, five had low MMR: Eastern Asia (33); Caucasus and Central Asia (39); Northern Africa (69); Western Asia (74); and Latin America and the Caribbean (85). Three had moderate MMR: South-eastern Asia (140); Southern Asia (190); and Oceania (190).

Of the 40 countries with the highest MMR in 2013, Sierra Leone is estimated to have the highest MMR at 1100. A further 15 countries in sub-Saharan Africa have very high MMR: Chad (980); Central African Republic (880); Somalia (850); Burundi (740); Democratic Republic of the Congo (730); South Sudan (730); Côte d'Ivoire (720); Guinea (650); Liberia (640); Niger (630); Cameroon (590); Guinea-Bissau (560); Nigeria (560); Mali (550); and Malawi (510). Only two countries outside sub-Saharan African region had high MMR: Afghanistan (400) and Haiti (380). In contrast, Cabo Verde and Mauritius were the only two sub-Saharan African countries that had low MMR at 53 and 73 maternal deaths per 100 000 live births respectively. Regarding adult lifetime risk of maternal mortality, Chad and Somalia had the highest at 1 in 15 and 1 in 18, respectively. The estimated lifetime risk for maternal mortality in developing regions is 1 in 3700 in comparison to developed regions where the lifetime risk is 1 in 160.

Sub-Saharan Africa accounted for 6800 (91%) of the estimated 7500 maternal deaths attributed to acquired immunodeficiency syndrome (AIDS) worldwide. However, the proportion of maternal deaths attributed to AIDS in sub-Saharan Africa was relatively small (3.8%) yielding an AIDS-attributed MMR for sub-Saharan Africa of 19 maternal deaths per 100 000 live births. Although the MDG regional aggregated proportions of maternal deaths attributed to AIDS were relatively small, they were substantial for countries with high HIV prevalence. Thirteen countries had a proportion of maternal deaths attributed to AIDS of 10% or more.

While most countries/regions aspire to achieve MDG5 target 5A by 2015, some countries will unlikely attain this goal if current trends persist. An assessment of progress was made for countries with an MMR  $\geq$  100 in 1990. Countries were categorized as 'on track' if their MMR had declined on average by 5.5% or more, which corresponds to a 75% reduction in MMR between 1990 and 2015.

The 11 countries categorized as 'on track' are: Maldives (93%), Bhutan (87%), Cambodia (86%), Equatorial Guinea (81%), Lao People's Democratic Republic (80%), Romania (80%), Timor-Leste (78%), Cabo Verde (77%), Eritrea (77%), Nepal (76%), Rwanda (76%). Countries with MMR < 100 in 1990 are not categorized. A further 63 countries are characterized as 'making progress', while 13 countries have made 'insufficient progress'. There are two countries that have made 'no progress'.

## References

1. Ban K. The Global Strategy for Women's and Children's Health. New York: United Nations; 2010.
2. The first report of the independent Expert Review Group (iERG) on Information and Accountability for Women's and Children's Health. Geneva: World Health Organization; 2012.

**Table 2. Trends in estimates of maternal mortality ratio (MMR, maternal deaths per 100 000 live births), 1990–2013, by country**

Country	MMR <sup>a</sup>					% change in MMR between 1990 and 2013 <sup>b</sup>	Average annual % change in MMR between 1990 and 2013 <sup>b</sup>	Range of uncertainty on annual % change in MMR	
	1990	1995	2000	2005	2013			Lower estimate	Upper estimate
Afghanistan	1200	1200	1100	730	400	-67	-4.7	-5.5	-3.9
Albania	31	29	28	24	21	-33	-1.7	-2.3	-1.1
Algeria	160	140	120	100	89	-44	-2.5	-2.9	-2
Angola	1400	1400	1100	750	460	-68	-4.9	-8.8	-0.7
Argentina	71	60	63	70	69	-2	-0.1	-0.5	0.4
Armenia	47	51	43	37	29	-39	-2.1	-2.5	-1.7
Australia	7	8	9	6	6	-14	-0.7	-2.8	1.5
Austria	10	7	5	5	4	-64	-4.3	-8.5	0.1
Azerbaijan	60	83	57	36	26	-57	-3.6	-4.1	-3.1
Bahamas	43	44	44	40	37	-14	-0.7	-1.5	0.4
Bahrain	21	22	27	16	22	3	0.1	-0.4	0.7
Bangladesh	550	440	340	260	170	-70	-5	-5.6	-4.5
Barbados	120	38	42	33	52	-56	-3.5	-6.7	-0.1
Belarus	37	29	32	21	1	-96	-13.2	-15	-11.3
Belgium	10	10	9	7	6	-35	-1.8	-2	-1.7
Belize	75	35	110	79	45	-40	-2.2	-4.8	0.6
Benin	600	520	490	420	340	-43	-2.4	-3	-1.8
Bhutan	900	610	390	240	120	-87	-8.4	-9.5	-7.3

Country	MMR <sup>a</sup>					% change in MMR between 1990 and 2013 <sup>b</sup>	Average annual % change in MMR between 1990 and 2013 <sup>b</sup>	Range of uncertainty on annual % change in MMR	
	1990	1995	2000	2005	2013			Lower estimate	Upper estimate
Bolivia (Plurinational State of)	510	420	330	270	200	-61	-4	-4.5	-3.5
Bosnia and Herzegovina	19	16	11	10	8	-57	-3.6	-4.3	-3
Botswana	360	370	390	340	170	-52	-3.1	-4.1	-1.8
Brazil	120	100	85	73	69	-43	-2.4	-2.9	-2
Brunei Darussalam	26	25	24	25	27	1	0	-0.6	0.7
Bulgaria	24	22	29	14	5	-78	-6.3	-8.2	-4.4
Burkina Faso	770	680	580	500	400	-49	-2.9	-3.4	-2.3
Burundi	1300	1300	1000	910	740	-41	-2.3	-3	-1.5
Cabo Verde	230	140	84	63	53	-77	-6.2	-10	-2.1
Cambodia	1200	860	540	320	170	-86	-8.1	-9	-7.2
Cameroon	720	760	740	690	590	-18	-0.9	-1.2	-0.5
Canada <sup>c</sup>	6	7	7	11	11	81	2.6	0.5	4.7
Central African Republic	1200	1200	1200	1100	880	-27	-1.3	-1.6	-1
Chad	1700	1600	1500	1200	980	-41	-2.3	-2.4	-2
Chile	55	40	29	26	22	-60	-3.9	-5.7	-2
China	97	76	63	50	32	-67	-4.7	-5.4	-4
Colombia	100	81	130	97	83	-17	-0.8	-2.5	0.9
Comoros	630	560	480	430	350	-45	-2.6	-6.5	1.5
Congo	670	650	610	530	410	-39	-2.1	-2.7	-1.5
Costa Rica	38	45	44	46	38	-1	-0.1	-1.9	1.8
Côte d'Ivoire	740	710	670	750	720	-3	-0.1	-0.5	0.3
Croatia	8	13	11	14	13	63	2.1	-1.4	5.8
Cuba	63	60	63	67	80	27	1	-1	3.1
Cyprus	18	18	16	13	10	-48	-2.8	-6.6	1.2
Czech Republic	15	9	7	7	5	-67	-4.7	-6.9	-2.4
Democratic People's Republic of Korea	85	83	120	110	87	3	0.1	-4	4.3
Democratic Republic of the Congo	1000	1100	1100	930	730	-29	-1.5	-2.4	-0.6
Denmark	9	16	9	8	5	-50	-2.9	-7	1.2
Djibouti	400	390	360	310	230	-43	-2.4	-6.4	1.7
Dominican Republic	240	180	120	130	100	-57	-3.6	-4	-3.2
Ecuador	160	130	120	98	87	-44	-2.5	-2.9	-2.1
Egypt	120	96	75	62	45	-62	-4.1	-4.8	-3.4
El Salvador	110	96	80	72	69	-39	-2.1	-2.6	-1.6
Equatorial Guinea	1600	1300	790	480	290	-81	-7	-8	-5.9
Eritrea	1700	1000	670	530	380	-77	-6.2	-6.8	-5.6
Estonia	48	46	26	24	11	-78	-6.4	-10.1	-2.4
Ethiopia	1400	1200	990	740	420	-69	-5	-5.4	-4.6
Fiji	89	79	72	69	59	-34	-1.8	-2.1	-1.5



Country	MMR <sup>a</sup>					% change in MMR between 1990 and 2013 <sup>b</sup>	Average annual % change in MMR between 1990 and 2013 <sup>b</sup>	Range of uncertainty on annual % change in MMR	
	1990	1995	2000	2005	2013			Lower estimate	Upper estimate
Finland	6	5	7	9	4	-36	-1.9	-4.3	0.6
France	12	10	9	8	9	-31	-1.6	-3.5	0.3
Gabon	380	340	330	300	240	-37	-2	-2.5	-1.2
Gambia	710	660	580	510	430	-39	-2.1	-6	2
Georgia	50	67	60	48	41	-18	-0.9	-1.1	-0.6
Germany	13	8	7	7	7	-47	-2.7	-3.7	-1.8
Ghana	760	650	570	470	380	-49	-2.9	-3.2	-2.5
Greece	6	2	5	3	5	-5	-0.2	-4.1	3.9
Grenada	34	33	29	25	23	-33	-1.7	-2.2	-1.2
Guatemala	270	220	160	140	140	-49	-2.8	-4.6	-1
Guinea	1100	1000	950	800	650	-40	-2.2	-2.6	-1.8
Guinea-Bissau	930	790	840	760	560	-40	-2.2	-6	1.8
Guyana	210	230	240	240	250	16	0.6	0.4	0.8
Haiti	670	580	510	470	380	-43	-2.4	-2.9	-1.9
Honduras	290	200	150	130	120	-60	-3.9	-4.5	-3.2
Hungary	23	23	10	13	14	-39	-2.1	-4.1	-0.2
Iceland	7	7	6	6	4	-45	-2.5	-2.7	-2.4
India	560	460	370	280	190	-65	-4.5	-4.9	-4
Indonesia	430	360	310	250	190	-56	-3.5	-4	-3.1
Iran (Islamic Republic of)	83	60	44	31	23	-72	-5.3	-6	-4.7
Iraq	110	84	71	77	67	-37	-2	-2.6	-1.4
Ireland	6	4	6	2	9	33	1.2	-1.6	4.1
Israel	12	10	9	7	2	-84	-7.6	-10.2	-5
Italy	10	6	4	5	4	-60	-3.9	-5.8	-2
Jamaica	98	89	88	85	80	-18	-0.8	-1.2	-0.5
Japan	14	10	10	7	6	-57	-3.6	-4.5	-2.8
Jordan	86	73	65	58	50	-42	-2.3	-2.7	-1.9
Kazakhstan	91	91	71	50	26	-71	-5.3	-7.2	-3.3
Kenya	490	530	570	550	400	-17	-0.8	-1.1	-0.4
Kiribati	250	240	200	170	130	-47	-2.7	-6.6	1.3
Kuwait	12	10	8	6	14	13	0.6	-4.4	5.7
Kyrgyzstan	85	120	100	92	75	-11	-0.5	-0.8	-0.2
Lao People's Democratic Republic	1100	830	600	410	220	-80	-6.8	-7.4	-6.3
Latvia	57	58	42	21	13	-77	-6.1	-8.7	-3.5
Lebanon	64	47	37	26	16	-76	-6	-6.5	-5.4
Lesotho	720	630	680	670	490	-32	-1.7	-2.4	-0.6
Liberia	1200	1600	1100	880	640	-48	-2.8	-3.2	-2.4
Libya	31	25	21	17	15	-52	-3.1	-3.6	-2.7
Lithuania	34	21	20	11	11	-68	-4.8	-7.7	-1.8

Country	MMR <sup>a</sup>					% change in MMR between 1990 and 2013 <sup>b</sup>	Average annual % change in MMR between 1990 and 2013 <sup>b</sup>	Range of uncertainty on annual % change in MMR	
	1990	1995	2000	2005	2013			Lower estimate	Upper estimate
Luxembourg	6	11	11	17	11	83	2.7	-2.3	8
Madagascar	740	640	550	530	440	-41	-2.3	-2.7	-1.8
Malawi	1100	870	750	570	510	-53	-3.2	-3.4	-2.9
Malaysia	56	45	40	36	29	-48	-2.8	-3.3	-2.3
Maldives	430	210	110	57	31	-93	-10.8	-11.5	-10.2
Mali	1100	1000	860	710	550	-51	-3.1	-3.4	-2.7
Malta	12	11	11	9	9	-31	-1.6	-2	-1.2
Mauritania	630	550	480	400	320	-49	-2.9	-3.3	-2.4
Mauritius	70	68	28	35	73	4	0.2	-2.4	2.7
Mexico	88	77	67	50	49	-45	-2.5	-4.4	-0.7
Micronesia (Federated States of)	170	140	130	120	96	-44	-2.5	-6.6	1.6
Mongolia	100	120	120	89	68	-34	-1.8	-2.2	-1.3
Montenegro	8	9	10	8	7	-12	-0.6	-0.7	-0.4
Morocco	310	240	200	160	120	-61	-4.1	-4.7	-3.4
Mozambique	1300	1100	870	680	480	-64	-4.3	-4.9	-3.4
Myanmar	580	470	360	260	200	-65	-4.5	-5	-4
Namibia	320	280	270	250	130	-58	-3.7	-4.3	-2.7
Nepal	790	580	430	310	190	-76	-6	-6.6	-5.4
Netherlands	11	11	15	10	6	-51	-3	-5.1	-0.9
New Zealand	18	13	12	12	8	-57	-3.6	-5.8	-1.5
Nicaragua	170	160	140	120	100	-38	-2.1	-2.6	-1.6
Niger	1000	920	850	760	630	-37	-2	-2.3	-1.6
Nigeria	1200	1100	950	740	560	-52	-3.1	-3.4	-2.8
Norway	9	4	8	9	4	-61	-4	-7.6	-0.2
Occupied Palestinian Territory <sup>d</sup>	96	71	59	59	47	-51	-3	-6.9	1
Oman	48	32	22	16	11	-77	-6.2	-6.9	-5.6
Pakistan	400	330	280	230	170	-57	-3.6	-4.1	-3
Panama	98	91	79	83	85	-14	-0.6	-2.5	1.3
Papua New Guinea	470	370	340	280	220	-54	-3.3	-7.2	0.8
Paraguay	130	130	120	130	110	-19	-0.9	-1.3	-0.6
Peru	250	220	160	120	89	-64	-4.4	-4.9	-3.8
Philippines	110	130	120	130	120	15	0.6	-1.1	2.4
Poland	17	14	8	5	3	-81	-6.9	-8.5	-5.3
Portugal	15	10	11	11	8	-44	-2.5	-5.2	0.6
Puerto Rico	29	28	24	21	20	-31	-1.6	-1.9	-1.3
Qatar	11	11	9	8	6	-51	-3	-7	1.1
Republic of Korea	18	18	19	18	27	53	1.9	0.8	3
Republic of Moldova	61	59	39	25	21	-66	-4.6	-6.9	-2.2



Country	MMR <sup>a</sup>					% change in MMR between 1990 and 2013 <sup>b</sup>	Average annual % change in MMR between 1990 and 2013 <sup>b</sup>	Range of uncertainty on annual % change in MMR	
	1990	1995	2000	2005	2013			Lower estimate	Upper estimate
Romania	170	72	53	30	33	-80	-6.8	-7.8	-5.7
Russian Federation	74	72	57	37	24	-68	-4.8	-6.5	-3
Rwanda	1400	1400	1000	610	320	-76	-6.1	-6.8	-5.4
Saint Lucia	60	52	44	39	34	-43	-2.4	-3.1	-1.8
Saint Vincent and the Grenadines	48	72	75	55	45	-7	-0.3	-0.8	0.1
Samoa	150	110	89	73	58	-60	-3.9	-7.9	0.2
Sao Tome and Principe	410	360	300	260	210	-48	-2.8	-3.3	-2.3
Saudi Arabia	41	31	24	19	16	-61	-4	-4.6	-3.4
Senegal	530	510	480	420	320	-40	-2.2	-2.5	-1.9
Serbia	18	20	7	8	16	-12	-0.5	-3.3	2.4
Sierra Leone	2300	2400	2200	1600	1100	-54	-3.3	-4	-2.7
Singapore	8	8	19	10	6	-30	-1.5	-4.8	1.8
Slovakia	15	10	12	6	7	-54	-3.4	-5.5	-1
Slovenia	11	11	12	15	7	-34	-1.8	-4.6	1
Solomon Islands	320	250	210	170	130	-59	-3.8	-7.7	0.2
Somalia	1300	1300	1200	1100	850	-34	-1.8	-5.8	2.3
South Africa	150	140	150	160	140	-9	-0.4	-2.2	2.4
South Sudan	1800	1500	1200	1000	730	-59	-3.8	-4.2	-3.5
Spain	7	4	5	6	4	-36	-1.9	-3.7	0
Sri Lanka	49	71	55	41	29	-40	-2.2	-2.5	-1.9
Sudan	720	640	540	460	360	-50	-3	-3.3	-2.7
Suriname	84	39	120	110	130	54	1.9	-0.1	3.9
Swaziland	550	480	520	480	310	-44	-2.5	-3.4	-0.4
Sweden	6	5	5	4	4	-34	-1.8	-4.6	1.3
Switzerland	8	8	7	8	6	-29	-1.5	-5.4	2.7
Syrian Arab Republic	130	94	75	58	49	-64	-4.3	-4.8	-3.8
Tajikistan	68	120	89	59	44	-36	-1.9	-2.3	-1.5
Thailand	42	37	40	34	26	-37	-2	-2.6	-1.3
The former Yugoslav Republic of Macedonia	15	13	15	14	7	-57	-3.6	-8.4	1.2
Timor-Leste	1200	1000	680	500	270	-78	-6.4	-6.8	-6.1
Togo	660	660	580	510	450	-31	-1.6	-2	-1.1
Tonga	71	89	91	100	120	72	2.4	-1.8	6.7
Trinidad and Tobago	89	91	59	58	84	-6	-0.3	-2.3	1.9
Tunisia	91	81	65	55	46	-50	-3	-3.4	-2.5
Turkey	48	39	33	27	20	-57	-3.6	-4	-3.2
Turkmenistan	66	79	81	76	61	-7	-0.3	-4.3	3.9
Uganda	780	740	650	510	360	-53	-3.2	-3.6	-2.9
Ukraine	49	45	35	25	23	-54	-3.3	-4	-2.5

Country	MMR <sup>a</sup>					% change in MMR between 1990 and 2013 <sup>b</sup>	Average annual % change in MMR between 1990 and 2013 <sup>b</sup>	Range of uncertainty on annual % change in MMR	
	1990	1995	2000	2005	2013			Lower estimate	Upper estimate
United Arab Emirates	16	13	11	8	8	-53	-3.3	-7.2	1
United Kingdom	10	11	11	12	8	-24	-1.2	-3.1	0.8
United Republic of Tanzania	910	890	770	610	410	-55	-3.5	-3.7	-3.1
United States of America	12	11	13	17	28	136	3.8	1.8	5.8
Uruguay	42	34	35	32	14	-67	-4.8	-6.3	-3.1
Uzbekistan	66	54	48	44	36	-45	-2.6	-3	-2.2
Vanuatu	170	140	120	100	86	-49	-2.9	-6.8	1.4
Venezuela (Bolivarian Republic of)	93	98	91	94	110	16	0.6	-1.2	2.6
Viet Nam	140	110	82	60	49	-64	-4.4	-4.9	-3.8
Yemen	460	420	370	330	270	-41	-2.3	-2.8	-1.7
Zambia	580	630	610	430	280	-51	-3.1	-3.4	-2.4
Zimbabwe	520	550	680	740	470	-10	-0.4	-0.8	0

Estimates have been computed to ensure comparability across countries; thus they are not necessarily the same as official statistics of the countries, which may use alternative rigorous methods.

- a MMR estimates have been rounded according to the following scheme: <100, no rounding; 100–999, rounded to nearest 10; and >1000, rounded to nearest 100.
- b Negative values indicate a decreasing MMR from 1990 to 2013, while positive values indicate an increasing MMR. Percentages have been calculated using unrounded estimates. The average annual % change is estimated by:

$$\left[ \left( \frac{MMR\ 2013}{MMR\ 1990} \right)^{\frac{1}{2013-1990}} - 1 \right] \times 100$$

- c Vital registration data were available for analysis only up to 2009. Recent hospital surveillance data for Canada excluding Quebec indicate a decline of maternal deaths per 100 000 deliveries from 8.8 in 2007–2009 to 6.1 in 2009–2011. 98% of deliveries in Canada occur in hospitals.
- d Refers to a territory.



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