



May, 2018

SPECIAL BULLETIN ON MATERNAL MORTALITY IN INDIA 2014-16

SAMPLE REGISTRATION SYSTEM

OFFICE OF REGISTRAR GENERAL, INDIA

VITAL STATISTICS DIVISION, WEST BLOCK 1, WING 1, 2ND FLOOR, R. K. PURAM, NEW DELHI-110 066

Reduction of mortality of women is an area of concern for the Governments across the globe. The International Conference on Population and Development in 1994 had recommended reduction in maternal mortality by at least 50 percent of the 1990 levels by the year 2000 and further one half by the year 2015.

2. The Office of the Registrar General, India under the Ministry of Home Affairs, apart from conducting Population Census and monitoring the implementation of Registration of Births and Deaths Act in the country, has been giving estimates on fertility and mortality using the Sample Registration System (SRS). SRS is the largest demographic sample survey in the country that among other indicators provide direct estimates of maternal mortality through a nationally representative sample. Verbal Autopsy instruments are administered for the deaths reported under the SRS on a regular basis to yield cause-specific mortality profile in the country. The First Report on maternal mortality in India (1997-2003) – Trends, Causes and Risk Factors was released in October, 2006. The present Bulletin, which provides only the levels of maternal mortality for the period 2014-16, is being brought out as a sequel to the previous Bulletin (2011-13). With this, the maternal mortality data from SRS is available for a period of 20 years.

3. In order to understand the maternal mortality situation in the country better and to map the changes that have taken place, specially, at the regional levels, States have been categorized into three groups namely, “Empowered Action Group” (EAG) States comprising Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Odisha, Rajasthan, Uttar Pradesh & Uttarakhand and Assam; “Southern” States which include Andhra Pradesh, Telangana, Karnataka, Kerala and Tamil Nadu; and “Other” States covering the remaining States/UTs as was done in respect of Maternal Mortality Report (1997-2003) and also in the Maternal Mortality Bulletin (2011-2013). It is heartening that the Maternal Mortality Ratio of India has declined from 167 in 2011-2013 to 130 in 2014-2016. The decline has been most significant in EAG States & Assam from 246 to 188. Among the Southern States, the decline has been from 93 to 77 and in the Other States from 115 to 93.

4. The key statistics presented in the Bulletin is the Maternal Mortality Ratio (MMR). This is derived as the proportion of maternal deaths per 1,00,000 live births reported under the SRS. Besides, the 95% Confidence Intervals (95% CI) of the estimates based on the calculated Standard Error (SE) have also been presented. In addition, estimates of Maternal Mortality Rate viz. maternal deaths to women in the ages 15-49 per lakh of women in that age group, and the life time risk have been presented. The life time risk is defined as the probability that at least one women of reproductive age(15-49) will die due to child birth or puerperium assuming that chance of death is uniformly distributed across the entire reproductive span and has been worked out using the following formula:

$$LifeTimeRisk = 1 - \left(1 - \frac{MaternalMortalityRate}{100000} \right)^{35}$$

5. The maternal deaths being a rare event require prohibitively large sample size to provide robust estimates. In order to enhance the SRS sample size, the results have been derived by following the practice of pooling the three years data to yield reliable estimates of maternal mortality. Further, in order to take care of the undercount mainly on account of out-migration as VA forms during the period was administered after the conduct of the Half Yearly Surveys, the actual number of maternal deaths for each state has been multiplied by a ‘Correction Factor’. This correction factor, which is the ratio of total female deaths in a particular age group in SRS to the counts for the corresponding age group as yielded from VA forms, has been applied separately for different reproductive age groups as was done in the past.

Table 1: Maternal Mortality Ratio (MMR), Maternal Mortality Rate and Life Time Risk; India, EAG & Assam, South and Other states, 2014-16

India & Major States	Sample Female Population	Live Births	Maternal Deaths	MMR	95% CI	Maternal Mortality Rate	Lifetime risk
INDIA TOTAL	6296101	426861	556	130	(119-141)	8.8	0.3%
Assam	180780	12334	29	237	(151-323)	16.2	0.6%
Bihar / Jharkhand	391838	37641	62	165	(124-206)	15.8	0.6%
Madhya Pradesh / Chhattisgarh	409030	37106	64	173	(131-215)	15.7	0.5%
Odisha	285319	19498	35	180	(121-240)	12.3	0.4%
Rajasthan	249729	23082	46	199	(141-256)	18.3	0.6%
Uttar Pradesh / Uttarakhand	621153	52843	106	201	(163-239)	17.1	0.6%
EAG AND ASSAM SUBTOTAL	2137849	182504	342	188	(168-207)	16.0	0.6%
Andhra Pradesh	323541	15995	12	74	(32-116)	3.6	0.1%
Telangana	208979	10840	9	81	(27-134)	4.2	0.1%
Karnataka	299276	23341	25	108	(66-150)	8.4	0.3%
Kerala	332361	15229	7	46	(12-79)	2.1	0.1%
Tamil Nadu	285844	22552	15	66	(32-99)	5.2	0.2%
SOUTH SUBTOTAL	1450001	87957	67	77	(58-95)	4.7	0.2%
Gujarat	357416	25241	23	91	(54-129)	6.4	0.2%
Haryana	182102	14707	15	101	(50-152)	8.2	0.3%
Maharashtra	384107	23172	14	61	(29-93)	3.7	0.1%
Punjab	160608	9097	11	122	(50-194)	6.9	0.2%
West Bengal	448410	24318	25	101	(61-141)	5.5	0.2%
Other States	1175608	59865	58	97	(72-122)	5.0	0.2%
OTHER SUBTOTAL	2708251	156400	146	93	(78-109)	5.4	0.2%

Table 2: Age Distribution of Maternal and Non-Maternal deaths, India, 2014-16

Age Groups	Maternal Deaths		Non-maternal Deaths	
	Proportion	95 % CI	Proportion	95 % CI
15-19	4%	(3-6)	9%	(9-10)
20-24	35%	(31-39)	10%	(9-11)
25-29	34%	(30-38)	12%	(11-12)
30-34	16%	(13-20)	12%	(12-13)
35-39	7%	(4-9)	15%	(14-16)
40-44	3%	(1-4)	19%	(18-20)
45-49	1%	(0-1)	22%	(21-23)
15-49	100%		100%	