



April 2009

SPECIAL BULLETIN ON MATERNAL MORTALITY IN INDIA 2004-06

SAMPLE REGISTRATION SYSTEM

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Deaths due to pregnancy and during the child birth are common among women in the reproductive age groups. Reduction of mortality of women has thus been an area of concern and the Governments across the globe have set time bound targets to achieve it. 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. The Millennium Development Goals (MDG) has set the target of achieving 200 maternal deaths per lakh of live births by 2007 and 109 per lakh of live births by 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 evaluating indirectly the impact of governmental programmes/schemes on fertility and mortality using the Sample Registration System (SRS). SRS is the largest demographic sample survey in the country and is also being used to provide direct estimates of maternal mortality through a nationally representative sample. The 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 2004-06, is being brought out in sequel to the previous Report. This is being done as the preparation of the Second Report along with causes of maternal deaths and associated risk factors would require assignment of causes of death by physicians. This may take some more

time. Pending the release of complete Report containing trends, causes and risk factors which would subsequently be done, the MMR rate for the period 2004-06 is being released looking to its requirement by different quarters.

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, Orissa, Rajasthan, Uttar Pradesh & Uttarakhand and Assam; “Southern” states which includes Andhra Pradesh, Karnataka, Kerala and Tamil Nadu; and ‘Other’ states covering remaining States/UTs as was done in respect of Maternal Mortality Report (1997-2003).

4. The chief statistics presented in the Bulletin is the Maternal Mortality Ratio (MMR). This is derived as the proportion of maternal deaths per 100,000 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.

Table 1: Maternal Mortality Ratio(MMR), Maternal Mortality Rate and Life Time Risk; India, EAG & Assam, South and Other states, 2004-06

India & Major States	Sample Female Population	Live Births	Maternal Deaths	MMR	95% CI	Maternal Mortality Rate	Lifetime risk
INDIA TOTAL	5348441	436648	1110	254	(239-269)	20.7	0.7%
Assam	162882	11663	56	480	(355-606)	34.4	1.2%
Bihar/Jharkhand	304690	37452	117	312	(256-369)	38.4	1.3%
Madhya Pradesh/Chhattisgarh	300897	33125	111	335	(273-397)	36.9	1.3%
Orissa	256956	21118	64	303	(229-377)	24.9	0.9%
Rajasthan	221039	27092	105	388	(314-462)	47.5	1.6%
Uttar Pradesh/Uttaranchal	446016	54566	240	440	(384-495)	53.8	1.9%
EAG AND ASSAM SUBTOTAL	1692480	185016	693	375	(347-402)	40.9	1.4%
Andhra Pradesh	321615	22660	35	154	(103-206)	10.9	0.4%
Karnataka	363162	23949	51	213	(155-271)	14.0	0.5%
Kerala	283975	14669	14	95	(45-145)	4.9	0.2%
Tamil Nadu	380146	22511	25	111	(68-155)	6.6	0.2%
SOUTH SUBTOTAL	1348898	83789	125	149	(123-175)	9.3	0.3%
Gujarat	269499	25075	40	160	(110-209)	14.8	0.5%
Haryana	155579	14495	27	186	(116-256)	17.4	0.6%
Maharashtra	312853	22362	29	130	(83-177)	9.3	0.3%
Punjab	182169	12991	25	192	(117-268)	13.7	0.5%
West Bengal	442177	31204	44	141	(99-183)	10.0	0.3%
Other	944786	61716	127	206	(170-242)	13.44	0.5%
OTHER SUBTOTAL	2307063	167843	292	174	(154-194)	12.7	0.4%

Table 2: Age Distribution of Maternal and Non-Maternal deaths, India, 2004-06

Age Groups	Maternal Deaths			Non-maternal Deaths	
	Proportion	95 % CI		Proportion	95 % CI
15-19	10%	(8-12)		14%	(13-15)
20-24	31%	(29-34)		14%	(13-15)
25-29	26%	(23-29)		13%	(12-14)
30-34	19%	(17-21)		13%	(12-14)
35-39	9%	(7-10)		15%	(14-16)
40-44	4%	(3-5)		16%	(15-17)
45-49	1%	(1-2)		15%	(14-16)
15-49	100%			100%	

MATERNAL MORTALITY RATIO (MMR) ALONGWITH 95% CONFIDENCE INTERVAL, INDIA AND STATES, 2004-2006

