

CHAPTER – 4

ESTIMATES OF MORTALITY INDICATORS

Mortality is one of the basic components of population change and related data is essential for demographic studies and public health administration. It is the principal ingredient for population projections and life tables. Information on death events recorded in SRS is used to estimate mortality indicators. The various measures of mortality published under SRS are Crude Death Rate (CDR), Under-five Mortality Rate (U5MR), Infant Mortality Rate (IMR) and its components, Age Specific Mortality Rates (ASMR), Still Birth Rate (SBR) and Peri-Natal Mortality Rate (PMR).

4.2 SRS has continued to provide data for estimating various mortality measures since its inception. The crude death rate at all India level has declined significantly from 14.9 to 12.5 during 1971 to 1981 and thereafter from 9.8 to 7.2 during 1991 to 2010. The decline has been steeper in rural areas as compared to urban areas. The infant mortality rate, which plays an important role in health planning, has shown a considerable decline from 129 per 1000 live births in 1971 to 110 in 1981 and from 80 in 1991 to 47 in 2010. The child mortality rate has depicted a perceptible decline from 51.9 in 1971 to 41.2 in 1981 and from 26.5 in 1991 to 13.3 in 2010. In 2010, about 34 percent of the deaths were institutional and 66 percent received medical attention other than institution.

4.3 Apart from the all India scenario, this chapter presents data on mortality indicators for bigger States by sex, residence and broad age groups. Besides Under-five mortality rate, it includes data on infant mortality and its component viz., neo-natal mortality and post neo-natal, peri-natal mortality and their changes over the last decade. It also includes data on medical attention before death. Chart 18 depicts crude death rate by residence, India and bigger States, 2010.

4.4 Apart from the mortality indicators at State and National levels, this report also includes estimates of death rates at sub-State, viz. NSS Natural Division Level in rural areas. The Table 11 in the annexure to this report contains data on death rate and infant mortality rate besides birth rate for 56 Natural Divisions of 16 bigger States. The Table 11 also contains data on death rate and infant mortality rate besides birth rate for four metro cities viz. Chennai, Delhi, Kolkata and Mumbai.

4.5 Crude Death Rate (Statement 41) at the National level for 2010 is 7.2 per thousand population and it varies from 7.7 in rural areas to 5.8 in urban areas. Among the bigger States, it varies from 4.2 in Delhi to 8.6 in Odisha. The States having death rate higher than or equal to the National level are Andhra Pradesh (7.6), Assam (8.2), Chhattisgarh (8.0), Madhya Pradesh (8.3), Odisha (8.6), Uttar Pradesh (8.1), and Tamil Nadu (7.6). Distribution of bigger States by level of CDR in rural and urban areas is shown in Chart 19. The estimated age-specific death rate by sex and residence for India and bigger States has been detailed in Table 8.

Statement 41

CDR (Crude death rates) by residence, India and bigger States, 2010

India and bigger States	Total	Rural	Urban
India	7.2	7.7	5.8
Andhra Pradesh	7.6	8.6	5.4
Assam	8.2	8.6	5.8
Bihar	6.8	7.0	5.6
Chhattisgarh	8.0	8.4	6.2
Delhi	4.2	4.6	4.1
Gujarat	6.7	7.5	5.5
Haryana	6.6	7.0	5.6
Himachal Pradesh	6.9	7.2	4.2
Jammu & Kashmir	5.7	5.9	4.7
Jharkhand	7.0	7.4	5.4
Karnataka	7.1	8.1	5.4
Kerala	7.0	7.1	6.7
Madhya Pradesh	8.3	9.0	6.0
Maharashtra	6.5	7.5	5.3
Odisha	8.6	9.0	6.6
Punjab	7.0	7.7	5.8
Rajasthan	6.7	6.9	6.0
Tamil Nadu	7.6	8.2	6.9
Uttar Pradesh	8.1	8.5	6.3
West Bengal	6.0	6.0	6.3

4.6 Statement 42 given below shows the percentage change in the level of Crude Death Rate between the period 1998-00 and 2008-10 for India and bigger States. During this period CDR in India has declined by 16.1 per cent. Among the bigger States, decline in CDR varies from 23.9 per cent in Madhya Pradesh to 2.7 per cent in Himachal Pradesh. In Kerala, average CDR have shown marginal increase during 1998-00 to 2008-10 period, which could be possibly due to the changes in age structure of the population.

Statement 42

Percent change in average Crude Death Rate between 1998-00 and 2008-2010, by residence, India and bigger States

India and bigger States	Total			Rural			Urban		
	1998-00	2008-10	% Change	1998-00	2008-10	% Change	1998-00	2008-10	% Change
India	8.7	7.3	-16.1	9.5	7.8	-17.9	6.4	5.8	-9.4
Andhra Pradesh	8.4	7.6	-9.5	9.2	8.5	-7.6	5.9	5.5	-6.8
Assam	9.8	8.4	-14.3	10.2	8.8	-13.7	6.1	5.8	-4.9
Bihar*	9.0	6.9	-23.3	9.3	7.1	-23.7	6.9	5.5	-20.3
Gujarat	7.8	6.8	-12.8	8.6	7.7	-10.5	6.0	5.5	-8.3
Haryana	7.8	6.7	-14.1	8.2	7.1	-13.4	6.5	5.7	-12.3
Himachal Pradesh	7.4	7.2	-2.7	7.6	7.4	-2.6	5.4	4.6	-14.8
Karnataka	7.8	7.2	-7.7	8.7	8.3	-4.6	5.6	5.4	-3.6
Kerala	6.4	6.8	6.2	6.5	6.9	6.2	6.2	6.5	4.8
Madhya Pradesh*	10.9	8.3	-23.9	11.4	8.8	-22.8	7.6	6.1	-19.7
Maharashtra	7.6	6.6	-13.2	8.7	7.5	-13.8	5.7	5.5	-3.5
Odisha	10.8	8.8	-18.5	11.2	9.2	-17.9	7.2	6.8	-5.6
Punjab	7.5	7.1	-5.3	8.0	7.8	-2.5	6.1	5.9	-3.3
Rajasthan	8.6	6.7	-22.1	9.0	6.9	-23.3	6.6	6.1	-7.6
Tamil Nadu	8.1	7.5	-7.4	8.9	8.3	-6.7	6.6	6.6	0.0
Uttar Pradesh*	10.4	8.0	-23.1	10.9	8.4	-22.9	8.1	6.2	-23.5
West Bengal	7.2	6.1	-15.3	7.4	6.1	-17.6	6.9	6.4	-7.2

* Bihar includes Jharkhand, Madhya Pradesh includes Chhattisgarh and Uttar Pradesh includes Uttarakhand.

4.7 Statement 43 given below presents the estimated Crude Death Rate for India by residence separately for males and females. It is observed that female death rate is lower than male death rate both in rural and urban areas.

Statement 43

Crude death rate by sex and residence, India, 2010

Residence	Total	Males	Females
Total	7.2	7.7	6.7
Rural	7.7	8.3	7.2
Urban	5.8	6.2	5.3

4.8 Crude death rates for males and females in the bigger States are shown below in Statement 44. It is observed that male death rate exceeds female death rate in all bigger States except Jammu & Kashmir.

Statement 44

Crude death rate by sex, India and bigger States, 2010

India and bigger States	Total	Males	Females
India	7.2	7.7	6.7
Andhra Pradesh	7.6	8.3	7.0
Assam	8.2	8.7	7.7
Bihar	6.8	7.1	6.6
Chhattisgarh	8.0	8.2	7.8
Delhi	4.2	4.5	3.9
Gujarat	6.7	7.1	6.3
Haryana	6.6	7.1	6.0
Himachal Pradesh	6.9	7.8	6.1
Jammu & Kashmir	5.7	5.6	5.7
Jharkhand	7.0	7.2	6.9
Karnataka	7.1	7.7	6.6
Kerala	7.0	7.7	6.3
Madhya Pradesh	8.3	9.1	7.6
Maharashtra	6.5	7.0	6.0
Odisha	8.6	9.3	8.0
Punjab	7.0	7.6	6.4
Rajasthan	6.7	7.2	6.2
Tamil Nadu	7.6	8.4	6.8
Uttar Pradesh	8.1	8.6	7.5
West Bengal	6.0	6.5	5.6

4.9 Statement 45 given below provides the per cent distribution of deaths by broad age groups for India and bigger States. At the National level, 14.5 per cent of the deaths are of infant deaths (0-1 year) whereas 48.0 percent of the deaths pertain to persons aged 60 years and above. Toddlers (1-4 years) accounts for 3.9 per cent of the deaths. The percentage of infant deaths to total deaths varies from a low 2.8 per cent in Kerala to a high of 21.8 per cent in Rajasthan. Percentage contribution of deaths from person's 60 years and above varies from 37.5 in Assam to 71.2 in Kerala. The percentage distribution of deaths to total deaths, by residence, sex and age-group at the National level and for the bigger States are given in Table 10.

Statement 45

Per cent distribution of deaths by broad age groups, India and bigger States, 2010

India and bigger States	Broad age-groups					
	<1	1-4	0-4	5-14	15-59	60+
India	14.5	3.9	18.4	2.7	30.9	48.0
Andhra Pradesh	10.6	0.8	11.4	1.4	37.6	49.6
Assam	16.4	6.9	23.3	3.2	36.1	37.5
Bihar	19.6	7.0	26.7	3.1	25.6	44.7
Chhattisgarh	16.1	3.3	19.4	3.4	33.5	43.7
Delhi	12.7	2.0	14.7	2.6	38.4	44.3
Gujarat	14.3	3.6	17.9	2.3	32.6	47.3
Haryana	16.1	2.5	18.6	2.1	36.5	42.8
Himachal Pradesh	7.4	2.3	9.7	1.5	29.8	59.0
Jammu & Kashmir	13.8	1.6	15.4	2.3	26.6	55.7
Jharkhand	15.1	6.0	21.2	4.8	30.5	43.6
Karnataka	10.4	2.0	12.4	2.1	35.9	49.6
Kerala	2.8	0.4	3.2	0.7	24.9	71.2
Madhya Pradesh	20.4	6.0	26.4	3.0	28.3	42.4
Maharashtra	7.4	1.5	8.9	1.4	31.8	57.9
Odisha	14.4	4.3	18.7	2.9	30.0	48.4
Punjab	8.1	2.1	10.2	1.3	33.8	54.7
Rajasthan	21.8	4.8	26.6	3.4	25.9	44.2
Tamil Nadu	5.0	0.9	5.9	1.0	32.4	60.7
Uttar Pradesh	21.2	6.3	27.6	4.0	28.4	40.0
West Bengal	8.5	2.0	10.5	2.1	33.1	54.3

Note: Total may not add upto 100 due to rounding.

4.10 The percentage share of infant deaths to total deaths by residence is shown below in Statement 46 for India and bigger States. At the National level, such share in the year 2010 is 14.5 per cent and varies from 15.8 per cent in rural areas to 9.7 per cent in urban areas. In rural areas, Kerala registered 3.0, the lowest per cent share of infant deaths as compared to 24.5 in Rajasthan. In urban areas, the variation is from 2.3 per cent in Kerala to 17.1 per cent in Uttar Pradesh.

Statement 46

**Percentage of Infant deaths to total deaths by residence
India and bigger States, 2010**

India and bigger States	Total	Rural	Urban
India	14.5	15.8	9.7
Andhra Pradesh	10.6	10.8	10.1
Assam	16.4	17.1	9.9
Bihar	19.6	20.1	14.9
Chhattisgarh	16.1	16.6	13.0
Delhi	12.7	15.7	12.1
Gujarat	14.3	15.9	10.6
Haryana	16.1	17.0	13.4
Himachal Pradesh	7.4	7.6	3.5
Jammu & Kashmir	13.8	14.8	9.1
Jharkhand	15.1	15.9	10.6
Karnataka	10.4	10.9	9.1
Kerala	2.8	3.0	2.3
Madhya Pradesh	20.4	21.6	14.1
Maharashtra	7.4	8.0	6.2
Odisha	14.4	14.9	9.8
Punjab	8.1	8.4	7.4
Rajasthan	21.8	24.5	11.9
Tamil Nadu	5.0	5.0	5.0
Uttar Pradesh	21.2	21.9	17.1
West Bengal	8.5	9.9	4.8

4.11 Statement 47 given below presents Infant Mortality Rate (IMR) by sex and residence for the year 2010 for India and bigger States. Infant Mortality Rate is defined as the infant deaths (less than one year) per thousand live births. At the National level, IMR is reported to be 47 and varies from 51 in rural areas to 31 in urban areas. Among the bigger States, it varies from 13 in Kerala to 62 in Madhya Pradesh. Female infants experienced a higher mortality than male infants in all States. Chart 20 provides the values of IMR by residence for India and bigger States. Distribution of bigger States by level of IMR in rural and urban areas is shown in Chart 21. The estimates on child and infant mortality indicators by residence have been detailed in Table 9.

Statement 47

Infant mortality rates by sex and residence, India and bigger States, 2010

India and bigger States	Total			Rural			Urban		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
India	47	46	49	51	50	53	31	30	33
Andhra Pradesh	46	44	47	51	50	51	33	29	36
Assam	58	56	60	60	59	62	36	35	38
Bihar	48	46	50	49	47	51	38	36	40
Chhattisgarh	51	48	54	52	49	55	44	41	46
Delhi	30	29	31	37	32	42	29	28	29
Gujarat	44	41	47	51	48	54	30	28	33
Haryana	48	46	49	51	51	52	38	35	42
Himachal Pradesh	40	35	47	41	35	48	29	29	29
Jammu & Kashmir	43	41	45	45	43	47	32	28	37
Jharkhand	42	41	44	44	43	46	30	28	31
Karnataka	38	37	39	43	42	44	28	28	28
Kerala	13	13	14	14	14	15	10	10	11
Madhya Pradesh	62	62	63	67	66	67	42	41	42
Maharashtra	28	27	29	34	33	35	20	19	21
Odisha	61	60	61	63	62	63	43	40	46
Punjab	34	33	35	37	36	39	28	27	29
Rajasthan	55	52	57	61	58	64	31	29	34
Tamil Nadu	24	23	24	25	25	26	22	22	22
Uttar Pradesh	61	58	63	64	61	67	44	44	45
West Bengal	31	29	32	32	31	33	25	24	27

4.12 The percentage change in the average level of infant mortality between 1998-00 and 2008-10 is given below in Statement 48. During this period, IMR, at the National level, declined by 28.6 per cent. Among the bigger States, the decline varies from 46.7 per cent in Tamil Nadu to 16.3 per cent in Kerala. In the rural areas, decline in IMR varies from 48.5 per cent in Tamil Nadu to 11.2 per cent in Kerala. The decline in IMR varies from 41.2 per cent in Rajasthan to 6.2 per cent in Andhra Pradesh in urban areas. IMR in urban areas of Assam & Karnataka have shown an increase, which may be attributed to sampling fluctuation.

Statement 48

Per cent change in average Infant mortality rates between 1998-00 and 2008-2010 by residence, India and bigger States

India and Bigger States	Total			Rural			Urban		
	1998-00	2008-10	% Change	1998-00	2008-10	% Change	1998-00	2008-10	% Change
India	70.0	50.0	-28.6	75.3	54.7	-27.4	44.3	33.7	-23.9
Andhra Pradesh	65.7	49.0	-25.4	74.7	54.3	-27.3	37.0	34.7	-6.2
Assam	75.7	61.0	-19.4	79.0	63.3	-19.9	35.7	37.3	4.5
Bihar*	64.0	46.3	-27.7	65.0	47.5	-26.9	53.0	34.9	-34.2
Gujarat	63.0	47.3	-24.9	70.0	54.7	-21.9	45.3	32.7	-27.8
Haryana	68.3	51.0	-25.3	70.3	54.3	-22.8	58.0	40.7	-29.8
Himachal Pradesh	62.0	43.0	-30.6	63.7	44.0	-30.9	37.7	28.0	-25.7
Karnataka	57.7	41.3	-28.4	69.0	46.7	-32.3	24.3	30.7	26.3
Kerala	14.7	12.3	-16.3	14.3	12.7	-11.2	15.7	10.3	-34.4
Madhya Pradesh*	91.7	59.5	-35.1	97.7	62.8	-35.7	55.0	42.0	-23.6
Maharashtra	48.3	30.7	-36.4	57.3	37.0	-35.4	32.0	21.7	-32.2
Odisha	96.7	65.0	-32.8	100.0	67.3	-32.7	65.7	46.0	-30.0
Punjab	53.0	37.7	-28.9	57.0	41.3	-27.5	39.0	30.7	-21.3
Rajasthan	81.0	59.0	-27.2	84.7	65.0	-23.3	59.0	34.7	-41.2
Tamil Nadu	52.0	27.7	-46.7	57.7	29.7	-48.5	39.0	25.3	-35.1
Uttar Pradesh*	84.0	59.3	-29.4	88.0	62.2	-29.3	65.3	44.2	-32.3
West Bengal	52.0	33.0	-36.5	55.0	34.3	-37.6	39.3	27.0	-31.3

* Bihar includes Jharkhand, Madhya Pradesh includes Chhattisgarh and Uttar Pradesh includes Uttarakhand.

4.13 Statement 49 given below presents the neo-natal (less than 29 days) mortality rate and the percentage of neo-natal deaths to infant deaths for the year 2010 both at the National and State levels. At the National level, the neo-natal mortality rate is 33 and ranges from 19 in urban areas to 36 in rural areas. Among the bigger States, neo-natal mortality ranges from 44 in Madhya Pradesh to 7 in Kerala. The percentage of neo-natal deaths to total infant deaths is 69.3 per cent at the National level and varies from 61.9 per cent in urban areas to 70.6 per cent in rural areas. Among the bigger States, Jammu & Kashmir (82.1) registered the highest percentage of neo-natal deaths to infant deaths and the lowest in Kerala (53.2).

Statement 49

Neo-natal mortality rates and percentage share of Neo-natal deaths to Infant deaths by residence, India and bigger States, 2010

India and Bigger States	Neo-natal mortality rate			Percentage of Neo-natal death to Infant deaths		
	Total	Rural	Urban	Total	Rural	Urban
India	33	36	19	69.3	70.6	61.9
Andhra Pradesh	30	36	13	65.9	72.0	41.5
Assam	33	36	13	57.7	59.1	36.0
Bihar	31	32	13	64.5	66.6	35.1
Chhattisgarh	37	38	32	73.2	73.1	74.3
Delhi	19	17	19	62.6	46.2	66.6
Gujarat	31	36	19	69.7	71.2	65.1
Haryana	33	36	24	69.4	70.9	63.7
Himachal Pradesh	31	32	19	77.5	77.7	64.5
Jammu & Kashmir	35	37	25	82.1	82.6	78.3
Jharkhand	29	32	14	69.6	72.3	46.6
Karnataka	25	31	14	66.3	71.1	51.2
Kerala	7	8	5	53.2	53.9	50.0
Madhya Pradesh	44	47	30	70.8	70.6	72.8
Maharashtra	22	27	15	78.0	80.0	73.1
Odisha	42	43	32	68.9	68.5	75.0
Punjab	25	27	22	74.2	72.2	79.0
Rajasthan	40	45	23	73.4	73.5	72.9
Tamil Nadu	16	18	13	66.1	69.2	61.4
Uttar Pradesh	42	45	27	69.9	71.2	60.4
West Bengal	23	24	19	74.0	74.0	74.1

4.14 Early neo-natal mortality rate i.e. number of infant deaths less than seven days of life per thousand live births forms an important component of infant mortality rate and more specifically of the neo-natal mortality rate. Statement 50 given below presents the early neo-natal mortality rate along with the percentage of early neo-natal deaths to the total infant deaths. At the National level, the early neo-natal mortality rate for the year 2010 has been estimated at 25 and ranges from 28 in rural areas to 15 in urban areas. Among the bigger States, Kerala (5) and Madhya Pradesh (34) are the two extremes. The percentage of early neo-natal deaths to the total infant deaths during the year 2010, at the National level, has been 53.9 and it varies from 54.6 in rural area to 49.6 in urban areas. In most of the States, rural proportion is relatively higher than the urban proportion except Delhi, Chhattisgarh, Madhya Pradesh and West Bengal. Among the bigger States the percentage for total, varies from 38.7 in Kerala to 69.4 in Jammu & Kashmir.

Statement 50

Early neo-natal mortality rates and percentage share of Early neo-natal deaths to Infant deaths by residence, India and bigger States, 2010

India and Bigger States	Early neo-natal mortality rate			Percentage of Early neo-natal deaths to Infant deaths		
	Total	Rural	Urban	Total	Rural	Urban
India	25	28	15	53.9	54.6	49.6
Andhra Pradesh	24	28	11	52.0	56.3	35.1
Assam	27	28	11	45.9	46.8	31.7
Bihar	27	28	11	55.7	57.5	29.8
Chhattisgarh	26	26	27	50.5	49.0	62.3
Delhi	16	17	16	53.6	46.2	55.4
Gujarat	24	28	15	53.9	55.1	50.0
Haryana	25	28	18	52.6	53.8	48.2
Himachal Pradesh	25	25	13	61.5	61.9	46.5
Jammu & Kashmir	30	32	17	69.4	71.5	53.6
Jharkhand	26	28	14	61.5	63.3	46.6
Karnataka	22	26	13	56.2	59.3	46.3
Kerala	5	6	3	38.7	40.8	30.0
Madhya Pradesh	34	36	26	55.0	54.0	63.2
Maharashtra	17	21	12	61.7	62.6	59.4
Odisha	33	35	21	55.0	55.4	50.0
Punjab	19	21	15	55.7	56.1	54.7
Rajasthan	33	38	16	61.2	62.5	51.3
Tamil Nadu	13	15	12	55.9	58.1	52.6
Uttar Pradesh	30	32	20	49.1	49.5	46.1
West Bengal	19	19	16	61.3	60.7	64.0

4.15 Statement 51 given below presents the peri-natal mortality rate and still birth rate for the year 2010, by residence, for India and bigger States. Peri-natal mortality rate (PMR) is defined as the number of still births and infant deaths of less than 7 days per one thousand live births (LB) and still births (SB) taken together during the year. The still birth rate (SBR) is estimated as the ratio of the number of still births per one thousand live births (LB) and still births (SB) during the year. At the National level, peri-natal mortality rate has been estimated to be 32 and ranges from 35 in rural areas to 22 in urban areas. Among the bigger States, Kerala (12) and Madhya Pradesh 42 forms the two extremes. The estimate of still birth rate for the year 2010, at the National level is 7. Among the bigger States, the highest level of still birth rate has been estimated for Karnataka (14) and the lowest for Bihar and Jharkhand (1). Still births are extremely difficult to capture and there is a room for considerable improvement in netting the events.

Statement 51

Peri-natal mortality rates and Still birth rates by residence, India and bigger States, 2010

India and Bigger States	Peri-natal mortality rate			Still birth rate		
	Total	Rural	Urban	Total	Rural	Urban
India	32	35	22	7	7	7
Andhra Pradesh	31	36	17	7	8	5
Assam	35	37	20	9	9	9
Bihar	28	29	12	1	1	1
Chhattisgarh	37	38	33	12	13	7
Delhi	22	20	23	6	3	7
Gujarat	32	35	24	8	7	9
Haryana	34	37	25	9	10	7
Himachal Pradesh	35	36	17	10	11	3
Jammu & Kashmir	35	37	25	5	5	8
Jharkhand	27	29	15	1	2	1
Karnataka	35	41	24	14	16	12
Kerala	12	13	8	7	7	5
Madhya Pradesh	42	43	36	8	7	10
Maharashtra	24	26	21	7	5	10
Odisha	41	42	32	8	8	11
Punjab	25	27	21	6	6	6
Rajasthan	39	44	21	6	6	5
Tamil Nadu	23	29	16	10	14	5
Uttar Pradesh	35	37	24	5	6	4
West Bengal	28	29	21	9	10	5

4.16 Per cent share of deaths to children below age five to total deaths by residence for India and bigger States is shown below in Statement 52. At the National level, such percentage is 18.4 and it varies from 20.3 in rural areas to 11.4 in urban areas. Among the bigger States, the variation is from 3.2 in Kerala to 27.6 in Uttar Pradesh. In rural areas, it varies from 3.3 in Kerala to 30.3 in Rajasthan, and in urban areas, it is 2.8 in Kerala to 20.6 in Uttar Pradesh.

Statement 52

**Percentage of deaths in the age group 0-4 years to total deaths
by residence, India and bigger States, 2010**

India and bigger States	Total	Rural	Urban
India	18.4	20.3	11.4
Andhra Pradesh	11.4	11.5	11.1
Assam	23.3	24.6	11.4
Bihar	26.7	27.4	18.3
Chhattisgarh	19.4	20.2	14.3
Delhi	14.7	18.1	14.0
Gujarat	17.9	20.4	12.3
Haryana	18.6	19.4	16.4
Himachal Pradesh	9.7	10.0	4.4
Jammu & Kashmir	15.4	16.7	9.4
Jharkhand	21.2	22.7	12.3
Karnataka	12.4	13.2	10.4
Kerala	3.2	3.3	2.8
Madhya Pradesh	26.4	28.0	18.0
Maharashtra	8.9	9.7	7.3
Odisha	18.7	19.7	10.5
Punjab	10.2	11.0	8.4
Rajasthan	26.6	30.3	12.9
Tamil Nadu	5.9	6.2	5.4
Uttar Pradesh	27.6	28.8	20.6
West Bengal	10.5	12.5	5.5

4.17 The death rates for children below age 5 by residence are given below in Statement 53 separately for males and females. At the National level, child mortality rate is estimated at 13.3 and it varies from 14.9 in rural areas to 7.8 in urban areas. Among the bigger States, this varies from 2.9 in Kerala to 20.0 in Madhya Pradesh. Except for the States of Odisha and West Bengal female children have higher death rates than male children in all States.

Statement 53

Estimated death rates for children aged 0-4 years by sex and residence India and bigger States, 2010

India and bigger States	Total			Rural			Urban		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
India	13.3	12.6	14.0	14.9	14.0	15.8	7.8	7.5	8.1
Andhra Pradesh	10.4	10.3	10.6	11.9	11.9	12.0	6.9	6.5	7.4
Assam	17.9	17.3	18.5	19.0	18.4	19.8	8.4	8.5	8.3
Bihar	13.4	12.7	14.2	13.8	13.0	14.8	9.2	9.7	8.7
Chhattisgarh	14.9	13.0	16.7	15.7	13.9	17.6	10.0	8.3	11.9
Delhi	6.5	6.2	7.0	7.2	7.2	7.3	6.4	6.0	6.9
Gujarat	12.9	12.0	13.8	15.5	14.7	16.3	8.0	7.2	9.0
Haryana	12.5	11.8	13.2	13.2	12.6	14.0	10.4	9.6	11.3
Himachal Pradesh	7.9	7.3	8.6	8.3	7.5	9.1	3.0	4.6	1.2
Jammu & Kashmir	10.8	10.4	11.2	11.4	11.2	11.6	7.4	6.5	8.5
Jharkhand	13.0	11.7	14.3	13.9	12.6	15.3	7.4	6.8	8.1
Karnataka	10.3	10.1	10.4	12.1	11.6	12.6	6.9	7.4	6.3
Kerala	2.9	2.7	3.2	3.1	2.8	3.4	2.4	2.4	2.5
Madhya Pradesh	20.0	19.6	20.4	21.9	21.3	22.5	11.5	11.8	11.2
Maharashtra	6.4	6.2	6.6	7.5	7.4	7.6	4.6	4.2	5.0
Odisha	17.1	17.2	17.0	18.2	18.3	18.0	9.0	8.1	9.9
Punjab	8.7	7.9	9.7	9.9	8.7	11.3	6.6	6.3	6.9
Rajasthan	16.2	14.6	18.0	18.2	16.3	20.2	8.4	7.9	9.0
Tamil Nadu	5.8	5.6	5.9	6.4	6.1	6.7	4.9	5.1	4.8
Uttar Pradesh	19.6	18.0	21.5	20.6	18.8	22.6	14.1	13.4	15.0
West Bengal	7.4	7.5	7.3	8.0	8.2	7.8	5.2	4.9	5.5

4.18 The Under-five mortality rates by residence are given below in Statement 54 separately for males and females. At the National level, under-five mortality rate is estimated at 59 and it varies from 66 in rural areas to 38 in urban areas. Among the bigger States, it varies from 15 in Kerala to 83 in Assam. All the bigger States have higher Under-five mortality rates of female than that of male.

Statement 54

**Under-five Mortality Rates (U5MR) by sex and residence,
India and bigger States, 2010**

India & bigger States	Total			Rural			Urban		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
India	59	55	64	66	61	71	38	36	40
Andhra Pradesh	48	46	51	53	52	55	36	32	40
Assam	83	79	87	88	83	93	42	41	42
Bihar	64	60	68	65	61	70	47	46	47
Chhattisgarh	61	52	70	63	54	72	48	42	54
Delhi	34	33	35	42	42	42	33	31	34
Gujarat	56	52	60	65	63	67	39	33	46
Haryana	55	51	59	58	54	61	47	41	53
Himachal Pradesh	49	43	57	50	43	59	37	40	34
Jammu & Kashmir	48	46	50	51	50	52	33	28	40
Jharkhand	59	52	66	63	55	71	35	32	38
Karnataka	45	43	47	49	47	51	36	34	38
Kerala	15	14	16	16	14	18	12	12	13
Madhya Pradesh	82	79	85	88	84	92	54	55	53
Maharashtra	33	31	35	39	37	42	23	22	25
Odisha	78	76	79	81	81	82	46	41	50
Punjab	43	38	48	49	43	56	31	30	33
Rajasthan	69	60	79	76	67	86	42	35	51
Tamil Nadu	27	26	28	30	28	32	24	24	24
Uttar Pradesh	79	71	87	82	74	92	60	59	60
West Bengal	37	37	38	40	39	40	28	26	30

4.19 Death rates for children in the age group 5-14 are given below in Statement 55. As revealed by the data, at the National level, the death rate in this age group is estimated to be 0.9. Rural-urban differentials exist with the urban areas registering significantly lower death rates as compared to that in rural areas in majority of the States. Among the bigger States, the lowest death rate in this age group is registered in Kerala (0.3) and the highest in Jharkhand (1.4).

Statement 55

**Death rates for children age 5-14 years by sex and residence
India and bigger States, 2010**

India and bigger States	Total			Rural			Urban		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
India	0.9	1.0	0.9	1.0	1.1	1.0	0.6	0.6	0.6
Andhra Pradesh	0.6	0.6	0.6	0.7	0.8	0.5	0.4	0.2	0.7
Assam	1.2	1.0	1.4	1.3	1.0	1.6	0.4	0.7	0.2
Bihar	0.8	0.9	0.7	0.8	0.9	0.7	0.9	0.8	0.9
Chhattisgarh	1.2	1.5	1.0	1.3	1.6	1.1	0.7	0.8	0.5
Delhi	0.6	0.4	0.8	0.5	0.5	0.6	0.6	0.3	0.9
Gujarat	0.8	0.8	0.7	1.0	1.1	0.9	0.3	0.3	0.3
Haryana	0.7	0.6	0.7	0.8	0.7	0.8	0.5	0.4	0.6
Himachal Pradesh	0.6	0.1	1.1	0.6	0.1	1.1	0.2	0.0	0.5
Jammu & Kashmir	0.7	0.4	1.0	0.7	0.4	1.1	0.6	0.5	0.6
Jharkhand	1.4	1.8	1.0	1.6	2.0	1.2	0.3	0.5	0.2
Karnataka	0.8	0.9	0.7	0.9	1.1	0.7	0.6	0.5	0.7
Kerala	0.3	0.3	0.2	0.3	0.4	0.2	0.2	0.2	0.2
Madhya Pradesh	1.1	1.1	1.1	1.3	1.3	1.3	0.3	0.3	0.3
Maharashtra	0.5	0.5	0.5	0.5	0.6	0.4	0.5	0.3	0.8
Odisha	1.3	1.3	1.2	1.3	1.3	1.3	0.9	1.1	0.7
Punjab	0.5	0.6	0.4	0.6	0.7	0.5	0.4	0.4	0.4
Rajasthan	1.0	1.0	0.9	0.9	1.0	0.9	1.2	1.3	1.2
Tamil Nadu	0.5	0.5	0.4	0.4	0.4	0.4	0.6	0.7	0.4
Uttar Pradesh	1.3	1.4	1.3	1.4	1.4	1.4	0.8	1.1	0.5
West Bengal	0.7	0.7	0.6	0.7	0.7	0.6	0.7	0.7	0.6

4.20 Death rates in the age group 15-59, by sex and residence, are given below in Statement 56. At the National level, death rate in this age group is estimated to be 3.6 and it varies from 3.8 in rural areas to 3.1 in urban areas. The female death rate is lower than that of males in all States except Bihar and Jammu & Kashmir.

Statement 56

**Death rates for persons age 15-59 years by sex and residence
India and bigger States, 2010**

India and bigger States	Total			Rural			Urban		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
India	3.6	4.2	3.0	3.8	4.4	3.2	3.1	3.8	2.4
Andhra Pradesh	4.4	5.2	3.5	4.8	5.6	4.0	3.3	4.3	2.3
Assam	4.8	5.1	4.4	5.0	5.3	4.7	3.5	4.4	2.5
Bihar	3.2	3.2	3.2	3.2	3.2	3.3	3.0	3.1	2.9
Chhattisgarh	4.4	4.7	4.1	4.6	4.8	4.3	3.7	4.4	3.0
Delhi	2.5	3.0	1.8	3.0	3.8	2.1	2.4	2.9	1.8
Gujarat	3.4	4.0	2.8	3.8	4.4	3.2	2.9	3.5	2.3
Haryana	3.8	4.7	2.8	4.1	5.0	3.1	3.1	3.9	2.2
Himachal Pradesh	3.2	4.5	2.1	3.4	4.7	2.1	2.1	2.9	1.3
Jammu & Kashmir	2.3	2.2	2.4	2.4	2.3	2.6	1.9	1.9	1.9
Jharkhand	3.7	3.8	3.5	3.9	3.8	3.9	2.9	3.6	2.3
Karnataka	3.9	4.8	2.9	4.5	5.5	3.4	2.9	3.7	2.2
Kerala	2.7	3.7	1.8	2.8	3.9	1.8	2.4	3.3	1.7
Madhya Pradesh	3.9	4.8	3.0	4.2	5.1	3.1	3.3	3.9	2.6
Maharashtra	3.3	4.0	2.6	3.6	4.3	2.8	2.9	3.5	2.2
Odisha	4.2	4.8	3.6	4.2	4.8	3.7	3.9	4.6	3.2
Punjab	3.6	4.6	2.6	3.8	4.8	2.7	3.3	4.2	2.4
Rajasthan	2.9	3.6	2.1	2.9	3.6	2.1	2.9	3.7	2.0
Tamil Nadu	3.8	4.8	2.7	4.1	5.2	3.0	3.4	4.3	2.4
Uttar Pradesh	4.0	4.5	3.4	4.1	4.6	3.6	3.4	4.0	2.7
West Bengal	3.1	3.6	2.5	3.0	3.5	2.5	3.3	3.8	2.7

4.21 Death rates for persons aged 60 years and above by sex and residence are given below in Statement 57. At the National level, death rate in this age group is estimated to be 46.2 and males have higher mortality rate (50.7) than females (42.0). This difference exists in both rural and urban areas. The death rate for this age group, among the bigger States varies from 32.8 in Delhi to 56.1 in Assam.

Statement 57

Death rates for persons age 60 years and above by Sex and residence, India and bigger States, 2010

India and bigger States	Total			Rural			Urban		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
India	46.2	50.7	42.0	48.3	53.9	43.0	40.4	42.0	38.9
Andhra Pradesh	49.0	54.1	44.6	52.1	56.8	48.0	39.4	45.1	35.1
Assam	56.1	61.7	50.0	59.1	65.8	51.6	41.7	41.6	41.8
Bihar	48.0	52.5	43.2	48.7	53.3	43.5	42.5	44.6	40.3
Chhattisgarh	54.2	62.4	47.3	55.9	65.8	47.8	45.7	47.4	44.0
Delhi	32.8	34.5	31.0	37.9	31.0	44.8	32.1	35.0	29.1
Gujarat	42.2	47.5	37.5	43.6	49.5	38.5	39.7	44.2	35.6
Haryana	46.2	52.6	40.7	49.8	58.7	42.5	38.9	41.2	36.7
Himachal Pradesh	40.4	43.5	37.5	41.2	44.6	38.1	30.4	31.4	29.3
Jammu & Kashmir	40.7	41.6	39.8	42.8	42.7	42.8	33.9	37.6	30.1
Jharkhand	51.9	57.1	47.1	53.3	60.7	46.7	46.3	43.9	49.0
Karnataka	44.7	45.1	44.4	47.0	49.1	45.0	39.9	36.6	43.0
Kerala	42.0	46.2	38.7	42.3	47.3	38.3	41.3	43.1	39.8
Madhya Pradesh	52.7	58.8	46.7	55.5	64.6	46.7	42.7	39.2	46.5
Maharashtra	41.2	44.3	38.4	44.1	48.7	40.0	36.3	37.0	35.6
Odisha	48.0	52.1	44.0	48.8	53.5	44.4	42.1	43.1	41.1
Punjab	43.0	45.3	40.7	45.0	48.6	41.4	39.0	38.7	39.3
Rajasthan	43.3	49.8	37.5	42.3	50.8	34.5	46.5	46.4	46.6
Tamil Nadu	46.4	49.2	43.8	47.8	50.3	45.5	44.4	47.6	41.3
Uttar Pradesh	50.6	58.2	42.7	51.8	60.3	42.9	45.3	48.6	41.8
West Bengal	43.9	45.5	42.4	46.6	48.6	44.7	38.7	39.8	37.4

Medical attention before death

4.22 The type of medical attention received before death is also collected in the SRS. In the new sample from 2004, the options on types of medical attention received before death have been modified to capture the deaths occurred specifically at private hospital/nursing homes. The options include 'Government Hospital', 'Private Hospital', 'Qualified professional', 'Untrained functionary' and 'others'. The options for the sample based on 1991 sample were 'Institutional'; 'Medical attentions other than institution'; and 'No medical attention'. Statement 58 given below presents the percentage distribution of deaths by type of medical attention received before death for India and bigger States separately for rural and urban areas for the year 2010. At the National level, 21.5 per cent of the deaths occurred at Government Hospital and varies from 19.3 per cent in rural areas to 29.4 per cent in urban areas. Among the bigger States, Himachal Pradesh (47.9) has the highest percentage of deaths in Government Hospital and Jharkhand (12.5) the lowest. Deaths in private hospitals account for 12.4 per cent and it varies from 3.5 per cent in Odisha to 33.5 per cent in Kerala. About 28.2 per cent deaths were attended by untrained functionaries and others.

Statement 58

Percent distribution of deaths by type of medical attention received before death by residence, India and bigger States, 2010

India and bigger States	Government Hospital			Private Hospital			Qualified professional			Untrained functionary & others		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
India	21.5	19.3	29.4	12.4	10.4	19.5	37.9	38.7	35.0	28.2	31.6	16.0
Andhra Pradesh	16.7	15.2	22.4	15.9	15.1	19.1	33.2	32.7	34.9	34.2	37.0	23.6
Assam	15.1	14.2	22.7	10.4	10.3	11.7	56.0	56.3	53.7	18.5	19.2	11.9
Bihar	14.6	14.0	21.2	7.5	6.6	17.7	44.2	44.0	46.8	33.6	35.4	14.3
Chhattisgarh	16.9	13.8	35.8	8.9	7.9	14.8	30.2	28.7	39.2	44.0	49.6	10.2
Delhi	42.0	20.5	46.1	11.3	6.4	12.2	29.0	49.4	25.2	17.6	23.7	16.5
Gujarat	20.6	16.6	29.2	14.3	12.2	18.8	49.6	52.9	42.6	15.5	18.3	9.4
Haryana	14.7	14.0	16.8	11.2	10.8	12.5	56.2	57.3	53.0	17.8	17.9	17.7
Himachal Pradesh	47.9	48.6	36.5	10.6	9.8	23.1	33.4	33.9	24.8	8.1	7.7	15.6
Jammu & Kashmir	37.1	32.6	58.1	8.2	7.7	10.5	37.2	38.6	30.5	17.5	21.1	0.9
Jharkhand	12.5	9.5	29.8	9.7	7.8	20.9	36.4	36.0	38.8	41.4	46.7	10.5
Karnataka	25.0	21.4	34.8	14.6	11.6	22.9	19.1	21.7	12.1	41.2	45.3	30.2
Kerala	39.7	41.2	34.7	33.5	35.6	26.9	12.6	7.7	28.2	14.2	15.5	10.2
Madhya Pradesh	30.3	28.4	40.4	13.9	12.6	20.5	30.5	30.7	29.6	25.3	28.3	9.5
Maharashtra	25.4	21.9	32.0	15.4	12.4	21.2	42.4	45.2	37.1	16.8	20.5	9.7
Odisha	21.2	20.4	27.9	3.5	3.1	6.7	22.7	22.4	25.1	52.6	54.1	40.3
Punjab	14.8	14.4	15.8	30.3	25.7	40.3	52.9	57.5	43.1	1.9	2.4	0.8
Rajasthan	25.0	23.1	31.9	8.3	7.1	12.8	41.0	40.6	42.5	25.7	29.2	12.8
Tamil Nadu	19.0	15.2	24.8	15.3	10.5	22.7	22.5	20.3	25.8	43.3	54.0	26.7
Uttar Pradesh	18.4	17.9	21.4	11.1	9.1	22.8	46.6	47.6	40.7	23.9	25.4	15.1
West Bengal	25.1	20.7	36.1	6.5	3.9	13.2	46.3	47.1	44.2	22.1	28.3	6.5