

## **CHAPTER – IV**

# **HEALTH CARE DELIVERY IN GUJARAT**

## Chapter IV

### 4. Health Care Delivery in Gujarat

Gujarat State, located in the western part of India possesses a total land area of 196924 sq. km and was established in the year 1960. For administrative purpose the State is organized into 26 districts, 225 talukas and 18066 villages. There are 242 towns and urban agglomerations including 8 municipal corporations. From the inception, the State has witnessed not only significant growth in size of economy but undergone a structural change in economy with high degree of industrialization and rapid urbanization.

#### 4.1 Demographic and Socio-Economic Profile

##### 4.1.1 Demographic Profile

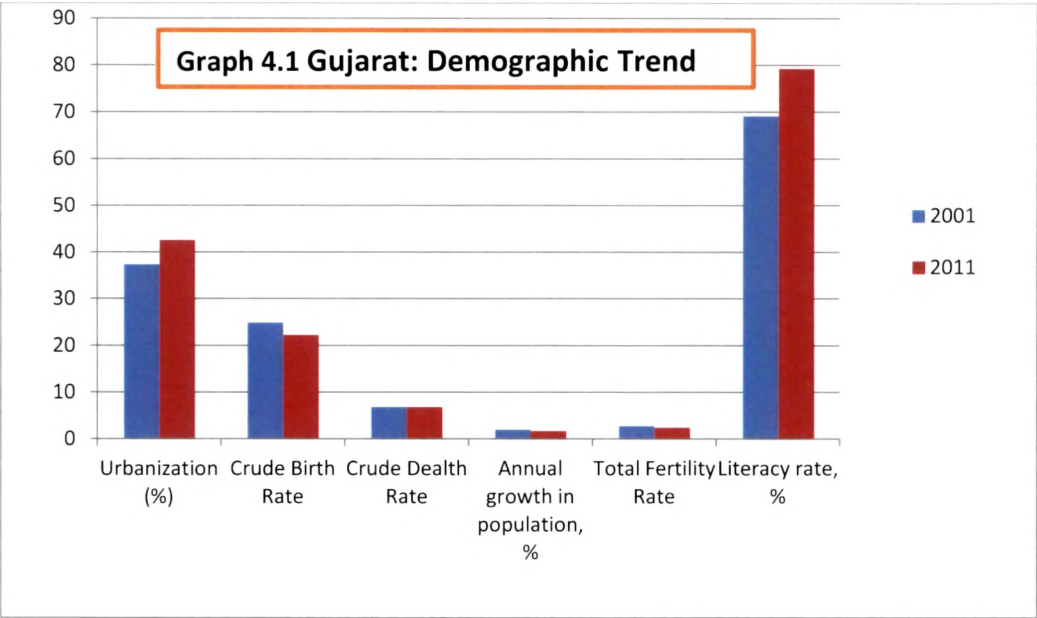
Table 4.1		Gujarat: Demographic Trend			
Factor		Gujarat		India	
		2001	2011	2001	2011
Population (Lakhs)		506	603	10287	12101
Urbanization (%)		37.35	42.58	27.81	31.20
Sex Ratio	All	920	918	933	940
	Children below 7 yrs	883	886	934	944
Crude Birth Rate <sup>58</sup> , %		24.9	22.3	24.1	22.3
Crude Death Rate, %		6.9	6.9	7.5	7.3
Annual growth in population, %		2.06	1.77	1.97	1.64
Total Fertility Rate		2.8 (2004)	2.5(2009)	2.9 (2004)	2.6 (2009)
Literacy rate, %	Men	79.66	87.23	75.26	82.14
	Women	57.80	70.73	53.67	65.26
	Overall	69.14	79.31	64.84	74.04

*Source: Census of India and Sample Registration System*

The population of the State increased from 506 lakhs in 2001 to 603 lakhs in 2011 (Table 4.1). An analysis of growth trend shows a significant drop in annual growth rate in population of 2.06% during 1991-2001 to 1.77% in 2001-11. The annual growth of population is higher than country as a whole because the CBR is same as the country and CDR is lesser. In the last decade, CBR has declined more rapidly than the country as a whole whereas the CDR has remained static. This demographic shift where both crude

<sup>58</sup> Sample Registration System Reports, Registrar General & Census Commissioner, Ministry of Home, Govt. of India- April, 2006 and June 2011.

birth and death rates have declined is due to sustained efforts to improve the health services and the overall socio-economic condition of people.



The State is getting rapidly urbanized with growth in urban population from 37.35% in 2001 to 42.58% in 2011 which is much higher than the national average of 31.20%. Though the sex ratio has marginally declined from 920 to 918 between 2001 and 2011, there is an increase in the ratio among the children below 7 years age from 883 to 886 but still a matter of concern.

#### 4.1.2 Socio-Economic Profile

Socio-economic factors like education, per capita income, poverty and investment have large impact on the health outcomes and are in turn influenced by health status of people. Gujarat has strived to attain high and balanced social and economic development as can be ascertained from the indicators like literacy, per capita income and poverty<sup>59</sup>. The overall literacy is 79.31% in 2011 with a female literacy of 70.73%. This is an increase from 69.14% and 57.80% respectively in 2001. It can be observed that the overall literacy has increased and the gap in respect of female literacy has declined. Similar trend can be observed at the national level too.

The State domestic product has witnessed a strong annual growth of 12.63% during 2001-11 compared to 9% for the country as a whole. This has translated in to

<sup>59</sup> Socio-Economic Review, Gujarat State, 2005-06 and 2010-11- Directorate of Economic and Statistics, Government of Gujarat, February, 2006.

growth in per capita income of 11% compared to 7.6% for the country. Share of Gujarat's GDP in the country has increased from 5.89% in 2005 to 6.50% in 2010. The per capita income of Gujarat has increased by 51.12% compared to 39.7% for the country. The population below poverty line was 16.8% in Gujarat compared to 27.5% for the country. Poverty is higher in rural areas at 19.1% and 16.8% in urban areas (Table 4.2).

In agriculture sector, the average size of landholding is higher in Gujarat at 2.35 ha as against 1.32 ha for the country. However, this has declined in both the cases in 2010 compared to 2005. The livestock population and milk production has increased during the period. Share of livestock in Gujarat has decreased marginally whereas the share of milk production has increased significantly.

<b>Table 4.2</b>		<b>Gujarat: Socio-Economy</b>					
<b>Indicator</b>		<b>India</b>	<b>Gujarat</b>	<b>Share</b>	<b>India</b>	<b>Gujarat</b>	<b>Share</b>
		<b>2004-05</b>			<b>2009-10</b>		
GDP	'000 crore	2922	172	5.89%	4351	283	6.50%
Per capita income	Rs	24143	32021		33731	49030	
<b>Poverty</b>		<b>2004-05</b>					
Overall	%	27.5	16.8				
Rural	%	25.7	19.1				
Urban	%	28.3	13				
<b>Agriculture</b>		<b>2000-01</b>			<b>2008-09</b>		
Average size of Landholding	ha	1.41	2.62		1.32	2.35	
		<b>2003</b>			<b>2007</b>		
Livestock population	000	485002	21671	4.47%	529698	23515	4.44%
		<b>2004-05</b>			<b>2007-08</b>		
Milk Production	Mill. Ton	91	6.75	7.42%	104.8	7.91	7.55%
<b>Industries</b>		<b>2001-02</b>			<b>2006-07</b>		
Working Factories		13950	128549	10.85%	144710	14328	9.90%
Employment	000	7750	713	9.20%	10328	984	9.53%
Value of Output	Rs. Cr	962457	147550	15.33%	2407658	371687	15.44%
Unemployment, 2005-06	Rural	2%	1.30%				
	Urban	4.50%	3.30%				
<b>Commerce</b>		<b>2005</b>			<b>2009</b>		
Banks		68116	3705	5.44%	79933	4338	5.43%
Credit-Deposit ratio		66.04%	46.73%		70.30%	61.90%	

*Source: Socio-Economic survey of Gujarat*

In Industrial sector, the share of number of working factories has declined in Gujarat whereas share in employment and value of output has increased from 2002 and 2007. The share of industrial output of 15.44% is much higher than the population share of 4.98%. In banking, the share of number of branches in Gujarat has remained almost the same. However, the credit-deposit ratio of the state is less than the country though the gap is narrowing down.

#### 4.1.3 Physical Infrastructure<sup>60</sup>

The availability, accessibility and quality of infrastructure are key factors in the progress and development of the State. Gujarat had 4.62% of total road length and 8.4% of rail length of the country in 2004 (Table 4.3) but witnessed a marginal decline of share in road length and rise in share of railway length in 2008. Per capita consumption of power has increased by almost 50% and remains around twice the national average. Thus, it can be understood that the people of Gujarat have better physical infrastructure and mobility compared to national average.

<b>Table 4.3</b>		<b>Gujarat: Infrastructure</b>					
<b>Parameter</b>		<b>India</b>	<b>Gujarat</b>	<b>% share</b>	<b>India</b>	<b>Gujarat</b>	<b>% share</b>
		<b>2004</b>			<b>2008</b>		
Railway Length	km	63221	5186	8.20%	63273	5328	8.42%
Electricity Generation	Million kwh	552655	41030	7.42%	627077	41307	6.59%
Per cap power consumption	kwh	411	908		672	1331	
		<b>2002</b>			<b>2008</b>		
Road Length	'000 km	2457	138	5.60%	3175	147	4.62%
		<b>2002</b>			<b>2006</b>		
Motor Vehicles	'000	58863	6008	10.21%	89618	8622	9.62%
Vehicle Density		18	31		27	44	

*Source: Socio-Economic Survey of Gujarat*

Though the share of motor vehicles has declined marginally, it is much higher than the population share of Gujarat. The vehicle density is 44 compared to national average of 27. All these factors indicate a robust physical infrastructure which is stronger than country as a whole.

<sup>60</sup> Health Statistics, 2009-10, Vital Statistics Division, Commissioner of Health, Medical Services, Medical Education and Research, Gujarat.

## 4.2 Health Profile of Gujarat

Health has an impact on every other sector of the economy and society and is in turn affected by the growth and development in other sectors. Hence, it is critical to understand the performance of the health sector and the context in which the NRHM program is conceptualised and implemented in the State.

An analysis of major health indicators shows progressive improvement in health status of the people in the State (Table 4-4). The life expectancy of both female and male has increased from 1998-2002 to 2008 by 6.4 and 1.9 years which is higher than the national average improvement of 4.6 and 1.5 years. A decline in crude birth rate as well as crude death rate indicating attainment of the 4<sup>th</sup> stage of demographic transition where both birth rate and death rates decline and the society achieves stabilization in population in due course can be observed.

<b>Table 4.4</b>	<b>Gujarat: Changes in Key Health Indicators</b>				
	<b>India</b>	<b>Gujarat</b>	<b>India</b>	<b>Gujarat</b>	
<b>Life Expectancy at Birth</b>	<b>1999-2003</b>		<b>2008</b>		
Male	61.8	62.5	63.3	64.4	SRS
Female	63.5	64.6	68.1	71	
<b>Sex Ratio, All</b>	<b>2001</b>		<b>2011</b>		
	933	920	940	918	Census
	<b>2004-06</b>		<b>2009</b>		
Maternal Mortality	254	160	212	148	SRS
	<b>2002-04</b>		<b>2007-08</b>		
Total Fertility Rate	2.9	2.8	2.6	2.5	CBHI
Infant Mortality Rate	58	54	47	44	SRS
Full ANC	16.4	25.8	18.8	19.9	DLHS
Institutional Delivery	40.5	52.2	47	56.4	DLHS
Full Immunization	45.8	54	53.5	54.8	DLHS
Contraceptive Use	53	59.2	54	63.3	DLHS

*Source: Sample Registration System, District Level Health Survey & Central Bureau of Health Intelligence*

Sex ratio has seen minor improvement at the national level has fallen in the State. IMR and MMR have improved at the state and national level. However, attainment of outcome targets of less than 30 for IMR and less than 100 for MMR by 2012 in the State appears to be a tough challenge for the health care administration of the State. This appears to be a huge challenge for the country as a whole. Among the output factors,

institutional delivery has improved at national and state level with the former outpacing the later. Similar trend is observed in total immunization also. In contraceptive use, Gujarat outperforms the country as a whole.

#### 4.2.1 Health Infrastructure in Gujarat

Primary health care infrastructure in terms of number of PHC and sub-centres has remained the same in Gujarat after NRHM, from 2004 to 2009. However, the state has better coverage in terms of average number of villages covered by health centres. New CHC were started during the period. It can be observed that the basic physical infrastructure was in place in Gujarat even before the launch of NRHM (Table 4.5).

<b>Table 4.5</b>	<b>Health Care Infrastructure in Gujarat</b>					
<b>Indicator</b>	<b>2004</b>			<b>2009</b>		
	<b>India</b>	<b>Gujarat</b>	<b>Share</b>	<b>India</b>	<b>Gujarat</b>	<b>Share</b>
Sub Centres	142655	7274	5.10%	145894	7274	4.99%
Villages /Sub-Centre				4	2	
PHC	23109	1070	4.63%	23391	1084	4.63%
Villages/PHC				25	17	
CHC	3222	271	8.41%	4510	281	6.23%
Villages/CHC				132	64	
Allopathic Medical Colleges	229	13	5.68%	289	14	4.84%

*Source: Central Bureau of Health Intelligence*

Thus, as far as physical health infrastructure is concerned, the number of villages covered by each sub-centre, PHC and CHC is well above the national figures indicating better reach of health centres. Number of allopathic medical colleges has also increased during the period.

#### 4.2.2 Human Resources in Public Health

Manpower availability in the State as a whole has improved between 2005 and 2010. Population served per doctor has improved from 1401 to 1260 (Table 4.6). The availability of doctors has increased at the national level also. While the availability of nurses has improved at the national level, it has not kept pace with population and has declined from 444 to 469 in Gujarat. The availability of doctors has improved at the PHC level. Gujarat has witnessed improvement as far as the specialists in CHC. Number of health workers has improved for the country as a whole, though number of male health workers has declined. In Gujarat, number of male workers has increased while number of female workers has declined.

<b>Table 4.6</b>	<b>Manpower in Health in Gujarat</b>					
<b>Indicator</b>	<b>2004</b>			<b>2009</b>		
	<b>India</b>	<b>Gujarat</b>	<b>Share</b>	<b>India</b>	<b>Gujarat</b>	<b>Share</b>
No of Doctors	643964	37194	5.78%	793305	45058	5.68%
Population per Doctor	1658	1401		1440	1260	
No of Nurses	865135	84796	9.80%	1073638	88258	8.22%
Population per Nurse	765	444		713	469	
Registered Midwives	521593	35935	6.89%	576542	36427	6.32%
Population per Midwives	2100	1506		2041	1606	
Doctors in PHC	21974	912	4.15%	23982	1019	4.25%
Specialists in CHC	3953	122	3.09%	5789	758	13.09%
Health Workers						
Male	60756	2389	3.93%	57439	4884	8.50%
Female	138906	6650	4.79%	190919	6431	3.37%

*Source: Central Bureau of Health Intelligence*

<b>Table 4.7</b>	<b>Gujarat: Status of Health Personnel</b>			
<b>Category</b>	<b>Required</b>	<b>Available</b>	<b>Shortfall</b>	<b>% Shortfall</b>
Sub-Centre	7263	7274	-	
Primary Health Centre	1172	1073	99	8%
Community Health Centre	293	273	20	7%
MPHW (Female) at Sub-Centres & PHC	8347	7060	1287	15%
HW & MPW (Male) at Sub-Centres & PHC	7274	4456	2818	39%
Health Assistant (Female)/LHV at PHCs	1073	267	806	75%
Health Assistant (Male) at PHCs	1073	2421	-	
Doctors at PHCs	1073	1019	54	5%
Obstetricians & Gynaecologists at CHCs	273	6	267	98%
Physicians at CHCs	273	0	273	100%
Paediatricians at CHCs	273	6	267	98%
Total Specialist at CHCs	1092	81	1011	93%
Radiographers	273	124	149	55%
Pharmacist	1346	781	565	42%
Laboratory Technicians	1346	897	449	33%
Nurse/Midwife	2984	1585	1399	47%

*Source: Central Bureau of Health Intelligence*



An analysis of health personnel at sub-centre, PHC and CHC of Gujarat was carried out to ascertain the requirement, availability and shortfall. Shortfall level is significant in case of health workers and assistants at 27%. In case of doctors vacancy is 5%. Huge vacancy is observed in the category of specialist doctors posts in CHC. Vacancy in case of paramedical staff is 39.2% and nurses are 47% (Table 4.7).

#### 4.2.3 Health Finance

It can be seen that financial resources committed to health sector in the Government budget has significantly increased from 3.95% in 2005 to 6.4% in 2010 in planned outlay. Significantly, non-plan budget has declined from 2.75% to 2.6% during the same period. Overall, the health sector allocation has increased from 3.11% to 4.19% (Table 4.8).

<b>Table 4.8</b>		<b>Gujarat: Health Finance/ Budget</b>	
		<b>2005</b>	<b>2010</b>
Plan outlay for health	Crores	434	1900
	%	3.95	6.40
Non Plan outlay	Crores	720	1088
	%	2.75	2.6
Total	Crores	1155	2988
	%	3.11	4.19

*Source: Vital Statistics, Gujarat*

#### 4.3 Public Health Management in Gujarat

Public health care system in Gujarat has three levels – primary, secondary and tertiary level institutions. Primary level infrastructure comprises of 7274 sub-centres, 1096 PHC and 290 CHC. The secondary level consists of 24 district level and 26 taluka/sub-district level hospitals. The tertiary level covers teaching hospitals with medical colleges and specialized hospitals. The State has 14 medical colleges<sup>61</sup> out of which 8 are in non-Government sector and 15 training schools for auxiliary nurse midwives.

The State implements national health programs for Malaria, Tuberculosis, Leprosy, epidemic control, HIV/AIDS, Janani Suraksha Yojna and family welfare

<sup>61</sup> Health Statistics of Gujarat: Commissionerate of Health, Government of Gujarat- 2010.

(including RCH), in addition to the State programs<sup>62</sup> like Chiranjeevi, 108 emergency ambulance services, Mamta Abhiyan, Bal Sakha Scheme and Beti Bachao Abhiyan.

**Chiranjeevi Yojna** was launched by the Government to protect mothers and babies from complications arising out of child birth by promoting institutional deliveries, with the involvement of private nursing homes and recognized hospitals. **Under Bal Sakha Scheme**, all babies born to BPL mothers in the State are covered for neonatal care by partnering with private Paediatricians, including care in their Neonatal Intensive Care Unit at no cost to the beneficiary. 108 emergency services were launched in private public partnership to cater to wide ranging medical emergencies including cardiac arrests, accidents and obstetric emergencies.

**Janani Suraksha Yojna** is a safe motherhood intervention under NRHM implemented with the objective of reducing maternal and neo-natal mortality by promoting institutional deliveries. **Mamta Abhiyan** is a package of preventive, promotive, curative and referral services under RCH program comprising of elements of nutrition, immunization and post-natal visit. Periodically, the State Government organizes health campaigns to improve awareness and reach of maternal and child health programs. Nirogi Bal Varsh (Healthy Child Year) campaign was organized in 2008-09 to address issues of nutrition of neonates, care for special children, right of girl child, care of mother and unmet needs of family planning.

Private sector plays a key role in health care delivery in Gujarat. The State has 122 grant-in-aid hospitals based on conventional model of private public partnership. As mentioned earlier, health programs like Chiranjeevi, emergency ambulance service etc are operated on PPP basis. Many corporate groups have set up speciality and super speciality hospitals in the tertiary sector, mainly for curative care.

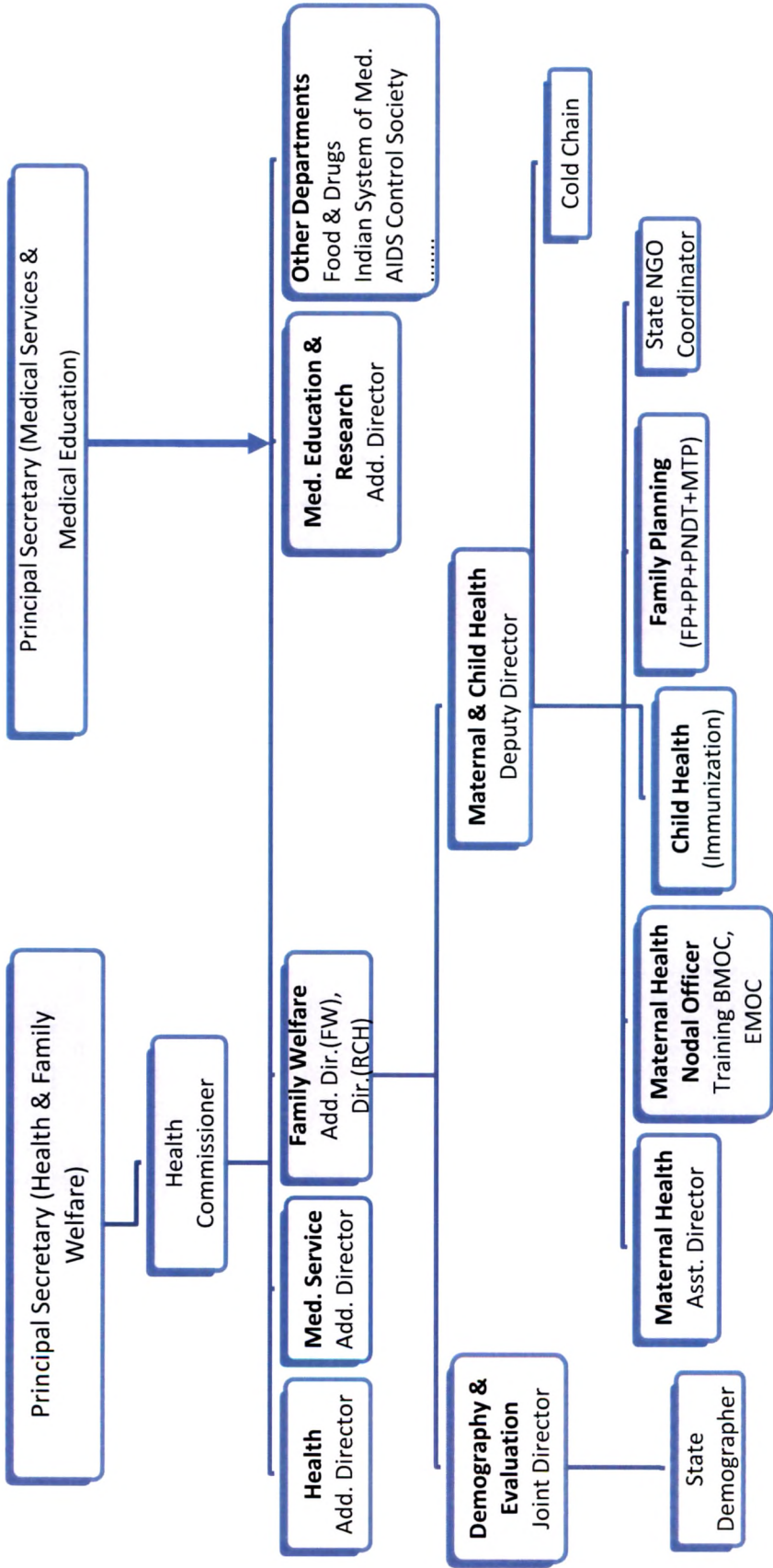
#### **4.3.1 Health Care Delivery Structure in Gujarat**

The department of health and family welfare in Gujarat is headed by the Minister of Health & Family Welfare, who is responsible for policy and administrative decisions at the State level. Principal Secretary (Health and Family Welfare) and Principal Secretary (Medical Services and Medical Education) are the administrative heads of the areas and responsible for implementing policies. Health Commissioner is responsible for implementation of health and medical care policies of the State. He is assisted by

---

<sup>62</sup> Saving the mothers and children the Gujarat way- Department of Health & Family Welfare, Gujarat, and October 2008.

Chart 4.1: Department of Health & Family Welfare, Govt. of Gujarat



Additional Directors for Health, Medical Services, Family Welfare, Medical Education & Research and Vital Statistics. Functions under Health division comprises of rural and urban health, epidemic control, Malaria, Leprosy, Tuberculosis and AIDS/HIV control, Blindness Control, disaster management, health evaluation and post-partum program. Medical services address curative care and look after all the Civil Hospitals which are headed by Chief District Medical Officers. It also looks after speciality hospitals like mental hospitals, eye hospitals and infectious diseases hospitals.

Family Welfare division supervises RCH, Polio eradication, Neo-Natal survival, NRHM, Malnutrition, Micro-nutrient initiatives, implementation of National Maternity Scheme, Quality Control, Rashtriya Swastha Bhima Yojna and Nutritional cell. Medical Education division supervises all medical, dental and nursing colleges, Physiotherapy, Paramedical institutions, Medical Education and Research Institute. Vital Statistics division looks after State civil registration of birth and death, training material for registration and publication and survey. State Institute of Health and Family Welfare along with its 5 regional training centres imparts training in health and family welfare. Apart from the above, Food and Drugs, AID control society and Indian System of Medicine are the other health care related activities under the department.