HEALTH

CHAPTER XII

Good health is an essential pre-requisite which contributes significantly both to the improvement in labour productivity and human resource development. Health care is widely recognized to be a public good with strong positive externalities. Universal access, of an adequate level of care, with equitable distribution of financial costs, cost effective use of the results of relevant research and special attention to vulnerable groups such as children, women, disabled and the aged is a key component of a modern civilized society. The role of government is crucial for addressing these challenges and achieving equity in health. To achieve this, Government of Tamil Nadu has converged more resources on health and nutrition, strengthening health infrastructure to reach world class standard, augmenting medical manpower resources and encouraging health outreach activities. The primary, secondary and tertiary health care delivery systems are being revamped and fine tuned in such a way that health care is delivered efficaciously to the people at the bottom of the economic pyramid. Considerable achievements have been made in Tamil Nadu in health indicators like life expectancy at birth, infant mortality rate and maternal mortality rate. Among the major States Tamil Nadu ranks 'fourth highest' in terms of life expectancy at birth, 'second lowest' next only to Kerala in terms of infant mortality rate and birth rate, 'third lowest' in terms of maternal mortality rate and 'tenth lowest' in terms of death rate. Small pox, polio and guinea worm have been eradicated.

Box No. 12.1 Health Sector Vision 2023

It envisages Tamil Nadu to become number one State in India in terms of social indicators and also raise the standard of health delivery to international standard by ensuring universal access to health facility. Some of the key initiatives of the Vision 2023 are:

- Increase the capacity of primary and secondary healthcare network by improving the infrastructure of hospitals such as bed strength, laboratory, radiology facilities and diet provision and ensuring that a referral centre is available within a maximum distance of five kilometers from every sub-centre.
- 15 new medical colleges attached to district hospitals will be established.
- 17 medical colleges attached to hospitals will be upgraded to international standard.
- Creation of two med. Cities in South and Western Tamil Nadu to serve the medical tourism industry by investment in hospital and education facilities, logistics and hospitality services.
- Trauma, ambulatory, disaster management care and diagnostic services to be improved and neutralized.
- Electronic medical records management and hospital management system will be implemented in all districts and Taluk hospitals.
- Ensuring 100 percent availability of drugs at all locations.
- The Vision document envisages an investment of Rs.11,000 Crores

Category	Rs. Crore
New Medical facilities	7900.00
Upgrading Medical Facilities	1500.00
Other Projects	1600.00
Total Investment	11000.00

Source: Vision 2023, Government of Tamil Nadu

The Twelfth Plan (2012-2017) has focused its attention on reducing infant mortality rate to 13 per thousand live births and maternal mortality rate to 44 per lakh live births, universal access to public health services, prevention and control of communicable and non-communicable diseases, maintaining gender and demographic balance, revitalize Indian Systems of Medicine and promoting a healthy lifestyle. The total funds earmarked for health sector during the plan period is Rs.10,832 crore which accounted for 5.1 percent of the total Twelfth Plan outlay of the State.

12.1 Quality Dimension of Healthcare Delivery:

The healthcare system consists of a mix of public and private sectors. The provision of healthcare facilities is related to preventive, curative and promotive services. Networks of healthcare facilities at the primary, secondary and tertiary level are run mainly by the State Government. Tamil Nadu is totally committed to address the major concerns and to bridge the gap in the existing health infrastructure and to provide accessible, affordable and equitable healthcare of the highest order to the public. Considerable achievements have been made with regard to the core health indicators.

The health of the population has been assessed by taking into account different indicators like Infant Mortality Rate (IMR), Death Rate, Birth Rate, Total Fertility Rate (TFR), Maternal Mortality Rate (MMR) and Life Expectancy at Birth (LEB). According to these indicators there was a dramatic improvement in the health situation of the public in the State. The State had experienced a diminishing trend with respect to Infant Mortality Rate (IMR), Birth Rate, Total Fertility Rate (TFR), Maternal Mortality Rate (MMR) and an upward trend in Life Expectancy at Birth. The good accomplishments are the result of many factors including greater health consciousness amongst the public, improvement in the female literacy rate and female empowerment, growing industrialization, faster urbanization, rising nutritional

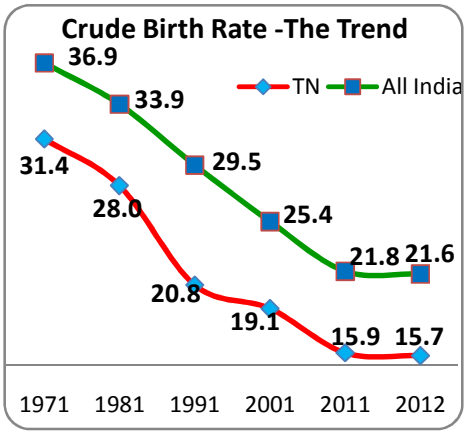
Table No.12.1 Health Indicators in Major States – The Trend

Category	CBR		CDR		IMR		TFR		MMR		LEB	
	2002	2012	2002	2012	2002	2012	2002	2011	2004-06	2010-12	2001-05	2006-10
Andhra Pradesh	20.7	17.5	8.1	8.6	62	41	2.2	1.8	154	110	64.0	65.8
Assam	26.6	22.5	9.2	7.9	70	55	3.0	2.4	480	328	58.7	61.9
Bihar	30.9	27.7	7.9	6.6	61	43	4.3	3.6	312	219	61.1	65.8
Gujarat	24.7	21.1	7.7	6.6	60	38	2.8	2.4	160	122	63.9	66.8
Haryana	26.6	21.6	7.1	6.4	62	42	3.1	2.3	186	146	65.8	67.0
Karnataka	22.1	18.5	7.2	7.2	55	32	2.4	1.9	213	144	65.2	67.2
Kerala	16.9	14.9	6.4	6.9	10	12	1.8	1.8	95	66	73.8	74.2
Madhya Pradesh	30.4	26.6	9.8	8.1	85	56	3.8	3.1	335	230	57.7	62.4
Maharashtra	20.3	16.6	7.3	6.3	45	25	2.3	1.8	130	87	67.0	69.9
Odisha	23.2	19.9	9.8	8.5	87	53	2.6	2.2	303	235	59.2	63.0
Punjab	20.8	15.9	7.1	6.8	51	28	2.3	1.8	192	155	69.1	69.3
Rajasthan	30.6	25.9	7.7	6.6	78	49	3.9	3.0	388	255	61.7	66.5
Tamil Nadu	18.5	15.7	7.7	7.4	44	21	2.1	1.7	111	90	66.0	68.9
Uttar Pradesh	31.6	27.4	9.7	7.7	80	53	4.4	3.4	440	292	59.7	62.7
West Bengal	20.5	16.1	6.7	6.3	49	32	2.3	1.7	141	117	64.7	69.0
All India	25.0	21.6	8.1	7.0	63	42	3.0	2.4	254	178	63.1	66.1

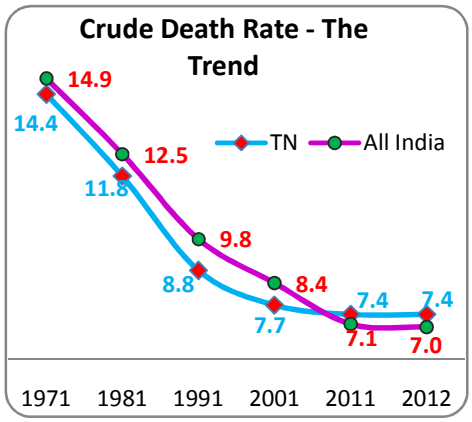
Note: CBR – Crude Birth Rate, CDR – Crude Death Rate, IMR –Infant Mortality Rate, TFR – Total Fertility Rate, MMR – Maternal Mortality Rate and LEB – Life Expectancy at Birth.
Source: Sample Registration Scheme (SRS), Registrar General, New Delhi.

status, early detection, treatment and control of outbreak of epidemics, easy accessibility to an efficacious healthcare delivery system, infectious disease prevention control, application

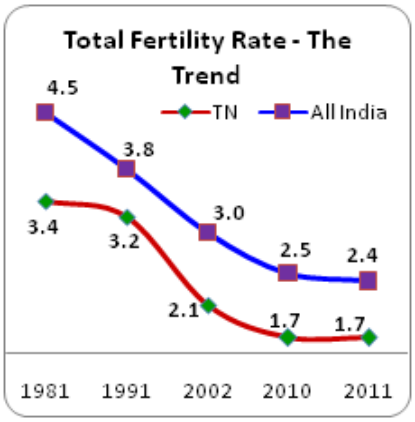
of modern medical practices in diagnosis and treatment of various ailments and effective administration of universal immunization. The State-wise comparison of health indicators has help to bring to light the following findings:



Crude Birth Rate (CBR) indicates the number of live births occurring during the year per thousand population. There was a steady decline in the crude birth rate of Tamil Nadu. It was from 18.5 in 2002 to 15.7 in 2012. Besides successful implementation of the family planning programme in the State by the successive Governments, wide propagation of higher age at marriage, a much wider reach of mass media facilitating speeder diffusion of small family norm, increasing literacy rate, improving status of women, better road connections between rural and urban areas, higher participation of females in non-farm activities, declining fertility rate, rising aspirations of the people in the contest of improving living standards are the reasons behind this decline. The crude birth rate in the State at 15.7 in 2012 was lower than all-India (21.6). Among the major States and as well as Southern States, Tamil Nadu (15.7) stood second next only to Kerala (14.9). At the end of the 12th Plan (2012-17), the State targets a crude birth rate of 14.0.



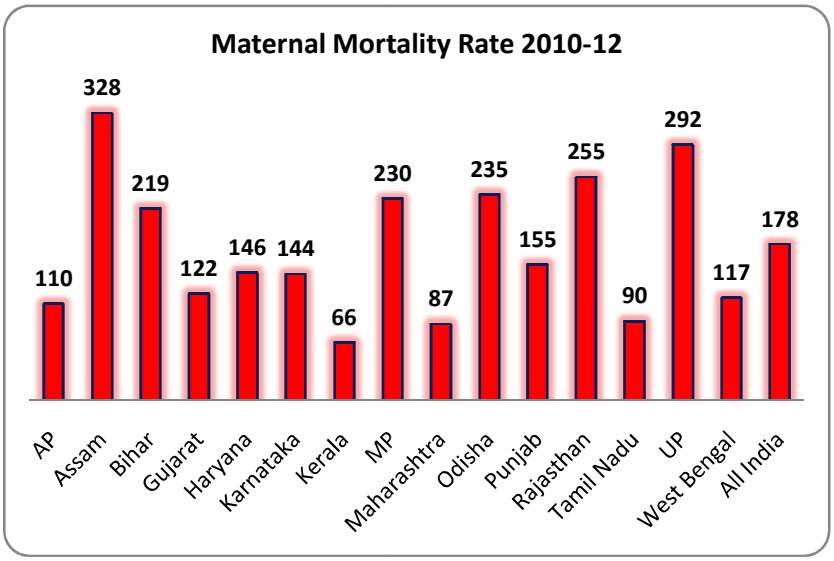
Crude Death Rate **(CDR)** indicates the total number of deaths per year per thousand population. Over the years it had steadily declined in the state. This was the result of greater health consciousness amongst the public, increasing education levels, rising nutritional status, improving standard of living, early detection, treatment and control of outbreak epidemics, easy accessibility to an efficacious health care delivery systems, infectious disease prevention control, application of modern medical practices in diagnoses and treatment various ailments and effective administration of universal immunisation, better connectivity of roads and easy transportation between rural and urban areas. Between 2002 and 2012 the crude death rate in the State had declined from 7.7 to 7.4. The crude death rate in the State at 7.4 in 2012 was slightly higher than that of all-India (7.0). This was mainly due to more deaths because of accidents and sucides occurred in the State. The State has contemplated to bring down the crude death rate by the end of the 12th Plan (2012-17).

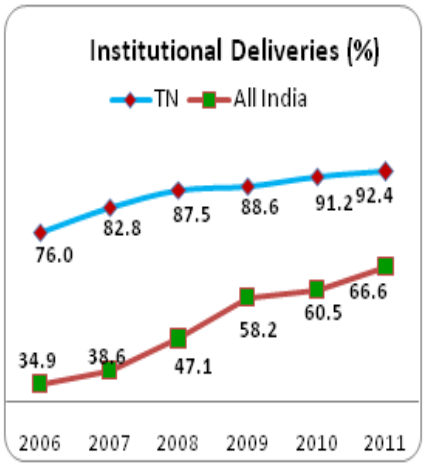


Total Fertility Rate (TFR) measures the number of children born to women during her entire re-productive period. There was a fall in the total fertility rate in Tamil Nadu from 2.1 in 2002 to 1.7 in 2011. This has been due to a combination of factors including propagation of higher age at marriage, wider diffusion of small family norm, improved levels of female literacy, increasing opportunity for women to engage in non-farm occupations, rising aspiration of people, postponement of child barring, improvement in women empowerment and autonomy etc., Among the states, the total fertility rate varied between 3.6 (Bihar) and

1.7(TN & West Bengal) in 2011. The fertility rate in the state at 1.7 was lower than all India (2.4). Tamil Nadu with the total fertility rate 1.7 in 2011 shared first place with West Bengal among major States. During the Twelfth Plan (2012-2017) period Tamil Nadu envisaged to bring down the fertility rate to 1.6.

Maternal Mortality Rate (MMR) which measures the number of women of re-productive age (15-49 years) dying due to maternal causes per one lakh live births. Besides the improvement in the awareness among women, higher female literacy rate, increasing institutional deliveries, marked accessibility of modern medical technology, functioning of 108 ambulance services, provisioning of hospitals on wheels in 385 blocks for Re-productive and Child Health (RCH) outreached services, establishment of 24x7 delivery services in all PHCs, establishment of Basic Emergency Obstetric and Newborn Care (BEmONC) and Comprehensive Emergency and Obstetric Neonatal Care (CEmONC) centres, strengthening referral linkages in PHCs, functioning of PHC operation theatres, tracking and transfer of mothers with high risk to higher facilities, admission of mother with known high risk factors well in advance in centres (CEmONC), implementation of Dr. Muthulakshmi Reddy Maternity Benefit Scheme etc., had helped to bring down MMR in the State. The MMR in the State had come down from 111 in 2004-06 to 90 in 2010-12. The MMR during the period 2010-12 at 90 in Tamil Nadu was significantly lower than the all India (178). Among the major States it was the highest in Assam (328) and lowest in Kerala (66). Tamil Nadu ranked third next only to Kerala (66) and Maharashtra (87). However, the major causes of maternal mortality continue to be unsafe abortions, ante and post-partum hemorrhage, anemia, obstructed labour, hypertensive disorders and post-partum sepsis. It is proposed to bring down the ratio to 44 in Tamil Nadu during the 12th Plan period (2012-17).





The healthcare sector has witnessed a significant shift from non-institutional to institutional deliveries over the years. Institutional delivery refers to the child birth at a technology-equipped medical facility under the supervision of skilled medical staff. In an institutional delivery, various modern medical tools and technologies are used to ascertain that the health of neonate or mother is safeguarded. Better road connectivity between rural and urban, easy transportation, change in attitude of the public, better access to health facilities and implementation of Dr. Muthulakshmi Reddy Maternity Benefit Scheme had all helped to improve the percentage of mothers who

received medical attention at delivery either at Government / private hospitals in the State. As a result, there was a steady increase in institutional deliveries in the State. The proportion of institutional deliveries in the State had increased from 76 percent in 2006 to 92.4 in 2011. At this level, the State is well above the all India (66.6%). Among the major States and as well as southern States, Tamil Nadu occupied the second position, next only to Kerala (99.7%).

Table No.12.2 Institutional Delivery among Major States (%)

States	2006	2011
Andhra Pradesh	56.2	90.7
Assam	25.1	61.8
Bihar	22.4	48.4
Gujarat	53.2	84.4
Haryana	33.7	69.9
Karnataka	60.4	88.4
Kerala	99.2	99.7
Madhya Pradesh	22.8	66.6
Maharashtra	58.1	59.7
Odisha	26.6	62.6
Punjab	42.7	73.4
Rajasthan	24.1	76.6
Tamil Nadu	76.0	92.4
Uttar Pradesh	15.0	48.4
West Bengal	44.8	70.5
All India	34.9	66.6

Source: Union Planning Commission, Government of India.

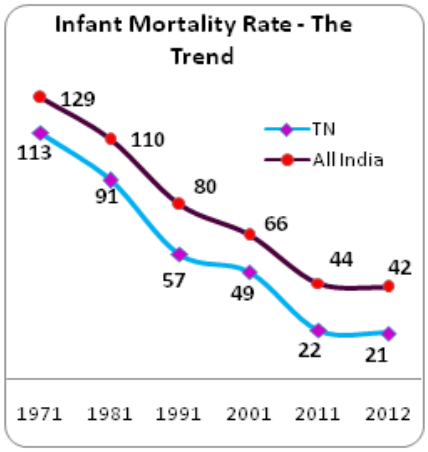
Among the rural and urban areas in Tamil Nadu, the institutional deliveries in the urban areas were significantly higher than in rural areas. In rural areas it had gradually picked up from 59.4 percent in 2006 to 87.5 percent in 2011. In urban areas it hovered around 99.0 percent. Households in rural areas still opt for home delivery because it involves less cost than at private/public health centres without adequately recognizing the risk.

Table No.12.3 Institutional Deliveries in Tamil Nadu (%)

Year	Rural	Urban
2006	59.4	99.0
2007	70.9	99.4
2008	78.7	99.3
2009	80.8	99.6
2010	85.8	98.5
2011	87.5	99.1

Source: Union Planning Commission, Government of India.

Infant Mortality Rate (IMR) which indicates the death of children before the age of one year per thousand live births is a reliable indicator of health and nutritional status of the population. The concerted efforts of the State through setting up of Comprehensive Emergency and Obstetric and Neonatal Care Centres, ensuring 24x7 delivery services in all PHCs by posting five medical officers and three staff nurses with the provision of necessary equipments, introducing special vehicles for transport of new borns, control of birth asphyxia and death due to hypothermia and implementing strategies for reduction and management of neonatal sepsis, inculcating the pregnant mothers on exclusive breast feeding, complementary foods, child care practices, danger signs in sick newborns and immunization of preventable diseases,rising female literacy rate and increasing institutional deliveries had paid rich dividends in bringing down the infant mortality rate considerably in the State. The IMR in the State declined from 44 in 2002 to 21 in 2012. The decline in IMR between these two years was more perceptible in Tamil Nadu (23) as compared to all-India (21). The IMR in the State was significantly was lower than at all-India (42) in 2012. Among the major States and as well as Southern States, Tamil Nadu ranked second next only to Kerala (12). During the 12th Plan it is programmed to bring down the IMR in Tamil Nadu to 13 which would require faster reduction in years to come.

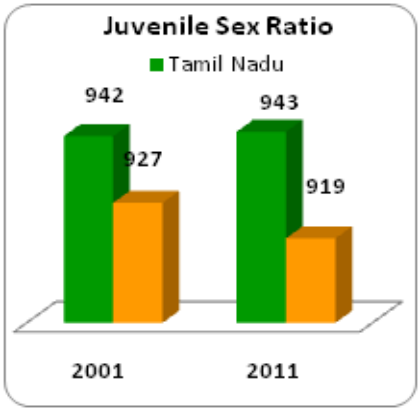


The juvenile sex ratio (child sex ratio) indicates the number of female children in the 0-6 age group per thousand male children. Between the 2001 and 2011 Censuses, the ratio in Tamil Nadu did not undergo any significant change. It slightly improved from 942 to 943. However, it indicates there is a striking deficit of girls. In urban areas, it actually declined between these two Censuses, whereas the ratio improved in rural areas. The strong preference of having a son, acceptance of small family norm, prevailing socio-economic and cultural milieu were the major factors behind this poor ratio. The poor sex ratio in the age group has cascading and cumulative effect on population over a period of time leading to a diminishing sex ratio. With regard to the juvenile ratio, Tamil Nadu was placed well ahead of the all India level in both the 2001 and 2011 Censuses. The ratio at the all India witnessed a fall between these two Censuses.

Table No.12.4 Juvenile Sex Ratio

Category	Rural		Urban		Overall	
	2001	2011	2001	2011	2001	2011
Tamil Nadu	933	936	955	952	942	943
All India	934	923	906	905	927	919

Source: Director of Census operation, Tamil Nadu.



As per the 2011 Census, the juvenile sex ratio in as many as 12 districts viz., Thiruvannamalai (930), Villuppuram (941), Salem (916), Namakkal (914), Karur (939), Perambalur (913), Ariyalur (891), Cuddalore (896), Madurai (932), Theni (924), Dharmapuri (913) and Krishnagiri (926) was lower than the State average (943).

Life Expectancy at Birth indicates the average number of years that a newborn is expected to live if current mortality rates continue to apply. With the improvements in the prevention and control of major childhood infectious diseases, nutritional status, housing condition and modern medical care resulted in an increase in life expectancy in the State. There was a improvement in the life expectancy at birth in Tamil Nadu from 66.0 years (2001-05) to 68.9 years (2006-10). At the all India level, life expectancy rose from 63.1 to 66.1 years. Tamil Nadu with the life expectancy at birth at 68.9 years occupied the second place among the southern States next only to Kerala (74..2) and well ahead of all India (66.1) during the period 2006-10.

12.2 Health Care Institutions in Tamil Nadu:

Health services are an important indicator to understand the healthcare delivery provisions and mechanisms in the State and are subdivided into three categories viz. primary, secondary and tertiary health care systems. The Primary Healthcare System consists of Primary Health Centres (PHCs) and Health Sub-Centres (HSCs). Secondary healthcare system comprises of District Head Quarters Hospitals, Taluk Hospitals, Women and Children Hospitals, Dispensaries, Mobile Medical Units, Police Hospitals and Non-Taluk Hospitals etc., Tertiary healthcare system covers multi-specialty hospitals. In addition to Government efforts, the private sector is also contributing to the provision of Health Care Services. In the absence of data relating to private sector health services, an attempt has been made to assess only the efficacy of Government healthcare system. The functioning of the Government run healthcare systems is set out below:

12.2.1 Primary Healthcare Services:

Primary Health Centres (PHCs) and Health Sub-centres (HSCs) are rendering the preventive, curative and rehabilitative health care services to the rural people. The rural health care infrastructure has been strengthened and fine-tuned under the National Rural Health Mission in order to realize the objective of Health for All. The number of PHCs functioning in the State was on the increase over the last four years. It had gone up from 1539 in 2010-11 to 1751 in 2013-14. All PHCs are functioning on 24x7 basis. The network of 1751 PHCs and 8706 Health Sub-centres has been rendering universal health care delivery to rural population on a mission mode and with a holistic approach. The State has excelled in meeting the norms as envisaged.

i. One Health Sub-Centre (HSC) for a population of 5,000 in plains and 3,000 in hilly and tribal areas.

ii. One Primary Health Centre (PHC) for 30,000 population in plains and 20,000 in hilly and tribal areas and one Community Health Centre (CHC) for a population of one lakh.

Box No.12.2 National Rural Health Mission (NRHM)

The focus of the mission is on establishing a fully functional, community owned, decentralized health delivery system with inter-sectoral convergence at all levels to ensure simultaneous action on a wide range of determinants of health like water, sanitation, education, nutrition, social and gender equity. It aims to improve the health status of the people especially those who live in villages by providing rural healthcare services effectively and efficiently. Basic thrust of NRHM is:

- Provision of accessible affordable, accountable, effective and reliable primary health care facilities, especially to the poor and vulnerable sections of the population,
- Bridging the gap in rural health care services through creation of a cadre of Accredited Social Health Activities (ASHA),
- Improved hospital care,
- Decentralized planning,
- Ensuring population stabilization,
- Inter-sectoral, convergence and maintaining gender balance.

Source : Policy Note 2013-14, Health and Family Welfare Department, Government of Tamil Nadu.

Table No.12.5 Functioning of PHCs (in lakhs)

Category	2010-11	2011-12	2012-13	2013-14
No. of PHCs functioning	1539	1592	1614	1751
Total Patients Treated	822.76	844.23	899.50	934.69
Outpatients	811.48	832.55	885.26	919.36
Inpatients	11.28	11.68	14.24	15.33
No. of Deliveries conducted	2.08	1.94	1.64	1.58
Normal	2.03	1.86	1.55	1.47
Caesarean	0.05	0.08	0.09	0.11
No. of referral Cases	0.36	0.43	0.43	0.43

Source: Department of Public Health and Preventive Medicine, Chennai-6.

It is the policy of the Government to provide at least one 30 bedded upgraded Primary Health Centre in each block in a phased manner. Each upgraded Primary Health Centre has an operation theater, modern diagnostic equipment and an ambulance vehicle. Five doctors are posted to the upgraded PHCs. A complement of 4864 Doctors, 18,705 Nurses and 18,749 other staff are delivering health care services at the primary village level. At present 341 upgraded Primary Health Centres are functioning in 310 blocks. In the upgraded PHCs caesarean deliveries are also conducted. The number of caesarean deliveries conducted in PHCs went up from 0.05 lakh in 2010-11 to 0.11 lakh in 2013-14. With upgradation, the number of outpatients and

inpatients has been increasing. The average number of outpatients treated per day in the PHCs improved from 2.22 lakh in 2010-11 to 2.52 lakh in 2013-14. Contrary to this trend, the number of normal deliveries was on the decline. The average number of deliveries conducted per PHC in a year had fallen from 135 (2010-11) to 91 (2013-14).

In the current primary health scenario, the number of population per doctor had come down. As against the doctor **:** population ratio of 1:11619 in 2012-13, the ratio in 2013-14 stood favorable at 1:10596. However, it is still well short of the norm stipulated by the World Health Organization (WHO) of 1:1000. Shortage of doctors is one of the major problems in the primary healthcare system. However, this may not reflect the real situation since the doctors in private sector those rendering rural health services are excluded. The population per bed had steadily gone up. In 2013-14, the bed**:** population ratio worked out to 1:3970 which is far below the norms of 5 beds per thousand population as prescribed by the WHO.

Table No.12.6 Primary Healthcare System – Key Indicators

Item	2011-12	2012-13	2013-14
Total Bed	12873	12935	12979
Bed **:** Population Ratio	1:3924	1:3945	1:3970
Total Doctors	4386	4392	4864
Doctor **:** Population ratio	1:11518	1:11619	1:10596

Source: Department of Public Health and Preventive Medicine, Chennai-6.

Health Sub-Centres are expected to provide promotive, preventive and few curative primary health care services relating to maternal and child health. In line with the guidelines, health sub centres for a population of 5,000 in plain area and 3,000 in hill area are being established. At present 8,706 health sub centres are functioning in the State which are manned by the Village Health Nurses (VHN).

A well structured network of urban primary health care institutions providing health and family welfare services to the population within one to three km of their dwellings has been established in the State. During 2013-14, totally 134 Urban Primary Health Centres (UPHC) with a total bed strength of 274 were functioning in the State. During the year, besides treating 31.65 lakh outpatients and 0.30 lakh inpatients, 2962 deliveries (2897 – normal and 65 – caesarean) were conducted. On an average 8672 out patients per day were treated by these health centres in the State during 2013-14.

Box No.12.3 National Urban Health Mission (NUHM)

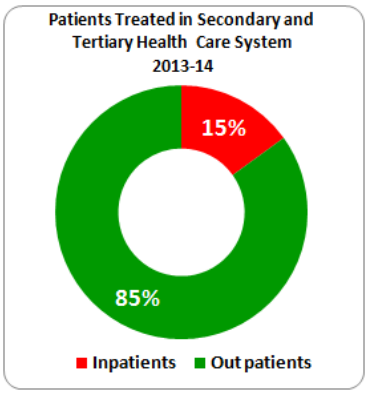
With a focus on slums and urban poor, the NUHMs core strategies include decentralized planning, flexibility to develop city-specific models, strengthen the urban health system, capacity-building, development of partnership with community-based organization, Non-Governmental organization, charitable organization and other stakeholders, development of information and technology and E-governance system for effective monitoring and evaluation implementation of health scheme and intersectional convergence with other schemes such as Jawaharlal Nehru Urban Renewal Mission (JnNURAM), Rajiv Awas Yojana (RAY) etc., under NUHM there are 134 Urban Primary Health Care Centres for small urban towns.

Source: Policy Note,2013-14, Health and Family Welfare, Government of Tamil Nadu.

12.2.2 Secondary and Tertiary Healthcare System:

There are 31 District Head Quarter Hospitals, 154 Taluk Hospitals, 76 Non-Taluk Hospitals, 19 Dispensaries, 10 Mobile Medical Units, 7 Women and Children Hospitals, 2 T.B. Hospitals, 2 T.B. Clinics, 7 Leprosy Hospitals/Centres and 47 Medical Education College

Hospitals, catering to the requirements of both secondary and tertiary healthcare systems in the State. Totally 9184 doctors, 12,848 nurses and 6924 para medical staff are working in these institutions in 2013-14. The total bed strength in these institutions in 2013-14 was 55,084.



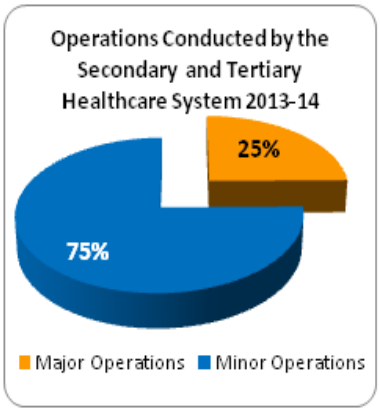
In addition to rendering secondary healthcare services, the District Headquarters Hospitals and Medical Education College Hospitals also follow close behind in offering specialized health care facilities backed by excellent diagnostic tertiary care support anywhere in the State. In such situation, the progress made under tertiary healthcare has been inbuilt with secondary healthcare system.

Table No.12.7 Performance of Secondary and Tertiary Healthcare System (Lakhs)

Category	2011-12	2012-13	2013-14
1. Total Patients Treated	1123.43	1099.94	1124.39
a.Total No. of inpatients	149.64	159.94	168.66
b.Total outpatients	973.79	940.00	955.73
2.Surgeries / operation done	17.67	19.49	20.89
a. Major	4.17	4.47	5.18
b. Minor	13.50	15.02	15.71
3.Number of laboratory tests conducted	416.01	550.07	619.12
4.Number of X rays taken	18.44	15.57	15.66
5.Number of CT/MRI scan taken	4.49	4.56	5.06

Note: In the absence of segregation of data relating to the patients treated by Government Hospitals and Medical Education College Hospitals under Secondary and Tertiary Healthcare the combined one is presented in the table.
Source: 1. Directorate of Medical Education, Chennai-10.
2. Directorate of Medical and Rural Health Services, Chennai-6.

With the aim of providing access to the weaker sections to specialized treatment as in private hospitals, Government speciality hospitals are being established in the State. Salem is the fore runner with more wings to follow, one at Madurai with Government of India assistance and the other at Trichy with State funds at a cost of Rs.100.00 crore. The setting up of a multi-speciality hospital at Omandurar Government Estate, Chennai with facilities on par with that of All India Institute of Medical Science, New Delhi will ensure the exposure to high quality medical care to the general public in the State. It has started functioning from February 2014. On an average 200 to 300 patients were treated daily. Some of the already existing centres of Therapeutic Excellence such as the Institute for Burns, Institute of Hand Re-connectivity Surgery, Department of Medical and Surgical Gastroenteritis in the existing medical education college hospitals will be strengthened to offer quality care to the public as well as to train medical post graduate. A sum of Rs.150.00 crore will be provided during the plan period for setting up of these multi-speciality hospitals to the people.



During the three year period ending 2013-14 on an average, per year 1115.9 lakh patients were treated under secondary and tertiary healthcare system in the State. Of the total patients treated, outpatients accounted for 85 percent share. On an average per day around 2.62 lakh out patients and 0.46 lakh inpatients were treated under these systems in 2013-14. The number of operations carried out was on the increase. Of the total operations

conducted, minor ones claimed a sizable share of 75 percent and the rest being major ones. The number of laboratory tests conducted and CT/MRI scans taken were also on the rise.

12.2.2.1 *The Way Forward:*

- Medical Education Colleges with hospitals may be established in all districts so as to provide specialized healthcare facilities backed by excellent diagnostic tertiary care support.
- To meet some of the recurring costs and to improve the quality of services in tertiary health care institutions, it is suggested for levying user charges and establishing pay clinics/pay cabins.
- Several tertiary care services can be delivered at the level of the district. To provide quality care to all, referral system needs to be strengthened and well coordinated with secondary level institutions, primarily the district hospitals.
- Given the role of the private sector in health, explore the options of involving the private sector in meeting the growing tertiary health care needs. Public-Private Partnerships have emerged as one of the options to direct the growth of private sector towards public goals, which will help to increase efficiency in service delivery, operations and management owing to better capacity utilization, making services equitable, accessible and of good quality, ensuring availability of additional resources (technical, infrastructure and financial) to meet the growing needs in the sector and access to advance but fast changing technology.
- Information and Communication Technology (ICT) may be tapped fully for the utilization of existing facilities for wider use of telemedicine in enhancing the quality and reach of tertiary health care.

12.2.3 Women and Child Heath:

Many of the problems seen in young children and neonates are different in nature and approach and treatment. They were quite different from that of adults. In order to cater to the health needs of children and women more specifically, there are 7 Women and Children hospitals functioning in the State. Totally 119 doctors were employed in these hospitals to take care of various pediatric related issues. The total number of beds in these hospitals was 537. Of the total patients treated 7.93 lakh during 2012-13, 76 percent were out patients. On an average daily 1,641 outpatients and 532 inpatients were treated in these hospitals. Eventhough concerted efforts have been taken, child health is confronted with the problems emerging from pre-mature birth, low birth weight, birth asphyxia and infections.

Table No.12.8 Functioning of Women and Children Hospitals

Item	2011-12	2012-13	2013-14 (upto July 2014)
1.No. of Doctors	115	111	119
2.No. of Beds	537	537	537
3.Total Patients (Lakhs)	8.33	7.93	2.54
a. In patients	1.94	1.94	0.62
b. Out patients	6.39	5.99	1.91
4.Surgeries Conducted (Lakhs)	0.18	0.17	0.05

Source: Department of Public Health and Preventive Medicine, Chennai-6.

12.2.4 Immunization:

Immunization is one of the most cost-effective public health interventions and largely responsible for reduction of under 5 mortality rate. However, vaccine preventable diseases are still responsible for deaths. The vaccination of children against six serious but preventable diseases has been the cornerstone of the child health care system. Health Immunization Programme is being implemented on a priority basis. Tamil Nadu started immunization programmes against preventable diseases like Diphtheria, Pertusis, Tetanus,

Measles, Poliomyelitis and Tuberculosis since 1985. Effective implementation of this measure has drastically reduced the outbreak of these diseases in the State. Under Universal Immunization Programme, it has been proposed to cover all infants and pregnant women in the State. As against the target, the achievement of administering vaccines fell short in all the years. In 2013-14, the short fall in administering vaccine varied between 2.09 percent (DPT and Polio) and 22.70 percent (Japanese Encephalitis). Lack of awareness regarding vaccination, inadequate delivery points, geographical diversity and some hard to reach populations are some of the reasons for the shortfall. To make the immunization cent percent successful, focus should be on increasing demand for vaccination by using effective IEC and bringing immunization closer to the communities. Complete immunization should be made mandatory to get admission in schools by appropriate legislation. In immunization, the State had achieved two distinctions - polio free status since 2004 and elimination of neonatal tetanus since 2006.

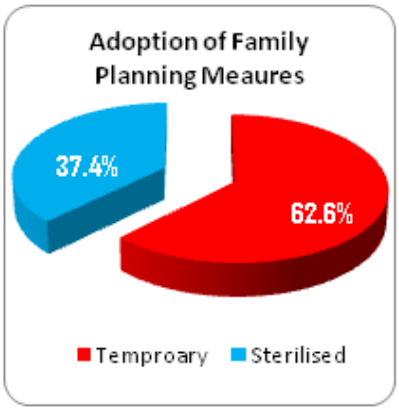
Table No.12.9 Immunization Performance in Tamil Nadu (lakhs)

Vaccine	2010-11		2011-12		2012-13		2013-14	
	Target	Achieve-ment	Target	Achieve-ment	Target	Achieve-ment	Target	Achieve-ment
TTM	12.06	11.88	11.97	11.72	11.88	11.36	11.46	11.10
DPT	10.97	10.82	10.83	10.65	10.83	10.46	10.48	10.26
POLIO	10.97	10.81	10.83	10.65	10.83	10.49	10.48	10.26
BCG	10.97	10.68	10.83	10.56	10.83	10.42	10.48	10.19
MEASLES	10.97	10.71	10.83	10.62	10.83	10.54	10.48	10.30
Japanese Encephalitis	3.42	1.36	3.30	2.81	3.35	3.12	3.26	2.52

Source: Department of Public Health and Preventive Medicine, Chennai-6.

Despite vaccination, some measles cases (1021 in all) were reported in 2013-14 as against 623 in 2012-13 and there was no incidence of mortality. It is one of the most contagious diseases and many children who do not have sufficient immunity contract measles if exposed. Providing at least one dose of measles vaccine at routine vaccination coverage administered at nine months of age and shortly thereafter giving all children a second opportunity for measles vaccination and establishing effective surveillance are the ways to completely eradicate measles. Only one casualty was reported due to Tetanus (Neo) during the year 2013-14. With regard to other vaccine preventable diseases no cases was reported.

12.2.5 Family Welfare:



The main objective of the State is to stabilize the population growth as well as to improve maternal and child health status, thereby reducing the vital indicators such as the Infant Mortality Rate (IMR) and Maternal Mortality Ratio (MMR). Tamil Nadu is playing a role model for the other States in the implementation of the Family Welfare Programmes. As the State has made commendable progress in reducing Birth Rate, focus has been shifted from a “Target Based Approach” to a “Community Based Approach” where importance is given to meet the unmet needs for family planning services and improving maternal and child health. The major factor behind the success of the programme in the State is strong social and political commitment coupled with a systematic administrative backup. The programme

is implemented through 1751 PHCs and 8706 Health Sub Centres in rural areas, 110 Post Partum Centres functioning in Government Hospitals, 193 Urban Health Posts and 108 Urban Family Welfare Centres in urban areas in 2013-14. 1930 approved private nursing homes also play an important role in Family Welfare Programmes.

Table No.12.10 Status of Family Welfare Measures (Lakhs)

Programme	2011-12		2012-13		2013-14 (upto July 2013)	
	Target	Achieve-ment	Target	Achieve-ment	Target	Achieve-ment
Sterilization	3.65	3.40	3.65	3.17	3.65	1.12
Intra Uterine Device Insertion	3.90	3.40	3.90	3.34	3.90	1.16
Oral Pill users	1.50	0.81	1.50	0.30	1.50	0.13
Community Clinic users	1.80	1.39	1.80	1.08	1.80	0.88
Medical Termination of Pregnancy	--	0.59	--	0.59	--	0.20

Source: Directorate of Family Welfare, Chennai-

There was a fall in the number of persons who adopted various family welfare measures in the State from 9.5 lakh in 2011-12 to 8.48 lakh in 2012-13. In both the years, the achievement fell short of the respective targets. Among the various family planning methods adopted, the use of temporary measures accounted for a larger share of 62.6 percent and the remaining being sterilized (37.4%). Between 2011-12 and 2012-13, there was a decline in the number of persons adopting various family planning methods. The short fall varied between 1.76 percent (Intra Uterine Device) and 62.96 percent (Oral Pills).

12.2.6 Mental Health:

Institute of Mental Health, Chennai is the second largest Institute in India offering mental health services to the affected population of Tamil Nadu and Pondicherry. Besides, giving treatment to mentally ill patients, the hospital also provides rehabilitation to the cured persons. The existing N.R. Thiagarajar Hospital at Theni is also being converted as a mental hospital to take care of mentally ill patients of the southern districts of Tamil Nadu. Apart from these, psychiatry units are being run in all the District headquarters hospitals in the State. There are a number of private mental health nursing homes / hospitals functioning in the State. At the instance of State Government under the pilot project Markkam & Maruthuvam two consultation rooms are provided in the premises of Erwadi Dargah for the Psychiatric teams at Ramanathapuram in 2013-14. The mentally ill patients who are coming for religious treatment have been referred to these Psychiatric teams. Besides one mobile health team has conducted treatment camp on every alternate day at Erwadi Dargah to mentally ill patients. The patients those who avail this service, can be permitted to take follow up services in nearby health centre or any place which is accessible to them. The drugs to the patients are supplied by the District Health Mental Programme team. Besides the team have also sensitized important community leaders – teachers, religious leaders, SHGs and care givers on mental health so as to enhance their community participation and the sustainability to make the project becomes success.

Absence of database relating to patients treated in private hospitals is one of the lacuna. It needs to be built up for the promotion of mental health. Eventhough, the implementation of District Mental Health Programme envisaged creating awareness about the mental health, facilitating early detections and treatment, reducing the stigma attached towards mental illness still the mental health has remained elusive. On an average per day 377 out patients were treated.

Table No.12.11 Functioning of Mental Health

Item	2011-12	2012-13	2013-14 (upto July 2013)
1.No. of Doctors	30	30	30
2.No. of Beds	1800	1800	1800
3.Total Patients (Lakhs)	1.402	1.383	0.561
a.Inpatients	0.002	0.003	0.001
b.Out patients	1.40	1.38	0.56

Source: Directorate of Mental Health, Chennai-10

12.2.7 Disease Burden:

Disease burden is the impact of a health problem as measured by mortality and morbidity. High cost of medicines and longer duration of treatment leads to financial burden to low income groups. An attempt has been made to assess the disease burden of various diseases in the State during 2012-13. Among the various diseases the number of cases reported in the State was the highest in respect of Acute Respiratory Infections (27.37 lakh), followed by diarrheal diseases (2.0 lakh), Pneumonia (0.59 lakh), Typhoid (0.34 lakh), Malaria (0.15 lakh), Dengue (0.12 lakh) and Viral hepatitis (0.11 lakh) during 2012-13. This was the case in all India also. A higher proportion of 33 percent of cases reported under cholera, 31.8 percent of Chickungunya Fever and 26.1 percent of Dengue at the all India was from Tamil Nadu. There were no cases of death reported under Malaria, Chikungunya, Cholera, Typhoid, Measles and Viral Hepatitis in the State. In all India, only under Chikungunya no death was reported. In Tamil Nadu death as a percentage to cases reported was highest in Japanese Encephalitis (6.8%) and followed by Swine flu (5.3%). In the case of all India also the same trend had existed. Tamil Nadu accounted for 27.3 percent of total deaths cases reported due to Dengue, 9.9 percent of Swine flu and 5.4 percent of Japanese Encephalitis at all India level.

Table No.12.12 Cases and Death Reported by Diseases 2012-13 (Nos)

Diseases	Tamil Nadu		All India	
	Cases	Deaths	Cases	Deaths
Malaria	15486	0	953710	446
Chikungunya Fever	5018	0	15783	0
Japanese Encephalitis	935	64	7948	1190
Dengue	12264	66	47029	242
Cholera	523	0	1583	1
Diarrheal Diseases	199930	17	11701755	1647
Typhoid	34611	0	1477699	428
Acute Respiratory Infection	2737294	21	31684628	4155
Measles	623	0	22589	40
Viral hepatitis	10628	0	118880	551
Pneumonia	59187	54	779794	3750
Swine Flu	750	40	5044	405

Source: Directorate of National Vector Borne Disease Control Programme, Ministry of Health and Family Welfare, government of India, New Delhi.

12.2.7.1 The Way Forward:

- Health promotion and prevention need to be given more attention to reduce the incidence of Non-Communicable Diseases (NCDs) and their risk factors.
- Integration of cross cutting components like health promotion, prevention, screening of population, training, referral services, emergency medical services, public

awareness programme management, monitoring & evaluation etc. would save on costs and make implementation more effective.

- Early Diagnosis through periodic/opportunistic screening of population and better diagnostic facilities is found to be more effective.

12.2.8 Disability:

Disability covers impairments, activity limitations, and participation restrictions. Impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations. Disability is thus not just a health problem. It is a complex phenomenon. Overcoming the difficulties faced by people with disabilities requires interventions to remove environmental and social barriers. People with disabilities have the same health needs as non-disabled people – for immunization, cancer screening etc. They also may experience a narrower margin of health, both because of poverty and social exclusion. Evidence suggests that people with disabilities face barriers in accessing the health and rehabilitation services they need in many settings. As per 2011 Census, in Tamil Nadu there were 16.42 lakh disabled persons. The State accounted for nearly 7.5 percent of the total disabled persons at all India. The proportion of disabled to total population in the State worked out to 2.3 percent. Among the southern States the ratio ranged between 1.5 percent (Karnataka) and 2.6 percent (Kerala). People with visual disability (58.7%) and locomotor disabilities (21.5%) together accounted for 80.2 percent of the total disabled persons in Tamil Nadu. At the all India level these two together claimed a share of 76.4 percent. The proportion of people with disabilities to population revealed that 1.3 percent was with visual disability in Tamil Nadu and it was higher than the all India (0.9 %). Among the southern States, the proportion of visual disability to total population varied between 0.7 (Andhra Pradesh and Karnataka) percent and 1.3 percent (Tamil Nadu). The proportion of speech disability was the lowest in Karnataka (0.1%). The proportion of hearing disability was the highest in Kerala (0.2%). The proportion of locomotor disability and mental disability was higher in Kerala.

Table No.12.13 Disability at a Glance 2012-13

Diseases	Tamil Nadu		All India	
	Disabled Persons	% to Total Population	Disabled Persons	% to Total Population
Visual disability	964063	58.7	10634881	48.5
Speech disability	124479	7.6	1640868	7.5
Hearing disability	72636	4.4	1261722	5.8
Locomotors Disability	353798	21.5	6105477	27.9
Mental Disability	127521	7.8	2263821	10.3
Total	1642497	100.0	21906769	100.0

Source: Directorate of National Vector Borne Disease Control Programme, Ministry of Health and Family Welfare, government of India, New Delhi.

Table No. 12.14 Proportion of Disabled to Total Population (%) 2012-13

Disability	Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	All India
Visual disability	0.7	0.7	1.0	1.3	0.9
Speech disability	0.2	0.1	0.2	0.2	0.1
Hearing disability	0.1	0.1	0.2	0.1	0.1
Locomotors Disability	0.5	0.4	0.7	0.5	0.5
Mental Disability	0.2	0.2	0.4	0.2	0.2
Total	1.6	1.5	2.6	2.3	1.8

Source: Directorate of National Vector Borne Disease Control Programme, Ministry of Health and Family Welfare, government of India, New Delhi.

12.2.9 Challenges and Outlook:

The public health sector suffered with the following limitations:

- The unfinished agenda of maternal and child mortality, HIV/AIDS pandemic and other communicable diseases still exerts immense strain on the overstretched health systems.
- Health systems are grappling with the effects of re-emerging diseases (drug-resistant TB, malaria, SARS, avian flu and the current H1N1 pandemic).
- The Integrated Disease Surveillance Project was set up to establish a dedicated highway of information relating to disease occurrence required for prevention and containment at the community level, but the slow pace of implementation is due to poor efforts in involving the critical actors outside the public sector.
- Public health diagnostic laboratories have a good capacity to support the government's diagnostic and research activities on health risks and threats, but are not being utilized efficiently.
- Mechanisms to monitor epidemiological challenges like mental health, occupational health and other environment risks are yet to be put in place.
- Private out-of-pocket expenditure dominates the cost financing health care, the effects are bound to be regressive.
- There is an increasing trend in lifestyle diseases.
- Non-availability of life saving drugs in health institutions.
- Reluctance of doctors to serve in rural areas.
- There is a growing tendency in using antibiotics in treatment of many diseases without understanding the ill-effects of such irrational use. Indiscriminate use of antibiotics will result in reduction in the immune system of the body and ultimate result of diseases becoming not resistance to antibiotics.
- There was a wide spread practice among the public to purchase even the harmful drugs without knowing their ill-effects over the counter of the medical shops without any prescriptions.

12.2.10 The Way Forward:

The following steps are the need of the hour to improve the efficacy of the public health sector:

- Introduction of effective efficient quality control systems is necessary to prevent over use, under use, abuse, misuse of facilities, improve effectiveness, efficiency and bring in accountability in the health system
- The new agenda of the future Public Health strategies may include the epidemiological transition (rising burden of chronic non-communicable diseases), demographic transition (increasing elderly population) and environmental changes.
- Health profiles published by the government should be used to help communities prioritize their health problems and to inform local decision making.
- Development of community-wide education programmes and other health promotion activities need to be strengthened. Much can be done to improve the effectiveness of health promotion by extending it to rural areas as well; observing days like “Diabetes day” and “Heart day” even in villages will help to create awareness at the grass root level.
- There is a dire need to establish training facilities for public health specialists along with identifying the scope for their contribution in the field. In addition, in-service

training for medical officers is essential for imparting management skills and leadership qualities.

- There is a need to increase the number of paramedical workers and training institutes
- All vacant post needs to be filled up in Government healthcare institutions
- Efforts may be taken to ensure the availability all life saving drugs in the Government healthcare institutions
- Public needs to be adequately educated about the ill effects of the irrational use of antibiotics.

12.3 On Going Schemes:

Under **Dr. Muthulakshmi Reddy Maternity Benefit Scheme** financial assistance to the tune of Rs.12,000 is being disbursed to poor pregnant women with the aim to meet expenses on nutritious diet, to compensate for loss of income during the delivery period and to avoid low birth weight of new born babies in three installments to those availing antenatal care, delivering and immunizing the babies born in Government Institutions. The total number of persons benefitted under the scheme during 2013-14 was 6.64 lakh as against 6.70 lakh in 2012-13. The total amount disbursed at Rs.652.16 crore in 2013-14 registered an increase of 3.4 percent over Rs.630.54 crore in 2012-13.

The **Menstrual Hygiene Programme** was launched in the State 2012-13 with inbuilt objective to increase awareness among the rural adolescent girls (10-19 years) on menstrual hygiene. The programme has also covered post natal mothers those delivered in Government institutions, female inpatients in the institute of mental health and women prisoners. Under the scheme, 18 packs of sanitary napkin are provided for each adolescent girl. As against the target of 32.79 lakh, it was distributed to 31.62 lakh in 2012-13.

The **Chief Minister's Comprehensive Health Insurance Scheme** was launched in the State in 2011-12 with the aim to provide Universal Healthcare to All by providing free medical surgical treatment in Government and private hospitals to any family whose annual income is less than Rs.72,000 by meeting all expenses relating to the hospitalization of the beneficiary. The scheme provides a coverage upto Rs.1,00,000 per family per year on floater basis for ailments and procedures. For certain specified ailments and procedures and critical nature the overall limit is increased to Rs.1,50,000. The scheme covers 1016 life saving procedures inclusive of 23 diagnostic procedure and 113 follow up packages which includes cardiology and cardiothoracic surgery, Oncology, Urology, Neurology and neuro surgery, Ophthalmology, Gastroenterology, Plastic surgery, E.N.T, Gynecology and hematology. As of 2013-14 the scheme is implemented through 829 hospitals (Government 142 + private 687). Total number of health card issued in the State was 1.29 crore. Cumulatively upto the end of the year 2013-14 totally 6.47 lakh persons were benefitted. Of which 61 percent received treatment from private hospitals. The total expenditure incurred under the scheme during the three years 2011-12 to 2013-14 was Rs.1617 crore.

Table 12.15 Chief Minister's Comprehensive Health Insurance Scheme

Category	2011-12	2012-13	2013-14
1.Hospitals Involved (Number)			
a.Government	98	139	142
b.Private	699	677	687
Total	797	816	829
2.Health card Issued (crore)	0.54	1.24	1.29
3.Persons Treated (Number)			
a.Government	6158	98795	146071
b.Private	16394	174447	204498
Total	22552	273242	350869
4.Expenditure Incurred (Rs. crore)	195	692	730

Source: Project Director, Tamil Nadu Health Systems Project, Chennai-6.

Millions of emergencies end in a loss of life because the needy cannot afford to ambulance services. In order to remove the barriers of affordability that prevents the poorer sections of the state from accessing ambulance services, Tamil Nadu Health Systems Projects (TNHSP) has launched ambulance services free of cost. The **108 Emergency Ambulance Service** is a 24x7 service, which anyone can avail by dialing the number 108 on their phone during the case of any emergency. It could be a medical emergency, a fire emergency, or a crime being committed. Initially, the person who receives the call at Emergency Response Centre (ERC) takes down the nature of emergency and the location of the caller. Depending on the nature of the call, an ambulance is sent. The ambulance has well trained personnel to provide pre-hospitalization care during transit. Advance Life Saving (ALS) ambulances are fitted with defibrillators and ventilators for handling the emergency cardiac cases. Help reaches the person within 20 minutes. There was an increase in the total number of 108 ambulances functioning in the State from 436 in 2011-12 to 638 in 2013-14. The number of cases attended by these services had also gone up from 5.0 lakh to 7.94 lakh. Of the total cases treated, 74 percent were emergency cases and the remaining were delivery cases. On an average one ambulance in a year took care of 1243 cases in 2013-14. One ambulance on an average per day handled 4 cases. The total expenditure incurred under the scheme had also gone up Rs. 52.28 crore in 2011-12 to 87.29 crore in 2013-14.

Table No. 12.16 Performance of 108 Ambulance Services

Category	2011-12	2012-13	2013-14
1.No. of 108 Services	436	629	638
2.Total Cases Attended (No)	500356	634364	793555
a.Delivery Cases	139068	160160	208149
b.Other Emergency cases	361288	474204	585406
3.Expenditure Incurred (lakhs)	5227.92	7114.05	8728.66

Source: Project Director, Tamil Nadu Health Systems Project, Chennai-6.

The **School Health Programme** mainly emphasizes on providing comprehensive healthcare services to all students studying in Government and Government aided schools. Under this programme care has been taken to identify heart diseases, eye disorders, nutritional disorders, skin diseases and dental problems. The students those indentified with problems and need of higher medical treatment are referred to higher medical institution. The number of schools covered under the programme had gone up from 63,596 in 2010-11 to 68,635 in 2012-13. In 2013-14 it declined to 65,995. The number of students covered under the programme improved from 1.06 crore 2010-11 to 1.12 crore in 2011-12 and it declined to 1.05 crore in 2012-13. In 2013-14 it again moved up to 1.08 crore. The proportion of students treated to total students covered under the programme for health problems had varied between 39 percent in 2011-12 and 46 percent in 2010-11. Of the total students giving treatment the proportion of students referred to higher medical institutions for further treatment has increased gradually from 0.6 percent in 2010-11 to 1.0 percent in 2012-13. and in 2013-14 it was 0.8 percent.

Table No.12.17 School Health Programme (lakhs)

Category	2010-11	2011-12	2012-13	2013-14
Schools Covered	0.64	0.63	0.69	0.66
Students Covered	106.25	111.60	104.58	108.49
Students Treated	48.88	43.55	43.17	42.62
Students referred	0.29	0.43	0.42	0.33

Source: Directorate of Public Health and Preventive Medicine, Chennai-6.

According to the latest survey (2004) conducted by **National Programme for Control of Blindness**, the prevalence of blindness in Tamil Nadu was 7.3 per thousand population against 11.2 per thousand population at all India. Among the southern States in

Andhra Pradesh (13.3 per thousand population) and Karnataka (16.7) the estimated prevalence of blindness was higher than the State. In Kerala it was lower at 5.3. Among the sex, the prevalence in the case of female was higher at 7.9 per thousand populations as against 6.8 of males in the States. The estimates at the all India in respect of males (10.2 per thousand population) and females (12.2) were higher. In the State among the age groups, the prevalence was significantly higher in the age group 50+ years (38.3 per thousand population) as compared to 0-14 years (0.01) and 15-49 years (0.03). Cataract was the major cause for the blindness. The main objective of the National Programme of Control of Blindness is to reduce the prevalence of blindness to 3 per thousand population. The total number of cataract surgeries with Intra Ocular Lens (IOL) conducted under this programmes was gradually on the increase in the State from 4.89 lakh in 2009-10 to 6.18 lakh in 2012-13.

The **National Leprosy Eradication programme** is being implemented in the State with the aim to detect and to provide sustained regular treatment to all leprosy patients. Multi-drug therapy was the key instrument of the programme. The prevalence of leprosy rate per ten thousand population during 2012-13 was 0.39. At this rate it was lower than the all India (0.73) and the two neighbouring southern States viz Andhra Pradesh (0.61) and Karnataka (0.44). Among the southern States the prevalence rate was lower in Kerala (0.24). Among the districts the prevalence rate was the lowest in The Nilgiris (0.12) and the highest in Erode (1.01). As of 2012-13, the deformity rate on account of the leprosy in the State was estimated at 2.32 per million population and it was the highest in Pudukkottai (8.40). In four districts viz., The Nilgiris, Sivagangai, Tuticorin and Thiruvallur no deformity case was reported. In Tamil Nadu of the total persons treated 3923 during 2012-13 as high as 93.4 percent were cured. The proportion at the all India was 92.8 percent.

The **Revised National TB Control Programme (RNTCP)** is being implemented in all districts in the State to detect maximum number of tuberculosis patients and cure them through Direct Observation Treatment Short course (DOTS). There are 144 TB units (1 TB unit for every 5 lakh population), 791 microscopic centres (1 centre for 1 lakh population) and 11000 Direct Observed Treatment Centre (DOTC) functioning in the State. Apart from these one TB cell in all medical colleges, 238 NGOs and 103 private nursing homes are involved in eradication of TB programme. The anti TB drugs are supplied in kind. During 2012, under this programme 6 lakh TB suspects were examined in the State. Among the districts, the number of TB suspects examined varied between 0.05 lakh in Karur and 0.67 lakh in Chennai. Among them 0.80 lakh (13.3%) were registered for treatment. Across the districts, the proportion ranged from 3.8 percent in The Nilgiris to 27.6 percent in Villuppuram. Among the patients who registered and received treatment, 7.5 percent known to be HIV infected ones and among the districts it was the lowest in Kancheepuram (3%) and highest in Theni (16%). The major challenges are: emergence of drug resistance TB and growing presence of HIV+ among TB patients.

Tamil Nadu State **AIDS Control** Society is taking concerted efforts to create awareness and disseminate information, prevent infection and surveillance and monitoring. There are 1471 integrated counseling and testing centres, 43 Anti Retroviral Therapy Centres (ART), 90 link ART centres and 30 community care centres are functioning to enable treatment, care, provide support. Anti Retroviral Therapy (ART) and Opportunistic Infection drugs are issued to patients to increase their longevity. The total number of clients tested for HIV in Tamil Nadu during 2012 was 9.84 lakh. Of which 1.08 percent were detected with sero-positive for HIV. This ratio was lower than all India (2.45%). Among the southern States the ratio ranged between 0.59 per cent (Kerala) and 4.52 per cent (Andhra Pradesh).

The total number of pregnant women tested for HIV was 5.93 lakh. Among them 0.09 percent had sero-positive for HIV and it was lower than all India (0.17%). Among the southern States, the ratio was the highest in Andhra Pradesh (0.3%) and lowest in Kerala (0.05%). The mother and baby pair receiving treatment was 784 during 2012 and Tamil Nadu accounted for a share of 8.6 percent at the all India.

Table No.12.18 AIDS Control 2012

States	Clients Tested for HIV	Clients having sero-positive HIV	Pregnant Women tested for HIV	Pregnant Women having sero-positive HIV	No of Mother Baby pair received treatment
Andhra Pradesh	919755	41588	703928	2120	1979
Karnataka	837806	25549	612916	1388	1385
Kerala	228028	1336	96199	50	63
Tamil Nadu	983799	10600	592821	510	784
All India	7325363	179617	5709691	9451	9108

Source: National AIDS Control Organization, New Delhi.

12.4 Indian System of Medicine:

Indian System of Medicine (ISM) encompasses not only Siddha, Ayurveda, Yoga and Naturopathy but also Unani and Homoeopathy systems. The increasing cost of medicine in Modern System and the incidence of toxicity with associated side effects have once again highlighted the need importance and relevance of traditional system of medicine in the world and have brought them to the centre stage. To ensure the public to drive the benefits of both Indian System of Medicine and modern medicine, the State has followed the co-location of ISM wings in Government hospitals and Primary Health Centres.

Table No. 12.19 Details of patients treated during the year 2012

Name of the System	No of Patients treated during the year 2012		
	Out-patients	In-Patients	Total
Siddha	25255057	224620	25479677
Ayurveda	1615498	33434	1648932
Unani	378548	12989	391537
Homoeopathy	2118980	21621	2140601
Naturopathy & Yoga	572309	--	572309
Total	29940392	292664	30233056

Source: Indian Medicine and Homoeopathy, Chennai-106.

There are 1375 ISM institutions (Siddha 1047, Ayurveda 100, Unani 65 Homoeopathy 107 and Yoga and Naturopathy 56) with an inpatients capacity of 1210 beds. On an average 62 outpatients were treated per day and 18 inpatients were treated per month by a ISM institution. Of the total patients treated, in the State Siddha system accounted for a higher share of 84.3 percent.

12.5 Nutrition:

Nutritional status is one of the indicators of the overall well being of population and human resources development. Malnutrition is the cumulative effect of factors like poverty, inadequate access to food, illiteracy, large size of families, poor environmental sanitation, lack of basic minimal health care, lack of personal hygiene, lack of easy access to adequate safe drinking water and lack of awareness. The manifestations of malnutrition could be seen in the prevalence of specific nutrient-deficiency disorders such as protein-energy malnutrition, anemia night blindness, goitre, susceptibility to a number of infectious diseases, low birth

weight of children, high IMR and MMR, lack of resistance to illnesses among mothers and children, growth retardation (both physical and mental) and stunting among toddlers.

Breast milk helps keep baby healthy by providing the necessary nutrients in the proper proportions, protecting against allergies, infections, diseases like diarrhea or upset stomach, diabetes and cancer and helping to build healthier weights as they grow. Breastfeeding should commence as soon as possible after giving birth and every 1 to 3 hours per 24 hours (8-12 times per 24 hours). Babies should be breastfed exclusively for the first 6 months. According to the National Family Health Survey-III (2005-06) the proportion of children that had breastfed within one hour of child birth in Tamil Nadu was 58.8 percent as against 24.5 percent at all-India. The proportion of children in the age group 0-5 months those exclusively breastfed in Tamil Nadu at 33.3 percent was lower than the average for all-India (46.3%). This implied that bottle-fed babies are more in the age group 0-5 months in Tamil Nadu and they are more vulnerable to be malnourished.

Box No. 12.4 Nutrition 12th Plan Targets and Outlay

- Total Outlay for nutrition – Rs.11285 crore
- Share in total 12th Plan outlay – 5.3 percent

Objectives:

- Eradicating malnutrition among children 0-6 years
- Promoting nutritive value of millets
- Focusing on life style approach for improving nutrition and health status
- Holistic empowerment of adolescent girls
- Strengthening, modernizing and improving service delivery
- Building the capacity of field functionaries

Monitorable Targets (%)	
Indicator	2017
Low Birth weight	10
Underweight children 0-3 years	16
Children 0-3 years with stunting	18
Children 0-3 years with anemia	32
Adolescent girls with anemia	20
Pregnant women with anemia	30
Women among 15-49 years with anemia	33

Source: 12th Plan Document, State Planning Commission, Chennai-5.

The latest National Family Health Survey-III (2005-06) throws light on the nutritional status of the people among the States. Based on the data the following inferences were drawn:

- With regard to the nutritional status of the children, 29.8 percent of the children below five years in the State were having underweight. It was comparatively lower than all India as well as Andhra Pradesh and Karnataka.
- 30.9 percent of the children were having stunted growth in the State as compared to 48 percent at all India. Among the southern States the ratio was the lowest in Kerala.
- 22.2 percent of children in Tamil Nadu were with wasted growth. The proportion was higher than all India as well as the three neighbouring southern States.
- Among 6-59 months children 64.2 percent were anemic in Tamil Nadu and it stood second lowest among the southern States, the first being Kerala with 44.5 percent.
- In respect of married women (15-49 years) 53.2 percent were anemic in Tamil Nadu. The State occupied the third place among southern States, the best two performing States were Kerala (32.8%) and Karnataka (51.5%).

- In the case of pregnant women, 53.3 percent in Tamil Nadu were anemic. At this level, the State was better placed over Andhra Pradesh (56.4%), Karnataka (59.5%) and all India (57.8%).
- With regard to the proportion of women and men having body mass index below normal Tamil Nadu ranked second next only to Kerala.
- Turning to overweight, the proportion among men and women in Tamil Nadu was higher than all India as well as the other two southern States Andhra Pradesh and Karnataka. This proportion in Kerala was higher than in Tamil Nadu.

Table No.12.20 Nutritional Status Select Indicators (2005-06) (%)

Indicators	Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	All India
1. Nutritional Status of Children below 5 years					
a. Stunted Growth	42.2	43.7	24.5	30.9	48.0
b. Wasted Growth	12.2	17.6	15.9	22.2	19.8
c. Under Weight	32.5	37.6	22.9	29.8	42.5
2. Anemic Status					
a. 6-59 months Children	70.8	70.4	44.5	64.2	69.5
b. 15-49 age married women	62.9	51.5	32.8	53.2	55.3
c. 15-49 age Pregnant women	56.4	59.5	33.1	53.3	57.8
d. 15-49 age married men	23.3	19.1	8.0	16.5	24.2
3. Nutritional Status of Adults					
a. Women Body mass (below normal)	33.5	33.5	18.0	28.4	35.6
b. Men Body mass (below normal)	30.8	33.9	21.5	27.1	34.2
c. Women Overweight	15.6	15.3	28.1	20.9	12.6
d. Men Overweight	13.6	10.9	17.8	14.5	9.3

Source: National Family Health Survey – III (2005-06), Ministry of Health and Family Welfare, Government of India.

Through the implementation of Integrated Child Development Services Schemes (ICDS) through 54.439 Child Centres (49,499 Anganwadi Centres+ 4940 mini Anganwadi Centres) in 434 child development blocks (385 rural, 47 urban and 2 tribal) and Puratchi Thalaivar MGR Nutritious Meal Programme the State has envisaged to improve the nutritional status of children, pregnant women, lactating mothers and adolescent girls and thereby to attain the goal of Malnutrition free Tamil Nadu. These two schemes together had benefited 88.65 lakh persons in the State in a year. Of them as high as 87.8 percent were children, 7.6 percent pregnant women, 4.5 percent adolescent girls and 0.1 percent old age pensioners.