

# MPRA

Munich Personal RePEc Archive

## **Trends in Health Status and Infrastructural Support in Tamil Nadu**

Dhas, Albert Christopher and Helen, Mary Jacqueline  
The American College, Madurai, Lady Doak College,  
Madurai

10. July 2008

Online at <http://mpra.ub.uni-muenchen.de/9518/>  
MPRA Paper No. 9518, posted 10. July 2008 / 08:58

# **Trends in Health Status and Infrastructural Support in Tamil Nadu**

**R.Albert Christopher Dhas\* & M.Helen Mary Jacqueline\*\***

Health is wealth. The real benefit of any wealth is realised by the society if only there is health. Hence, it is emphasised upon to improve the health status of people at each level along with all the efforts to increase the income of the country.

The health dimensions of people and its significance in economics is highlighted by Marshall, in his attempt towards defining 'Economics' all about (Marshall:1982). Though welfare aspects emphasised by Marshall gave fillip to the subject economics, the issues on 'welfare' received stepmother treatment in the literatures in Economics. However, in recent years, the subject welfare economics has drawn the attention of economists both on theoretical and empirical levels. Needless to say that studies on health economics is more attached to the latter one.

Efforts to improve the health status of the population are a major thrust area under the social development programme being undertaken in India. The expenditure on health comprises 5.2 per cent of Gross Domestic Product (GDP) with public health investment at 0.9 per cent (Economic Survey: 2007-08). Accordingly, technological advances, improvement in the access to and utilisation of health services in the country are given due consideration in our health policies. In fact, India has built up a vast health infrastructure and manpower. However, the extent of access to and utilisation of health care services varied substantially between states, regions and society.

The objective of this paper is to examine the health status in Tamil Nadu and to highlight the major issues on it. The discussion is carried out in three sections. In Section 1, the health scenario of Tamil Nadu is examined, based on certain selected health indicators.

---

\* Senior Lecturer in Economics, The American College, Madurai-2.

\*\* Lecturer in Economics, Lady Doak College, Madurai-2.

In Section 2, the extent of health infrastructure available in the state and its utilisation are discussed. The last section summarises the main findings and highlights the major issues.

## **Section 1**

### **Trends in Health Status in Tamil Nadu**

The demography and vital statistics provide the base information on the health status of any region or community. Life Expectancy at Birth (LEB), Infant Mortality Rate (IMR), Crude Birth Rate (CBR) and Crude Death Rate (CDR) are the important indicators that reflect the health status and human development. The comparison of these health indicators for Tamil Nadu and All India average reveal the advantageous position of the state (Table 1).

**Table 1**  
**Vital Events for Tamil Nadu and All-India (2002)**

	Life Expectancy at birth (2001-06)		Infant Mortality (per 1000 live births)			Birth Rate (per 1000)	Death Rate (per 1000)
	Male	Female	Male	Female	Total		
<b>Tamil Nadu</b>	67.00	69.75	46	43	44	18.5	7.7
<b>All India</b>	63.87	66.91	62	65	63	25.0	8.1

Source: Tamil Nadu: An Economic Appraisal: 2003-04 and 2004-05.

The Life Expectancy Rate for both male and female are at higher levels in Tamil Nadu (67 and 69.75 years respectively) compared to that of All India (63.87 and 66.91 years respectively). Infant Mortality, Birth and Death Rates are at of very much low compared to that of All-India during the year 2002. The achievements of Taminadu are being extolled as remarkable and considered as a model that could be achieved by other states. The experience of Tamil Nadu in its demographic achievements is very much different than that of Kerala. While the remarkable success of Kerala has been attributed to historical factors contributing to high literacy and women's empowerment, Tamil Nadu witnessed significant advancement without accompanying progress in literacy and gender equality (Rajiv Misra et.al :2003)

The reduction in the vital statistics such as birth rate, death rate and infant mortality rate, and increase in the life expectancy at birth indicate the developments in the health status of the people. The experience of Tamil Nadu during the previous years indicated steady progress in the health indicators (Table 2 and 3).

**Table 2**  
**Trends in Death, Birth and Infant Mortality Rates in Tamil Nadu**

<b>Year</b>	<b>Death Rate (per 1000)</b>	<b>Birth Rate (per 1000)</b>	<b>Infant Mortality (per 1000 live births)</b>
1971	12.7	31.4	113
1980	11.2	27.9	93
1990	8.5	21.6	59
2000	7.9	19.3	51
2004	7.5	17.1	41

Source: Tamil Nadu-An Economic Appraisal 2005-06.

**Table 3**  
**Trends in Life Expectancy at Birth in Tamil Nadu**  
(in Years)

<b>Period</b>	<b>Male</b>	<b>Female</b>
1941-51	36.2	37.4
1951-61	41.0	39.24
1961-71	47.5	46.50
1971-81	52.5	51.90
1981-91	57.4	58.50
2001-06	67.0	69.75

Source: The same as for Table 2.

It could be seen that there has been a steady reduction in the Death, Birth and Infant Mortality Rates during the period between 1971 and 2004. Such decline in these rates could be attributed to better health status of the people, technology and its adoption, health care delivery and utilisation, and health awareness and attitudes of the people. The

increasing trend in the Life Expectancy at birth indicated the extent to which the fruits of economic development are realised with the support of health delivery system. In Tamil Nadu, the Life Expectancy at Birth for both male and female had almost doubled between the period 1941-51 and 2001-06.

Though the demographic indicators and vital statistics indicate very high of Tamil Nadu in terms of health performance, there are several areas in which improvements are possible (See Table 4). Infant Mortality and Maternal Mortality Rates could be brought down further. In the Ninth Plan, though it was aimed to bring it down to 30 (IMR) and <1 (MMR) per thousand live births, the state could achieve the level of 51 (IMR) and 1.3 (MMR) only. There is scope for improvements in the support indicators of birth rates such as total fertility rate, couple protection rate, etc., and the support indicators of IMR and MMR such as still birth rate, maternal care indicators, institutional deliveries, average birth weight of babies and immunisation coverage. Similarly, with regard to the control of major diseases such as blindness,, leprosy, TB, Malaria and HIV positive further attention could be given and its incidence could be reduced further.

Though there are scope for further improvements in health indicators, the observed performance and achievements in health status in Tamil Nadu are made possible partly due to the health infrastructure available and its utilisation. We shall examine the extent of health infrastructure and their utilisation in the next section.

## **Section 2**

### **Health Infrastructure and Its Utilisation in Tamil Nadu**

The health infrastructure does not mean only the physical structures, but also the health service net work. According to the Ninth Five Year Plan of Tamil Nadu, “Health Care for All” was the main objective of the Plan. It focussed on the improvement in the general health status of the population, better access to health care services, improved MCH care, effective control and prevention of communicable and non-communicable diseases (Ninth Five Year Plan-Tamil Nadu: 1997-2002).

**Table 4**  
**Achievements in Health and Family Welfare Indicators\***

Indicators		Unit	Achievement (2002)	
Vital Statistics	Infant Mortality Rate	Per '000 live births	51	
	Maternal Mortality Rate	Per 000 live births	1.3	
Support Indicators of Birth Rates	Mean age at Marriage – Female	Years	21.2	
	Total fertility rate	Nos.	1.95	
	Higher Order Births (more than 2 children)	Percent	21.6	
	Couple protection rate	Percent	51.6	
	Mean age of acceptance of	a) Tubectomy	Years	27
		b) IUD	Years	25
Percentage of sterilization acceptors with two and less than two living children		Percentage	65.4	
Support Indicators of IMR And MMR	Still Birth Rate	Per 000 deliveries	11.7	
	Maternal Care Indicators – Ante-natal Care	Percent	98.5	
	Maternal Care Indicators – Post-natal Care	Percent	90	
	Pregnant women receiving 2 doses of Tetanus Toxoid	Percent	84	
	Level of Institutional Deliveries	Percent	87.6	
	Deliveries attended by trained staff	Percent	98	
	Baby friendly hospitals	Nos.	467	
	Average birth weight of babies	Kgs.	2.7	
	Low birth weight babies (<2.5 kgs.)	Percentage	17	
	Growth monitoring of new borns	Percent	96	
	Iron and Vitamin A deficiencies to be covered	a) FST (L) supplied	Percentage	100
		b) FST (S) supplied	Percentage	88
		c) Vitamin A I dose	Percentage	71
		d) Vitamin A II dose	Percentage	63
	Immunisation coverage	a) Reduction of polio	Percentage	100
		b) NNT	Percentage	98
		c) Measles	Percentage	92
d) TTEM		Percentage	97	
Deaths due to diarrhea	Nos.	224		
Mortality due to ARI (0-5) reduction	Nos.	264		
Control of Diseases	Prevalence rate of blindness	Per 10000 persons	40	
	Prevalence rate of leprosy	Per 10000 persons	4.5	
	Prevalence rate of TB	Per 1 lakh person	479	
	Prevalence rate of Malaria	Per 1 lakh person	70	
	AIDS control – Prevalence rate of HIV positive	Percentage	1.35	

Note: \* All these indicators showed shortfall in their achievements compared to the 9<sup>th</sup> plan Target of Tamil Nadu.

Source: The same as for Table 2.

Towards achieving the health goals of the State, health care facilities were provided by creating health infrastructure in urban and rural areas during the past few decades. Dr.MGR Medical University is the first Medical University of India, functioning in Tamil Nadu from July 1988 onwards. This University aims at promoting academic excellence in the field of medical and paramedical education and strives to bridge the growing gap between the Indian and International standard of research in medical science.

The health infrastructure under modern medicine (Allopathic) in Tamil Nadu is examined from various dimensions and presented in Table 5.

**Table 5**  
**Health Infrastructure in Tamil Nadu (2005-06)**

<b>Category</b>		<b>Tamil Nadu</b>
Number of Hospitals	Hospitals attached with Medical Colleges	42
	District / Taluk / Non-Taluk Hospitals	264
	Dispensaries / ESI Dispensaries & Hospitals	208
	Primary Health Centres (PHC)	1,417
	Others T.B. / Leprosy Sanitarium / Women & Children Hospital / Mobile Medical Unit	29
Number of Patients Treated (in lakhs)	Inpatients Treated	134,74
	No. of Inpatients Treated per day	0.37
	Outpatients Treated	1,390.03
	No. of Outpatients Treated per day	3.81
	IP and OP combined	1,524.77
	IP and OP Patients Treated per day	4.18
Bed Strength (in Nos.)	Total availability	53,326
	Bed Occupancy Rate (%)	69.2
Number of Doctors	Availability	8,364
	Patients (IP/OP) per Doctor	8,230
	Patients Treated by a Doctor per day	23
Number of Nurses	Availability	9,193
	Patients (IP/OP) per Nurse	6,586
	Patients covered by a Nurse per day	18

Source: Tamil Nadu Economic Appraisal: 2005-2006 and previous years.

The medical and rural health services are rendered through 42 teaching hospitals, 29 district headquarters hospitals, 155 taluk hospitals, 80 non-taluk hospitals, 187 ESI hospitals, 1417 primary health centres, 8682 sub-centres and 12 government dispensaries and mobile units. All the Primary Health Centres (PHC) have been equipped with basic facilities for surgeries and deliveries. Most of the Block PHCs have emergency services, facilities for sterilisation and detection of cataract cases. The specialised services under medical and rural health include 240 X-ray plants, 108 dental clinics, 51 ophthalmic clinics, 27 ENT clinics, 37 STD clinics, 16 psychiatric clinics, 37 ortho clinics, 61 paediatric clinics, 13 diabetic clinics and 12 cardiology clinics. The services are rendered by 3,622 doctors, 5,354 nurses, 10,315 paramedical staff with 19,925 beds.

The Directorate of Indian Medicine and Homoeopathy deals with teaching as well as health care in various systems of Indian medicines, namely, Siddha, Ayurveda, Unani, Homoeopathy, Yoga and Naturopathy. There are 38 Homeopathy and 287 Indian Medicine teaching hospitals functioning under these systems, with 735 doctors, 147 nurses, 531 para medical staff and 965 beds.

The public health and preventive medicine is concerned with the prevention of diseases like Malaria, Tuberculosis, Filariasis and Japanese Encephalitis, AIDS, Blindness, Leprosy, Small Pox, Cholera, Typhoid and infective Hepatitis. The Directorate of Public Health and Preventive Medicine is also concerned with the implementation of programmes for immunisation, school health, maternal and child health care, food adulteration and health education.

Though the above information reveals the magnitude of the health infrastructure available in the state, it does not provide any analytical insights on its requirement. However, there are several arguments to justify that the available infrastructure is not sufficient enough to achieve the expected improvements in the health status of the people. This is very much evident when we compare the target that is aimed at in the beginning of the Ninth Plan and the achievement made at the end of the Plan (Table 6).



**Table 6**

**Achievement of Health Infrastructure in Tamil Nadu during the Ninth Plan (1997-2002)**

Indicators		Ninth Plan Target	Achievement (2002)
General Indicators	Bed Population Ratio	1 : 1000	1 : 1319
	Doctor Population Ratio	1 : 5000	1 : 2000
	Nurse Doctor Ratio	2 : 1	2 : 1
	Hospital Beds (in Lakhs)	0.50	0.47
	Hospitals and Dispensaries (in Numbers)	3500	2779

Source: The same as for Table 2.

On the whole, it could be summarised that Tamil Nadu has bestowed with large health infrastructure facilities. However, its requirement is not sufficient and there is scope for further strengthening of this facility so that desirable level of growth in health status could be achieved.

### **Section 3**

#### **Summary and Conclusion**

This paper aimed at examining the health status in Tamil Nadu and to highlight the major issues on it. The health scenario of Tamil Nadu was examined, based on certain selected health indicators and the extent of health infrastructure available in the state and its utilisation were also discussed

The study observed that there is a reduction in the vital statistics such as birth rate, death rate and infant mortality rate and an increase in the life expectancy at birth in Tamil Nadu during the last three decades. These trends indicated the developments in the health status of the people and the steady progress in the health indicators.

The study argued that though the demographic indicators and vital statistics indicate very high of Tamil Nadu in terms of health performance, there are several areas in which improvements are possible. Particularly, Infant Mortality and Maternal Mortality Rates could be brought down further. There is scope for improvements in the support indicators

of birth rates, IMR and MMR. And, the incidence of major diseases such as blindness leprosy, TB, Malaria and HIV positive could be controlled and reduced further.

Towards achieving the health goals, health infrastructure under modern medicine and various systems of Indian medicines namely, Siddha, Ayurveda, Unani, Homoeopathy, Yoga and Naturopathy were created in both urban and rural areas of the state. It was argued that its requirement is not sufficient and there is scope for further strengthening health infrastructure facilities so as to achieve the desirable level of growth in health status.

There are several issues that require serious attention with regard to health status and health economics. Of them, the inter linkage between factors influencing health outcomes, cost of health care, barriers to access to health and public versus private services are very significant. Several factors such as poverty literacy, employment, fertility, nutrition, distribution of income and wealth are inter-linked key variables that influence health outcomes. These areas are found with deficiencies in Tamil Nadu and therefore, there is scope for further improvement.

More over, it is observed that the average health expenditure per hospitalisation in both rural and urban areas of Tamil Nadu showed high discrepancy between Government hospitals and private hospitals. According to the NCAER study conducted during 2001, in rural Tamil Nadu, the average expenditure per hospitalization was Rs. 751 and Rs.4,333 respectively in government and private hospitals. Similarly, in urban Tamil Nadu, this expenditure was Rs.934 and Rs.5,927 respectively. This vast difference raises questions related to type of services and nature of treatment, subsidization, pricing, standardization, access to services, market force as determinant.

To conclude, Tamil Nadu seems to have performed better compared to All India average in demographic and several health indicators. However, Tamil Nadu is capable of much higher levels of achievements with its knowledge base, administrative and institutional strength and its growth potentials.

## **References:**

### **Books**

Ajay Mahal et.al (2001): Who Benefits from Public Spending in India, Benefit Incidence Study, NCAER, New Delhi.

Marshall A (1982): Principles of Economics, 8<sup>th</sup> Edition, Mac Millan London.

Rajiv Misra, Rachel Chatterjee and Sujatha Rao (2003): India Health Report, Oxford University Press, New Delhi.

RamankuttyV (1999): A Primer of Health Systems Economics, Allied Publishers Ltd., New Delhi.

### **Reports**

Economic Survey: 2007-2008 and previous years, Government of India, Ministry of Finance and Company Affairs.

Ninth Five Year Plan-Tamil Nadu: 1997-2002, State Planning Commission, Government of Tamil Nadu, Chennai.

Tamil Nadu-An Economic Appraisal 2005-06 and previous years, Government of Tamil Nadu, Department of Evaluation and Applied Research, Chennai.