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NRHM - A New Thrust in Public Health Care Delivery System in the Union Territory of Puducherry: A Performance Analysis

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Abstract:
The concept of Human Resource Development as defined by UNDP rests on three pillars namely education, health, and livelihoods. India which is demographically a larger country found to be in a poor status in all these three variables and comes under educational poverty, poor public health status besides in severe income poverty. Public health occupies a predominant place in India where 35.00 percent of effective working age population out of the total population depends to their skill and productivity. Henceforth foremost importance is being given starting from the First Five Year Plan 1951.Since from Bhore committee recommendations and to that of recent NRHM many changes took place in Health sector and crisis remains as an unfinished agenda in the rural India. The NRHM has created revolutionary change in the Preventive, Curative, and Promotional health care facilities besides public hygiene, sanitation and providing safe drinking water in rural India.
The UNDP, besides many national and regional level studies conducted to evaluate the performance of the mission in different part of India. An earnest attempt has made in the present study to evaluate the NRHM in terms of its performance in the Union Territory of Puducherry at the end of the Millennium Development Goals targeted year, 2015.

Keywords: *Human resource development, public health care delivery system, rural public health care issues, NRHM, performance, Union Territory of Puducherry*

1. Introduction

The concept of Human Development as defined by UNDP rests on three pillars namely knowledge, health, and livelihoods. Among these three, health occupies a strategic position. Without good health and quality education, a person cannot acquire knowledge and ultimately cannot achieve better and decent life. Good health makes a person to realize his own potential. Therefore, education and public health are considered to be the two sides of the same coin namely Human Resource Development. Hence investment in public health is an engine for economic development. Improved health of the people always gets reflected a better human wellbeing and ensures effective Human resources of a country.

India is known for its huge geographical spread and magnitude of its population. The issues related to the inherited problems of population have attempted through planned efforts. In 2011, half of our population was younger than 25 years old and 781 million individuals made up the working-age population of 15-64. These numbers are expected to increase sharply over the course of the next two decades. By 2020, our working-age population is expected to reach 916 million. By 2030, our working-age population should reach an impressive 1.02 billion. And at that time, half the overall population will be younger than 28 years old the importance of public health in Indian's development cannot be over emphasized. India is a demographically young country. The largest growing demographic segment over the next two decades lies between 15-59 years. This provides a wide window of opportunity to enhance national growth provided one can productively deploy this large base of human resources

The Millennium Development Declaration adopted by the United Nations General Assembly in the year 2000 reaffirmed its commitment to the right based inclusive growth, through its eight goals, eradication of hunger and poverty, Income inequality, overall improvement in public health particularly on women and child besides peace, security and sustainable development. The Eleventh and Twelfth Five Year Plans of India focused on Inclusive Growth and directed towards the Right Based Programmes which has given new dimension to the Indian Economy besides political repercussions. The Right based Programme such as Right to Information Act, Right for Education, Right to Employment (MNREGA), Right to Public Health (NRHM), Right for Food (Food Security Bill) and Right for Women (Women Security Bill still Pending with the Parliament node).

The Right for Health focusing on rural health constitutes the prime focus of the MDGs. Of the three of the eight goals are related to the factors which have significant influence on the Public Health. The government of India assigned the responsibility of health development to the state governments. However, it did not absolve of its responsibilities in the matter of human resource development

through health promotion. Thereby it provided the necessary Policy guidelines to the state governments and fixed national targets for achieving "Health for all" in the country in 2000 and taken up the U.N, s agenda up to 2015 guided by MDG and further going to be focusing on SDG till 2030.

Towards this end, the government of India has earmarked increasing outlays in various five year plans to strength the medical infrastructure in the country. Several innovative national schemes and programmes were also conceived and implemented by the Ministry of Health and Family Welfare. The government also participated in the implementation of various WHO development schemes in this regard. It is also directly implemented central sector schemes and Centrally Sponsored Schemes in the States and Union Territories under its direct jurisdiction. Therefore, the efforts undertaken by the Government in the initial stages of Health Development were really judicious and commendable. Its emphasis on primary health care as an instrument of rural health development has exerted congenial impact on the public health so as to promote qualitative Human Resources.

2. Significance of Public Health

The public health is requisite for the human productivity and it is essential for the technology and thereby overall economic development of a nation. Individually health is man's greatest possession for it lays a solid foundation for their happiness and wellbeing. Improvement in health would make a positive impact on economic development. Better health can increase the number of potentials among the people by reducing morbidity and disability as well by reducing mortality. Health status of the people is a significant index of the prosperity and welfare of a country. It is of paramount importance as a national asset and forms a basis to sustain as well as stimulate optimum level of efficiency. Health is vital for ethical, artistic, mental and social well-being. Improvement of health and nutritional status of the population is an important segment of the programmes need to improve the quality of the population, so as to ensure a productive situation.

The governments in the developed countries can spend large amounts on health services and having health insurance schemes. But the small amount available for health care in the developing countries is mal distributed through health structures heavily biased in favor of service for the urban elite. In most developing countries, only 20-30 percent of the people enjoy ready across to health services of any kind of problems are solved through technology and infrastructure including skilled manpower. The quality of life is this missing from a large number of people in the developing world besides mismatch between technology, infrastructure and the population. The reason for such a state of affair is not essentially the lack of resources, material or human, but mostly under-utilization of those existing resources. Inthe context of public health, the developing countries having the resources to provide decent health care to all at the earliest. This has not been possible because of the lack of effective administration and proper co-ordination among all the agencies and institutions engaged in the field of health care. The benefits of modern science and technology can reach the people only if such services are properly planned and effectively implemented.

The solution to the problems in making health care system which is technically adequate and socially acceptable lie in evolving a proper and realistic health policy with well-defined goals, policies and plans. Clear, precise and logical priorities within the health care system and the policy should therefore be laid down based on the recommendations of various committees on Public Health. A scant attention has to be given to the balance between curative, preventive and promotional health care activities and division of resources among these services.

3. National Rural Health Mission in India

The Union Govt. particularly the UPA-II, focused on the Development prospects in terms of development for freedom focused on the Right Based programmes. National Rural Health Mission programme is for improving health care delivery across rural India as a matter of fundamental right for public health care. The Mission, initially mooted for 7 years (2005-2012), is run by the Ministry of Health. The scheme proposes a number of new Mechanisms for Healthcare Delivery including training local residents as Accredited Social Health Activists (ASHA), and the Janani Surakshay Yojana (motherhood protection programme). It also aims at improving hygiene, sanitation, providing safe drinking water, nutritional aspects of lactating mothers and children health delivery infrastructure particularly in the rural India. National Health Policy and Millennium Development Goals: Integrated goals of NRHM

1. Facilitate increased access and utilization of quality health services by all.
2. Forge a partnership between the Central, state and the local government.
3. Set up a platform for involving the Panchayat Raj institutions and community in the management of primary health programmes and infrastructure.
4. Provide an opportunity for promoting equity and social justice.
5. Establish a mechanism to provide flexibility to the states and the community to promote local initiatives.
   Develop a framework for promoting inter-sectoral convergence for promotive and preventive health care.

3.1. The Objectives of the Mission

1. Reduction in child and maternal mortality.
2. Access to integrated comprehensive primary health care.
3. Universal access to public services for food and nutrition, sanitation and hygiene and universal access to public health care services with emphasis on services addressing women's and children's health and universal immunization.
4. Prevention and control of communicable and non-communicable diseases, including locally endemic diseases.
5. Population stabilization, gender and demographic balance.
6. Revitalize local health traditions & mainstream AYUSH.

7. Promotion of healthy life styles.

3.2. National Rural Health Mission in the Union Territory of Puducherry

The Union Territory of Puducherry the erstwhile French Colony merged with Indian Union in the year 1952. The Territory comprised with four Regions viz. Puducherry, Karaikal, Mahe and Yanam having Population around thirteen lakhs. All the Economic indicators are much ahead of all India statistics specifically in the matter of education and public health. Obviously the NRHM as a centrally sponsored scheme introduced along with the existing schemes with a restructured formula in the Territory, considerably contributed to the overall human resource development of the Union Territory.

The Puducherry State Health Mission was formed on 08th December 2005 by integrating the existing societies of reproductive and Child Health (RCH), National Leprosy Eradication Programme (NLEP), revised National Tuberculosis Programme (RNTCP), National Programme for control of blindness (NPCB) and integrated disease surveillance Programme (IDSP). The state programme management unit and district Programme management unit was established as per the GO. Ms No. 74&75 dated 27th October 2005 and G.O.Ms. No. 46&47 dated 25th June 2010.

3.3. Progress of National Rural Health Mission in Puducherry

In Puducherry, at the end of five years, the National Rural Health, the (NRHM) has made considerable progress in terms of improving infrastructure, healthcare delivery and health indicators in the Union Territory. Under NRHM, the Puducherry state health mission (PSHM) has made good progress from 2005 to 2013 in the Union Territory. Under this ambitious programme 20.00 lakh each has been granted to all district hospitals and Community Health Centre (CHS), for upgrading facilities. Lab facilities have been established in all Primary Health Centre (PHC), while dental services have been introduced.

The emergency referral transport is functioning in Puducherry and Karaikal regions through the Indian red cross society, while it was introduced at Yanam through co-operative society. Adolescent healthcare has received a shot in the arm with NRHM. Anemia levels in adolescent girls have reduced from 99.00 percentto75.00 percent and adolescent clinics have been started in this Union Territory of Puducherry.

4. Performance of NRHM in Terms of Health Expenditure

The Expenditure on Public Health in the Union Territory of Puducherry is found to be continuously on increased trend except during the year. 2000-2001, 1982-1983 and 2007-2008 in these three years the Public Expenditure on Health of shows in negative trends due to the delay in the NRHM fund and its reassessment of fund along with the state fund, besides utilization of fund from non-plan. It is found that during 1981-82, the Health expenditure seems to be highest 107.02 percent. The health expenditure substantially increased after the introduction of National Rural Health Mission, the centrally sponsored schemes under the UPA Govt. The Table: 1 clearly shows, that the Gross State Product at Current price level convincingly on the raise since, 1980-1981 to 2009 to 2010. It was Rs.19092 in 1980-1981, and steadily rose to Rs.11, 25,521 in the year 2009-2010. It is to be noted from the diagram that the Gross state product and the expenditure on public health both one on the raise implies one influence the other. Even though the health expenditure in relation to the SDP it is higher than the national allocation in relation to the GDP. Further this allocation is besides the allocation under CSS fund from NRHM. Therefore, financially this Territory is in little comfortable position.

4.1. Performance in Terms of Health Infrastructure

The Table No: 2 clearly explain the trend of Population growth and the growth of Number of hospitals. As the population continuously increases in the Union Territory, the Government is too keen on increasing the expenditure on Public Health, and as a result the number of Hospitals, increased from 133 (1985) to 159 (2013) as a result of enhanced monetary outlays from National Rural Health Mission. As the NRHM Programme itself concentrates more on health infrastructure there is no surprise and the number is on increase in Hospitals, Doctors, Nurses and other laboratory facilities.

Table No: 3 explain the Public Health infrastructure in the Union Territory of Puducherry. During the year 2010-11, there were eight hospitals of which, Five in Puducherry regions each one in Karaikal, Mahe and Yanam. The PHCs and sub-centers play a vital role in the Performance of NRHM. There are thirty-nine Primary Health Centers of which twenty-seven are in the Pondicherry region. Further there are eighty-one sub-centers in the whole Union Territory of which fifty-five are in the Pondicherry region and rest of them in the offer regions. There are seven medical colleges with very good hospital facilities besides JIPMER Centre, the doctor – patient ratio, Nurse – Patient ratio is found to be low in par with national scenario.

The most remarkable aspects of Public Health delivery system in the Union Territory of Pondicherry is the impressive achievement in the Family Welfare Programme. During the year 2010-2011, 17871 eligible compels were protected by adopting family planning. The age at marriage is also higher due to the higher literacy level of the population. The infrastructure facilities are happening to be a handy tool to implement NRHM in the Union Territory of Puducherry. Possibly, recruitment of ASHAs as well as their Training seems to have gone satisfactorily in all the seven states of India. The convention of ANM in to ASHAs have not done in this territory, duties of ASHAs by providing proper training, there are 77 ANMs in 92 villages in the Union Territory of Puducherry.

4.2. Performance in Terms of Preventive Health Care

In Puducherry the nutrition level is found to be low in 1987. Protein level 8-10 grams 300 calories in 6-72 months' children and pregnant women and nursing mother's 15-20 grams' protein 500 calories. The nutrition status of the people is not significant. Hence the Government of Puducherry has brought various programmes to improve the nutritional status of the vulnerable group. Under these

programmes food is served to children approximately 500 calories (12-15 grams), forpregnant women and nursing mothers 600 calories(18-20 grams) of proteins. As the National Rural Health Mission Programme concentrate overall health care of the people. The nutritional aspects also well covered under the programme. The calories intake has considerably increased after the introduction National Rural Health Mission even in the rural area through the orchestrated efforts by the ASHAs.

Table: 5 show the immunization, status of children in the union territory of Puducherry. It is well known that of all health services, immunization is the simplest and less expensive services. Tuberculosis was the leading killer when compared to and less expensive services. Tuberculosis was the leading killer when compared to tetanus, measles, poliomyelitis and diphtheria. On an average, tetanus killed three out of 100 infants. Immunization coverage shows an increasing trend particularly for O.P.V.D. The Expanded Programme of immunization (EPI) was introduced in 1978. Immunization against the most common and serious childhood diseases such as polio, tetanus, diphtheria, B.C.G., etc., are available free of cost. The prevention is better than cure is not just a proverb but a medically valid statement.

The vaccine dosage required annually, to fully cover the net infant population in the year 2007-08 to 2010-2011. In varied between 41,672 and 43,581 dosages for BCG and between 16,858 and 15,511 dosages for T.T (10 Years children's) and between 18,887 and 14,124 dosages for T.T (16 years' children's) the large supply of dosage obviously reflects the extended programme of children up to five years of age in the Union Territory of Puducherry.

The tetanus taxied for school children (TT for 10 years and 16 years' children's). Immunization against tuberculosis (BCG) vaccination has given to the children. Immunization against diphtheria, whooping cough (DT) vaccination has given and immunization against tetanus (DTP) vaccination has brought and immunization against poliomyelitis (Polio) and measles vaccination has given to the children's. The coverage rates are much higher for BCG prophylaxis low percentages receiving measles. There is positive relationship between mother's education and children's vaccination coverage.

4.3. Performance of NRHM in Terms of (Health Indicators) Birth Rate, Death Rate, IMR and Life Expectancy

Table No: 6 shows region wise maternal deaths in Union Territory of Puducherry. Maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy. This table shows that no maternal death has been reported in Mahe during 2005 to 2007 and 2008 to 2010. In Karaikal 2009 to 2010 no maternal death, in Puducherry was 12 deaths in 2005-06 which decreased 8 in 2009-10. In Karaikal 5 deaths, in Yanam were 27 deaths in 2005-06 which decreased from 9. Totally Union Territory of Puducherry maternal death was declined 44 to 17. The Table No: 7 Shows that the trends in birth rate and death rate of Union Territory of Puducherry during 2000 to 2012. In the year 2000 the birth rate was 17.8 and it steadily decreased to 16.5 in the year 2012 and the death rate was increased from 0.5 to 7.4 the same period.

The birth rate has steadily declined in the Territory, which may be due to increase in education of the people especially female and increase the family planning and rise in the mean age at marriage for women reduced birth in the Territory. The death rate of Puducherry 2000 to 2004 it was increasing trend and 2005 to 2012 it was declined from 8.0 to 7.4. This may be due to increase in hospitals deliveries and decrease in the death rate of mother and children. Improvement of medical education and medical facilities also decrease the death rate in the Union Territory of Puducherry. In over the period of time death rate was increasing in the Union Territory of Puducherry.

Table No: 8 show the age wise distribution of deaths due to various causes in the Union Territory of Puducherry during the period of 2000 to 2012. The less than a year 877 children died in the year 2000 it was increased to 2029 in 2012, from 1 to 4 years' children died 163 in the year 2000 and it has increased to 191 in 2012 from 5 to 14 years' children 230 died in 2000 and it increased from 262 in 2012. 15 to 24 years' age group people 610 died in 2000 and have increased to 15914 in 2012. Above 70 years 2761 died in 2000 and it has increased in 3167 in 2012. Table: No.8 regarding Infant Mortality Rate of Puducherry is consistently reveals the same results.

This Table No.9 shows deaths due to various causes in the Union Territory of Puducherry. In the year 2000 the cholera disease was 0.02 percent and it has declined in 2006 to 2012 there is no disease. In the year 2000 Malaria disease was 0.14 percent it has decreased to 0.03 percent in 2012. In the year 2000 Other Fever was 0.87 percent and it increased from 0.96 percent in 2012. In the year of Dysentery & Diarrhea was 0.34 percent it was decreased to 0.24 percent in 2012. The respiratory disease was 5.78 in 2000 and it has steadily decreased to 4.16 percent in 2007. The Maternal deaths were 0.07 in 2000 and it increased from 0.10 percent in 2012. Other Diseases deaths were 92.78 percent in 2000 and it has also increased from 94.51 in 2012. Further it is clear that the number of death due to various causes falling rapidly. The contribution of National Rural Health Mission, particularly the ASHA's contribution is incalculable.

The infant mortality rate is sensitive index of the cultural ethos of community or country that is sensitive to changes conductive to development. It would reflect the state of Public health and hygiene, environmental sanitation, the cultural moves about the feeding and clothing, socio-economic development and above all, the people's attitude towards the dignity and value of human life itself. The infant mortality rate in the Union Territory of Puducherry compared to that of National statistics in Table No.10. From the Table No: 11 it is clear that the IMR is declining over the period of time. In Pondicherry the IMR was 134 in 1960 which has declined to 22 per 1000 deaths in 2012. In All India level, the IMR is on the decline. But IMR in Puducherry is very low compared to National level. In 1960 in Puducherry it was 134 whereas at the National level it was 184 per 1000 deaths. Further in 2010 in Puducherry it was 22 at the all India level it was 53 per 1000 deaths. Both are declining, still Puducherry has got significant decline. It is a contribution to high heath status. The reason for decline may be due to beneficial impact to health care on curing infant diseases and deaths. The major causes for IMR were tetanus, pneumonia, diarrhea, typhoid, jaundice, diphtheria, whooping cough and measles. But these are

overcome by the preventive measures taken by the Directorate of Health and Family Welfare, Government of Puducherry through the NRHM a centrally sponsored scheme which have been reflected on the decline in Infant Mortality Rate.

Life Expectancy: The life expectancy at birth for male was 62.6 years as compared to females, 64.2 years according to 2002-06 estimates. Urban Male (67.1 years) and Urban Female (70 Years) have longer life span as compared to their rural counter parts. The life expectancy in Kerala is the highest (74 years) and the lowest in Madhya Pradesh (58 years). It is 650 in the Union Territory of Puducherry. The Union Territory of Puducherry having one of the highest Per Capita Income Rs.1, 00,137 among Indian States obviously the higher per capita Income ensures higher standard of living which reflects the life expectancy rate as highest. Further the public hygiene, sanitation and safe drinking water, well connected social sector infrastructure, higher literacy rate (86.55 per cent) very good public health delivery system leads the life expectancy rate at an impressive rate through the integrated NRHM.

The Table No: 12 clearly explain the performance of health indicators after the implementation of the NRHM Programme in the entire Union Territory of Puducherry. The Health expenditure by book Government and the private sector is highly impressive. During the year 2006 was Rs.5665.74 and rose to Rs.9937.01 in the year 2009 and sustainably high during 2012 by Rs.14694.91. At the same time, the private expenditure also goes along with the trend of Government health expenditure. It was Rs.990 in the year 2006 and Rs.1658 for the year 2010 and 2011. During the year 2012 tothe Union Territory sustained to Rs.1016 as per capita annual health expenditure. The tremendous increase in the Public and private expenditure on health, in the Union Territory of Puducherry have impressive effect on the progress of Public Health delivery system. The Doctor Population ratio rose from 1:1972 in the year 2006, to 1:2790 during the year 2012. It is to be noted that that during the period under NRHM Programme. Well qualified Doctors were fully equipped even at rural PHCs along with the ASHA the improvised Health worker.

As a result of the indicators such as Birth rate, Death Rate, and Infant Mortality rate are all on the deckling trend. The IMR during 2006, per 1000 population was 15.7 and sustainable until 2012 in 16.7. This indicates the major senses of the NRHM through the ASHAs who are specially designed for this effective implementation of the programmes the Table No: 12 further explain the Birth rate and Death rate which constitutes the major senses of the NRHM Programme. Both are found to sustain at a rate per 1000 population. During 2006 the birth rate per population was 15.7 and retainable between 16.7 until 2012. This motivated aspects and extraordinary conviction shown by the medical officers and ASHAs. In the same way the Death rate maintained around 7.4 per 1000 population from 2006 to 2012.

Therefore, it is clear that the contribution of NRHM in this Territory in terms of Birth rate, Death rate, IMR and the Family Welfare programme, are all found to be for better than the all India level progress achieved through NRHM. Over and above the centrally sponsored schemes, the following flagship programmes are implemented in the UT Puducherry:

1. Sarva Shiksh Abhiyan (SSA)
2. Mid –day Meals Scheme
3. National Rural Health Mission (NRHM)
4. Integrated Child Development Services (ICDS)
5. Jawaharlal Nehru National Urban Renewal Mission (JNNURM)
   (a) Urban Infrastructure Development and Governance (UIG)
   (b) Urban Infrastructure Development Scheme for Small and Medium Town (UIDSSMT)
   (c) Basic services to urban poor (BSUP)
   (d) Integrated Housing and Slum Development Programme (IHSDP)
   (e) Programme Management Unit (housing)
   (f) Mahatma Gandhi National Rural Employment Scheme (NREGA)
6. Indira Awas Jojana (IAY)

As per the instruction of the cabinet secretariat a monthly review of the flagship programmes is being held under the Chairmanship of Chief Secretary of the first Saturday of every month and the outcome of such review meeting is communicated to the Cabinet Secretariat and to Planning Commission. This review has enabled the concerned implementing Departments to initiate corrective action wherever required and timely intervention is ensured for effective implementation.

- The Findings of the present study
  1. IMR reduced to 26/1000 live births until 2013 from more than 30/1000.
  2. Maternal Mortality reduced to 100/100,000 live births until 2013 which was higher than that.
  3. Total Fertility rate reduced to 2.1 by 2013
  4. Malaria Mortality Reduction Rate -30.00 percent up to 2010, additional 10.00percent by 2013
  5. Kala Azar mortality Reduction by Rate – 100.00 percent 2010 and sustaining elimination until 2013.
  6. Filarial/microfilaria reduction rate – 70.00 percent by 2010, 80 percent by 2013 and elimination by 2015.
  7. Cataract operations – increasing to 46 lakhs until 2013.
  8. Leprosy prevalence rate-reduce from 1.8 per 10, 000 in 2005 to less than 1 per cent (more or less eradicated)10, 000 thereafter.
  9. Tuberculosis DOTS series – maintain 85.00 percent cure rate through entire mission period and also sustain planned case detection rate
  10. Dengue mortality reduction rate -50.00 percent by 2013 and elimination by 2015.
  11. Upgrading all Community Health Centers to Indian Public Health Standards

12. Increase utilization of First Referral units from bed occupancy by referred cases of less than 20.00 percent to over 75.00 percent.

- The expected outcomes at community levels:

1. Availability of trained community level worker at village level, with a drug kit for generic ailments.
2. Health day at Aanganwadi level on a fixed day/month for provision of immunization, ante/post-natal checkup and services related to mother and child health care, including nutrition.
3. Availability of generic drugs or common ailments at sub common ailments at sub centre and hospital level.
4. Cress to good hospital care through assured availability of doctors, drugs and quality services at PHC/CHC level and assures referral-transport-communication systems to reach these facilities in time.
5. Improved access to universal immunization through induction of auto Disabled Syringes, alternate vaccine delivery and improved mobilization services under the programme.
6. Improved facilities for institutional deliveries through provision of referral transport, escort and improved hospital care subsidized under the Janani Suraksha Yojana (JSY) for the below poverty live families.
7. Availability of assured health care at reduced financial risk through pilots of community health insurance under the mission.
8. Availability of safe drinking water.
9. Provision of households toilets.
10. Improved outreach services to medically under -serve remote areas through mobile medical units.
11. Increase awareness about preventive health including nutrition.

5. Conclusion

The above analysis of health indicators, in the light of performance, clearly proved that the Union Territory of Puducherry is above the National level health statistics. The public expenditure on health of the Union Territory Government in addition to the NRHM funding, the health sector developed well in terms of health infrastructure such as hospitals, ANMs(ASHA) and technical staffs including medicine, equipments and lower bed ratios. As a result, the birth rates, IMR have fallen deeply besides the rise in the life expectancy rate besides the disappearance of many fatal diseases. Further the special feature of NRHM is that helped to reduce the Bed-Population Ratio and Doctor Population Ratio as the Public Health infrastructure considerably increased.

It is to be noted that the private health expenditure also substantially grown along with the public expenditure on public health more than several times as the private health infrastructures also increased manifold through the Government policy guidelines and encouragement. Further The Union Territory of Puducherry shown the way and stood a Model to other states of Indian unions in the matter of health development so has to enhance the human resource development.

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APPENDIX

Year	Gross State product at Current Price	Percentage Change	Health Expenditure	Percentage Change
2000-2001	386368	19.4	7393.9	-1.38
2001-2002	425882	10.2	7784.71	2.84
2002-2003	493037	15.8	8005.62	6.68
2003-2004	518474	5.1	8538.12	19.16
2004-2005	575371	11.0	10173.93	16.31
2005-2006	797723	38.6	11833.55	48.56
2006-2007	833511	4.5	17579.68	13.64
2007-2008	938903	12.6	19978.11	-11.71
2008-2009	1026274	9.3	17638.01	48.69
2009-2010	1125521	9.7	26226.49	-

Table 1: Relation in Gross State Domestic Product and Health Expenditure in the Union Territory of Puducherry
Source: Directorate of Economics and Statistics, State Income of Puducherry, Government of Puducherry, Various issues

1985-2010							
Year	Population	No. of Hospitals	Ratio of Population in terms of No. of Hospitals	No. of Doctors	Ratio of Population in terms of No.of Doctors	No. of Nurses	Ratio of Population in terms of No.of Nurses
1985	447500	133	3364.66	346	1293.33	491	911.40
1990	797400	138	5778.26	475	1668.20	640	1245.93
1995	863800	142	6083.09	480	1799.58	772	1118.91
2000	966300	142	6804.92	487	1984.18	842	1147.62
2005	104200	147	7088.43	520	2003.84	1270	820.47
2011	1244464	159	7826.81	586	2023.65	2601	478.45
2012	1244464	159	7826.81	586	2023.65	2601	478.45
2013	1244464	159	7826.81	586	2023.65	2601	478.45

Table 2: Trends in Number of Hospitals, Doctors and Nurses in Union Territory of Puducherry
Source: Computed from secondary data, Abstracts of Statistics, Government of Puducherry

Sl. No.	Item/Details	Unit	2010-11				
			Puducherry	Karaikal	Mahe	Yanam	State
1	2	3	4	5	6	7	8
1	Hospitals	Nos.	5	1	1	1	8
2	Dental college and Hospital	"	1	--	--	--	1
3	Chest clinic	"	1	--	--	--	1
4	Physical Medicine and Rehabilitation center(PMRC)	"	1	--	--	--	1
5	Community Health centers	"	2	1	1	0	4
6	Primary Health centers	"	27	11	1	0	4
7	Sub-Centers	"	55	17	4	5	81
8	E.S.I Dispensaries	"	11	2**	1	1	15
9	Hospital beds (including PMRC Beds)	"	1391	506	171	100	2168
10	Dental college and Hospital Beds	"	52	0	0	0	52
11	Community Health center Beds	"	66	30	30	0	126
12	Primary Health center Beds	"	137	95	2	0	234
13	Sub-Centre Beds	"	14	6	1	0	21
14	Jipmer Beds	"	1591	0	0	0	1591
15	Birth Rate*	Per'000population	--	--	--	--	16.5
16	Death Rate*	"	--	--	--	--	7.0
17	Infant Mortality Rate*	"	--	--	--	--	22
18	Eligible couples protected by Family Welfare Methods	Nos.	135200	29824	6578	7169	17871
19	Per capita expenditure medical and Health services(excluding JIPMER)***	Rs.	--	--	--	--	2331

Table 3: Health Infrastructure and Family Welare
Source: Dept. of Health &Family Welfare Services, Puducherry
***1 part time dispensary ***Excluding NRHM (PSHM) full*

SI.No	Category	[Pre-revised]		[Revised]	
		Calories (K Cal)	Protein (g)	Calories (K Cal)	Protein(g)
1	Children(6-72 Months)	300	8-10	500	12-15
2	Severely malnourished children (6-72 months)	600	20	800	20-25
3	Pregnant women and Nursing mothers	500	15-20	600	18-20

Table 4: Feeding and Nutrition Norms under Nrhm
Source: NRHM – Manual 2012

SI.No	Item	2007-08	2008-09	2010-11
1	T.T	17511	14121	14959
2	BCG	41672	44829	43581
3	O.P.V.D	42979	38543	43778
4	D.P.T.I	17600	17342	16655
5	D.P.T.2	16933	15503	12744
6	D.T.3	16969	15238	15604
7	Measles	16858	14894	15511
8	D.T	19314	10372	16387
9	T.T(10 Years)	20076	17805	17568
10	T.T(16 Years)	18887	16221	14124

Table 5: Immunization Status of Children in Union Territory of Puducherry
Source: Office of the Deputy Director (Immunization), Puducherry

S.No	Year	Live-Birth Rate	Still Birth Rate
1	2004	45.9	23.0
2	2005	44.0	21.0
3	2006	44.5	20.4
4	2007	42.5	19.1
5	2008	43.0	19.1
6	2009	44.5	20.4
7	2010	41.5	19.0
8	2011	42.0	19.0
9	2012	NA	NA

Table 6: Live Birth Rate, Still Birth Rate U.T. Puducherry
Source: Local Administration Department, Puducherry

Year	Birth Rate	Death Rate
2002	17.9	7.0
2003	17.5	6.3
2004	17.0	8.0
2005	16.2	7.1
2006	15.7	7.3
2007	15.1	7.7
2008	16.4	7.5
2009	16.5	7.0
2010	16.4	7.5
2011	16.5	7.0
2012	16.7	7.4

Table 7: Birth and Dealth Rate of U.T Puducherry
Source: Abstract of Statistics, Department of Economics and Statistics

Age Groups	2000	2005	2006	2012
Below one year	877	1257	1797	2029
1 to 4 years	163	216	150	191
5 to 14 years	230	300	211	262
15 to 24 years	610	684	382	489
25 to 44 years	1634	1795	1249	1342
45 to 64 years	2755	2984	2481	2451
65 to 69 years	756	882	1314	15914
70 years and above	2761	2962	3273	3167

Table 8: Death by Different Age Groups in the Union Territory of Puducherry
Source: Local Administration Department, Puducherry

SI.No	Causes of Death	2000	2005	2006	2012
1	Cholera	0.02	0.03	0	0
2	Malaria	0.14	0.07	0.04	0.03
3	Other Fevers	0.87	1.14	0.95	0.96
4	Dysentery & Diarrhea	0.34	0.45	0.17	0.24
5	Respiratory Diarrhea	0.78	5.99	4.05	4.16
6	Maternal death	0.07	0.13	0.16	0.10
7	Other Diseases	92.78	92.20	94.63	94.51

Table 9: Death Due to Various Causesin the Union Territory
Source: Local Administration Department, Puducherry

Year	India	Puducherry
2005	58	28
2006	57	28
2007	55	25
2008	53	25
2009	53	25
2010	53	25
2011	50	22
2012	53	22

Table 10: Trends in Infant Mortality Rate India and Puducherry
Source: National Sample System – Various SRS Bulletin

States	Above Age
Madhya Pradesh	58.0
Kerala	74.00
Punjab	69.40
Uttar Pradesh	60.0
Bihar	61.6
Rajasthan	62.0
Gujarat	64.1
Andhra Pradesh	64.4
West Bengal	64.9
Puducherry	66.0
Karnataka	65.3
Haryana	66.2
Tamil Nadu	66.2
Himachal Pradesh	67.0
Maharashtra	67.2

Table 11: Life Expectancy at Birth – Indian States
Source: NRHM News Letter, October. 5.2013

	Item	Unit	As on 31-3-2006	As on 31-3-2007	As on 31-3-2008	As on 31-3-2009	As on 31-3-2010	As on 31-3-2011	As on 31-3-2012
1	Birth rate	Per 1000 population	15.7	15.1	16.4	16.4	16.4	16.5	16.7
2	Death Rate	Per 1000 population	7.3	7.7	7.5	7.5	7.5	7.0	7.4
3	Infant Mortality Rate	Per 1000 live births	28.0	25.0	25.0	25.0	25.0	22.0	22.0
4	Bed-Population Ratio	Ratio	1:499	1:460	1:485	1:502	1:527	1:462	1:408
5	Doctor-Population	Ratio	1:1972	1:2060	1:2170	1:2283	1:2399	1:2088	1:2790
6	Total Health Expenditure State	Ratio	5665.74	11332.68	13364.11	9937.01	16934.53	20141.82	14694.91
7	Health Expenditure Private	In Rs.	990	1071	1337	1370	1658	1658	1016

Table 12: Health Indicators (As On 31.03.2006 to 31.03.2012)
Source: Computed from secondary data, Hand Book, Directorate of Health and Family Welfare, Government of Puducherry