Chapter XI

MEDICAL AND PUBLIC HEALTH SERVICES

The *Ayurveda* system of medicine has been in practice from very early times. Several *Ayurveda Vaidyas* enjoyed royal patronage. In every village there were at least one or two families capable of offering relief to patients with the help of herbs. Restricted to towns, the *Unani* System of medicine was introduced in around 14th Century, during Muslim rule. The *Unani* physicians known as *Hakeems* enjoyed the confidence of the Muslim rulers as well as the general public. The Bahmani King Ahmed II (1436-53) ordered the construction of a splendid *Shafa Khana* (hospital) at Bidar which attracted patients from all communities. *Homeopathy, Yoga, Naturopathy* and *Siddha* systems were also in practice.

Health administration in the erstwhile State of Mysuru was very well ahead of its neighbouring provinces. Prior to 1864, four hospitals and 24 dispensaries under of the British administration were in existence and these were handed over to the then Government of Mysuru in 1884. A medical school was established as early as 1881, for the purpose of training Hospital Assistants. In 1907, the re-organization of the health services took place and a Public Health Department was created. In 1913, the head of the Medical Department was designated as Sanitary Commissioner. In the Mysuru State, a board of Health was appointed in 1929 to act as an Advisory Body on the public health matters. Mysuru State is the first in the Country to establish Rural Health Centres in 1931, which can be considered as a milestone in the health administration of the State. The important activities of these centres were improvement of village sanitation, investigation and control of outbreak of epidemic diseases, immunization services, chlorination of drinking water sources and reporting of births and deaths. A *Bureau of Maternal and Child Health,* and a *Bureau of Malariology* were started in 1934 and *Health training –cum-Demonstration centre* was opened in 1936. Mysuru was one of the earliest states to establish a Health education Bureau in the Department of Health in 1929, to promote health consciousness among people.

The erstwhile State of Mysuru occupies a unique position in the field of family planning programme. The World's first official family planning clinic was established in Mysuru in 1930. The University Medical School in Bengaluru was started in 1917 and in 1924, the first medical college was opened. After the re-organization of the State with parts of erstwhile Mysuru, Bombay, Madras, Coorg and Hyderabad in 1956, it was felt that there was need to co-ordinate the medical and health services, and accordingly, *the medical department and public health department* were amalgamated into a single department,*i.e.The Department of Health Services.*

Vital Statistics: Registration of births and deaths is an important source of demographic data for socio-economic development and population control in developing Countries. The data on population growth, fertility and mortality serves as the starting point for population projections. Apart from these vital indicators, an adequate evaluation of number of programs in the health sector, including family planning, maternal and child health (Reproductive and Child health), immunization programs is dependent upon the availability of accurate, up-to-date fertility and mortality data. In India, the need for dependable demographic data was felt soon after independence heralding the era of five year planning. The registration of births and deaths started on voluntary basis and there was no uniformity in statistical returns resulting in both under-registration and incomplete coverage. In order to unify the civil registration activities, the Registration of Births and Deaths Act, 1969 was enacted. Despite having the registration of births and deaths compulsory under the statute, the level of registration of births and deaths under the Act has continued to be far from satisfactory in several States/Union Territories.

The Director of Economics and Statistics is the Chief Registrar of Births and Deaths at State level. The Joint Director, the Deputy Director and Assistant Directors are in charge of Vital Statistics, as the Joint Chief Registrars. The Registration of Births and Deaths Rules 1970 came into effect from 1971 in the State. The Chief Registrar is the Chief Executive Authority in the State for implementing the Act.

Birth Registration in Karnataka: The registration of Births and Deaths Act, 1969 came into force in the State with effect from 1st April 1970. The Karnataka Registration of Birth and Death Rules (KRBD), 1970 were framed and issued by the Government of Karnataka on 15th December 1970, and were effective from 1st January 1971. Initially, in the rural areas, village Headman (Patels) acted as the registrars till 1978. The KRBD rules subsequently were amended in December 1999, as per the instructions of Registrar General, India. Revamped system of Registration of Births and Deaths is in force in Karnataka from 1st January 2000. In the urban areas, the city corporation/city municipal councils/Town Municipal Councils/ Notified Area Committees/Project Area/Sanitary Boards etc./Heath Officer/Health Inspectors/ Sanitary Inspectors are the Registrars. In some large cities/towns, Sub-Registrar of Births and Deaths have been appointed for different areas to decentralize the work. In rural areas, the village accountants are the registrars.

Sample Registration System (SRS): With a view to generate reliable and continuous data on these indicators, the Office of the Registrar General, India, initiated the scheme of sample registration of births and deaths in India popularly known as Sample Registration System in 1964-65 on a pilot basis and on full scale from 1969-70. The SRS since then has been providing data on regular basis. The main objective of SRS is to provide reliable estimates of birth rate, death rate and infant mortality rate for the rural areas and also for the urban areas district-wise as per *National Sample Survey (NSS)* classified group of contiguous administrative districts with distinct geographical and other natural characteristics. It also provides data for other measures of fertility and mortality including total fertility, infant and child mortality rate at higher geographical levels.

Various methods based on the application of sampling techniques have been tried and tested in many developing Countries. Such methods include single and multi-round retrospective surveys and the dual record system. The SRS in India is based on a dual record system. The field investigation under Sample Registration System consists of continuous enumeration of births and deaths in a sample of villages/urban blocks by a resident part time enumerator, and an independent six monthly retrospective survey by a full time supervisor. The data obtained through these two sources are matched. The unmatched and partially matched events are re-verified in the field to get an unduplicated count of correct events. The advantage of this procedure, in addition to elimination of errors of duplication, is that it leads to a quantitative assessment of the sources of distortion in the two sets of records making it a self-evaluating technique.

Year	Infant Mortality Rate (IMR)	Maternal Mortality Rate (MMR)
1998	72	245
1999	70	266
2000	68	266
2001	66	266
2002	63	228
2003	60	228
2004	58	213
2005	58	213
2006	57	213
2007	47	178
2008	45	178
2009	41	178
2010	40	178

Year	Crude birth rate	Crude death rate	TFR
2003	21.8	7.2	2.3
2004	20.9	6.9	2.3
2005	20.6	7.1	2.2
2006	20.1	7.1	2.1
2007	19.9	7.3	2.1
2008	19.8	7.1	2
2009	19.5	7	2

Number of Births and Deaths from 1996 to 2008

Year	Births	Deaths
1996	10,28,112	3,36,535
1997	10,31,147	3,50,264
1998	10,42,256	3,74,400
1999	9,97,649	3,46,451
2000	10,09,716	3,51,736
2001	10,17,224	3,65,181
2002	9,73,653	3,55,662
2003	10,01,749	3,59,661
2004	9,88,520	3,43,644
2005	10,07,868	3,64,415
2006	10,46,531	3,87,604
2007	10,46,424	3,81,890
2008	10,82,450	3,72,062

Medical Certification of Cause of Death(MCCD): Reliable cause specific mortality statistics is required on a regular basis by Administrators, Policy Planners, Researchers and other Professionals for evidence based decision making with regard to resource allocation, monitoring of indicators, identifying the Priorities for programmes and other related activities in the area of Public Health. Keeping this in view, the *Scheme of Medical Certification of Cause of Death (MCCD)* was introduced in the Country under the provisions of *Registration of Births and Deaths (RBD) Act, 1969.* Section 10(2) of the Act empowers the State Government to enforce the provision relating to Medical Certification of Cause of Death in specified areas taking into consideration the availability of medical facilities. Section 10(3) of the Act provides for issuing a certificate of the cause of death by the medical practitioner who has attended on the deceased at the time of death.

Medical Research is currently facing stiff challenges from the spread of a variety of ailments like Cancer, AIDS, Heart Diseases, Juvenile diabetes, non-communicable diseases, Swine flu and Chikungunya etc. For tackling these issues, good documentation of information on the causes of death is indispensable. Recognising this fact and in order to draw the profile of different natural and manmade causes of death, the international community of Medical Professionals, under the aegis of World Health Organisation have codified most of the disease labeling them "*International Classification of Diseases (ICD)*".

This ICD is customised to the Indian conditions under the scheme of "*Medical Certification of Cause of Death*". Important demographic indicators like *Infant Mortality Rate, Maternal Mortality Rate and Child Mortality Rate* are derived using the information on MCCD. The term '*cause of death*' has been defined as to go back to the root/underlying cause. It is "*the morbid condition to which can be traced the sequences of events ultimately resulting in death*".

Methodology: The necessary data is collected in the Prescribed forms (Form No.4 for Hospital deaths and Form No.4A for Non-institutional deaths). Both these forms have been designed by *World Health Organisation (WHO)* and are supposed to be filled-up by the medical professionals attending to the deceased at the time of terminal illness. Thereafter, these forms are to be sent to the concerned Registrars of Births and Deaths for onward transmission to the Chief Registrar Office for tabulation as per National List based on *International Classification of Death* . The State subsequently send it to the Office of the Registrar General, India in the form of Statistical Table-9 for consolidation at the National level.

Scope of the report: The report on *Medical Certification of Cause of Death – 2011* is based upon 1,23,221 (Males: 78517 and Females: 44,704) medically certified deaths (32.03 per cent of total registered deaths) supplied by 1,308 Hospitals. As mentioned above, owing to different levels of efficiency of medical certification across the State, the number of deaths reported therein may lack the representative feature in the strict sense, however, it may be sufficient to throw some valuable insight into deaths by various cause groups and their gravity.

Overall Findings: During the year 2011, following are eight leading cause groups of deaths constituting around 88.14 per cent of total deaths: I.Diseases of Circulatory System (29.97 per cent)., II. Injury, Poisoning and certain other consequences of External causes (11.20 per cent)., III. Certain Infectious and Parasitic diseases (10.68 per cent)., IV. Certain condition originating in the perinatal period (9.33 per cent)., V. Diseases of the Respiratory System (7.90 per cent). VI. Diseases

of the Digestive System (6.55 per cent)., VII. Endocrine, Nutritional and Metabolic Diseases (6.36 per cent). VIII. Neoplasm (6.15 per cent).

Among the "*Diseases of the circulatory system*" deaths, "*Ischemic Heart Diseases" (IHD)* account for the highest number of deaths (41.03 per cent). Around every 12th medically certified death has been reported to be causes by Ischemic Heart Disease alone.

The second leading cause group "*Injury, Poisoning and certain other consequences of External causes*" has a major constituent "*Poisonings by drugs and Biological substances and Toxic effects of substances chiefly non-medicinal as to source*" contributing around 36.48 per cent of the total deaths under this cause group and 4.15 per cent of total medically certified deaths.

The major group "*Certain Infectious and Parasitic Diseases*" which is the third leading cause of death is mainly constituted by "*Respiratory Tuberculosis and septicemia*". Under this major group, the share of these two diseases are 33.78 per cent and 19.14 per cent respectively. The Respiratory Tuberculosis alone accounts for 3.67 per cent of the total medically certified deaths.

The fourth leading group "*Certain conditions originating in the perinatal period*" accounting for 9.48 per cent of the total medically certified deaths. "*Slow fetal growth, fetal malnutrition and immaturity*" accounts for 41.81 per cent of the deaths under the group and 3.96 percent of total medically certified deaths.

The major group "*Diseases of the Respiratory System*" is the fifth leading cause "*Other Lower Respiratory Disorders*" accounting for around 34.23 per cent of the total deaths. The other major cause in this group is "*Pneumonia*" Causing 25.03 per cent of death, under total medically certified deaths, "*Pneumonia*" alone accounts for 2.01 per cent.

The major group comprising "*Diseases of Digestive System*" is the sixth leading cause accounting for 6.65 per cent of the total medically certified deaths. Among the deaths due to disorders of digestive system "*Diseases of the Liver*" alone accounts for 66.52 per cent of the total deaths in this group.

The group of "*Endocrine, Nutritional and Metabolic Diseases*" is the seventh leading cause group accounting for 6.46 per cent of the total medically certified deaths. Under this cause group, "*Diabetes Mellitus*" group alone accounts for 86.61 per cent of total deaths reported and 5.59 per cent of total medically certified deaths.

The eighth leading cause group, Neoplasms (cancer) is responsible for 6.25 per cent of the total medically certified deaths, of which "*Malignant Neoplasm of digestive organs*" accounts for 26.47 per cent which is around one-third of deaths. This is followed by "*Malignant Neoplasms of Lymphoid, Haematopoietic and Related tissue*" accounts for one-sixth of deaths (15.32 per cent).

***Age-wise*:** Every tenth reported medically certified deaths has been of the infants (age less than one year). About 87.81 per cent of infant deaths have been reported to be caused by '*Certain conditions originating in the perinatal period*'. Among the children aged one to four years "*Congenital Malformations, Deformations and Chromosomal Abnormalities*" have taken the highest toll of 29.62 per cent. In the age group 5-14 years "*Certain Infectious and Parasitic Diseases*" this cause claimed the topmost position with the share of 23.67 per cent. In the age-group of 15-24 and 25-34 years, major group. "*Injury Poisoning and certain other consequences of External causes*" is the first among the leading causes contributing around 45.81 per cent and 33.72 per cent respectively. It implies that these age-group of youth and adolescent are more vulnerable to injuries and poisoning related deaths. In the age-group 35-44 years, the first two leading causes "*Diseases of Circulatory System*" and "*Injury, Poisoning and certain other consequences of External causes*" are having shares of 23.39 and 18.97 per cent respectively. For all the age-groups of 45 years and above "*Diseases of Circulatory System*" is the first leading cause of death. The percentage contribution of this cause group for 45 years and above, to respective age-group totals have been increasing with age. The percentage share of this cause group to the total medically certified deaths for these ages varies from 31.82 per cent to 47.65 per cent. The highest number of deaths (27,508 i.e., 22.32 per cent of total) has been reported for the age-group 70 years and above.

***Gender-wise*:** The contributions of male and female deaths in the total medically certified cases has been reported to be 63.72 per cent and 36.28 per cent respectively. There is no significant difference for both males and females as far as eight leading causes are concerned, except for Neoplasm, Endocrine, Nutritional and Metabolic diseases and Diseases of Digestive System deaths. The percentage of female neoplasm deaths to total female medically certified deaths is 7.19 per cent as compared to the corresponding male figure of 5.56 per cent. On the contrary, the percentage of female digestive system deaths to total female medically certified deaths is just 3.60 per cent as compared to the corresponding male figure of 8.24 per cent.

The eight leading cause groups of deaths viz., *Diseases of the circulatory system ,Injury, Poisoning and certain other consequences of external causes , Certain Infectious and Parasitic Diseases, Certain conditions originating in the perinatal period, Diseases of the Respiratory System, Diseases of the Digestive System , Endocrine, Nutritional and Metabolic Diseases and Neoplasm* had taken together account for about 88.15 per cent of the total medically certified deaths.

Among the leading cause groups, '*Diseases of Circulatory System*' constitute the maximum i.e. 29.97 per cent of total medically certified deaths, followed by '*Injury, Poisoning and Certain Other Consequences of External Causes*' 11.20 per cent, '*Certain Infectious and Parasitic Diseases*' 10.68 per cent and *'Certain conditions originating in the perinatal period'* constitute 9.33 per cent of total medically certified deaths, followed by 7.90 per cent due to '*Diseases of the Respiratory System*',

'*Diseases of the Digestive system*', *'Endocrine, Nutritional and Metabolic Diseases'* and *'The Neoplasms*' each constitute around six per cent of the total medically certified deaths. In respect of eight leading causes of death the gender difference is not significant. However, the medically certified male deaths are on a higher side in case of *'Diseases of Circulatory System'*, *'Injury, Poisoning and Certain Other Consequences of External Causes', 'Certain Infectious and Parasitic Diseases*','*Diseases of Respiratory System' and 'Diseases of the digestive system'* compared to corresponding female figures.

Diseases of the Circulatory System :It is the topmost ranking major group of disease, constituting 30.44 per cent of total medically certified deaths. It accounts for 30.90 per cent of males and 29.63 per cent of female deaths in their respective totals of medically certified deaths.

The Sub-group '*Ischemic Heart Diseases (IHD)*' characterized by reduced blood supply to the heart muscle, usually due to coronary artery disease (arthrosclerosis of the Coronary arteries) accounts for the highest no.of deaths (41.03 per cent) under the major group 'Diseases of Circulatory System'. Furthermore, around every 13th medically certified deaths has been reported to be caused by IHD alone. The sub group

'Cerebrovascular Diseases' is reported to be the second highest cause of deaths constituting 22.02 per cent of the Circulatory system deaths followed by 'Diseases of Pulmonary Circulation and other forms of heart Diseases (19.16 per cent)' and 'Hypertensive Diseases (12.11 per cent)'. The percentages of male deaths to female deaths are more in the cause group of Ischemic Heart Diseases and Cerebro Vascular Diseases. It is vis-a-versa in the cause group of Diseases of Pulmonary Circulation and Other Forms of Heart Diseases and Hypertensive Diseases.

Injury Poisoning and Certain other Consequences of External Causes : It is the second leading cause group responsible for 11.37 per cent of total medically certified deaths. This has caused 11.53 per cent of male and 11.10 per cent of female deaths. Under this cause group *'Poisonings by drugs and biological substances and toxic effects of substances chiefly non-medicinal as to source'* alone have contributed to 36.48 per cent of the total deaths, this is followed by 'Burns and Corrosions' (25.15 per cent) and 'Other Injuries of specified and unspecified and multiple body regions' with 2,827 male and 601 female deaths (24.84 per cent). Death due to Burns and corrosions among females is 46.48 per cent as compared to 13.26 per cent among males, under this major group.

Certain Infectious and Parasitic Diseases (I):It is the third leading cause group of disease accounting for 10.85 per cent of total medically certified deaths, which constitute 11.03 per cent of male and 10.54 per cent of female medically certified deaths of their respective totals.

Among the Certain Infectious and Parasitic Diseases, 'Respiratory Tuberculosis' is the highest reported medically certified cause of mortality, constituting around 33.78 per cent followed by 'Septicemia' (19.14 per cent). Under this group, percentage of Respiratory Tuberculosis deaths in females is 25.87 percent as against 38.16 per cent of males out of their respective totals. The share of 'Diarrhoea and Gastroenteritis of presumed Infectious Origin', 'Tuberculosis of Nervous System', 'Other Arthopad Borne Fevers and Viral Haemarrhagic fevers', 'Tuberculosis of other organs and miliary tuberculosis' and 'Other Viral Encephalitis' in the total deaths under this group are 9.55, 5.54, 5.35, 4.58 and 3.98 per cent respectively.

Certain Conditions Originating in the Perinatal Period :The group of diseases relating to 'Certain conditions originating in the Perinatal Period' is the fourth leading cause of death, accounting 9.48 per cent of the total medically certified deaths. This has contributed to 9.23 per cent of male and 9.92per cent of female medically certified deaths.

Diseases of the Respiratory System :The major group of Diseases of Respiratory System is the fifth leading cause, responsible for 8.02 per cent of the total medically certified deaths. This has contributed to 8.39 per cent of male and 7.37per cent of female deaths.

'*Other lower Respiratory disorders*', is the leading cause of death, has caused 30 out of every hundred reported deaths under the major cause group. It is followed by 'Pneumonia' an inflammatory illness of the lung and also one of the leading cause of death in this major group constitutes about 25.03 per cent of the deaths. 'All other Diseases of the Respiratory System' has caused 23 out of every hundred reported deaths. The percentage share of Pneumonia to the total medically certified deaths is 2.01 per cent with the corresponding share of Asthma being 0.86 per cent.

***Diseases of the Digestive System*:** The major group comprising 'Diseases of Digestive system' is the sixth leading cause group, responsible for 6.65 per cent of the total medically certified deaths with 8.41 per cent of male and 3.61 per cent of female deaths. The percentage of male digestive disorder deaths to total medically certified is just double to that of corresponding female figures.

Among the deaths due to disorders of digestive system, 'Diseases of the Liver' account for 66.52 per cent of the total medically certified deaths in this group. The share of liver diseases is about four per cent among the total medically certified deaths. 'All other Diseases of the other parts of the Digestive System' and 'Peritonitis' also have responsible for 12.03 per cent and 6.66 per cent of total deaths under this major cause group.

Endocrine, Nutritional and Metabolic Diseases : This is the seventh leading cause group has contributed to 6.46 per cent of the total medically certified deaths. Under this cause group, 'Diabetes Mellitus' that causes serious health complications such as renal failures, heart disease, stroke and blindness, is a disease in which Pancreas no longer produces enough insulin or when cells stop responding to the insulin that is produced, so that glucose in the blood cannot be absorbed into the cells of the body, is the leading cause of death. It alone accounts for 86.61 per cent of total deaths reported under the cause group. The share of *Diabetes mellitus* in total medically certified deaths is 5.59 per cent. The incidence of '*Diabetes Mellitus*' death is reported to be the highest for the age group 70 and above (39.28 per cent).

***Neoplasms* :** The eighth leading cause, Neoplasm, which is commonly known as Cancer, is responsible for 6.25 per cent of the total medically certified deaths. The share of deaths due to Neoplasms in total female deaths is 7.22 per cent as compared to the corresponding figure of 5.68 per cent in case of males. Among total female medically certified deaths, it is the seventh leading cause of death.

Among the neoplasm deaths, '*Malignant Neoplasm of Digestive Organs*' accounts for the highest mortality of 26.47 percent, followed by '*Malignant of Lymphoid, haematopoetic & other related tissue*' (15.32 per cent), '*Malignant Neoplasm of Respiratory Intrathoracic Organs*' (13.77 per cent) and '*Malignant Neoplasms of Genitor-Urinary Organs*' (12.43 per cent). The share of deaths due to Malignant Neoplasms of Digestive Organs in males, to total male Neoplasm deaths is 30.69 per cent as against 20.73 per cent of corresponding female deaths. The percentage of female deaths due to '*Malignant Neoplasm of genito urinary organs*' to total female neoplasm deaths is 19.55 per cent as compared to 7.19 per cent

of corresponding male deaths. Among deaths caused by '*Malignant Neoplasm of Respiratory and Intra Thoracic Organs'* about 61 per cent is due to Lung Cancer in male. Lung Cancer alone accounts for around 14.57 per cent of total male Neoplasm deaths.

Diseases of the Genito-Urinary System : Out of every hundred medically certified deaths, around three are reported from '*Diseases of Genitourinary System*'. Renal failure is the cause of maximum deaths (68.74 per cent) under the '*Genitourinary System'* disease with the overall share of 2.31 per cent in total medically certified deaths.

Diseases of the Nervous System : The cause group of Diseases of Nervous System is responsible for 2.61 per cent of the total medically certified deaths. '*All other Diseases of the Nervous System*' accounts for the maximum (36.20 per cent) deaths reported under this group, followed by '*Meningitis*' (26.94 per cent) and '*Encephalitis Myelitis and Encephalomyelitis*' (21.53 per cent). The share of '*Meningitis*' in the total medically certified deaths is about 0.7 per cent.

Diseases of the Blood and Blood Forming Organs and Certain Disorders involving the Immune Mechanism: The diseases under this cause group have contributed to 1.66 per cent of the total medically certified deaths. This cause group accounts for 1.43 per cent of total male and 2.05 per cent of total female medically certified deaths. " *Other Anaemias*" is the major cause constitute around 81 per cent of total deaths reported in the cause group and 1.35 per cent of the total medically certified deaths.

Congenital Malformations, Deformations and Chromosomal Abnormalities: Merely 1805 deaths are reportedly caused by '*Congenital Malformations, deformations and Chromosomal abnormalities*', constituting about 1.46 per cent of the total medically certified deaths. The majority of these deaths occur for age less than one year (1098 or 60.83 per cent). Under this cause group, about 57.89 per cent deaths are caused by malformation of various Circulatory System.

Symptoms, Signs and Abnormal Clinical & Laboratory Findings, not elsewhere classified (N.E.C): This leading major cause group responsible for 1.34 per cent of the total medically certified deaths of which 1.33 per cent of males and 1.37 per cent of female death. Thus around every third reported death is having no specific cause. The high prevalence of causes of death being reported under this cause from the hospitals reporting Medical Certification of Cause of Death data, clearly suggests about the deficiency in clarification especially improper classification of causes of deaths by the attending doctors. As depicted in the Statement-28. "*All other Symptoms, Signs and Abnormal Clinical and Laboratory Findings Not Elsewhere Classified*" accounted for 0.95 per cent of the total deaths in this group.

Complications of Pregnancy, Childbirth and the Puerperium : The group consisting of '*Complications of Pregnancy, Childbirth and the Puerperium*' has reportedly caused 841 deaths (1.89 per cent of the total female medically certified deaths). As high as 95.60 per cent of deaths under this cause group have been due to obstetric causes like '*Oedema, Proteinura, Hypertensive Disorders, Complications Predominantly Related to the Puerperium*' and some other related complications. The remaining 4.40 per cent deaths in this cause group are due to abortive outcome of Pregnancy such as *Medical and Spontaneous Abortions*.

Diseases of the Skin and Subcutaneous Tissue : These diseases account for 772 medically certified deaths (0.63 per cent of the total medically certified deaths). This cause group accounts for 0.65 per cent of total male and 0.59 per cent of total female medically certified deaths. About 81 per cent of the deaths under the cause group are caused by '*Infections of the Skin and Subcutaneous Tissue*'.

Mental and Behavioural Disorders : The group relating to Mental and Behavioural disorders accounts for 105 deaths (0.09 per cent of total medically certified deaths). The age group 25-64 years constitutes around 83 per cent of total deaths due to '*Mental and Behavioural Disorders*'. Under this cause group, the deaths due to "*Schizophrenia, Schizotypal & Delusional Disorders*" constitutes the highest share (42.86 per cent) of total deaths. The ratio of males to females was disproportionate in this group (74 males to 31 females).

The least harmful major causes are *Diseases of the Ear and Mastoid Process and Diseases of the Eye and Adnexa* . No significant mortality is reported due to these causes.

The descriptions for all Major Groups of the National list based on ICD-10 are as follows:

Major Cause Groups and Description and ICD Codes.

I Certain Infectious and Parasitic diseases (A00-B99).

II Neoplasms (C00-D48)

III Diseases of the blood and blood forming organs and certain disorders involving the immune mechanism (D50-D89)

IV Endocrine, nutritional and metabolic diseases (E00-E89)

V Mental and behavioral disorders (F01-F99)

VI Diseases of the nervous system (G00-G98)

VII Diseases of the eye and Adnexa (H00-H59)

VIII Diseases of the ear and mastoid process (H60-H95)

IX Diseases of the circulatory system (I00-I99)

X Diseases of the respiratory system (J00-J98)

XI Diseases of the digestive system (K00-K92)

XII Diseases of the skin and subcutaneous tissue (L00-L98)

XIII Diseases of the musculoskeletal system and connective tissue (M00-M99)

XIV Diseases of the genitourinary system (N00-N99)

XV Pregnancy, childbirth and the puerperium (O00-O99)

XVI Certain conditions originating in the perinatal period (P00-P96)

XVII Congenital malformations, deformation and chromosomal abnormalities (Q00-Q99)

XVIII Symptoms, signs and abnormal clinical and laboratory findings, n.e.c. (R00-R99)

XIX Injury, poisoning and certain other consequences of external causes (S00-T98)

XX External causes of morbidity and mortality (V01-Y89)

*XXI Factors influencing health status and contact with health services (Z00-Z99)

* Not in use in India.

Directorate of Health and Family Welfare Services

The Department of Health and Family Welfare Services implements various National and State Health programs of Public Health importance to provide comprehensive Health Care Services to the people of the State through various Health and Medical Institutions.

Health Care Services provided through various Projects, Programmes and Services: a) Rural Health component of the Minimum Needs Programme, b) Curative Services, c) National Rural Health Mission (NRHM), d) National Leprosy Eradication Programme, e) Revised National Tuberculosis Control Programme, f) National Programme for Control of Blindness, g) National Vector Borne Control Programme (NVBDCP), h) National Guinea Worm Eradication Programme, i) Prevention and control of Communicable Diseases like Diarrhoea, Kysanur Forest Diseases, etc., j) Health Education, Training and School Health Services, k) Nutritional Services, l) National Iodine Deficiency Disorder Control Programme, m) Laboratory Services, n) Karnataka Health Systems Development and Reforms Project and o) AIDS Prevention Programmes

Administration and Direction

The Department is headed by the Commissioner of Health and Family Welfare Services and the Director of Health and Family Welfare Services. Commissioner is the administrative head and Director is the technical head. National Rural Health Mission (NRHM) is headed by a Mission Director (NRHM). Karnataka Health System Development and Reforms Project (KHSDRP) is headed by the Project Administrator. Karnataka State AIDS Prevention Society is headed by project Administrator. These officers are assisted by Additional Directors, Joint Directors, Deputy Directors and Demographer in implementing and monitoring health programmes. Chief Administrative Officer and Chief Accounts Officers cum Financial Adviser assist in administrative and financial matters of the Department. At the District level, District Health and Family Welfare Officer is the head of Public Health Services. Implementation and monitoring of various National and State Health Programmes in all below 100 beds health care service institutions which are under Zilla Panchayath Sector are done by the District Health

and Family Welfare Officer. He is assisted by; District Programme Management Officer, District TB Officer, District Malaria Officer, District Family Welfare Officer , District Surveillance Officer and District Leprosy Officer (who also oversees Blindness Control Programme). Above 100 beds healthcare services institutions are under state sector.

The District Surgeons of District Hospitals are responsible for providing curative, emergency and promotive services including referral services. Presently 21 District Hospitals are under the control of Health and Family Welfare Department. 176 Taluk Health Officers are positioned at Taluk headquarters. They are the implementing authorities of Public Health, National and State Health Programs in their respective Taluks. The Medical Officers of Health at Primary Health Centre Level are responsible for the implementation of various National and State Health Programs including Family Welfare Programme and MCH Services. To provide Primary Health Care throughout the State, a network of 8,871 Sub Centres, 2,346 Primary Health Centres, 188 Community Health Centres and 146 Taluk Hospitals have been provided.

Karnataka is one of the pioneer States in the Country in providing comprehensive Public Health Services to its people. Even before the concept of Primary Health Centres was conceived by the Government of India, the State had already made a beginning in this regard by establishing a number of primary health centres for providing comprehensive health care delivery system consisting of *"Curative", "Preventive", "Promotive" and "Rehabilitative services"* in health care to the people of the State. The department is rendering the following services through its network of Medical and Health institutions in the State:

1. Common Minimum Needs Programme, 2) Curative Services, 3) Reproductive and Child Health Programme, 4) Prevention and control of communicable diseases, National Leprosy Control Programme, National AIDS control programme, Revised National Tuberculosis control programme, National Guinea worm eradication programme and National programme for control of blindness, 5) National Vector Borne Disease Control Programme including National Anti-Malaria Programme, National Filaria Control Programme, Anti JE programme and Dengue Control Programme, 6) Laboratory Services, 7) Implementation of Food Adulteration, 8) Environmental Sanitation, 9) Vital Statistics, 10) National Services, 11) Health Education and School Health Services, 12) Training programmes, 12) EMRI (Arogya Kavacha), 13) Public Private Partnership programme, 14) Mobile Health Units, 15) Madilu, 16) Prasuthi Aarike etc.

Society Mode of implementation of programmes: With a view to cut down bureaucratic procedures, reduce delays, relax rules and regulations, better and speedy implementations of programmes, and bring in transparency and flexibility, societal mode of implementation has been unique in Karnataka State. This mode started under DANIDA in 1980s till date the National Programme for Control of Blindness, improved many folds at each district levels in the form of District Blindness Control Society. Given the great success of this, many more programmes later on started implementing in this mode for example Reproductive and Child Health Programme (RCH), KSAPS, Leprosy, Tuberculosis, Drug Logistics and NRHM.

Health Infrastructure: Primary Healthcare: Primary healthcare denotes the first level of contact between individuals and families with the health system. Primary Healthcare is provided through a network of Sub centres and Primary Health Centres in rural areas. The Sub centre consists of one Auxiliary Nurse Midwife and Male Health worker and serves a population of 5,000 in plains and 3,000 persons in hilly and tribal areas. The Primary Health Centre (PHC), staffed by Medical Officer and other paramedical staff serves every 30,000 population in the plains and 20,000 persons in hilly, tribal and backward areas.

Secondary Health Care: Secondary Healthcare refers to a second tier of health system, in which patients from primary health care are referred to specialists in higher hospitals for treatment. The health centres for secondary health care include *District hospitals and Community Health Centre (CHC)* at block level.

Tertiary Health Care: Tertiary Health care refers to a third level of health system, in which specialized consultative care is provided usually on referral from primary and secondary medical

care. Specialized Intensive Care Units, advanced diagnostic support services and specialized medical personnel on the key features of tertiary health care. Under public health system, tertiary care service is provided by medical colleges and advanced medical research institutes.

Primary Health Care is one of the items under the restructured 20 point programme. The State is following the National Pattern of three tiers Health Infrastructure in rendering Primary Health Care by establishing health institutions *viz.,* Sub centre, Primary Health Centres and Community Health Centres.

	2000	01	02	03	04	05	06	07	08	09
State Government										
Number	177	177	177	177	177	177	177	26	27	19
Beds	23273	23273	23273	23273	23273	23273	23273	10045	10145	4850
Other agencies										
Number	61	61	61	61	61	61	61	42	42	10
Beds	5257	5257	5257	5257	5257	5257	5257	10461	10461	2102
CHC										
Number								147	146	29
Beds								15220	15120	18342
Indian System of Medicine										
Number	93	101	103	103	103	103	103	178	178	144
Beds	1430	1495	1535	1535	1535	1535	1535	5340	5340	14870
PHC										
Number	1685	1685	1677	1696	1698	1679	2193	2193	2193	2163
Beds	15144	15144	15931	15581	15893	17828	10693	10693	10693	10693
PHU										
Number	583	583	582	581	581	578	17	17	17	27
Beds	1122	1122	1145	1132	1132	1229	102	102	102	162
Dispensaries										
Number	208	208	208	208	208	208	659	659	659	659
Beds	121	121	121	121	121	121				
Under ISM	609	639	639	638	638	638	2565	1565	1565	1565
Family Welfare Centres	459	459	459	639	638	638				
Subcenter	8143	8143	8143	8143	8143	8143	843	8143	8143	8143
Drug Shops										
Retail Shops	8133	11618	14827	14088	13758	15790	16455	16543	17145	18173
Restricted Shops	613	640	513	478	482	522	485	485	465	511
Blood banks	91	110	141	140	147	150	169	169	172	174

Family Welfare Services

Reproductive and Child Health Programme: Karnataka is a pioneer State in launching of Family Welfare Programme in the Country since June 11, 1930. Erstwhile Mysuru State had initiated the idea of some kind of birth control as early as in 1930, inducing clinics to advise mothers on the subject in the two hospitals, in the State. The Family Planning programme gained momentum at the beginning of the Second Plan.

For better co-ordination and supervision, while implementing the programmes at various levels, the District Health Officer was designated as the District Health and Family Welfare Officer to look after the Welfare activities of the District. In 1964 *Family Planning Bureau* was formed at each District Headquarter to co-ordinate the family welfare activity.

Extension approach was adopted in 1964, wherein Education Service facilities were extended to the door steps of the rural masses and the urban people. Facilities have been provided in all medical institutions for conducting vasectomy, tubectomies, laparoscopic operations and IUD placements. Intensive propaganda through lectures, film shows, exhibitions, publicity, literature etc., is being conducted throughout the State to popularize the programme. As a result, female sterilization gained momentum and laparoscopic operation was found to be safe.

Child Survival and Safe Motherhood Project (CSSM): The CSSM project (1991-96) financed by an IDA credit of US$ 214.5 million, supported the enhancement and expansion of the *Maternal and Child Health (MNCH)* component of the National Family Welfare Programme. It was national in scope, with emphasis on districts where maternal and infant mortality rates were higher than the national average.

The project's specific objectives were to enhance child survival, reduce maternal mortality and morbidity rates, and increase the effectiveness of service delivery by supporting 1) Child survival programmes including the Universal Immunization programme, diarrhoea control programmes and the control of acute respiratory infections, 2) A Safe Motherhood initiative to improve ante-natal and delivery care for all pregnant women and to identify high-risk pregnancies and 3) Institutional systems development, including improving and expanding training programmes for family welfare workers, education and communication and management information. More than 42 million women and children benefited annually from the services provided. Karnataka has performed fairly well and has brought not only annual growth rate of population to 1.7 per cent as per 2001 census but also the crude birth rate, the crude death rate and infant mortality rate, couple protection rate and so on.

The latest vital indicators are given below:

Sl. No	Particulars	2006	2007	2008	2009
1	Birth rate	20.6	19.9	19.8	19.5
2	Death rate	7.1	7.3	7.3	7.2
3	IMR	50	47	45	41
4	Couple Protection Rate (%)	63.6	67	65.47	65.47

Source: Sample Registration System

The achievements under Sterilizations are shown below:

Year	Number of Sterilizations	IUD	C.C. Users	O.P. Users
1997	3,716			
1998	3,837			
1999	3,95,624			
2000	3,95,123			
2001	4,13,092			
2002	4,12,726			
2003	3,95,379	3,07,034	2,88,863	1,59,256
2004	3,77,481	3,77,481	2,96,830	2,87,493
2005	3,76,960	2,97,265	3,06,280	1,71,843
2006	3,76,308	2,91,134	3,03,124	1,71,103
2007	3,84,829	2,78,894	3,00,097	1,68,499
2008	3,68,975	2,85,588	3,09,946	1,74,045
2009	3,88,959	2,74,305	3,16,311	1,66,230

Maternal and Child Health Programme: As a part of Family Welfare Programme, great emphasis has been laid on improving health of the mothers and children since it is of vital importance to the acceptance of the family norms. The *Maternal and Child Health Programme* aims at providing antenatal and postnatal services to pregnant women and mothers. These include immunization of pregnant women and child against six killer diseases, prophylaxis against nutritional anaemia and vitamin 'A' deficiency diseases.

Year	DPT	Polio	BCG	Measles	TT
1997	1,147	1,150	1,220	1,078	1,281
1998	1,144	1,146	1,211	1,085	1,276
1999	11,15,720	11,16,789	11,94,340	10,33,279	12,50,116
2000	10,71,807	10,72,942	10,80,658	9,99,435	11,56,808
2001	10,99,455	10,99,425	11,75,688	10,41,556	12,10,239
2002	11,35,495	11,37,900	11,87,564	10,93,997	11,94,472
2003	10,69,642	10,99,586	10,79,832	10,13,386	11,18,965
2004	9,63,640	10,36,021	10,73,775	9,27,595	9,87,258
2005	10,61,788	10,61,778	10,77,554	10,04,958	11,18,524
2006	10,93,428	10,92,151	11,08,016	10,39,664	11,53,354
2007	12,20,037	12,19,377	12,30,702	11,71,368	12,95,460
2008	10,44,946	10,74,087	10,98,931	10,28,859	11,33,230
2009	10,70,435	5,54,798	10,85,556	10,18,121	11,90,192

In the year 2010-2011, 11.02 lakhs of DPT, 10.96 lakhs of Polio, 11.19 lakhs of BCG, 10.41 lakhs of Measles and 11.84 lakhs of TT were given.

Health Statistics: Communicable Diseases

Plague: Plague is a zoonotic disease circulating mainly among small animals and their fleas. The bacteria *Yersinia pestis* can also infect humans. It is transmitted between animals and humans by the bite of infected fleas, direct contact, inhalation and rarely, ingestion of infective materials. Plague can be a very severe disease in people, with a case-fatality ratio of 30 to 60 per cent if left untreated. Infected persons usually start with "*flu-like*" symptoms after an incubation period of three to seven days. Patients typically experience the sudden onset of fever, chills, head and body-aches and weakness, vomiting and nausea. Clinical plague infection manifests itself in three forms depending on the route of infection: bubonic, septicaemia and pneumonic.

Plague is a deadly infectious disease that is caused by the enterobacteria *Yersinia pestis*, named after the French-Swiss bacteriologist Alexandre Yersin. Primarily carried by rodents (most notably rats), Plague is not of recent origin and dates from 1886 when it was introduced in some parts of Bombay Presidency from China and spread rapidly over a large part of the Country. During 1897, the disease took a heavy toll. After the advent of State-wide insecticidal spray operations under the *National Malaria Control Programme*, Plague declined. The plague surveillance unit was founded in Bengaluru in 1975 and become functional in 1976. There have been no cases of plague in recent years.

Plague Control Programme

Surveillance	2008	2009	2010(Up to December)
Rodent collection	5,821	6,948	4,298
Sera collected and examined	5,051	5,835	3,454
REP Survey	Nil	2	25

Rodent sera samples have been analyzed at NICD- Bengaluru

Cholera: Cholera is an acute intestinal infection caused by ingestion of food or water contaminated with the bacterium *Vibrio cholerae*. It has a short incubation period, from less than one day to five days, and produces an enterotoxin that causes a copious, painless, watery diarrhea that can quickly lead to severe dehydration and death if treatment is not promptly given. Vomiting also occurs in most patients. In Karnataka State, eight districts namely Belagavi, Ballari, Vijayapura, Chitradurga, Dharwad, Bidar, Mysuru and Kalburgi have been declared as endemic for Cholera. Cholera Combat Teams take up investigation, treatment and containment on spot in each of the above districts. But with the provision of drinking water through bore-wells on a large scale, the incidence of cholera has declined during the last one decade. But industrial pollution has contributed to its appearance in many new areas like Mysuru district. In view of poor protection offered by the Cholera vaccine against the disease cholera, the vaccination programme was discontinued in 1990's

Year	Attack	Death
1971-1981	5,230	463
1982-1990	4,551	140
1991-2000	4,702	115
2001-2011(Up to September)	2,472	17

Typhoid: Typhoid fever is a bacterial disease, caused by *Salmonella typhi*. It is transmitted through the ingestion of food or drink contaminated by the faeces or urine of infected people. Symptoms usually develop one to three weeks after exposure, and may be mild or severe. They include high fever, malaise, headache, constipation or diarrhoea, rose-coloured spots on the chest, and enlarged spleen and liver. Healthy carrier state may follow acute illness.

Year	Attack	Death
1991-2000	1,58,666	19
2001-2011(Up to September)	3,32,346	60

Gastro Enteritis: Gastroenteritis (also known as gastric flu, stomach flu, and stomach virus, although unrelated to influenza) is marked by severe inflammation of the gastrointestinal tract involving both the stomach and small intestine resulting in acute diarrhoea and vomiting. It can be transferred by contact with contaminated food and water. The inflammation is caused most often by an infection from certain viruses or less often by bacteria, their toxins (e.g. SEB), parasites, or an adverse reaction to something in the diet or medication.

Year	Attack	Death
1991-2000	2,02,904	4,305
2001-2011(Up to September)	4,22,533	1,151

Viral Hepatitis: Viral hepatitis is liver inflammation due to a viral infection. It may present in acute (recent infection, relatively rapid onset) or chronic forms. The most common causes of *viral hepatitis* are the five unrelated hepatotropic viruses *Hepatitis A, Hepatitis B, Hepatitis C, Hepatitis D, and Hepatitis E.*

Year	Attack	Death
1991-2000	24136	66
2001-2011(Up to September)	45923	161

Leptospirosis: Leptospirosis is a bacterial disease that affects both humans and animals. The early stages of the disease may include high

fever, severe headache, muscle pain, chills, and redness in the eyes, abdominal pain, jaundice, haemorrhages in skin and mucous membranes (including pulmonary bleeding), vomiting, diarrhoea and a rash.

Year	Attack	Death
1991-2000	125	4
2001-2011(Up to September)	2111	104

Kysanur Forest Disease: *Kysanur Forest Disease (KFD)* is reported from two districts of Karnataka, Chikkamagaluru and Uttara Kannada (Karwar)

Year	Attack	Death
1991-2000	2,574	36
2001-2011(Up to September)	909	36

Handigodu Syndrome: *Handigodu* Syndrome is prevalent only in Shivamogga and Chikkamagaluru districts. 198 new cases were detected by ICMR (II Phase study) in Shivamogga district and put on treatment. Cases under treatment: Shivamogga district-272, Chikkamagaluru district-323, Total cases-595

Year	Attack	Death
1991-2000	832	0
2001-2011(Up to September)	6759	48

Dog bite

Year	Attack	Death
1991-2000	159439	65
2001-2011(Up to September)	1727406	302

Snake bite

Year	Attack	Death
1991-2000	9884	258
2001-2011(Up to September)	71860	1988

Guinea Worm Eradication Programme

Since 1995, Zero incidence of Guinea Worm disease is maintained in Karnataka

Year	Attack	Death
1991-1994	432	0

Report for 2010-2011:

Covered during search operation			Found Guinea Worm affected		
No of			No of		
PHCs	Villages	Popula-tion in lakhs	PHCs	Villages	Popula-tion in lakhs
826	10095	244.77	Nil	Nil	Nil

H1N1 (Influenza-A)

Status of H1N1 samples tested and confirmed cases:

Sl. No	Particulars	2009 (June to Dec)	2010	2011	Total
1	Specimen examined	8504	12952	706	22162
2	H1N1 cases confirmed by lab test	1799	2552	13	4364
3	Cases successfully treated and recovered	1664	2432	11	4107
4	Reported deaths	135	120	2	257

Communicable Diseases:

	Year	2007		2008		2009		2010	
Sl. No.	**Name of Diseases**	**Attack**	**Death**	**Attack**	**Death**	**Attack**	**Death**	**Attack**	**Death**
1	Acute Diarrheal Diseases	555426	54	723129	84	787179	81	590868	62
2	Diphtheria	2	0	2139	0	5	0	0	0
3	Acute Poliomyelitis	0	0	2	0	0	0	2	0
4	Tetanus (others)	26	12	52	12	3	0	9	0
5	Tetanus (neonatal)	2	0	14	1	19	0	0	0
6	Whooping cough	3175	0	1209	0	1650	0	908	0
7	Measles	1181	0	1353	0	2393	1	1128	0
8	Acute Respiratory Infection	1559990	86	1922624	112	2160932	197	1601142	200
9	Pneumonia	23680	78	27390	189	31616	151	18378	165
10	Enteric fever	46877	3	54572	16	50434	11	35233	6
11	Viral Hepatitis-A	12762	15	8405	24	8656	18	8381	16
12	Viral Hepatitis-B	0	0	926	1	2232	1	634	0
13	Viral Hepatitis-C,D,E	0	0	0	0	141	0	138	0
14	Meningococcal Meningitis	627	6	1218	13	1145	6	797	7
15	Rabies	3728	8	10016	17	11801	6	9142	3
16	AIDS	2802	42	10831	218	10865	258	13186	338
17	Syphilis	3782	0	2950	0	5602	0	2019	0
18	Gonococal Infection	5833	0	9646	0	9180	0	3791	7
19	Other STD Diseases	2100	1	8211	2	23069	22	38642	17
20	Pulmonary Tuberculosis	54140	405	78620	762	63841	700	47734	622
Total		**2276133**	**710**	**2863307**	**1451**	**3170763**	**1452**	**2372132**	**1443**

Vector Borne Diseases

Malaria: Malaria is caused by a parasite called *Plasmodium*, which is transmitted *via* the bites of infected mosquitoes. In the human body, the parasites multiply in the liver, and then infect red blood cells. Symptoms of malaria include fever, headache, and vomiting, and usually appear between 10 and 15 days after the mosquito bite. If not treated, malaria can quickly become life-threatening by disrupting the blood supply to vital organs. In many parts of the world, the parasites have developed resistance to a number of malaria medicines.

Malaria spreads in the community through the bite of female Anopheles mosquito. It was a serious disease in *Malnad* (Districts with dense forest) areas, and thousands suffered from it and with enlarged

spleen. The spraying of D.D.T. started in 1950's had completely brought down the incidence to almost nil. *The National Malaria Control Programme* had been implemented since 1953 in the State. Later in 1958 it was changed to the *National Malaria Eradication Programme* in all the districts. In the districts like Chitradurga, Hassan, Kolar, Mysuru and Tumakuru high incidence of Malaria as much as 70 per cent was reported. The Urban Malaria Scheme is implemented in eight cities/towns of Bengaluru, Ballari, Belagavi, Hosapete, Raichur, Hassan, Tumakuru and Chikkamagaluru through local bodies.

Year	Blood smears examined	Total malaria cases	P.F. cases	ABER	SPR	API
1976-1981	2,49,03,360	21,94,065	1,65,014	81.19	57.22	74
1988-1992	3,36,97,842	4,33,325		88.02	6.34	8.87
1999-2010	11,03,57,710	10,41,653	2,44,444	215.2	11.44	20.6

P.F.: Plasmodium Falciparum; ABER: Annual Blood Examination Rate; SPR: Slide Positive Rate; API: Annual Parasite Indices

Filariasis: *Filariasis (Philariasis)* is a parasitic disease and is considered as an infectious tropical disease caused by thread-like Filarial nematodes (roundworms) in the super family Filarioidea, also known as "*filariae*". Filaria control activities are being implemented in nine Filaria endemic districts of Kalburgi, Yadgir, Bagalkot, Bidar, Koppal, Raichur, Dakishna Kannada, Udupi and Uttara Kannada. Eight Filaria control units, 25 Filaria clinics and one Filaria survey cell at Raichur are functioning in the State.

Year	No of persons examined	No positive for Mf	Persons with disease manifestations	Treatment given
1995	1,22,484	964	3,480	4,444
1996	1,35,469	1,073	4,853	5,926
1997	2,08,827	1,344	5,615	6,959
1998	1,32,981	1,235	5,711	6,946
1999	1,28,632	1,178	8,591	9,769
2000	1,32,836	1,328	7,275	8,603
2001	1,58,831	1,135	6,969	8,353
2002	1,38,394	904	6,396	7,300
2003	1,44,756	973	6,111	7,084
2004	1,31,341	731	5,463	6,194
2005	1,88,310	885	6,240	7,125
2006	1,75,623	653	4,470	5,123
2007	1,71,752	645	4,268	4,913
2008	1,59,373	620	3,270	3,890
2009	1,47,266	787	3,942	4,729
2010	1,62,206	425	3,417	3,842

Japanese Encephalitis: *Japanese encephalitis* is a viral disease that infects animals and humans. It is transmitted by mosquitoes and in humans it causes inflammation of the membranes around the brain. *Japanese encephalitis (JE)* is a disease caused by a flavi virus that affects the membranes around the brain. Most JE virus infections are mild (fever and headache) or without apparent symptoms, but approximately 1 in 200 infections results in severe disease characterized by rapid onset of high fever, headache, neck stiffness, disorientation, coma, seizures, spastic paralysis and death.

Year	Suspected		Confirmed	
	Attack	Death	Attack	Death
1993	287	67	0	0
1994	125	47	0	0
1995	285	89	13	0
1996	85	12	30	0
1997	336	71	26	2
1998	173	31	79	9
1999	422	71	102	5
2000	260	27	96	10
2001	174	11	80	1
2002	144	15	23	2
2003	211	10	35	4
2004	164	6	32	1
2005	113	10	13	1
2006	80	3	4	0
2007	18	3	3	0
2008	10	0	0	0
2009	258	8	7	0
2010	143	1	4	0

Dengue: Dengue fever also known as break bone fever is an infectious tropical disease. Symptoms include fever, headache, muscle and joint pains, and a characteristic skin rash that is similar to measles. In a small proportion of cases the disease develops into the life-threatening dengue hemorrhagic fever, resulting in bleeding, low levels of blood platelets and blood plasma leakage, or into dengue shock syndrome, where dangerously low blood pressure occurs.

Year	Attack	Death
1996	124	5
1997	262	4
1998	115	3
1999	39	0
2000	189	0
2001	218	0
2002	420	1
2003	1223	7
2004	281	2
2005	587	17
2006	109	7
2007	228	0
2008	339	3
2009	1764	8
2010	2285	7

Chikungunya: Chikungunya virus (CHIKV) is an insect-borne virus, of the genus Alphavirus, that is transmitted to humans by virus-carrying *Aedes* mosquitoes. There have been recent breakouts of disease associated with severe illness. CHIKV infection causes an illness with symptoms similar to dengue fever, with an acute febrile phase of the illness lasting only two to five days, followed by a prolonged arthralgic disease that affects the joints of the extremities.

Year	Suspected Chikun gunya fever cases	Blood samples collected	Positive cases	Death
2006	7,62,026	5,000	305	0
2007	1,705	641	144	0
2008	46,510	2,957	1,008	0
2009	41,649	7,864	3,239	0
2010	8,740	3,625	1,430	0

Tuberculosis: *Tuberculosis* (TB) is a contagious disease. Like the common cold, it spreads through the air. Only people who are sick with TB in their lungs are infectious. When infectious people cough, sneeze, talk or spit, they propel TB germs, known as *bacilli*, into the air. A person needs only to inhale a small number of these to be infected.

Leprosy: *Leprosy or Hansen's disease (HD)* is a chronic disease caused by the bacteria *Mycobacterium leprae*. leprosy is primarily a granulomatous disease of the peripheral nerves and mucosa of the upper respiratory tract; skin lesions are the primary external sign. Although the mode of transmission of Hansen's disease remains uncertain, most investigators think that *M. leprae* is usually spread from person to person in respiratory droplets. Leprosy was a public health problem and also social problem in the State. *National Leprosy Eradication Programme (NLEP)* was conceived as a control programme and launched in the year 1954-55. The prevalence rate was 50 per 10,000 populations during 1986 and has reduced to 0.48 as on 31st December 2010. Prevalence of less than one has been achieved in 29 districts of Karnataka. Karnataka is considered as a low endemic State.

After the inception of *Multi-Drug Treatment (MDT)*, the *prevalence rate (PR)* which was 16 per 10,000 populations during 1990-91 has been

brought down to 0.49 as on March 2010. Remarkable achievement is made in prevention of deformity, i.e. the deformity rate has been brought down to 3.30 per cent of the new case detection. *State Leprosy Society* is established for proper monitoring all 30 *District Leprosy Societies.*

National leprosy eradication programme is the oldest National Health Programme and one of the most successful programmes. MDT started during 1986-87 in Karnataka. There were 677 Survey Education and Treatment Centres in Karnataka. At present there is only one Government Leprosy Hospital at Magadi Road, Bengaluru. There are 22 temporary Hospitalization wards with 20 beds.

Statement Showing the No. of New cases detected, No. of cases cured , PR, NCDR, Child Rate, MB Rate and Gr.II Deformity Rate of Karnataka State from 1990-91 to 2009-10.

S. No	Year	New cases to be detected		No. of cases discharged as cured		Prevalence Rate	NCDR	Child Rate	MB rate	Gr. II deformity
		Target	Ach.	Target	Ach.					
1	**1990-91**	18000	25668	60000	35662	16	57.06	24.1	49.36	3.28
2	**1991-92**	15000	25786	46000	43446	11	57.3	21.45	36.71	2.92
3	**1992-93**	12000	26499	40000	39529	6	58.80	29.7	35.3	2.49
4	**1993-94**	11000	26465	40000	30462	5	58.84	29.03	47.15	2.49
5	**1994-95**	18000	24019	30000	26221	4	53.40	29.57	39.21	2.24
6	**1995-96**	9000	21978	26000	23076	4	48.86	27.8	19	2
7	**1996-97**	8000	19589	23000	20883	3	43.55	26.7	20	1.8
8	**1997-98**	6000	17761	19320	21202	2.6	39.48	24.5	25	1.4
9	**1998-99**	13000	26173	20000	24394	2.8	58.19	26	22	0.8
10	**1999-2000**	10000	23095	14000	21154	3.1	51.33	26.8	27	1
11	**2000-01**	8000	17872	14000	19982	2.1	33.89	24.4	29	1
12	**2001-02**	8000	21307	14000	19584	2.4	40.40	23.5	29	0.7
13	**2002-03**	13890	13070	19720	15340	1.9	24.78	21.2	35	1
14	**2003-04**	0	10598	0	12522	1.4	20	15.34	44.1	0.79
15	**2004-05**	0	7850	0	10082	0.87	13.97	13.49	48	0.49
16	**2005-06**	0	5307	0	6611	0.57	9.30	10.74	55	0.45
17	**2006-07**	0	4299	0	4455	0.5	7.41	11.18	56	1.23
18	**2007-08**	0	4522	0	4286	0.51	7.67	10.26	58	0.86
19	**2008-09**	0	4411	0	4277	0.5	6.83	11.81	57.76	1.61
20	**2009-10**	0	4408	0	4228	0.49	7.19	11.82	56.7	3.3

Statement showing institutional Reconstructive surgery performance from the year 2007, 2008, 2009 and 2010

Sl. No	Name of the District	Name of institution (GOV)	No. of RCS conducted during 2007-08	No. of RCS conducted during 2008-09	No. of RCS conducted during 2009-10	Grand Total
1	Dharwad	1)Hubballi Hospital for Handicapped, Hubballi (NGO)	23	18	19	**60**
2	Tumakuru	Swami Vivekananda Integrated Rural Health Center, Pavagada (NGO)	13	13	36	**62**
3	Belagavi	Belagavi Leprosy Hospital, TheLeprsoy Mission, Venguria Road,Hindalga, Belagavi District - 591108, Karnataka (RCS operations conducted at TLM, Miraj, Maharashtra)	25	26	47	**98**
4	Dakshina Kannada	Wenlock Hospital, Mangaluru (Govt)	4	5	1	**10**
5	Bengaluru	K.C. General Hospital Bengaluru (Govt)	-	-	8	**8**
6	Ballari	VIMS, Ballari (Govt)	-	-	3	**3**
Total			**65**	**62**	**114**	**233**

iii) Non-Communicable Diseases

		2007		2008		2009		2010	
Sl No	**Nature / Group of Non Communicable Diseases**	**Attack**	**Death**	**Attack**	**Death**	**Attack**	**Death**	**Attack**	**Death**
1	**Cardio Vascular Diseases**								
1.1	Hypertension	206370	625	88273	175	117399	135	103866	321
1.2	Ischemic Heart Diseases	29221	952	11254	329	15191	412	22615	601
2	**Neurological Disorders**								
2.1	Cerebro Vascular Disorders	15712	558	5818	253	7367	275	12293	331
2.2	Other Neurological Disorders **	23285	93	9488	51	10911	52	13162	38
3	**Diabetes Mellitus**								
3.1	Type 1	78713	127	41461	45	41484	59	34199	329

3.2	Type 2	106254	101	41168	38	51385	128	54647	318
4	**Lungs Disease**								
4.1	Bronchitis	481928	508	189525	101	242331	97	209815	150
4.2	Emphysemas	36702	10	5463	24	9108	32	7636	49
4.3	Asthma	425019	252	163302	119	199965	121	175746	190
5	**Psychiatric Disorder**								
5.1	Common Mental Disorders	34080	13	10167	14	18352	9	17624	0
5.2	Severe Mental Disorders	8445	11	3730	32	3327	7	3232	0
6	**Accidental Injuries**	219049	852	92689	373	119463	558	124401	1085
7	**Cancer**	6644	154	5526	54	7345	99	7072	83
8	**Snake Bite**	9100	121	3587	54	4499	61	5851	52
Total		**1680522**	**4377**	**673920**	**1673**	**848127**	**2045**	**792159**	**3547**

National Programme for control of Blindness:
The National programme for control of Blindness was started in 1976 as a centrally sponsored scheme to control the problems of Blindness due to various factors and also to reduce the prevalence of Blindness to 0.3 per cent by 2020. The components of the programme are: Cataract surgeries, School screening programme, Eye ball collection and Eye banks. Three Medical Colleges MMC, Mysuru, VIMS, Ballari and KIMS, Hubballi for higher clinical services. 37 eye banks are registered under Human Organ Transplant Act, of which three are Government eye banks at Minto Hospital, Bengaluru, K.R.Hospital, Mysuru and District Hospital, Belagavi.

Eye ball collection is done to perform Keratoplasty to provide eye sight to corneally blind. Cataract surgeries are performed through Government and Voluntary organizations. Every year Higher Primary School teachers are trained in primary eye screening under SES programme. Poor students with refractive errors are provided with free spectacles by District Health and Family Welfare Society.

Year	Cataract surgeries	Eye ball collection
2008	3,80,591	2,405
2009	3,50,207	4,650
2010	3,73,141	3,872

Year	No of children screened	No. of children detected with Refractive Errors	No. of spectacles given to children
2008	20,46,334	88,555	20,548
2009	11,42,910	19.237	7,426
2010	10,78,907	13,091	4,703

School Health Programme: School Health Programme is being implemented in the State from many years. It has expanded from narrower concept of just medical examination of children to the present day concept of comprehensive care

of health and wellbeing of children throughout the academic year. Various activities include: 1) Medical examination of the students of First to Tenth standard, 2) Immunization of children with 1st booster dose of DT to 1st standard students, 1st dose of TT to 4th standard students and Second dose of TT to tenth standard students, 3) Providing treatment for minor ailments, 4) Referral to nearest hospital for specialist treatment, 5) Health education to teachers and students and 6) Provision of First Aid Kits to schools

Health Statistics for 2010 to 2011

Sl. No	Activities	Achievements
1	Medical examination of students from 1st to 10th standard	85,86,828
2	Dand T immunization for 1st standard students	6,36,292
3	TT immunization to 4th standard students	6,58,706
4	TT immunization to 10th standard students	5,56,492

Special Suvarna Arogya Chaitanya programme will be conducted as "*Masacharane*" for First to tenth standard students during the month of August every year. Under the programme children needing major operation/treatment like Heart operation, Orthopedic, Eye surgery and ENT surgery are identified and treated at major hospitals identified under Yeshasvini scheme and travel expenses to parents is also paid. During 2010-11, 8,58,628 students were examined and 8,07,704 were treated at Taluk and District Hospitals. 2,160 students have undergone surgeries.

Janani Suraksh Yojane (JSY): This is a programme for intensifying institutional deliveries with goals of reduction in maternal and infant mortality rate as well as to increase the institutional deliveries of BPL and SC/ ST families by compensating for loss of wage. This scheme provides for cash assistance to the mother for institutional deliveries, at the rate Rs. 700 per case in rural areas and Rs. 600 in urban areas. Cash assistance of Rs.500 is provided for women delivering at home. Assistance of Rs.1,500 is provided in case of caesarean operation in empanelled hospitals. The benefit is limited to first two live deliveries.

Janani Shishu Suraksha Karyakrama (JSSK): entitles all categories of pregnant women (APL and BPL) delivering in public health institutions including Medical colleges an absolutely free maternity and neonatal care services without any out of pocket expenditure. It clearly spells out that all expenses related to delivery would be borne entirely by the Government and no user charges would be levied.

Bhagyalaksmi Programme: A comprehensive medical checkup and treatment for girl children with Bhayalaksmi certificate is undertaken towards gender equality, care and empowerment of girl child. This scheme is being implemented from October 2010 in convergence with Women and Child Development Department. Around nine lakhs children were examined till date.

Arogya Kavacha Scheme: Under this scheme, every emergency call made on to number '108' either mobile or landline , be it medical, police or fire etc. would be attended by the emergency team in the call center. This center would ensure that the ambulance (with paramedical staff seven necessary modern equipments) reaches the spot and necessary pre-hospitalization care is rendered to stabilize the victim before the patient is shifted to the hospital. This service is provided free of cost. So far, 2.18 crores calls were attended and out of these 10.77 lakhs lives have been touched. Of these, about 42 per cent are pregnancy and delivery related cases.

Vajapayee Arogya Shree: BPL families who are affected by catastrophic diseases like cancer, cardiology, Neurology, renal failure, burns, ploytruma etc,. are provided free cashless treatment in the identified hospitals upto Rs. two lakhs on family floater basis. The Scheme was being implemented in all the Districts of tha State.

Madilu Scheme: BPL pregnant women (including SC/ST) who undergo delivery in Government Hospital are given a Health Hygiene Kit containing 19 useful materials worth Rs. 1,260. So far 7.45 lakhs beneficiaries have availed this facility. This program provides post-natal care for the mother and the child, the objective being to encourage poor pregnant women to avail delivery services in health centres and hospitals in order to reduce maternal and infant mortality in the State. Under the programme, a kit containing 19 items

of day to day use is provided to women belonging to Below Poverty Line, including SC/ST, delivering in Government hospitals. The benefit is limited to first two live deliveries.

Prasuthi Aarike Scheme: Under this scheme, BPL pregnant women (including SC/ST) who undergo deliveries in Government Hospitals are given an incentive of Rs. 2,000 for getting their nutritional supplements in two installments. So far, 4.48 lakhs beneficiaries are covered. The scheme is being implemented for the benefit of pregnant women belonging to Below Poverty Line including SC and ST families. The women of Below Poverty Line get Rs. 2,000 (for first two deliveries), Rs.1,000 during her antenatal and Rs.1,000 in postnatal care to get nutritional supplements.

Thayi Bhagya Scheme: In order to improve the institutional deliveries, a tie-up has been made under Public Private Partnership with private nursing homes to provide normal as well as caesarian delivery services to the eligible BPL mothers including SC/ST. This scheme is being implemented in seven backward districts of North Karnataka and Chamarajanagar district. So far 68,471 deliveries are benefited with this scheme. Further, eligible BPL mothers (including SC/ST) in rural areas who undergo deliveries in private hospitals are being paid cash incentive of Rs.1,000. This scheme has come into force during 2010-11 and the progress achieved so far is about 5,426. To reduce *Infant Mortality Rate (IMR) and Maternal Mortality Rate (MMR)*, empanelled private hospitals in the Backward Districts of Bidar, Kalburgi, Yadgir, Raichur, Koppal, Vijayapura, Bagalkot and Chamarajanagar, are given an incentive of Rs. three Lakhs for every 100 deliveries conducted including surgeries. The treatment is free to the patients.

Mother and Child Tracking System: A web based pregnant women and child tracking system, introduced for the first time in India, aimed to provide pre-natal and post-natal care at the door steps of rural poor. The programme is greatly appreciated by the Government of India which has asked the other States to emulate.

Arogya Bandu Scheme: In Primary Health Centres where the required staff could not be provided, health care services are being provided in this scheme under Public Private Partnership. So far, 56 PHCs have been entrusted to NGO's and Medical Colleges. Further, this scheme has been extended for management of Taluk Hospitals, Community Health Centres and Primary Health Centres under PPP in 39 most backward taluks identified by Dr. D.M. Nanjundappa where the health indicators are low.

Suvarna Arogya Chaitanya: Under this programme, around one crore school children (both Private and Government sector) are medically screened and children needing surgeries are provided surgical treatment at free of cost in empanelled hospitals under Yeshaswini Scheme.

SAKAALA Service Guarantee Programme: Health and Family Welfare Department one of the 11 Departments which have taken up this people friendly Programme in Karnataka. Four Services included in the programme are, a) issue of Age Certificate, b) Wound Certificate, c) Disability Certificate and d) Sterilization Certificate with Discharge summary.

Training of staff, awareness creation among public, display of services provided in front of all hospitals and appointment of Nodal Officers/ Officers has been taken up on a pilot basis in one taluk of each Revenue Division from 1st march 2012. The taluks under the pilot are Aurad, Chitradurga, Dharwad and Puttur. A total of 1,95,780 certificates are issued till 31-03-2013.

Public Private Partnership (PPP): It was felt that convergence of private sector interests and public sector goals would best be brought about by seeking a partnership. Hence, initiatives in PPP were undertaken, with a view to enable optimization of resources such as human resources, hospital buildings and medical equipment amongst others. In cases where the Government has entered into a partnership with a private partner, a Memorandum of Understanding (MoU) is drawn. As per this document, a governing council comprising of eleven members, six from Government and five from the private partner manage this partnership.

Government-NGO Partnership in Primary Health Care: This form of partnership pertains to handing over of PHCs to NGOs or private Medical Colleges for maintenance. Presently, around 56 PHCs have been handed over in this manner. This scheme is applicable to all private medical

colleges and NGOs, fulfilling certain conditions and trusts sponspered by reputed corporate bodies with proven managerial capacities. A set procedure is followed for evaluating and selecting the organizations. The DME or CEO of the Zilla Panchayat first verifies the proposals received, which are then chosen by a selection committee. In terms of management, the Medical College/ NGO/Trust is fully responsible for providing all personnel and implementation of all National and State Health and Family Welfare programmes.

The existing assets of the PHCs are handed over to the partner agency, which is responsible for the maintenance of assets and at the end of partnership, the same would be returned to the Government in a proper condition. The partner is free to make any additions to the fixed assets and is responsible for ensuring adequate stocks of all the essential drugs. Financial support from the Government in the form of reimbursement of remuneration of cent per cent of salary is payable to the Government staff. Reimbursement of water and electricity charges is subject to a maximum of Rs.1,500 per month while Rs. 25,000 per annum is paid towards contingencies and maintenance of buildings. The budget for drugs is based on the scale determined by the Government. The funds are released as grant-in-aid once in a quarter. The District Health and Family Welfare Officer undertake the monitoring of the working of the PHC. The PHC is entrusted to the partner for a period of five years subject to review and confirmation. The Government retains powers to give directions to the partner, in the public interest and may terminate the contract for violation of conditions of contract by the partner, after due enquiry into such violations.

One of the NGOs involved in a partnership with the government is the *Karuna Trust*, established in 1980, working with Soliga tribals in the B.R.Hills, Yelandur Taluk. The Trust works in the fields of Health, Education, community organization and livelihood activities. The Trust took the responsibility of running the Gumballi PHC along with three Sub centres in Yelandur taluk in 1996 under IPP-9. As the PHC completed five years of service, an evaluation team from the Government of Karnataka visited the PHC and Sub centres and was renewed and till today Karuna Trust is running the PHC successfully. In 2001, based on the successful running of the Gumballi PHC, the Karnataka Government's Special Task Force on Health and Family Welfare recommended the formulation of a "*Scheme for involvement of private medical colleges and other agencies in the management of PHC's*". This landmark initiative laid down the framework for handling over PHC's to private medical colleges and NGO's. *Karuna Trust* currently manages 62 PHC's in Karnataka, Andhra Pradesh, Orissa, Arunachal Pradesh, Manipur, Maharashtra and Meghalaya in partnership with respective State Governments. It is also in the process of entering into partnerships with other State Governments.

National Accreditation Board for Hospitals and Healthcare providers (NABH): NABH is a constituent board of Quality Council of India, set up to establish and operate accreditation programme for healthcare organizations. The board is structured to cater to much desired needs of the consumers and to set benchmarks for progress of health industry. The board while being supported by all stakeholders including industry, consumers, Government, has full functional autonomy in its operation.

Benefits of Accreditation: Accreditation benefits all stake holders. Patients are the biggest beneficiary. Accreditation results in high quality of care and patient safety. The patients get services by credential medical staff. Rights of patients are respected and protected. Patient satisfaction is regularly evaluated. The staff in an accredited health care organization is satisfied lot as it provides for continuous learning, good working environment, leadership and above all ownership of clinical processes. Accreditation to a health care organization stimulates continuous improvement. It enables the organization in demonstrating commitment to quality care. It raises community confidence in the services provided by the health care organization. It also provides opportunity to healthcare unit to benchmark with the best. Finally, accreditation provides an objective system of empanelment by insurance and other third parties. Accreditation provides access to reliable and certified information on facilities, infrastructure and level of care.

Decentralization in health sector: The State of Karnataka for over three decades is engaged in promoting PRIs at the grass root level. In 1970s,

this took the form of Gram Panchayats and Taluk Development Boards. In 1983, Karnataka Zilla Panchayats, Taluk Panchayat Samitis, Mandal Panchayats and Nyaya Panchayats Act came into existence, which provided for the establishment of Zilla Parishads and Group or Mandal Panchayats. Karnataka was the first State to establish a three-tier system. The Government of Karnataka (GoK) constitutes a working group on decentralization, which submitted its report in March 2002. Based on the recommendations of this report, the GoK has circulated a bill to amend the existing Panchayat law of 1993. In the area of decentralization in health, various initiatives attempted across the State include decentralization of user charges, appointment of doctors on a contract basis and decentralization of non-clinical services. Furthermore, all the National Health Programmes like Malaria, Filaria, Leprosy and TB have been decentralized and control has been given to the Zilla Panchayat and Taluk Panchayat.

Health Financing: User Fees: The Government of Karnataka had issued an order in 1988 prescribing the user charges for an identified range of services. The scale of fees has also specifications. The order provided exemption to poor patients with green cards under the public Distribution System, being the means to check eligibility. However, collections were quite insignificant as these were required to be deposited in the treasury. Following a study to assess the willingness of the people to pay for the services in government hospitals, a revised schedule of charges for various services/facilities was formulated. The study also recommended that user charges be made compulsory for all except for the 'below –poverty-line' (BPL) category with a provision that there would be a method to identify the poor. It also recommended that adequate financial powers be granted to the administrative medical officers (the officer in-charge) of the Government hospitals for better maintenance of the hospital. In 1995, as a part of the KHSDP, the Government established a District Development fund and assigned the district-level health committees the responsibility of collecting user charges and re-using the same for maintenance and repair of the hospitals. At the District level, BHO and District Surgeon serve as Secretary and Member Secretary of the committee. At the Taluk level, the Taluk Health Officer and ADMO of the General Hospital serve as the Secretary and Member Secretary respectively. The user charges are collected at all hospitals with the amount being kept in the respective District for the use of hospital development. The amount collected is utilized for all basic facilities, minor repair of equipment and civil work, for meeting contingency expenditure, purchase of X-ray and emergency drugs. In terms of challenges faced, there was initial resistance by public, with a demand from the people for free treatment. The initial protest and resistance from the public reduced with the public becoming accustomed to the same.

Health Insurance: *Community Health Insurance*: The State of Karnataka has attempted innovations in the area of health insurance. *The Ministry of Health and Family Welfare, Directorate of Health Services and UNDP* in partnership *with Karuna Trust, Centre for Population Dynamics and National Insurance Co. Ltd.* has undertaken the work in the area of community health financing, with the objective of developing and testing a model of community health financing suited to the rural community. Other objectives include exposing communities to the scope of health insurance, developing a system for the interface with the organized insurance sector; increasing access to public medical care by rural poor and lower income groups; ensuring equitable distribution of medical care through prepaid insurance; enhancing awareness of the need for preventive health care and involving area specific community based organizations such as *Self Help Groups(SHGs), Village Development Committees(VDCs), Anganwadi Workers(AWWs), Panchayat Raj Institutions(PRIs)* and Co-operative societies. This scheme is being implemented through two models. For instance, in Narasipura taluk, Karuna Trust organizes as well as manages the scheme while in Bailhongal taluk, the official health personnel organize and manage the scheme under the supervision of the Chief Executive Officer of the Zilla Panchayat. The scheme is mainly run as a part of micro-credit financing for out-patient care through the SHGs. A premium of Rs. 30 per person per annum entails an individual to a health insurance cover of Rs.2, 500. This cover includes all cases of hospitalization at public health facilities. Additionally, Rs.50 per day is given directly to the hospital for drugs while Rs. 50 per day is given to the patient to compensate for wage loss. The scheme is fully subsidized for BPL SC/ST population and partially for BPL non SC/

ST population. The APL population cannot avail any subsides. For the purpose of implementation, a revolving fund has been established at the health institution to ensure that claims are settled immediately. The social workers deputed at the health centre along with the field staff engage in active case finding; marketing of the scheme, documentation and claim settlement. Cases referred to any other public health institution are also considered for reimbursement. This scheme does not have any exclusion clauses and is enforced immediately. Now, this is not functioning to avoid duplication as Government has launched many new schemes like RBSY, Vajpayee Arogyasri etc.

Yeshasvini Health Insurance: "*Yeshasvini Cooperative Farmers Health Care Scheme" (Yeshasvini Scheme)* was introduced by the State Government to the Co-operative farmers of Karnataka. The scheme was operationalized with effect from 1st June 2003. Karnataka has become role model State with the introduction of '*Yeshasvini Self-Funded Health Care Scheme*'. The concept of "*rural health care scheme*" was initiated by Dr. Devi Prasad Shetty of *Narayana Hrudayalaya,* Bengaluru, and with suitable modifications by Sri A Ramaswamy, then the Principal Secretary to Government of Karnataka, Co-operation Department and band of officers of Co-operation Department with the financial assistance of Government of Karnataka *Yeshasvini Health Care Scheme* was implemented through network hospitals to provide cost effective quality healthcare facilities to the Co-operative farmers spread across the State of Karnataka. The *Yeshasvini Cooperative Farmers Health Care Trust* was registered under the *Indian Trust Act 1882*. The Hon'ble Chief Minister of Karnataka is Chief Patron and Hon'ble Minister for Cooperation is Patron. The Government of Karnataka provides matching contribution to the Trust for implementation of the scheme. *Yeshasvini Cooperative Farmers Health Care Trust* also implements *Suvarna Arogya Chaitanya Scheme* for School Going Children studying in Government and Aided schools from First to tenth standard across the State and PPTCT Scheme sponsored by the National Rural Health Mission through the Department of Heath and Family Welfare and Education Government of Karnataka. These schemes are also administered by existing TPA.

Medical Benefits covered under the Scheme: 1,600 types of surgical procedures identified by the Yeshasvini Trust, defined in the list of surgeries, subject to the certain exclusions, at tariffs pre-negotiated with participating hospitals. From 2006-07 the following defined medical benefits have been included: Medical emergencies such as dog bite, snake bite, drowning, and accidents occurred while operating agricultural implements, bull gore injures and electrics shocks, Normal Delivery, Neo natal care and Angioplasty procedure.

Product Features: Surgery Package includes: Cost of Medicines, Consumables during hospital stay, Cost of Operation Theater, Anesthesia, Surgeons fee, Professional Charge, Consultant fee, nursing fee, General Ward Bed Charge, etc are included in the package and Yeshasvini Trust reimburses this expenditure to the Network Hospitals. Package rates for each of the surgery are fixed under the scheme. Free out Patient consultation at all participating hospitals. Discounted tariffs for lab investigations and tests. The plan excludes coverage for: Medical and Follow up Treatment, Implants, Prosthesis, Joint replacement surgeries, Kidney and Heart Transplants, Chemotherapy, Cosmetic surgery, Burns Cases, Dental Surgeries, Road Traffic Accidents and Medico Legal Cases, Diagnostic Investigations, Autoimmune diseases, Skin Grafting, Dialysis, Artificial Limb, Deviated Nasal Septum, Nails, Screws and Stents, etc for Orthopedic and Urological Surgeries.

The Yeshasvini Scheme is a surgicare scheme does not cover inpatient medical treatment where surgical intervention is not required. If the beneficiary avails inpatient medical treatment at the Network Hospital, it is his responsibility to pay the charges as per hospital rates and the Trust is not liable to reimburse the treatment charges. Yeshasvini beneficiaries are entitled only for general ward admission. If the beneficiaries opt for a higher category of bed, he will have to pay the differential amount to the hospital.

No specific time for inpatient is prescribed to the Network Hospitals for surgical procedures. In normal health care scheme pre-existing diseases like Diabetes, Hypertension, Heart related diseases, Kidney diseases etc., are not covered. Most novel feature of the scheme is that entire transaction from the time of admission till discharge of the patient is cashless limited to the package rates.

Rashtriya Swasthya Bima Yojana (RSBY): RSBY has been launched by Ministry of Labour and Employment, Government of India to provide health insurance coverage for *Below Poverty Line (BPL)* families. The objective of RSBY is to provide protection to BPL households from financial liabilities arising out of health shocks that involve hospitalization. Beneficiaries under RSBY are entitled for hospitalization coverage up to Rs. 30,000 for most of the diseases that require hospitalization.

Government has even fixed the package rates for the hospitals for a large number of interventions. Pre-existing conditions are covered from day one and there is no age limit. Coverage extends to five members of the family which includes the head of household, spouse and up to three dependents. Beneficiaries need to pay only Rs. 30 as registration fee while Central and State Government pays the premium to the insurer selected by the State Government on the basis of a competitive bidding.

Karnataka Health System Development (KHSDP): *The Karnataka Health System Development Project (KHSDP)* was set up in 1996 with a view to improve the secondary level of health care in Karnataka. The project, supported by the World Bank, had an outlay of Rs.546 crores spread over a period of six years. The project sought to bring about improvement in the performance and quality of health care services at the sub-district and district levels, narrowing current coverage gaps and improving efficiency. Major components included improvement of the institutional policy framework, strengthening implementation capacity, development of a surveillance system, extension and renovation of all secondary level hospitals, improvement of their clinical effectiveness and establishment of a properly functioning referral system.

Some of the initiatives undertaken as part of this project include renovation and expansion in 201 secondary care hospitals, increasing the number of beds available in these hospitals, establishment of a comprehensive HMIS connecting all districts under implementation and establishment of an engineering wing to ensure speedy execution of the civil construction programme. The project envisaged the expansion of 204 hospitals, construction of 21 district laboratories, 34 trauma care centres, 21 equipment maintenance units, and 27 blood banks. The Rs.536-crore was completed March 2003.

Karnataka Health System Development and Reform Project (KHSDRP): *Karnataka Health System and Development and Reform Project is a World Bank funded International Development Association (IDA) Project* launched on 19th December 2006 with the aim of providing better public health care services in the remote and underserved areas of the State, so that the deprived and vulnerable groups can access quality health care. KHSDRP envisages strengthening the existing Government health care programmes to make health services more affordable, accessible and accountable. The mechanism of programme financing will be used to support the existing Government programmes, at the level of both the primary and the secondary health care services.

Project Components: Strengthening existing Government Health Programmes by Organizational Development and improving primary and secondary health care services. Programme Management including Monitoring and Evaluation. Innovation in services delivery linked to need and performance through. *SICF – Services Improvement Challenge Fund.* Infrastructure Construction and Renovation. Establish Mobile Health Unit. Public Private Partnership. Tribal ANM schemes. *PHCF- Public Health Competitive Fund.* Health Insurance.

Karnataka State AIDS Prevention Society (KSAPS): State AIDS cell was established during 1992 in the Directorate of Health and Family Welfare Services to implement AIDS control programme. Karnataka State AIDS Prevention Society was formed during 1996-97 under Society Registration Act for more effective implementation of this programme. The Society is functioning independently since 2001.

National AIDS Control Programme in Karnataka: This programme mainly aims at prevention of spread of HIV infection, implementation of preventive measures to control spread of HIV infection and decrease instances of death due to AIDS and prevention of impact of AIDS. Programmes taken up for prevention of HIV/AIDS: Sexually Transmitted Diseases (STD): 40 STD clinics have been established in District Hospitals and selected Taluk Hospitals and 166 STD clinics have been established in Community Health Centres (CHC) hospitals all over the State.

Information, Education and Communication (IEC): Activities have been taken up for behavioral change of people by taking up IEC activities through media such as All India Radio, CCTV, printing of messages on ICTC, VBD and ART on post cards, printing of posters on WAD. 43 ART centres are functioning in various hospitals in the State. During the year 2011-12 NACO has sanctioned 4 new ART centres in Belagavi(2), Bagalkot(1) and Mysuru(1).

National Rural Health Mission (NRHM): The Honorable Prime Minister launched the NRHM on 12th April, 2005 throughout the country with special focus on 18 States including eight **Empowered Action Group (EAG)** States, the North East States, Jammu and Kashmir and Himachal Pradesh. These 18 States are Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand, Jammu and Kashmir, Manipur, Mizoram, Meghalaya, Madhya Pradesh, Nagaland, Orissa, Rajasthan, Sikkim, Tripura, Uttaranchal and Uttara Pradesh.

The NRHM (2005-2012) seeks to provide accessible, affordable and quality health care to the effective health care to rural population especially the vulnerable sections.

The key features of the implementation of NRHM in Karnataka includes making public health delivery system fully functional and accountable to the community, working in a mission mode, decentralized planning, delegation of powers, human resource management, community involvement, rigorous monitoring and evaluation against standards, convergence of health related programmes and flexible financing.

A state specific programme implementation plan for NRHM has been developed by integrating district health action plan from all the 27 districts in the state for the year 08-09. It is based on the district specific health needs and comprises of most of the components of NRHM.

Directorate of Medical Education

The Directorate of Medical Education, Government of Karnataka was bifurcated from the Department of Health and Family Welfare Services, in the year 1978 and is functioning independently since then. The main aim of the department is to provide a good quality education in the field of medical sciences.

Educational Institutions: Mysuru Medical College is one of the oldest and is considered a reputed medical college in India. It is located in the heart of Mysuru city adjacent to the railway station. Founded in 1924 by Sri Krishnarajendra Wodeyar, it was the first in the Karnataka region and the seventh in India. Since there were no medical institutions in the erstwhile State of Mysuru, a scheme for giving Medical education was started in 1881 under which carefully selected students were given scholarship and sent to places like Madras and Bombay to undergo training only to return and work as "*Hospital Assistants*". After the Madras Presidency expressed its inability to admit Mysuru State students, the Government of Mysuru sanctioned another scheme in April 1917 as a part of which a "*Mysuru Medical School*" was started at Bengaluru to train the then called "*Sub Assistant Surgeons*". Trainees had to undergo a course for four years to qualify as a *Licensed Medical Practitioner (LMP).*

In 1924 the "*Mysuru Medical School*" was upgraded and was then called the "*Mysuru Medical College*". The college was affiliated to the University of Mysuru and the trainees were then granted Medical Degrees. At the request and insistence of Sri Krishnadevaraja Wodeyar the College was shifted from Bengaluru to Mysuru in 1930.

At present, there are six Teaching Hospitals (including the newly started Regional Advanced Pediatric Care Centre attached to Wenlock District Hospital, Mangaluru), six Nursing Colleges and ten Nursing Schools, under the direct administrative control of the Director, Medical Education; and one Para - Medical Board and one Nursing Examination Board, are functioning in the State independently, under the Chairmanship of the Director, Medical Education. Further, 19 autonomous institutions - two Govt. Medical Colleges at Bengaluru and Mysuru and two Government Dental Colleges at Bengaluru and Ballari; and six newly started Govt. Medical Colleges at Hassan, Shivamogga, Mandya, Bidar, Belagavi and Raichur; S.D.S. and Rajiv Gandhi Institute of Chest Diseases, Bengaluru; and the newly started Karnataka Institute of Mental Health and Neuro Sciences, at Dharwad; are functioning in the State independently, under the direct control of the State Government, along with the already existing eight Autonomous Institutions catering to the academic needs in varied fields of medicine and nursing.

The following are the Medical Institutions and Teaching Hospitals coming under the Department of Medical Education in the State:-

a) Under the direct control of the Directorate of Medical Education:

1. District Hospital, Belagavi;
2. District Hospital, Kalburgi;
3. District Wenlock Hospital, Mangaluru;
4. Regional Advanced Pediatric Care Centre, Wenlock Hospital, Mangaluru;
5. Lady Goshen Hospital, Mangaluru;
6. C.G. Hospital, Davangere;
7. Women and Children Hospital, Davangere;
8. Govt. Nursing College, Bengaluru;
9. Govt. Nursing College, Hassan;
10. Govt. Nursing College, Holenarasipura;
11. Govt. Nursing College, Kalburgi. (up-graded from Nursing School);
12. Govt. Nursing College, Hubballi (KIMS) and
13. Govt. Nursing College, Ballari (VIMS).

b) Govt. Nursing Schools

1) Nursing School, Victoria Hospital, Bengaluru;
2) Nursing School, Bowring and Lady Curzon Hospital, Bengaluru;
3) Nursing School, District Hospital, Chitradurga;
4) Nursing School, Chigateri General Hospital, Davangere;
5) Nursing School, District Hospital, Belagavi;
6) Nursing School, District Hospital, Vijayapura;
7) Nursing School, District Hospital, Kalburgi (contd. to function under the State Government's instructions);
8) Nursing School, K.R. Hospital, Mysuru;
9) Nursing School, District Wenlock Hospital, Mangaluru and
10) Nursing School, Ballari (VIMS).

c) Autonomous Institutions

The following nineteen Autonomous Medical Institutions coming under Medical Education Department are functioning independently, each headed by a Director, under the direct control of the Government

1. Bengaluru Medical College and Research Centre, Bengaluru
2. Mysuru Medical College and Research Centre, Mysuru
3. Government Dental College and Research Centre, Bengaluru
4. Mandya Institute of Medical Sciences, Mandya
5. Hassan Institute of Medical Sciences, Hassan
6. Shivamogga Institute of Medical Sciences, Shivamogga
7. Raichur Institute of Medical Sciences, Raichur
8. Belagavi Institute of Medical Sciences, Belagavi
9. Bidar Institute of Medical Sciences, Bidar
10. National Institute of Mental Health and Neuro Sciences, Bengaluru
11. Karnataka Institute of Mental Health and Neuro Sciences, Dharwad
12. KIDWAI Memorial Institute of Oncology, Bengaluru
13. Sri Jayadeva Institute of Cardiology, Bengaluru
14. Vijayanagar Institute of Medical Sciences (VIMS), Ballari
15. Karnataka Institute of Medical Sciences (KIMS), Hubballi
16. Indira Gandhi Institute of Child Health, Bengaluru
17. Nephro-Urology Institute, Bengaluru
18. Karnataka Institute of Diabetology, Bengaluru
19. S.D.S. and Rajiv Gandhi Institute of Chest Diseases, Bengaluru
20. Government Dental College at Ballari attached to VIMS, Ballari

Rajiv Gandhi University of Health Sciences: This is an apex body in the academic field. The primary responsibility of the Directorate of Medical Education is to conduct various medical courses, for providing quality medical education at graduate, post-graduate, and super-specialty levels, Para-medical courses, nursing, etc. To fit into the above philosophy, the Department is geared up to bring-in a qualitative change, with due emphasis on providing a low-cost and curative health care services, at tertiary level hospitals.

Education: The academic matters pertaining to Medical / Nursing Colleges are entirely governed by the rules and regulations of the Medical Council of India, Dental Council of India, Nursing Council of India and Rajiv Gandhi University of Health Sciences, Bengaluru. There is a Selection Committee in the Directorate, which helps in identifying the number of seats in Post-Graduate and Under-Graduate Medical and Dental faculties, M.Pharma, B.Pharma, B.Sc (Nursing) and Bachelor in Physio-Therapy, available in Government and Private Colleges in the State, for the allotment of students to the respective courses and send proposals to the Government for Notification and issuing Government Orders. The Committee also prepares the Seat Matrix as per the State's Reservation Policy and sends the proposals to the Government for Notification and Orders. Reconciliation for filling up of the un-allotted seats in private colleges, effecting mutual transfers to MBBS / BDS students, sending proposals to the Government regarding the amendments of the selection rules, etc., are also being handled by this Committee.

List of Government and Private Medical, Dental and Nursing colleges in Karnataka

Sl. No.	Name of the Colleges / Institutions
	Government Medical Colleges
1.	Bengaluru Medical College and Research Institute, Bengaluru
2.	Mysuru Medical College and Research Institute, Mysuru
3.	Karnataka Institute of Medical Sciences, Hubballi (KIMS)
4.	Vijayanagar Institute of Medical Sciences, Ballari (VIMS)
5.	Mandya Institute of Medical Sciences, Mandya
6.	Belagavi Institute of Medical Sciences, Belagavi
7.	Hassan Institute of Medical Sciences, Hassan
8.	Raichur Institute of Medical Sciences, Raichur
9.	Bidar Institute of Medical Sciences, Bidar
10.	Shivamogga Institute of Medical Sciences, Shivamogga
	Private Medical Colleges (Non - Minorities)
11	JJM Medical College, Davangere
12	M.S.Ramaiah Medical College, Bengaluru
13	Kempegowda Institute of Medical Sciences, Bengaluru
14	M.R.Medical College, Kalburgi
15	Adichunchanagiri Medical College, Bellur
16	K.V.G. Medical College, Sulya
17	Dr.B.R.Ambedkar Medical College, Bengaluru
18	S.S. Institute of Medical Sciences, Davanagere
19	S.Nijalingappa Medical College, Bagalkot
20	Basaveswara Medical College, Chitradurga
	Private Medical Colleges (Minorities)
21	Al Ameen Medical College, Vijayapura
22	Khaja Bande Nawaz Inst.of Med.Sciences, Kalburgi
23	Father Muller's Medical College, Mangaluru
24	Vydehi Institute of Medical Sciences, Bengaluru
25	S.D.M. Medical College, Dharwad
26	M.V.J. Medical College, Bengaluru
27	Raja Rajeshwari Medical College, Bengaluru
28	Navodaya Medical College, Raichur
29	A.J. Institute of Medical Sciences, Mangaluru
30	St.John's Medical College, Bengaluru
	Deemed University Medical Colleges
31	J.N. Medical College, Belagavi

32	Sri Devaraja Urs Medical College, Kolar
33	J.S.S. Medical College, Mysuru
34	Sri Siddhartha Medical College, Tumakuru
/35	BLDEA's B.M.Patil Medical College, Vijayapura
36	K.S.Hegde Medical Academy, Mangaluru
37	Yenepoya Medical College, Mangaluru
38	Kasturba Medical College, Mangaluru
39	Kasturba Medical College, Manipal

Dental Colleges

Sl. No	Government Dental colleges
1	Government Dental College and Research Institute, Bengaluru
2	Government Dental College, Ballari (VIMS, Ballari)
Private Dental Colleges (Non-Minorities)	
3	Bapuji Dental College, Davangere
4	HKE Society's S.Nijalingappa Dental College, Kalburgi
5	V.S.Dental College, Bengaluru
6	B.R.Dental College, Bengaluru
7	Institute of Dental Sciences, Davangere
8	K.V.G. Institute of Dental Sciences, Sullia
9	M.S. Ramaiah Dental College, Bengaluru
10	K.G.F. Institute of Dental Sciences, K.G.F.
11	Rajiv Gandhi Dental College, Bengaluru
12	R.V.Dental College, Bengaluru
13	HKDET Dental College, Humnabad
14	AME's. Dental College, Raichur
15	S.B.Patil Dental College, Bidar
16	Hasanamba Dental College, Hassan
17	Maratha Mandal Dental College, Belagavi
18	Shyamala Reddy Dental College, Bengaluru
19	NSVK Dental College, Bengaluru
20	S.J.M. Dental College, Chitradurga
21	P.M. Nadagouda Dental College, Bagalkot
22	Dayananda Sagara Dental College, Bengaluru.
23	Krishna Devaraya Dental College, Bengaluru
24	K.L.E. Dental College, Bengaluru
25	Sharavathi Dental College, Shivamogga
26	A.B.Shetty Dental College, Mangaluru
Private Dental Colleges (Minorities)	
27	Al-Ameen Dental College, Vijayapura
28	Al Bhadar Dental college, Kalburgi
29	Farukia Dental College, Mysuru
30	S.D.M.Dental College, Dharwad
31	Oxford Dental College, Bengaluru
32	Maruthi Dental College, Bengaluru
33	A.J.Institute of Dental Sciences, Mangaluru.
34	Coorg Institute of Dental Science, Virajpet
35	Raja Rajeshwari Institute of Medical Sciences, Bengaluru.
36	Bengaluru Institute of Dental Science, Bengaluru
37	Vydehi Institute of Dental Sciences, Bengaluru.
38	Navodaya Dental Wing, Raichur
Deemed University Dental Colleges:	
39	K.L.E. Dental College, Belagavi
40	J.S.S.Dental College, Mysuru
41	Sri Siddhartha Dental College, Tumakuru
42	Yenepoya Dental College, Mangaluru
43	College of Dental Surgery Kasturba Medical College, Mangaluru
44	College of Dental Surgery Kasturba Medical College, Manipal

Nursing Activities

There are 10 Government Nursing Schools, 1 Government Nursing College imparting M.Sc. (Nursing) course and many Private Nursing Colleges are functioning in the State.

Number of recognized private nursing institutions for different courses:

Sl. No	Course	Number of colleges
1	ANM	43
2	B.Sc	338
3	M.Sc	157
4	GNM	543
5	P B B.Sc	167
6	IGNOU	2
7	P B Diploma	4

Para-Medical Activities: Prior to 1997, all the Para-Medical Courses were conducted and monitored by the *Vocational Education Board.* Since these courses are of inter-disciplinary in medical subjects, the *Para-Medical Board* has been reconstituted by the Government, vide Government Order dated 02-05-1997 and is functioning under the control of the Director of Medical Education in the State. This Board since inception is conducting the Para-Medical courses through nine Government Medical Colleges, one Government Dental College / Institutions, Bowring and Lady Curzon Hospital, Bengaluru, one Nephro Urology Institute, Bengaluru; Medical Training Centre, Air-Force Commando Hospital, Government of India. The Board is being managed through self-financing, by way of collecting affiliation, renewal of affiliation and other types of fees, from the Para-Medical Colleges / Institutions. Thus there is no financial burden from the Board on the State's Exchequer.

Autonomous Medical Institutions

Bengaluru Medical College and Research Institute, Bengaluru:Bengaluru Medical College, established in the year 1955, being an old medical institution in Karnataka, has been renamed as *Bengaluru Medical College and Research Institute* during the year 2008-09, with autonomous status. *Victoria, Bowring and Lady Curzon, Vani Vilas and Minto Eye – Hospitals*, all situated in Bengaluru, are the teaching hospitals attached to this Institution. The Institution is imparting Medical Education to the MBBS students selected from the Karnataka Examination Authority, and also for Post-graduate, Diploma, Fellowships and Para-Medical courses.

Mysuru Medical College and Research Institute, Mysuru: *Mysuru Medical College and Research Institute, Mysuru* was granted autonomous status during January 2007. This Institution has got three associated hospitals viz., *K.R.Hospital, Cheluvamba Hospital and P.K.T.B. Hospital* for catering services in medicine, surgery and other connected branches and obstetrics and gynecology and also pediatric patients. P.K.T.B. caters services for pulmonary medicine and thoracic surgeries.

Government Dental College and Research Institute, Bengaluru: Government Dental College and Research Institute, Bengaluru, which was accorded autonomous status in the year 2008-09, was started during the year 1958. This Institute is a premier teaching institute and also gives dental treatment to public at nominal cost. This college has been recognized by the Dental Council of India and Rajiv Gandhi University of Health Sciences.

New Medical Colleges

Raichur Institute of Medical Sciences, Raichur: Raichur Institute of Medical Sciences, Raichur was established vide Government Order number HFW / 213 / MPS / 2002 dated 26.02.2002 of the Department of Health and Family Welfare, (Medical Education) and it was registered as a society under Karnataka Societies Act – 1960. It is an autonomous institution under the administrative control of Department of Health and Family Welfare (Medical Education), Government of Karnataka.

The Institution was established to impart medical education, conduct research in medicine and health sciences, have infrastructure for college and hospitals, extension of medical facilities and services, undertake health and medical care of the people of this region and to control occurrences of wide spread prevalence of diseases like Chikungunya, Leptospirosis, Japanese Encephalitis, Malaria and Filariasis.

Shivamogga Institute of Medical Sciences, Shivamogga:The Government of Karnataka accorded sanction to establish SIMS on 22-1-2005. In the year 2007-08 Medical Council of India has given permission to commence the Medical course (MBBS). There is governing council headed by Hon'ble Minister for Medical Education Karnataka Government as Chairman, which has been seeing the overall functioning of the Institute.

Belagavi Institute of Medical Sciences, Belagavi: The Belagavi Institute of Medical Sciences is one of the six new Medical Colleges established by Government of Karnataka, vide G. O. No. Aa.Ku.Ka 516 MPS 2004, Dated: 21-01-2005. Belagavi Medical College is spread over approximately 25 acres of land attached to existing District Hospital, Belagavi (BIMS Hospital).

Mandya Institute of Medical Sciences, Mandya: The Mandya Institute of Medical Sciences is one among the six New Medical Colleges established by Government of Karnataka, in the year 2005-06, with the objective of providing effective curative services, conducting research activities in the field of advanced medical sciences and training the medical personnel accordingly, and also to disseminate the knowledge through seminars, workshops, conferences and so on. The Institution functioning under the control of an administrative board formed by the Government of Karnataka is headed by Director appointed by the Government of Karnataka. One peripheral cancer sub-centre of KIDWAI Memorial Institute of Oncology, Bengaluru has been functioning in this Institute since 2007, providing radiation treatment to an average of 20-50 patients per day. Patients requiring surgery and chemotherapy treatment will be referred to the KIDWAI Memorial Institute of Oncology, Bengaluru for further treatment.

Hassan Institute of Medical Sciences, Hassan: Hassan Institute of Medical Sciences, Hassan was established in the year 2006 and situated in the Premises of Sri Chamarajendra Hospital, Hassan. This Institution was registered under the Karnataka Registration Act 1960 and registered vide registration No 17/2005-06 date 13-05-2005. Medical Education unit is headed by the Director of the Institute.

Bidar Institute of Medical Sciences, Bidar: Bidar Institute of Medical Sciences, Bidar established in the year 2005, is an autonomous institution under the administrative control of the Department of Medical Education, Government of Karnataka. The Institution is aimed at imparting medical education, conduct research in Medical and Health Sciences, to disseminate technology, to provide health and medical care services to the people of the region and to control and prevent the occurrence of various diseases. Medical Education unit is headed by the Director of the Institute, appointed by the Government of Karnataka.

Institute of Nephro Urology, Bengaluru: Institute of Nephro-Urology is an Autonomous Institute established in Bengaluru by the Government of Karnataka, to provide comprehensive health care services in the field of Nephrology and Urology. It is an Apex Institute in the State of Karnataka, situated in the campus of Victoria Hospital, Bengaluru. It has started functioning in the year 2007, with bed strength of 150. The number of patients treated at the Institution during the year under report, is as briefed hereunder:

OPD	28703
IPD	3388
Dialysis	8299
Major Operations	1693
Minor Operations	3357

The Institute having been recognized by the Government of Karnataka, as the appropriate authority for Kidney Transplantation, has so far conducted seven transplantations. An eight bedded Intensive Care Unit has been started with modern gadgets.

Indira Gandhi Institute of Child Health, Bengaluru: Indira Gandhi Institute of Child Health is a premier organization promoting Child Health Care services. It is an autonomous body, registered under Karnataka Societies Registration Act 1960 on 06.08.1985. It is aided by Government of Karnataka, since 1991, located in its own premises next to the National Institute of Mental Health and Neuro Sciences at South Hospital Complex in Bengaluru. The Institute

is providing comprehensive and quality care to Pediatric patients and is offering Post-graduate courses in Pediatrics i.e., MD, DCH and also DNB courses in Pediatric Surgery. The Institute has two main constitutional bodies, viz., the General Body and Governing Council. The General Body formulates overall policies while the Governing Council is responsible for the management and administration of the Institute. Both these bodies comprise members nominated by the Government of Karnataka from time to time.

The Institute is also committed to take up research programmes relating to diagnosis and treatment of pediatric ailments. Vaccination programme is conducted regularly on Out-Patient Department basis as per the National Immunization Schedule. The vaccines such as BCG, OPV, DPT, TT, and Measles are administered to children on OPD basis, on specified days of the week. Polio Vaccine is administered apart from the routine vaccination under National Pulse Polio Programme. The Out-patient department is providing medical care to all pediatric patients who come to the hospital (up to 18 years age). Daily clinics are run in pediatric medicine and surgery along with super-specialty clinics.

Sri Jayadeva Institute of Cardio-Vascular Sciences and Research, Bengaluru: Sri Jayadeva Institute of Cardiovascular Sciences and Research is a tertiary care Autonomous Institute run by Government of Karnataka in Bengaluru. In March 1979, it started as a separate and independent Institute of Cardiology at the Victoria Hospital Complex, Bengaluru. Today it is spread on a sprawling 13 acres of land in Jayanagar, and is one of the largest heart hospitals in Asia Pacific region. Initially it had a bed strength of only 20 which became 65 in the year 1982, today it has got 540 bed strength with the State of art equipments in the form of 5 Cath Labs, 7 Operation Theatres, Non-Invasive Laboratories and 24 hours ICU facilities. Presently, on an average 900-1000 patients are visiting this hospital everyday and annually 24,000 In-Patients are treated. Annually about 3000 Open Heart Surgeries, 10,000 Coronary Angiograms, 5,500 Procedures including Angioplasties and Valvuloplasties, Device Closure, Pacemaker [Highest numbers in the country] are done in this hospital. It is also conducting country's biggest Post-Graduate courses with 21 seats in DM Cardiology, 12 seats in M.Ch. Cardiothoracic Surgery and eight seats in DM Cardiac Anesthesia. The Institute has published 25 Research articles in National and International journals.

Sri Jayadeva Institute of Cardiovascular Sciences and Research, Mysuru Branch, was inaugurated on 12th August, 2010. It is a 105 Bed facility in the premises of K.R.Hospital with the State of the art Non-Invasive facilities such as Color Doppler, Echo, Holter Monitoring System, computerized Tread Mill Stress Test, 24 hours Laboratory, ICU Services, Cardiac Cath Lab etc. It is catering to the needs of the patients across the districts of Mysuru, Mandya, Chamarajanagar and Kodagu.

Yeshasvini, Arogya Bhagya, Insurances, Suvarna Arogya Chaitanya, Hrudaya Sanjeevini, etc., schemes are adopted in the hospital for the welfare of poor patients. Credit facilities are provided for Government servants, CGHS, ESI, VISL, KSRTC, BBMP, KSDL, BMTC, ISRO, MPM, Mysuru Minerals Ltd., Hutti Gold Mines Co., Ltd., BDA, and KPTCK. BWSSB, Karnataka Legislature and KPC, Health Insurance Card Holders, etc. It is attracting overseas doctors from France, Argentina, USA, Middle East, Ireland, Chine and UK for training Programme in various procedures. Future plans: Opening of cardiovascular unit affiliated to Sri Jayadeva Institute of Cardiovascular Science and Research at Megan hospital, Shivamogga and cardiovascular unit affiliated to Sri Jayadeva Institute of Cardiovascular Science and Research at Medical College, Hubballi.

Tuberculosis Research Centre and Rajiv Gandhi Institute of Chest Diseases (SDSTB and RGICD) Bengaluru: SDSTB and RGICD is a 470 bedded super specialty State level referral hospital having 60 acres of land exclusively dedicated to cater to chest diseases and thoracic surgery with its own establishment and consisting of two chest related departments viz., Department of Pulmonary Medicine and Department of Thoracic Surgery. SDSTRC and RGICD is the first Medical College Hospital to implement DOTS in way back 1998

Karnataka Institute of Mental Health and Neuro-Sciences, Dharwad (KIMHANS): Karnataka Institute of Mental Health and Neuro-Sciences has been established in the year 2009-10

at Dharwad, as an autonomous Institution on the model of the National Institute of Mental Health and Neuro Sciences, Bengaluru, for the welfare of Northern Karnataka population, for which the State Government has released an amount of Rs.100 lakhs under plan programmes for developmental programmes / payment of salaries and Rs.50 lakhs under non-plan programmes. It is headed by a Director.

Karnataka Institute of Diabetology, Bengaluru: Karnataka Institute of Diabetology was established with the sole purpose of offering comprehensive and holistic state of the art of care in diabetes. This is first in the whole of Country where all the facilities like Nephro Diabetology, Cardio Diabetology, Neuro Diabetology, Psycho Diabetology, Podiatry, Vitreo Retinal, Nutrition, Diabetes Education and Laboratory services along with the specialized Diabetology care services, are being made available with a corporate quality at Government rates under one roof.

Karnataka Institute of Medical Sciences, Hubballi (KIMS): Karnataka Institute of Medical Sciences, Hubballi has started in the year 1957 with annual admission of 150 per year under-graduate course, post- graduate courses (degree and diploma) are imparted in this Institution. The hospital is having 300 teaching beds.

KIDWAI Memorial Institute of Oncology, Bengaluru: *KIDWAI Memorial Institute of Oncology* is an autonomous body, Member of International Union against Cancer, affiliated to *Rajiv Gandhi University of Health Sciences, Bengaluru* and *Regional Centre for Cancer treatment and Research* recognized by Government of India as an Institute of Excellence. The Institute is well equipped with department of diagnosis, surgical, medical, gynaecological, head and neck; and radiation oncology on therapeutic side. The population based cancer registry and hospital based cancer registry departments collect statistics regarding current trends and prevalence of cancer. Community oncology and mobile cancer detection and education units are providing services to the general public. '*Dharmashala*' provides free accommodation. This Institute has been one of the best cancer pain relief and palliative care centre in the Country.

The rehabilitation units comprise Speech Therapy, Clinical Psychology, and Colostomy and Breast care Units. The Institute also houses the Bhabha Atomic Research Centre Unit, a Regional Centre for dispensing and distribution of Radio Pharmaceuticals and Radiation Sterilization Plant that sterilizes medical products for private and Governmental agencies.

The Radiological Dosimeter Laboratory in the department of radiation physics provides calibration of dosimeters to other cancer institute's in India. It also has a drug foundation which dispenses free drugs to the poor and deserving patients at 20 per cent to 30 per cent cheaper rate. On the academic front, the Institute serves as a training ground for medical students – undergraduates as well as post-graduates and super specialization courses in medical and surgical oncology. Nurses and Para-medical personnel from other Institutions in the State are also trained. It is a recognized centre for WHO students for Oncology training.

Teaching Hospitals: *Bowring and Lady Curzon Hospital, Bengaluru* (1866) was the only civil medical institution till 1900 in Bengaluru. It had bed strength of 104 at the beginning and at present, it has bed strength of 876.

1. *Victoria Hospital, Bengaluru* (1900) inaugurated by Lord Curzon is the biggest hospital in Karnataka. To begin with the accommodation was provided to 100 inpatients. It has facilities like operation theatre, laboratory, pharmacy section etc., it is a teaching hospital. It has a burns ward sponsored by the Mahabodhi Society. Now it has bed strength of 1000.

2. *K.R.Hospital, Mysuru* (1876) was a dispensary and in 1918 it was upgraded to a general hospital. Later on, it was converted into a teaching hospital attached to Mysuru Medical College. It started with bed strength of 20 and presently the bed strength has been raised to 1,050.

3. *Minto Regional Institute of Ophthalmology, Bengaluru* was founded in 1913 as the Minto Ophthalmology Hospital. In 1982, it was upgraded as Minto Regional Institute of Ophthalmology with a provision of 300 beds.

4. *Vanivilas Hospital, Bengaluru* started functioning in 1935 with 536 bed strength exclusively for women and children.

5. *Cheluvamba Hospital, Mysuru* was

started in 1880 and was named after Maharani Kemparajammanniyavaru. It had 21 beds in 1939, then a new two storied building was constructed with bed strength of 200 and it was named as Cheluvamba Hospital. In 1983 it had bed strength of 400 beds. At present it has bed strength of 420 beds. This a teaching hospital attached to Mysuru Medical College.

6. *PKTB and CD Hospital, Mysuru*: The *princess Krishnarajammanni Tuberculosis Hospital,* Mysuru was opened in 1921. The accommodation available in 1921 was for eight paying patients and 20 poor patients. As a memory to the Golden Jubilee, a 22 bedded emergency ward was constructed. Tuberculosis and other chest diseases are treated in the sanatorium. The present bed strength is 470 beds.

7.*CG Hospital, Davangere*: 930 beds

8.*Women and Children Hospital, Davangere*: 100 beds

9.*District Wenlock Hospital, Mangaluru*:705 beds

10.*Lady Goshen Hospital, Mangaluru*:260 beds

11.*District Hospital, Belagavi*: 740 beds

12.*District Hospital, Kalburgi*: 750 beds

Other Major Hospitals: Public/Private

Most of the major hospitals of the State are attached to the Medical colleges and they are providing clinical facilities along with almost all specialist services. They function as referral hospitals to the other institutions which come under their jurisdiction. They are having specialties like Medicine, Surgery, Obstetrics, Gynecology, ENT, Skin and VD, Pathology and Bacteriology, Radiology, Anesthesia, Dental etc., besides latest modern medical services. A brief account of some of the major hospitals of the State is as follows:

1. *St. Martha's Hospital, Bengaluru* is owned and managed by the Sisters of the Good Shepherd. The hospital was started with just 50 beds in the land that was given by Sri Chamaraja Wodeyar X, the then Maharaja of Mysuru in the year 1884. In the year 1884 the Rt. Revd. Monsignor Bishop Charbonnaux M.E.P., Archbishop of Bengaluru, invited the Sisters to the Archdiocese to establish and open schools and orphanages for young girls to be treated with kindness and dignity. During the decades of the nineteen thirties, forties, and fifties, the Hospital continued and consolidated its services to the poor and needy. Sisters with vision and commitment to build on the early foundation started a Nursing School in 1933. Today it has 550 beds for in-patients care, and treats about 800 out-patients' cases a day.

2. *Father Mueller's Charitable Institution, Mangaluru* had its beginning in the modest Homeopathic Poor Dispensary founded by father Mueller, a German Missionary in 1880. Gradually, it is expanded into a General Hospital by 1895. Now, it is a full- fledged general hospital with all modern facilities.

3. *Mary Calvert Holdsworth Memorial Hospital, Mysuru* (1906) is a hospital for women and children.

4. *Ellen Thoburn Cowen Memorial Hospital, Kolar*, (1910) is a property of Methodist Church in India.

5. *The Karnataka Health Institute, Ghataprabha, Belagavi District* was founded in 1935 with a purpose of bringing modern medical facilities to the doors of neglected villages.

6. *St. Philomena's Hospital, Bengaluru* was founded in 1937 is one of the well equipped hospital.

7. *The Kempa Cheluvamba (K. C.) General Hospital, Bengaluru* was started as a maternity hospital in 1939 with a provision of 40 inpatients. Later in 1962 it was converted into a General Hospital.

8. *St. John's Medical College Hospital, Bengaluru* Started on December 8, 1975 is a tertiary medical service centre with 1,200 beds. It offers specialty and super specialty services, including state-of-the-art diagnostic facilities to ensure the delivery of holistic patient care. It has 24 full-fledged departments to provide specialty and super specialty services.

9. *Sanjay Gandhi Institute of Accident, Rehabilitation and Physical Medicine* is an autonomous body receiving grant from Government. It started working from April 1984.

List of private hospitals in Karnataka:

1. *Apollo Hospitals*
2. *Ananya Hospitals*

3. *Bhagawan Mahaveer Jain Hospital*
4. *BGS Global Hospital*
5. *Bengaluru Hospital*
6. *B.W. Lions Super Speciality Hospital*
7. *Columbia Asia Hospital*
8. *Fortis Hospital*
9. *Hosmat Hospital*
10. *M S Ramaiah Memorial Hospital*
11. *Mallige Medical Centre*
12. *Mallya Hospital*
13. *Manipal Hospital*
14. *Manasa Medical Centre*
15. *Modi Hospital*
16. *Narayana Hrudalaya*
17. *Narayana Nethralaya*
18. *Nethradhama Eye Hospital*
19. *NU Hospital*
20. *Panacea Hospital*
21. *Ramakrishna Hospital*
22. *Rotary Hospital*
23. *Sagar Hospital*
24. *Sevakshetra Hospital*
25. *Shirdi Saibaba Charitable Hospital*
26. *Shekar Nethralaya*
27. *Vikram Hospital*
28. *Wockhardt Hospital etc.,*

Department Of AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy)

Department of Indian Systems of Medicine and Homoeopathy (ISM&H) was created in March,1995 and re-named as *Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH)* in November, 2003 with a view to providing Healthcare, Education and Research in *Ayurveda, Yoga & Naturopathy, Unani, Siddha, Homoepathy,* systems. The Department continued to lay emphasis on improving health care facilities, upgrading AYUSH Educational standards, awareness generation about AYUSH. The Karnataka has taken initiative in mainstreaming of AYUSH in National Health Care under NRHM in right earnest.

The AYUSH systems are time-tested methods to tackle life style disorders which are becoming a major threat to health in present era. These systems can play major role not only in preventing the diseases but in curative aspect too. AYUSH system can give a holistic approach to health systems there by boosting the whole health system and contribute to the society. In the society. In the above view it is necessary to Popularize, Revive, Revitalize, the AYUSH system by giving proper infrastructure, Human Resource Development, training, AYUSH systems of Medicines are well accepted by community particularly with rural areas because these are socially acceptable, comparatively safe and efficacious and easily available which can be prepared locally by the available resources. By these it is possible to make these systems accessible to the people in general and patients in particular. The Department of AYUSH rendering effective services in health care both curative and preventive, has got its own health services wing in all the system of medicine and has got its own medical education department, drug manufacturing unit, drug licensing authority and registration board to assist its pioneering nature of work that is health care delivery system.

The basic objectives as indicated in the policy document are: 1) To expand outreach and ensure affordable AYUSH services to the people, 2) To improve quality of teachers and clinicians by revising curricula to contemporary relevance, 3) To facilitate availability of raw drugs which are authentic and contain essential components as required under Pharmacopoeial standards, 4) To integrate AYUSH in health care delivery systems in the National Programmes, 5) To reorient and prioritize research in AYUSH, 6) To create awareness about the strengths of these systems in India and abroad, 7) To provide full opportunity for the growth and development of these systems, 8) To provide availability and accessibility of Quality health care to people, especially for those in rural areas, the poor, women and children, 9) To provide safe and effective health care to rural mass, 10) To make people self reliant for their primary health care needs, 11) To supplement nutrition and vitamin supplement through natural and Herbal source, 12) To provide preventive, primitive, and curative, health care through AYUSH, 13) To reduce IMR / MMR and increase life expectancy by timely and quality health interventions, and 14)

To provide Health Care facility to the vulnerable section of the society especially the rural population and population of the most backward areas, The *Thandas*, Tribal's and people in remote areas.

The Director of AYUSH is being assisted by One Joint Director (ME), One Chief Administrative Officer, Drug Licensing Authority , One each Deputy Directors for Ayurveda, Unani, and Homoeopathy, Nature Cure and Yoga physician- Gr-I, Planning and Development Cell, One Administrative Officer and One Accounts Officer at the Directorate level under the supervision of the Commissioner of Health and Family Welfare Department. District AYUSH Officers are looking after the District Hospitals and Dispensaries.

The Hospitals and Dispensaries under Zilla Panchayat Sector are being monitored by the concerned District AYUSH Officers. *Government Central Pharmacy, Bengaluru* supplies 60 per cent of required Medicine (Ayurveda and Unani) by Government AYUSH Hospitals and Dispensaries and 40 per cent procured and supplied from KSDL and WS, Bengaluru/IMPCL etc Government Enterprise. There are 122 hospitals and 660 dispensaries functioning in this State as on 31-03-2013. There are two statutory Boards namely "*The Karnataka Ayurveda and Unani Practitioner's Board*" and "*The Karnataka Board of Homoeopathic System of Medicine*" functioning under the Department. AYUSH colleges are affiliated to Rajiv Gandhi University of Health Sciences. Selection of candidates for all these Medical colleges will be made transparently through Common Entrance Test. Central Government's grants are being utilized for overall development of these colleges.

AYURVEDA: Ayurveda is the most ancient and traditional system of medicine in India. The Ayurvedic system of medication is based on many centuries of experience in medical practice handed down through generations. Ayurvedic medicine originated in the early civilizations of India some 3,000-5,000 years ago making Ayurvedic medicine the oldest surviving healing system in the world.

According to The word Ayurveda is formed by the combination of two words - "*Ayu*" meaning life, and "*Veda*" meaning knowledge. Ayurveda is regarded as "*The Science of Life*" and the practice involves the care of physical, mental and spiritual health of human beings. Life according to Ayurveda is a combination of senses, mind, body and soul. Ayurveda is not only limited to body or physical symptoms but also gives a comprehensive knowledge about spiritual, mental and social health. Thus *ayurveda* is a qualitative, holistic science of health and longevity, a philosophy and system of healing the whole person, body and mind.

***Ayu*:** The real meaning of "*Ayu*" or life according to the fundamental principles of ayurveda is *Sharirendriya sattwa atma samyogo ayuhu*, goes one verse. *Sharir* means physical body; *indriya* means senses. *Sattwa* refers to the combination of mind and heart--overall psychological strength, and *atma* means soul or spirit. When all of these--body, senses, heart, mind and spirit--are in proper balance and function in a harmonious, coordinated manner that is true life-the living body.

***Veda* :** "*Veda*" means science, not a science that changes its theories and its findings every few years but ageless, eternal knowledge built on *siddhantas*, fundamental unchanging principles. Veda refers to guided knowledge: it is not just theory, but also a roadmap for how to derive practical benefit from the knowledge.

The two principle objectives of *Ayurveda* are: 1) To prolong life and promote perfect health, and 2) To eradicate the disease and dysfunction of the body. Another goal of ayurveda is to achieve "*Nirvana*" or liberation from all kinds of "*Wants*". This is primarily achieved through good health, which is regarded as the supreme foundation of life. According to *Ayurveda*, all matter is thought to he composed of five basic elements known as the Panchamahabhuthas - Earth (*Prithvi*), Water (*Jala*), Fire (*Tejas*), Wind (*Vayu*) and Space (*Akasha*).These elements interact and exists in combination, in which one or more elements dominate. The human body is composed of derivatives of these five basic elements, in the form of doshas, tissues (*dhatus*) and waste products (*malas*). The *Panchmahabhutas* therefore serve as the foundation of all diagnosis and treatment modalities in *Ayurveda*.

Ayurveda has eight specialized branches: 1) Internal medicine, 2) Surgery, 3) Management of diseases of Eye and ENT, 4) Pediatrics, 5) Psycho-therapy including Seizures by evil spirits, 6) Toxicology, 7) Geriatrics, and 8) Science of aphrodisiacs.

Yoga: Yoga is a discipline to improve or develop one's inherent power in a balanced manner. It offers the means to attain complete self-realization. The literal meaning of the Sanskrit word *Yoga* is '*Yoke*'. *Yoga* can therefore be defined as a means of uniting the individual spirit with the universal spirit of God. According to *Maharishi Patanjali, Yoga* is the suppression of modifications of the mind.

Yoga is one of the six systems of Vedic philosophy. *Maharishi Patanjali*, rightly called "The Father of Yoga compiled and refined various aspects of Yoga systematically in his "*Yoga Sutras*" (aphorisms) He advocated the eight folds path of Yoga, popularly known as "*Ashtanga Yoga*" for all-round development of human beings. They are: *Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana and Samadhi.*

These components advocate certain restraints and observances, physical discipline, breath regulations, restraining the sense organs, contemplation, meditation and samadhi. These steps are believed to have a potential for improvement of physical health by enhancing circulation of oxygenated blood in the body, retraining the sense organs thereby inducing tranquility and serenity of mind. The practice of Yoga prevents psychosomatic disorders and improves an individual's resistance and ability to endure stressful situations.

Salient features of yoga: *1)* Yoga a universal practical discipline.Yoga is universal in character for practice and application irrespective of culture, nationality, race, caste, creed, sex, age and physical condition, 2) Yoga as evolutionary process. Yoga is an evolutionary process in the development of human consciousness. Evolution of total consciousness does not necessarily begin in any particular man rather it begins only if one chooses it to begin, 3) Yoga as soul therapy. All paths of Yoga (*Japa, Karma, Bhakti* etc.) have healing potential to shelter out the effects of pains. However, one especially needs proper guidance from an accomplished exponent, who has already treaded the same track to reach the ultimate goal.

Types of yoga: *1) Japa Yoga, 2) Karma Yoga, 3) Gyana Yoga, 4) Bhakti Yog, 5) Raja Yoga, 6) Swara Yoga, 7) Kundalini yoga and 8) Nadi.*

Unani

Origin and Development: The *Unani* System of medicine owes, as its name suggests, its origin to Greece. It was the Greek Philosopher-physician Hippocrates (460-377 BC) who freed Medicine from the realm of superstition and magic, and gave it the status of Science. *Unani* system of medicine developed into an elaborate medical system by Arabs, like *Rhazes, Avicenna, AL-Zehravi, Ibn-e-nafs*, & others. The *Unani* System got enriched by imbibing what was best in the contemporary systems of traditional medicines in Egypt, Syria, Iraq, Persia, India, China and other middle east Countries.

The Theoretical frame work of Unani Medicine in based on the teaching of Hippocrates. After him a number of scholars enriched the system considerably. of them, Galen (131-210AD) stands out as the one who stabilized its foundation on which Arab and Persian physicians like Rhazes (850-925AD) constructed an imposing edifice.

In India, Unani System of Medicine was introduced by Arabs and soon it took firm roots. The Delhi Sultans (rulers) provided patronage to the scholars of Unani System and even enrolled some as State employees and Court physicians. During the British rule, Unani System suffered a set back due to withdrawal of State Patronage, but continued to be practiced as the masses reposed faith in the system

An out standing physician and scholar of *Unani* Medicine, *Hakim Ajmal Khan*(1868-1927) championed the cause system in India. After Independence of India, *Unani* System was recognized as one of the Indian Systems of medicine and steps were taken to develop and Propagate this system.

Scope: *Unani* Medicine has been used for centuries and in known for its therapeutic efficacies, there is a need to scientifically establish its efficacy and safety in order to achieve global acceptance. Organized research work in this system is therefore the need of the hour. in post independent era, Central Council for research, drug development, literary work, survey and cultivation of medicinal plants program is contributing significantly for last three decades. Vitiligo, sinusitis, filariasis, eczema, malaria, jaundice, infective hepatitis nervous system disorders, bronchial asthma, arthritis and several other acute and chronic

diseases are some of the conditions where *Unani* therapies have earned recognition after scientific validation where other systems have not been able to give desired response. Now the system has crossed national boundaries and is popular among the masses globally.

Fundamentals: According to the principles and philosophy of *Unani* Medicine, disease is natural process. Its symptoms are the reactions of the body to the disease and the chief function of the physician is to aid the natural forces of the body. *Unani* Medicine is based on the Humoral Theory.

One Government *Unani* Medical College is functioning at Bengaluru with an intake capacity of 50 students per year. There are three private unaided *Unani* Medical Colleges one each at Kalburgi, Vijayapura and Tumakuru with an intake strength of 40 students respectively.

Siddha

Siddha system is one of the oldest systems of medicine in India . The term Siddha means achievements and *Siddhars* were saintly persons who achieved results in medicine. Eighteen *Siddhars* were said to have contributed towards the development of this medical system. *Siddha* literature is in Tamil and it is practised largely in Tamil speaking part of India and abroad. The *Siddha* System is largely therapeutic in nature.

The original Home allotted to mankind by the Creator was in the temparate and fertile region of the East and pointedly in India. It is from here that the human race began its culture and career. India may, therefore, be safely stated as that the first Country from which human culture and civilization originated and spread. According to Indian history prior to Aryans migration, the Dravidian was the first inhabitant of India of whom the Tamilians were the most prominent.

The Tamilians were not only the earliest civilized but also those who may more considerable progress in civilization than any other early people. The languages of India were divided into two great classes, the northern with Sanskrit as the pre-pondering element and the southern with Dravidian language as independent bases.

The science of medicine is of fundamental importance to man's well being be and his survival and so it must have originated with man and developed as civilization. It is, therefore rather pointless to try to determine the exact point of time to which the beginning of these systems could be traced They are eternal, they began with man and may end with him.

The *Siddha* was flouriest in south and *Ayurveda* prevalent in the north. Instead of giving the name of any of individual as the founder of these systems our ancestors attributed their origin to the creator. According to the tradition it was Shiva who unfolded the knowledge of *Siddha* system of medicine to his concert Parvati who handed it down to *Nandi Deva* and he the *Siddhars*. The Siddhars were great scientists in ancient times.

According to tradition, the origin of *Siddha* system of medicine is attributed to the great *Siddha Ayastiyar*. Some of his works are still standard books of medicine and surgery in daily use among the Siddha Medical practitioners.

Basic Concepts: This principles and doctrines of this system, both fundamental and applied, have a close similarity to *Ayurveda*, with specialization in Iatro-chemistry. According to this system the human body is the replica of the universe and so are the food and drugs irrespective of their origin.

Like Ayurveda, this system believes that all objects in the universe including human body are composed of five basic elements namely, earth, water, fire, air and sky.

The food, which the human body takes and the drugs it uses are all, made of these five elements. The proportion of the elements present in the drugs vary and their preponderance or otherwise is responsible for certain actions and therapeutic results.

As in *Ayurveda*, This system also considers the human body as a conglomeration of three humours, seven basic tissues and the waste products of the body such as faeces, urine and sweat. The food is considered to be basic building material of human body which gets processed into humours, body tissues and waste products. The equilibrium of humours is considered as health and its disturbance or imbalance leads to disease or sickness. This system also deals with the concept of salvation in life. The exponents of this system consider achievement of this state is possible by medicines and meditation.

HOMOEOPATHY: (B.H.M.S) There are 11 Homoeopathy Medical Colleges in the State of which one college is run by the Government Homeopathy Medical College at Bengaluru with an in take of 40 students. In the remaining 10 Homoeopathy unaided Medical Colleges the intake strength is fixed from 40 to 100 students on the availability of the facilities and infrastructure of the concerned colleges.

NATURE CURE: One Government Nature Cure and Yoga degree college has been sanctioned to Mysuru. The Intake capacity of the college is 25 students. Further three Private Nature Cure and Yoga colleges are functioning at Ujire, Moodbidre and Jigani with an intake of 100, 60 and 50 respectively.

HERB GARDEN

Herb gardens are being maintained at Bengaluru, Mysuru and Ballari which are attached to the Ayurveda Medical Colleges. The Medicinal plants required for demonstration to the students and green herbs are required for the hospitals being grown in these herb gardens. Further, *Dhanvantri* Vana has been established in 37 acres of land at Nagarabhavi near Bengaluru University campus for development of herbarium and about 500 Herbs have been raised.

State Health Policy

Rationale for State Health Policy: The State has so far followed policy guidelines through the framework of successive five Year Plans developed by the Planning Commission, decisions of the *Central Council of Health and Family welfare, Central health legislation and National health programmes* developed by Central Government. Over a period of time, separate policies at the National level have been developed for Health (1983), which was revised in 2002, Education For Health Sciences (1989), Nutrition (1993), Drug Policy (1986 and 1994), Pharmaceutical Policy 2002, Medical Council of India (MCI) guidelines (1998, 1999 and 2000), Blood Banking have served the State well in developing its health system, and will continue to be used as guidelines for further growth. A National Health Policy-2002 has been announced and provides a framework within which the Health Policy of the State Would refashion the elements therein to meet the current needs of the State. The State Health Policy would be based on the specific needs of the State and recognize regional disparities.

Health however is constitutionally a State subject. Health needs, defined socio-epidemiologically, vary between States and even districts, requiring more specific planning. Health expenditure is met largely by the State budget, with 82 per cent of public sector expenditure on health from State Government of Karnataka and 18 per cent from Central Government. A comprehensive Karnataka State Policy for the Integrated Health Development and functioning of the health sector is therefore being articulated explicitly, for the first time. The Policy, with a string emphasis on process and implementation, will be an instrument for optimal, people oriented development of health services.

The State Health Policy would be based on the following premises- 1) It will build on the existing institutional capacities of the public, voluntary and private health sectors, 2) It will pay particular attention to filling up gaps and will move towards greater equity in health and health care, within a reasonable time frame, 3) It will use a public health approach, focusing on determinants of health such as food and nutrition, safe-water, sanitation, housing and education, 4) It will expand beyond a focus on curative care and further strengthen the primary health care strategy, 5) It will encourage the development of Indian and other systems of medicines and 6) It views health as a reasonable expectation of every citizen and will work within a framework of social justice. More importantly it is intended to be guiding document that needs to evolve and be changed in response to changing Situations.

Health Gains: During the past century and particularly after independence in 1947, several gains have been made in health and health care in Karnataka. Life expectancy at birth has increased from 37.15 to 61.7 years and from 36.15 to 65.4 years for males and females respectively, between 1951 and 2001.The *Infant Mortality Rate (IMR)* declined from as high as 148/1000 live births in 1951 to 69 in 1981,and further to 57 in 2000(SRS 2000). In this sensitive key indicator, the goal of 60 fixed in the 1983 National Health Policy has been reached. The crude Birth Rate has fallen from 40.8/1000 populations in 1951 to 22.0 in 2000 and the total fertility rate from 6.0 children

in 1951 to 2.13 in 1998-99. SmallPox has been eradicated. The State has become free of plague and more recently of guinea worm infection. The incidence of polio cases has been reduced to zero by December 2000 and until now, for more than two years, the nil status has been maintained. The progress in brining down *Crude Death Rate* by more than two thirds from 25.1 in 1951 to 7.8 in 2000 is noteworthy. Public Health care programmes richly deserve much of the credit for this. A brief picture of the gains is depicted below.

Health Indicator

HEALTH INDICATOR	1951	1971	1981	1991	2001
Life expectancy at birth (years)	37.15	50.9	55.4	58.1	61.7
Males Females	36.15	50.2	55.7	58.6	65.4
Crude Birth Rate (per 1000 population)	40.8	37.1	28.3	26.9	22.0*
Crude Death Rate (per 1000 population)	25.1	17.0	9.1	9.0	7.8*
IMR (per 1000 lbs)	148	120	110	80	57*
Malaria (API)	NA	1.35	4.79	1.16	3.93
Leprosy (cases/1000 population)	NA	NA	31	16	2.45

** Sample Registration System 2000*

Further Improvements in the health Infrastructure over the years in Karnataka are apparent from the following table:

HEALTH INFRASTRUCTURE	1970-71	1980-81	1990-91	2000-01
No. Of Sub Centers	NA	3334	7793	8143
No. Of Primary Health Centers	265	300	1198	1676
No. Primary Health Units	917	1215	626	583
Hospitals	114	137	176	176
Beds	NA	24597	31432	43112
Doctors	NA	NA	4370	5202
Staff Nurse	NA	NA	4607	5317

NA: - Not Available

The Health and demographic scenario in Karnataka, compares favourably with the national average as could be evidenced from the following table.

DEMOGRAPHIC INDICATORS

SI. NO	Indicator	1951		1971		1991		1997		2000	
		K	I	K	I	K	I	K	I	K	I
1	Crude Birth Rate	40.8	39.9	37.1	41.2	26.9	32.5	22.7	27.2	22.0	25.8
2	Crude Death Rate	25.1	27.4	17.0	19.0	9.0	11.4	7.6	8.9	7.8	8.5
3	Natural Growth Rate	15.7	12.5	20.1	22.2	17.9	21.1	15.1	18.3	14.2	17.3
4	Infant Mortality Rate	148	NA	120	129	77	80	53	71	57	68

NOTE- K-Karnataka I-India NA-Not Available

Health Gaps: However, gaps remain. Large rural-urban differences remain, exemplified by IMR estimates of 70 for rural areas and 25 for urban areas (SRS, 1998). Despite overall improvements in health indicators, inter-district and regional disparities continue. The five districts of Kalburgi Division (Bidar, Koppal, Kalburgi, Raichur, Ballari), with Vijayapura and Bagalkot districts of Belagavi division continue to lag behind. Under–nutrition in under-five children and anemia in women continue to remain unacceptably high. Women's health, mental health and disability care are still relatively neglected. Certain preventable health problems remain more prevalent in geographical regions or among particular population groups. Structural reforms as suggested by the task force on Health have to be made and more effective management practices imbued with accountability have to be introduced to ensure swift and effective local responses to Health problems. The relatively low level of public confidence in public sector health services, particularly at primary health centers, is recognized. Lack of credibility of services adversely affects the functioning of all programmes. Underlying reasons for implementation gaps need to be understood and addressed.

Population Stabilization: Population stabilization through fertility decline has long been a goal of the State government, in consonance with national priorities. It is, however, realized that some of the causes for the state not achieving demographic goals as envisaged are inadequate social development, isolation of certain sub-groups of population, and lack of commitment on the part of service providers. It is widely recognized that the public sector, in particular has generated awareness, demand for services and has also provided widespread access to contraceptive and family welfare services, especially terminal methods, and *Mother and Child health care*. There have been resultant gains with declines in birth rates from 41.6 (1951-60) to 22.0 (2000), death rates from 22.2 (1950- 51) to 7.8 (2000), and growth rates from 2.2 (1951) to 1.7 (2001 Census). The Total Fertility Rate (TFR) is 21.3 and the effective Couple Projection Rate (CPR) is 60.7 per cent (2001). Thus the State is fairly near to reaching replacement levels of fertility. Data indicates decline with slower or stagnant declines). This momentum of decline is likely to continue. Improvement in social development, quality of life and gender development will hasten the process of demographic transition. This will be an important component of the State strategy, with emphasis on districts in greater need.

Drawing from the guidelines of the National Population Policy 2000, the State will follow certain basic principles: 1) It will promote the spirit of voluntarism and will protect human rights. It will not adopt coercive strategies in any form, 2) It will provide good quality contraceptive services, integrated with primary health care throughout the State. Reproductive technologies that are safe and effective will be used. Quality of care will be further improved with screening, follow-up services, managing and minimizing side effects. Demand for spacing methods will be enhanced. Male methods will be increasingly used, reducing the burden on women only. The government is committed to providing for informed choices and to seeking the voluntary involvement of the citizens, and 3) Responding to the specific situation in Karnataka, the State will develop a special package for districts with greatest unmet need in terms of Health and Family Welfare Services. It will endeavour to increase the, utilization of these services by making them user friendly, being particularly sensitive to the special needs of women.

The Objective of the State in terms of population stabilization are: 1) To provide good quality family welfare services integrated with general health care services to all sections of the population, particularly in areas of greater need, 2) To bring down the Total Fertility Rate to replacement levels in the State and in all the districts by 2010 and 3) To achieve a stable population by 2030.

Strategies: 1) The need of *Reproductive Child Health (RCH) services* will be estimated through a well-organized and meaningful Community Needs Assessment Approach at the grass root level, 2) Setting up a State Commission for Population and Social Development, 3) Making all efforts to ensure adequate facilities for good quality mother and child health care, 4) The State will attempt to develop a good civil registration system, working towards cent per cent registration of births, deaths. Registration of marriages will also be actively promoted and gradually made compulsory, 5) The State is concerned about increasing son preference that is adversely altering the gender ratio. It will implement legal measures such as. The Prenatal

Diagnostic Techniques (Regulation and Prevention of Misuse) Act 1994 to prevent female foeticide. An awareness campaign would be mounted to educate the community regarding the intrinsic value of girl children, 6) Introducing life-skill and population education for adolescent girls and boys, using methods that capture their interest and responding to their needs, 7) Promoting delayed marriages for girls in particular and boys, delaying of the first pregnancy and spacing of the second child, 8) A network of committed NGOs and other allied systems of medicine will be involved in Needs Assessment and delivery of service, 9) Placing the responsibility of implementing the Population Policy on a number of Departments, in addition to Health and Family Welfare through an effective inter-sectoral coordination mechanism, 10) Efforts will be made to enhance the adoption of family planning measures among groups where fertility, due to various reasons, continues to be high, 11) All the districts, including those which are demographically advanced, will be given due attention for sustaining the levels they have achieved, and 12) Educational, vocational and employment opportunities for girls will be considerably enhanced so that they become economically and socially empowered.

Rational Drug Policy : The State is aware of the technological advances and the progress in terms of increased production, high turnover and exports made by the pharmaceutical industries in the country and State. The State will take steps to make available essential drugs of good quality in adequate quantities in all Government hospitals and will take further necessary steps to curb the menace of spurious/adulterated/not of standard quality drugs. The State will ensure compliance with the provisions of the *Drugs and Cosmetics Act and Rules,* and allied Drug Legislations. The State supports the concept of essentiality, based on criteria of therapeutic needs, efficacy and safety. Essential drug lists for different levels of institutions will be followed. Dissemination of information on drugs concerning essentiality and essential drugs list to medical professionals, pharmacists and to the citizens will be promoted. Patient's right to information about harmful, hazardous, irrational drugs will be ensured.

The State will continue to support the system of monitoring *Adverse Drug Rations (ADR)* already initiated by the *Karnataka State Pharmacy Council*. The State will strengthen the Drug Control Enforcement machinery by providing adequate staff with required qualification. Key Staff and Doctors will be educated in rational use of Drug, and in Drug Policy Issues. Measures to increase efficiency, economy and transparency in drug procurement, warehousing and distribution will be implemented.

The State will support strategies in co-ordination with professional and consumer bodies to ensure safe drugs and rational use of drug for people. A state drug formulary and therapeutic guidelines will be developed, adopted and regularly updated. Steps will be taken to modernize *Drugs Testing Laboratories* for speedy and accurate test and analysis of drugs.

Karnataka State prides itself of having premier scientific, technical and research institutions in various fields. The State will partner with these institutions and actively foster systematic data collection and research in the public health services and educational institutions so as to inform the planning process. It will develop the necessary bodies and facilities for this purpose. A research advisory group, within the Department, would steer the research process, raise funds and review technical quality and achievements.

Women's Health: The State has several ongoing schemes for girl children and women. These will be expanded, strengthened and developed further. The State recognizes several societal factors that influence and affect women's health, such as lower social status, social exclusion and isolation: lower access to and utilization of health and other services especially in some districts; poverty, leading to overwork, fatigue, stress, under nutrition, and a host of effects; environmental degradation reducing access to water and fuel; migration for economic reasons increasing risk of ill-health; violence in the family, at the workplace and in public places. Along with education, employment, mobility, empowerment and political participation which have positive influences. The state is committed to women friendly policies in all these areas. It will also undertake reviews of the implementation of schemes addressing these issues and studies of their impact with a view to improving the effectiveness of these measures.

More specifically, in health, policies will work towards the following: 1) There would be a sustained

focus on the entire life course or life cycle of women. This means ensuring adequate nutrition and physical and social conditions for mothers during pregnancy, providing access to good mother and child health services, implementing measures to prevent female foeticide and female infanticide, 2) Focus on the woman /women as whole including physical, psychosocial and emotional aspects, 3) Using strategies empowering women for health, where women are important agents for change, 4) Using a community health and community development approach that facilitates community mobilization, community participation, community organization and community action, wherein the role of men is also important. As many health problems of women have social roots, this strategy will allow for social interventions rather than medical interventions only, 5) Health promotion for women focusing on empowerment and community action, 6) Access to care for women will be enhanced by increasing the number of women health professionals, particularly at primary care levels and in the first referral units. Provision of adequate living facilities, equipment and drugs will also be ensured at these centers. Priority attention will be given to backward areas, 7) Special attention will be given to developing counseling and mental health services for women, with trained professionals and by short term training of health workers at primary care levels to respond to the needs at community level, 8) Facilities for diagnosis and treatment of *Reproductive Tract Infections (RTIs) and Sexually Transmitted Diseases (STDs)* will be made available at the primary care level supported by a referral system, 9) Education regarding reproductive health will be given high priority.

10) The health policies regarding women's health would give emphasis to the following: a) Women empowerment by providing more education and job facilities, b) Male participation: As our society is male dominated, the need for male participation in all spheres of women health would be stressed, c) Grass root level workers, who are the back bone of these programmes, would be given further training, facilities and incentives, d) Intensive monitoring to ensure accountability at all levels would be introduced and e) Under Reproductive Child Health (RCH) – Intervention, by way of incentives, in 'C' category districts such as honorarium for doctors, nurses and cleaning personnel conducting deliveries between 8 pm to 7 am has resulted in an increase of about 30 per cent in institutional deliveries. Transport facilities for pregnant women requiring referral to higher centers for safe delivery under RCH has also been perceived as beneficial. It is proposed to continue these benefits.

Children's Health: Karnataka State has a special interest in and commitment to the health and well-being of children during their intrauterine period, infancy, toddler years, school age and adolescence. Its interventions reach out through Maternal and Child Health programmes, through Anganwadis of the *Integrated Child Development Scheme* through schools and colleges. A policy document, "*The State Programme of Action for the Child*" brought out in 1994, reiterated the State's commitments, in keeping with the spirit of the National Policy for Children in 1974, the World Summit for Children in 1990, the four sets of Rights of Children (to survival, protection, development and participation), and the National Plan of Action: A Commitment to the child, adopted in 1992. The State will be guided by the principle underlying the national plan, namely "*first call for children*", wherein the essential needs of children will be given highest priority in allocation of resources of all times. This will also be applied specifically to the spheres of health and nutrition.

Specific efforts will be made to reach children, especially from socially deprived groups, who are still not reached by the ICDS and who are out of school. A multisectoral approach will be used to provide services for working and street children, and to address underlying issues that result in their having to work. The State will undertake all efforts to ensure child survival with no damage to the processes of growth, maturation and development. Continuing efforts will be made to reduce infant and neonatal mortality. The coverage and quality of services of the *Integrated Child Development Scheme (ICDS)* with regard to health, nutrition and care will be improved by providing adequate resources and training of all levels of personnel. Supervisory and monitoring systems will be strengthened. Constructive partnerships with gram Panchayats and parents will be developed and linkages with Primary Health Center Staff will be made more functional

and regular. Quality of food given to children will be ensured and health promotion and nutrition education will be undertaken more proactively. The neediest children, including those belonging to scheduled castes and scheduled tribes, will receive particular attention.

Mental Health: The burden of suffering due to mental illness is high. Research work done, over the years by premier institutions has helped to quantify this in Karnataka. At least two per cent of the population suffers from severe mental morbidity at any point of time and an additional 10 per cent suffer from neurotic conditions, alcohol and drug addictions and personality problems. A large proportion of outpatients (20-25 per cent)in general health services has somatoform disorders and come with multiple vague symptoms. Unsupported and untreated mental illness has an impact on families as well. Mental ill health is thus an issue of public health importance, requiring proactive, sensitive interventions particularly since more effective and better management in now a reality.

However, there continue to be shortages of trained personnel in Karnataka, compounded by misdistribution of facilities and staff with greater urban concentration, especially in big cities. The State will make systematic and sustained efforts to enhance mental health services by: 1) Improving training in psychiatry and psychology in undergraduate medical and general nursing courses, 2) Introducing district mental health programmes in a phased manner by strengthening psychiatric teas and services at district hospital level and planning for counselling services at taluk hospital level, 3) Ensuring minimum standards of care for mentally ill patients, 4) Providing for mental health care at primary care level by training primary health centre medical officers and staff, using manuals already prepared by *National Institute of Mental Health and Neuro Sciences (NIMHANS)*, 5) Encouraging and making provision for care facilities for persons with chronic mental illness, through NGOs and other organizations, 6) Introducing the mental health component into school health services on a pilot basis in different districts and later expanding it, 7) Supporting broader societal strategies that address violence, particularly against women; discrimination in any form; substance abuse; poverty and destination, 8) Establishing institutional mechanisms at the State level through which mental health care services can be promoted and 9) Caring for and nurturing health care personnel, who work under difficult conditions.

Prevention and control of non-communicable diseases: Karnataka carries a double burden of communicable and non-communicable diseases. The latter include, in particular cardiovascular diseases, including hypertension, cancers and diabetes. These have on the whole received less public sector and policy attention due to the magnitude of other problems and issues. However, keeping in view the future perspective, especially considering rising life expectancies, growing urbanization and industrialization in the State, and rapidly changing life styles including diets, the state will provide greater support to the prevention and control of noncommunicable diseases. It will use a public health approach by adopting strategies to reduce the risk factors for these diseases and by using health education to promote healthier life styles.

It will initiate policies to discourage the use of tobacco, and alcohol, which is on an increasing curve due to intensive advertisement and aggressive marketing. Over 25 serious diseases are associated with the use of tobacco and several diseases and social problems are linked to alcohol. These are described as communicated diseases. They are both addictive substances. Policies that would reduce consumption of these include bans on sponsorship of sports and entertainment; bans on direct and indirect advertising; higher taxation; sales to be permitted to persons over 18 years; sales to be barred within certain distances from educational institution; and public education, especially among children and youth as part of life skills education; education of health personnel.

In the case of tobacco, measures include banning smoking in public places to prevent passive smoking and working towards alternative crops and alternative employment for those engaged in its cultivation and production. Chewed tobacco in particular is a growing problem with widespread use among women (40-60 per cent in different groups) and even among tobacco control includes smoked and chewed tobacco. The appropriate measures would be taken to the extent feasible to mitigate the use of tobacco. In the case of alcohol there is a need for strategies to help women and children cope with men who drink heavily. De-

addiction strategies using group therapy such as alcoholic anonymous groups will be supported, besides individual therapy and counselling.

Education regarding the deleterious effects of tobacco and alcohol will be included in school and college curricula. Diagnosis and treatment for non-communicable diseases will be made available at primary health care level. This will require preparation of treatment guidelines and supply of diagnostic equipment and drugs. Recording and reporting of non-communicable diseases as per the international classification of diseases will be introduced into the diseases surveillance system. The cancer programme will also be strengthened by discouraging the use of tobacco, health education, early detection and provision of treatment. Facilities will be made available at regional level and later in a phased manner in some districts where medical colleges exist. Grants provided by the national programme will be fully utilized.

Disability : It is estimated that about two to three per cent of the total population of Karnataka consist of persons with disabilities, with 76 per cent in rural areas and 58 per cent men. Disabilities include locomotors, visual and learning disabilities, hearing and speech impairment, mental illness, mental retardation, multiple disabilities, leprosy cured with disability etc. An inclusive approach will be adopted for persons who are differently challenged or persons with disability, with their full participation in decision-making and implementation.

The Department of Health and Family Welfare will increase its role and responsibility in respect to disability, by way of prevention, early detection and intervention and will, for this purpose, coordinate with the *Directorate of Welfare of the Disabled*, under the *Department of Women and Child Development*, which is currently the administrative Department concerned. *The persons with disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act of 1995* will be made more widely known and implemented. Intervention will include medical, social and environmental components.

The different steps would be: 1) Disability prevention –though universal immunization, good nutrition, maternity and child health, accident prevention through "*drink and not drive*" policies, helmets for two wheelers and car-seat belts etc. 2) Disability limitation-through prompt treatment, particularly at primary care levels and 3) Reducing the transition from disability to handicap-by rehabilitation. Establishing rehabilitation units at district hospitals. Actively supporting Community Based Rehabilitation, providing access to aids and appliances to those who cannot afford them, using apex and specialized institution in the State for training of Medical officers and different levels of health workers and As per the Medical Council of India recommendations, starting Physical Medicine and Rehabilitation departments in every medical college.

Occupational Health and Safety: Though services exist in some large public sector and private sector units, this specialty needs greater support. The focus will be on the workers in the agricultural and unorganized sectors who comprise the largest proportion of the work force and who are at risk because few safety devices and precautions are used. The services of institution like the Regional Occupational Health Center and experts will be utilized to evolve a strategy.

Dental Health/Oral Health: The awareness about health care is poor especially in rural areas. The increased life expectancy of the population and widespread prevalence of oral diseases warrants a serious thought for immediate strengthening of the existing oral health delivery system in the State. The establishment of a three tier Oral Health Care delivery system in Karnataka would be planned, namely: a)Primary Oral Health Care , b) Secondary Oral Health Care and c) Tertiary Oral Health Care.

Primary Oral Health Care comprises of mainly (a) Health Education for promotion of oral health and (b) various Preventive Procedures for Oral Health. Secondary Oral Health Care comprises of secondary level Oral Health Care given by qualified dental surgeons at community Health Centres and taluk level Hospitals. The Secondary Oral Health Care rendered at these hospitals includes both preventive and also curative treatments. The Tertiary Oral Health Care programme comprises of specialty treatment, which will be made available at each district level hospital. Necessary restructuring of the implementation, monitoring and supervision mechanisms for these programmes within the department would be made.

Other strategies would include- 1) Proper utilization of mass media for regular Oral

Health Education, 2) Involvement of local non-governmental agencies in programme operation for better implementation of the programme and 3) Programme for increasing awareness amongst schoolteachers regarding Oral Health. Apart from the Government Dental College, Bengaluru, other good Dental Colleges in each division would be identified so that such colleges, dental association and other social organization adopt some villages for comprehensive dental care delivery.

Emergency Health Services and Trauma Care: There is pressing need for strengthening and expanding Emergency Health Services and Trauma Care. This would include not only accidents and injuries but also *Emergency Obstetric Care (EOC)*, snakebites, dog bites, insect stings and other medical emergencies. The timely availability of Anti-Snake Venom, antidote for Organo Phosphorus poisoning and anti-Rabies vaccine will be ensured. Networking of Communication, links and transparent facilities will be established.

Training in first-aid and life support system will be imparted to school children, college students, teachers, factory workers, drivers, bus conductors, traffic police and paramedics. Efforts will be made to enforce preventive measures such as wearing of helmets and seat belts. The Citizens Right to accessing care for first line critical care in any hospital, as determined by the Supreme Court, will be widely publicized.

Key Drugs Control Processes: The organizations for Drugs Control exist at two levels i.e, at the Central and State Government level.

The Central Drug Control Standard Organization (CDSCO): It is generally concerned with policy and making of laws and rules and management of committee such as *Drugs Technical Advisory Board (DTAB) and Drugs Consultative Committee (DCC).* It deals in licensing work such as approval of license meant for manufacture of Large Volume Parenteral, Vaccine and Sera, Blood Bank and Blood Components, Medical devices and products manufactured by Recombinant technology. It also deals with new drug clearance, clinical trials, import registration, import of drugs etc., and inspections.

The State Drug Control Department: On the other hand, It deals with licensing of both manufacturing and sales premises of drugs and cosmetics. Its most important mandate is to ensure the supply of quality drugs at the price fixed by GOI (NPPA) to the people of the State. Drugs Control Department, Karnataka has its beginning with the appointment of four Drugs Inspectors in the erstwhile Mysuru in the Directorate of Health and Family Welfare Services. The Drugs and Cosmetics Act, 1940 and Rules, 1945 were implemented in Karnataka state with effect from 01-04-1957.

Drugs Control Department in Karnataka State is the State prime organization to ensure consumer gets quality drugs at price fixed by Government of India - *National Pharmaceutical Pricing Authority (NPPA).* Today the Drugs Control Administration in Karnataka is an independent department under the Ministry of Health and Family welfare in the Government of Karnataka headed by Drugs Controller as its Administrative head who will be reporting to Secretary to Government, Health and Family Welfare Department.

The Present Building of Drug Control Department in Karnataka was established in 1965 and has three wings: 1) Enforcement wing, 2) Drugs Testing Laboratory and 3) Education in Pharmacy. Government College of Pharmacy imparting education at the level of diploma, degree, post-graduation and doctorate. Board of examining authority to conduct examination and declaring results of students of all Diploma Pharmacy colleges in the State as per guidelines of Pharmacy Council of India. Head Office and Bengaluru Drug Testing Laboratory are housed in three-storied building with built up area of 9,773 Sq.m.

Regional Deputy Drugs Controller Offices are at Bengaluru, Mysuru, Hubballi, Ballari and Kalaburgi are headed by Deputy Drugs Controllers and each District office in Karnataka is called as circle which is headed by Assistant Drugs Controller. Regional Drug Testing Laboratories are also located at Hubballi and Ballari. Education wing has separate infrastructure. It has dedicated professionals working to protect, promote and enhance the health of people of the Karnataka and country by proper implementation and regulation of the Drugs and Cosmetics Act, 1940 to uphold safety standards, and protects consumers.

Enforcement Wing: Enforcement wing deals with licensing of Drugs/ Cosmetics/Blood banks/ Medical Devices manufacturing establishments, sales establishments, inspections of manufacturing

and sales establishments and drawl of samples for test and analysis, investigation of complaints, launching of prosecution against the defaulters etc. *Drugs and Cosmetics Act, 1940 and Rules* recognizes mainly three Functionaries viz., *Inspector*: The State Government by notification in the Official Gazette appointed Drugs Inspectors to be Inspectors under Section 21 of Drugs and Cosmetics Act, 1940 for areas assigned to them.

Licensing Authority: Drugs Controller is Licensing Authority for manufacturing / sales Establishments. However, with the approval of State Government, he has delegated the powers of Licensing Authority in respect of sales establishments to Asst Drugs Controllers working at Circle offices. Controlling Authority: Drugs Controller is controlling authority. All inspectors are officially sub-ordinate to Controlling Authority.

Head Office Functions: 1) Overall administration of the entire organization, 2) Grant / renewal of Manufacturing licenses for Drugs and Cosmetics, Approval of laboratories, Blood Banks and Blood components, Blood Storage Centres, 3) Approval to Recognized Medical Institutions for transport, possession and use of Oral Morphine for palliative care in cancer patients, 4) Inspections of manufacturing units of Drugs, Cosmetics, Approved laboratories, Blood banks and Blood Storage Centres and medical devices, 5) Investigation of complaints, 6) Drawl of samples from manufacturing establishments, 7) Issue of certificates such as GMP (Good Manufacturing Practices) certificate, Free Sale Certificate, Tender purpose Certificate, Export Registration Certificate etc., 8) Overall administration of the entire organization and 9) Three deputy Drugs Controllers placed at Headquarters will also be monitoring the administration and functioning of officers working at six circles of Bengaluru urban district.

Regional Offices Functions: Five Regional Offices headed by Deputy Drugs Controller are situated at Bengaluru, Mysuru, Hubballi, Ballari and Kalaburgi for 30 circles (other than circles of Bengaluru Urban district) of entire State and they are overall in charge of all circles coming under justification. Other functions are: Overall administration of the entire jurisdiction assigned, Blood Bank / Blood Storage Centres Inspections, Collection and dissemination of information gathered during intelligence work, Inspections of sales / manufacturing establishments whenever required, Drawl of samples from sales premises/ Drugs stores attached to Govt. hospital for test and analysis, Investigation of complaints and Any other work assigned by higher ups.

Intelligence Wing: Main objective is to unearth Spurious / Adulterated / Misbranded Drugs, Cosmetics and to detect unlicensed dealers / Manufacturers, headed by Additional Drugs Controller. State Intelligence Branch: is situated at Bengaluru with Five Drugs Inspectors (having jurisdiction over entire state), headed by Additional Drugs Controller, and assisted by the senior most Assistant Drugs Controller at Head Quarters. *Regional Intelligence*: One Drugs Inspector is attached to each regional office of the Deputy Drugs Controllers as Intelligence Officer having jurisdiction over circles as shown in the above table. Their functions are: Collection and dissemination of information gathered during intelligence work, Blood Bank/Blood Storage Centres Inspections, Inspections of sales/manufacturing establishments whenever required, Drawl of samples from sales/ manufacturing premises/Drugs stores attached to Government/private hospitals for test and analysis, Investigation of complaints, Institution of prosecutions and follow up and any other work assigned by higher ups.

Circle Offices: Each district is having one circle office except that of Mysuru which is having two circle offices and Bengaluru Urban district which is having six circle offices and they are headed by Assistant Drugs Controllers under whom Drugs Inspectors are working. They have been delegated the powers of Licensing Authority by Drugs Controller under Drugs and Cosmetics Rules, 1945 for the jurisdiction assigned to them. Their functions include:

Overall administration of the entire jurisdiction assigned, They are over all in-charge of respective circle office, Grant / Renewal of sales licenses, Inspections of sales/manufacturing (wherever required) establishments, Government/Private hospital drug stores, Blood Banks and Blood Storage centres, Drawl of samples from sales / manufacturing (wherever required) establishments / Drugs Stores attached to Government/private hospital for test and analysis, Investigation of complaints, Institution of prosecution against the defaulters and follow up and Any other work assigned by higher ups.

***Special Activities*:** First state to constitute Special courts in accordance with Drugs and Cosmetics (Amendment) Act, 2008. Two Regional Drugs Testing Laboratories are established in Hubballi and Ballari. The Department computerized the sales Licensing Activities and shortly online applications will be undertaken for both sales and manufacturing licensees. Letter and File Movement System (LMS/ FMS) has been installed in Head Office to trace the document / file and also to speed up the work. Special Drive inspections of all the Blood Banks in the state are being carried out along with NGOs twice in year, Survey samples are drawn from the sales outlets, Govt. hospitals by the NGOs and analyzed at the approved laboratories twice in a year, Special drive inspections of all manufacturing units in the state are being carried out once in a year and Special drive inspections for verification of sale of Psychotropic drugs is being carried out once in three months.

The drugs Testing Laboratory is provided with Hi-tech equipments and trained technical personnel and is equipped to analyse all types of drugs and cosmetics except vaccines, sera, Blood and blood products. There are three Drugs Testing Laboratories in Karnataka, one at Bengaluru, and one each as Regional Drugs Testing Laboratories at Hubballi and Ballari in North Karnataka.

Pharmacy Education: Pharmacy Education consists of two wings viz., Government college of Pharmacy Bengaluru and Board of Examining Authority, Bengaluru.

Government College Of Pharmacy: Pharmacy Education – Government College of Pharmacy was established in the year 1964-1965 in 6.5 acres of land, conducting D.Pharm course and B.pharm courses approved by the *All India Council for Technical Education (A.I.C.T.E)* and Pharmacy council of India, and M.Pharm course approved and funded by A.I.C.T.E. The college is under the administrative control of Drugs Control Department, Bengaluru under Health and Family welfare Department (Medical Education), Government of Karnataka

B.Pharm course a four years degree course and was affiliated to Bengaluru University till 1995 and from 1996 the course is affiliated to the Rajiv Gandhi University of Health Sciences, Karnataka, Bengaluru. The present intake for First B.Pharm course is 50. The qualifying examination for entry into B.Pharm course is Pre-university/ 10+2 with Physics, Chemistry abd Biology or Mathematics as optional subjects. For computing merit for the admission Physics, Chemistry and Biology or Mathematics are taken.

The selection at present is being made through counseling conducted by the Directorate of Medical Education, Bengaluru, for this college and for Government seats in 47 private Pharmacy colleges in the State of Karnataka. The selection is made on the merit for General Merit category candidates and Scheduled Caste, Scheduled Tribe, Category-I, Category-II(a), Category-II(b), Category-III(a) and Category-III(b) to Government College of Pharmacy, Bengaluru, and all the private Pharmacy colleges in the State of Karnataka as per Selection rules framed by the Government in this regard.

Five admission to II B.Pharm course over and above the I B.Pharm course over and above the I B.Pharm sanctioned strength, is made by the Dircetorate of Medical Education to In-service candidates working in the Department of Health and Family Welfare in Karnataka, with diploma in Pharmacy education approved by the Pharmacy Council of India based on seniority and roster.

More than 1,200 students have graduated from this institute and among them many have pursued post graduate courses from this college and other pharmacy colleges in the country and abroad and are occupying coveted posts in the Pharmaceutical Industries and Research organization in India and abroad. More than 150 Alumni of this college are in USA alone working in FDA, Research organizations, Universities and as Pharmacists.

This college started post graduate program in the year 1978-79. M.Pharm courses are in four different branched, namely M.Pharm in Pharmaceutics, M.pharm in Pharmaceutical Chemistry, M.Pharm in Pharmacology and M.Pharm in Pharmacognosy. All the post graduate students of this college are absorbed in Private Pharmacy colleges in the State, in Pharmaceutical Industries and in Research and Development, development of Pharmaceutical Multinational companies. They are being chosen in campus interviews/selections.

D.Pharm course is of two years tenure approved by the Pharmacy Council of India and A.I.C.T.E with an intake of 60 students to D.Pharm Part-I course. The minimum qualification to this course

is pass in Pre-university /10+2 with optional subjects Physics, Chemistry and Biology or Mathematics. They are absorbed in Government and private sector as pharmacists and many of them have established pharmacies in the state.

The college also has housed the Board of Examining Authority under the administrative control of the Drugs Controller of Karnataka. The Principal of the college is also the Chairman of the Board of Examining Authority and one of the senior of professors also would work as the member Secretary of the Board. The college has a vision to start post graduate program and research in the area of Biotechnology.

Following disciplines are established under Post Graduate Courses- 1) Pharmaceutical Technology, 2) Pharmacology, 3) Pharmacognosy and 4) Pharmaceutical Chemistry

The Board of Examining Authority which is situated in the same campus is conducting the examination and valuation of Diploma in Pharmacy Course. This authority is entrusted with the responsibility of conducting Examination to students of Diploma in Pharmacy as per the Education regulations of Pharmacy Council of India, a statutory body to oversee the standard of education in Pharmacy in the country. For this purpose, the Govt. has constituted Board of Examining Authority with Principal Government college of Pharmacy, Bengaluru as Chairman and one of the Deputy Drugs Controller as Member Secretary. There are 96 Private colleges imparting Diploma in Pharmacy Education and one Government College of Pharmacy in the State during 2012-13.

Karnataka Pharmaceutical Policy 2012

Karnataka is one of the fastest growing states of the Country in pharmaceutical sector and currently ranks fifth in pharmaceutical exports. State contributes around 10 per cent to the Indian pharmaceutical export revenues. Presently, over 230 pharma and bio-tech companies are housed in the State and achieved a total turnover of about Rs.6,500 crore in 2010-11, registering a growth of 10 per cent over the previous year. A host of reputed and globally known pharmaceutical companies functioning in the State have brought name and fame to Karnataka.

The Government is committed for over all development of industry and service sector across the State. A host of sector specific policies are in place in the state which is giving required impetus to the growth and development of respective sectors. Karnataka Industrial Policy 2009-14 has been serving as a Master Policy in guiding the orderly development of industries in the State.

The Millennium Biotech Policy 2001 and subsequent Biotech Policy announced in 2006 have laid down a strong foundation for the pharmaceutical industry. Due to these visionary policies and encouragement several Indian and international companies have already started operations in Karnataka, making the region a hotspot for pharmaceutical services.

Karnataka is recognized world over for its manufacturing capabilities and acknowledged as a source of high quality and affordable generic medicines. State has several modern plants with international regulatory certifications.

The Indian pharma industry is expected to grow at a CAGR of 15-20 per cent and achieve a turnover of US $ 50 billion by 2020. The Active Pharmaceutical Ingredients (API) market is expanding at a rapid pace and formulation manufacturers have vast opportunities due to the upcoming patent cliff.

Karnataka intends to maintain its leadership position in biopharmaceutical manufacturing which accounts for 60 per cent share of the total biotech sector in India, valued at over Rs.17,000 crore in 2010-11.

At present, Karnataka has only a few dedicated bio-pharmaceutical companies manufacturing monoclonal antibodies (MAbs) which primarily include drugs targeted against cancer, as well as insulin and vaccines that are produced using cell culture. A strong strategy is necessary for Karnataka to maintain its leadership position in this highly specialized area. As biopharmaceutical products set to capture a quarter of the global pharmaceutical market by 2016, the State needs to strengthen its prime position by taking proactive steps.

Internationally many top selling drugs are on the verge of losing patent protection in the near future. This will throw a huge potential for the State to enhance its manufacturing base.

The National Manufacturing Policy announced by Government of India on 4th November, 2011 acknowledges that India's large domestic market coupled with a strong engineering base has created indigenous expertise and cost effective manufacturing in pharmaceuticals apart from other sectors. The Policy emphasizes the necessity of formulating special programmes to consolidate strong industry base to retain the global leadership position.

Keeping these points in view, the State recognizes the necessity to formulate an exclusive policy for promotion of pharmaceutical sector in a holistic way. The policy covers major segments of pharma sector viz., bulk drugs, drugs intermediate, bio-pharmaceuticals and formulations for the rapid development by providing a level playing field to all investors.

Policy Measures

Specialised Infrastructure for Pharma Sector;

Pharma Parks: Karnataka is striving to provide quality infrastructure facilities like land, water, power and connectivity for growth of industry and trade across the State. Pharmaceutical sector requires specialized infrastructure for the orderly growth. It is a global experience that, clustering and agglomeration enhances supply chain responsiveness, provides easier access to market, talent and substantially lowers logistics costs. To take advantage of this concept, it is proposed to develop Pharmaceutical Parks in potential locations of Karnataka through Public Private Partnership.

These parks shall be equipped with comprehensive infrastructure facilities like *common effluent treatment plant (CETP)*, common testing laboratory, cold storage with warehousing, stand-alone power station, etc. Facilities for housing will also be created with all basic amenities facilitating the concept of 'walk-to-work' in these parks. Support mechanisms and incentives available under other policies like Infrastructure Policy, Bio-tech Policy would be dovetailed for setting up such parks.

***Special Economic Zones*:** In order to promote exports from pharma sector, setting up of Special Economic Zones (SEZs) in the State would also be encouraged under the provisions prevailing in the SEZ Policy of Karnataka. Promoters of SEZs and also units in the SEZs will be offered incentives and concessions as per the SEZ Policies of the State and Government of India.

Research and Development : With a large number of educational institutes and pharmaceutical companies, Karnataka possesses the requisite knowledge base and capabilities to drive cost efficiencies. This offers an immense potential for research and development in the State. Policy encourages setting up Research and Development institutions related to pharma sector to leverage the strengths already available in the State. Supportive fiscal incentives would be provided for promoting collaborative Research and Development activities initiated by industry and academia.

Innovation is the key for sustained development of pharma sector in the emerging global scenario. To encourage research projects taken up in collaboration with industry and institutions, they will be supported through financial grant to partially mitigate the huge cost involved in such research projects including approved Bio-availability and Bio-equivalence studies and authorized clinical trials.

Obtaining patents to protect Intellectual Property Rights (IPRs) will be encouraged by way of financial incentives for registration in India and in other countries.

Educational Institution Network :Karnataka has a strong base of educational institutions imparting courses in pharmacy. Currently, the State has about 75 undergraduate and 40 postgraduate colleges, some of which are highly reputed. In addition, Centres of Excellence like Indian Institute of Science, Jawaharlal Nehru Centre for Advanced Scientific Research, etc., also exist in the State providing much required education supporting the pharmaceutical sector.

The Government will support the selected and reputed pharmaceutical educational institutions in setting up Finishing School for Pharmaceutical Learning across Karnataka. These schools will endeavor to impart industryspecific skills that will enhance the contributions of new entrants into the sector as well as existing employees. The courses would include vocational training in pharmaceutical plant operations, entrepreneurship development

in Pharmacy, herbal drug technology, research skill developments, quality control, manuscript writing, patent, cGMP regulations and other regulatory affairs.

The Government may support one Finishing School initially, selected by vision group and monitored by KPDC and accreditation from recognized university. The State Government will provide financial support upto 25 per cent of the cost subject to maximum of Rs. one crore per Finishing School, towards setting up necessary laboratory instruments and other technology related gadgets and equipment required to train the students.

Government will also provide stipend to students undergoing training in these Finishing Schools in order to meet the shortage of skilled workforce readily employable in pharma industry.

Focus on Mega projects : Pharmaceutical market in India is highly fragmented and major players control about 70 per cent of the market. There is a need to create manufacturing capabilities matching with the global giants to compete in the world market. Policy lays special focus on attracting mega pharmaceutical projects to Karnataka and makes it globally competitive.

While offering attractive package of incentives and concessions to MSME sector, Policy provides special incentives and concessions to attract mega projects as such projects are bound to create a large scope for ancillaries, downstream and supporting activities.

Venture capital funds : Budding entrepreneurs in the pharmaceutical sector may require monetary support at the initial stage to venture into industry. To provide need based equity support for such entrepreneurs, the State Government will set up a Venture Capital Fund with a corpus of Rs.50 crores with contribution of 26% from Government. Remaining funds will be contributed by the private sector such as industries, financial institutions and private investors.

Power and water supply: Government endeavor to provide uninterrupted and quality power supply to pharmaceutical projects. Projects are provided with adequate water supply wherever possible. Industries are also encouraged to augment water supply from available nearby sources to meet their requirements. Further, industries are supported to go for non-conventional energy sources like solar, wind, bio-fuel, utilisation of solvent waste for boiler, etc., for their requirements. Adoption of rain water harvesting, water recycling and other conservation measures will also be supported by incentives.

Effluent treatment plants; Individual Effluent Treatment Plants : Since pharmaceutical industries generate large volumes of industrial waste, so, effluent treatment plants are essential. Industries are supported to put up stand-alone effluent treatment plant to mitigate pollution related problems by way of one time fiscal incentives.

Common Effluent Treatment Plants : *Common Effluent Treatment Plants (CETPs)* to be established in PPP model in Pharma Parks, SEZs and other clusters of pharmaceutical industries will also be supported by way of one time grant to augment investments on such CETPs.

Go green initiatives: Pharmaceutical companies, which take steps for reducing waste generation at source or recycling of wastes will be encouraged to reduce wastes in manufacturing activities. Such initiatives will be supported by providing subsidy upto 50 per cent of the cost subject to a maximum of Rs.50 lakhs.

The Government also proposes setting up waste exchanges with private participation which will help transferring waste materials to another company for use as is or for reuse after treatment.

Cold-chain facilities : Government encourages industry in creating a distribution network for the temperature controlled transportation of temperature sensitive pharmaceuticals throughout the supply chain. Purchase of refrigerated vans by industry for captive use will be considered as part of capital investment of the unit.

Quality Assurance : Administrative machinery will be strengthened by providing additional manpower and modern facilities in terms of appointing more Enforcement Officers and Drug Testing Laboratories with adequate state of the art testing equipments.

Institutional Support; Pharmexcil: In order to extend necessary support for export oriented pharmaceutical industries, the State Government will prevail upon the Union Government to set up a branch of *Pharmaceutical Export Promotion Council (Pharmexcil)* in Bengaluru. Setting up a branch

in the State would facilitate companies to obtain required certificates from the council locally and is also expected to facilitate industries to avail the benefits of various schemes being operated by the Council.

In order to showcase the strengths and opportunities in pharma sector, a biennial event – Pharmacia would be organized in the State in association with industry and other stakeholders. The Government extend 50 per cent support not exceeding Rs. six crores for each event.

Vision Group: A Vision Group will also be constituted under the Chairmanship of an eminent personality from the Pharmaceutical sector, having members from industry, institutions and government. This Vision Group will guide the Government on various strategies and actions required to be initiated for rapid and healthy growth of pharmaceutical sector in the State from time to time. A provision upto Rs.25.00 lakhs will be provided to meet the recurring cost.

Karnataka Pharmaceutical Development Council (KPDC): Karnataka Pharmaceutical Development Council (KPDC) will be constituted by the Government to serve as a dedicated single point contact for pharmaceutical sector. This council will extend all facilitation services for investors and act as a link between Government and investor. Investors will be provided handholding support and escort services from the council. The council will also provide required literature, information and other details helpful to take decisions by the investors. KPDC will also receive and process applications from investors for necessary approval of the projects by the respective competent authorities / committees. In addition to this, it will monitor the overall activities of Finishing Schools. A budgetary provision of Rupees one crore would be made for initial expenditure and recurring expenditure upto Rs.25 lakhs per annum would also be provided by the government for effective functioning of the Council.

Implementation and Monitoring: A high level Inter-departmental Monitoring and Review Committee under the Chairmanship of Chief Secretary to Government will be constituted having members from all the Departments / Agencies involved in implementation of the Policy. This Committee will regularly monitor implementation of various provisions of the Policy and ensure issue of necessary Government Orders by various departments in relation to the Policy. The Committee is empowered to make mid-course corrections, if required for smooth implementation of the policy. KPDC will provide the secretarial services to this Committee. The Govt. support by providing Rs.75 lakhs per year to meet the recurring cost.

List of Major Hospitals in Karnataka is Listed here:

A. J. Hospital & Research Centre, Kuntikana, Mangaluru, 575004.

Aadithya Hospital (Adithya Adhikari Hospital), Gokulam, Mysuru 570021.

Abhaya Hospital Bengaluru 560027.

Adarsh Heart Care Centre Pvt Ltd , Ballari 583001.

Adarsh Nursing Home, Ballari 583103.

Adarsha Nursing Home, Tumakuru 572103.

Agadi Hospital And Research Centre,Bengaluru 560027.

Amrik Nethralaya Super Speciality Eye Hospital,Bengaluru 560043

Annapurna Hospital, Chikkamagaluru 577101

Apollo Hospital-Bengaluru, Bengaluru 560041.

Ashraya Hospital, Chikmaglure 577101.

Athena Hospital, Mangaluru 575002.

Bengaluru Baptist Hospital,Bengaluru 560024.

Bengaluru Institute of Oncology, Bengaluru 560027.

Basappa Memorial Hospital, Mysuru 570012.

Basaveswara Medical Centre, Ballari 583103.

Belle Vues Cambridge Hospital, Bengaluru 560008.

B G S Apollo Hospital(Mysuru), Mysuru 570023.

Bharath Hospital & Institute Of Oncology, Mysuru 570017.

Bibi Ayesha Milli Hospital, Mysuru 570007.

Chandrakala Hospital & Institute Of Medical Research, Mysuru 570012.

Chinmaya Mission Hospital, Bengaluru 560038.

Chitra's Hospital, Mysuru 570001.

Church Of South India Hospital, Bengaluru 560051.

City Central Hosptial Pvt.Ltd., Davangere 577002.

City Clinic, Hubballi 580020.

City Hospital (Udupi), Udupi 576101.

City Hospital Research & Diagnostic Centre, Mangaluru 575003.

Colaco Hospital Mangaluru A Unit Of Icmc Trust,Mangaluru 575002.

Columbia Asia Hospital Pvt. Ltd., Bengaluru 560024.

D.G.Hospital, Bengaluru 560070.

Deccan Medical Centre Private Ltd, Belgaum 590001.

Devi Eye Hospital, Bengaluru.

Dr Nukapur Hospital, Kolar 563101.

Dr. Agarwal Hospital, Bengaluru 560025.

Dr. Rao's Maternity Hospital, Bengaluru 560079.

Dr. S.R.Ramanagoudar Nursing Home, Dharwad 580008.

Garden City Hospital & Medical Centre, Bengaluru 560011.

Gayathri Hospital, Bengaluru 560040.

Gopala Gowda Shanthaveri Memorial Hospital, Mysuru 570023.

Greenview Healthcare, Bengaluru 560034.

Guru Nanak Hospital (Bidar), Bidar 585402.

Highland Hospital, Mangaluru 575002.

Hitech Kidney Stone Hospital, Bengaluru 560001.

Hitech Medicare Hospital& Research Centre, Udupi 576103.

Hosmat Hospital, Bengaluru 560025.

Hosmath Hospital, Gadag 582101.

Jedi Speciality Hospital Pvt. Ltd., Madikeri 571201.

Jindal Sanjeevani Hospital, Ballari 583278.

K. R. Hospital (Uttarahalli - Bengaluru), Bengaluru 560050.

K.R.Hospital, Bengaluru 560050.

Kairali Ayurvedic Health Resort Pvt. Ltd., Karwar 581326.

Kamakshi Hospital, Mysuru 570009.

Kapl Hospital - Ayurvedagram Heirtage Wellness Center Pvt Ltd, Bengaluru 560067.

Karnataka Nephrology And Transplant Institute, Bengaluru 560042.

Karuna Hospital, Mysuru 570023.

Koshys Hospital (Bengaluru), Bengaluru 560016.

Lakeside Medical Centre & Hospital, Bengaluru 560042.

Lokhande's Health Care Pvt. Ltd., Bengaluru 560043.

M. S. Ramaiah Medical Teaching Hospital, Bengaluru 560054.

Maharaja Agrasen Hospital (Bengaluru), Bengaluru 560070.

Mallige Medical Centre, Bengaluru 560001.

Mallya Hospital, Bengaluru 560001.

Manasa Hospital, Bengaluru 560079.

Mangala Hospital, Hassan 573201.

Mathru Nursing Home, Bengaluru 560060.

Mediscope Hospital Pvt.Ltd, Bengaluru 560045.

Mitra Hospital, Udupi 576101.

Namratha Nursing & Maternity Home, Bengaluru 560086.

Nandini Nursing Home, Mandya 571401.

Nanjappa Hospital, Shivamogga 577201.

Narayana Hrudayalaya (Bengaluru), Bengaluru 562158.

Narayana Netralaya, Bengaluru 560010.

New Pragathi Nursing Home, Mandya 571401.

Northside Hospital & Diagnostic Centre, Bengaluru 560092.

P. D. Hinduja Sindhi Hospital, Bengaluru 560027.

Panacea Hospital Limited (Bengaluru), Bengaluru 560079.

Prashanthi Medical Centre, Bengaluru.

Prayavi Hospital, Bidar 585401.

Pristine Hospital. Bengaluru 560086.

Rajiv Gandhi Superspeciality Hospital, Raichur 584101.

Rajshekar Hospital, Bengaluru 560078.

Raman Medical Services, Mysuru 570004.

Ramkrishna Hospital Pvt Ltd/Ram Krishna Nursing Home, Bengaluru 560011.

Ravi Kirloskar Memorial Hospital, Bengaluru 560058.

Republic Hospital, Bengaluru 560042.

Sagar Apollo Hospital, Bengaluru 560041.

Sahana Hospital, Bengaluru 560060.

Saikrupa Hospital For Women & Surgical Centre, Bengaluru 560040.

Santosh Hospital, Bengaluru 560005.

Sarojini Hospital, Bengaluru 560057.

Sarvodaya Hospital(Bengaluru), Bengaluru 560079.

Seventh-Day Adventist Hospital, Bengaluru 560005.

Shakuntala Memorial Hospital & Reserach Centre, Hubballi 580030.

Shanbhag Nursing Home, Bengaluru 560079.

Shekar Netralaya (Bengaluru), Bengaluru 560078.

Shekhar Hospital (Jaya Nagar - Bengaluru), Bengaluru 560069.

Shekhar Hospital(Bengaluru), Bengaluru 560040.

Shirdi Sai Hospital, Bengaluru 560054.

Shiva Krupa Hospital & Intensive Care Unit, Dharwad 580020.

Shree Sapthagiri Hospital, Kunigal, 572130.

Shreeya Hospital (Dharwad), Dharwad 580001.

Shreya Hospital, Bengaluru 560060.

Shridevi Hospital, Tumakuru 572101.

Sri Basaveswara Hospital, Shivamogga 577201.

Sri Ram Hospital (Bengaluru), Bengaluru 560036.

Srinivasa Cardiology Center Pvt.Ltd.(Bhagwan Mahaveer Jain Heart Centre),Bengaluru 560052.

St. John's Medical College Hospital, Bengaluru 560034.

St. Martha's Hospital, Bengaluru 560001.

St. Philomena's Hospital, Bengaluru 560047.

Suraksha Nursing Home, Mandya 571401.

Sushruta Nursing Home, Bidar 585401.

The Bengaluru Hospital, Bengaluru 560004.

The Eye Surgical Centre, Bengaluru 560010 .

Trinity Hospital & Heart Foudation, Bengaluru 560004.

Unity Health Complex, Mangaluru 575002.

Varalakshmi Nursing & Maternity Home, Bengaluru 560010.

Vasan Eye Care Hospital (Hubballi), Hubballi 580029.

Vinayaka Hospital (Bengaluru), Bengaluru 560050.

Wockhardt Hospital Limited(Bengaluru), Bengaluru 560052.

Wockhardt Hospitals (Bannerghatta), Bengaluru 560076.

Yellamma Dasappa Hospital, Bengaluru 560027.

HOSPITALS AND DISPENSARIES BY MANAGEMENT (ALLOPATHY)

(Numbers)

Year/District	State Government						Others *		Central ** Governement	
	Dist. Hospitals	Taluk Hq Hospitals	Other Hospitals Under HFW	CHCs	PHCs	Autono-mous& teaching Hospitals	Hospitals	Dispens-aries	Hospitals	Dispens-aries
1	2	3	4	5	6	7	9	10	11	12
2011-12	**17**	**146**	**10**	**180**	**2310**	**29**	**3**	**15**	**31**	**10**
2012-13	**20**	**146**	**10**	**188**	**2350**	**25**	**3**	**15**	**31**	**10**
2013-14	**20**	**146**	**11**	**193**	**2233**	**29**	**3**	**15**	**31**	**10**
2013-14										
1. Bagalkote	1	5	0	8	48	0	0	0	0	0
2. Belgaum	0	9	0	17	140	1	1	0	0	0
3. Bellary	0	6	1	8	55	2	1	0	0	0
4. Bengaluru U	0	3	6	5	82	14	1	1	29	10
5. Bengaluru R	0	4	0	2	48	0	0	0	0	0
6. Bidar	0	4	0	8	51	1	0	1	0	0
7. Bijapur	1	4	0	9	60	0	0	1	0	0
8.Chamarajnagar	1	3	0	4	60	0	0	0	0	0
9.Chikkaballapura	1	5	0	2	56	0	0	0	0	0
10.Chikmagalur	1	6	0	5	88	0	0	0	0	0
11.Chitradurga	1	5	0	11	80	0	0	0	0	0
12.D. Kannada	1	4	1	7	63	0	0	1	0	0
13.Davangere	1	5	0	6	104	0	0	0	0	0
14.Dharwad	1	3	0	0	33	2	0	1	1	0
15 Gadag	1	4	0	2	39	0	0	0	0	0
16 Gulbarga	1	6	0	16	91	0	0	1	0	0
17 Hassan	0	7	0	15	136	1	0	0	0	0
18 Haveri	1	6	0	5	67	0	0	0	0	0
19.Kodagu	1	2	0	7	29	0	0	1	0	0
20.Kolar	1	4	2	2	61	0	0	0	0	0
21.Koppal	1	3	0	9	45	0	0	0	0	0
22 Mandya	0	6	0	7	119	1	0	0	0	0
23.Mysore	0	6	1	4	137	4	0	1	1	0
24.Raichur	0	4	0	6	50	2	0	1	0	0
25.Ramanagara	1	3	0	4	62	0	0	0	0	0
26.Shimoga	0	6	0	7	103	1	0	1	0	0
27.Tumkur	1	9	0	4	143	0	0	0	0	0
28.Udupi	1	2	0	6	59	0	0	1	0	0
29.Uttara Kannada	1	10	0	2	82	0	0	4	0	0
30.Yadagiri	1	2	0	5	42	0	0	0	0	0

Source: Directorate of Health and Family Welfare Services, Bangalore

* PWD, Forest, Prisons etc.,

** CGHS and Railway

HOSPITALS AND DISPENSARIES BY MANAGEMENT (ALLOPATHY) contd..

(Numbers)

Year/District	ESI		Urban Local Bodies		Private Medical Estt.	Total Hospitals	Total PHCs. & Dispen-saries
	Hospitals	Dispens-aries	Hospitals	Dispens-aries	Hospitals and Clinics		
1	13	14	15	16	17	19	20
2011-12	8	131	59	60	18998	19481	2526
2012-13	8	131	59	60	21431	21921	2566
2013-14	9	113	59	60	22224	22725	2431
2013-14							
1. Bagalkote	0	1	0	0	830	844	49
2. Belgaum	1	7	0	8	1875	1904	155
3. Bellary	0	1	0	0	526	544	56
4. Bengaluru U	3	39	59	41	5300	5420	173
5. Bengaluru R	0	4	0	0	156	162	52
6. Bidar	0	0	0	0	332	345	52
7. Bijapur	0	0	0	0	856	870	61
8.Chamarajnagar	0	2	0	0	176	184	62
9.Chikkaballapura	0	0	0	0	90	98	56
10.Chikmagalur	0	0	0	0	179	191	88
11.Chitradurga	0	2	0	0	350	367	82
12.D. Kannada	1	6	0	0	1487	1501	70
13.Davangere	1	9	0	0	687	700	113
14.Dharwad	1	7	0	7	1394	1402	48
15 Gadag	0	1	0	0	482	489	40
16 Gulbarga	0	4	0	0	634	657	96
17 Hassan	0	1	0	0	476	499	137
18 Haveri	0	0	0	0	550	562	67
19.Kodagu	0	0	0	0	226	236	30
20.Kolar	0	2	0	0	264	273	63
21.Koppal	0	1	0	0	302	315	46
22 Mandya	0	2	0	0	438	452	121
23.Mysore	1	10	0	4	1445	1462	152
24.Raichur	0	1	0	0	485	497	52
25.Ramanagara	0	2	0	0	59	67	64
26.Shimoga	0	4	0	0	563	577	108
27.Tumkur	0	2	0	0	648	662	145
28.Udupi	0	4	0	0	939	948	64
29.Uttara Kannada	1	1	0	0	281	295	87
30.Yadagiri	0	0	0	0	194	202	42

Private Medical Estt. As registered under KPME Act

Source: Directorate of Health and Family Welfare Services, Bangalore

BED STRENGTH IN HOSPITALS AND PRIMARY HEALTH CENTRES

(Numbers)

Year/District	Hospitals										Primary Health Centres
	State Government					Central Govern-ment **	E.S.I	Other Depart-ment *	Local bodies	Private*	
	Dist. Hospitals	Taluk Hq Hospitals	Other Hospitals	CHCs	Auton-omous& teaching Hospitals						
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
2011-12	**4750**	**15170**	**2103**	**5500**	**18342**	**346**	**1255**	**125**	**775**	**35208**	**15405**
2012-13	**7515**	**15170**	**2103**	**5740**	**15943**	**346**	**1255**	**125**	**775**	**35208**	**15126**
2013-14	**7859**	**15120**	**2218**	**5790**	**17008**	**346**	**1275**	**125**	**775**	**35208**	**14424**
2013-14											
1. Bagalkote	300	500	0	240	0	0	0	0	0	1872	278
2. Belgaum	0	900	0	510	1000	0	50	20	30	2700	788
3. Bellary	0	600	288	240	1110	0	0	5	0	930	352
4. Bengaluru U	0	300	1475	150	6273	96	900	100	705	11018	550
5. Bengaluru R	0	400	0	60	0	0	0	0	0	400	321
6. Bidar	0	400	0	240	1000	0	0	0	0	415	310
7. Bijapur	400	400	0	270	0	0	0	0	30	187	324
8.Chamarajnagar	250	350	0	120	0	0	0	0	0	349	434
9.Chikkaballapura	100	510	0	60	0	0	0	0	0	444	387
10.Chikmagalur	400	600	0	150	0	0	0	0	0	568	600
11.Chitradurga	450	500	0	330	0	0	0	0	0	570	480
12.D. Kannada	965	400	100	210	0	0	100	0	10	1838	380
13.Davangere	1030	500	0	180	0	0	50	0	0	952	680
14.Dharwad	250	300	0	0	1375	149	50	0	0	1342	208
15 Gadag	304	400	0	60	0	0	0	0	0	488	244
16 Gulbarga	750	600	0	480	0	0	0	0	0	394	512
17 Hassan	0	950	0	450	1000	0	0	0	0	956	906
18 Haveri	250	600	0	150	0	0	0	0		819	408
19.Kodagu	410	360	0	210	0	0	0	0	0	280	269
20.Kolar	400	400	305	60	0	0	0	0	0	400	422
21.Koppal	250	300	0	270	0	0	0	0	0	325	266
22 Mandya	0	600	0	210	1000	0	0	0	0	830	901
23.Mysore	0	600	50	120	2050	101	100	0	0	2060	935
24.Raichur	0	400	0	180	1200	0	0	0	0	400	294
25.Ramanagara	100	300	0	120	0	0	0	0	0	435	405
26.Shimoga	0	650	0	210	1000	0	0	0	0	914	654
27.Tumkur	400	900	0	120	0	0	0	0	0	1478	956
28.Udupi	350	200	0	180	0	0	0	0	0	720	386
29.Uttara Kannada	400	1000	0	60	0	0	25	0	0	926	532
30.Yadagiri	100	200	0	150	0	0	0	0	0	198	242

* Prison Dept. ** Railway Dept.

* Private Medical Estt. As registered under KPME Act

Source: Directorate of Health and Family Welfare Services, Bangalore

FAMILY WELFARE PROGRAMME AND USERS OF CONTRACEPTIVES

(Nos)

Year/ District	Sterilization		I.U.D		C.C. Users		O.P. Users	
	Target	Achiev-ement	Target	Achiev-ement	Target	Achiev-ement	Target	Achiev-ement
1	2	3	4	5	6	7	8	9
2011-12	**521711**	**312770**	**277404**	**195487**	**378038**	**1922876**	**239333**	**1251886**
2012-13	**484980**	**333302**	**311822**	**189981**	**559695**	**167302**	**275027**	**105149**
2013-14	**407102**	**311415**	**311883**	**179541**	**338600**	**171732**	**243880**	**113213**
2013-14								
1. Bagalkote	15701	19013	11661	6588	7000	6300	7375	4238
2. Belgaum	37203	25221	23774	17692	31629	6733	19742	4931
3. Bellary	20425	16628	14000	10018	15614	7585	9466	6180
4. Bengaluru U	63746	39599	46284	28706	67038	27711	43896	19154
5. Bengaluru R	5650	4334	6110	3115	6873	3962	4680	2727
6. Bidar	13338	6639	8957	2460	10977	3581	6499	2965
7. Bijapur	20090	14435	16601	7523	14218	6012	8417	3382
8.Chamarajnagar	5560	5133	4559	2047	4483	4564	2558	2572
9.Chikkaballapura	7350	3642	5760	3702	4600	2388	3500	1275
10.Chikmagalur	6117	5134	6543	3416	3309	6209	5717	2335
11.Chitradurga	8454	7672	10145	4570	10501	8245	6991	6415
12.D. Kannada	7469	4365	12791	4139	8800	6207	9062	2450
13.Davangere	11567	17242	8700	6830	10952	5723	10771	4875
14.Dharwad	12500	8970	9388	8446	12280	2982	7686	1777
15 Gadag	5425	5316	5280	4218	5983	2710	4405	1829
16 Gulbarga	21027	17134	14598	6629	8068	2009	8868	1032
17 Hassan	8200	8104	6200	5533	5000	6034	4377	3668
18 Haveri	14550	7659	7350	3356	9575	3737	6250	2953
19.Kodagu	3044	2571	2525	1727	3683	3213	1250	1303
20.Kolar	8600	7749	7194	5186	10392	3330	6795	2700
21.Koppal	13566	9777	7399	3363	8969	4515	5227	2799
22 Mandya	9915	8882	9107	6112	5972	2032	5644	1821
23.Mysore	19100	11709	12468	5301	14490	6344	11949	6193
24.Raichur	14998	9692	9599	3412	12785	1823	7986	1161
25.Ramanagara	6107	4844	4915	2754	7046	4542	4672	2401
26.Shimoga	9800	9148	10675	6619	8320	7417	7451	6142
27.Tumkur	12483	11804	11398	8651	8543	8677	7817	4751
28.Udupi	6833	4110	5322	2288	7498	7210	5096	3688
29.Uttara Kannada	5773	6578	5939	2878	6500	5659	5551	3253
30.Yadagiri	12511	8311	6641	2262	7502	4277	4182	2244

Source: Directorate of Health and Family Welfare Services, Bangalore

MATERNITY AND CHILD HEALTH (M.C.H.) ACTIVITIES.

(Numbers)

Year/ District	M.C.H. Activities					
	DPT Immuni-zation	Polio Immuni-zation	BCG Immuni-zation	Measles Immuni-zation	TT(PW) Immuni-zation	Hepatities 'B'Immuniza tion
1	2	3	4	5	6	7
2011-12	**1130349**	**1115886**	**1178976**	**1062082**	**1259156**	**1005536**
2012-13	**1134700**	**1127987**	**1159252**	**1085495**	**1245414**	**1098815**
2013-14	**300186**	**1057853**	**1131948**	**1030082**	**1195474**	**291008**
2013-14						
1. Bagalkote	18797	43807	50425	41116	44335	15703
2. Belgaum	23200	92445	107499	87961	99144	22877
3. Bellary	16387	58018	59100	56837	70667	14366
4. Bengaluru U	36709	105864	121284	111661	154784	36056
5. Bengaluru R	3454	18706	13481	13671	17176	3485
6. Bidar	5622	33550	44000	31686	43657	7276
7. Bijapur	12752	53113	65217	48860	64797	14068
8.Chamarajnagar	2827	13904	11557	13794	14853	2888
9.Chikkaballapura	11128	22424	19066	23199	24562	9308
10.Chikmagalur	4506	15802	15797	16045	15321	4727
11.Chitradurga	9171	28389	27486	27047	29466	9762
12.D. Kannada	2951	28930	28683	28662	25900	4245
13.Davangere	15268	34435	44067	32812	36411	14481
14.Dharwad	4055	38080	48275	37814	41466	6029
15 Gadag	4537	20745	20999	19871	22115	4524
16 Gulbarga	22604	63390	70233	60294	72097	19208
17 Hassan	4990	26232	23760	25575	24806	5310
18 Haveri	6195	30416	29693	29680	33015	5853
19.Kodagu	2205	7642	8054	7767	7728	2119
20.Kolar	5513	25393	21843	23699	26698	6218
21.Koppal	9558	29506	33973	27953	32289	7405
22 Mandya	4914	26054	22129	26113	29086	5428
23.Mysore	10779	41073	42976	41237	46981	9984
24.Raichur	15648	42006	49301	43029	50286	15018
25.Ramanagara	7890	15137	14289	15619	16908	7365
26.Shimoga	6984	28845	27471	27765	29159	7439
27.Tumkur	10362	42157	37725	41924	44624	10079
28.Udupi	5602	16883	16833	15851	16522	5111
29.Uttara Kannada	5101	22656	24242	22146	23831	4527
30.Yadagiri	10477	32251	32490	30394	36790	10149

Source: Directorate of Health and Family Welfare Services, Bangalore