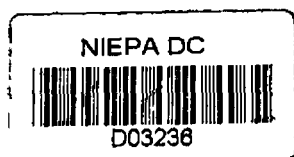


GOVERNMENT OF KERALA

**HIGH LEVEL COMMITTEE
ON EDUCATION AND
EMPLOYMENT**

**REPORT
ON MEDICAL EDUCATION**



STATE PLANNING BOARD

TRIVANDRUM

Sub. National Systems Unit,
National Institute of Educational
Planning and Administration
17-B, Sector 14, Connaught Place, New Delhi-110016
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FOREWORD

The primary function of the State Planning Board as detailed in the Government Order of 30th July, 1982 reconstituting the Board is "to study in depth the different aspects of the State's economy and development and on the basis of the assessment of the progress made during the last 25 years, and in the context of the special problems facing the State, suggest the objectives and profiles of future planned effort upto 2000 AD". In order to assist the State Planning Board in the discharge of this function, Government constituted in October, 1982, five High Level Committees on the following subjects.

1. Land and Water Resources
2. Industry and Trade
3. Social Infrastructure and Services
4. Physical Infrastructure and Transport
5. Education and Employment.

The Report of the High Level Committee on Education and Employment is presented in five volumes.

This is the fourth volume which deals with Medical Education.

The views and opinions expressed in this Report are those of the Committee and do not necessarily reflect the views of Government or the State Planning Board on the subject.

The State Planning Board wishes to place on record their high appreciation of the commendable work done by this High Level Committee.

S. VARADACHARY,

Member Secretary, State Planning
Board and Secretary to
Government, Planning &
Economic Affairs Department.

Preface

The Government of Kerala reconstituted the State Planning Board by G.O. (P) 42/82/Plg. dated 30th July, 1982. Its Primary function is "to study in depth the different aspects of the State's economy and development and on the basis of the assessment of the progress made during the last 25 years, and in the context of the special problems facing the State, suggest the objectives and profiles of future planned effort upto 2000 A.D.". By another G.O. MS. 56/82/Plg. dated 4-10-1982 Government constituted Six High Level Committees to assist the State Planning Board in discharging this function. One of these is the High Level Committee on Education and Employment consisting of:

- | | |
|---|----------|
| 1. Prof. V.R. Pillai | Chairman |
| 2. Dr. M.V. Pylee
Former Vice-Chancellor
Cochin University | Member |
| 3. Shri P.K. Umashankar
Spl. Secretary (General Edn.) | Member |
| 4. Dr. K. Gopalan,
Vice-Chancellor, Cochin University | Member |
| 5. Dr. K.N. Pai | Member |
| 6. Dr. S. Vasudev,
Chairman, State Committee
on Science & Technology | Member |
| 7. Prof. K.S. Lakshmana Panicker | Member |
| 8. Shri N. Gopalakrishnan Nair -
Chief, Perspective Planning
Division | Convener |

As education and employment comprise several subject areas, each requiring specialised knowledge for undertaking the proposed studies, five sub groups were constituted for the purpose in April, 1983 viz: (1) General Education (2) Higher Education (3) Technical Education (4) Medical Education and (5) Employment.

The Sub Group on Medical Education consisted of:

- | | |
|---|----------|
| 1. Dr. K.N. Pai, Jaya Mansion,
Poojappura, Trivandrum—12 | Chairman |
| 2. Dr. C.V. Korah, Principal,
Medical College, Trichur | Member |
| 3. The Principal, Medical College
Trivandrum—11 | Member |
| 4. The Principal, Medical College,
Calicut | Member |
| 5. The Additional Director of Health
Services (Planning), Health Servi-
ces Department, Trivandrum. | Member |
| 6. The Registrar, Medical Council,
Red Cross Road, Trivandrum—1 | Member |
| 7. Dr. M.S. Valiathan, Director,
Sree Chithira Thirunal Medical
Centre, Trivandrum—11 | Member |
| 8. Director of Indigenous Medicines,
Trivandrum | Member |
| 9. Director of Homoeopathy,
Trivandrum | Member |
| 10. Shri K. George, Joint Director,
State Planning Board. | Convener |

The Committee found that, in the absence of any requirement for the registration of private hospitals, no data was available about the innumerable private medical institutions in different systems of medicine which have grown up in all parts of the State. As this data is important for estimating the demand for medical and paramedical personnel and for enhancing the facilities for medical education and the training of para medical personnel, the Planning Board, at the request of the Committee, undertook a survey of private medical institutions in the State. The survey was conducted through the District Planning Units in the State, to enumerate the number of institutions under different categories, their bed strength, their intake of doctors and para medical personnel etc. and the results are tabulated in Table 14.

The Sub Group held six meetings and submitted its Report to the High Level Committee on 30-9-1983. The Committee felt that adequate attention had not been given to indigeneous

systems of medicine. Therefore a meeting of the principals of Ayurvedic and Homoeopathic Colleges was held to discuss the objectives and profiles of development in their respective areas. Representatives of these disciplines met the Chairman of the Sub Group and finalised their plan proposals which have also been incorporated in this Report which was further discussed and passed by the High Level Committee at its meeting on 26-3-1984.

The Committee places on record its high appreciation of the valuable assistance rendered by the medical experts associated with this study under the leadership of Dr. K.N. Pai, the doyen of the medical profession in the State. We are grateful to the Department of Health (Government Secretariat), the Directorates of Health Services, Medical Education Indigeneous Medicines and Homoeopathy and the Medical Council (Trivandrum) for the kind cooperation extended to us. Our thanks are also due to Shri N. Gopalakrishnan Nair, Chief (Perspective Planning) and Shri K. George (Joint Director, State Planning Board) who functioned as the Conveners of the Committee and the Sub Group on medical education respectively.

V.R. Pillai
Chairman
High Level Committee on
Education and Employment.

Trivandrum,
2-4-1984

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CHAPTER I

A Review of the Progress of Medical and Public Health Activities at the National and State Level

Health is regarded as an important social input. The Development of a society can be ensured if the citizens are healthy. Healthy manpower adds more man days to the factory, field and office; increasing thereby the working hours for gross production, which in turn enhances the per capita income of the nation. Provision of health care facilities are of fundamental importance. This principle has been confirmed in the international conference on Primary Health care at Alma Ata, USSR in September 1978, which is now popularly known as Alma Ata declaration. This declaration to provide health care facilities for all by 2000 A.D., further adds that the people have the right and duty to participate individually, and collectively in the planning and implementation of health care programmes. Primary health care addresses itself to the main health problems in the community—providing promotive, preventive, curative and rehabilitative services, and accordingly it includes health education, proper nutrition; safe drinking water supply and basic sanitation, maternal and child health care, family planning, immunisation, control of diseases, provision of essential drugs etc. In the health schemes, it is also envisaged to augment training facilities to the different categories of medical and paramedical personnel, with a view to overcome shortages of qualified technical personnel and at the same time to improve the medical and public health services through production and distribution of basic and essential medicines.

Progress of Medical and Public Health Activities in India Under Five Year Plans.

In India, planned development over three decades has resulted in vast improvements in health facilities. The number of doctors, and hospital beds has increased by more than two and a half times and that of nurses by more than six times during the above period. The number of medical colleges has increased from 30 before the First Plan to 106 at present. In rural areas, there are 5568 primary Health Centres and 51192 Sub Centres at present, whereas none existed before 1951. Malaria, Tuberculosis and Cholera, which used to take a heavy toll of life have been controlled to varying degrees. The general death rate has come down from 27.4 per thousand in 1949-50 to an estimated 12.8 per thousand in 1979, and life expectancy at birth has increased from 32 years to 52 years in 1976-81. The infant mortality rate has come down from 135 per thousand in 1973 to 125 per thousand in 1979.

The family Welfare Programme was launched in 1952, with a view to check the rate of growth of population. The population of India as per the 1981 Census stood at 68.4 crores with decadal (1971-81) growth rate of 24.75 per cent, which was marginally less than the previous decadal (1961-71) growth rate of 24.80 per cent. The goal is to reach the birth rate of 21, and death rate of 9 per thousand population by 2000 AD.

The Indian Systems of medicine are very popular among rural population. About 2.78 lakh registered practitioners are practising these systems at present. In addition, 13,535 dispensaries, 371 hospitals and 11,118 beds are also functioning in this system.

There are 95 Ayurvedic, 16 Unani and one Sidha, under graduate colleges in India, at present. Out of this, about 49 Ayurvedic, and 10 Unani colleges are run by Voluntary Organisations.

Homoeopathic system of medicine also commands wide popularity among both urban and rural population of this country. There is a Homoeopathic Advisory Committee to advise the Central Government on the development of Homoeopathy. There are 122 institutions imparting training in Homoeopathy.

which have been recognised by the State Boards and Councils. Seven of these are government institutions. Under the homoeopathic system, 1806 dispensaries, and 83 hospitals with 2249 beds are now functioning in this country.

Medical Education

With a view to promote medical education 106 medical colleges, 19 dental colleges, and 11 other institutions are functioning in India. Establishment of new medical colleges, and expansion of existing ones have raised the admission capacity from 2500 in 1950-51 to over 12500 in 1977-78. The doctor-population ratio, which was 1:5150 in 1968 improved to 1:3600 in 1979-80.

The Sixth Plan (1980-85)

During the Sixth Plan the main objective in the Health Sector is to provide better primary health care and medical care services in Rural areas, tribal areas and among poor people, with the underlying philosophy that "the needs of many people should prevail over those of the few". The driving force behind health planning is the commitment of the nation to achieve the goal of "Health for all by 2000 A.D." The revised Twenty Point Programme announced by the Prime Minister in January 1980 pinpoints special thrust on improving the health status of the people. According to this programme, it is proposed to promote family planning on a voluntary basis as a people's movement substantially augment primary health facilities; control leprosy, TB and blindness, and accelerate programme of welfare for women and children, and nutrition programmes for pregnant women, nursing mothers and children, especially in the tribal, hill and backward areas.

Medical and Health Care in Kerala

The people of Kerala enjoy a better standard of health than those in other states of India. Traditionally they maintain a high standard of personal and environmental hygiene. Though the system of indigenous medicines was popular among them from olden days, the facilities for prevention and treatment of disease by modern medicine were also provided in the state sufficiently early. The high rate of literacy has also contributed for the

Maintenance of a high standard of health and hygiene among the people of Kerala. Further the greater attention paid to the development of medical and public health services during the Five Year Plan periods has contributed to a significant improvement of the medical and health care system in Kerala.

Even though sustained efforts towards promotion of medical and health care facilities were carried on in Kerala, since the inception of Five Year Plans, remarkable achievements could be witnessed only in the last two decades. The well-known indicators of health, such as birth rate, death rate, infant mortality rate and bed-population ratio reveal that this State now occupies the top-most position among Indian States in regard to health status.

System of Modern Medicine

At the inception of the First Five Year Plan, there were only 197 medical institutions including 15 grant-in-aid institutions and 6 newly started Primary Health Centres in the State. All the above institutions together had a total bed strength of 6752. Both the number of institutions and beds exhibited significant increase over the past years. In 1981, institutions under modern medicine totalled 968, with a bed strength of 32447. There were 11856 registered allopathic medical practitioners in the state. Doctors in government service numbered 3805 including those in Medical College Hospitals. Out of 500 registered dental practitioners in the State, 62 were in government service. The staff nurses numbered about 4335 including 844 Head Nurses, as against 848 registered nurses, and there were 1576 pharmacists. There existed one institution under modern medicine for every 40 sq. Km. in the state. The following indicators will reveal the level of health care facilities in 1981 as far as medical personnel are concerned.

i. Doctor population ratio	1 : 6684
ii. Nurse—population ratio	1 : 5859
iii. ANM—population ratio	1 : 7587

By the end of 1981, there were 12 district hospitals, 55 taluk hospitals, 6 women and children's Hospitals, 595 rural dispensaries and 178 Primary Health Centres (1982 March) in the state. Kerala State Drugs and Pharmaceuticals (KSDP) is a

government undertaking, engaged in the manufacture of many items under modern medicine to cater to the needs of the hospitals and dispensaries in the State.

Indian Systems of Medicine.

The Department of Indian Systems of Medicine in Kerala originally comprised the Ayurveda Colleges, Ayurveda hospitals and dispensaries, together with some Homeopathic hospitals and dispensaries. During the year 1973-74, the Homoeopathic institutions were brought under a separate Directorate. The Ayurveda Colleges and attached institutions were brought under the control of the Principals of respective colleges in 1979.

At the end of 1981, there were 11043 registered Ayurvedic Medical Practitioners. As a result of the increase in the number of qualified doctors, more Ayurvedic hospitals and dispensaries could be opened.

By the end of 1982, there were 94 Ayurvedic Hospitals including two college hospitals and 489 dispensaries in the State run by government. Total number of beds available in these institutions was 1639. In addition to the above, 19 dispensaries are run by Harijan and Tribal Welfare Department.

A Pharmaceutical Corporation (ISM) in the public sector is functioning at Trichur to cater to the needs of the different Ayurvedic medical institutions in the State.

HOMOEOPATHIC SYSTEM OF MEDICINE

At the national level, West Bengal and Kerala occupy the first and second position respectively, in regard to popularity and advancement of homoeopathic system of medicine. All the homoeopathic institutions in the State, except Colleges of Homoeopathy are under the control of the Directorate of Homoeopathy. The Colleges of Homoeopathy are headed by the Principals of the respective colleges.

By the end of the year 1981-82 there were 214 Homoeopathic medical institutions consisting of 28 Hospitals and 19 dispensaries, run by government. Total bed strength in the above institutions was about 675.

Medical Education in Kerala

i. Allopathy.

The first medical college in Kerala was established in Trivandrum in 1951, prior to the re-organisation of States. During the second Five Year Plan, the second medical college was started at Calicut. Two more medical colleges were established, one at Kottayam, and the other at Alleppey during the third Five Year Plan. The fifth medical college has been started at Trichur in January 1982. Kerala, with a population of 254.54 lakhs (1981 Census) has now five medical colleges. It has thus achieved the norm of one Medical College for 50 lakhs of population as proposed by the Health Survey and Planning Committee 1961 (Mudaliar Committee). The supply of medical man power in the state has considerably increased with the establishment of the above Medical Colleges.

The State has at present two Dental Colleges, one at Trivandrum, and the other at Calicut, attached to the respective Medical Colleges. More over three Nursing Colleges (Trivandrum, Kottayam and Calicut) and four Pharmacy Colleges (Trivandrum, Alleppey, Kottayam and Calicut) are also functioning.

Details of Medical/para-medical courses conducted in the above five medical colleges are given in Table No. (1)

Re-orientation of medical education was initiated with the objective of giving it a rural bias as well as providing curative health care facilities to the rural population. Under this scheme, each medical college should be linked effectively with three primary health centres, where delivery of preventive, curative and family welfare services, is done through the same team of doctor, nurses and paramedical staff.

The Kerala Nurses and Midwives' Council is controlling the training in General Nursing and Multipurpose Health Workers' Course. The Council also conducts examinations for candidates trained at various institutions recognised by the council. The details regarding the number of recognised training institutions and the annual intake of students are given below.

TABLE. No. (I)

Medical/Para Medical Courses conducted in the Medical Colleges, and Sree Chitira Thirunal Institute of Medical Science & Technology and intake of students.

Sl. No.	Name of Course	No. of Institution as on 1982	Trivandrum	Medical College at			
				Alleppey	Kottayam	Trichur	Calicut
1	2	3	4	5	6	7	8
1.	M.B.B.S.	5	200	100	100	100	200
2.	Post Graduate Degree/Diploma course (list given Separately)						
3.	B.D.S.	2	40	—	—	—	30
4.	B.Sc. (Nursing)	3	25	—	25	—	25
5.	B. Pharm	1	28	—	—	—	—
6.	D. Pharm	4	30	25	30	—	40
7.	Health Inspectors Course (Last Batch)	—	70	—	60	—	60
8.	Lab Technicians Course	2	30	—	—	—	32
9.	Ophthalmic Assistants Course	1	20	—	—	—	—
10.	C.R.A.	1	20	—	—	—	—
11.	Dental Mechanic	1	5	—	—	—	—
12.	M.D.s.	—	12	—	—	—	—
13.	MCH/DM	—	—	—	1	—	6
Sree Chithira Thirunal Institute of medical Science & Technology							
14.	MCH/DM	8	—	—	—	—	—
15.	Post Doctoral Certificate Courses in Radiology and Anaesthesia	2 + 2	—	—	—	—	—

Table No. (i) (Contd...)

Post Graduate Degree/Diploma Courses in the Medical Colleges of Kerala.

Sl. No.	Name of Course	Number of Seats		
		Trivan- drum	Kottayam	Calicut
1	2	3	4	5
	Post Graduate Degree			
1.	M.D. General Medicine	13	8	6
2.	M.D. Obstetrics & Gynaccology	8	2	4
3.	M.D. Paediatrics	3	3	3
4.	M.S. Anatomy	2	—	2
5.	M.D. Physiology	2	2	3
6.	M.D. Biochemistry	2	—	2
7.	M.D. Pathology	6	3	2
8.	M.D. Pharmacology	4	—	2
9.	M.D. Forensic Medicine	2	—	2
10.	M.S. General Surgery	20	2	6
11.	M.S. Ophthalmology	4	2	2
12.	M.S. Orthopaedics	4	—	2
13.	M.D. Microbiology	2	—	2
14.	M.D. Social & Preventive Medicine	3	—	2
15.	M.D. Anaesthesia	4	1	1
16.	M.D. Radio-diagnosis	2	—	—
17.	M.D. Radio-therapy	2	—	—
18.	M.D. Dermatology & Venereology	2	3	2
19.	M.S. ENT.	2	—	2
20.	M.D. Psychiatry	—	—	2
21.	M.D. TB & RD	2	—	—

Table No(i) (Contd.....)

Sl. No.	Name of Course	Number of seats		
		Trivan- drum	Kottayam	Calicut
DIPLOMA COURSES				
1.	Diploma in Clinical Pathology	3	—	4
2.	Diploma in Gynaecology and Obstetrics	12	6	8
3.	Diploma in child Health	6	6	6
4.	Diploma in Ophthalmology	3	4	6
5.	Diploma in Orthopaedic Surgery	8	—	4
6.	Diploma in Laryngology and Otolaryngology	8	—	3
7.	Diploma in Public Health	12	—	—
8.	Diploma in Anaesthesiology	8	6	2
9.	Diploma in Dermatology and Venereology	—	—	2
10.	Diploma in Psychiatric Medicine	6	—	—
11.	Diploma in Physical Medicine and Rehabilitation	4	—	—
12.	D.T.C.D.	2	—	2
13.	D.M.R.D.	2	—	2
14.	D.M.R.T.	2	—	2

TABLE No. (II)**Details of recognised Training Institutions and the annual intake of students for Training Courses**

Name of Course	No. of Institutions	Annual intake of Students. (Nos)
(i) General Nursing Course		
a. Government	10	270
b. Private	43	774
TOTAL	53	1044
(ii) Health Workers Course		
a. Government	4	140
b. Private	12	244
TOTAL	16	384

Source: Office of the Registrar, Medical Council, Trivandrum.

Details of registration with the Kerala Nurses and Midwives' Council as on 31-12-1982 are given below.

	Category	No of registrations
1.	General Nursing and Midwifery (Integrated Course)	3229
2.	Nurses	9005
3.	Midwives	8981
4.	Auxiliary Nurse Midwives	4137
5.	Health Visitors	279

(Source: Office of the Registrar, Medical Council, Trivandrum)

(ii) Ayurveda

There are, at present five Ayurveda Colleges in the State. Two Government colleges (at Trivandrum and Tripunithura) and three private colleges (at Kottakkal, Ollur and Shornur).

A post graduate centre in Ayurveda has been started in 1971, at Trivandrum, with Central assistance, to impart Postgraduate training. There is a Regional Research Institute and a Model Demonstration Garden of Medicinal herbs at Poojappura, Trivandrum. A Nature Cure Centre at Varkala and a Mental Hospital at Kottakkal are also functioning under this system.

In order to overcome the scarcity of trained nurses and pharmacists in Ayurveda, training courses for nurses and pharmacist (40 students each) have been newly started, and the first batch is now undergoing training. Pharmacy Course (B.Pharm) in Ayurveda, proposed to be started in Ayurveda College, Trivandrum could not be started for want of sanction from the University.

iii. Homoeopathy

Till 1975, there was only three private colleges offering diploma courses in homoeopathy. A Homoeo Medical College for conducting degree course, was started at Calicut in 1975, with admission capacity of 30 students per year. The intake capacity was later increased to 50. During 1981-82, another government college of Homoeopathy was started at Trivandrum with admission capacity of 50 students per year.

CHAPTER II.

Recommendations/Observations

The main observations/recommendations of the High Level Committee are given below:

1. Availability of up-to-date basic statistics on medical education and public health is inadequate at present. Similarly the data pertaining to private medical institutions are scarcely available. Efforts may be made by the Director of Health Services to maintain reliable and up-to-date data on public health, in respect of departmental and private medical institutions, while the Principals of medical colleges may endeavour to maintain relevant statistics relating their institutions.

2. Due to paucity of funds a number of plan schemes already put into operation in most of the medical colleges, could not progress satisfactorily. The provisions made in the annual plans are found quite inadequate for the successful implementation of the above schemes. For post graduate medical education, the funds provided are often quite meagre.

3. Emphasis has to be given on the conduct of more paramedical courses, and the development of new specialities in all medical colleges in the State.

4. Intake for Post graduate courses in medicine must be enhanced. The number of seats for post graduate courses has not increased significantly during the past years, commensurate with the development of new specialities. The seats for para-medical courses must be increased in view of the growing demand for para-medical personnel in Primary Health Centres, Taluk Hospitals and District Hospitals.

5. At present the facilities for medical service available in the above hospitals are limited. Development of those medical institutions is urgently needed in the context of the conversion of Medical College Hospitals to Referral Hospitals.

6. The main reason for the out-break of many diseases in the rural areas is the lack of sanitation and protected water supply. Hence adequate funds must be provided in the plan budgets for rural water supply and sanitation schemes.

7. A large number of medical institutions in the State are now badly in need of specialists, para medical staff, as well as medical equipments. At present there are no proper arrangements for the timely repair of defective equipments in Medical College Hospitals, other Government Hospitals and Primary Health Centres. This is mainly due to inadequate delegation of powers to the concerned Medical Officers, as well as paucity of required funds.

8. There is no proper set up at present for the preventive maintenance of bio-medical equipments. This causes undue delay to get defective equipments repaired. It is therefore inevitable to establish a work shop for the preventive maintenance as well as repair of bio-medical equipments. Provision of adequate Funds and delegation of necessary financial powers to the concerned Medical Officers might be effected simultaneously.

9. More training Centres must be opened for the training of para-medical personnel especially technicians. In the case of technicians, it is better to enhance the intake of the concerned training centres, than to increase their number. More over, some sort of control should be exerted on the export of specialists and technicians.

10. Districts hospitals which undertake nurses training programmes must enhance the intake of trainees. Also, the number of Multi purpose—Health workers, and Community Health workers must be increased so as to cope with the widening medical and public health activities.

11. Basic specialities must be developed in all the Medical colleges in the State Super specialities need not be repeated.

12. It is advisable to establish a Cardiac Centre for every 10 million of the population.

13. There is urgent need for developing a mobile medical unit in the Department of Homoeopathy. Under this system of medicine, training courses for nurses and pharmacists must be

started at government level.

14. There is urgent need for the establishment of Central Institute of Medical Research in this State, For all programmes of research under this Institute, regional problems must be given due emphasis. Suitable incentives must be awarded, to attract qualified persons for dedicated research work.

15. There is pressing need to develop a medical speciality for infectious diseases in view of their high incidence in the State.

16. The number of seats for the para-medical courses in the medical colleges at Trivandrum and Calicut must be increased to the maximum extent possible. Simultaneously, urgent steps should be adopted to start the above courses in the medical colleges at Kottayam and Alleppey.

17. Due emphasis must be given for the implementation of the scheme of continuing Medical Education for the benefit of the medical and para-medical staff at all levels.

18. In view of the dim prospects for the employment potential of Nursing Degree Holders in this state rules must be framed to select them as Specialists at higher level within centres. prospects for promotion of paramedical staff might be assured.

19. It is advisable to establish a Drugs Unit in the Department of Homoeopathy, as a concern fully owned by Kerala Government, and start Research Hospitals attached to Homoeo Medical Colleges.

20. Laboratory technicians' training Courses must be started in all medical institutions of the State Government. The Government should also exercise strict quality control on the training courses run by private institutions.

21. Three Regional Homoeopathic Hospitals for the treatment of infectious diseases (each with a bed strength of 200 have to be opened. These Hospitals should be under the control of the Directorate of Homoeopathy.

22. As there is a haphazard growth of private medical institutions in all systems of medicine, without any kind of regulation by Government, the Committee recommends that registration of private medical institutions should be made compulsory.

CHAPTER III

Seventh Five Year Plan (1985-90)

Even though Kerala has established a proud record of achieving lower birth rate, infant mortality rate and death rate as well as higher life expectancy, the health care system prevailing in the State suffers from many weaknesses, pitfalls and deficiencies. The High Power Committee (1979) on Health Services headed by Dr. K.N. Pai made an indepth study on the existing institutions and their working. The report of this Committee contains several suggestions as correctional measures and measures for improving the efficiency of institutions. The report points out that the present health services in Kerala is, undoubtely of a high standard; but when compared to those of developed countries, it is still under developed.

The quality of health services in the State has to be improved by improving the discipline in hospitals and by providing the necessary infrastructure and other accessories. The man power for health care in Kerala is below the approved norms in the case of doctors, nurses, and other para-medical staff. In developed countries like U.S.S.R. and U.S.A. there is one physician for every 347, and 622 persons respectively, while Kerala has only about one-tenth of such facility.

The Medical education programmes in the VIIth Plan mainly aim at enhancing the outturn of medical and para medical personnel, etc. Advanced specialities are proposed to be started, and intake of post graduate courses has to be enhanced. With a view to increasing the out turn of para medical staff, more training institutions will be established and the intake in the existing institutions will be increased. Several recommendations in this respect have been made by the Sub-Group on Medical Education constituted in the State Planning Board, towards the formation of the seventh five year plan (1985-90) and future plans.

Schemes for the VIIIth Plan

1. **Modern Medicine** The five medical colleges in the State have presented a number of schemes before the Sub Group on Medical Education for inclusion in the Seventh Plan.

The proposed outlays are given below:

	Total outlay for VIIIth plan (1985-90) (Rs. in lak)
1. Medical College, Trivandrum	827.00
2. Medical College, Kottayam	847.00
3. T.D. Medical College, Alleppy	497.00
4. Medical College, Trichur	3331.25
5. Medical College, Calicut	848.00)
	150.00)
	(for centrally sponsored Schemes)

A summary of the Year-wise outlays is given in Table No.4. Detailed Scheme wise outlays are furnished in Table No. 5.

The above medical colleges (except Medical College, Trichur) have also proposed some new medical specialities and new courses to be taken up for implementation in future plans. The details are given below:

Medical College, Trivandrum

Master's Degree in Pharmacy

Masters Degree in Nursing

Medical College, Kottayam

1. Infectious diseases.

2. Neonatology

3. Thorasic surgery.

T.D. Medical College, Alleppey

1. Cardiology

2. Neurology

3. Plastic Surgery

4. Neuro Surgery.

5. Post Graduate Courses in Medicine & Surgery

6. Infectious Diseases.

Medical College, Calicut

Post Graduate Courses in:—

1. Radio therapy

2. T.B. & Chest Diseases
3. Radio Diagnoses
4. Cardiology
5. Gastro enterology
6. Thoracic Surgery
7. Psychiatry

The following schemes have been discussed by the Sub-Group on Medical Education in its meetings, and recommended for inclusion in the Seventh Plan.

1. Development of ten advanced specialities.
2. Establishment of an Institute of Medical Research.
3. Development of a medical Speciality for Infectious Diseases.

Details of the above schemes have been incorporated in this report.

(ii) Ayurveda

The Principal, Ayurveda College, Trivandrum has proposed the speciality 'Prasoothi Tantra' to be taken up for implementation.

The Project Officer, Post-graduate centre in Ayurveda Trivandrum has recommended the following specialities to be started in that Centre.

- i. Prasoothi tantra.
- ii. Salyasalakya.

iii. Homoeopathy

The Directorate of Homoeopathy has proposed the following Schemes to be taken up during the VIIth Plan (1985-90) period.

Sl.	Name of Scheme	Proposed Outlay (Rs. in lakhs)
1.	Mobile Homoeo Dispensaries	12.00
2.	Training Course for Nurses (stipendary)	3.00
3.	Training Course for Pharmacists (stipendary)	3.00
4.	Drugs Unit	15.00
5.	Establishment of 3 Regional Homoeopathic Hospitals for infectious diseases (each with bed strength of 200)	60.00
6.	Starting of Research Hospitals attached to Homoeo Medical Colleges.	30.00
7.	Post Graduate Course (M.D.) in Homoeo Medical Colleges	10.00
	Total	133.00

The VIIth Plan proposals put up by the government Homoeo Medical College, Trivandrum are shown below:
Proposed Outlay (1985-90): Rs. 240 lakhs

I. Civil Works.

	Recurring (Rs. lakhs)	Non recurring (Rs. lakhs)	Total (Rs. lakhs)
Building Ist. phase	—	80	80
IIInd Phase	—	40	40
IIIrd Phase	—	30	30
IVth Phase	—	30	30
Vth Phase	—	20	20
Sub Total (I)	—	200	200

II. Establishment Charges.

Salaries:

1. College	11	—	11
2. Hospital	9	—	9
Machinery & Equipment	—	15	15
Materials & Supplies	3	—	3
Other Charges	2	—	2
Sub Total (II)	25	15	40
Grand Total (i) & (II)	25	215	240

Homoeo Medical College, Calicut

Paucity of sufficient funds is a draw back of this college, ever since its commencement in 1975-76 onwards. If sufficient funds are provided every year say Rs. 75 lakhs, necessary buildings and land can be provided within a short while for colleges, Collegiate Hospital, Hostel for men and women students, Play grounds, staff quarters etc.

There are proposals pending with Government to enhance the bed strength of the Collegiate Hospital from the existing 50 beds of 150 beds immediately to achieve the target of 300 beds, on a phased programme.

APPENDIX I

Scheme for the development of advanced specialities During the VIIth Plan (1985-90)

Kerala will have five Medical Colleges and an efficient health care delivery system at the end of the VIth plan. The State has already achieved a proud record of having low birth rate, death rate and infant mortality rate and high life expectancy. But Cardio-Vascular diseases, cancer and degenerative disorders have already emerged as threatening problems in the health scene of the State. In this context, it is quite relevant to think of developing advanced specialities in Kerala during the VIIth Plan. The following specialities are classified as 'advanced' in view as much of their sophistication as of their relevance in the State.

- 1 & 2. Cardiology and Cardio Thoracic Surgery
- 3 & 4. Neurology and Neurosurgery
5. Nephrology
6. Plastic and Reconstructive Surgery;
(including maxillo facial)
7. Gastroenterology
8. Haematology
9. Endocrinology
10. Genetics and Immunology

While the availability of Services in advanced specialities is a desirable objective in every medical college, their requirements in terms of equipment, skilled manpower and running expenses will make it mandatory that they are distributed selectively in the State during the VIIth Plan. They should be viewed as Centres of service for patients and also for the training of doctors and specialised personnel.

The importance and relevance of the above specialities are briefly discussed below:

1 & 2. Cardiology and Cardiac Surgery.

(2 Centres. Proposed Outlay Rs. 470 lakhs)

With the rise of life expectancy above 60 years deaths from heart diseases have emerged as a major problem in Kerala, Rheumatic heart disease and congenital heart diseases, coronary artery diseases are now very common. In this context the organisation of one centre in the north and another centre in the south of Kerala is suggested, for cardiology and cardiac surgery to serve a population of 10 million each.

3 & 4. Neurology and Neurosurgery.

(2 Centres: Proposed outlay Rs. 520 lakhs)

The high incidence of intracranial AV malformations, craniovertebral anomalies, lumbar canal stenosis, epilepsy and other disabling conditions, is sufficient justification to upgrade two centres for neurology and neurosurgery in the north and south of Kerala. These centres should be equipped with full range of diagnostic and therapeutic equipment to provide efficient service to the patients.

5. Nephrology and Transplant Unit.

(Proposed Outlay: Rs. 135 lakhs)

Even though there are five medical colleges in the State, a fully developed Department of Nephrology does not exist in any institution. The demand for a regular Nephrology programme in the community is quite large, and therefore the need for at least one fully developed Department of Nephrology in the State cannot be ignored. As a modern Nephrology Service is complex, and includes intensive patient care, round the clock laboratory service, immunologic studies and transplantation surgery, one Nephrology Centre is proposed.

6. Plastic and Reconstructive Surgery.

(proposed Outlay Rs. 55 lakhs)

In view of the size of the States' population and the prevalence of oral cancer, it is necessary to set up an advanced centre for reconstructive surgery which would include among its specialised staff, Plastic Surgeons, oral Surgeons Orthopaedists, Engineers, Speech Therapists, etc. The centre should serve the

patients with maxillo -facial problems referred to it from all over the State and also serve as a Department of Plastic Surgery for the particular Medical College.

7. Gastroentology

(proposed Outlay Rs. 35 lakhs)

Gastro-intestinal ailments are extremely common in Kerala, and are a major cause of morbidity absenteeism etc. The incidence of intestinal parasitic diseases, peptic Ulcer and pancreatitis in this State is perhaps higher than that in other parts of India. The need to develop an advanced Department with necessary staff and equipment is therefore self evident. It would seem to be economical and advantageous to develop further the existing Department at the medical College Hospital, Trivandrum during the seventh plan period (1985-90).

8. Haematology.

(Proposed Outlay Rs. 125 lakhs)

Apart from nutritional anaemias, leukaemias, haemoglobinopathies and coagulopathies constitute major problems which are poorly investigated and treated in Kerala. Bone marrow transplant and other modern forms of treatment for haematologic conditions have already been introduced in other centres in India. As there is an urgent need to set up at least one advanced centre for haematology with complete facilities, its development could be considered as addition to the Regional Cancer Centre, for which additional resources should be provided.

9. Endocrinology and Metabolism.

(Proposed Outlay Rs. 70 lakhs)

Kerala does not have a Department of Endocrinology and metabolism in any of the Medical Colleges, with the result that investigations for hormonal disorders are sought outside the State. Even more distressingly a regional problem of great importance such as pancreatic calculi defies understanding even after several decades of its original report. It is proposed that one Department of Endocrinology and metabolism may be set up during the VIIth Plan (1985-90) which could provide diagnostic assay services for all the Medical Colleges, and also take up a regional problem such as Pancreatic calculi for intensive investigation.

10. Genetics and Immunology.

(Proposed outlay Rs. 50 lakh)

Apart from the need for genetic counselling and management of genetic disorders, a modern department of Genetics and Immunology is essential in Kerala in view of the growing importance of biotechnology, as well as probable introduction of new forms of treatment such as gene therapy, in the near future. In order to assimilate the new advances, it is necessary that a base is built in Kerala during the VIIth Plan, in the form of a Department of Genetics and Immunology.

Scheme For Setting Up An Institute Of Medical Research

(Proposed Outlay Rs: 90 lakhs)

The development of superspecialities will certainly promote medical services and encourage research in specialised areas. But research studies on occupational health problems of workers in traditional industries, effect of low dose radiation on immunologic functions, comparative merits of Ayurvedic and Allopathic systems of medical treatment etc, will also have to be conducted in view of their regional importance. It is therefore proposed that the State should set up an Institute of Medical Research which should co-ordinate its research agenda with that of Medical Colleges and the National Institutes to avoid wasteful duplication of resources and effort. The proposed Institute could make significant contribution to scientific knowledge and also become a source of strength to the Medical Colleges in Kerala.

In view of the progress made by the Kerala State Electronics Development Corporation, it would be advisable for the proposed Institute to set up a department for computer applications in Medicine in collaboration with KELTRON. Apart from developing computer applications, the Department could also offer regular teaching courses on computers in medicine to the medical undergraduates and post graduates in Kerala.

Explanatory Note.

Advanced specialities can provide service of high quality if sufficient inputs are available. A second requirement for high quality service is the need to maintain a minimum level of performance constantly without periodic interruptions and slow downs.

Inputs

In preparing the table 7 on the inputs for various advanced specialities, it was assumed that no fresh building construction would be required to house them. This assumption was made because the foundations for these specialities already exist in the Medical Colleges of the State, and it would only be necessary to upgrade them for the Seventh Plan programmes. Provision for building has been made only in respect of the Institute of Medical Research.

Performance targets.

In fixing performance targets, the minima prescribed by international agencies or those already accepted in this country were used as a basis. Where no such minima exist, the needs of the speciality and patient care were the main basis for suggesting performance targets.

Personnel

Specialised personnel are required to run advanced clinical specialities and fully equipped laboratories are essential for round the clock operation. This implies the requirement of large number of para-medical personnel, who should be free from frequent transfers. The medical staff shown in Table 7 is at the consultant level. The figures given in the above table do not include general staff such as typists, assistants, cleaners etc.

Expenditure.

The annual recurring expenditure in Table 7 includes the salaries of specialised personnel, and cost of imported items such as recording paper, X-Ray films, chemicals and reagents, implants, spares, and surgical instruments.

Selective locations

The scarcity of trained personnel and resources would necessitate the selective locations of the upgrades Departments during the VIIIth Plan period. The Government could consider a scheme for the selective locations of the proposed super specialities and Institute of Medical Research, keeping in view the medico-social needs, geographical balance and existing facilities.

A perspective plan could also be prepared for adding other advanced specialities in the Medical Colleges during subsequent plans. The ultimate aim would be the provision of all advanced specialities in each of the five Medical Colleges in the State by 2000 AD.

APPENDIX. II.

Scheme for the Development of a Medical Speciality for Infectious Diseases.

The large majority of medical problems in India, as in other developing countries, continues to be caused by infections. Epidemics of infectious diseases affect thousands of population every year. Factors such as nutrition, life style, environmental hygiene, climate, ecological perturbations, variations in herd immunity, exposure to antibiotics and many others as yet unidentified, induce qualitative and quantitative changes in infectious diseases. Geographic variations in infectious diseases are well known.

Advances in micro biology, immunology, pharmacology, patho physiology, and biochemistry have led to greater understanding, speedier diagnosis, better prevention, and more effective treatment of infectious diseases. But this involves the recognition that infectious diseases form a separate speciality requiring special attention and study. This awareness is present, in countries like U.S.A., where infectious diseases is a very well developed speciality. But this has not become a popular speciality in India and other developing countries.

In the Medical Colleges of Kerala, while most other specialities have full-fledged staff, even up to Directors and Professors, Infectious Diseases' are served by a Tutor or at the most an Assistant Professor who works in the Department of medicine and looks after the Isolation ward. Medical students get little training in the field of infectious diseases. To remedy this serious defect, the following measures are proposed.

1. Every Medical College should have initially a Unit for infectious diseases, which should ultimately develop in to a full-fledged department. Qualifications for teachers in infectious deseases are to be so fixed that they should have a postgraduate degree in medicine with training/degree in Microbiology.

2. Separate

accommodation should be provided for the infectious diseases unit/department for patient care, diagnostic laboratory work and research. It is also suggested to build an infectious disease hospital attached to every medical college in the State. The hospital may be provided with 100 beds, 40 for children, 40 for males and 20 for females.

3. The proposed units of infectious diseases attached to medical colleges should also serve as Research Centres for the study of local problems. All of them should be capable of tackling bacterial diseases, while at least one or two should specialise on viral, parasitic and mycotic diseases.

4. There is no suitable postgraduate training course in infectious diseases available in India at present. It would therefore be desirable to organise a properly planned postgraduate diploma/degree course in infectious diseases in one or two medical colleges in Kerala. This would need the concurrence of the University as well as the Medical Council of India.

5. There should be close liaison between doctors in the Department of Health Services Medical Colleges as well as private practitioners in the matter of infectious diseases. Orientation Courses should be organised for doctors in service and in private practice to develop an awareness of the problems, and to update their information on infectious diseases.

Anticipated Expenditure

Non-recurring.

1. Infectious Disease Hospitals—(with 100 beds and attached laboratories)—Rs. 25 lakhs per centre.

2. Equipments for research—Rs. 5 lakhs per centre.

Recurring.

1. Salaries of (1) Medical, paramedical and nursing staff (2) Laboratory staff.

Medical staff/per centre

Professor/Associate Professor	1
Assistant Professor	1
Tutor	3

Non Medical staff

Nursing staff)	For 100 beds
Para-medical staff		

Laboratory Staff

Techincians	2
Last Grade workers	2

b. Chemicals and reagent for centre—Rs. 1 lakh. (drugs not included)

c. Expenditure on starting post-graduate course.

Initial expenditure—Rs. 5 lakhs.

Recurring expenditure—stipends for students.

CHAPTER IV

Perspective Plan For Medical Education (1985-2000 A.D.)

Kerala holds the proud record of maintaining lower rates of birth, death and infant mortality as well as higher life expectancy in respect of its population. This is due to the maintenance of a high standard of personal and environmental hygiene by the people as well as the operation of an effective health care system in the state. This doesn't mean that the prevailing health care system is perfect in all respects. There are many pitfalls and shortcomings in the system which need urgent rectification. The High Power Committee on Health Services (1979) headed by Dr. K.N. Pai attempted an in-depth study on the working of the existing public health institutions in the State. The Report submitted by the above committee contains several suggestions as correctional measures and steps for toning up the efficiency of those institutions. In this connection it is to be pointed out that dearth of medical personnel, shortage of medical and public health institutions, inadequacy of drugs etc. are some of the major aspects which call for immediate attention.

Man Power For Health Care

The man power for health care in Kerala is far below the approved norms. The shortage is acute in the case of specialists, nurses, and other para medical staff. The Health Survey and Planning Committee set up by the Government of India in 1961 (Mudaliar Committee) prescribed the following norms to be achieved by the end of the Fourth Five Year Plan.

Category of Personnel

1. Doctor

Norm suggested.

One doctor for 3000 to 3500 of the population.

- | | |
|----------------------------|--|
| 2. Dental Surgeon | One dental surgeon for 3000 to 3500 of the population. |
| 3. Nurse-midwife | One for 2000 of the population by 1981 |
| 4. Auxiliary Nurse-midwife | One for 5000 of the population by 1976 |
| 5. Pharmacist | One for every three doctors. |

Besides the above, the Mudaliar Committee has prescribed the norm of one medical college for every 50 lakh of the population, and one hospital bed for every thousand of the population.

Kerala, with a population of 254.5 lakhs as per 1981 census, has now five medical colleges. At the end of the year 1980-81, there were 998 medical and public health institutions. With a total bed strength of 32,447. The availability of hospital beds per lakh of population works out to 128. Thus it can be seen that the norms in respect of medical colleges and bed-population ratio, as recommended by the Mudaliar committee has already been achieved.

Requirement and availability of medical and paramedical Personnel.

Projections on the requirement of certain categories of medical and para-medical personnel during the period 1985-2000 A.D. have been made here, on the basis of population estimates, and norms of requirement. Availability of these personnel during the above period has also been projected on the basis of the present intake of students for the concerned courses, assuming 10 per cent wastage in intake, as well as 2 per cent annual depletion due to retirement, death etc, in the gross availability. In the book 'Man Power Studies, Vol. I published in 1977 by the Bureau of Economics and statistics, the above procedure has been adopted to project the requirement, and availability of doctors, dental Surgeons, Nurses, ANMs, and Pharmacists up to the year 1981.

Doctors

Kerala has at present five medical Colleges, with an intake

capacity of 700. The fifth medical college at Trichur started functioning in January 1982, and the first batch of doctors from that medical college will be available for employment in 1987 only. Availability of doctors has been estimated on this assumption. The requirement, availability and surplus/deficit of doctors, for some selected years are given below. Year-wise data for the period 1985-2000 A.D. are furnished in the appendix tables.

Table (III)

Requirement and Availability of Doctors

Year	Cumulative Requirement (Nos)	Cumulative Availability (Nos)	Surplus (+) or Deficit (-) (Nos)
1985	7802	8976	+ 1176
1990	8520	11001	+ 2481
1995	9304	12910	+ 3606
2000	10159	14635	+ 4486

Dental Surgeons

The Bhore Committee has recommended as early in 1946, that there should be one dental surgeon for every 4000 of the population by 1981. The Mudaliar Committee (1961) has recommended almost same norm of requirement of dental surgeons, as that for doctors, viz., one surgeon for 3000 to 3500 of the population. In the present circumstances it is impossible to achieve this target, as the intake in the Dental Colleges is very small, compared to that for MBBS course. It is therefore more realistic to have a dental surgeon for every 25000 to 30,000 of the population. This norm has been adopted by the Bureau of Economics & Statistics for estimating the requirement of dental surgeons, up to 1981.

Table (iv)

Requirement and availability of dental Surgeons.

Year	Cumulative Requirement (Nos)	Cumulative Availability (Nos)	Surplus (+) or Deficit (-) (Nos)
1985	910	622	(-) 288
1990	994	858	(-) 136
1995	1085	1073	(-) 12
2000	1185	1266	(+) 84

At present there are only two dental colleges in Kerala with a total intake capacity of 70. In case more dental colleges are not started or the intake capacity not enhanced, the deficiency of dental surgeons will continue up to 1995. By 2000 A.D. dental surgeons are likely to become surplus.

General Nurses

The Registrar, Medical Council has reported that at present there are 10 government institutions and 43 private institutions conducting General Nursing Course. Total annual intake capacity is 1044 (Government institutions: 270; Private institutions: 774).

Table V

Requirement and availability of General Nurses

Year	Cumulative Requirement (Nos)	Cumulative Availability (Nos)	Surplus (+) or Deficit (-) (Nos)
1985	13654	11184	- 2470
1990	14910	14535	- 375
1995	16281	17565	+ 1284
2000	17778	20305	+ 2523

Provided, the existing intake capacity for general Nursing Course is not enhanced, deficiency for general nurses will continue up to 1991. From 1992 onwards, there is very likelihood of general nurses to become surplus over requirement.

Female Health Workers (ANMs)

At present, there are 13 FHW Training Schools in the State (4 Government and 9 Private) with annual admission capacity of 290. The estimates of requirement and availability of FHWs are given below.

Table vi**Requirement and Availability of FHWS (1985-2000) A.D.**

Year	Cumulative Requirements (Nos)	Cumulative Availability (Nos)	Surplus (+) or Deficit (-) (Nos)
1985	5462	4646	- 816
1990	5964	5428	- 536
1995	6512	6135	- 377
2000	7111	6774	- 337

Thus it is seen that the deficiency of FHWS will continue to exist even after 2000 AD, provided additional training schools are not opened or present intake capacity is not enhanced sufficiently. Steps are being taken to start 10 new training schools for Multi-purpose Health workers in Government Institutions attached to Medical Colleges and Regional Health and Family Welfare Training Centres at Trivandrum and Calicut.

Pharmacists

Degree Course in Pharmacy (B.Pharm) is now conducted only in Trivandrum Medical College. with intake capacity 28 Diploma-Courses are hold in the medical colleges at Trivandrum, Alleppey, Kottayam and Calicut and the total admission capacity in above colleges is 125.

Steps have been taken to start an M.Pharm Course in the Medical College, Trivandrum. Assuming annual intake capacity for Pharmacy Courses to be 125, the availability and requirement of Pharmacists are estimated for the period 1985-2000 A.D.

Table (vii)**Requirement and Availability of Pharmacists (1985-2000 A.D.)**

Year	Cumulative Requirement (Nos)	Cumulative Availability (Nos)	Surplus (+) or Deficit (-) (Nos)
1985	2601	1884	(-) 717
1990	2840	2235	(-) 605
1995	3101	2552	(-) 549
2000	3386	2838	(-) 548

The deficiency of pharmacists will continue to exist beyond 2000 AD; exhibiting a declining trend. If the Ward Pharmacy Scheme as recommended by the Pai Committee is also implemented and the requirements of Chemists and requirements of pharmacists as per the Chemists and Druggists Regulations are to be fully met, actual need and deficit will be more. In order to reduce the deficit, it is essential, either to open more centres to conduct the above courses or to enhance the present intake capacity.

Medical Institutions

At the end of the year 1981-82, there were 968 medical institutions in Kerala. This implies that, on the average there was one medical institution for every 40 sq.km. in the State. Disparity exists among the various districts, in respect of the distribution of these institutions. The Districts of Wynad and Idukki are backward in this regard. (See Table No. 8)

Even though Kerala has achieved the target of one bed per thousand of the population as early as in 1969-70, the bed-population ratios in respect of the districts of Idukki, Quilon, Malappuram, Palghat and Cannanore stand less than the above norms.

The Pai Committee, while studying in depth the functioning of the public health institutions in the State, suggested certain norms for the requirement of the various categories of these institutions. The norms suggested in the Report of the above Committee are given below:

- | | |
|---------------------------|--|
| 1. District Hospitals | : One for each district. |
| 2. Intermediate Hospitals | : One for every 4 lakh of population. |
| 3. Primary health Centre | : One for every 80,000 of the population, reduced by the number of Intermediate Hospitals |
| 4. Basic Health Units | : One for every 20,000 of the population, reduced by the PHCs and Intermediate Hospitals. |
| 5. Sub Centres | : One for every 5,000 of the population reduced by the total number of Intermediate hospitals PHCs and Basic Health Units. |

On the basis of population estimates, for the period 1985-2000 A.D., at 5 year intervals the requirements of the various types of institutions have been worked out, and the relevant figures are given in the following table. (

Table (viii)
Requirements of various categories of medical institution

Category of Institution.	No. of Institutions required			
	1985	1990	1995	2000
1. District Hospital	15	15	15	15
2. Intermediate Hospital	68	75	81	89
3. P.H. Centre	273	298	326	355
4. Basic Health Unit	1024	1118	1221	1334
5. Sub Centre	4097	4473	4885	5333
Total	5475	5977	6526	7124

Existence of 5475 medical institutions implies the availability of one institution for every 7 Sq. km. in the State. Achievement of the target for 2000 A.D. will make available one medical institution for every 5 sq. km.

Ayurveda

At present only about one third of the villages in this state have the facility for treatment by Indian system of medicine. It is envisaged that by 2000 A.D. all the villages should get the above facility. Hence, the objective should be to start 50 dispensaries in a year, so that the target could be achieved within 10 to 15 years.

A minimum number of 30 beds must be made available in local hospitals. In Taluk hospital minimum bed strength should be 50. At least one speciality according to the requirement of the region should be available in taluk hospitals.

District hospital must have bed strength of at least 200. The specialities, Visha, Marma, Netra etc. are proposed to be taken up by District hospitals.

During the period 1985-2000, it is envisaged to start five farms for growing medicinal plants. Establishment of a Central Drug Testing Laboratory with all facilities for standardisation of medicines, is also urgently needed. Training programmes for physicians in Panchakarma, Vishachikitsa, Manasika chikitsa, Netra chikitsa etc. have to be organised in a phased manner during the above period.

Homoeopathy

It is envisaged to establish 15 Research Hospitals for skin and mental diseases, during the period 1985-2000, as a phased programme. About 60 refresher courses are proposed to be conducted for Homoeo Medical Officers. In addition to the above, arrangements will have to be made to conduct 15 training courses for nurses and Pharmacists, during the said period.

By the end of 2000 A.D., it is envisaged to raise the total annual intake in the Homoeo Degree Courses to 400 and in the Diploma Courses to 300.

At present, about 1/6th of the Panchayats in the state have the facility for treatment by the system of Homoeopathic medicine. It is envisaged that by 2000 A.D., the people of all the Panchayats should have the facility of getting Homeopathic treatment. In order to achieve the goal, within 15 years, a minimum number of 60 dispensaries in a year has to be opened.

There are about 1/4th of the taluks in this state, having hospitals, with a minimum of 25 beds each. In order to achieve the goal of having one hospital for each taluk, by the end of 2000 A.D., at least three hospitals per year has to be opened from 1986 onwards. The bed strength in each hospital has to be raised to a minimum of 100.

In order to have one District level hospital for each District, three more such hospitals have to be opened. This can be achieved within the VIIIth Plan period itself. Each District Hospital should have a minimum bed strength of 200, by the end of 2000 A.D.

The Outlays of important schemes proposed for implementation during the period 1985-2000 are given below.

Name of scheme	Proposed Outlay
1. Research Hospital (15 Nos) for skin and Mental diseases.	Rs. 150.00 lakhs
2. Short refresher Courses (60 Nos) for Homoeo Medical Officers	Rs. 6.00 lakhs
3. One year training Courses (15 Nos) for Nurses and Pharmacists (stipendary)	Rs. 30.00 lakhs
Total	Rs: 186.00 lakhs

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TABLE NO. I

Pattern of Investment on Health Schemes in Different plan periods (All India)

Plan	Total Plan investment	Health Outlay	(Rs. Crores)
			Allocation to health as per-
			centages of the total allocation
1	2	3	4
First Plan (1951-56)	1960.00	65.20	3.30
Second Plan (1956-61)	4672.00	140.00	3.00
Third Plan (1961-66)	8576.00	225.90	2.60
Annual Plan (1966-69)	6225.40	140.20	2.10
Fourth Plan (1969-74)	15778.80	335.50	2.10
Fifth Plan (1974-78)	39322.00	532.70	1.40
Annual Plan (1978-79)	11650.00	281.53	2.42
Annual Plan (1979-80)	12601.00	275.45	2.19
Sixth Plan (1980-85)	97500.00	1821.05	1.87
Outlay (1980-81)	14593.00	316.80	2.16
Tentative Outlay (1981-82)	17417.31	356.60	2.05
Tentative Outlay (1982-83)	21137.00	392.61	1.86

Source : India—1982.

Table No. 2
Plan outlay and expenditure. (Rs. lakhs) on medical and public health services in Kerala State.

Period	Plan Outlay	Expenditure	% of Expenditure to plan outlay.
Ist Plan 1951-56	192.00	258.96	135.00
IInd Plan 1956-61	847.74	655.46	77.32
IIIRD Plan 1961-66	1350.00	1588.49	117.63
Three Annual Plans 1966-67 to 68-69	477.45	495.02	103.68
IVth Plan 1969-74	1044.00	859.21	81.00
Vth Plan 1974-79	1249.00	1477.31	118.28
1978-79	375.00	464.06	123.75
1979-80	489.45	438.69	89.62
1980-81	736.25	627.72	85.26
1981-82	750.00	894.00 (R.E.)	119.20
1982-83	900.00	—	—

Table No.3
Sixth Plan (1980-85)
Outlay and Expenditure on Medical Education & Research

Name of Scheme	Sixth	(Expenditure Rs. Lakhs)			1983-84 B.E.
	Plan Outlay	1980-81 Accounts	1981-82 Accounts	1982-83 R.E.	
A. ALLOPATHY					
1. Medical College, Trivandrum	170.00	35.67	58.84	39.00	47.00
2. Medical College, Kottayam.	170.00	43.39	35.48	35.00	40.00
3. Medical College, Alleppey	170.00	21.97	46.16	35.00	38.00
4. Medical College, Calicut.	165.00	46.61	105.23	40.00	37.15
5. Medical Collge, Trichur	---	---	---	152.00	65.00
6. Regional Limb fitting Centre, Medical College, Trivandrum (Zonal Limb fitting Centre)	15.00	2.50	1.65	2.50	2.50
7. Institute of Mental Health and Neuro Sciences.	15.00	---	0.03	0.50	0.50
8. Nursing Education	40.00	9.51	8.97	16.00	16.50
9. College of Pharmaceutical Science, Trivandrum.	10.00	0.38	1.20	3.00	3.00
10. Reorientation of Medical Education and Upgradation of the Department of Ophthalmology, Medical College, Trivandrum. (State Share)	55.00	8.48	6.40	10.00	10.00
11. Providing Generators in the Medical College Hospitals.	5.00	---	1.74	1.00	1.00
12. Establishment of Regional Cancer Centre, Trivandrum (State Share)	60.00	19.00	11.37	10.00	20.00
13. Dental College, Trivandrum	30.00	0.95	1.56	5.00	5.70
14. Training of Teachers in Specialities	10.00	1.87	1.18	2.00	2.00
Total (Education in Allopathy)	915.00	190.33	279.81	351.00	288.35
B. AYURVEDA					
1. Ayurveda College, Trivandrum	10.00	---	0.48	2.00	3.00
2. Ayurveda College, Trippunithura	12.00	0.01	2.66	2.00	2.50

3.	Construction of Hostels, Staff Quarters, Pharmacy Hospitals etc. for Ayurveda College Trivandrum and Trippunithura	55.00	2.59	3.66	7.00	7.00
4.	Grants in aid to private Ayurveda Colleges, Shornur and Ollur and assistance to Ayurveda College Kottakkal.	3.00	3.85	0.25	0.95	0.95
5.	Expanding of Collegiate Hospital, Trivandrum.	8.00	1.00	3.49	1.50	2.00
6.	Paywards for Collegiate Hospitals.	10.00	0.28	0.67	1.00	1.00
7.	Publication Division in Ayurveda College Trivandrum	6.00	0.44	0.43	1.00	1.00
8.	Training of Pharmacists and Nurses.	2.00	0.09	0.06	0.25	0.25
9.	Training in Prakrithi Chikitsa.	2.00	---	---	0.50	0.50
10.	Acquiring and Preserving Manuscripts, preparing text Books, and expanding College Libraries	11.00	1.14	1.24	2.00	2.00
11.	Specialisation in Ayurvedic Branches, Condensed degree Courses and continuing degree course in Pharmacy	7.50	0.17	---	1.50	1.50
12.	Refresher Courses for Medical Teaching and Paramedical staff.	2.50	0.19	---	0.50	0.50
13.	Regional Research Institute, Pujapura, including model demonstration gardens and herbs.	35.00	0.31	0.20	5.00	5.00
	Total (Education Ayurveda)	164.00	10.27	13.14	25.20	27.20
C. HOMOEOPATHY						
1.	Starting of Degree College and Hospitals in Homoeopathy	10	2.11	2.98	2.00	5.00
2.	Development of Existing Homoeopathy Degree College, Calicut--Building and Hospitals Buildings.	50	4.27	6.99	11.00	12.00
3.	Refresher Courses to Staff and Medical Officers.	2	---	---	---	---
	Total (Education Homoeopathy)	62	6.38	9.97	13.00	17.00

TABLE NO 5

MEDICAL COLLEGE, TRIVANDRUM

Sl. No	Name of Scheme	VII Plan Total Outlay proposed (in lakhs)	Phasing of Outlays				
			85-86	86-87	87-88	88-89	89-90
I. CONSTRUCTION WORKS							
1.	Auditorium—cum Examination Hall	25	3	5	5	5	7
2.	Building For Super Speciality	40	5	10	10	5	10
3.	Allergy Clinic at Pulayanarkotta	8	2	2	2	1	1
4.	Generator	30	10	10	5	3	2
5.	Paediatrics block extension	15	5	5	5	—	—
6.	Casualty block extension ENT extension-cum-infectious Diseases	10	2	2	2	2	2
7.	Ladies Hostel	20	5	5	5	3	2
8.	College of Pharmaceutical Science Extension	10	3	3	2	2	—
9.	Construction of quarters	15	3	3	3	3	3
10.	College Building Extension	25	5	5	5	5	5
11.	Dental College Extension	15	3	3	3	3	3
12.	Central Work Shop	5	1	1	1	1	1
NEW WORKS							
1.	Construction of new Administrative Block	15	3	3	3	3	3
2.	Operation Theatre for SAT Hospital	20	5	5	5	3	2
3.	New Building for Ophthalmic Hospital	15	3	3	2	2	5
4.	Building for Department of Medical Illustration	25	5	5	5	5	5
	Total	293	63	70	63	46	51

II. DEVELOPMENT OF DEPARTMENTS

1.	Non Clinical Departments	40	10	10	10	5	5
2.	Speciality Departments						
	i. Gastroenterology	12	3	3	3	2	1
	ii. Nephrology	15	3	3	3	3	3
	iii. Neurology	15	3	3	3	3	3
	iv. TB & Respiratory	15	3	3	3	3	3
	v. Cardiology	45	15	5	5	10	10
	vi. Radiology	15	5	5	3	3	1
	SURGICAL SPECIALITY						
1.	Plastic Surgery	15	5	3	3	3	1
2.	Urology	10	3	2	3	1	1
3.	Surgical Gastroenterology	12	3	3	3	2	1
4.	Neuro Surgery	50	30	5	5	5	5
5.	Orthopaedics	10	3	2	1	3	1
6.	Thoracic Surgery	30	5	5	5	5	10
7.	Central Institute for blood bank and Serum Manufacture	20	4	4	4	4	4
	Total	304	95	54	54	52	49

III. OTHER SCHEMES

1.	Pharmacy	15	3	3	3	3	3
2.	Dental College	15	3	3	3	3	3
3.	Medical Laboratory Technology	10	3	3	2	1	1
4.	Continuing Medical Education	10	2	2	2	2	2
5.	Training of Teachers	10	2	2	2	2	2
6.	Grant-in-aid	5	1	1	1	1	1
7.	Matching grant for RCC Society	125	25	25	25	25	25
8.	Rehabilitation for mentally Retarded	15	3	3	3	3	3
9.	International Training Centre for Rehabilitation	10	2	2	2	2	2
10.	Upgradation of Ophthalmology Department	10	2	3	3	1	1
11.	College of Nursing starting M.Sc. Course	5	1	1	1	1	1
	Total	230	47	48	47	44	44

MEDICAL COLLEGE, KOTTAYAM

Sl. No.	Name of Scheme	VII Plan	Phasing of outlays				
		total Outlay Lakhs	85-86 lakhs	86-87 lakhs	87-88 lakhs	88-89 lakhs	89-90 lakhs
1.	1. Continuing works	3	4	5	6	7	8
	1. College Building proper	80	25	25	15	10	5
	2. Speciality block	100	30	20	20	15	15
	3. Nurses Hostel	10	5	5	---	---	---
	4. Construction of Quarters for Staff	30	15	5	5	5	---
	2. New Works						
	1. Construction of additional quarters	30	10	10	5	5	---
	2. Women and Children's Hospital	100	25	30	30	10	5
	3. Additional Hostels for Men and Women	40	10	10	10	5	5
	4. Post Graduate Hostel	10	3	4	1	1	1
	5. Single Officers Hostel and a guest House	10	5	3	2	---	---
	6. Zonal Artificial Limb Fitting Centre	7	1	2	2	1	1
	7. College of Nursing and Hostel	10	3	3	2	1	1
	8. Building for Paramedical Courses	5	2	1	1	1	---
	9. Dental College Building	15	3	4	5	2	1
	10. Regional Cancer Centre	10	1	2	4	2	1
II.	Development of Departments						
	1. Improvement of Existing departments including procurement of costly equipments like Cat scan etc.	200	125	25	25	15	10
	2. Starting of new departments like Gastroenterology, (Medical & Surgical endocrinology, haematology etc.)	90	20	20	20	15	15

III.

Other Schemes

1. Starting of B.Pharm Course.
2. Dental College
3. Regional Cancer Centre
4. Paramedical Training Programme.
 - a. C.S.R. Training Course
 - b. Health Workers Training Programme.
 - c. Lab. Technician Course (MLT)
 - d. Radiographer Course
 - e. Theatre Mechanic Course

	100	15	15	25	25	20	
Total Outlay proposed:	840						13

T.D. MEDICAL COLLEGE ALLEPPEY

Sl. No.	Name of Scheme	7th Plan Total Outlay				Phasing of outlays (Rupees in Lakhs)			Remarks
		Proposed	85-86	86-87	87-88	88-89	89-90		
1	2	3	4	5	6	7	8	9	
I. CONSTRUCTION WORKS:									
1.	Construction of Collegiate Hospital at Vandanam.	110	30	20	20	20	20		
2.	Completion of first floor of the college Building	80	20	10	10	10	30		
3.	Construction of staff quarters	40	10	10	10	10	---		
4.	Construction of Medical College Health Unit at Amabalapuzha	20	10	10	---	---	---		44
5.	Construction of Pharmacy Building	30	15	15	---	---	---		
6.	.. Administrative building	10	5	5	---	---	---		
7.	.. Stadium	10	5	5	---	---	---		
8.	.. House Surgeon's Quarters	10	5	5	---	---	---		
9.	.. Nurses' Quarters	15	5	5	5	---	---		
10.	.. Lecture Theatre Complex	10	5	5	---	---	---		
11.	.. P.G. Hostel	10	5	5	---	---	---		
12.	.. School of Nursing	5	5	---	---	---	---		

II. DEVELOPMENT OF DEPARTMENTS

1. Biochemistry	10	5	5	---	---	---
2. Pathology	10	5	5	---	---	---
3. Medicine	15	5	5	5	---	---
4. Surgery	20	10	5	5	---	---
5. Obstetrics & Gynaccology	10	5	5	---	---	---
6. Social and Preventive Medicine	5	---	3	2	---	---
7. Physiology	5	---	3	2	---	---
8. Anatomy	5	---	3	2	---	---
9. Pharmacology	5	---	3	2	---	---
10. Microbiology	7	---	3	2	2	---
11. Forensic Medicine	5	---	3	2	---	---
12. Radiology	25	10	10	5	---	---
13. Ophthalmology	10	---	5	3	2	---

Other Schemes

1. Starting of MLT Courses						
2. Starting of Health Inspectors Courses						
3. Starting of College of Nursing	15	3	3	3	3	3

MEDICAL COLLEGE, TRICHUR

Sl. No.	Name of scheme	VII plan total outlay proposed	Phasing of outlays				
			1985-86	1986-87	1987-88	1988-89	1989-90
1	2	3	4	5	6	7	8
I. CONSTRUCTION WORKS:			Rupees in Lakhs				
	1. College Building (4 Floors)	500	100	100	100	100	100
	2. Medical College Hospital	500	100	100	100	100	100
	3. Chest Hospital	1.25	1	0.25	---	---	---
	4. Women & Children Hospital	400	100	100	100	50	50
	5. Speciality Block	150	---	---	---	50	100
	6. Auditorium cum Exam. Hall	3	---	---	---	2	1
	7. Hostels—8 blocks (3 for men students, 3 for Lady students, 1 for Bystanders, 1 for Government Servents—single accommodation)	400	100	100	100	50	50
	8. Staff Quarters	200	50	50	50	25	25
	9. Gymnasium	4	---	---	---	2	2
	10. Guest House	5	3	1	1	---	---
	11. Consumer stores, Post Office, Bank, Police Station, P.W.D., PHED	10	2	2	2	2	2
	12. College of Nursing	15	---	---	5	5	5
	13. School of Nursing & Nurses Hostel	30	15	5	5	5	---
	14. College of Pharmacy	10	---	---	---	5	5
	15. Dental College	10	---	---	---	5	5
	16. Water supply & Drainage	50	30	10	5	5	---
	17. Development of Roads	15	5	5	5	---	---
	18. Compound wall	20	10	5	5	---	---
	19. Laundry Incinerator	10	5	3	2	---	---
II. Development of Departments							
	1. Medical College	50	10	10	10	10	10
	2. Hospitals	100	40	15	15	15	15

MEDICAL COLLEGE CALICUT

Sl. No.	Name of scheme	VII Plan					Phasing of Outlays (Rs. Lakhs)	
		Total outlay proposed	1985-86	1986-87	1987-88	1988-89	1989-90	
1	2	3	4	5	6	7	8	
I.	Construction Works							
	1. T.B. Hospital	50.00	20.00	15.00	10.00	4.00	1.00	
	2. Institute of Maternal & Child Health Administration Block cum store section	10.00	5.00	2.00	3.00	1.00	1.00	
	3. Laundry for Institute of Maternal & Child Health -	10.00	5.00	2.00	1.00	1.00	1.00	
	4. Central Gas supply to IMCH	5.00	1.00	1.00	1.00	1.00	1.00	
	5. Examination hall cum Auditorium	30.00	10.00	10.00	5.00	3.00	2.00	
	6. Residential quarters to staff	100.00	50.00	20.00	10.00	10.00	10.00	
	7. Sports pavilion cum Gymnasium cum Indoor court	18.00	6.00	4.00	3.00	3.00	2.00	
	8. College of Nursing	30.00	20.00	5.00	3.00	1.00	1.00	
	9. College of Pharmacy	20.00	5.00	5.00	5.00	3.00	2.00	
	10. Building for consumer store	5.00	1.00	1.00	1.00	1.00	1.00	
	11. Additional Men's Hostel	40.00	20.00	10.00	5.00	3.00	2.00	
	12. Infections disease hospital	30.00	10.00	10.00	5.00	3.00	2.00	
	13. Construction of twin operation theatre for plastic Surgery	15.00	5.00	3.00	3.00	2.00	2.00	
	14. Addl. floor to Operation theatre M.C.H.	40.00	15.00	10.00	5.00	5.00	5.00	
	15. Addl. facilities to existing departments— \ continuing construction.	15.00	5.00	3.00	3.00	2.00	2.00	
	16. Water supply and drainage scheme	50.00	25.00	10.00	5.00	5.00	5.00	
	17. Additional Ladies Hostel	30.00	10.00	5.00	10.00	3.00	2.00	
	18. Swimming pool	50.00	10.00	10.00	10.00	10.00	10.00	

19. Development of roads	10.00	2.00	2.00	2.00	2.00	2.00
20. Compound wall for campus and Hospitals	50.00	20.00	10.00	10.00	5.00	5.00
21. Hospital for Govt. servants—single accommodation	50.00	20.00	10.00	10.00	5.00	5.00
II. Development of Departments						
1. Institute of Immunology	20.00	10.00	5.00	2.00	2.00	1.00
2. Kindney Transplant Unit	10.00	5.00	2.00	1.00	1.00	1.00
3. Cardiothoracic Surgery	10.00	5.00	2.00	1.00	1.00	1.00
4. Gastroenterology	10.00	5.00	2.00	1.00	1.00	1.00
5. Haematology laboratory	5.00	2.00	1.00	1.00	1.00	—
6. Cancer treatment equipments	15.00	10.00	2.00	1.00	1.00	1.00
7. Diagnostic radiology equipments	20.00	10.00	5.00	3.00	1.00	1.00
III. Other Schemes						
1. Re-orientation of Medical Education—state share	50.00	10.00	10.00	10.00	10.00	10.00
2. National Programme for prevention of Blindness—state share	50.00	10.00	10.00	10.00	10.00	10.00
3. Re-orientation of Medical Education	50.00	10.00	10.00	10.00	10.00	10.00
4. National Programme for prevention of Blindness	50.00	10.00	10.00	10.00	10.00	10.00
5. National Leprosy eradication programme	50.00	10.00	10.00	10.00	10.00	10.00

Table. 6
VII Plan Estimate (Advanced specialities at a glance
(Rs. in lakhs)

	Capital	Recurring
1 & 2 Cardiology Cardiac Surgery (2 Centres)	360	110
3 & 4 Neurology Neurosurgery (2 Centres)	440	80
5. Nephrology and transplant Unit	100	35
6. Plastic and Reconstructive Surgery	40	15
7. Gastroenterology	30	5
8. Haematology	100	25
9. Endocrinology	50	20
10. Genetics & Immunology	40	10
Total	1160	300
11. Institute of Medical Research	80	10
Grant Total	1240	310

Table 7
Inputs for Advanced Specialities
(Building cost excluded)

Speciality	Performance	Beds	Annual Recurring (Expenditure in lakhs)		Specialised personnel		Remarks
			Equipment cost (in lakhs)		Medical	Para Medical	
Cardiology	12 catheterisation /week 20-25 OP/day	30 4 ccu	100	3 +	50	25	+ Excludes Post Graduates
Cardiac Surgery	4 open heart/week 8 cardiovascular procedures/week	30 6 icu	80	6*	50	30	* Includes Anaesthetists
Neurology	20 New cases/day-EMC EG sessions daily -Neuroradiologic procedures daily	30 4 icu	70	3	30	15	
Neuro Surgery	8-10 Surgery Procedures/week	30 6 icu	150	4 +	42	25*	+ includes Radiologist * includes running cost of OT Scan
Nephrology and Transplant Unit	12-14 dialysis/ week	40 + icu 6	100*	6 A	50	35	+ Includes surgical beds * Labs for biochemistry tissue typing, dialysis operating and ICU facilities. A. Includes surgeon & immunologists.

Plastic and reconstructive Surgery (including Maxillofacial)	8-10 procedures/week	30	40	4*	30	15	*includes oral surgeon.
Gastroenterology	Three clinics/week 8-10 Special investigative procedures per week	30	30	2	20	5	
Haematology	Paediatric Haematology labs for coagulopathies, haemoglobinopathies, immuno-haematology	30	100 +	3	50*	25	+ Includes equipment for research* in blood cancer * Includes staff for icu, transplant unit.
Indocrinology	-OPD clinics thrice/week RIA estimations for its own patients as well as requests from other colleges.	30	50	2	50	20	
-Genetics and Immunology	Genetic counselling clinic twice/week -Units for population -Chromosomal & biochemical genetics -Immunologic labs for service and research	30*	40	2	15	10	* A division of internal medicine.
Institute of Medical Research		Building 30	Equipment 50	Annual recurring expenditure 10			

Table. 8
District wise distribution of government Medical Institution, and Hospital Beds under
Modern Medicine, Ayurvedic and Homeopathic system of Medicine (1981-82)

District/State	No. of Medical Institution				No. of Hospital beds			
	Modern Medicine	Ayurveda	Homoeo- pathy	Total	Modern Medicine	Ayurveda	Homoeo- pathy	Total
Trivandrum	97	55	24	176	5678	225	150	6053
Quilon	97	48	19	164	2065	150	25	2240
Alleppey	88	52	21	161	3557	140	75	3812
Kottayam	66	31	20	117	2723	140	125	2988
Idukki	46	21	14	81	395	60	50	505
Ernakulam	98	45	21	164	3031	180	50	3261
Trichur	84	70	13	167	3511	203	25	3739
Palghat	83	46	14	143	1399	120	25	1544
Malappuram	89	51	22	162	1062	180	50	1292
Kozhikode	64	36	18	118	3762	50	25	3837
Wynad	29	8	2	39	388	10	—	398
Cannanore	127	68	26	221	2683	141	75	2899
KERALA	968	531	214	1713	30254	1639	675	32568

**Requirements and availability of Doctors
(1985 to 2000 A.D.)**

Year	Requirement of Doctors	Availability of Doctors	Deficit (-) Surplus (+)
1	2	3	4
1985	7802	8978	(+) 1176
1986	7941	9328	(+) 1387
1987	8082	9759	(+) 1677
1988	8225	10181	(+) 1956
1989	8372	10595	(+) 2223
1990	8520	11001	(+) 2481
1991	8671	11398	(+) 2727
1992	8825	11787	(+) 2962
1993	8982	12169	(+) 3187
1994	9141	12543	(+) 3402
1995	9304	12910	(+) 3606
1996	9468	13269	(+) 3801
1997	9637	13621	(+) 3984
1998	9808	13966	(+) 4158
1999	9982	14304	(+) 4322
2000	10159	14635	(+) 4476

Table No.10
Requirements and availability of Dental Surgeon
(1985 to 2000 A.D.)

Year	Requirement of Dental Surgeon	Availaility of Dental Surgeon	Deficit (-) Surplus (+)
1	2	3	4
1985	910	622	(-) 288
1986	926	671	(-) 255
1987	943	719	(-) 224
1988	959	766	(-) 193
1989	977	812	(-) 165
1990	994	858	(-) 136
1991	1012	903	(-) 109
1992	1030	947	(-) 83
1993	1048	990	(-) 58
1994	1066	1032	(-) 34
1995	1085	1073	(-) 12
1996	1105	1113	(+) 8
1997	1124	1152	(+) 28
1998	1144	1191	(+) 47
1999	1164	1229	(+) 65
2000	1185	1266	(+) 81

Table No.11**Requirements and availability of Nurses (1985 to 2000 A.D.)**

Year	Requirement of Nurses	Availability of Nurses	Deficit (-) Surplus (+)
1	2	3	4
1985	13654	11184	(-) 2470
1986	13897	11882	(-) 2015
1987	14143	12566	(-) 1577
1988	14395	13236	(-) 1159
1989	14650	13892	(-) 458
1990	14910	14535	(-) 375
1991	15175	15166	(-) 9
1992	15441	15784	(+) 343
1993	15718	16390	(+) 672
1994	15997	16983	(+) 986
1995	16281	17565	(+) 1284
1996	16570	18135	(+) 1565
1997	16864	18694	(+) 1830
1998	17163	19241	(+) 2078
1999	17468	19777	(+) 2309
2000	17778	20303	(+) 2525

Table No 12
Requirements and availability of Female Health
Workers(1985 to 2000 A.D.)

Year	Requirement of Auxillary Nurse Midwife	Availability of Auxillary Nurse Midwife	Deficit (-) or Surplus (+)
1	2	3	4
1985	5462	4646	(-) 816
1986	5559	4809	(-) 750
1987	5657	4969	(+) 688
1988	5758	5125	(-) 633
1989	5860	5278	(-) 582
1990	5964	5428	(-) 536
1991	6070	5575	(-) 495
1992	6178	5719	(-) 459
1993	6287	5860	(-) 427
1994	6399	5999	(-) 400
1995	6512	6135	(-) 377
1996	6628	6268	(-) 360
1997	6746	6398	(-) 348
1998	6865	6526	(-) 339
1999	6987	6651	(-) 336
2000	7111	6774	(-) 337

Table No. 13**Requirement and availability of Pharmacists
(1985-2000 A.D.)**

Year	Cumulative Requirement (Nos)	Cumulative Availability (Nos)	Surplus (+) or Deficit (-)
1	2	3	4
1985	2601	1884	(-) 717
1986	2647	1957	(-) 690
1987	2694	2029	(-) 665
1988	2742	2099	(-) 643
1989	2790	2168	(-) 622
1990	2840	2235	(-) 605
1991	2890	2301	(-) 589
1992	2942	2366	(-) 576
1993	2994	2429	(-) 565
1994	3047	2491	(-) 556
1995	3101	2552	(-) 549
1996	3156	2612	(-) 544
1997	3212	2670	(-) 542
1998	3269	2727	(-) 542
1999	3327	2783	(-) 544
2000	3386	2838	(-) 548

Table No. 14
Inventory of Private Medical Institutions
No. of Institutions

Sl. No.		Modern Medicine	Homoeopathy	Ayurveda	Others	Total	No. of beds	No. of Doctors	Nurses (general)	Nurses (Special)	Pharmacists	Other technicians
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Trivandrum	164	9	7	—	180	3422	308	707	—	106	311
2.	Quilon	46	11	25	4	86	1997	212	289	31	43	114
3.	Alleppey	66	—	3	—	69	2551	245	507	25	77	134
4.	Kottayam	—	—	—	—	122	4673	304	615	—	87	576
5.	Iddukki	86	1	—	—	87	2696	158	377	19	38	97
6.	Ernakulam	162	4	3	—	169	7746	729	1132	215	188	1215
7.	Trichur	106	1	2	1	110	4722	406	480	46	91	384
8.	Palghat	36	1	4	1	42	791	100	135	5	24	181
9.	Malappuram	59	—	2	—	61	1326	159	314	—	51	255
10.	Kozhikode	92	—	3	—	95	2213	259	412	66	81	567
11.	Wynad	50	—	—	—	50	1236	71	186	1	28	156
12.	Cannanore	81	—	1	—	82	1889	141	20	3	4	480

MEDICAL EDUCATION IN AYURVEDA AND HOMOEOPATHY

I. Ayurveda

At present, five Ayurveda Colleges are functioning in the State. These Colleges, together with their annual intake capacity are listed below.

College	Annual Intake capacity (for degree course)
1. Government Ayurveda College, Trivandrum.	50
2. Government Ayurveda College, Tripunithura.	30
3. Ayurveda College, Kottakkal. (Quasi-government)	30
4. Ayurveda College, Ollur (Private)	30
5. Ayurveda College, Shornur.	30

Seventh Plan (1985-90) proposals

i. Government Ayurveda College, Trivandrum.

The Principal, Government Ayurveda College has proposed 41 Schemes to be taken up for implementation during the Seventh Plan period. The Yearwise-break up of financial targets is given in the following table. The recurring and non-recurring expenditures amount to Rs. 3131.30 lakhs and Rs. 1696.70 lakhs respectively, adding upto a total of Rs. 4828.00 lakhs for the entire Seventh Plan period. For the period 1985-2000 A.D., the tentative outlay proposed, amounts to Rs. 19312.00 lakhs.

AYURVEDA COLLEGE, TRIVANDRUM
Seventh Plan Proposals
(Financial Targets)

(Rs. in Lakhs)

Year/period	Total Outlay		Total
	Recurring	Non-recurring	
1985-86	578.30	353.30	931.60
1986-87	615.80	426.30	1042.10
1987-88	628.35	346.25	974.60
1988-89	646.40	300.20	946.60
1989-90	662.45	270.65	933.10
Total (1985-90)	3131.30	1396.70	4828.00
Total Provision for 1985- 2000 A.D.	---	---	19,312.00

ii. Government Ayurveda College, Trippunithura.

The Principal, Government Ayurveda College, Trippunithura, has proposed an outlay of Rs. 1495 lakhs to implement various schemes in that College during the period 1985-2000 A.D. A summarised statement of the outlay is given in the following table.

Items	Proposed Outlay (Rs. lakhs)
i. College-staff	34.00
ii. Development	
a. Construction of buildings	
Land acquisition etc.	75.00
b. Sanskrit, Samhita and Siddhanta	8.00
c. Swasthavritha	13.00
d. Dravya guna and Rasasasthra	150.00
e. Clinics	375.00
f. Salyasalkya	140.00
g. Sarcera	700.00
Total	1495.00

II. Homoeopathy

Five Homoeo Medical Colleges are at present functioning in the State. These Colleges, together with their annual intake capacity are listed below.

College	Annual Intake Capacity	
	Degree Course	Diploma Course
1. Government Homoeopathic Medical College, Trivandrum	50	—
2. Government Homoeopathic Medical College, Calicut	50	—
3. Athurasramam Homoeopathic Medical College, Kurichi, Kottayam (private)	50	100
4. Sri. Vidyadhiraja Homoeopathic Medical College, Trivandrum (private)	—	60
5. Padiar Memorial Homoeopathic Medical College, Ernakulam (private)	—	60

i. Government Homoeopathic Medical College, Trivandrum

For the implementation of various Schemes in the College, the following outlays are proposed by the Principal.

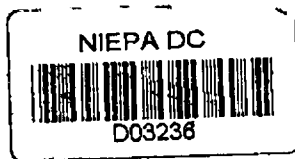
Sl. No.	Name of Scheme	(Rs. in lakhs)	
		Proposed Outlay for the 7th Plan (1985-90)	Proposed Outlay for the period. 1990-2000 AD.)
1.	Starting of degree College (Salaries, Machinery and equipments etc.)	119.55	349.00
2.	Construction of buildings for:		
i.	College	70.00	15.00
ii.	Collegiate Hospital	85.00	25.00
iii.	Hostel for Men and Women	42.50	20.00

iv. Play grounds and Miscellaneous items	5.00	—
v. Staff quarters for R.M.O., Nurses etc.	8.50	20.00
Total	330.55	429.00

ii. Government Homoeopathic Medical College, Calicut

For the implementation of various developmental schemes of this college during the VIIIth Plan, (1985-90) the Principal has proposed a total outlay of Rs. 10/- crores, at the rate of Rs. 2/- crores per annum. The schemes/projects proposed to be implemented are listed below:

1. Starting of Post Graduate degree Course:
2. Providing more facilities for Laboratory, Library, etc.
3. Construction of Buildings for College, Hospital, Hostel Quarters etc.
4. Acquisition of Land for College.
5. Mobile Units—starting of
6. Starting of new Homoeopathic Medical Colleges.
7. Starting of Nursing cum-Pharmacist Training Courses.
8. Inclusion of Homoeopathy in the LSI. Scheme.
9. Inclusion of Homoeopathy in the school Health Programme.



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