

10

File No.

BRANCH

---

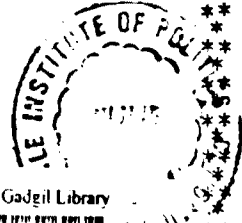
Subject 1

GOVERNMENT OF KARNATAKA

AN ASSESSEMENT OF THE MEDICAL  
AND PARA-MEDICAL MANPOWER  
IN KARNATAKA

1974-79

GOVERNMENT OF KARNATAKA



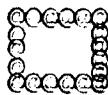
Dhananjayaram Gadgil Library



GIPE-PUNE-173900

AN ASSESSMENT OF THE MEDICAL AND  
PARA-MEDICAL MANPOWER IN KARNATAKA,

1974-79.



MANPOWER AND EMPLOYMENT UNIT  
PLANNING DEPARTMENT  
BANGALORE

1978.

\*\*\*  
\*

## FOREWORD

Manpower Planning, especially in respect of high level skills, assumes great importance in the context of the optimal use of scarce capital. Huge investments made for developing manpower would go waste if the supply is allowed to exceed the demand. It will mean a waste of the scarce resources and at the same time add to the unemployed army of skilled manpower.

This study is concerned with planning for medical and para-medical manpower in Karnataka. The objective of the study was to estimate the demand and supply during the Fifth Five Year Plan period so as to formulate appropriate policies for medical education as well as for the training of para-medical manpower.

The data base is rather very weak in this area. Available data cover mostly the demand for such personnel in the public sector. For a total assessment of the medical manpower needs, the demand in the private or the self-employed sector is equally important. A number of constraints prevent a successful coverage of both.

The study had to get circumscribed by the availability of data and consequently assesses the demand for medical and para-medical manpower in the public sector. It has pointed out the various constraints and has offered suggestions for overcoming deficiencies in a crucial area like that of medical manpower. The State Medical Council has an important role to play in improving the data base for the medical manpower planning particularly in the self-employed sector.

This study was prepared by Shri G.N.Gopalakrishna, Deputy Director with the assistance of Shri S.G.Lingarasaiah, Assistant Director and Shri S. Chandrashekharan, Senior Investigator.

BANGALORE,  
March, 1978.

D. M. Nanjundappa  
Economic Adviser and  
Special Secretary to Government  
Planning Department.

\*\*\*\*\*

AN ASSESSMENT OF THE MEDICAL AND  
PARA-MEDICAL MANPOWER IN KARNATAKA,

1974-79

C O N T E N T S

<u>Chapter</u>	<u>Page No.</u>
1. Introduction .. ..	1
2. Medical and Health Programmes ..	4
3. Growth of Medical Education ..	6
4. Stock of Doctors .. ..	8
5. Doctor-population Ratio ..	11
6. Allopathic Doctors .. ..	12
7. Non-Allopathic Doctors ..	16
8. Dentists .. ..	17
9. Pharmacists .. ..	18
10. Nurses, Auxiliary Nurse Midwives and Lady Health Visitors..	20
11. Other Para-Medical Personnel ..	23
12. Summary and Conclusions ..	24

\*\*\*\*\*

## A N N E X U R E S

Page No.

Annexure 1.	Intake and Out-turn of post-graduates in Medicine from 1960-61 to 1978-79	27
Annexure 2.	The No. of doctors deputed for post-graduate courses in Medicine for the years 1962-76.	28
Annexure 3.	Intake and Outturn of MBBS students in Medical colleges from 1960-61 to 76-77.	29
Annexure 4.	Intake and outturn of MBBS students in govt. medical colleges from 60-61 to 76.77.	30
Annexure 5.	Intake and outturn of MBBS students in private medical colleges from 1960-61 to 1976-77.	31
Annexure 6.	Statement showing outturn of doctors & the number of doctors registered with the Karnataka Medical Council during 1960-76.	32
Annexure 7.	Registration, Migration and Deaths of Ayurveda, Unani and Integrated course Doctors during 1966-77.	33
Annexure 8.	Intake and out-turn of Dental post-graduates and graduates during 1965-79.	34
Annexure 9.	Intake and outturn of B.Pharma and D. Pharma courses for the years from 1965-66 to 1978-79.	35
Annexure 10.	Intake and outturn of Staff Nurses in Government Teaching Hospitals from 1969-70 to 1978-79.	36
Annexure 11.	Statement showing the Demand and Supply of Medical and Paramedical personnel during 1974-79.	37
Annexure 12.	Revised form of application for Registration in the Karnataka Medical council.	38

\*\*\*\*\*

AN ASSESSMENT OF THE MEDICAL AND  
PARA-MEDICAL MANPOWER IN KARNATAKA

1974-79

1. Introduction:

1.1 The importance of providing adequate medical and health facilities is a long recognised one. Long range perspective is very essential in planning for such facilities in view of the lead time involved to provide such facilities. It is also equally necessary to plan for a reasonable spatial distribution of these facilities so that no one particular region/area is unduly benefited at the cost of others.

1.2 In order to assess the requirements and availability of medical and para-medical manpower, this study was initiated. The required material for this exercise was obtained by contacting the concerned departments of the State Government. The requirements of the private sector and the potential for self-employment in certain categories of medical personnel have been assessed independently, to the extent possible.

(b) Objectives:

1.3 The objectives of the report are to estimate:

- i. the demand (requirement) for the Medical and para-Medical personnel during 1974-79, and
- ii. the supply (availability) of the following categories of qualified personnel during 1974-79.

I. Allopathic:

- (a) Post-graduates; and
- (b) Graduates.

II. Ayurvedic and others:

- (a) Graduates in Ayurvedic Medicine
- (b) Graduates in Homoeopathic Medicine.

III. D e n t a l:

- (a) Post-graduates in Dental Surgery
- (b) Graduates in Dental Surgery.

IV. Pharmacists:

- (a) Graduates in Pharmacy.
- (b) Diploma-holders in Pharmacy.

V. Paramedical Staff:

- (a) Nurses.
- (b) Auxiliary-nurse-Midwives.
- (c) Lady Health Visitors.
- (d) Others.

iii. and recommend measures to bring about a balance between supply and demand.

(c) Demand:

1.4. The demand at any period consists of three components viz.

- i. Shortage/vacant posts at the beginning of the period;
- ii. replacement needs during the period; and
- iii. additional requirements due to new programmes and expansion during the period. The concerned departments have furnished the requirements separately for each of these components.

1.5 The data on demand were obtained for each year of the fifth Plan because the annual phasings of the demand are of operational significance. It was possible to obtain the actual demand (i.e., number of posts actually created) in respect of various categories of medical and paramedical personnel for the years from 1974-75 to 1977-78, in most of the cases, from the departments concerned. These figures have been made use of while assessing the total demand for the period, 1974-79.

(d) Supply:

1.6 The supply also can be broken into three components viz.,

- i. unemployed stock at the beginning of the period;
- ii. out turn of educational institutions/departmental training institutions during the period; and
- iii. net migration i.e., the difference between in and out migration.

1.7 The actual magnitude of unemployed medical and para-medical personnel is not available. Hence, the estimates of unemployment are based on the employment exchange figures. Usually the registration figures do not reflect the real position of unemployment because there may be non-registrations, double/multiple registrations and registrations by the employed. As the data on non-registrations and double/multiple registrations are not available, the estimates on unemployment could not be refined to the extent required. Hence, those factors have not been taken into account. However, according to a report\*, 30% of the total registrants were in regular employment. In the absence of corresponding information in respect of post-graduates, graduates, diploma-holders etc., in medical and paramedical subjects it is felt reasonable to adopt the same percentage in the categories of medical personnel. Hence when employment exchange figures are made use of to estimate the supply of medical personnel, 30% is used as a correction factor.

1.8 The additional supply is mainly due to out-turn of educational institutions/departmental training institutions. While taking this major source of additional supply, we have to account for labour/occupational wastage i.e., non-entry into labour force after completing the educational/training. However, particularly in Medical profession, the rate of non-labour participation is almost nil. It is, therefore, felt reasonable to consider the entire out-turn as the supply. However, the supply of allopathic doctors has been arrived at taking only the persons belonging to the State of Karnataka.

1.9 As reliable data on immigration are not available, this factor has not been taken into consideration.

-----

\* Report on the Survey of Registrations in Employment Exchanges, Bureau of Economics and Statistics, 1966.



## 2. MEDICAL AND HEALTH PROGRAMMES

2.1 The State Government has taken considerable care in attending to the medical and health problems of the people. A long term policy to improve health services was drawn up by the Health Survey and Planning Committee of 1961. The main criterion was to provide an effective base for health services in the rural areas by strengthening the primary health centres, which were expected to undertake preventive and curative health services and also effective steps to control communicable diseases like malaria, small pox, cholera, filaria, V.D., trachoma etc. Family planning and nutritional programmes were also entrusted to these centres for effective services at the peripheral levels in the rural areas. These broad objectives were followed in all the previous plans. In the Fifth Plan also these objectives are being pursued with more vigour.

2.2 The State has taken good strides in providing medical and health services both in rural and urban areas. Apart from primary health centres, a wide range of hospitals and dispensaries have been established. As at the beginning of the Fifth Plan, there were 192 hospitals with a strength of 24,363 beds. Of these hospitals, 128 were run directly by the State Government and these hospitals had a total bed strength of 18,293. The remaining 64 hospitals accounted for 6,070 beds. There were in all 1,281 dispensaries having a bed strength of 4,177.

2.3 Though the total bed strength has increased in the State, there is an imbalance between rural and urban areas regarding the availability of beds. Of the total 28,540 beds in the State at the beginning of the Fifth Plan, 21,770 were in Government institutions and the remaining 6,770 were in private institutions. The urban areas of the State had a bed strength of 24,027 whereas the rural areas had only 4,513 beds. In terms of bed population ratio, the urban areas, with a 1:300, were better served compared to rural areas which had a bed-population ratio of 1:5000, the State ratio being 1:1000. This imbalance has to be rectified.

2.4 Several important programmes have been planned by the Directorate of Health and Family Welfare Services during 1974-79. They are to provide basic minimum health facilities to increased population, to up-grade the taluk level institutions, to enforce servilance and control measures over communicable diseases, to provide protection and nutritional measures to large number of children and to improve the rural bed-population ratio. The important programmes of Drugs Control Department are to strengthen the department at headquarters and various other levels for more effective enforcement of Drugs and Cosmatic Act, to provide opportunities to first class graduates in pharmacy, to obtain practical training in the manufacture and quality control of drugs at pharmaceutical concerns in Bangalore and to expand drugs testing laboratory at Bangalore for analysis of all kinds of drpgs.

2.5 Under the Indian Systems of Medicine, the emphasis will be on improving the quality of medical services in rural areas. In case of Ayurvedic system of medicine, against a target of 87 Rural Ayurvedic Dispensaries 15 have been opened. One (25 bedd) hospital has been opened against three (100 beded) hospitals. In case of Nature cure, 1 dispensary has been opened in rural areas against 13. There is a proposal to open 1 Nature Cure College. In case of Homoeopathic systems of medicine, 2 dispensaries have been opened against 12 and 1 hospital (25 beded) has been opened against a target of 2. Here also there is a proposal to open one Homoeopathic College. In case of Unani Systems of medicine one Unani College is functioning and 2 dispensaries have been opened against 13. Some steps have been taken to encourage Siddha System also. One wing of 10 beds has been created.

### 3. GROWTH OF MEDICAL EDUCATION

3.1 Compared to only 4 Medical colleges in 1960-61, there were 9 colleges in 1965-66. During this period the number of private Medical colleges was increased from 1 to 5. However, since 1965-66, there are no additions to the 9 Medical colleges in the State.

3.2 During 1960-61 the intake of students was only 607, which reached a level of 1,390 during 1965-66, when all the 9 Medical colleges were functioning. The intake reached a peak level of 1,575 during 1971-72. However, the intake was brought down to 717 during 1974-75 and it was kept almost at that level during the subsequent two years. The sudden decrease from 1,238 in 1973-74 to 717 in 1974-75 was mainly due to the steps by the Indian Medical Council.

3.3 Though the intake of students to M.B.B.S., Course was on the high side, on the whole more than one fourth of the intake has been cornered by outsiders (i.e., persons belonging to other States/Countries) during the past 17 years (i.e., 1960-77). During 1960-61 only 14% of seats went to outsiders, but gradually the share of outsiders went on increasing and in 1976-77, it came upto 32%. In this regard the role of Private Medical colleges requires special mentioning. During the past 17 years nearly 56% of the seats have been given to the outsiders. In fact during the early 60's, in some years, more than 70-75% of the seats were allotted to the outsiders. Against this unusual phenomenon the Government colleges of late are providing seats for not more than 10% of the total intake to the outsiders. In fact during 1960-70 not more than 5% of the seats were given to outsiders. In terms of absolute numbers, out of 10,883 seats only 417 seats (i.e. 4%) were thrown open to outsiders, during 1960-77. Whereas in case of private medical colleges, out of an intake of 8,952, during the same period the share of outsiders was 4,991 (56%). It can be concluded that the private medical colleges in the State are mostly receiving the outsiders than the persons belonging to Karnataka. If lure of money is the reason for entertaining the outsiders by the private medical colleges in the State, this should be reviewed.

3.4 Whatever the reason for accommodating the outsiders by the medical colleges, from the point of view of availability of doctors to serve the population of the State, the entire outturn cannot be taken as supply. Over a period of 17 years from 1960-61 to 1976-77, 4,112 (27%) doctors, out of 15,110 doctors produced in the State were outsiders. Out of these 4,112 doctors, private medical colleges are responsible for 3,862 (94%) doctors. Broadly this category of doctors cannot be considered as available for the State for any period of reckoning.

3.5 There are 4 colleges which are running post-graduate courses in Medicine in the State. Three are Government colleges and one is a private college. The post-graduate degrees are given as M.S. and M.D. in clinical and non-clinical subjects and diploma also is given in clinical and non-clinical subjects. The duration of the post-graduate degree course is 3 years and that of diploma course is 2 years from the year 1974-75.

3.6 There are two dental colleges in the State. One is a Government college at Bangalore and the other is a private college at Manipal. The course is for 2-3 years for post-graduates and 4 years for graduates.

3.7 There are 2 colleges conducting B. Pharma and 8 institutions conducting D.Pharma courses. The duration of B.Pharma is 4 years and that of D.Pharma is 2 years.

4. STOCK OF DOCTORS

4.1 It is very essential to estimate the stock of doctors, at any given point of time, to work out the doctor-population ratio. These ratios are being used as yardsticks to measure the availability of doctors to the general population. There are different sources from which stock estimates could be built up. The data thrown up by the Decennial Census is one such source. Another source of information is the Karnataka Medical Council (K.M.C.). However, KMC data cannot be utilised to estimate the stock of doctors, as the renewals are not very effective as can be seen from Table 4.1.

TABLE 4.1

No. of Medical Practitioners registered in the Karnataka Medical Council from 1.7.1932 to 31.12.1976 and yearwise from 1970 to 1976.

Sl. No. (1)	Year of Registration. (2)	Number Registered. (3)	Number Renewed. (4)	Number dead (5)
1.	1.7.32 - 31.12.69	5,886	2,096	Yearwise details are not available
2.	1970	990	nil	
3.	1971	962	nil	
4.	1972	971	2,762	
5.	1973	1,152	226	
6.	1974	1,293	1,834	
7.	1975	1,170	726	
8.	1976	1,182	178	
TOTAL:		13,611	7,822	361

Source: Karnataka Medical Council.

4.2 It is, therefore, very clear that very few doctors are renewing though they are expected to do it every year according to the Karnataka Medical Registration Act, and Rules. The K.M.C. should take remedial steps to overcome this major deficiency.

Similarly, the revised application form for Registration now adopted as per our earlier suggestion should be used to update the information collected, as required by Rule 45 of the above Act.

4.3 As per the 1971 Census there were 6,832 doctors. According to Karnataka Medical Council, total number of doctors registered at the end of 1970 was 6,876. The slight difference may be due to the dead stock. However, the future stock of doctors has been estimated utilising the 1971 Census data as the base. While estimating the future stock, only the out-turn of doctors belonging to Karnataka has been considered. The attrition rate has been taken as 1%, as per the trend observed from the data maintained by the K.M.C.

4.4 In case of Ayurvedic doctors, there is a wide variation in the stock between the 1971 Census data and the data maintained by the Ayurvedic and Unani Practitioners Board. According to 1971 Census there were only 2,935 doctors, whereas according to the Board there were 5,869 doctors. The large difference between the two sets of figures may be due to not revealing their identity by the Practitioners of Ayurvedic system of medicine at the time of census reckoning. Similar is the case in respect of Unani and Homoeopathic doctors. As per 1971 Census there were 140 Unani practitioners and 630 Homoeopathsists whereas according to respective boards, there were 373 Unani practitioners and 1,743 Homoeopathsists. For the purpose projecting the future stock the data maintained by the Board have been taken as the base.

4.5 The stock of doctors has also been estimated separately for urban and rural areas of the State, for the years 1973-74, 1978-79 and 1983-84. Though neither the Karnataka Medical Council nor the Ayurvedic Board has maintained the information on the stock of doctors on a rural-urban basis, estimates have been prepared on the basis of the trend observed from the 1971 census data.

TABLE 4.2  
ESTIMATED STOCK OF DOCTORS

Year (1)	Area (2)	Estimated Population (in lakhs)* (3)	Estimated No. of doctors		
			Allopathic (4)	Ayurvedic (5)	Combined (6)
1970-71 (Census) <sup>o</sup>	Rural	221.77	2,181	3,052	5,233
	Urban	71.22	4,651	2,817	7,468
	TOTAL:	292.99	6,832	5,869	12,701
1973-74	Rural	237.12	3,089	3,192	6,281
	Urban	79.72	6,564	2,947	9,511
	TOTAL:	316.84	9,653	6,139	15,792
1978-79	Rural	260.67	4,566	3,702	8,268
	Urban	94.50	9,702	3,417	13,119
	TOTAL:	355.17	14,268	7,119	21,387
1983-84	Rural	289.32	5,352	4,084	9,436
	Urban	104.90	11,372	3,770	15,142
	TOTAL:	394.22	16,724	7,854	24,578

\*Source: Statistical Abstract of Karnataka, 1973-74, D.E.O., Bangalore

<sup>o</sup> Relates to columns (3) and (4) only.

4.6 As per 1971 Census there were 6,832 allopathic doctors, comprising of 2,181 doctors in rural areas (32%) and 4,651 doctors in urban areas (68%). At the end of the IV Plan (1973-74) the stock has been estimated at 9,653. It is expected to reach a level of 14,268 at the end of 1978-79 and 16,724 by 1983-84. The number of urban doctors is likely to increase from 4,651 in 1970-71 to 11,372 in 1983-84, on the assumption that the urban-rural composition of doctors would remain same as reflected in 1971 Census (Table 4.2).

4.7 Similarly the stock of Ayurvedic doctors is likely to register about 34% increase during 1971-84. The stock which was 5,869 in 1970-71, is expected to reach a level of 7,854 in 1983-84. The combined stock of doctors may increase from 12,701 in 1970-71 to 24,573 in 1983-84, registering an increase of about 94% during 1971-84.

5. DOCTOR-POPULATION RATIO

5.1 Making use of the data estimated in Table 4.2 the doctor-population ratios have been worked out separately for Allopathic and Ayurvedic systems. The details are given in Table 5.1.

TABLE 5.1Doctor-population ratio

Year (1)	Area (2)	Allopathic (3)	Ayurvedic (4)	Combined (5)
1970-71	Rural	10,168	7,266	4,238
	Urban	1,531	2,598	953
	TOTAL:	4,288	4,992	2,306
1973-74	Rural	7,676	7,429	3,775
	Urban	1,215	2,705	838
	TOTAL:	3,282	5,161	2,006
1978-79	Rural	5,709	7,041	3,153
	Urban	974	2,766	720
	TOTAL:	2,489	4,989	1,661
1983-84	Rural	5,406	7,084	3,066
	Urban	922	2,782	693
	TOTAL:	2,357	5,019	1,604

5.2 During 1970-71, there was 1 allopathic doctor for a population of 4,288, whereas the all-India ratio was 1:4,150. At the end of the Fourth Plan the ratio came down to 1:3,282 at the State level. The target set at the National level for 1978-79 was 1 doctor for 3,700. However, Karnataka may have a favourable ratio of 1:2,489, at the end of 1978-79. Further, assuming that the present intake of 777 (In fact, it is only 528, if outsiders are left out) will hold good upto 1978-79, the doctor population ratio would be of the order of 1:2,357 even in 1983-84. Assuming the attrition rate among the



allopathic doctors as 1% and further assuming the population growth at 2% per annum, the annual requirement of doctors beyond 1983-84 could be estimated at about 500 in order to maintain the doctor-population ratio at the 1983-84 level. If the stock of Ayurvedic doctors is also included, since they are also serving the population, the doctor-population ratio would be 1:1,661 by the end of 1978-79 and would stand at 1:1,604 in 1983-84. This position is based on the doctor-population ratio as a yardstick. It would be better if the need for doctors is based on the prevailing morbidity conditions in the State. But at present no such study has been done and no meaningful conclusions could be drawn without keeping the morbidity conditions prevailing in the State. In order to assess the future expansion of Allopathic system, morbidity survey may be undertaken by the Health Department.

#### 6. ALLOPATHIC DOCTORS

Demand and Supply of post-graduates in degree and diploma in Medical Science.

...

6.1 Table 6.1 gives the demand and supply of post-graduates (Degree and Diploma) during the period 1974-79.

TABLE 6.1

DEMAND & SUPPLY OF POST GRADUATES IN MEDICINE DURING 1974-79.

Particulars	1974-75	75-76	76-77	77-78	78-79	Total
1. Demand	86	82	47	111	111	437
2. Supply	228*	244	314	314	314	1414
3. Deduct - deputationists	196	154	69	86	93	598
4. Net supply	32	90	245	228	221	816
5. Surplus(+) or Deficit(-)	-54	+8	+198	+117	+110	+379
6. Cumulative Surplus(+) or Deficit(-)	-54	-46	+152	+269	+379	

Note\*: includes an unemployed stock of 2.

6.2 There will be a supply of 1412 post-graduates (both degree and diploma) during 1974-79 from the medical colleges of the State. Out of this total supply, 598 are expected to be deputationists from the Department of Health and Family Welfare Services. If this number is deducted from the total supply of 1,412 then 814 will be actual supply of post graduates. To this, if 2 post graduates who were on the live register are added then the total supply will be 816. Against this supply of post graduates, the estimated demand comes to 437, leaving a surplus of 379 post-graduates at the end of 1978-79. This surplus is arrived at by taking the demand for post-graduates from Government departments only, since the demand from private sector, self employment, and out migration, and also the need for specialists based on the morbidity conditions are not available. However, this position may become critical if the present intake of 367 to clinical subjects (against 24 to non-clinical subjects) is continued. A study on the need for postgraduate doctors in the State has to be taken up immediately and based on that outcome action has to be initiated to review the intake of post graduate courses. Out turn of post graduates are given in annexure-1 and the number of deputationists in annexure-2.

6.3 The demand and supply of M.B.B.S., graduates during 1974-79 year-wise, are shown in Table 6.2

TABLE 6.2

Demand and supply of M.B.B.S. graduates during 1974-79

Particulars	74-75	75-76	76-77	77-78	78-79	Total
1. Demand	262*	145	170	166	170	913
2. Supply <sup>©</sup>	1,477**	972	1,199	916	1,087	5,651
3. Surplus	1,215	827	1,029	750	917	4,738
4. Cumulative surplus.	1,215	2,042	3,071	3,821	4,738	-

Note: \* Includes 150 vacant posts and  
 \*\* includes 450 (at 70%) unemployed doctors as on 1.4.74.  
 © considering only the local supply, leaving out outsiders.

6.4 As can be seen from Table 6.2 the demand in the State Sector for medical graduates has been estimated at 913 during 1974-79. The total supply of doctors has been estimated at 5,651 which leaves a surplus of 4,738 doctors. However, the entire surplus will not be added to the unemployment stock due to out-migration and self employment.

6.5 As pointed out the above surplus of 4,738 doctors cannot be taken as real surplus. In the absence of exact information on the potential for self employment and the scope for outmigration, it is very difficult to find out the real surplus. However, the live register data maintained by the Employment Exchanges (Table 6.3) will throw some light on the problem of unemployment (though this data source has got certain in built deficiencies).

TABLE 6.3

Number of M.B.B.S. doctors registered, placed and on the live register

Year	Number registered	Number placed	Number of the live register at the end of the year.	Outturn (belonging to Karnataka.)
(1)	(2)	(3)	(4)	(5)
1974	570	11	465	1,027
1975	284	9	315	972
1976	237	21	307	1,199
1977	189	2	272	916
TOTAL:	1,280	43	-	4,114

6.6 As can be seen from Table 6.3 there is a systematic reduction in the number of doctors seeking the help of employment exchanges to get any placements. In fact, hardly 43 doctors have been provided with jobs during the past 4 years by the

Employment Exchanges. Though the outturn of doctors (taking only the Parnatakites) has almost remained at the same level, number of doctors on the Live Register has been decreasing from 1974 to 1977. As per 1971 Census (individual slips) 32% of allopathic doctors were self employed and 11% were employed in the private sector. All this indicate that employment potential in the private sector as well as for self employment may be about 2,500. Even then this leaves a real surplus of about 2,200 allopathic doctors at the end of 1978-79. There is another factor which may reduce this surplus and that is the outmigration to other countries. But, this is not an economically viable proposition to the problem of over production, considering the cost of producing an allopathic doctor, which may be around 1½ to 1¾ lakhs of rupees. In view of all the above facts, it is all the more necessary to maintain the present level of intake to the MBBS course for the next ten years.

6.7 Even though the State is producing large number of doctors, the rural areas of the State have not been benefited with the required medical care. As per the 1971 Census, only 32% of allopathic doctors were serving 76% of the rural population as against 68% of doctors serving only 24% of Urban population. This glaring imbalance in the distribution of allopathic doctors should be corrected at the earliest. All possible steps, including administrative and financial, should be taken to attract doctors to the rural areas.

6.8 The intake for MBBS course during 1974-75 in the State has been reduced by nearly 40% compared to previous year. The impact of this reduction in intake will be felt from 1980-81 and onwards. The outturn of doctors will be reduced by about 50% from that year compared to the outturn at the beginning of the Fifth Plan. The intake and outturn of MBBS course are given in annexures 3, 4 and 5.

...

7. NON-ALLOPATHIC DOCTORS

Demand and supply of Ayurvedic, Unani  
and Homoeopathic Doctors

.....

7.1. There are 7 Ayurvedic (3 Govt. and 4 private), 1 Unani and 4 private Homoeopathic institutions in the State which are conducting courses in the respective disciplines. The Ayurvedic and Unani courses are of 5½ years duration and Homoeopathic course is of 4 years Diploma and 5 years Graduate Diploma. The demand and supply of Ayurvedic, Unani and Homoeopathic doctors for 1974-79 are indicated in Table 7.1.

TABLE 7.1

Demand and Supply of Ayurvedic, Unani and Homoeopathic  
Doctors.

Particulars	74-75	75-76	76-77	77-78	78-79	Total
<b>I. DEMAND</b>						
i. Ayurvedic	34	26	26	25	25	136
ii. Unani	11	7	7	5	5	35
iii. Homoeopathic	5	5	5	5	5	25
<b>II SUPPLY</b>						
i. Ayurvedic	215	130	130	130	130	735
ii. Unani	----- Not available -----					
iii. Homoeopathic	125	125	125	125	125	625

7.2 The demand for Ayurvedic doctors in the State sector during 1974-79 is only 136 against an anticipated supply of 735 which leaves a surplus of 599 at the end of 1978-79. As the Unani college has been started very recently, required number of doctors has to be trained outside the State. In case of Homoeopathic doctors, there will be a surplus of 600 doctors at the end of 1978-79. However, it is not clear how many Ayurvedic and Homoeopathic doctors will seek self employment on their own accord. But judging from the present trend it may be presumed that there may not be any difficulty for most of these doctors to select rural areas for practice.

8. DENTISTS

Demand and supply of Dental post graduates

8.1 During 1974-79 the demand for Dental post graduates in Government sector is reported to be nil. But the supply from the two Dental Colleges would be 35. Out of this, 21 post-graduates will be in-service Surgeons, who are deputed by the Health Department. Thus, only a small surplus of 14 will be left with at the end of 1978-79. Since the requirements of the private sector are not known, the small surplus may not create any problem.

Demand and supply of Dental graduates:

8.2 Against a supply of 319 Dental graduates during 1974-79 from the two Dental Colleges of the State the demand is only for 44 dental graduates in the State sector. This leaves a surplus of 275 dental graduates. However, the demand from private sector, self employment and out migrations and prevailing dental morbidity have not been considered. The Dental Council of India has recommended one dentist for 30,000 population. At the end of 1978-79 the State will have one dentist for about 44,000 population. A separate study is necessary to find out the employment potential of dentists to decide the future intake. The demand and supply of dental graduates during 1974-79 are given in Table 8.1. Intake and outturn of Dentists are shown in annexure - 8.

TABLE 8.1

Demand and supply of Dental graduates during 1974-79.

Particulars	74-75	75-76	76-77	77-78	78-79	Total
1. Demand	4	8	2	15	15	44
2. Supply	65	65	63	67	59	319
3. Surplus	61	57	61	52	44	275
4. Cumulative surplus.	61	118	179	231	275	-

.....

9. PHARMACISTS

9.1 The stock of registered pharmacists at the end of 1975 was 3,431 according to the Karnataka State Pharmacy Council. The other details about the registered and qualified pharmacists for certain years are given in Table 9.1.

TABLE 9.1

Registered and qualified pharmacists in Karnataka

Year	Total No. of Registered pharmacists	No. of qualified pharmacists				Others	No. of Pharmacists expired.	No. of pharmacists removed from the register.
		M. Pharma.	B. Pharma.	D. Pharma.	Compounders Trng. certificate.			
1963	1,260	1	7	4	504	739	5	-
1972	1,555	1	16	114	871	533	4	16
1973	298	-	5	53	105	122	-	13
1974	228	1	56	115	8	42	-	6
1975	134	-	37	87	1	9	-	-
TOTAL: 3,475		3	121	373	1,489	1,445	9	35

Source: Karnataka State Pharmacy Council.

9.2 There were 24 B. Pharma graduates on the live register of Employment Exchange at the end of Fourth Plan. But the report on "Technical Manpower in Mysore 1969-74"\* brought out by the Planning Department, estimated a surplus of 165 B. Pharma graduates, on the assumption that the absorption of the pharmacists in private sector would be 150% of the absorption made in State Government sector. The above report estimated the supply during 1969-74, at 230. The actual supply was 243. Even though the estimates of supply were more or less same as actuals, the ultimate surplus was very much below the level of anticipation. It may, therefore, be presumed that private absorption has taken place at a higher level than expected. In addition

\* Technical Manpower in Mysore, Fourth Five Year Plan - (1969-74), Directorate of Evaluation and Manpower, Planning Department, Bangalore, 1973.

to that it may also be presumed that some of the pharmacists of the State might have gone outside the State. The situation was more or less same in case of D. Pharma also. The Mudaliar Committee has recommended one pharmacist for 10,000 population. At the end of 1978-79 the State will probably have one Pharmacist for about 7,500 population, provided that all the pharmacists are settled in Karnataka.

9.3 The demand for B.Pharma graduates during 1974-79 in the State sector, is reported to be only 33, whereas the supply has been estimated at 259, leaving a surplus of 226 at the end of 1978-79. The demand for D.Pharma holders in the State sector during 1974-79 is estimated to be 440 on the basis of the actual demand during 1974-75 and 1975-76. The supply during 1974-79 has been estimated at 580 which leaves a surplus of 140. The surplus of graduates and diplomas in Pharmacy may not pose any problem, as per the observation made in para 9.2. Table 9.2 gives the demand and supply of B.Pharma and D.Pharma during 1974-79. Intake and out-turn of pharmacists are given in annexure 9.

TABLE 9.2

Demand and supply of B.Pharma  
and D.Pharma during 1974-79.

Particulars	74-75	75-76	76-77	77-78	78-79	Total
<b>1. B.PHARMA</b>						
i. Demand	-	-	-	-	-	33*
ii. Supply	51	46	54	54	54	259
iii. Surplus	-	-	-	-	-	226
<b>2. D.PHARMA</b>						
i. Demand	89	87	88	88	88	440
ii. Supply	116	116	116	116	116	580
iii. Surplus	27	29	28	28	28	140

\* Yearwise break-ups are not available.



10. NURSES, AUXILIARY NURSE MIDWIVES (ANMs) AND  
LADY HEALTH VISITORS (LHVs)

NURSES:

10.1 There are 8 teaching hospitals in the State which are training nurses with complete training facilities. These hospitals are attached to the concerned medical colleges. 4 more hospitals conduct training classes for nurses partially for a period of 1½ years as the facilities available in those hospitals are insufficient to complete the training. Hence, the trainees will be sent to the 8 hospitals mentioned earlier to complete the training. The course for General Nursing is for 3 years and for midwifery another 9 months training will be conducted. The trainees are given a stipend of Rs. 200/- per month during training period. The demand and supply of nurses in the State sector for the period 1974-79 are indicated in Table 10.1. The intake and out-turn of nurses are given in annexure - 10.

TABLE 10.1

Demand and supply of Nurses during 1974-79.

Particulars	74-75	75-76	76-77	77-78	78-79	Total
1. Demand	53	232	65	15	-	365
2. Supply	49	115	279	296	119	858
3. Surplus/ Deficit	-4	-117	214	281	119	493
4. Cumulative Surplus/ Deficit.	-4	-121	93	374	493	-

10.2 As can be seen from Table 10.1 considerable number of nurses would be in surplus at the end of 1978-79. However, a portion of this surplus may be utilised by the private sector. There may be some more scope for absorptions of these nurses in the Public Sector.

10.3 If the Department of Health has to attain the 'Nurse-Bed Ratio', as recommended by the 'Central Council of Health' viz., 1:5 and 1:3 in nonteaching and teaching hospitals

respectively, the demand for nurses would enormously increase in the coming years. The present Nurse-Bed Ratio is approximately 1:10. The department has worked out a scheme to train 2,846 nurses which involves an additional outlay of Rs. 240 lakhs in a phased manner spread over a period of 8-10 years. If this scheme is accepted, by 1987 the nurse-bed ratio could be brought to the level as recommended by the Central Council of Health. This proposal requires serious consideration.

10.4 Another source of supply of nurses in the State is from 6 private nursing schools situated in various parts of the State. These private schools together produce on an average 100 nurses every year. About 500 nurses may come out from private schools during 1974-79. This additional supply together with the surplus produced in the public sector may perhaps meet the demand for nurses in the private sector.

AUXILIARY NURSE MIDWIVES (ANMs)

10.5 There are 19 Government institutions in the State which are training Auxiliary Nurse Midwives. The course is for 2 years. The minimum qualification prescribed hitherto for admission to the course was VII standard, which has been recently revised to SSLC. Each trainee gets a stipend of Rs. 60/- per month. 400 ANMs will come out every year. These ANMs mostly serve in rural areas. The demand and supply of ANMs during 1974-79 in the State Sector are given in Table 10.2.

TABLE 10.2

DEMAND & SUPPLY OF AUXILIARY NURSE MIDWIVES DURING 1974-79

Particulars	74-75	75-76	76-77	77-78	78-79	Total
1. Demand	304	319	635	82	-	1,340
2. Supply	400	400	400	400	400	2,000
3. Surplus(+) or Deficit(-)	+96	+81	-235	+318	+400	+660
4. Cumulative Surplus(+) or deficit(-)	+96	+177	-58	+260	+460	-

10.6 It can be seen from Table 10.2 that at the end of 1978-79 there will be a big surplus of 660 ANMs, considering only the demand in the State sector. The demand in the private sector may not be that much to absorb the surplus ANMs. The demand for the next Plan has to be assessed quickly before deciding any change in the present intake.

LADY HEALTH VISITORS (LHVs)

10.7 There are 3 Government schools which conduct a 2½ year course for Lady Health Visitors (LHVs). The total intake capacity of these 3 schools is 90. In addition to this, these schools also conduct a condensed course for 18 months for ANMs. The demand and supply of LHVs during 1974-79 are given in Table 10.3.

TABLE 10.3

DEMAND AND SUPPLY OF  
LADY HEALTH VISITORS DURING - 1974-79

Particulars	74-75	75-76	76-77	77-78	78-79	Total
1. Demand	77	75	82	95	60	389
2. Supply	86	86	86	86	86	430
3. Surplus(+) or deficit(-)	+9	+11	+4	-9	+26	+41
4. Cumulative surplus.	9	20	24	15	41	-

10.8 The demand for LHVs has been estimated at 389 and the supply at 430, which leaves a surplus of only 41 at the end of 1978-79. Since the margin of surplus is very small, it may not cause much problem.

...

11. OTHER PARA-MEDICAL PERSONNEL

11.1 Health visitors, Senior and Junior Health Inspectors, Dental Mechanics, Dental Hygienists, X-ray Technicians, Junior Laboratory Technicians and Junior Microscopists are some of the categories which come under para medical staff.

11.2 There will be regular training courses conducted by the Health Department to train the required number of personnel in those categories. Since there will not be any difficulty in meeting the demand, the supply aspect has not been considered. The demand for each of these categories during 1974-79 is indicated in Table 11.1. An abstract indicating the total demand and supply of medical and para medical personnel during 1974-79 is given in annexure - 11.

TABLE 11.1

DEMAND FOR OTHER PARA-MEDICAL PERSONNEL DURING 1974-79

Category	74-75	75-76	76-77	77-78	78-79	Total
1. Health Supervisors	3	6	11	6	4	30
2. Sr.Health Inspectors	31	34	34	38	32	169
3. Jr.Health Inspectors	103	100	2	-	-	205
4. Dental Mechanics	7	2	-	-	-	9
5. Dental Hygienists	3	-	-	-	-	3
6. X-Ray Technicians	-	2	10	-	-	12
7. Jr.Laboratory Technicians	-	2	-	-	-	2
8. Junior Microscopists	-	32	-	-	-	32

## 12. SUMMARY AND CONCLUSIONS

### Improvement of the information system:

12.1 An important source for estimating the stock of allopathic doctors is the Medical Register maintained by the State Medical Council. However, some of the important information relating to the registrants like date of birth, year of passing, occupation, industry, sector of employment, etc., are at present not available in the Register. It is, therefore, necessary to maintain detailed information about the registrants, as suggested by the Central Working Group on Medical Manpower. The revised form, as indicated at annexure - 12, which has been recently adopted by the State Medical Council, should be used to update the information and maintain upto-date information regarding the spatial distribution of doctors in the State.

12.2 Though, there is a provision (Rule 43) in the Karnataka Medical Registration Act 1961 and Rules 1963, under which each Medical Practitioner registered under the Act shall apply to the Medical Council well in time for renewal before the 31st day of December of every year for the continuance of his name in the register, very few are adhering to the Rules, as only 1,834, 736 and 178 doctors have renewed their registration during 1974, 1975 and 1976 respectively. The Karnataka Medical Council should enforce the Rules strictly. If necessary some deterrent action should be embodied in the Rules to the effect that non-renewal within a stipulated period, say 6 months, will lead to cancellation of registration. Regular form for renewal may be prescribed.

12.3 Similar steps should be taken by the Ayurvedic and Unani and Homoeopathic Boards in the State.

12.4 In this regard, another step may be taken to build up reliable stock of doctors, both allopathic and indigenous, by utilising the existing Government machinery in the Health Department. The personnel belonging to this department are working even in the remote villages. As in the case of

Education Department, the Health Department also could conduct annual Census of all types of Medical Personnel in the State.

12.5 Statistics required for medical manpower planning, like intake and outturn of institutions, departmental training facilities, stock of doctors etc., are not readily available in the Health Department at one place. The recently created Health Intelligence Unit of the Health Department should collect, compile and collate data on all the aspects of Medical Manpower in the State.

12.6 Though the State is having a favourable doctor population ratio, compared to all-India, the distribution of doctors in urban and rural areas is not satisfactory. Much concentration of doctors has taken place only in urban areas to the detriment of the rural population. Serious steps should be taken to attract more number of doctors to serve in rural areas. Some of the Banks are financing the doctors to set up practice in rural areas. These Banks should enlarge area of operation, covering other personnel like Pharmacists, Dentists etc. The rural bed-population ratio also requires substantive improvement over the present 1:5,000.

#### Medical Education

12.7 It is anticipated on the basis of present intake to the Medical course and expected increase in population, that the State will have a favourable doctor-population ratio of 1:2,160 even during 1983-84. This position is based on the doctor-population ratio as a yard-stick. It would be better if the need for doctors is based on the prevailing morbidity conditions in the State. At present no such study has been done and no meaningful conclusions could be drawn without knowing the morbidity conditions prevailing in the State. In order to assess the future expansion of Allopathic system morbidity survey may be undertaken by Health Department. Until then the present level of intake of about 700 to the M.E.S.S. course may be maintained.

12.8 Considering only the demand by Government departments for Post-graduates, the supply is in excess. Since demand by private sector, self employment, and the need for specialists on the basis of the morbidity conditions etc., are not known, a study on the need for post-graduates doctors in the State has to be made immediately and action taken to review the intake of post-graduate courses.

12.9 It is very necessary to reorient the present medical education curricula towards the community health care including family planning and the hospital based medical care bias should be corrected.

12.10 Necessary fillip should be given to encourage Indian system of medicine as they are found to be cheaper and serving the weaker sections of the population.

Staffing of hospitals and Medical colleges.

12.11 The Health Department should take up a quick survey of the staffing and equipment position prevailing in the referral hospitals in the State in order to find out the extent of medical facilities available for common ailments.

Dental Personnel

12.12 Dental clinics should be set up in each taluk hospitals with the necessary complement of staff.

12.13. The Manpower Unit may take up a quick study to find out the employment potential of dentists and pharmacists in the State.

Nursing Personnel

12.14 There may be a surplus of about 500 nurses by 1978-79. This surplus may be utilised to improve the present nurse-bed ratio of 1:10 in teaching and non-teaching hospitals in the State. Further, arrangements have to be made to train more people in Nursing. In this connection, serious consideration may be given to the proposal of the Health Department to train 2,846 nurses, which involves an additional outlay of Rs. 240 lakhs, spread over a period of 8-10 years.

12.15 In case of Auxiliary Nurse Midwives large surplus of about 660 may result at the end of 1978-79. At present the intake to this course is at 400. This intake has to be reviewed immediately, considering the requirements of the next Plan.

ANNEXURE - 1INTAKE AND OUTTURN OF POST-GRDUATES IN MEDICINE  
FROM 1960-61 TO 1978-79.

YEAR	POST-GRADUATE DEGREE				POST-GRADUATE DIPLOMA			
	Clinical		Non-clinical		Clinical		Non-clinical	
	In-take	Out-turn	In-take	Out-turn	In-take	Out-turn	In-take	Out-turn
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1960-61	-	-	-	-	4	4	-	-
1961-62	-	-	-	-	6	6	-	-
1962-63	24	-	-	-	13	4	-	-
1963-64	29	7	-	-	8	8	-	-
1964-65	29	21	-	-	5	4	-	-
1965-66	44	22	3	-	11	14	-	-
1966-67	50	24	4	-	16	2	-	-
1967-68	45	20	1	3	24	15	-	-
1968-69	42	18	1	-	10	10	-	-
1969-70	103	49	8	4	47	35	-	-
1970-71	98	41	13	3	60	41	-	-
1971-72	125	82	12	5	97	63	-	-
1972-73	189	78	14	7	112	69	-	-
1973-74	188	94	16	4	130	94	-	-
1974-75	172	106	12	8	157	108	4	4
1975-76	170	129	7	4	197	108	17	3
1976-77*	170	123	7	6	197	172	17	13
1977-78*	170	123	7	6	197	172	17	13
1978-79*	170	123	7	6	197	172	17	13

Source: Individual colleges.

Note: \*1. The outturn figures for 1976-79 are estimates.

2. For post-graduate degree (clinical) the out-turn during 1976-79 is estimated at 71.53% of the intake of the corresponding cohort years 1974-77. 71.53 is the percentage of the total out-turn (691) during 1963-76 to the total intake (966) during the corresponding cohort years 1962-74.
3. For post graduate degree (non-clinical) the outturn for 1976-79 is estimated at 52.78% of the intake of the corresponding cohort years 1974-77. 52.78 is the percentage of total outturn (38) during 1967-76 to the total intake (72) of the corresponding cohort years 1965-74.



- Note: 4. For post-graduate diploma (clinical) the outturn for 1976-79 is estimated at 87.11% of the intake of the corresponding cohort years 1975-78. 87.11 is the percentage of the total outturn (473) during 1961-75 to the total intake (543) of the corresponding cohort years 1960-74.
5. For the post-graduate diploma (non-clinical) the outturn for 1976-79 is estimated at 75% of the intake of the corresponding cohort years 1975-78. 75 is the percentage of the outturn (3) during 1975-76 to the intake (4) during 1974-75.
6. The duration of the course for post-graduate degree is taken as 3 years and for post-graduate diploma it is taken as 2 years from 1974-75 onwards for computational purposes.

.....  
ANNEXURE - 2

NUMBER OF INSERVICE DOCTORS DEPUTED FOR POST-GRADUATE COURSE IN MEDICINE FOR THE YEARS 1962-76.

YEAR.	No. of Inservice doctors deputed for post-graduate courses	
1962-63	..	34
1963-64	..	37
1964-65	..	36
1965-66	..	48
1966-67	..	33
1967-68	..	42
1968-69	..	53
1969-70	..	92
1970-71	..	97
1971-72	..	101
1972-73	..	140
1973-74	..	196
1974-75	..	154
1975-76	..	69
1976-77	..	86
1977-78	..	93

Source: Directorate of Health and Family Welfare Services, Bangalore.

ANNEXURE - 3INTAKE AND OUT-TURN OF M.B.B.S. STUDENTS IN MEDICAL  
COLLEGES FROM 1960-61 TO 1976-77

YEAR	I N T A K E			O U T - T U R N		
	Belonging to		Total	Belonging to		Total
	Karna- taka.	Other States/ countries		Karna- taka.	Other States/ countries	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1960-61	521	86	607	114	123	237
1961-62	547	135	682	164	139	303
1962-63	843	109	952	227	96	323
1963-64	868	199	1,067	274	111	385
1964-65	902	310	1,212	363	120	483
1965-66	1,011	379	1,390	395	90	485
1966-67	1,003	400	1,403	428	141	569
1967-68	1,029	427	1,456	565	160	725
1968-69	996	477	1,473	635	203	838
1969-70	1,047	505	1,552	823	267	1,090
1970-71	1,029	492	1,521	869	257	1,126
1971-72	1,121	454	1,575	1,032	255	1,287
1972-73	1,049	411	1,460	995	391	1,386
1973-74	902	336	1,238	1,027	429	1,456
1974-75	503	214	717	972	428	1,400
1975-76	528	225	753	1,199	437	1,636
1976-77	528	249	777	916	465	1,381
<b>TOTAL:</b>	<b>14,427</b>	<b>5,408</b>	<b>19,835</b>	<b>10,998</b>	<b>4,112</b>	<b>15,110</b>

Source: Directorate of Health and Family Welfare Services,  
Bangalore.

.....

ANNEXURE - 4

INTAKE AND OUT-TURN OF M.B.B.S. STUDENTS IN GOVT. MEDICAL  
COLLEGES FROM 1960-61 TO 1976-77

YEAR	I N T A K E			O U T - T U R N		
	Belonging to		Total	Belonging to		Total
	Karna- taka.	Other States/ countries		Karna- taka	Other States/ countries	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1960-61	402	3	405	103	1	104
1961-62	494	7	501	142	5	147
1962-63	786	5	791	214	7	221
1963-64	807	15	822	254	9	263
1964-65	747	11	758	337	7	344
1965-66	744	22	766	388	12	400
1966-67	739	27	766	398	15	413
1967-68	737	26	763	534	13	547
1968-69	730	39	769	575	15	590
1969-70	736	30	766	725	14	739
1970-71	718	41	759	728	14	742
1971-72	734	34	768	852	20	872
1972-73	700	44	744	773	17	790
1973-74	417	14	431	726	18	744
1974-75	333	37	370	666	19	685
1975-76	321	32	353	940	30	970
1976-77	321	30	351	611	34	645
TOTAL:	10,466	417	10,883	8,966	250	9,216

Source: Directorate of Health and Family Welfare Services,  
Bangalore.

.....

ANNEXURE - 5INTAKE AND OUT-TURN OF M.B.B.S. STUDENTS IN PRIVATE  
MEDICAL COLLEGES FROM 1960-61 TO 76-77.

YEAR	I N T A K E			O U T - T U R N		
	Belonging to		Total	Belonging to		Total
	Karna- taka	Other States/ countries		Karna- taka	Other States/ countries	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1960-61	119	83	202	11	122	133
1961-62	53	128	181	22	134	156
1962-63	57	104	161	13	89	102
1963-64	61	184	245	20	102	122
1964-65	155	299	454	26	113	139
1965-66	267	357	624	7	78	85
1966-67	264	373	637	30	126	156
1967-68	292	401	693	31	147	178
1968-69	266	438	704	60	188	248
1969-70	311	475	786	98	253	351
1970-71	311	451	762	141	243	384
1971-72	387	420	807	180	235	415
1972-73	349	367	716	222	374	596
1973-74	485	322	807	301	411	712
1974-75	170	177	347	306	409	715
1975-76	207	193	400	259	407	666
1976-77	207	219	426	305	431	736
TOTAL:	3,961	4,991	8,952	2,032	3,862	5,894

Source: Directorate of Health and Family Welfare Services,  
Bangalore.

.....

ANNEXURE - 6

STATEMENT SHOWING THE OUT-TURN OF DOCTORS AND THE  
NO. OF DOCTORS REGISTERED WITH THE KARNATAKA MEDICAL  
COUNCIL DURING 1960-76.

Year	Out-turn of doctors.	No. of doctors registered	Difference between columns (2) & (3)
(1)	(2)	(3)	(4)
1960	237	168	- 69
1961	303	239	- 64
1962	323	463	+140
1963	385	408	+ 23
1964	483	279	-204
1965	485	241	-244
1966	569	356	-213
1967	725	404	-321
1968	838	461	-377
1969	1,090	535	-555
1970	1,126	990	-136
1971	1,287	962	-325
1972	1,386	971	-415
1973	1,456	1,152	-304
1974	1,400	1,298	-102
1975	1,636	1,170	-466
1976	1,381	1,182	-199
<b>TOTAL:</b>	<b>15,110</b>	<b>11,279</b>	<b>--3,831</b>

Source: For Col.(2): Directorate of Health and Family Welfare Services, Bangalore.

For Col.(3): Karnataka Medical Council.

.....

ANNEXURE - 7

REGISTRATION, MIGRATION AND DEATHS OF AYURVEDIC, UNANI AND INTEGRATED-  
COURSE DOCTORS FROM 1966 TO 1977.

YEAR (1)	No. of doctors registered			No. of doctors in-migrated.			No. of doctors out-migrated			No. of doctors died		
	Ayur-vedic (2)	Unani (3)	Inte-grated (4)	Ayur-vedic (5)	Unani (6)	Inte-grated (7)	Ayur-vedic (8)	Unani (9)	Inte-grated (10)	Ayur-vedic (11)	Unani (12)	Inte-grated (13)
1966	409	22	26	9	-	3	11	-	-	4	1	-
1967	1,851	118	100	11	1	11	28	1	2	9	1	3
1968	1,935	159	406	10	-	14	23	-	3	14	1	-
1969	884	49	120	11	1	6	35	1	2	4	-	-
1970	191	8	86	1	-	20	1	-	-	-	-	-
1971	44	3	47	1	-	11	1	-	-	-	-	-
1972	56	2	36	4	-	5	-	-	-	-	-	-
1973	54	1	35	8	-	6	-	-	-	-	-	1
1974 to 1977	613	NA	163	105	NA	15	-	NA	-	-	NA	-
<b>TOTAL:</b>	<b>6,037</b>	<b>362</b>	<b>919</b>	<b>160</b>	<b>2</b>	<b>91</b>	<b>99</b>	<b>2</b>	<b>7</b>	<b>31</b>	<b>3</b>	<b>4</b>

Source: The Mysore Ayurvedic and Unani Practitioners' Board, Bangalore.

... 33 ...

... 34

ANNEXURE - 8

INTAKE AND OUT-TURN OF DENTAL POST-GRADUATES & GRADUATES  
FROM 1965-66 TO 1978-79

YEAR (1)	DENTAL POST-GRADUATES		DENTAL GRADUATES	
	Intake (2)	Out-turn (3)	Intake (4)	Out-turn (5)
1965-66	5	-	30	3
1966-67	3	3	55	12
1967-68	6	12	65	20
1968-69	7	4	81	26
1969-70	-	-	65	33
1970-71	16	5	65	32
1971-72	17	9	81	49
1972-73	18	8	104	67
1973-74	15	5	86	65
1974-75	12	10	91	65
1975-76	10	7	80	65
1976-77	10	6	80	63
1977-78	10	6	80	67
1978-79	10	6	80	59

Source: Individual colleges.

Note: 1. Figures for 1976-79 are estimates.

2. In case of Dental post-graduates, the out-turn for 1976-79 is estimated at 63.64% of the intake of the corresponding cohort years 1975-78. 63.64 is the percentage of the total out-turn (63) during 1966-67 to the total intake (99) during the corresponding cohort years 1965-75.

3. In case of Dental graduates, the out-turn for 1976-79 is estimated at 73.63% of the intake of corresponding cohort years 1973-76. 73.63 is the percentage of the total out-turn (402) during 1968-76 to the total intake (546) during the corresponding cohort years 1965-73.

.....

ANNEXURE 9

INTAKE AND OUTTURN OF B.PHARMA AND D.PHARMA COURSES  
FOR THE YEARS 1965-66 TO 1978-79.

YEAR (1)	I N T A K E		O U T - T U R N	
	B.Pharma (2)	D.Pharma (3)	B.Pharma (4)	D.Pharma (5)
1965-66	60	80	-	20
1966-67	67	75	-	25
1967-68	59	122	25	48
1968-69	60	140	49	78
1969-70	61	134	50	99
1970-71	61	168	47	95
1971-72	61	159	55	95
1972-73	55	102	52	174
1973-74	65	154	52	128
1974-75	65	154	51	116
1975-76	65	154	46	116
1976-77	65	154	54	116
1977-78	65	154	54	116
1978-79	65	154	54	116

Source: Drugs Controller.

- Note: 1. Out-turn figures for the years 1974-75 to 1978-79 are estimates.
2. In case of B.Pharma, 82.9% of the intake of corresponding cohort years from 1971-72 to 1975-76 is considered. This is the percentage of total out-turn (305) from 1968-69 to 1973-74 to the total intake (368) during the corresponding cohort years 1965-66 to 1970-71.
3. In case of D.Pharma 75.7% of the intake of corresponding cohort years from 1973-74 to 1977-78 is considered. This is the percentage of total out-turn (742) from 1966-67 to 1973-74 to the total intake (980) during the corresponding cohort years 1965-66 to 1972-73.

.....



ANNEXURE - 10

INTAKE AND OUT-TURN OF STAFF NURSES IN GOVERNMENT  
TEACHING HOSPITALS FROM 1969-70 TO 1978-79

Year	Intake	Out-turn
1969-70	233	171
1970-71	230	157
1971-72	143	207
1972-73	182	211
1973-74	395	182
1974-75	419	49
1975-76	169	115
1976-77	169	279
1977-78	169	296
1978-79	169	119

Source: Directorate of Health and Family Welfare Services.

Note: Out-turn from 1976-77 to 1978-79 are estimated at 70.7% of the intake during the corresponding cohort years 1973-74 to 1975-76. This is the percentage of the total out-turn (557) during 1972-73 to 1975-76 to the total intake (788) during the corresponding cohort years from 1969-70 to 1972-73. (The duration of the Staff Nurse Training course is taken as 4 years for purpose of computation.)

ANNEXURE - 11STATEMENT SHOWING THE DEMAND AND SUPPLY OF MEDICAL AND  
PARA-MEDICAL PERSONNEL DURING 1974-79

Category (1)	Total demand 1974-79 (2)	Total supply 1974-79 (3)	Surplus(+) or Deficit(-) (4)
1. Post-graduate doctors	437	816	+ 379
2. Graduate doctors	913	5,651	+4,738
3. Ayurvedic doctors	136	735	+ 599
4. Unani doctors	35	N.A.	-
5. Homoeopathy doctors	25	625	+ 600
6. Graduate Dentists	44	319	+ 275
7. Graduate Pharmacists	33	259	+ 226
8. Diploma Pharmacists	440	580	+ 140
9. Nurses	365	858	+ 493
10. Auxiliary Nurse- Midwives.	1,340	2,000	+ 660
11. Lady Health Visitors	389	430	+ 41
12. Health Supervisors	30	-	-
13. Sr. Health Inspectors	169	-	-
14. Jr. Health Inspectors	205	-	-
15. Dental Mechanics	9	-	-
16. Dental Hygeinists	3	-	-
17. X-Ray Technicians	12	-	-
18. Junior Laboratory Technicians	2	-	-
19. Junior Microscopists	32	-	-

