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HEALTH MANPOWER REPORT

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by

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Health Manpower Report
for the
Health Sector Assessment, Egypt

Dr. Doris Storms

Executive Summary

This report deals with the human resources in the formal Egyptian health care system today: government, public and private. It finds a relatively high number of trained national health providers available, as well as a high capacity for producing physicians and nurses. However, the supply is more than the country's health sector management system and its economy can absorb, and the existing export market is uncertain. To understand the problems, accommodations and alternatives in Egyptian health manpower development and utilization, it is necessary to first consider the social and economic policies of Egypt.

The government of Egypt has a longstanding policy of equity and full employment which dates to Egypt's independence. In the face of explosive population growth, there has been increasing job division. There are more and more workers to do parts of jobs. The problem is that implementation becomes quite difficult as more people try to do more things with ever-smaller pieces of the whole. In the health sector, every person trained is guaranteed a job, and very few are refused admission to training if they have the required academic preparation. It is very important to understand that the priority of the government of Egypt has been to give all of its people the opportunity and the dignity of employment. Egypt's emphasis has been on extent not efficiency or efficacy of employment. It is this most basic, fundamental premise which at the same time gives the Egyptian health sector its greatest strengths and weaknesses. How these human resources are produced, how they carry out their work and toward what end their efforts are directed are the key issues to address in manpower.

Possible health manpower related interventions through which USAID-Cairo could assist Egyptian development in the next five years must take into account the present situation with regard to the functioning of existing large numbers of health care providers (over 100,000 in the government and public sectors alone). Current provider-population ratios are in the range of 1:2000 for doctors and 1:1000 for nurses. (The ratios are even lower if one uses registration figures: 1:1000 for doctors and 1:800 for nurses.) It may be desirable to facilitate the establishment of new forms of

health service delivery or improved community medicine and public health nursing training opportunities, but it would be a tragic mistake to focus only on future outputs. Any intervention must deal with the reality of an existing large and youthful labor force in the health sector. The age profile for physicians, nurses and other types of health personnel suggests a considerable cohort effect as the large numbers of young health workers trained in the mid- to late 1970s moves through time. Current curriculum revision and school improvement efforts will not affect the bulk of personnel who, by 1985, will be in their mid-30s, presumably at higher career levels. To the extent that the initial or basic training of these health workers is considered to have been deficient, more in-service skills, upgrading and continuing education will be required to make this large cohort effective providers of services in the 1980s and for the remainder of their careers.

The need for income supplementation pushes health care providers into a multiple employment pattern, thereby increasing their private capital through a combination of public and private sources of income. The negative implications of this employment pattern for service delivery include: few permanent employees of health insurance organizations versus a large number of contract employees; reduced hours of service availability; lack of incentives for good work; divided job loyalties; minimum commitment to a place of work; and a pitting of public service against the possibility for private gain.

However, there are also positive elements to multiple employment which have implications for strategic health manpower-related interventions open to USAID-Cairo assistance. The most important of these is that with an estimated 80% of all physicians employed some portion of time in government service, there is a tremendous potential for a direct pass-through to the private and public sectors with any skills upgrading, in-service training or continuing education program for those in the government sector. A second point is that the manpower is available for an increased number of private and para-statal alternatives to public sector health care, provided that the managerial capacity is strengthened in order to deal with large numbers of part-time health workers and assuring quality of their care. Otherwise, there will be considerable administrative loss of control over the provision of effective and affordable health care.

The government of Egypt has made a substantial investment in the training of health manpower. So much so, in fact, that the medical schools are producing approximately 5,000 graduates a year, while the nursing schools (including both MOH and university-operated

schools) now graduate over 5,000 annually. For the past 10 years there has been a policy of open admissions, that is, all could enter if they had the necessary academic requirements (which in the case of doctors and high institute nurses is secondary school, and in the case of secondary technical nurses is preparatory school). That admissions policy vastly increased the size of classes and altered training in such a manner that the competence of graduates is called into question.

Some of the criticisms levelled at medical graduates of the 1970s are:

- (a) Insufficient clinical practice, coupled with a curriculum top-heavy with theoretical information only cursorily related to major problems of morbidity and mortality (for example, problems of infant and child diarrhea, lower respiratory infections, and injury control).
- (b) Little or no exposure to public health training or methods of community health status assessment and disease prevention.
- (c) Inadequate preparation in a number of specialty areas (e.g. obstetrics) and in certain practical, functional areas (e.g. maternal and child immunizations).
- (d) Virtually no training in administration or management, despite their frequent employment as heads of health units and supervisors of the other health personnel.
- (e) Lack of knowledge of what other "team" members know and can do--particularly the training and potential range of activities of nurses.

Such problems in academic preparation must be seen in the context of a system which has nearly achieved recommended WHO standards of doctor:population ratios and population coverage of health facilities. In spite of the availability of such personnel and facilities, however, one to two of every five infants born died before reaching one year of age, including 2,000 deaths from tetanus neonatorum, and numerous children fell ill with measles or polio.

There are several innovative attempts at medical curriculum change (e.g., those at Ismailia) but the effects will be long-term, not short or middle range. It will be 5-6 years before the first class of 44 students at Ismailia graduates, and many years before a critical mass of graduates are in the system. At present,

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physicians number around 34,000, of which around 18,000 are in-service, 10,000 are temporary migrants, and the others are on study leave or in the military or entirely in private practice.

Perhaps even more serious problems exist in nursing. Recruitment to the profession has suffered from poor public acceptance of the propriety of that job for a young woman. Attempts to bring males into nursing face problems as well, including a role for male nurses largely restricted to emergency and surgical care, leaving to the female nurses the care of women and children (who comprise at least 60% of the population). Once recruited, however, numerous problems hamper training. Some facilities are clearly insufficient for the needs of either classroom use or the culturally necessary "rest house" -- a place where the girls reside under close supervision. There is an appalling lack of teaching materials in Arabic. Recently the MOH Center for Educational Technology in Health has just begun to publish some well thought-out nursing booklets, with clear teaching objectives and self-assessment sections. These booklets have been distributed and are being used in the STN training schools. Much more material in Arabic is needed, however, and the staff to prepare these booklets is small in number for the magnitude of the task. There are too few nurse educators with clinical expertise and preparation in educational techniques. Further training and advancement in nursing education and administration is hampered by the poor English language skills of nurses. English is the language of instruction for the more highly educated nurses. Unfortunately, there are relatively few opportunities to learn English at a time or place convenient to attend outside of work hours. (English is considered important to know because it puts the nurse in contact with professional nursing journals and other published results of recent advances in nursing practice.)

These deficiencies are well-recognized but little acted upon. The status of nursing is so poor that nursing manpower development makes little claim upon available economic resources. It is doubtful whether the nursing leadership could garner the political clout which would be required to make the kind of sweeping changes which are necessary.

Recent attempts to define a continuing education/skills retraining program for nurses have not been encouraging. An AID-Cairo P.I.D. exists for a nurse training project, but a number of substantive questions have been raised by reviewers internal to AID and by an outside systems consultant. The project lacks focus and the kind of imaginative thrust which is apparent in the recent medical curriculum innovations. The draft task list recently developed by a

MOH committee for use in training is traditional in outlook, curative and hospital focused, and does not go to the heart of what is required to improve health status and prevent illness and disability in Egypt.

Although nursing development is potentially a key point for bilateral and multi-lateral interventions related to health manpower, the perspective of donor groups is often narrowed by a view of health care which is synonymous with "doctor" care. Equally handicapping is the relative void in international perspective on the part of donor country nurse educators, who often reflect the staffing and academic concerns of more developed countries. In terms of AID-Cairo assistance directed toward manpower development in nursing, there needs to be input from persons with actual public health nursing, hospital nursing and nursing education experience in developing countries.

The time horizon is a key issue in any manpower-related intervention. The large cohort of young nurses and doctors with training ill-fit to the epidemiology of disease in Egypt suggests that a retraining strategy will have the maximum short-term effect, with long-range benefits. Retraining should be focused on a systematic and integrated pre-service, in-service and continuing education program which would be based on evaluation of deficiencies in job-related competence, and directed toward increasing skills most needed to achieve specified health status outcomes for those problems which account for the greatest morbidity and mortality in the Egyptian population.

Competency-based skills training appears to be the most appropriate manpower development strategy, given the types of problems found in the rural, peri-urban and urban low-income areas of Egypt. It has the advantage of being labor intensive. In addition, technical retraining uses mid-level trainees, instead of scarce academic resources, and permits more governmental control over standardization of training content, methods and materials. It should be carried out in Arabic.

There are possible constraints to this strategy, however. It should not be dependent on personal motivation. Recent experience with nurses, doctors and dayas all suggest that the approach should not be voluntary. The experience with doctors is that on the average only one in four successfully completes the 2-year program of post-graduate study which is paid for by the government. In terms of nurses, there are still considerable numbers of nurses with only 1 1/2 years' training, although the government has offered them 1 1/2 years more in order to get the STN certificate (3 year

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nurse). Finally, in the case of dayas, the World Bank Population II Program has run into difficulties with cooperation from dayas. A staff member at a health unit which is part of the Population Project said none of the village dayas wanted to work with the health center staff or be "trained" by them.

The annual continuing education conference for physicians, supported by the MOH, does not evaluate the sessions. There are no criteria for selection of attendees, nor are set curricula or learning objectives developed for the conferences. Instead, specialist physicians come in to lecture -- a process without much quality control.

The government of Egypt is aware of these problems in quality and productivity of health workers and has reacted in some very appropriate, well-focused ways. Chiefly, these efforts have been to: evaluate reasons for physician drop-out from advanced study; obtain rationale and objectives for existing educational programs for medicine and nursing; develop and distribute teaching materials in Arabic for Secondary Technical Nurses; and promote use of dayas in family planning while trying to improve daya childbirth practices.

One problem which continues to plague the government is the economic situation of health workers in Egypt. The WHO/EMRO manpower survey of 57 medical and paramedical personnel in 12 health units throughout Egypt found that annual salaries reported by the personnel ranged from a low of L.E. 240 per annum to L.E. 996 per annum. The average annual salary reported was L.E. 446 per annum (\$US 637 at the then-current official exchange rate), which at the time of the survey was double the national per capita income. Starting salaries (L.E. 43) and average annual wages place doctors above the level defined as meeting basic needs, and within a range of twice the per capita income to the upper 10 percent of estimated family/household incomes. However, starting salaries for nurses (L.E. 16-20) are below the basic needs level, a factor which may account in part for the rapid attrition from nursing employment.

As a way to offset the level of wages set by the government, and to promote the dispersion of manpower into rural and frontier areas, an elaborate system of incentives has been developed. The problem, however, is that what was once an incentive is soon seen as a basic part of wages, and thus loses its character as a reward or incentive for quality job performance. Also, the practice of remedying problems through monetary incentives has reduced the likelihood of developing other, non-monetary, solutions to problems in the delivery system. More incentives aren't the solution to most of the existing manpower problems in Egypt's health care system. More

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human resources need to be directed into manpower planning, management and evaluation.

International departures of Egyptian health manpower have grown considerably since 1973. At present, it is estimated that 10,000 Egyptian physicians and 3,800 nurses have emigrated to the Arab states and Africa. Migration benefits Egypt through remittances accrued from overseas workers. Also, although a tax is not levied on the individual migrant's earnings, temporary migrants must transfer 25% of salary earned abroad back to Egypt through banks at the official exchange rate. The rapid increase in the rate of migration of Egyptian health manpower has helped relieve the pressure caused by the recent high production of physicians who would otherwise be employed in the public sector.

A decreasing quality of Egyptian health workers has been noted, while expectations on the part of Egyptian citizens and overseas employers of temporary migrants have increased. Three short-term impact strategies are proposed: First, an extensive competency-based skills retraining program for government health manpower, which would have rapid pass-through to other parts of the health sector due to multiple employment patterns. Second, on-going structured management training at the governorate and district levels, to detect service delivery problems and improve organization and delivery of services. Third, short-term managerial and supervisory training for heads of health units and nurse supervisors. This training should be designed for all persons in government, including the MOH and the Ministry of Higher Education, which is responsible for university hospital care. These programs are feasible in a 5-year time frame.

Three long-range interventions are proposed. The first is to continue to facilitate appropriate changes in medical education, and in particular in its general practice and community medicine segments.

Any long-range attempt to deal with nursing education is more problematical unless substantial problems of recruitment and rapid attrition are given attention at the same time. The second long-range intervention then could be a sustained program of enhancing the role of the nurse and clarifying public misperceptions of the female nurse. This program should use all media, but even more importantly, be carried out with the assistance of the religious leaders and the respected groups in Egyptian society. It is foolhardy to increase the numbers of nurses trained if there is no sound basis for such action and if the high rates of attrition continue.

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The third possible long-range manpower-related intervention is more controversial and requires more sweeping changes. The suggestion is that a limit be placed on numbers of medical school graduates and that, rather than producing excessive numbers of physicians, teaching programs be developed for the education of health administrators, health planners, and health service researchers. The course offerings should be practical, problem-oriented, and based on management theory and Egyptian case studies. They should include courses in management and planning, health manpower development, operations research, program evaluation, survey analysis and related subjects. These programs should be open to doctors and nurses but not restricted to them. They should not be schools for advanced or elite training. They should chiefly serve as programs which give technical training and opportunity for employment in Egyptian resource management.

Egypt struggles to control the economic and social problems caused by increasing population size. There is a political will to strengthen implementation and make services more functional and affordable at the most basic level of human resources. Egypt will need assistance to develop the capacity for resource management in the health sector.

The body of the report which follows contains statistical data and more detailed discussions on types and numbers of Egyptian health workers; geographic, age, sex, and service-specific distributions; MOH employee earnings; out-migration; and estimates of future manpower requirements.

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Health Manpower Report
for the
1982 Health Sector Assessment, Egypt

Dr. Doris Storms

1. Introduction to the purposes of the report

All forms of health care depend upon a body of trained health personnel. This report deals with the human resources in the formal Egyptian health care system today. It focuses on existing levels of health manpower and on how those resources are deployed and used, describes trends in the development and utilization of that manpower, estimates numbers of personnel required in the different categories, and lists key issues which must be addressed if there is to be a redistribution of those resources to where they are most needed and a change in how they are used.

This report was prepared as a background document for the Phase II Team of the Health Sector Assessment carried out by the USAID Mission to the Arab Republic of Egypt. It is intended to be a practical, useful resource to facilitate the work of that team. It aims to help them acquire in the shortest time possible the most salient information about Egyptian health manpower, in order that they may integrate this knowledge with that presented in the other consultant reports and make recommendations for maximum effective development and utilization of those human resources for health.

This document reflects approximately a month's work in document review, interviews, field visits, and statistical data analysis. The research was carried out with the assistance of an Egyptian counterpart, assigned by the Ministry of Health. However, the presentation of this material and the conclusions are solely the responsibility of this consultant and do not necessarily reflect the views of the MOH or of AID.

2. Current levels and trends in health manpower in Egypt

2.1 Major categories of health personnel covered by this report

Many persons are engaged in providing health care to the people of Egypt. Health care includes care provided by each person, by members of his or her family, and by traditional healers, in addition to that provided by members of the formal health care system. This report deals almost exclusively with members of the formal system. Dayas (traditional midwives), for example, are the only traditional providers discussed, and even they are discussed only briefly and only in relation to work of the rural health units. Further, this report elaborates on the numbers, distribution and utilization of physicians and nurses. These categories were chosen because they represent the two largest groups of health care providers, and any proposal for effective deployment must tackle the problems of their production, distribution, balance, job-related competence, acceptability, and incentives for quality care. Emphasis on physicians is clearly necessary, given Egyptian policy and practice in health services, health manpower, and health manpower training. Emphasis on nurses is equally necessary, given the importance of their roles, their relative scarcity in some parts of the health services systems, and the potential contributions to health which they could make in Egypt's communities, as well as in health facilities. Other categories of health workers are also clearly of importance when assessing supply and demand of manpower: they include pharmacists, social workers, laboratory technicians, physiotherapists, etc. For reasons of time, only enumeration information is provided for such categories of health workers in this report. However, the reader is directed to read other assessment consultants' reports for additional health manpower information. In particular, pharmacists are covered in the Pharmacy

report, dayas, in the Users' Perspectives report, and the Health Services Systems report covers activities of hospital and out-patient facility health manpower.

2.2 Sectoral employment covered by this report

There are three main health sectors in Egypt: the government, which includes primarily the Ministry of Health, the Ministry of Higher Education (teaching hospitals), and the Ministry of the Interior; the public sector, which includes Health Insurance Organizations and Curative Organizations; and the private sector, which includes private practice and voluntary organizations. In addition government health care is provided to the military and to prisoners. Most information on employment in this report pertains to the major health sector employers: the Ministry of Health, Health Insurance Organizations, and University Hospitals.

Measures of health sector employment status may be misleading because of the prevalent practice of holding jobs in multiple sectors, or multiple jobs in one sector, as a way to supplement earnings. For example, it is estimated that 80% of MOH physicians have jobs in the private sector.

2.3 Sources of data

Considerable information is available on levels of health manpower and their production, but the data are of variable quality. Problems have been noted with registration data for physicians, as the rolls are not kept current. (For example, many registrants who have died or migrated are still on the rolls.) Sources of data on types and levels of health care providers were published and unpublished statistics from the Ministry of Health,

the Health Insurance Organization of Alexandria, and the 1979 Health Facilities Inventory. Information on training institution outputs came from published data and AID consultant reports. Information on migration was provided by the Department of Foreign Health Affairs, Ministry of Health. Data on earnings and incentives for health workers are both difficult to obtain and inadequate. Other than starting salaries, most of the information is anecdotal. Income data for the Egyptian population was taken from World Bank reports. Information on job-related competence and satisfaction of health workers was drawn from published reports and anecdotal information. (Also see Quality of Care annex to the HSA report on Health Services Delivery Systems.) There have been very few scientific studies of job-related competence in the Egyptian health sector, although several assessments exist.

Special mention should be made of the source of data on distribution of health manpower, the 1979 Health Facilities Inventory (HFI). This inventory is part of the Health Profile of Egypt project, which is a joint research activity of the Ministry of Health of Egypt and the National Center for Health Statistics, USA. As an activity of the HFI, a census of manpower working in the health field was conducted. The purpose of this census was to provide indicators which would be of help in health planning and medical education. The first phase of the census consisted of those working in the Ministry of Health, some other governmental agencies, and half of the public sector. The next phase will include the private sector, some universities, and the rest of the public sector. Not included are military physicians, interns and emigrants, but the HFI investigators suggest these be estimated from the registries of medical licenses by deduction of other categories.

In the Health Profile of Egypt project about 100,000 persons working in the health field were included in the manpower census; respondents for whom data are published number approximately 70,000. Estimates of the degree of coverage of the manpower census of physicians are found in Table 1. Comparison of HFI survey data concerning on-duty physicians with information from the Ministry of Health suggests a high degree of coverage. A smaller proportion of non-MOH personnel responded to the survey questions, and there were no existing data from the MOH General Department of Statistics with which to compare the responses from the other governmental and public sector physicians.

This survey was an extremely rich source of material, largely unanalyzed. This consultant observed several problems of computation in the reports, so that this present analysis has concentrated on comparing differences across groups through use of proportions of totals.

There are a few outstanding gaps in existing information. One pertains to information on earnings and incentives, particularly in light of widespread employment in multiple sectors and multiple jobs (an issue which is discussed further in section 2.6 and elsewhere below). Information is also lacking on the personnel flows for nurses. While a formal manpower flow analysis does not exist for physicians, more is known about the possible exits and entries for doctors than for nurses.

Table 1

Estimates of Degree of Coverage of Manpower Census*

The Number of Physicians (National level) obtained from the registers:

Last serial number till Dec. 31, 1979	43,547
Excluding those registered before 1945	-4,297
Excluding 1% annually because of death and retirement, with average of 150 physicians x 35 yrs.	-5,250
Total of registered physicians on duty (including emigrants abroad "3,730")	34,000

Ratios of Physicians and Population 1979-1981

<u>Year</u>	<u>Resident Population</u>	<u>Physicians</u>	<u>Physician/Population</u>
1979	39.5 millions	30,000	1 : 1315
1980	40.5 millions	34,000	1 : 1190
1981	41.5 millions	38,000	1 : 1090

The above ratios are almost those known during the last three years.

Perspective of distribution of physicians on duty by different sectors 1979 - (estimated):

Ministry of Health	15,500
Other governmental/public sector	4,000
Private sector	3,000
Military physicians	4,500
Interns	4,000
Emigrants	3,000

This number is similar to that obtained by the annual enumeration carried out by the Ministry of Health for M.O.H. manpower.

Physicians included in manpower census of HFI (Coverage)Ministry of Health:

13,148 out of 15,500 (85%)

Other governmental/Public Sector:

1,600 out of 4,000 (40%)

*Source: Health Profile of Egypt

2.4 Present situation: types and numbers of Egyptian health workers

2.4.1 Enumerations: Registrations, Ministry of Health

Table 2 indicates the numbers of registered health personnel in the Ministry of Health and presents personnel ratios per 10,000 population for the years 1977 and 1978. (Population data are taken from the 1976 census.) Physicians are in greatest number, then midwives (including assistant midwives), nurses, and pharmacists. Nurses experienced the greatest percentage growth between 1976 and 1978. Increases of at least 20 percent were reported for nurse supervisors, nurses, and nurse technicians. These are registration figures and, as pointed out previously, are considerable overestimates of the personnel actually on duty. In fact, if one compares these data with 1977 data on physicians and nurses actually in service (Table 3), one can see for example that the number of on-duty physicians was 64 percent smaller than the expected number of registered MOH physicians (shown in Table 1 to be 46% of all registered physicians).

Overall, the numbers of registered health personnel increased by 10% between 1977 and 1978. It is difficult to know whether this increase is due to not keeping the rolls current or pertains to actual increases in registration. Table 4 presents a more recent distribution of on-duty physicians and nurses working for the Ministry of Health. In the three years, 1977-1980, there was a 41 percent increase in the number of MOH physicians on duty, and a 44 percent increase in on-duty MOH nurses. Thus, it would appear that an increase of registration of about 10 percent a year is realistic.

Table 2

Registered Health Personnel by Occupational Category,
Egyptian Ministry of Health,
December 31, 1977 and December 31, 1978*

<u>Category</u>	<u>1977</u>		<u>1978</u>		<u>% Change</u>
	<u>Number</u>	<u>per 10,000 population</u>	<u>Number</u>	<u>per 10,000 population</u>	
Physician	35,489	9.2	39,386	10.0	10.98%
Pharmacist	12,314	3.2	13,367	3.4	8.55
Dentist	4,314	1.2	5,133	1.3	10.84
Nurse Supervisor	400	0.1	504	0.1	26.00
Nurse	17,283	4.5	21,008	5.3	21.55
Asst. Midwife	19,268	5.0	19,374	5.9	0.55
Midwife	2,372	0.6	2,376	0.6	0.16
Technician	5,579	1.5	6,975	1.8	25.02
Totals	97,019		108,123		11.44%

*Source: Ministry of Health, GOE, 1982

Table 3
Distribution of Ministry of Health Health Personnel by Governorate 1977

<u>Governorate</u>	<u>Population</u>	<u>Health Personnel</u>		<u>Health Personnel/1000 people</u>	
		Physicians	Nurses and Technicians	Physicians	Nurses and Technicians
Cairo	5,144,000	1,250	2,839	0.24	0.55
Alexandria	2,352,000	493	2,060	0.21	0.88
Port Said	267,000	140	524	0.52	1.96
Suez	198,000	109	392	0.55	1.98
Urban Govern.	<u>7,961,000</u>	<u>1,992</u>	<u>5,815</u>	<u>0.25</u>	<u>0.73</u>
Damietta	565,000	182	614	0.32	1.09
Dakahliya	2,765,000	730	1,954	0.26	0.71
Sharkiya	2,655,000	636	1,456	0.24	0.55
Kalyubiya	1,708,000	538	1,377	0.31	0.81
Kafr El Sheikh	1,423,000	388	1,117	0.27	0.78
Gharbiya	2,322,000	724	2,343	0.31	1.01
Menoufiya	1,729,000	406	1,268	0.23	0.73
Beheira	2,555,000	637	2,436	0.25	0.95
Ismailia	358,000	128	351	0.36	0.98
Lower Egypt	<u>16,080,000</u>	<u>742</u>	<u>1,649</u>	<u>0.30</u>	<u>0.67</u>
Giza	2,473,000	742	1,649	0.30	0.67
Beni-Suef	1,121,000	326	1,159	0.29	1.03
Fayoum	1,154,000	283	986	0.24	0.85
Minya	2,079,000	449	1,487	0.21	0.71
Assiut	1,715,000	442	1,082	0.26	0.63
Sohag	1,942,000	468	1,128	0.24	0.58
Quena	1,723,000	386	719	0.22	0.42
Aswan	627,000	194	481	0.31	0.77
Upper Egypt	<u>12,834,000</u>	<u>3,290</u>	<u>8,691</u>	<u>0.26</u>	<u>0.68</u>
Frontier Govern.	422,000	196	340	0.46	0.81
Egypt	<u>37,297,000</u>	<u>9,847</u>	<u>27,762</u>	<u>0.26</u>	<u>0.74</u>

TABLE 4

Number of In-Service Physicians and Nurses, MOH, Egypt, 1980

<u>Governorate</u>	<u>Physi- cians</u>	<u>Chief Nurse</u>	<u>Techni- cal Nurse</u>	<u>Hakima</u>	<u>Nurse 3 Yrs.</u>	<u>Nurse 1.5 Yrs.</u>	<u>TOTAL</u>
Cairo	2,349	26	8	378	1,721	1,036	5,518
Alexandria	1,152	152	47	76	841	615	2,883
Port Said	185	12	3	14	444	154	812
Suez	159	5	1	9	222	88	484
Ismailia	163	4	1	5	270	34	477
Damietta	250	3	1	21	426	211	912
Dakhaliya	1,254	3	1	124	705	1,521	3,608
Sharqiya	706	3	1	171	893	611	2,385
Kalyoubiya	580	1	1	23	637	514	1,756
Kafr El Sheikh	476	3	1	6	746	285	1,517
Gharbiya	886	15	7	54	1,625	931	3,518
Menoufiya	487	3	2	15	784	554	1,845
Beheira	710	20	11	30	1,271	404	2,446
Giza	1,160	8	4	231	649	516	2,568
Beni Suef	305	3	1	19	728	587	1,643
Fayoum	346	3	-	113	943	37	1,442
Minia	569	1	-	28	466	859	1,923
Assiut	706	5	-	10	312	305	1,338
Sohag	687	2	-	5	407	262	1,363
Quena	435	2	-	3	333	214	987
Aswan	198	-	-	20	246	48	512
Matruh	57	-	-	-	96	15	168
Wadi El Gedid	36	-	-	1	111	14	162
Bahr El Ahmar	35	-	-	-	76	24	135
Sinaa Shamaliya	57	-	1	-	69	3	130
Sinaa Ganoubeya	13	-	-	-	-	-	13
Total	13,961	274	91	1,356	15,021	9,842	40,645

Source: Ministry of Health, Arab Republic of Egypt, 1982

2.4.2 1979 survey data (government and public sectors)

Tables 5.1 - 5.3 present the numbers and corresponding ratios per 10,000 population of on-duty health personnel in each of the governorates, by occupation, for 1979. These data were obtained by the HFI manpower survey and include personnel employed by the government and public sectors. This source details more types of personnel than the statistics published by the Ministry of Health, and therefore permits comparison with standards of adequate staffing for health care providers other than physicians or nurses.

The most striking finding is the poor distribution of middle level health personnel. It will be noted from the table that the population ratios are quite small for mid-level occupations other than nurse and nurse assistant. This table also allows for a comparison across governorates, showing, for example, that physician-population ratios are highest in urban areas and are low in more rural governorates. Imbalances appear to be greater across regions for mid-level health care workers than for physicians. Nursing in particular has quite a wide range of population ratios across Egypt's governorates.

In summary, the supply of physicians does not appear to be matched by that of middle level health manpower, suggesting that there may not be an adequate support system for health services.

2.4.3 Health insurance organization standards

Information was available from the Health Insurance Organization (HIO) in Alexandria on the standards set for staffing. (See Table 6) According to one of the Phase I Health Sector Assessment consultants who made a field visit to the Alexandria

Table 5.1: Numbers and Corresponding Population Ratios of On-Duty Personnel, by Occupation and Governorate 1979

Occupation	PORT SAID		SUEZ		ALEXANDRIA		CAIRO		ISMAILIA		DAMIETTA		DAKAHLIA		SHARKIA	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
University level medical:																
Physician	145	5.19	120	5.71	950	3.85	1941	3.59	93	2.49	148	2.47	848	2.9	564	2.00
Dentist	28	1.00	24	1.14	143	0.58	207	0.38	25	0.67	40	0.67	117	0.4	74	0.26
Pharmacist	36	1.29	12	0.57	365	1.48	310	0.57	15	0.40	22	0.37	114	0.4	42	0.15
Physiotherapist	1	0.04	2	0.10	6	0.02	64	0.12	5	0.13	-	0.00	5	-	5	0.02
Chief Nurse	15	0.54	7	0.33	104	0.42	56	0.10	-	-	3	0.05	9	-	4	0.01
Sub-total	225	8.06	165	7.86	1569	6.35	2578	4.76	138	3.69	213	3.56	1093	3.7	689	2.44
University level non-medical:																
Chemist	5	0.18	8	0.38	42	0.17	38	0.07	6	0.16	4	0.07	19	0.1	14	0.05
Agricultural Engineer	5	0.18	2	0.10	6	0.02	17	0.03	5	0.13	3	0.05	21	0.1	15	0.05
Social Worker	14	0.50	7	0.33	100	0.41	170	0.31	6	0.16	5	0.08	24	0.1	18	0.06
Others	19	0.68	21	1.00	118	0.47	339	0.66	20	0.54	1	0.02	81	0.2	103	0.36
Sub-total	43	1.54	38	1.81	266	1.08	564	1.04	37	0.99	13	0.22	145	0.5	150	0.53
Middle level medical:																
Pharmaceutical Asst.	1	0.04	-	-	1	-	12	0.02	-	-	1	0.02	4	0	1	0.00
Laboratory Technician	27	0.97	29	1.38	277	1.12	217	0.40	20	0.54	24	0.40	157	0.5	43	0.15
Sanitarian	29	1.04	34	1.62	205	0.83	254	0.47	18	0.48	33	0.55	223	0.8	196	0.70
Health Assistant	91	3.26	49	2.33	185	0.75	235	0.43	61	1.64	33	0.55	461	1.6	377	1.34
Dental Technician	5	0.18	4	0.19	22	0.09	36	0.07	3	0.08	6	0.10	4	-	7	0.02
X-Ray Technician	5	0.18	13	0.62	83	0.34	124	0.23	11	0.29	10	0.17	73	0.2	28	0.10
Optical Technician	1	0.04	1	0.05	-	-	1	0.00	3	0.08	-	0.00	1	-	1	-
First Aid Expert	6	0.22	13	0.62	58	0.23	57	0.11	17	0.46	-	0.00	38	0.1	15	0.05
First Aid (1.5 yrs)	-	-	-	-	-	-	2	0.00	5	0.13	-	0.00	1	-	-	-
Laboratory Assistant	7	0.25	11	0.52	46	0.19	164	0.30	18	0.48	39	0.65	213	0.7	262	0.93
Nurse (3 yrs)	401	14.35	224	10.67	931	3.77	2585	4.78	185	5.05	217	3.62	969	3.2	858	3.40
Nurse Assistant (1.5 yrs)	179	6.42	56	2.67	695	2.81	1095	2.02	77	2.11	119	1.99	708	2.3	593	2.16
Hakema	1	0.04	-	-	24	0.10	14	0.03	1	0.03	-	0.00	10	-	16	0.06
Administrative Technician	-	-	-	-	2	0.01	11	0.02	-	-	-	0.00	2	-	1	-
X-Ray Assistant	4	0.14	1	0.05	7	0.03	17	0.03	-	-	2	0.03	6	-	4	-
Others	-	-	-	-	6	0.02	-	-	-	-	-	-	7	-	1	-
Sub-total	757	27.13	435	20.71	2542	10.30	4824	8.92	419	11.23	484	8.08	2873	9.8	2403	8.52
Middle level non-medical																
Clerks	452	16.20	217	10.33	1028	4.16	1641	3.03	211	5.66	58	0.97	1207	4.1	1123	3.98
Others	292	10.47	198	9.43	869	3.52	1192	2.20	248	6.65	40	0.67	802	2.7	323	1.15
Sub-total	744	26.67	415	19.76	1897	7.68	2833	5.23	459	12.31	98	1.64	2009	6.8	1446	5.13
Total of All On-Duty Personnel	1769	63.40	1053	50.14	6274	25.41	10779	19.95	1053	28.23	808	13.50	6120	20.8	4691	16.63

Table 5.1

Table 5.2: Numbers and Corresponding Population Ratios of On-Duty Personnel, by Occupation and Governorate 1979

Occupation	KALIOUBIA		KAFR EL-SHEIKH		GHARBIA.		MUNUFIA		EL_FAYUM		BEHEIRA		GIZA		BENI SUEF	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
University level medical:																
Physician	568	3.14	365	2.41	699	2.70	483	2.63	273	2.21	618	2.27	825	3.17	372	3.1
Dentist	164	0.19	47	0.31	71	0.30	86	.47	64	0.52	122	0.45	126	0.48	78	0.7
Pharmacist	58	0.32	42	0.27	110	0.40	48	.26	30	0.24	124	0.46	86	0.33	40	0.3
Physiotherapist	-	-	1	0.07	1	-	-	-	-	-	1	0.00	14	0.05	3	0.02
Chief Nurse	6	0.03	4	0.03	17	0.10	4	.02	3	0.02	13	0.05	5	0.02	10	0.08
Sub-total	796	4.40	459	3.04	868	3.50	621	3.38	370	3.00	878	3.23	1,056	4.05	503	4.2
University level non-medical:																
Chemist	6	0.03	4	0.03	21	0.10	8	.04	10	0.08	6	0.02	14	0.05	8	0.07
Agricultural Engineer	10	0.06	3	0.02	5	-	13	.07	-	-	32	0.12	12	0.05	13	0.11
Social Worker	16	0.09	5	0.03	16	0.10	9	.05	5	0.04	26	0.10	32	0.12	7	0.06
Others	59	0.32	29	0.19	83	0.30	33	.18	36	0.29	57	0.21	95	0.37	28	0.23
Sub-total	91	0.50	41	0.27	125	0.50	63	.34	51	0.41	121	0.45	153	0.59	57	0.48
Middle level medical:																
Pharmaceutical Asst.	-	-	-	-	-	-	1	0.01	-	-	22	0.01	4	0.02	3	0.03
Laboratory Technician	42	0.23	52	0.34	86	0.4	28	.15	55	0.45	119	0.44	62	0.24	35	0.29
Sanitarian	114	0.63	109	0.72	165	0.7	104	.57	86	0.70	202	0.74	118	0.45	116	0.97
Health Assistant	219	1.21	210	1.39	185	0.8	302	1.65	234	1.89	328	1.21	165	0.63	193	1.61
Dental Technician	14	0.08	4	0.03	5	0.0	2	.01	8	0.06	12	0.04	19	0.07	7	0.06
X-Ray Technician	23	0.13	14	0.09	39	0.2	23	.13	24	0.19	30	0.11	36	0.14	21	0.18
Optical Technician	-	-	-	-	-	-	-	-	2	0.02	1	0.00	1	0.00	1	0.01
First Aid Expert	10	0.06	20	0.13	42	0.2	25	.14	12	0.10	38	0.14	21	0.08	57	0.48
First Aid (1.5 yrs)	4	0.02	-	-	-	-	1	.01	2	0.02	4	0.01	7	0.03	1	0.01
Laboratory Assistant	122	0.67	131	0.86	171	0.7	154	.83	95	0.77	249	0.92	126	0.48	128	1.07
Nurse (3 yrs)	602	3.33	552	3.65	1,282	5.2	651	3.54	484	3.92	995	3.66	862	3.3	577	4.82
Nurse Assistant (1.5 yrs)	358	1.97	242	1.60	767	3.1	640	3.48	289	2.34	476	1.75	444	1.7	543	4.54
Hakema	10	0.06	-	-	5	-	6	.03	3	0.02	30	0.11	2	0.02	-	-
Administrative Technician	-	-	-	-	-	-	1	.01	-	-	1	0.00	1	0.00	1	0.01
X-Ray Assistant	1	0.01	1	0.01	5	-	4	.03	-	-	5	0.02	1	0.00	5	0.04
Sub-total	1,523	8.42	1,335	8.83	2,755	11.2	1,944	10.59	1,295	10.49	2,502	9.2	1,869	7.16	1,688	14.12
Middle level non-medical																
Clerks	564	3.12	347	2.29	800	3.3	626	3.42	559	4.52	668	2.46	371	1.42	551	4.61
Others	265	1.47	246	1.63	570	2.3	561	3.05	416	3.36	478	1.75	537	2.05	674	5.63
Sub-total	829	4.59	593	3.92	1370	5.6	1187	6.47	975	7.89	1,146	4.21	908	3.48	1,225	10.24
Total of All On-Duty Personnel	3239	17.91	2428	16.06	5118	20.8	3,815	20.78	2,691	21.79	4,647	17.09	3,986	15.28	3,473	29.04

Table 5.3: Number and Corresponding Population Ratios of On-Duty Personnel, by Occupation and Governorate 1979

Occupation	MENTA		ASSIUT		SOHAG		QENA		MATROUH		SINAI		RED SEA		NEW VALLEY	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
University level medical:																
Physician	593	2.7	482	2.6	537	2.59	429	2.34	50	3.91	21	1.31	32	5.33	49	5.38
Dentist	53	0.2	63	0.3	68	0.33	54	0.29	20	1.56	6	0.38	8	1.33	7	0.77
Pharmacist	76	0.3	112	0.6	36	0.17	20	0.11	16	1.25	2	0.13	4	0.67	5	0.55
Physiotherapist	-	-	-	-	-	-	1	0.01	-	-	-	-	-	-	-	-
Chief Nurse	1	0.0	6	0.0	-	-	4	0.02	-	-	-	-	-	-	-	-
Sub-total	723	3.2	663	3.6	641	3.09	508	2.77	86	6.72	29	1.82	44	7.3	61	6.7
University level non-medical:																
Chemist	13	0.1	14	0.1	-	-	5	0.03	-	-	-	-	2	0.3	2	0.22
Agricultural Engineer	23	0.1	23	0.1	12	0.06	8	0.04	-	-	1	0.06	-	-	-	-
Social Worker	9	0.0	5	0.0	8	0.04	4	0.02	2	0.16	-	-	-	-	-	-
Others	34	0.2	40	0.2	34	0.16	14	0.08	5	0.39	7	0.44	4	0.7	6	0.66
Sub-total	79	0.4	82	0.4	54	0.26	31	0.17	7	0.55	8	0.5	6	1	8	0.88
Middle level medical:																
Pharmaceutical Asst.	2	0.0	-	-	3	0.01	-	-	1	0.08	-	-	-	-	-	-
Laboratory Technician	88	0.4	122	0.7	78	0.38	75	0.41	14	1.09	3	0.19	12	2	12	1.32
Sanitarian	185	0.8	196	1.1	170	0.82	147	0.81	22	1.72	14	0.88	20	3.3	17	1.87
Health Assistant	378	1.7	296	1.6	248	1.19	242	1.32	15	1.17	10	0.63	6	1	61	6.7
Dental Technician	4	0.0	6	0.0	1	0.00	4	0.02	-	-	-	-	-	-	4	0.44
X-Ray Technician	44	0.2	99	0.5	50	0.24	25	0.14	7	0.55	3	0.19	7	1.2	5	0.55
Optical Technician	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
First Aid Expert	49	0.2	32	0.2	8	0.04	22	0.12	-	-	-	-	-	-	1	0.11
First Aid (1.5 yrs)	4	0.0	-	-	9	0.04	-	-	-	-	-	-	-	-	-	-
Laboratory Assistant	184	0.8	190	1.0	116	0.56	129	0.70	7	0.55	4	0.25	4	0.7	22	2.42
Nurse (3 yrs)	598	2.7	513	2.8	405	1.95	335	1.83	71	5.55	-	-	66	11	91	9.99
Nurse Assistant (1.5 yrs)	680	3.0	351	1.9	196	0.94	146	0.80	13	1.02	-	-	17	2.8	21	2.31
Hakema	-	-	3	0.0	-	-	4	0.02	1	0.08	-	-	-	-	-	-
Administrative Technician	2	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
X-Ray Assistant	2	0.0	1	0.0	1	0.00	2	0.01	-	-	-	-	-	-	1	0.11
Sub-total	2,220	9.9	1,809	9.9	1,285	6.19	1,131	6.18	151	11.81	34	2.14	132	22	235	25.82
Middle level non-medical																
Clerks	661	3.0	672	3.7	516	2.49	439	2.4	95	7.5	36	2.26	35	5.8	125	13.74
Others	474	2.1	446	2.4	571	2.62	547	2.99	77	6.02	43	2.71	15	2.5	168	18.46
Sub-total	1,135	5.1	1,118	6.1	1,060	5.11	986	5.39	173	13.52	79	4.97	50	8.3	293	32.2
Total of All On-Duty Personnel	4,157	18.6	3,672	22.01	3,040	14.64	2,656	14.51	417	32.58	150	9.43	232	38.7	597	65.6

Table 5.3

Table 6
Some Standards Stipulated for Health Insurance Organization
Medical Services (Alexandria)

- 1 General Practitioner/not more than 2000 beneficiarries
- 1 Nurse/general practitioner
- 1 Aide/Assistant/G.P.
- 1 Registration Clerk/3 G.P.
- 1 Polyclinic/10,000 - 40,000 beneficiaries
- 1 Gynaecologist/10,000 female beneficiaries
- 1 Internist/15,000 beneficiaries
- 1 Ophthalmologist/15,000 beneficiaries
- 1 Psychiatrist/15,000 beneficiaries
- 1 Surgeon/20,000 beneficiaries
- 1 Orthopedic surgeon/20,000 beneficiaries
- 1 ENT specialist/30,000/beneficiaries
- 1 Chest specialist/40,000 beneficiaries
- 1 Urologist/40.000 beneficiaries
- 1 Dermatologist/40.000 beneficiaries
- 1 Pediatrician/2000 children
- 1 Laboratory specialist/2000 beneficiaries
+ 2 technicians
- 1 Radiologist/2000 beneficiarries
+ 2 technicians
- 1 Owned Pharmacy/each polyclinic (if available)
or one contracted pharmacy/2000 beneficiaries at least
- 1 dentist/10000 beneficiaries
- 4 beds/1000 beneficiaries (currently 2.5 beds are sufficient for those who do
not pay out of pocket money at service, and one for those who pay)
- Not more than 6 beds/room
- Not less than 6 sq. meter/bed (floor area)
- Head of department, specialist, assistant specialist and 2 residents/department
or 40 beds whichever less (a department should not be less than 20 beds)
- 1 Nurse/4 beds
- 1 Lab. technician/50 beds
- 1 X-Ray technician/100 beds
- 1 Nutrition specialist/100 beds
- 1 Assistant Nutrition specialist/50 beds
- 1 Social welfare worker/100 beds
- 1 aide/assistant/3 beds

Source: Health Insurance Organization, Alexandria, 1982.

organization, the staffing was much as intended except for pediatricians and obstetricians. Since the HIO has few female beneficiaries and has not yet started services for dependents, it has not really had the need for those specialties. In a study of general practice in the HIO in Alexandria, it was found that the average practice size for each G.P. was 2410 beneficiaries. One half were responsible for 2000-2500 beneficiaries, while almost one third were responsible for more than 2500 beneficiaries. The remaining 17.5% had less than 2000 beneficiaries on their lists. (Shehata et al, 1979).

More studies have been carried out on physicians and bed staffing patterns of the HIOs than on their staffing of mid-level positions. It is difficult to secure an adequate number of nurses, according to the director of the Alexandria HIO. Many nurses either migrate to the gulf states for money or go on family leaves. Some information on the distribution of different categories of nurses according to the organizations for which they work is found in Table 7. While one can make comparisons of nurse-bed ratios, it is also necessary to have estimates of the ratios of nurses to population if the nurses are expected to participate in outreach, health education, and motivation activities in the community.

2.5 Present situation: distribution of health workers in Egypt

2.5.1 Geographic distribution

The distribution of health manpower is a critical aspect of health manpower development. The deployment of personnel by type of worker, level of training, focus of service and type of establishment affects estimates of both manpower supply and

Table 7

DISTRIBUTION OF THE DIFFERENT CATEGORIES OF
NURSES ACCORDING TO THE ORGANIZATIONS PRESENT IN EGYPT*

Organization	No. of Beds	HIN	HTI	O.D.	Nurses			Assistants				EXP	NUN	Total
					1	2	3	4	5	6	7			
Ministry of Health														
Curative		127	64	146	912	6,920	25	31	2,140	86	823	110	25	11,409
Preventive		29	10	174	201	1,521	18	1,358	987	20	2,486	61	2	6,867
Rural			28	17	62	2,807	20	831	401	16	3,518	2		7,712
Others		19	2	137	315	167		11	108	4	89			852
Total M.O.H.	54,021	175	104	474	1,490	11,415	63	2,231	3,636	126	6,926	173	27	26,840
Universities	10,486	145	22	314	371	2,440	1	4	599	44	28	5		3,973
Teaching Institutes and Hospital Org.														
Curative Organization	3,138	55	49	57	193	838	1	25	206		24	29	4	1,481
Health Insurance	3,445	74	16	32	158	519		14	173	16	128	152	51	1,333
Other Ministry Organizations	3,038	8	3	1	19	348			231		5	33		648
Total	1,774	1	12		31	160			57	4	2	48		315
Total		458	206	878	2,262	15,720	65	2,274	4,902	190	7,113	440	82	34,590

HIN: High Institute of Nursing
HTI: Health Technical Institutes
O.D. Old Diploma (five years)
EXP: Experimental Nurses (Research)

1: Specialized Nurses
2: Nurse
3: Male Nurse
4: Health Visitor
5: Assistant Nurse
6: Assistant Nurse (Male)
7: Assistant Midwife

*Ministry of Health figures circa 1978

NOTE: This table is taken from USAID/Cairo's Project Identification Document for a Technical Nurse Training Project, October, 1980,

demand. One basic approach to distribution is to look at geographic spread of personnel. As noted in the report on health services utilization, the Egyptian health care network comprises three principal systems: government, public, and private sectors. There is a very high provision of health care resources in terms of doctors and hospital beds, throughout the country, although some problems have been identified in management and upgrading is probably required in the quality of care provided. By and large, there is a fairly equitable distribution of hospitals, health centers and units throughout the 26 governorates, with current efforts directed toward further equalizing geographic accessibility to health care services. However, certain social and cultural factors affect the extent to which health care providers choose to remain in certain geographic sections of the country.

Many workers prefer to live in urbanized areas, despite the fact that the government has instituted several incentives for health workers to practice in the rural areas. The system of free medical education for those who qualify for admission also has aided in securing more personnel for the rural areas, since many rural students return to their home governorates to live and practice medicine. The housing situation, taxes, and rents all interact to support the retention of skilled health care workers in their geographic areas of origin. There is a problem of retention in the rural and frontier areas, but there is also a problem of providing health care services in low income urban areas -- areas of rapid in-migration, poor sanitary and environmental services, and inadequate water supply.

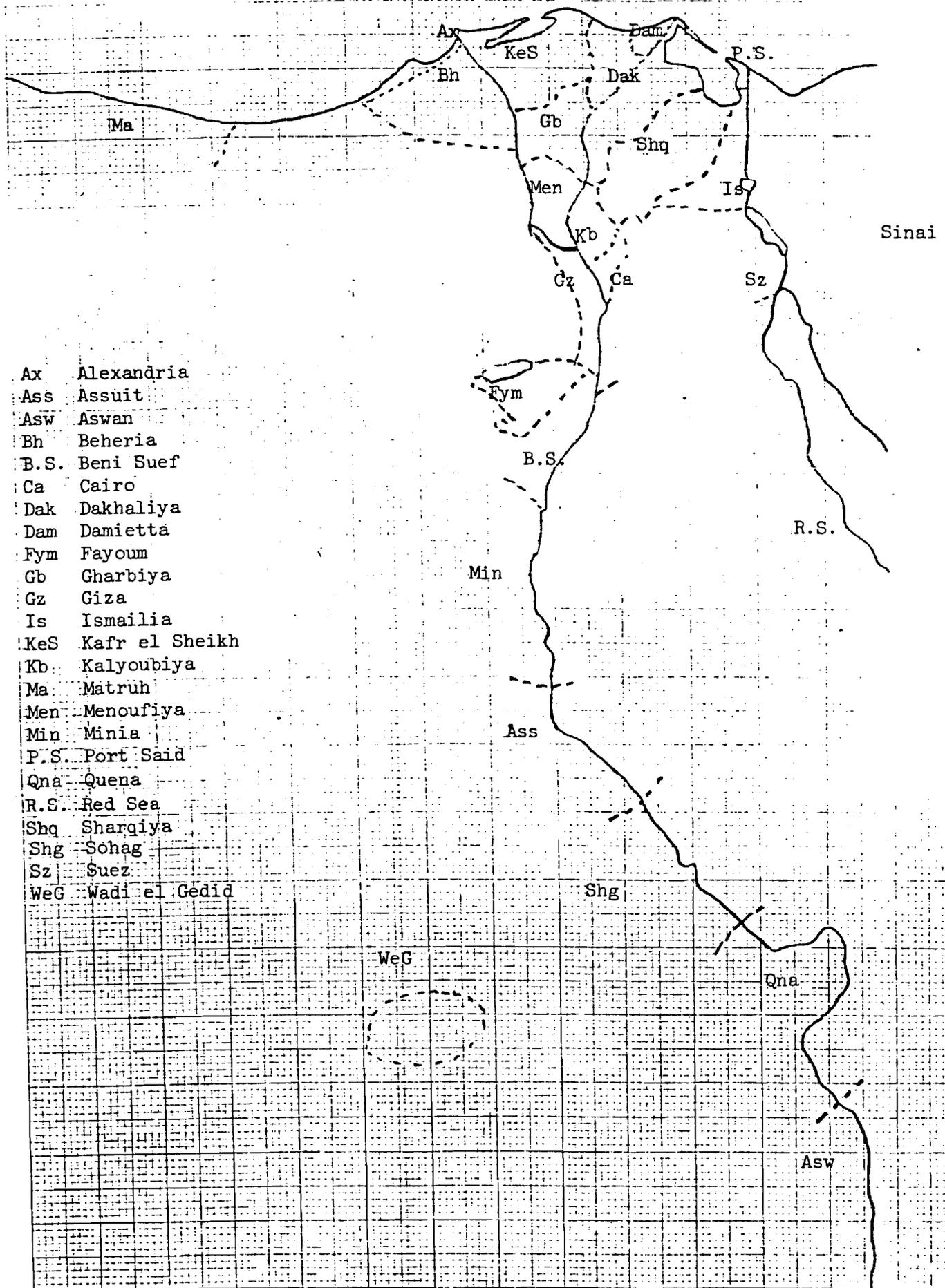
Another way to look at distribution of health manpower is in terms of the epidemiology of morbidity and mortality. As detailed in the Health Sector Assessment Phase I report on

Epidemiology and Health Status in present day Egypt, health and nutritional status are worse in upper Egypt and in low income urban areas, and better in the region of lower Egypt where the cities of Port Said, Suez, Alexandria and Cairo are located. (See map, Figure 1)

The approach taken in this report is to group the governorates by their rankings on the Physical Quality of Life Index (PQLI), a scalar measure of well-being. It is recognized that health data are insufficient for precise estimates of well-being, and further, that any scalar measure of well-being is only a theoretical construct. However, it is a measure which has been useful in comparing across different levels of development. The PQLI was estimated for Egyptian governorates by averaging three social welfare indicators -- literacy, infant mortality between the ages of zero and one year, and percentage of households having a "pure" water supply (using 1976 census data). In calculating the PQLI, the investigators translated each indicator to a one-to-one-hundred scale within the country. The governorate score was a simple average of the three scaled indicators. (Field and Ropes, 1978)

Table 8 presents the resulting estimates of the PQLI in Egyptian governorates. Except for the area of Quena, the PQLI scaling of the governorates shows a decreasing estimate of well-being from lower Egypt to upper Egypt. (PQLI estimates were not made for the border governorates of Sinai, New Valley, Matrouh and the Red Sea.) For purposes of presentation, then, the governorates are divided into three regions, roughly approximating the area of lower Egypt (Region I), middle Egypt (Region II) and upper Egypt (Region III). (Quena was grouped into region III, where it is located geographically, although its PQLI estimate was higher

Figure 1 - Map



- Ax Alexandria
- Ass Assuit
- Asw Aswan
- Bh Beheria
- B.S. Beni Suef
- Ca Cairo
- Dak Dakhaliya
- Dam Damietta
- Fym Fayoum
- Gb Gharbiya
- Gz Giza
- Is Ismailia
- KeS Kafr el Sheikh
- Kb Kalyoubiya
- Ma Matruh
- Men Menoufiya
- Min Minia
- P.S. Port Said
- Qna Quena
- R.S. Red Sea
- Shq Sharqiya
- Shg Sohag
- Sz Suez
- WeG Wadi el Gedid

Best Available Document

Table 8

Physical Quality of Life Index (PQLI) by Governorates

<u>Governorates</u>	<u>PQLI (1 - 100)</u>	<u>Infant Mortality (per 1000)</u>	<u>Literacy (%)</u>	<u>Households with Pure Water (%)</u>
Port Said	95	48	60	87
Suez	78	60	56	65
Alexandria	77	103	63	90
Cairo	65	128	65	81
Damietta	57	85	51	50
Ismailia	51	74	49	30
Dakaliya	45	79	44	29
Giza	40	109	47	40
Kafr El Sheikh	38	55	30	17
Gharbiya	38	99	45	29
Beheira	36	71	34	20
Sharqiya	30	89	37	16
Kalyoubiya	28	118	46	20
Quena	27	75	29	12
Menoufiya	23	115	43	13
Assiut	22	98	31	17
Sohag	21	88	27	14
Aswan	21	132	44	22
Beni Suef	18	106	32	12
Fayoum	15	97	26	12
Minia	15	103	29	11

Source: John Osgood Field and George Ropes, Development in the Egyptian Governorates: A modified Physical Quality of Life Index, Technology Adaptation Program, Massachusetts Institute of Technology, December, 1978.

than other governorates in upper Egypt.) A fourth category is formed by the four distant governorates. This designation of the geographic areas is used throughout the present report.

2.5.2 Age

The majority of physicians and nurses practicing in the public sector are under the age of 40. With the large numbers of these personnel entering the work force each year, the shift toward a younger age distribution should become even more pronounced. This trend has important implications for understanding career mobility opportunities and manpower flow and for projecting needs for continuing education.

The 1979 Health Facilities Inventory provided data on age distributions of physicians and nurses on-duty in the Ministry of Health and other parts of the public sector. Results of this survey showed that the proportion of nurses in the younger ages was even greater than that of physicians. Of 10,437 physicians on-duty in 1979, 46.7% were in the age group 30-39 yrs. About one in four physicians was over the age of 40, with about 8.3% over the age of 50. In contrast, 54.3% of on duty nurses were between 20-29 years, with approximately 16 percent over the age of 40.

Physicians in Ministry of Health service are younger than those in other governmental or public sectoral employment. A study of the characteristics of a hundred general practitioners engaged in the provision of medical care to beneficiaries of the National Health Insurance Program in Alexandria found that more than half (58%) of them were below 40 years of age. (Shehata et al, 1979) In comparison, three out of every four MOH physicians are under age 40.

Figure 2 shows the distribution of on-duty physicians by 10 year age groups and geographic areas in 1979. The pattern is similar across all regions -- the majority of the physicians in the younger age groups, with few at older ages. However, within that pattern, an important variation emerges. The age distribution of physicians grows younger as one moves away from lower Egypt and the cities of Cairo and Alexandria. This age and geographic area interaction suggests the assignment of younger physicians to the rural areas, followed by their migration away from frontier governorates and upper Egypt.

Given the large number of medical students graduating each year, it is surprising that there is a smaller proportion of physicians in the 20-29 group than in the 30-39 year category. However, the younger physician can take several paths which will remove him or her from on-duty rolls. A one year internship is required following graduation, then the physician must enter a two year period of obligatory rural service. The physician may serve that time in the assigned post, or may, instead, enter military service or be awarded study leave during those two years.

The distribution of on-duty nurses by age and geographic distribution is presented in Figure 3. The figure shows that in all regions there are more nurses in the younger ages, with the frontier governorates having a greater proportion under age 30, and lower Egypt having a greater concentration of nurses over age 30. The proportion of on-duty nurses rapidly decreases with age, suggesting a large number of nurse graduates entering employment, and the possibility of rapid attrition. There is no clearly marked period for study leave such as is the case with physicians.

Figure 2
DISTRIBUTION OF ON-DUTY PHYSICIANS BY AGE AND GEOGRAPHIC AREA, EGYPT 1979

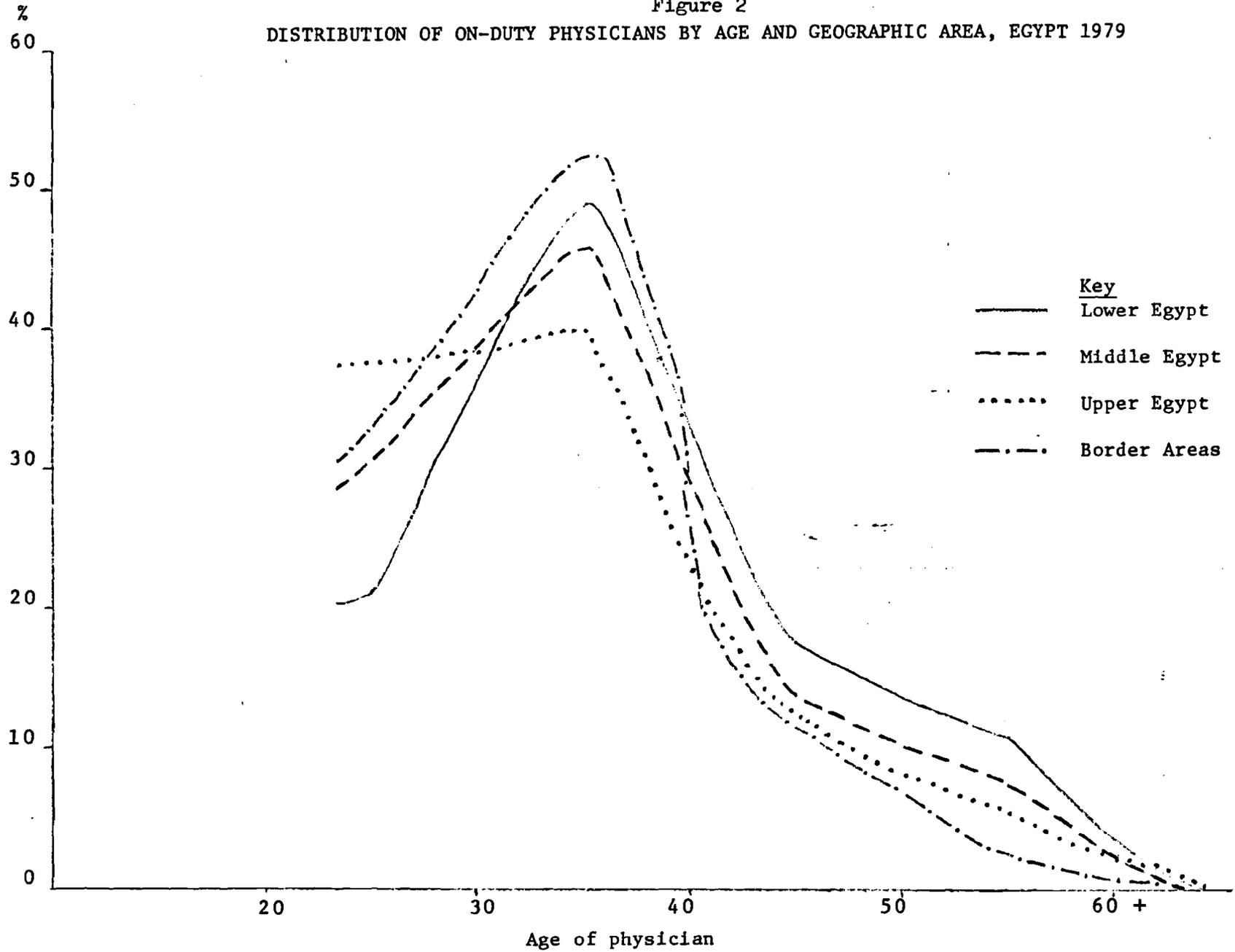
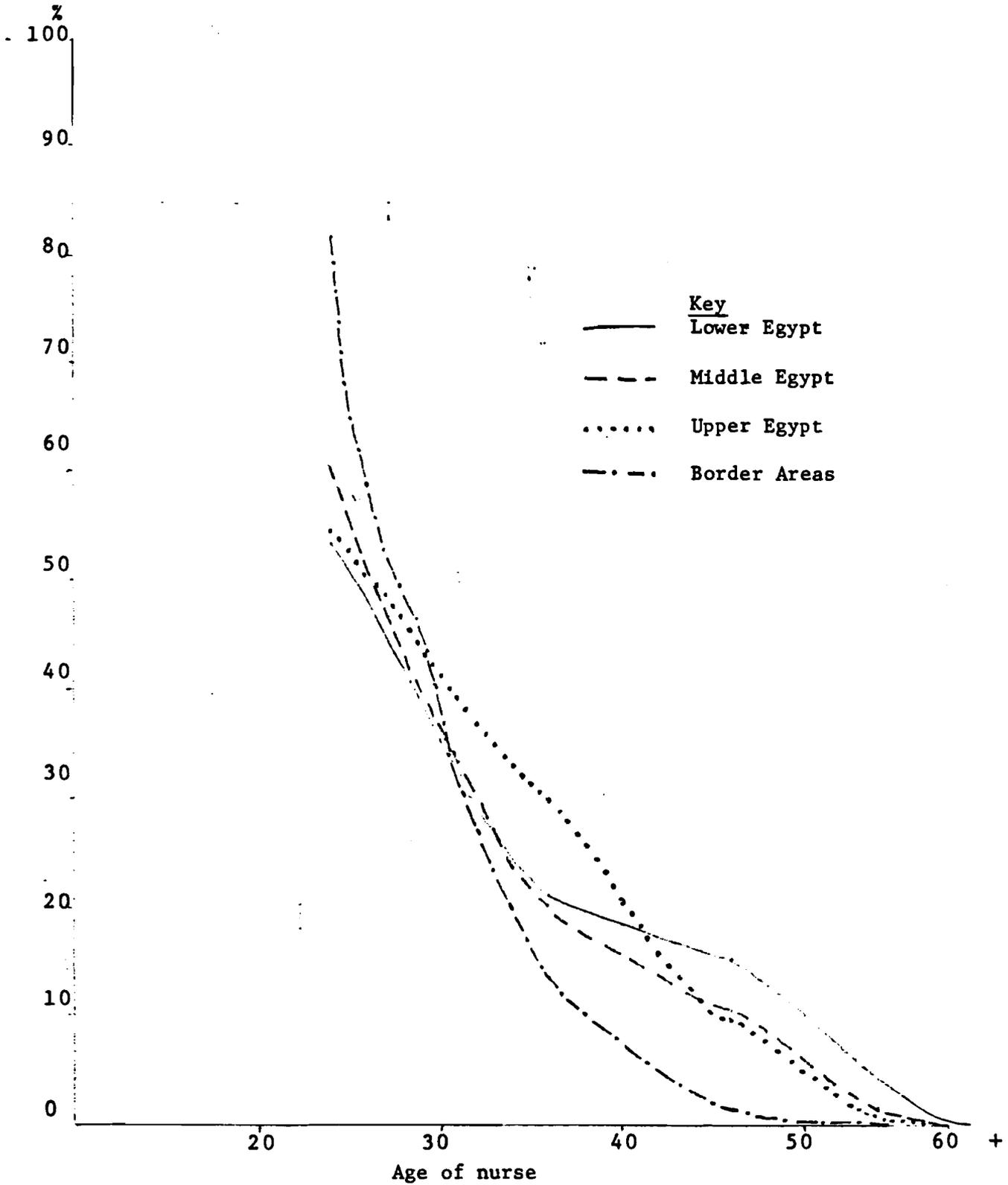


Figure 3

DISTRIBUTION OF ON-DUTY NURSES BY AGE AND GEOGRAPHIC REGION, EGYPT 1979



A more youthful work force appears to be true for all types of health personnel. EMRO/WHO carried out a micro-manpower survey in Cairo, Kafr El Sheikh, Quena, New Valley and Minya health units.(REF) They interviewed 57 medical and paramedical personnel (including nurses, physicians, social workers, midwives, and pharmacists) and found that most were under the age of 35. This was true for the country as a whole and for each of the communities except Minya, where a greater proportion were older.

The age profile for physicians, nurses and other types of health personnel (though less well documented for others) suggests a considerable cohort effect as the large numbers of young health workers trained in the mid to late 1970's move through time. Current curriculum revision and school improvement efforts will not affect the bulk of personnel who, by 1985, will be in their mid-30's, presumably at higher career levels. To the extent that the initial or basic training of these health workers is considered to have been deficient, more in-service skills upgrading and continuing education will be required to make this large cohort effective providers of services in the 1980s and for the remainder of their careers.

2.5.3 Sex Composition

2.5.3.1 Physicians

There has been a significant change in the numbers of female physicians in the Egyptian labor force. According to the Health Facilities Survey of 1979, one out of four physicians practicing in the public sector is female. As Table 9 shows, female physicians are more numerous in urban areas than rural areas of upper Egypt and provincial or frontier towns (e.g., Cairo 40.4% vs.

TABLE 9 Percentage of Male and Female Physicians and Nurses Working in the Public Sector by Geographical Area, Egypt 1979

<u>Region I</u>	<u>Doctors</u> <u>% Male</u>	<u>Nurses</u> <u>% Female</u>
Cairo Governorate	59.6	96.5
Alexandria "	65.6	97.5
Port Said "	84.8	99.2
Ismallia "	86.9	98.4
Suez "	82.0	99.6
Damietta "	83.8	99.1
Dakahlia "	80.0	98.7
Subtotal	69.4	97.8
<u>Region II</u>		
Sharkia "	80.0	94.1
Kalyubia "	72.8	97.1
Khafr El-Sheikh "	79.9	95.0
Gharbia "	76.5	97.5
Menufia "	79.0	98.7
Behera "	75.7	99.6
Giza "	66.6	97.7
Subtotal	75.0	97.4
<u>Region III</u>		
Beni-Suef "	76.8	99.7
Fayoum "	78.0	97.8
Menia "	75.7	98.5
Assiut "	68.8	98.9
Souhag "	88.7	92.2
Qena "	85.3	95.5
Aswan "	85.0	93.8
Subtotal	79.5	97.5
<u>Frontier Areas</u>		
Matrouh "	84.0	100.0
New Valley "	89.8	100.0
Red Sea "	93.7	97.6
Sinai "	100.0	
Subtotal	90.1	100.0
All Governorates	Number 10,438	21,293
	Percent 74.6	97.6

Source: Health Facilities Inventory, 1981

Quena 14.7% or New Valley 10.2%). The WHO/EMRO survey of 12 units providing basic health services in five governorates found a third of their physician sample were women. This does not mean there was a female physician in every health unit, however: in one area (Minya) there were no women physicians.

The question arises as to what impact the increased numbers of female physicians will have on career patterns, leadership in the medical profession, functioning of the health team, and acceptance of health services by the community. In interviews, several persons indicated that they regarded the change as quite important. An anthropologist saw it as important in changing village attitudes, while an economist noted that an AID study team had concluded it to be a significant change. There is little published research on the subject. A study carried out under the sponsorship of the Social Research Center at the American University in Cairo examined the managerial capabilities, role definitions, and job satisfaction of twenty physicians in rural Egypt, ten male and ten female.(El-Mehairy, 1978) The sample size is too small to make generalizations, but provides an interesting background from which to consider the impact of the increasing numbers of female physicians. In general, the attitudes expressed in the interviews were compatible with the stereotyped role of women. With regard to the need for further education and training, most of the female physicians preferred to enter obstetrics, gynecology or pediatrics, while the male physicians preferred other areas of study. Female doctors were rated by their co-workers as more competent in counseling, history taking, clinical procedures and follow-up care, but considered less capable than men of recording information, using data and making comprehensive reports. (In regard to the tasks for which female MD's seem suited, this consultant was told that the shortage of laboratory technicians was,

in part, being remedied because of the interest and skill which female physicians have in performing laboratory work. In the process of job division, this function appears to be increasingly allocated to women.)

It was noted that lady doctors were preferred more by some females in villages "and sometimes in towns", but that in general medicine was a hard career for women. In response to a question about problems encountered in the community, the female doctors gave only a few answers which pertained to sex bias (e.g., "Some people are not convinced by a woman as doctor; they trust only male doctors" or "They make trouble because they think that being a female means one is weak") There were special problems the women physicians experienced in the village, centering on embarrassment and fear to make night home visits, distant visits and "ill-treatment by youth". The women cited problems with clinic staff --"Some of them cause trouble because they consider me weak; others try to enforce themselves upon me to protect me." And they noted that women were expected to be more sympathetic so that from female doctors clinic staff asked for more exceptions and gave more excuses for not carrying out assigned tasks. In this regard, an assessment report of a proposed AID-funded secondary technical nurse project cited anecdotal impressions that "Female MD's in rural areas appear to support and relate to secondary technical nurses much more successfully."(O'Connor, 1982). Perhaps this is so because, as one woman physician said at interview, "With the staff I treat each one as a sister."

Women physicians also reported problems with supervisors in the governorate --"Some of them do not consider the special circumstances of a female doctor, particularly if the supervisor is a woman". At the Ministry of Health level, however, interviews held while compiling this report suggested that there was

recognition of the special circumstances which female doctors encounter in rural areas, chief among them being concern for family and social relationships and for the lack of environmental cleanliness. For these reasons the urban areas were seen to be a better working site for women physicians.

Interview responses of male physicians reflected similar social themes. All thought being a male was an advantage for a physician. They cited such reasons as the respect which rural society holds for men, a man's ease of communication with village people, his easier adaptation to local customs, his social position among workers in the health unit, the lack of sex-related restrictions on the length of his working hours, and the male's physical ability to carry out hard work.

In summary, women constitute twenty-five percent of physicians, but social definitions of the proper role of women inhibits their performance of surgery, directs their careers along certain specialties, affects their choice of practice location, and influences perceptions of their effectiveness in working with other members of the team, their patients and the community. Although not investigated, it is most likely that those social perceptions will equally affect women's share of the future leadership positions in the medical profession.

2.5.3.2 Nurses

Table 9 also presents data on sex composition of the nursing work force. It will be seen that nursing in Egypt is almost exclusively a profession for women. Overall, 97.6% of nurses are women, with the percentage of male nurses in the governorates ranging from zero to 7.7%, (i.e., Sinai vs. Souhag).

The social attitude toward nurses is rather complex. According to Nadim (Personal Communications, February 1982), the nurse is viewed by villagers as having power, with that power being derived from the physician. The nurse controls such activities as dispensation of medication, flow of patients, and bed care, and accepts tips ("baksheesh") for services. On the other hand, Nadim reports that few villagers would want their daughters to enter nursing, as it is not seen as a proper job for women -- perhaps because of a nurse's contact with male patients' bodies. She believes that this attitude toward nursing was slowly changing in Egypt, but that it was still prevalent in traditional rural areas.

On a field visit to Quena, there was a chance to see how such attitudes toward nursing affect recruitment into the profession. At the secondary technical nurses training school in Quena, which can hold a total of 75 students for all three years of training, there were 25 in the third year, 27 in the second, and 10 students in the first year class. Of those 10, 4 were from Quena; the remainder were sent from other areas to fill the class. All applicants are taken, no one was not admitted who applied, and, we were told, all students will graduate.

This school was clean, but in very poor condition. To this observer, the condition of the school clearly reflected the low social status of nursing. It is difficult to believe that such conditions would exist for a medical educational program. The facilities were clearly inadequate, and there was almost no equipment. Small nursing booklets on a few subjects were available for the students. These were in Arabic and were written for secondary technical nurse training schools by personnel at the MOH Center for Educational Technology. Having visited this center earlier in Cairo and talked with the highly motivated and competent

women working on these booklets, it was a pleasure to see the material being used, appreciated, and very much needed. The headmistress of this school was a public health nurse, with special training in educational methods. Her lesson plans were beautifully worked out, and it appeared that all was being done that could possibly be done by individual effort. But the facilities were not intended for a school: they were part of the hospital, and the rooms had been only slightly adapted for school use. In the "rest house" for the girls, there were five beds in each room, stacked head to toe against the two outside walls. In the stairwell there were lockers which held the girls' possessions. When one considers the importance which is attached in Egyptian society to the proper housing and chaperoning of girls before marriage, the difference between the medical school setting and the nurse training environment is even more remarkable. The girls were well-chaperoned, but the facilities were simply inadequate and served as a physical reminder of the low position which nursing occupies in the society.

The problem of recruitment spills over into staffing. In the Quena governorate health services there was a 3:1 ratio of physicians to nurses, because of the lack of entry of students to nursing. At the Luxor polyclinic (part of the new hospital which is under construction), we were told that there was at present no need for more hospital nurses, so that the hospital's nurses training school was closed, but would reopen when more nurses needed to be trained. However, on a tour of the polyclinic, which has 200 patient visits a day, no nurses were seen in the various outpatient clinics. The staffing appeared to consist largely of physicians and male assistants, although no statistical confirmation was obtained for this observation.

Recruitment and staffing in nursing are considerably affected by public attitudes toward nursing as a proper role for a female. The Ministry of Health is planning to tackle this problem by publication of a small booklet in Arabic telling about nurses and the important jobs they do for the people of Egypt. The MOH Center for Educational Technology plans to develop the booklet. That unit has designed the teaching guides for secondary technical nurses, and thus has not only a clear understanding of what the nurses do, but also experience in developing booklets for people with low level reading ability. While this should be a useful booklet, it is doubtful that it would have much impact in an area such as Quena. The opinions of their religious leaders could have much more influence on the attitudes of the people in this regard.

The extent to which this attitude toward nurses affects public acceptance of the nurse is not clear. One example of acceptance occurred in the Dendera health unit, Quena governorate, which serves a population of 14,000. The village is divided into sectors of 400-500 families and one nurse is assigned to a sector. The nurse is expected to make at least one home visit every two months at each of the homes in her sector. The nurses said they were accepted into the homes of people. They had taken a census during their home visits, and the records indicated they had been in homes of size 1 to 12 persons, with an average of 5 persons per household. The home visiting program was being carried out as part of the World Bank's Second Population Project. In response to my question about acceptance of the nurses by the villagers, a doctor interjected, "We advise them not to speak of family planning. They just take care of any health problem related to family planning work." Other examples of acceptance were noted. For example, at a conference on Community Medicine held in Ismailia, the

attendees discussed the problems of acceptance of medical students by the villagers. They said the nurse had good acceptance and could help the medical student to form a relationship with the villagers. So the picture is mixed. Most rural Egyptians will accept home visits, clinic and hospital care from a nurse, but many do not want their daughters to be nurses. The MOH has started nurse training for men, chiefly for emergency room and surgical care, but given the very high percentage of women in nursing, the profession will probably be identified with women for a considerable period. In summary, the negative public image of nursing, combined with the large numbers of physicians graduating annually, results in a health system which relies on high level medical care providers but makes poor use of middle level health personnel. Still, approximately 5,300 nurses graduate each year because, as a young nurse at Quena said, "Nursing is an honorable profession, and it helps people."

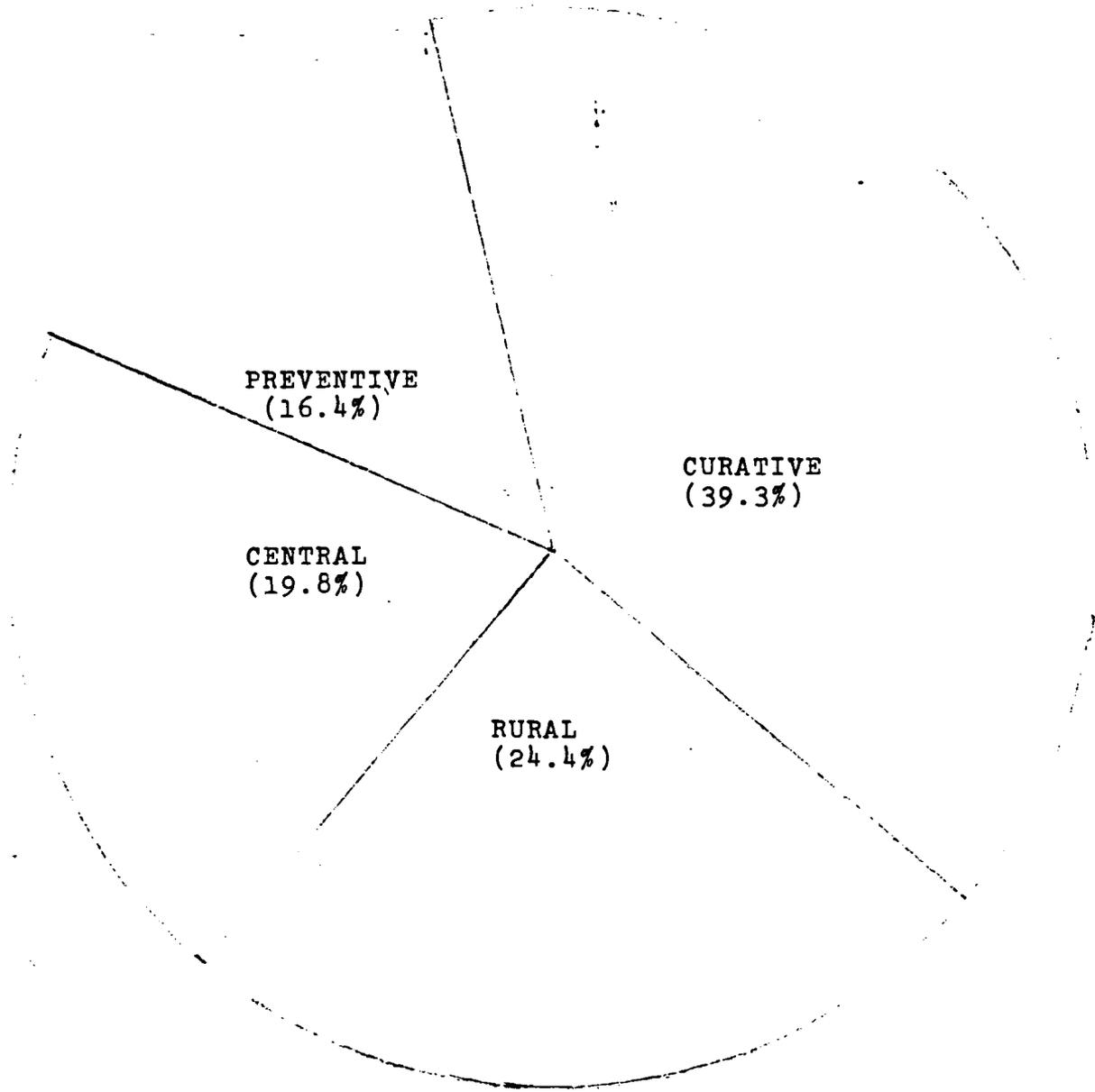
2.5.4 Service Focus

Data on distribution of Egyptian health personnel by type of service reveals a system which is curative in focus, hospital-based, and physician-oriented, with emphasis on specialized non-integrated services.

As discussed in greater detail in the Health Sector Assessment Phase I report on Egyptian health service systems, curative and institutional care is largely provided by governmental health units. However, preventive care is the sole responsibility of the MOH. Although the private sector, including traditional practitioners, is a large component of the health delivery system, governmental health units have a key responsibility for the provision of primary health care services. Such basic services include vital events registration, vaccination, control of

Figure 4

DISTRIBUTION OF IN-SERVICE HEALTH PERSONNEL BY CATEGORY OF HEALTH ESTABLISHMENT, EGYPT, 1979



communicable diseases, MCH care, school health care, discovery and treatment of endemic diseases, dental care, family planning, health education, and food control activities, with an increasing participation in sanitary control of the environment. Data obtained from the Health Facilities Inventory of 1979 indicate, however, that distribution of personnel is largely in institutional curative care and not in preventive or primary care activities and services.

Figure 4 shows the distribution of all in-service health personnel by category of health establishment. Data are for 71,439 workers and come from the Health Facilities Inventory of 1979, covering health personnel working in the government and public sectors, but excluding private clinics and hospitals. The greatest proportion of health care providers were found in curative care, and then, in decreasing order, in rural services, central administration and preventive services. As Table 10 shows, about half the physicians and nurses were allocated to curative service. Of the remainder, proportionally more physicians were working in rural care than were nurses, while proportionally more nurses were working in preventive care than doctors. About the same numbers of physicians and nurses were employed in central administration.

Separating the nurses into two groups -- those with 3 years of training and those with 1 1/2 years -- it is possible to see quite different employment patterns. The majority of three year secondary technical nurses are employed in curative care locations, while about a third of the nurse assistants are to be found in each of the curative, rural and preventive type of establishments, leaving only a small proportion in the central services.

The majority of graduates of the High Institute of Nursing, Cairo University, are employed as head nurses and directors

TABLE 10

Distribution of On-Duty Physicians and Nurses
by Category of Health Establishment, Egypt 1979

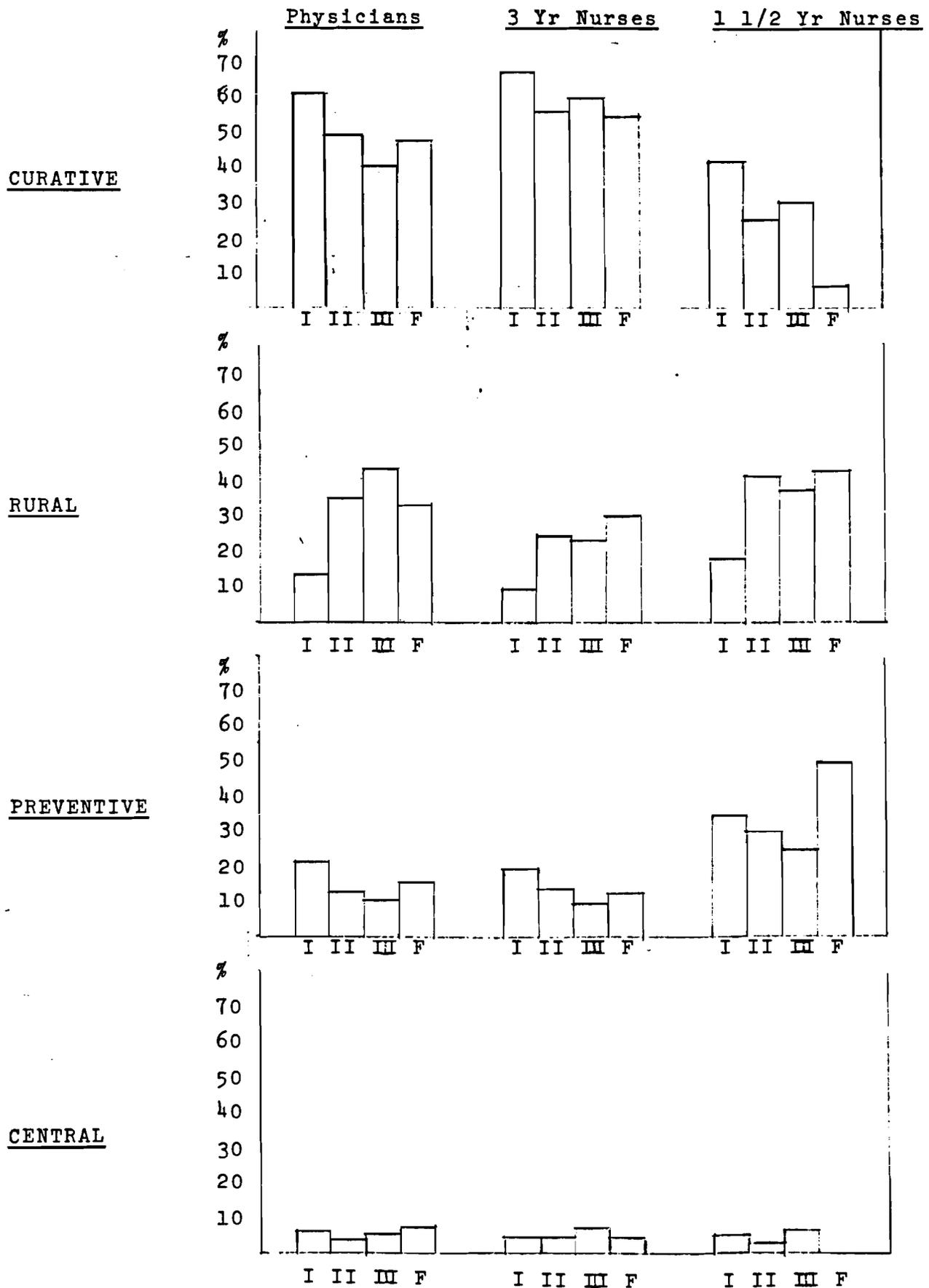
	<u>Number</u>	<u>Percent</u>			
		<u>Curative</u>	<u>Rural</u>	<u>Preventive</u>	<u>Central</u>
Physicians	10,332	50.6	29.7	14.9	4.8
Nurses	21,156	49.8	20.7	25.5	3.9
3 year	12,800	61.2	20.3	14.3	4.2
1 year	8,356	32.3	33.5	30.6	3.6

of nursing services in hospitals. Very few are employed in the rural health sector. (Moustafa and Bennett, 1977) There is a recognized need for professional nurses to work as community health nurses. Several reasons have been advanced for the failure to add public health nurses to health care staffing, including: shortage of nurses, lack of funds for nurse employment, competitive pull of out-migration opportunities.

Figure 5 further details the distribution of in-service personnel by type of worker, category of health establishment, and geographic region. There is no clear pattern to these data, except that in curative services more physicians and nurses are employed in lower Egypt, while those engaged in rural services increase as one moves away from lower Egypt. The distribution of health providers in preventive services does not seem to vary by geographic region, except in the case of nurses with 1 1/2 year training. They are found in greater numbers in the preventive services in the frontier areas. The proportions of doctors and nurses in central administration also do not seem to vary greatly across regions.

In conclusion, mortality and morbidity data suggest that the health status of the population worsens as one moves from the region of lower Egypt to the regions of upper Egypt and the frontier or border areas. The Physical Quality of Life Index also suggests that the well-being of the population deteriorates from lower to upper Egypt. However, there is little evidence (apart from the increased employment in rural services as one moves away from upper Egypt) that the distribution of on-duty health personnel according to category of health establishment varies according to such measures of poor health and nutritional status of the population. The emphasis appears to be on equity of distribution

Figure 5
 DISTRIBUTION OF IN-SERVICE HEALTH PERSONNEL BY TYPE,
 CATEGORY OF HEALTH ESTABLISHMENT AND GEOGRAPHIC REGION,
 EGYPT, 1979.



and not on targeted services focussed on epidemiologically determined priorities, a strategy which would call for differential employment of personnel in curative, preventive, rural or central establishments according to the incidence and prevalence patterns of the geographic area.

Figures 6 and 7 give the distribution of on-duty MOH physicians and nurses working in 1979, by type of service. A comparison of the two figures shows that from 36 to 38 percent are employed in general hospitals, with another 12 to 17 percent working in such settings as chest, fever, leprosy and other specialized care (e.g., eye) hospitals. Approximately another 36 to 39 percent provide basic care services, including maternal and child health, rural and school health services.

Figure 8 presents in greater detail the distribution of on-duty physicians and nurses in each geographic region by type of service. Probably the most striking overall observation is that across all regions at least two out of five MOH physicians and nurses are employed in hospitals. As expected, region I, which approximates the area of lower Egypt and includes Cairo and Alexandria, has few personnel allocated to rural services, while regions II (middle Egypt) and III (approximating upper Egypt) have a greater proportion of doctors and nurses working in the rural services. In all regions, MCH services employ a small proportion of the on-duty doctors and nurses. Similarly, few doctors and nurses are in school health services; in region I it comes to about 10 percent of all MOH doctors and nurses, but the proportion is considerably less in the remaining sections of the country. In region III, an area of poor health status relative to regions I and II, almost all doctors and nurses are to be found in general hospitals and rural services, with very few such personnel in the other health services.

Figure 6

DISTRIBUTION OF ON-DUTY PHYSICIANS BY TYPE OF SERVICE, MINISTRY OF HEALTH, EGYPT 1979

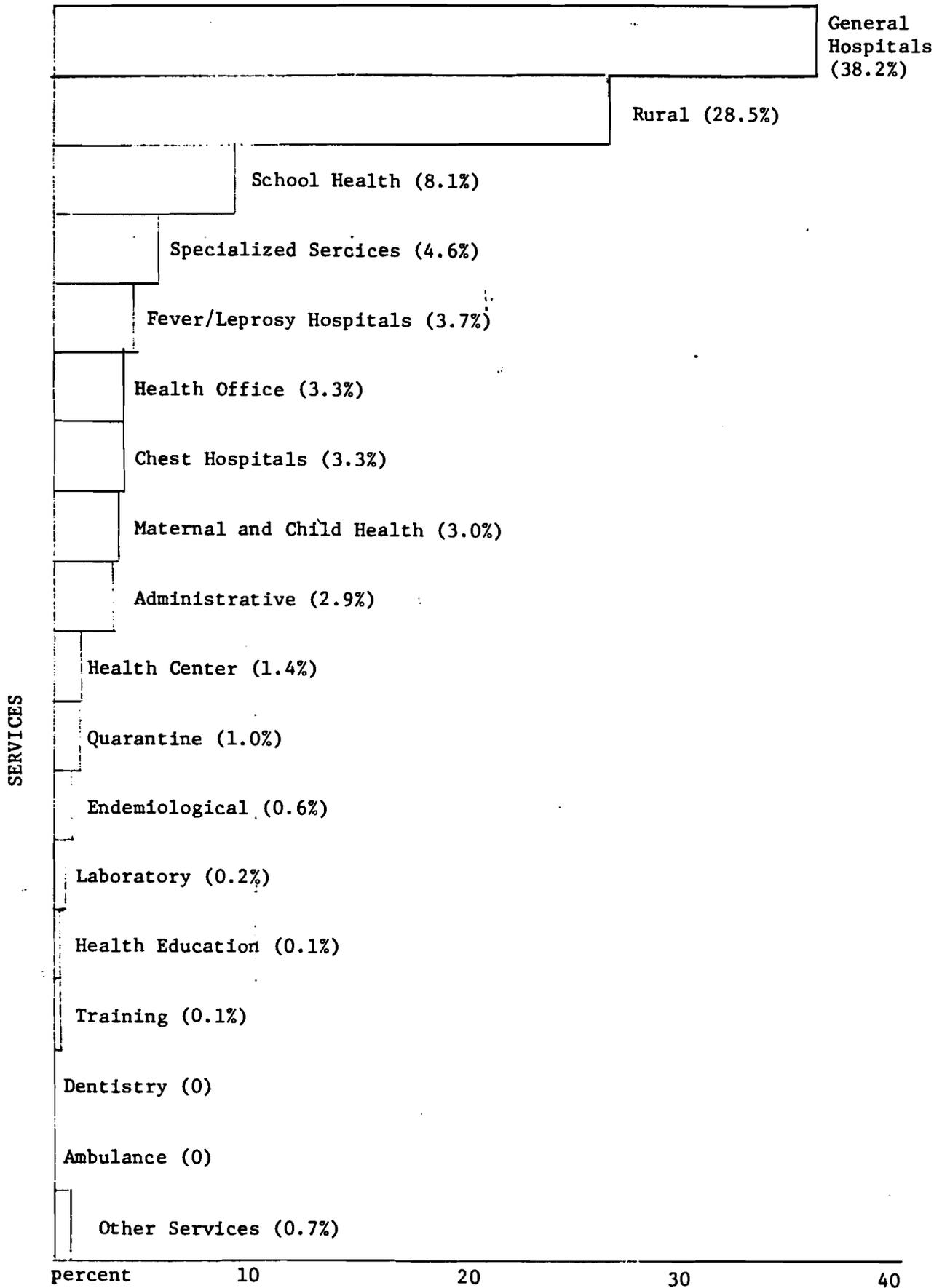


Figure 7

DISTRIBUTION OF ON-DUTY NURSES BY TYPE OF SERVICE, MINISTRY OF HEALTH, EGYPT 1979

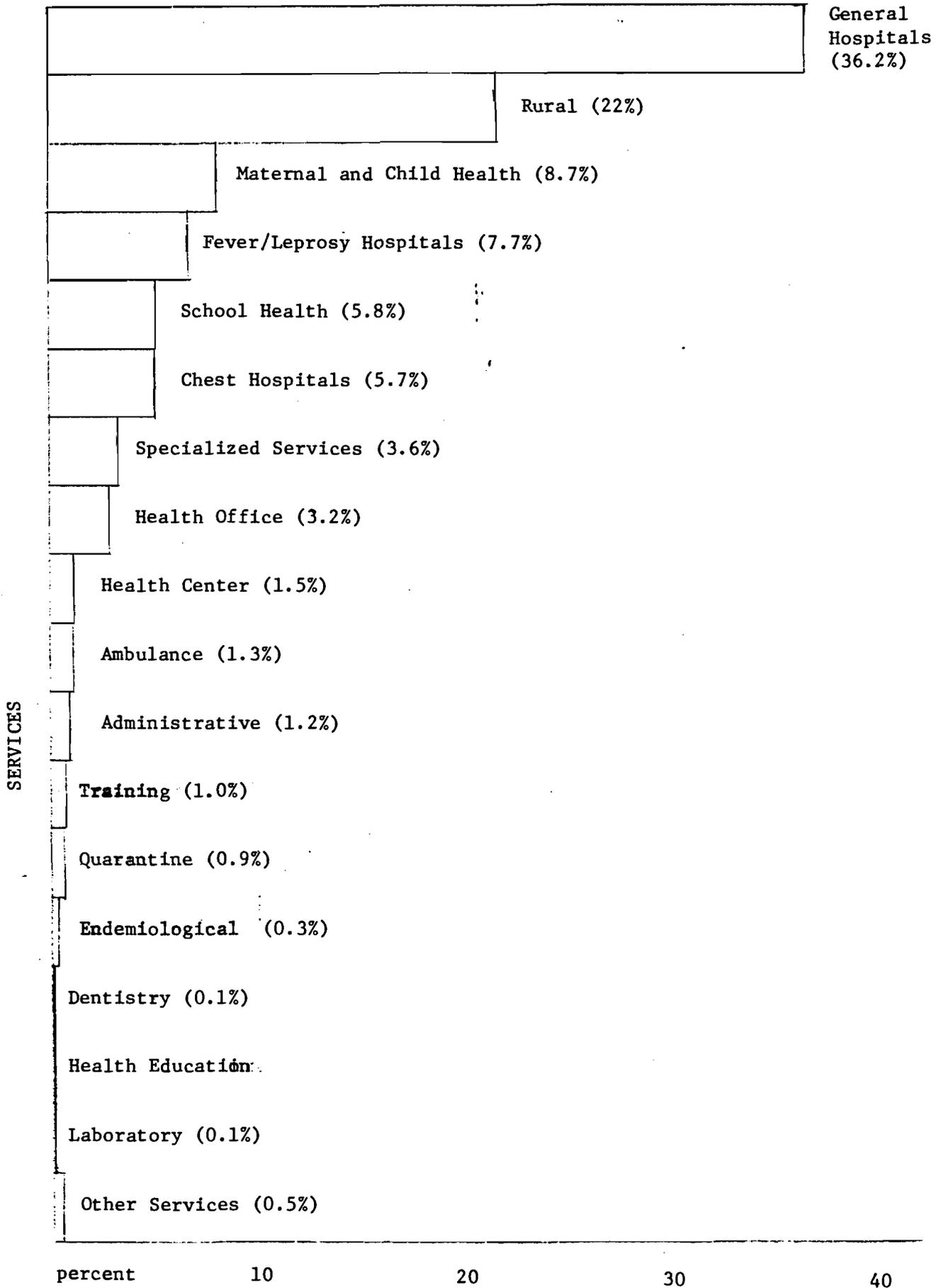
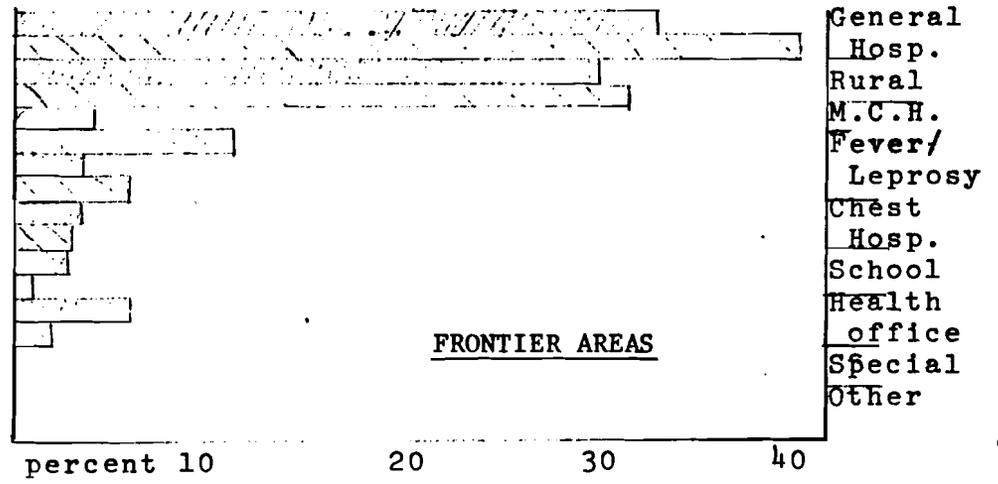
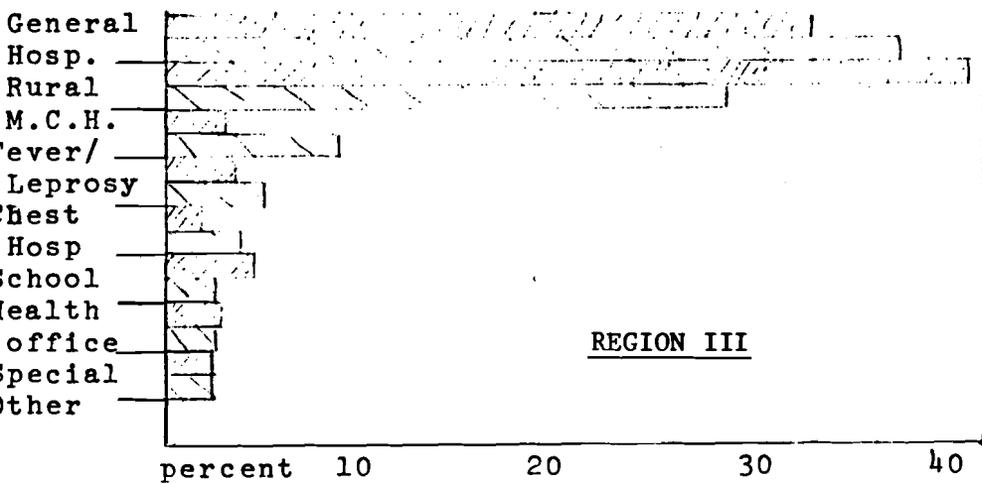
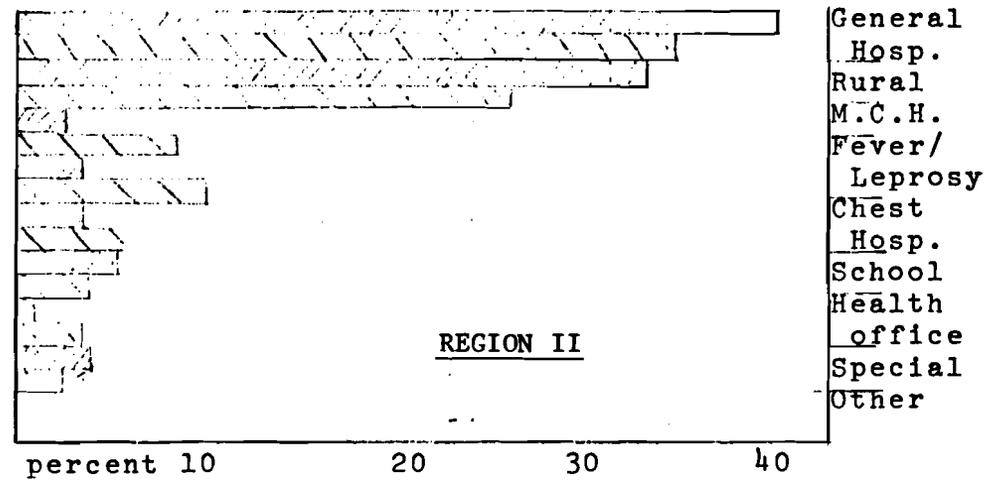
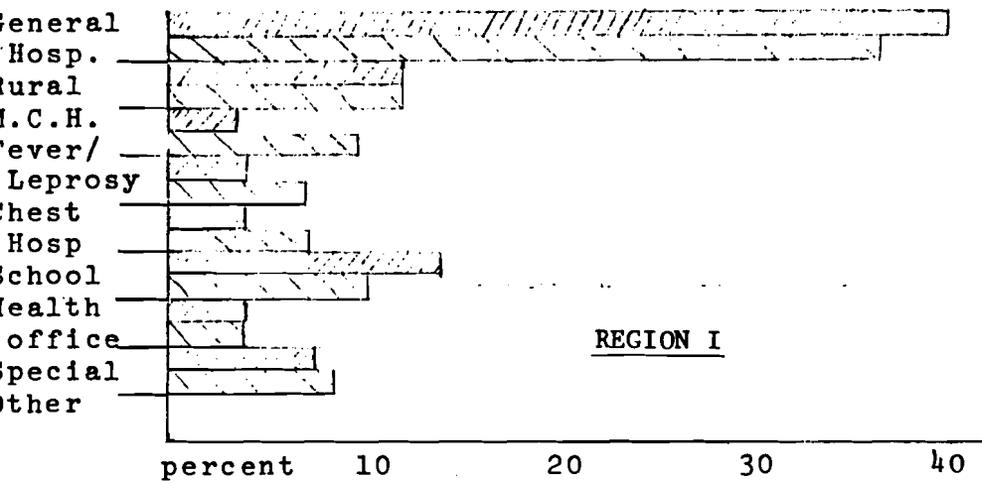
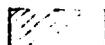


Figure 8 *
 DISTRIBUTION OF ON-DUTY PHYSICIANS AND NURSES BY TYPE OF SERVICE AND GEOGRAPHIC REGION, EGYPT 1979



 Physicians
 Nurses

* Services are: General Hospitals, Rural, Maternal and Child Health, Fever/Leprosy Hospitals, Chest Hospitals, School, Health Office, Specialized Services and Other Services

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Proportionally more physicians than nurses are assigned to hospital care in regions I and II . This pattern is reversed in region III and the frontier areas. In addition, a greater proportion of doctors than nurses work in rural health services in regions II and III. These survey data on MOH staffing show an emphasis on physician care, instead of care provided by middle or lower level health workers, in both hospital and basic care services.

2.6 Present Situation: Earnings and Incentives

2.6.1 Compensation

Earnings of health workers are probably the least known aspect of health manpower in Egypt today. There are several reasons for this lack of hard data, chief among them being dual employment of providers in the public and private sectors, an intrinsically intertwined basic salary and incentive structure, and reluctance to state one's earnings for personal privacy and tax reasons.

Starting MOH salaries are L.E. 43 for physicians and L.E. 16-20 for nurses. All persons interviewed for this report thought salaries for health providers to be low by Egyptian standards for other occupations, in spite of substantial salary increase in mid 1981. (For example, tourist guides in Luxor still earn as much as the MOH salaries paid to public health personnel. There was also an interesting speculation by a group of young health workers who believed that the day averaged L.E. 200/month.) Anecdotal evidence suggests that those entering government health sector employment are paid only slightly less than persons with many years of service, and that performance has relatively little effect on earnings. Table 11 gives the total MOH expenditures for the year

Table 11
 Obligated and Expended Funds for Central and Peripheral Administration
 Ministry of Health, 1980-81, 1981-82 (in thousands L.E.)

	1980-81		1981-82	
	<u>Obligated</u>	<u>Expended</u>	<u>Obligated</u>	<u>Expended</u>
Central Administration of M.O.H.	4,600	3,914	5,400	N.A.
Peripheral Adminis- tration	49,778	83,534	140,904	N.A.
	<u>104,378</u>	<u>87,451</u>	<u>146,304</u>	<u>N.A.</u>

Source, Ministry of Health, Office of Planning, 1982

1980-81. This averages to L.E. 2161/yr, or L.E. 180/month, by dividing total expenditures by the total number of in-service physicians and nurses in that year (a known underestimate of the total employed MOH staff.) The WHO/EMRO manpower survey of 57 medical and paramedical personnel in 12 health units throughout Egypt found that annual salaries reported by the personnel ranged from a low of L.E. 240 per annum to L.E. 996 per annum, with the distribution of salaries as follows:

8 persons	L.E. 200-300
18 "	" 300-400
18 "	" 400-500
8 "	" 500-600
5 "	" 600+

The average annual salary reported was L.E. 446 per annum (\$US 637 at the then-current official exchange rate), which at the time of the survey was double the national per capita income.

Whether a salary is "high" or "low" is relative to the general distribution of incomes in a society. Data on family income distribution by region of Egypt for 1975 is found in Table 12, based on information gathered in 1975 by the Central Agency for Public Mobilization and Statistics (CAPMAS) and reported upon in a World Bank draft paper on basic needs. (World Bank, 1981). The source, a labor force sample survey of the employed labor force, has no built-in checks on non-wage payments and therefore underestimates household income; for our purposes, however, it is quite adequate since the reported salaries of health providers are known underestimates of actual income from all sources, including health services provided to the private sector. The table shows that rural income levels are well below those in urban areas, with a greater

TABLE 12

PERCENTAGE FAMILY INCOME DISTRIBUTION BY REGION, EGYPT 1975

	<u>0 - 250</u>	<u>250 - 400</u>	<u>400 - 800</u>	<u>800 +</u>
<u>Urban Incomes</u>	35.5%	32.7%	25.3%	08.4%
Cairo/Alexandria	30.9%	30.6%	26.6%	11.9%
Lower Egypt	30.5%	34.1%	27.9%	07.3%
Upper Egypt	39.7%	33.8%	21.0%	05.4%
 <u>Rural Incomes</u>	 56.7%	 29.0%	 12.1%	 02.4%
Lower Egypt	49.7%	32.9%	14.5%	02.9%
Upper Egypt	62.9%	25.4%	09.8%	01.8%

Source: CAPMAS, Labor Force Sample Survey (May round, 1975), Cairo, 1977.

frequency of incomes above L.E. 400 in Cairo and Alexandria. Both urban and rural incomes are lower on average in upper Egypt than in lower Egypt.

A World Bank consumer expenditure survey carried out in 1974/1975 made an estimate of household expenditures per year by region, taking into account direct taxes and household savings. Because the data showed household size increasing with household expenditure, estimates were made both by household and by person. Table 13 presents the household expenditure estimates, which are higher than the estimates of family income distributions (Table 12) based solely on wage payments.

A World Bank draft report has estimated the income level necessary to meet basic needs, that is, the minimum level of income which is necessary to cover the cost of obtaining a nutritionally adequate diet and meeting the bare non-food expenses. They estimated this basic needs level for rural areas to be in the range of L.E. 200-250 per year and for urban households within the range of L.E. 300-350 per year.

In summary, salaries for government workers are considered low in relation to other sectors. However, starting salaries and average annual wages place physicians above the level defined as meeting basic needs, and within a range of twice the per capita income to the upper 10 percent of estimated family/household incomes. Further, the data suggest that health providers assigned to upper Egypt are relatively better paid, in relation to the average of the population in the area, than are those health workers assigned to lower Egypt. However, starting salaries for nurses are below the estimated basic needs level, a factor which surely accounts for part of the rapid attrition from nursing employment.

TABLE 13

Estimated Household Expenditures per Year, 1974/75

	<u>0 - 250</u>	<u>250 - 400</u>	<u>400 - 800</u>	<u>800 +</u>
<u>Rural</u>				
Frequency of households	0.390	0.317	0.222	0.072
Frequency of persons	0.269	0.339	0.284	0.108
<u>Urban</u>				
Frequency of households	0.176	0.247	0.395	0.183
Frequency of persons	0.116	0.230	0.440	0.214

Source: The World Bank, Arab Republic of Egypt: Economic Management in a Period of Transition, Report No. 1815-EGT, May 8, 1978, Volume I.

2.6.2 Other Jobs and Hours Worked

The majority of health care providers have a second job in addition to their employment in the MOH. Interviews with a variety of persons brought out that second jobs may be in other government or public sector employment (e.g., army, prisons, health insurance organization contractual employees), or may be in the private sector (including private practice consultancies, teaching, or contractual arrangements to provide health care for private voluntary organizations).

Private income opportunities are greater for physicians than for nurses. All of the MOH specialist physicians who were interviewed for this report were also engaged in private practice. Such private practice can often be quite substantial; for example, one obstetrician reported the insertion of approximately 50 loops in the past month, 30 of those in his private practice. One surgeon reported carrying out a minimum of 4 private practice operations a week. Another informant said that physicians working in distant rural governorates, where there were few private physicians available, would be able to make approximately L.E. 100-200 a month seeing patients outside clinic hours. In contrast, private income opportunities for the secondary technical nurse are limited to small gifts, delivery fees, and extra work in doctors' clinics. (O'Connor, 1981).

Income supplementation is not restricted to Ministry of Health employees. A study of general practice in the National Health Insurance System in Alexandria indicated relative service instability due in part to the finding that the majority of general practitioners (88%) were employed on the basis of temporary contracts rather than having permanent jobs. (Shehata et al, 1979)

As the authors of the study pointed out, such contractual employment provides more income for the physicians, but does not provide doctors the full benefits and also can be terminated at any time by the program administration without severance compensation for the general practitioners. Thus, doctors employed on temporary contractual basis are "largely insecure and do not have good reasons to feel loyal or to have a strong feeling of belonging to the health insurance organization."(Shehata et al, 1979).

The number of hours worked per week by employees in the health sector is not known. Anecdotal evidence suggests substantial underemployment of physicians. According to information obtained on several field visits by members of the Phase I Health Sector Assessment team (with no claims for representativeness of the sample), service hours usually fell between 9am and 1pm, with the remainder of the time directed toward "emergency care" or "home visits". The WHO/EMRO manpower study found that 56% of the 57 medical and paramedical workers surveyed reported working 40 hours or more a week, while 40% reported between 30 and 40 hours of work. Only five people out of the 57 said they had another job in addition to their job at the unit.(WHO/EMRO Vol II) In interviews for the present report, people admitted to holding second jobs -- some people quite reluctantly, others quite enthusiastically --but all noted it was because of the low salary structure that they found it necessary to go outside the system for additional income.

2.6.3 Incentives

As a way to offset the level of wages set by the government, and to promote the dispersion of manpower into rural and frontier areas, an elaborate system of incentives has been developed. The problem, however, is that what was once an incentive

is soon seen as a basic part of wages, and thus loses its character as a reward or incentive for quality job performance.

Some privileges or priorities accrue to persons who provide government health services in far governorates such as Sinai, New Valley or the Red Sea. For example, the 1 year residency is reduced to 6 months' training, living quarters are provided, and salaries are supplemented by one third more. There are also incentives for staying full-time in the government health sector. A doctor is given 40 pounds a month for not having a private practice. Incentives also exist for working in several offices at once in the Ministry of Health. This promotes knowledge of what other offices are doing, and it maximizes the spread of technical expertise, but it also leads to fragmentation of efforts in any one locale. Incentives exist to prompt nurses into hospital employment, since hospital nurses work more hours than nurses in other sites while receiving the same salary. (Abdel-Fattah et al 1977). Such incentives may raise the LE 16 starting salary to as much as LE 60.

Another kind of income supplementation comes from clinic admission fees. Part of these admission fees goes to the unit, and part (about half) goes to the doctor and then to the nurse. This gives health workers some incentives to increase clinic attendance, although much weaker than incentives to see patients privately.

Incentives also exist in institutional care. In the public hospitals, a few beds are designated as private beds. Here a doctor can place a private patient by the payment of a small bed fee. These fees are then reallocated in the following manner: 40% to the physician, 20% to nurses or other auxiliaries, and 40% to service unit improvement. These incentives also promote or create a demand for surgical care. In this regard, it is interesting to note

that voluntary operations make up a large proportion of hospital care, most of them for gastrointestinal problems (piles, hernias) and bladder stones (bilharzia-related).

A pressing reason to supplement one's income is the need for "key money" in order to obtain a flat to live in or set up private practice. In Cairo, for example, it is said that such fees for "middle class" apartments commonly amount to tens of thousands of pounds, and that it sometimes costs up to L.E. 110,000 - 150,000 to obtain a flat, although the actual rent per month may be quite low. Thus, although the flat is rented, it in effect is rented for life. In Quena we were told that "key money" was in the range of L.E. 60,000-75,000. Many people with whom we talked, from statistical clerks to physicians, planned to postpone marriage until they had earned enough capital to obtain housing.

2.6.4 Summary

In summary, the high value placed on income pushes health care providers into a multiple employment pattern, thereby increasing their private capital through a combination of public and private sources of income. The negative implications of this employment pattern for service delivery include: few regular full time medical personnel on-duty in MOH health units; few permanent employees of health insurance organizations versus a large number of contractual employees; reduced hours of service availability; lack of incentives for good work; divided job loyalties; minimum commitment to a place of employment; and a pitting of public service against the possibility for private gain.

However, there are also some positive elements to multiple employment. One is the potential for a direct pass-through

to the private sector with any continuing medical education program for those in the public sector. Another is an increased number of private alternatives to public sector health care. While this latter point may not seem an advantage to those working in public health services, there is ample evidence that people do make use of alternatives for reasons including: personal preferences for more individual care; cultural acceptability of services provided; and increased accessibility in terms of geographic location and time when service is desired.

2.7 Present Situation: Entry and Exit Points in Egyptian Health Employment

A formal manpower flow analysis was not made for this assessment, but information was obtained which helps to clarify major personnel flows from entry to health sector employment to the multiple exits through which people leave the system. This section concentrates on personnel flows for physicians and nurses. It finds significant underemployment of physicians, due to excess or near excess production of medical graduates; instability in length of service in sectors outside of government; rapid attrition of nursing personnel; substantial off-duty time related to MOH administrative shifting such as secondment and delegation; high absenteeism due to personal time, sick leave, temporary study leave, and temporary migration for purposes of career advancement and increasing individual income. The nature of these problems suggests deficiencies in managerial capabilities as well as more basic structural problems related to underwriting education in the health professions and the guarantee of a job upon graduation.

The Ministry of Health has the responsibility to provide manpower for the system of free medical care run by the MOH,

including: general, special and district hospitals, health offices (which carry out statistical and administrative functions), urban and rural health centers, health units, maternal and child health centers, and school health units. At the present time, there is a two year period of obligatory government service following graduation of physicians, dentists, pharmacists, technicians and nurses. The government policy is that every graduate must have employment. Nearly all graduated physicians serve on internship for one year and then have 2 years' obligatory service in rural areas. However, there are several routes a doctor may take instead of "obligatory" service, including further study and military service. Approximately 85% apply for further study.

From the pool of nursing graduates, the MOH takes nurses from the secondary technical schools and high institute nurses. Nurses from university hospitals schools tend to enter employment in that system under the Ministry of Higher Education. From table 14 it can be seen that proportionally fewer nurses than doctors are sent on for further study.

The MOH reassigns personnel about once every four or five years, chiefly because of the fear in rural units of isolation and reduced career prospects. MOH officials, however, report that in recent years a larger proportion of physicians have been willing to remain in rural service after completing their initial assignments. This change is considered to be due to the provision or availability of housing, to increased competition for alternative posts and for off-duty status positions, and to the recent MOH authorization of private practice by MOH physicians. Regarding the latter, it is said that even at the officially-authorized rate of 50 piasters per home visit a physician can substantially supplement his MOH salary in rural areas, where cash has become much more plentiful in recent years.

A pattern of multiple employment emerges - with some doctors working in private practice and some nurses splitting work among government and private employment. The health worker may emigrate for a few years to gain additional money.

2.7.1 Training institution outputs

The MOH, in conjunction with the Ministry of Education, is responsible for the education of health manpower. The MOH plans for and implements programs and evaluates personnel below the bachelor degree level. The MOH and MOE share the responsibility for final examinations and issuing of final certificates. The Technical Institute has a managing council responsible for all the educational activities related to training manpower in laboratory, x-ray and pharmacy technical areas. Training and education programs for various categories of health personnel, including nurses, are under the Department of Manpower Development and the Center for Educational Technology, which are part of the Development and Research Sector headed by Dr. Khalaf. It is this sector which provided the Egyptian counterpart (Dr. Afaf Abdel-Aziz of the section headed by Dr. Enaam) for the manpower and the manpower training consultants on the Phase I assessment team.

Entry to the health field is restricted by the educational level which the person has attained. Medical schools and the Higher Institute of Nursing require graduation from secondary school. For nurses, the decision to enter a three year nursing school usually is made following graduation from preparatory school, after nine years of schooling. Nursing is usually not an occupation of first choice. Most girls would prefer to be in commerce or agriculture. But if the girls find, for example, that they cannot enter secretarial training and that no other options

seem open to them, then they may enter nursing school. This process takes place within a very short time: graduation from preparatory school takes place in September, and nursing training begins in October.

Annual production of health personnel was estimated in 1978 to have been in the following ranges: physicians, 5,000; nurses (all categories) 4,000; dentists, 750; pharmacists, 1,000; medical assistants, 800. (Serri et al., 1978). Current MOH estimates indicate annual outputs of 5,000 physicians (said to be about to increase to 7,000) and over 5,000 nurses (including both MOH and university operated training facilities). Training institution outputs are detailed in the Health Sector Assessment Phase I consultant's report on health manpower training. In brief, one can say that the Egyptian government has made considerable investment in the training of health manpower. A relatively large number of trained national health providers is available, as is a relatively high capacity for producing health personnel.

2.7.2 Length of employment retention

There is a relatively high turnover rate among physicians and nurses, documented in several studies. Less is known about the rate of retention of other health workers. A recent study found that after 10 years of operation of the Health Insurance Organization in Alexandria, only 29% of the general practitioners had been practicing in the system 5 years or more, while 22 percent were employed less than 1 year. When asked about the clinic in which they were working, only 20% had been practicing in the same clinic at least three years. One out of three doctors had been in the clinic less than one year. (Shehata, 1979). In contrast, the WHO study of 12 health units providing basic health services found that 47% of the personnel had been working in their unit less than 5

years. Approximately 12 percent had been working there less than a year. Forty percent had worked more than five years in the unit. (WHO/EMRO VOL II)

Considerable concern has been expressed about problems of nurse retention. O'Connor has estimated the average service life of a nurse to be four years. (O'Connor, 1981). The Health Insurance Organization in Alexandria reports that approximately 3 new nurses are taken into the system each week because of the high rate of turnover.

2.7.3 Off-duty status

Table 14 shows the various types of leaves which are available to MOH physicians and nurses. Three major reasons predominate: delegation by the MOH to another area, study in Egypt, and sick leave. For physicians, military service is another important reason for being off-duty. For nurses, secondment plays a greater role in their being absent than does study leave. Nurses were twice as likely to be absent due to sick leave than were physicians.

Unauthorized absence from work, which is not one of the "off-duty" categories, is a major problem in Egypt's health sector. A number of assessments of government health services in Egypt have supported the frequent criticism that personnel are often not available at the health units and centers. For example, in a unit which also serves as a teaching site for medical students, it was reported that out of the 10 doctors assigned to the position, 4 were actually on-duty, two of whom were part of the teaching staff. There were supposed to be 30 nurses assigned to the unit, but only 16 were on-duty. (Source: Presentations at Community Medicine

Table 14

Percent Distribution of Off-Duty Physicians and Nurses
by Reason for Leaving Work and by Geographic Area

Reason	Physicians*				Nurses*				All	
	I	III	III**	Total	I	II	III**	Total	No.	%
Military Service	11.2	11.6	42.8	20.2	5.8	2.7	0.0	3.4	490	11.81
Delegation	19.3	24.5	13.5	19.0	30.1	18.4	30.5	25.8	932	22.4
Study - Egypt	30.9	21.8	25.9	27.1	12.2	23.0	9.7	15.6	888	21.4
Study - Abroad	5.3	9.4	3.6	5.8	1.5	5.2	2.2	3.0	185	4.4
Sick Leave	18.1	19.8	7.5	15.6	31.6	23.5	31.5	28.6	916	22.0
Secondment	13.3	11.6	4.8	10.5	15.9	21.7	20.4	19.1	613	14.8
Unknown	2.0	1.1	1.9	1.7	3.0	5.6	5.5	4.5	130	3.1
TOTAL										
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	20.0	4154	100.0
Number	(948)	(550)	(586)	(2084)	(805)	(770)	(495)	2070		

* Excludes Matruh, New Valley, Red Sea and Sinai Governorates.

**Data missing for Aswan Governorate

Source: Health Facilities Inventory, Arab Republic of Egypt, Volume III MOH, October 1981.

Workshop, Ismailia, March 1982.) A time-motion study of family planning activities among nursing and midwifery personnel in MCH and family planning settings found that personal time and absenteeism consumed from 60 to 70 percent of the nursing personnel's time in two centers studied. Absenteeism was higher for the less qualified assistant midwives than for the midwives. (Mekhemar, et al 1979).

2.7.4 Out-Migration

A number of investigators have described the migration of Egyptian workers, both skilled and unskilled, to other Arab states and their importance to development programs and to plans for social change. Egypt has long exported professional manpower. Egyptian teachers, engineers, lawyers, doctors, and other professionals have migrated to other Arab countries in search of better opportunities. As Choucri has noted, "It is not the fact of Egyptian emigration that is novel, but its extent, rate of increase, and role in the economies of the recipient countries. (Choucri, 1977) To this one might add consideration of the benefits of migration to the economy of the labor exporting country. Migration benefits Egypt through remittances accrued from overseas workers. In addition, the rapid increase in the rate of migration of Egyptian health manpower has helped relieve the pressure caused by the recent high production of physicians who would otherwise be employed in the public sector. The direct cost, of course, is that migration, deprives the country of other returns from its investments in medical and nursing education and deprives the society of the gains associated with the use of skilled medical and nursing manpower.

Data exist on the migration of health care providers for at least the last 16 years. (Hadley, 1977). The Central Agency for Public Mobilization and Statistics reports net annual migration

of doctors (including some pharmacists) and nurses for the years 1968 - 1972 to be:

	<u>Doctors & Pharmacists</u>	<u>Nurses</u>
1968	620	na
1969	739	na
1970	501	191
1971	687	598
1972	297	243

More recent detailed information on the migration of Egyptian health personnel is found in Tables 15 through 17. Table 15 presents data on persons defined as permanently leaving Egypt, while Tables 16 and 17 display the numbers of Egyptian health workers who are temporarily employed in other Arab states and Africa, by the type of contract under which the employment occurs.

From the tables it can be seen that international departures of Egyptian health manpower have grown considerably since 1973. For example, CAPMAS reported that in 1973 there were 1,941 temporary nursing migrants (Birks and Sinclair, 1979), as contrasted with the 3,857 temporary nursing migrants in 1981 reported for moslem employing countries alone (Table 16). Current out-migration of nurses is estimated to be 1000 per year.

Temporary migrants may be "on loan" from the MOH to the country requesting Egyptian manpower assistance, or they may be on leave without pay. Persons in this latter category are usually spouses accompanying a person who has a personal contract (such as a female physician accompanying her physician husband who has been loaned to another country for a specified period of time). A

Table 15
 Number of Emigrants from Egyptian Health Sector,
 1977 - 1981, by Type of Health Worker

Category	1977	1978	1979	1980	1981	Total
Physician	15	17	21	25	18	96
Dentist	17	7	7	4	5	40
Pharmacist	32	13	3	4	1	53
Physio-therapist	1	-	-	-	-	1
Service special.	1	-	-	-	-	1
Social worker	1	-	-	-	-	1
Chief Nurse	1	-	-	-	-	1
Sanitarian	-	1	1	-	-	2
X-Ray technic.	-	1	-	-	-	1
Nurse	-	1	1	-	-	2
Accountant	-	-	1	-	-	1
Clerk	-	-	-	1	-	1
Agric. engineer	-	-	-	1	-	1
Social worker	-	-	-	-	1	1
Total	68	40	34	35	25	202

Source: Ministry of Health, Foreign Health Relations Department,
 Arab Republic of Egypt, 1982

Table 16

Number of Egyptian Health Workers Employed in Moslem Countries, by Type of Worker and Employing Country, 1981

	Physician		Nurse		Technician		Other		Total	
	T*	V**	T	V	T	V	T	V	T	V
Saudi Arabia	1696	965	1777	692	990	757	197	587	4660	3003
Kuwait	110	122	512	224	-	17	-	17	622	380
Iran	11	-	-	-	-	-	-	-	11	-
Syria	-	2	-	1	-	-	-	-	-	3
Libya	253	-	209	-	31	-	36	-	529	-
Emirates	52	33	47	99	8	30	11	5	118	167
Qatar	43	18	27	61	1	15	1	9	72	103
Bahrein	84	3	1	-	-	-	4	-	89	3
Oman	31	38	67	6	30	22	6	8	134	74
N. Yemen	33	29	73	8	13	11	3	5	122	53
S. Yemen	2	-	-	-	-	-	-	-	2	-
Iraq	4	3	-	4	-	20	-	11	4	38
Lebanon	-	3	-	-	-	-	-	-	-	3
Jordan	-	3	39	10	-	4	-	4	39	21
Tunisia	-	3	-	-	-	-	-	-	-	3
Malaysia	5	-	-	-	-	-	-	-	5	-
TOTAL	2324	1222	2752	1105	1073	873	258	648	6407	3851

* Transfer employee

** Vacancy without pay

Source: Ministry of Health, Foreign Health Relations Department, Arab Republic of Egypt, 1982

Table 17
 Number of Egyptian Health Workers Employed in African Countries
 by Type of Workers and Employing Countries, 1981

Country	Transfer	Vacancy no pay	TOTAL
Nigeria	143	69	212
Mauritania	17	-	17
Tanzania	12	2	14
Guinee Konakri	1	0	1
Botswana	1	2	3
Zaire	1	0	1
Senegal	2	-	2
Central Africa	4	-	4
Jibouti	5	-	5
Gabon	4	0	4
Zambia	10	-	10
Algeria	7	-	7
Upper Volta	2	-	2
Somalie	3	-	3
Kenea	14	-	14
Sudan	1	-	1
Niger	9	-	9
Leshoto	2	-	2
Liberia	2	-	2
Cape Verde	4	-	4
Rawanda	5	-	5
Zimbabwe	2	-	2
Sierra Leone	3	-	3
TOTAL	254	73	327

Source: Ministry of Health, Foreign Health Relations Department,
 Arab Republic of Egypt, 1982.

physician may not apply for work overseas until after serving a minimum of three years for the MOH. Temporary migrants are given unpaid leave of up to six years from the MOH; at the end of that time they either go off the MOH rolls or return to fill the place which has been reserved for them on the rolls. The time spent working in other countries is counted toward promotions.

The wealth position of health care workers returning from overseas employment is noticeably improved over the position of the typical MOH employee. For example, a physician with three years' service would expect to make about L.E. 70 per month in Egypt, compared with approximately \$1400 per month in Libya. A nurse working night shift in an Egyptian MOH hospital might expect to earn L.E. 60 a month, compared with approximately \$700-\$800 per month in Libya. In addition, temporary migrants to other countries represent an important resource to the Egyptian government in the form of hidden taxes. Although a tax is not levied on the individual migrant's earnings, temporary migrants must transfer 25% of salary earned abroad back to Egypt through banks at the official exchange rate. The GOE is clearly not taking full advantage, however, of the possible foreign exchange benefits which would accrue from passing a much larger proportion of overseas workers' remittances through the GOE or the official Egyptian banking system.

2.7.5 Export Market

As Tables 16 and 17 show, there was an extensive market for Egyptian health manpower in 1981, including the more wealthy Arab gulf state countries, less developed countries in Africa and the Middle East, and Muslim areas of Asia. From the Egyptian side, it might be expected that the trend toward increased rates of migration would continue, given the political and economic

incentives of such migration, existing overproduction of Egyptian physicians, and the need for individual capital to offset inflation. Certainly the motivation is high among young Egyptian men and women. Although in no way a representative sample, interviews with some recent medical graduates from three medical schools about their future career plans revealed a unanimous interest to go abroad to work. Also, as O'Connor has noted (1981), mass emigration to gulf states by young unattached Moslem nurses for work testifies to the value placed on salary.

There is an uncertain future export market for doctors and nurses. The Arab countries are beginning to see the results of their investments in medical and nursing education, and may soon be requiring fewer Egyptian physicians, although there will probably still be a strong market for nurses. In addition, the quality of recently graduated Egyptian physicians has been called into question recently by some receiving Arab countries. Several Phase I HSA consultants have been told that certain Arab countries may refuse to take any Egyptian physician trained after 1976, the time when a great expansion of Egypt's medical school enrollments began to produce a negative impact on student/teacher ratios and on the relative availability of classroom and clinical practice space. Also, at least one of the receiving countries (Kuwait), after careful selection of Egyptian physicians, gives them several months of additional training after arrival in-country.

In summary, temporary out-migration of Egyptian health care providers has been extensive during the past decade. There have been considerable societal and individual benefits from such temporary migration, including the role of the export market in absorbing production of health manpower beyond that which could have been absorbed by the public and private sector. There have also

been less favorable aspects to this migration, including the loss of a highly educated and technically skilled group of people, knowledgeable about physical and environmental health problems, some of whom have high motivation for social development.

2.8 Estimates of future health manpower requirements and public and private sector absorptive capacity

These are numerous constraints to the estimation and projection of health manpower supply and demand in Egypt. The economic situation of the country, its rate of population growth, opportunities for out-migration, and modern preference for urban living -- all combine to make forecasting of health manpower needs tenuous, at best. The problem is not just one of ascertaining the match between future supply and demand of numbers of health personnel: equally important elements of health manpower development are estimations of the productivity of workers, and functional analysis of service activities in light of prevailing use patterns and community morbidity surveys. There are problems in extrapolating from any existing health service. It appears that the existing government facilities are underutilized and need a better-focused set of treatment priorities. Health insurance organizations appear to be better managed, but basically offer curative care and only to the employed population and a few dependents and retirees. Their ability to offer preventive services to mothers and children, urban poor, and rural areas is untested and uncertain.

Two other sector assessment reports are useful in projecting the balance between supply and demand of health manpower. The supply of physicians and nurses is discussed in the Health Manpower Training consultant's report, while the absorptive

capacity of the public and private sectors, and several related issues, are discussed more fully in the Health Policy consultant's report. It is the conclusion of this (Health Manpower) consultant that a sufficient and perhaps excessive number of physicians is being produced, even taking into account different rates of population growth. The country cannot absorb the doctors now produced, and the emigration of health personnel which occurs can be expected to continue unless the Arab states place restrictions on their import. There are personnel shortages below the physician level, but the shortage in nursing is intimately tied to problems of recruitment and retention. (Annex B shows one set of estimates of nursing needs in Egypt, according to three population projections.) There has been a 9% increase in the number of STN graduates in the past 3 years, but the number enrolled has dropped by 9 percent. Nursing graduates now number over 5,000 per year. The schools have considerably improved the attrition rate during training to offset the declining admissions. Problems of recruitment and employment retention negate the effort put into supporting training.

Certain specialties are said to be in short supply, among them the high-capital investment specialties of radiology, orthopedics and ophthalmology. Dermatologists are also needed. The field of dermatology has a stigma attached to it, due to its association with care of venereal disease. There have been shortages of laboratory technicians, but the situation is improving as female physicians move into laboratory services. There is a shortage of medical record librarians contributing to the drastic problems in record systems. Educational technologists are needed, but this too may be relieved if the technical nurses are given such training, as is now planned.

There is a general department for planning which gets information from different departments, but this is only beginning, and in actuality very little formal planning has been carried out. There are not enough persons qualified in planning at the government level. The government health sector may know its own needs, but information is needed on the other sectors. The data are not good. The plans are for one year only, not five years. There may be a known shortage today, in orthopedics for example, but the estimate of the supply and demand for that or other specialties for the next 5-10 years is not known. There is a shortage of general management capabilities, and a lack of orientation to modern management on the part of doctors and health administrators. Studies have shown that there is both need and desire for managerial training on the part of physicians serving as administrators in rural health work, as well as on the part of supervising nurses in hospital settings.

The distribution of health workers is expected to be greatly influenced by the projected increase in urban growth. At present, the peri-urban government health services are probably least well-staffed, since there are many opportunities for multiple employment in urban areas. In the rural areas, physicians and nurses who reside in the area have little opportunity to take extra jobs outside of the area. In the urban areas, however, there are many ways for a doctor to generate employment in order to gather the "key" money necessary to obtain a flat and set up practice, or to otherwise better his or her standard of living.

3.1 Assessments of quality

The quality of care provided by the health personnel has been reviewed as part of the HSA Report on Health Services Delivery Systems.

Some of the criticisms levelled at medical graduates of the 1970s are:

- (a) Insufficient clinical practice coupled with a curriculum top-heavy with theoretical information only cursorily related to major problems of morbidity and mortality (for example, problems of infant and child diarrhea, lower respiratory infections, and injury control).
- (b) Little or no exposure to public health training or methods of community health status assessment and disease prevention.
- (c) Inadequate preparation in a number of specialty areas (e.g. obstetrics) and in certain practical, functional areas (e.g. maternal and child immunizations).
- (d) Virtually no training in administration or management, despite their frequent employment as heads of health units and supervisors of the other health personnel.
- (e) Lack of knowledge of what other "team" members know and can do--particularly the training and potential range of activities of nurses.

3.2 Manpower Development

The MOH has responsibility for development of its personnel: pre-service and in-service training, continuing education, university scholarships for post-graduate study in Egypt, and overseas fellowships through international organizations and bilateral agreements. Health manpower development programs are

carried out in collaboration with the Medical Syndicate, the Egyptian Medical Association, and the universities, through the establishment of committees and councils.

A recent health manpower development committee activity concerns the expansion of higher-level training in nursing. In particular there is an attempt to redefine the curriculum for secondary technical nurses, based on an analysis of the tasks which the STN is expected to do.

The government, in collaboration with WHO, has begun an overall evaluation of GOE manpower development programs for health, including review of the organization, structures and mechanisms at present in operation. An evaluation committee with continuing responsibility for health manpower development evaluation has been set up within the Ministry of Health. Evaluation activities pertaining to planning, implementing and monitoring health manpower development (HMD) programs are carried out by the Department of Manpower Development in the Development and Research Sector, MOH. This sector is also responsible for statistical information, research, international health relations, health education and information departments. Therefore, the MOH Development and Research Sector would be key to any USAID-Cairo assistance directed toward health manpower development and evaluation or toward competency-based training or retraining efforts.

Current activities carried out by the Department of Manpower Development include an attempt to prepare an overall description of the various mechanisms for health manpower development currently in effect in the country and an evaluation of internal and external study fellowships (national, multilateral and bilateral). WHO has assisted in strengthening this capacity of the

government of Egypt to carry out HMD evaluation in a variety of ways, including evaluation training of Dr. Afaf Abdel Aziz (the person responsible for implementing the evaluation studies) and short-term WHO consultant activities. (WHO Biennial Report 1981)

3.3 Pre-service and in-service training, post-graduate study, and continuing education

Pre-service training is a current concern of the MOH. Since the education of doctors is almost exclusively classroom and hospital-based and technically oriented, a two month pre-service orientation and training program is given to MOH doctors beginning their obligatory service. The remedial (or "retread") training includes instruction in immunizations, diarrhea control, malaria, and clinic management. Pre-service training is needed for graduating STN's as well. The focus of training has been theoretical rather than competency based. Currently, the STN's are mainly used in hospitals for non-nursing tasks of transport, housekeeping, etc., while the MCH centers, health centers and units they provide MCH and well-child care. Pre-service training needs to center on community MCH and family planning needs (including midwifery and public health), and provision of simple outreach services. The Strengthening Rural Health Delivery Project has shown that the STN's can learn these issues and be effective in providing MCH/FP services. Depending upon the locale of employment, STN competence improvement would seem to best be brought about through integrated and systematic pre-service and in-service training. In-service training could then be directed toward remedying knowledge and performance deficiencies identified during employment and after successful completion of pre-service training which imparts the basic, standardized core of MCH/FP knowledge and skills.

There are considerable needs for pre- and in-service training in all areas of family planning. Short term training in family planning topics is expected to be dealt with in the Population Sector Assessment. However, it is important to note that Egypt sees family planning as part of basic health services. The supervision and back-up to both health unit and health center staff is known to need strengthening. There are considerable difficulties in the way of effecting cooperation with dayas. Management of contraceptive complications is not well understood.

For the most part, in-service nursing education programs have been seriously lacking in most hospitals. In Alexandria there is a program operated by the University hospitals where staff nurses can get an academic degree in different branches of nursing. (Abdel-Fattah 1976). Nurses from outside the university employment are required to provide the approval of their employees for a one year study leave. (This is a considerable obstacle, since there is a shortage in staff nurses.)

Attempts to improve community health nursing are being carried out by the High Institute of Nursing in conjunction with HOPE. A community health nursing demonstration unit in Alexandria provides the setting in which to update the skills and knowlege of midwives and assistant midwives working at MCH centers.

The assistant to the midwife has 1.5 years of training. The MOH no longer trains assistant nurses, but has given those with 1.5 years' study the opportunity to take another 1.5 years of training in nursing; they are then in general considered to be equivalent to the nurses who initially took the three year course. However, this extra 1.5 years doesn't entitle them to go on later to obtain a postgraduate diploma. Fewer assistant nurses than expected

have taken advantage of this opportunity to complete the extra 1.5 years, so the program is being continued for at least another year.

The MOH has made a substantial investment in time and salaries for continuing education of physicians. Since 1978 approximately 1000 doctors per year have been entering postgraduate specialty studies. Unfortunately, only about one in four successfully completes the two year postgraduate course. The analysis has not been completed on this study of attrition from postgraduate training, but preliminary findings by the manpower training section indicates that the problems lie in the place of study, government policies pertaining to failure, research requirements that cannot be met, and the poor level of specialty supervision. The place of study is important because the person coming from other circumstances -- from urban to rural areas, for example, may not easily adjust to local behavior. A doctor is selected for post-graduate training according to school marks and expressed interest in where to go for further study. There is great motivation to complete these postgraduate studies, because promotions follow and specialists cannot be dismissed: "Once a specialist, a specialist for good". Specialists enter practice automatically.

To prepare for the post graduate assignments, the Department of Manpower Training collects the declared needs for specialists from the different departments in the MOH (e.g., curative, preventive, and basic health). The departments in turn obtain them first from the governorates. The process by which assignment is carried out is not straightforward; it involves shifting personnel from one area to another, consideration of prior school grades, consideration of priority geographic areas such as the far governorates, and the marital status of the doctors. At the

end of the first year of study, the doctor takes an examination. If the doctor fails, the examination may be retaken in six months. Government support is withdrawn if a doctor fails the second time, and the doctor is reassigned back to the area of original assignment. The doctor is entitled to 4 attempts at the examination, at 6 month intervals. Usually, however, the students find it hard to pass the examination and carry out health center work at the same time.

If the doctor passes the first examination, there is an additional hurdle of the thesis. Some students do not complete postgraduate study because thesis research is costly and they are not well-trained to do such work. There is an extra problem in the clinical specialties: few physicians are motivated to be consultants, since there is no obligation to do so and no control or incentives are applied. The consultant may be reluctant to give instructions to remedy quality of basic education. The consultant may also be reluctant to train possible competitors for scarce paying patients. Only one in five doctors who are in a clinical specialty complete postgraduate study.

Continuing medical education is carried out by the MOH and the universities. Over 600 general practice doctors at MOH rural units attend the annual general practitioner continuing education conference, in Cairo. The MOH, which sponsors the weeks-long medical syndicate-run conference, asks the governorates to choose a specified number of physicians to attend, and pays an L.E.10 registration fee for each such attendee. The governorate pays all other costs (above the L.E.10) for attending the course and living in Cairo during it. Governorates seldom send more doctors than the number specified by the MOH, since they would have to underwrite such costs. The conferences are usually not filled. The doctors

often don't think it worth it to leave work just to attend a series of lectures in another town. Attendance is checked each day, but the doctors can leave the sessions. Lecturers choose the specific topics (within guidelines provided by the MOH to the Medical Syndicate which organizes the sessions) and usually present for one hour; Medical Syndicate specialists often give the lectures. Seldom are teaching notes or reference materials distributed during or after the meetings (in spite of MOH requests that such materials be provided), and there is no evaluation.

At the governorate level, there is a 2 day (morning and afternoon) lecture on any topic. The lecture is advertised in the newspapers, but many physicians do not attend. This is thought to be partially due to lack of sufficient advance notice to permit doctors to arrange their schedules to attend the sessions.

These continuing medical education programs offer points of possible intervention if issues of attendance and of location and content of courses could be resolved.

4. Relationships with the traditional sector

This topic will be covered fully, from another perspective, in the HSA Report on Users Perspectives. Several published studies report that health personnel in the formal system generally hold negative views of traditional healers. The EMRO/WHO study, for example, found that only two of the 57 persons interviewed had ever cooperated with traditional healers such as dayas, barber sheiks, and hagas. (EMRO/WHO Vol II). Among the reasons staff gave for not cooperating with traditional healers were the following: "Ignorance" or "Lack of training" of the healer; "They are cheaters and cannot be trusted"; "They endanger children and cause

deaths"; "No license to practice"; and "They obstruct the work of the unit".

On the part of the dayas there is also reluctance to cooperate. The World Bank Population Project has run into difficulties with a daya training program. Staff members of a health unit which is part of that Population Project said none of the village dayas wanted to work with them or be "trained" by them. While developing this report, information gathered about the dayas was often conflicting. A common statement was that dayas attend 80-100% of all deliveries, particularly in the rural and low-income urban areas. Other times those statistics were said to be much lower now. There were reports that the MOH was going to train dayas and license them, and there were other statements that such training would occur only in family planning and that no license would be given to dayas. Everyone seemed to feel dayas were trusted by villagers and that villagers particularly liked the fact that the dayas would come at any time of the day or night and stay with the mother in labor until after delivery. The impression remaining from the conflicting stories was that there is in fact little cooperation between the traditional sector and the formal health care system, although there are some exceptions, (e.g., at facilities in the Population Project where daya training does occur).

5. Job satisfaction and providers' perspectives on other health team members

To the extent that job satisfaction is important to employee retention and quality of care, the factors making for satisfaction or dissatisfaction need to be understood. In the cases of health workers which have been studied, a considerable number and variety of reasons are advanced for dissatisfaction.

A study of job satisfaction among hospital nurses in Alexandria found that nurses showed a low degree of satisfaction with their jobs. (Abdel-Fattah et al 1976) Nurses were dissatisfied with all areas: nature of responsibilities; organization and staffing patterns; work communications and relationships; facilities and work conditions; opportunities for promotion; opportunities for further study; hospital rules and policies concerning pay scales, work incentives, and overtime pay. Nurses were frustrated by differences in both quantity and quality of their meals and those of the medical staff. Nurses claimed they were not treated well when they fell sick, frequently having to wait more than a day to be examined by the doctor.

A survey of job satisfaction of general practitioners working under the Government Health Insurance Program in Alexandria reported more mixed reactions to employment: 49 percent were moderately satisfied, the remainder about evenly divided into very satisfied or dissatisfied. The G.P.s were dissatisfied with training opportunities, equipment and supplies, type of employment, size of practice, or promotion schedules. They were most satisfied with payment (Shehata 1978)

Greater job satisfaction was expressed by twenty physicians working in the governorate of Menufia who participated in a study of role definition and job satisfaction among physicians in rural Egypt (El-Mehairy 1979). In general, the respondents expressed a sense of job fulfillment and of contribution to the health and welfare of the people. They expressed dissatisfaction with MOH bureaucracy and with continuous changes in the system. They were critical of supervisors, saying that "They imagine that these doctors are made from a different dough. They give them plenty of work and do not forgive them for any administrative mistakes, and punish them instead of directing them."

In general, female doctors expressed more satisfaction with their jobs and the work situation, although they felt they were at a disadvantage because as women they were not allowed to do surgical operations. Not as many women as men were dissatisfied with salary level, perhaps because 8 out of the 10 were married and had another source of income.

6. Key issues and possible interventions

6.1 Key Issues

The total strategy for improving the health sector in Egypt must include improving the quality of staff, and improving quality of services, bringing in some new services (e.g. providing nutrition education and oral rehydration at all primary care facilities), and improving some existing services, (e.g., correcting shortfalls in immunization). These activities cannot occur without a total human resource development strategy for health. Fortunately, Egypt has already taken strong steps in this direction. A major policy since the 1952 revolution has been full employment. An elaborate medical infrastructure has been created. In relation to other countries at a similar level of development, Egypt's labor force is relatively well-nourished, motivated, and educated. Government leaders in the health sector are aware of problems of service delivery and are responsive to suggestions of manpower-related interventions. Within the Ministry of Health, the Development and Research Sector is key.

The key issues to continue to address in health manpower are how well the needed human resources are prepared, how they carry out their work, and toward what objectives their efforts are directed.

Possible health manpower related interventions through which USAID-Cairo could assist Egyptian development in the next five years must take into account the present situation with regard to the functioning of existing large numbers of health care providers (over 100,000 in the formal government and public sectors alone). Current provider-population ratios are in the range of 1:2000 for doctors and 1:1000 for nurses. (The provider-population ratios are

even higher if one uses registration figures: 1:1000 for doctors and 1:800 for nurses.) It may be desirable to facilitate the establishment of new forms of health service delivery or improved community medicine and public health nursing training opportunities, but it would be a tragic mistake to focus only on future outputs. Any intervention must deal with the reality of an existing large and youthful labor force in the health sector. The age profile for physicians, nurses and other types of health personnel suggests a considerable cohort effect as the large numbers of young health workers trained in the mid- to late 1970s moves through time. Current curriculum revision and school improvement efforts will not affect the bulk of personnel who, by 1985, will be in their mid-30s, presumably at higher career levels. To the extent that the initial or basic training of these health workers is considered to have been deficient, more in-service skills upgrading and continuing education will be required to make this large cohort effective providers of services in the 1980s and for the remainder of their careers.

A decreasing quality of Egyptian health workers has been noted, while expectations on the part of Egyptian citizens and overseas employers of temporary migrants have increased. Short- and long-term interventions to help correct some of the health sector's manpower problems are suggested below.

6.2 Possible health manpower interventions

Three short-term impact strategies are proposed: First, an extensive competency-based skills retraining program for government health manpower, which would have rapid pass-through to other parts of the health sector due to multiple employment patterns. Second, on-going structured management training at the governorate and district levels, to detect service delivery problems and improve organization and delivery of services: Third, short-term managerial and supervisory training for heads of health units and nurse supervisors. This training should be designed for all persons in government, including the MOH and the Ministry of Higher Education, which is responsible for university hospital care. These programs are feasible in a 5-year time frame.

Three long-range interventions are proposed. The first is to continue to facilitate appropriate changes in medical education, and in particular in its general practice and community medicine segments.

Any long-range attempt to deal with nursing education (especially secondary technical nurse training) is more problematical unless substantial problems of recruitment and rapid attrition are given attention at the same time. The second long-range intervention, then, could be a sustained program of enhancing the role of the nurse and clarifying public misperceptions of the female nurse. This program should use all media, but even more importantly, be carried out with the assistance of the religious leaders and the respected groups in Egyptian society. It is foolhardy to increase the numbers of nurses trained if there is no sound basis for such action and if the high rates of attrition continue.

The third possible long-range manpower-related intervention is more controversial and requires more sweeping changes. The suggestion is that a limit be placed on numbers of medical school graduates and that, rather than producing excessive numbers of physicians, teaching programs be developed for the education of health administrators, health planners, and health service researchers. The course offerings should be practical, problem-oriented, and based on management theory and Egyptian case studies. They should include courses in management and planning, health manpower development, operations research, program evaluation, survey analysis, and related subjects. These programs should be open to doctors and nurses, but not restricted to them. They should not be schools for advanced or elite training. They should chiefly serve as programs which give technical training and opportunity for employment in Egyptian resource management.

Egypt struggles to control the economic and social problems caused by increasing population size. There is a political will to strengthen implementation and make services more functional and affordable at the most basic level of human resources. Egypt will need assistance to develop the capacity for resource management in the health sector.

Annex A

Estimated Nursing Needs in Egypt
According to the three Population Projections
1980-2000

Population Projection	1980	1985	1990	1995	2000
<u>First Projection :</u>					
Population in thousands	* 41208	46206	50812	54941	57516
Nurses level one	8242	9241	10165	10928	11503
Nurses level two	41208	46206	50812	54641	57516
Total	49450	55447	60977	65569	69019
<u>Second Projection:</u>					
Population in thousand	* 41208	46681	52206	57681	62976
Nurses level one	8242	9337	10441	11536	12596
Nurses level two	41208	46681	52206	57681	62976
Total	49450	56018	62647	69217	75577
<u>Third Projection :</u>					
Population in thousand	* 41208	47140	53604	60644	68386
Nurses level one	8242	9428	10721	12130	13677
Nurses level two	41208	47140	53604	60644	68386
Total	49450	56568	64325	72774	82063

* A ratio of 3.5% representing people outside the country has been deduced.

NB: This appendix is attached to Mahmoud Fathalla's Report of Workshop on High Institute of Nursing, Assiut, January 21-22, 1982.

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Annex B

Secondary Technical Nursing Schools in Egypt

Governorate	Enrolled			Graduates		
	79/80	80/81	81/82	1979	1980	1981
Cairo	1615	1492	1325	506	540	484
Alexandria	440	451	272	159	154	190
Kaliobia	650	612	558	203	194	220
Menofiah	218	223	166	624	637	649
Sinai	25	25	20	15	46	70
El-Gharbiah	315	351	481	976	918	939
El-Bohairah	290	277	242	1244	984	1182
Dahietta	91	92	51	223	251	288
Ka r El-Sheikh	518	525	538	165	159	189
El Sharkiah	751	719	639	184	179	216
Port-Said	36	39	28	64	90	97
Ismailia	34	27	34	76	91	92
Suez	75	65	70	25	30	12
Dakahliah	816	931	913	230	198	326
Giza	447	397	360	187	155	146
Minia	248	221	241	50	85	42
Fa oum	274	266	239	118	78	102
Beni-Suef	283	249	261	78	119	80
Assiut	549	490	418	94	189	187
Kena	67	142	190	15	6	33
Sohag	56	55	48	13	16	20
Asswan	62	70	51	17	9	28
El-Wady El-Gadid	35	47	50	12	14	6
El-Bahr El-Ahmer	-	-	-	-	-	-
Marsa Matrouh	73	71	51	16	15	15

NB: This appendix is attached to Mahmoud Fathalla's Report of Workshop on High Institute of Nursing, Assiut, January 21-22, 1982

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ANNEX C: REFERENCES

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ANNEX D:

Key Persons Contacted in Preparing HSA Health Manpower Report

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Dr. Dharm Anand	- Ismailia Seminar Participant.
Dr. Mohamed Azzam	- Ismailia Seminar Participant.
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Dr. Fouad Nasralla Girgis	- Director of Health Administration, Luxor, Quena.
Dr. Hossam Hamdi	- Ismailia Seminar Participant.
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Dr. Taymour Khattab	- Ismailia Seminar Participant.
Dr. Zoheir Nooman	- Ismailia Seminar Participant.
Dr. Adel Sabry	- Ismailia Seminar Participant.
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Dr. Tawfik Seoudi	- Responsible for All 6 Technical Institutes.
Dr. Mohamed Shehata	- Ismailia Seminar Participant.
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