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HEALTH MANPOWER TRAINING REPORT

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1982 Health Sector Assessment, Egypt

Health Manpower Training Report

Executive Summary

There are extensive changes underway in the health manpower training system in Egypt. Physicians and nurses have new curricula, job descriptions are developed for several categories of workers, each district has a designated training health center, and plans are in hand to set up four centers for the training of tutors. The electrifying news is the preparation of a new 5-year health plan emphasizing training and health education against tightly defined objectives.

The fundamental structure is sound. Most categories of health personnel are being trained and the service delivery structure is in place for their posting. However, most personnel are unclear about their function. Physicians are reluctant to allow nurses or oratory lab technicians to undertake any but the most menial tasks because in the rural units in particular there is little in function to separate physician from other health staff. There is need for a clear understanding of roles, the development of team work, and the recognition of the challenge of primary health care, health education and community medicine and all that it involves. The new medical curriculum attempts to do some of this.

Numbers: Currently Egypt is graduating some 5,500 physicians annually, many of them of limited capacity. This number is expected to increase to 7,000 in coming years. Not only is university education free, but physicians receive a stipend of L.E. 8-15 a month and every university graduate is assured a job. Some 80% of qualified high school graduates who want to get into the university do so. It is estimated that the Ministry of Health might absorb about 2,500 physicians a year over the next 10 years. This would move the

physician ratio per 10,000 population up from 3-4 to just over 5, given a 2.5% population growth rate or hold even at a 3% population growth rate. While the Army and the private sector can absorb as many as 1,000 per year, it is difficult to justify the current policy of producing large numbers of poorly trained physicians. Nurses are produced in three categories--graduate, diploma and certificate. Annual numbers of graduates are about 200, 60 and 3,500, respectively. More graduate nurses will be produced with the opening of a new institute this year--projected at a total of 300 by 1986. Numbers of Secondary Technical Nurses (STNs) are inadequate to current needs and should be increased by at least 25% annually to accommodate losses out of country and to marriage and motherhood, etc. Male nurses should be encouraged.

Other technical staff such as sanitarians, lab technicians and X-ray technicians are coming out at about 400 for each category annually. They are in very short supply and numbers should be increased, but not until the curriculum is totally redesigned and the new curriculum tested in well-equipped facilities.

Curricula

A redesigned curriculum has been introduced into all medical schools as from last Fall (1981). The major changes are the addition of community medicine continuous through the first five years of the 6-year course, 60 hours of epidemiology in the 4th year, and some units of social and behavioral science in years one and two. The practicum in the fourth year is to include one month in a primary health care setting. It should be recognized that faculty do not change as rapidly as curricula and there has been limited experience of university sharing or using MOH facilities, and the possibility of 5,500 fourth year students all expecting a month of primary health care practice will put great strains on the system. Much has yet to be worked out, but the direction is sound. A new medical school in the Suez Canal University at Ismailia opened in the Fall of 1981 with a revolutionary problem-oriented curriculum. There is much enthusiasm by faculty and students. However, it is different from the approach of the other medical schools--which are

conservative, clinically based and research oriented. Therefore the Ismailia school depends heavily on personal relationships for its survival over the next ten years until its graduates can demonstrate their equality. The very presence of this medical training model is, however, strong evidence of a willingness to experiment with new approaches.

The nursing curricula likewise have been redesigned to emphasize competency. There is need for practical training to be developed around objectives and incremental competencies also. Similarly, there is need to redesign the technician's curricula based on competences and skill training.

Major recommendations include exchange of faculty with medical schools in other countries, cross-appointments between university faculty (to MOH) and MOH physicians (as clinical instructors to FOM), and the review of the university linkage program to eliminate some of the restrictive clauses that now apply.

A further area of concern is the sharing of MOH facilities for training of physicians and nurses. MOH will not get practical physicians unless it shares the facilities which allow for a practical orientation. This is even more true for nurses.

Language

University courses are taught in English as are some courses for certificate nurses and technicians. The rationale is the need for skill in an international language and for access to the vast health and medical literature in English. The rationale is sound at university level. However, libraries are poorly stocked, poorly run and have few periodicals. There is need for at least one good health and/or medical library in each major center, and it is recommended that consideration be given to developing the High Institute of Public Health library into a model.

Non-university training holds little promise of overseas fellowships and should be more concerned with skills development than academic interests. Translation of major texts into Arabic would allow better communication between teacher and student (in Arabic) and thus enhance the learning process. Assistance may be needed with incentives for translation.

Both university and non-university training would benefit from properly equipped learning resources centers. The MOH Center for Educational Technology has begun production of film strips (slide/tapes) on some nursing subjects. There is a large amount of material available in English. If copies were purchased, translations could be made. Three or four learning centers for physicians and nurses would improve the opportunity for accurate understanding of the subject matter. Some medical schools have a class of 1,000 in a room designed for 250-300.

Fellowships to study the form and function of libraries and learning centers would be useful.

Primary Health Care

While some 35% of physicians are now opting to remain in the rural areas after their obligatory service, few of them have a public health view. Two inservice suggestions are proposed. One is to arrange 3-6 month short courses with the Institute of Public Health in Alexandria, the other is to develop small training teams of epidemiologists and behavioral scientists who might conduct short courses in the governorates or districts.

There is also a need to retrain all technicians in the techniques of their profession, within the context of the needs of primary health care.

Gaps in the System

A vast amount of data is being recorded and processed, but it takes some 2-3 years to synthesize and condense it and it is therefore of limited value for

planning. There is need to review the information system and to update the present system, with consequent training of information systems specialists, or to consider a cross-section prevalence sample as has been done in several recent studies. The whole area needs attention as the basic strategy for a sound planning and forecasting capability. The rapid analysis of local data can also provide inspiration to the health team as they measure impact on morbidity or mortality. The community can also be involved in this educational process.

Large hospitals are complex organizations and require effective administration of personnel and trainees. A cadre of health and hospital administrators is needed. Physicians regard this concept as a threat to their autonomy. It need not be. As population grows and resources dwindle, more attention will be needed to the cost/effectiveness equation of the health system. Administrators should be well-trained in the most effective management and assessment techniques for a sound health service.

Maintenance is always a difficulty. The acquisition of new and complex equipment and the repair and rehabilitation of older equipment is necessary to efficiency as well as to economy.

In summary, health manpower training in Egypt has a sound structure. It suffers from inequities in numbers, from a clinical and academic orientation at all levels (at the expense of practical skills), and from a lack of commitment to primary health care. There is a strong effort at reorientation underway within the last year and this holds promise of success. Some help is needed with library facilities and training equipment, but most of the change required is interpersonal and not sensitive to bilateral or multilateral assistance. The major challenge is to transform an academic orientation into a practical and community oriented approach--not an easy task.

1. Introduction

The training of health manpower must reflect the policy of a government toward social sector development. Speaking of the strategy for health care delivery in the year 2,000, Dr. Ramsis A. Gomaa has noted that "adequate health care delivery is a human right and must be within the reach of each individual's capability."* This statement finds further elaboration in a document on primary health care:

"The success of the health sector in achieving its ultimate goal of bettering the quality of life for Egyptians is highly dependent on its ability to utilize the abundant human resources and the limited material resources in the most efficient and effective combination possible that meets the health needs of the people and contributes to national development.

Our strategy in the present five-year plan is:

- A. To maximize the benefit of the health sector from available health technology that maximizes returns on health investments, i.e., more emphasis on prevention and primary health care, rather than sophisticated costly health technology for a few;
- B) To improve the management of health services as an integral component of community development;
- C) To elicit, support, and augment popular participation in primary health care;
- D) To institutionalize planning and health services research in the health sector at all levels in order to continually develop and adapt the health system to community health needs;
- E) To effectively involve the academia in planning and development of health services, and orient the undergraduate in the health professions to the actual health needs of the country early in his educational curriculum."*

* Editor's note: No references were provided by the author for these and various other quotations and studies mentioned in this report.

A further GOE policy pertinent to any discussion of health manpower is the assurance on the one hand of free education to all Egyptian citizens admitted to the university, and on the other hand the assurance of employment to all university graduates. This policy suggests that the primary purpose of the service agencies may be to ensure employment of the well-educated in a rapidly expanding population, and that other purposes may be of secondary import.

With an Infant Mortality Rate currently officially estimated by the Government of Egypt at 89 and a Child Mortality Rate at about 20, there are obvious health problems. Moreover, the health problems are complex (See HSA Report on Epidemiology, Health Status, and Categorical Diseases). Egypt is in a transition period reflecting serious communicable diseases of viral, bacterial and parasitic origin and a rising trend in cardiovascular and other chronic diseases associated with lifestyle and personal behavior patterns. Communicable and chronic diseases are totally different in etiology, treatment and control and require different orientations by the health manpower responsible for dealing with them. This dichotomy in orientation can pose serious problems for the training structure. These problems are exacerbated by the sharp difference in role definition and professional milieu between employment in a rural health unit and a large urban hospital.

Health manpower training is conducted principally by the Ministry of Health and by universities with the Ministry of Education. All degrees and related educational credentials are awarded by the Ministry of Education. Technical Health Institutes and Training Centers are operated by MOH along with various short term training courses. MOH has responsibility for school health and for the Institute of Nutrition. There is no accreditation procedure for any of the training institutions, but the prestigious Medical Education Committee of the Supreme Council of the University advises and assesses new programs such as the Medical School at Ismailia. Boards provide a directive role in the practice of the High Institutes of Nursing and of Public Health.

However, all categories of health personnel perform their duties within a structure of laws and decrees. Laws 415/54, 481/54, 537/54 and 127/55 (all as

modified; see Annex 1) regulate the practice of medicine, obstetrics, dentistry and pharmacy.

Ministry of Health

The directorate of manpower development is one of five directorates under the direction of the Under Secretary for Development and Research, Dr. Abdel Ghaefar Khallaf. The MOH directs a number of Technical Health Institutes and Regional Training Centers and conducts a wide range of in-service training activities. While national direction of health manpower development is a central responsibility, the organization and cost of most inservice training is a responsibility of the respective governorates. The division of responsibility between the central MOH and the Directorate of Health at the governorate level is not always clear, causing a recent Minister of Health to list this relationship as one of two major challenges facing the health system in the 80's. The two challenges presented were: "How to transform a centrally directed health system into a functionally viable decentralized system" and "How to respond to the increasing and changing health needs of the population within the context of the socio-economic realities of Egypt."

2. Physicians - Situation and Current Trends

2.1 Introduction

Health and manpower in Egypt may be classified into four general categories of physicians, nurses, technicians and others. Egypt has had its own medical and nursing schools since 1826 and has sought constantly to modify and adjust to the most appropriate use of manpower. Recently there has been a move to consolidation of health manpower categories, redefinition of job descriptions and revision of curricula.

The preparation of physicians involves philosophical as well as technical education impacting strongly on the health service. A recent report states the case clearly: "In Egypt, as in many other countries of the world, physician behavior in aggregate is the power structure that controls the shape, cost and effectiveness of health care delivery. Unless the critical core problem of relevant training, employment and continuing education of physicians is addressed within the context of limited national resources and primary community needs, improvements in basic community health services will continue to be elusive."

While the health manpower roles are present, there is an obvious and expressed need for integration, for the conscious development of a health team, particularly for primary health care, and this problem goes beyond the technical parameters of curriculum to the philosophy of professors and tutors and to formal and informal communication structure between ministries.

As of 1982 Egypt has recognized ten medical schools, though some of these have satellites or subsidiaries which will claim independence in the future. Nine medical schools are operated under authority granted to the Minister of Education, and one (Al Azhar) under the authority of the Minister of Religion. This latter is, in fact, two schools--one for males and one for females. Enrollment and graduate figures are given in Table 1. Approximately

5,000 physicians are graduated annually. This number is expected to increase to 7,000 in coming years. All university education is free and medical school undergraduates receive an average monthly stipend of about L.E. 8 to cover personal expenses. This may vary greatly, as extra incentives are given for "good" grades and further incentives for "excellent" grades. No figures are available on the cost of producing one physician, but simple calculations would suggest a cost of at least L.E. 8,000 (annual cost per student: Faculty L.E. 800; Student stipend L.E. 100; Ancillary staff L.E. 200; Library & equipment L.E. 50; Buildings & transport L.E. 150, by 6 years = L.E. 7,800).

2.2 Admissions

From high school, students may apply for up to 13 categories of position for further study. Based on achieved grades these applications are prioritized. Only those with the highest grades enter medical schools. Some medical schools, such as Suez Canal University Medical School, require that students come from governorates within the area. While no aggregate figures are available, individual schools indicate a male/female ratio of about 2:1.

2.3 Curriculum

Egyptian medical schools have reflected the influence of the French in a clinically-based, research-oriented curriculum (see Table 2). This has produced a physician with a strong technical bias and an orientation to specialization in a large urban hospital. Beginning with the Fayoum conference in 1978 there have been a number of high level discussions on the need for change, culminating in a set of revised guidelines adopted by all medical schools this year. The guidelines represent minimal change in curriculum and individual Faculties of Medicine have great discretion in interpretation. Under the new guidelines medical schools should offer:

Courses in Community Medicine each year for years 1 - 5

Social Science in years 1 and 2

Behavioral Science in years 1 and 2

Epidemiology for 60 hours in year 4

Physician undergraduates should have at least one month of field experience in primary health care setting.

While it is a comparatively simple matter to agree on changes in a curriculum, it is much more complex to translate the meaning and purpose of changes through the medium of existing faculty members who have not been participants in the developmental discussions, may not share the philosophy of the new curriculum, and in many cases may not understand it.

While most medical schools follow some form of the above curriculum, there are differences. Al Azhar, under the Ministry of Religion, combines Islamic teaching with medical science. The faculty of medicine at the Suez Canal University, Ismailia, has just opened their doors to 48 students, offering them a problem - oriented, community - based approach which is totally different in concept and function from other medical schools in the country and reflects a highly innovative approach by any educational standards. Thirdly, the faculty of medicine at Assiut is seeking to produce a physician with a strong orientation to community and to public health issues.

Ismailia Faculty of Medicine: Under preparation for the last four years, this medical school has deliberately tried to present a totally different model as a demonstration project. First classes began in the fall of 1981 with 48 students. Students are oriented to primary health care, to community and to MOH resources from the first week. Each student spends two days a week in an MOH rural health center assisting staff, and each student relates socially and professionally to two families for the whole training period. The curriculum is developed in modules of five weeks, with emphasis on problem solving and self-learning by the students. Objectives for each week are clearly delineated and applied in evaluation. A sample of objectives for the perinatal unit (No. 3) is given in Annex 2. This faculty has no teaching hospital and therefore relies heavily on the primary health care service structure for clinical experience. Student/faculty interchange is frank, and a spirit of interdependence and open exchange prevails. Conceptual learning

and interpersonal feedback are encouraged, which contrasts with the rote learning by students at the large medical schools where more than 1,000 students may attend a class in a room designed for a third that number. Ismailia, however, is an experiment and results will not be available for several years. The curriculum is designed by faculty with advice and assistance from many sources. If faculty remain stable they will provide enthusiasm and will exert their own interpretations from experience and conviction. If, however, they "return to Cairo" and a regular turnover is experienced, then the curriculum will tend to be unstable.

Students do not appear to be integrated into the service structure because faculty have no authority in an MOH unit. Until the question of faculty authority is resolved, the field work will be little more than a visit, and not part of the curriculum. Similarly, with family relationships the in-depth knowledge of individual members tends to emphasize a clinical viewpoint whereas a broad survey of community conditions or needs would provide an epidemiological viewpoint and a matrix within which the physician might consider the clinical "case" or problem. Furthermore, the relationship with families may not persist unless both parties find something of value to stimulate the social effort necessary to continue the relationship. In summary, while the Ismailia FOM curriculum is feasible it is vastly different (revolutionary) from most other medical curricula in Egypt. Gross deviance is not usually tolerated in the long run.

Assiut Faculty of Medicine: Under the new guidelines this faculty will offer at least one hour per week of community orientation through the total 6 years of study. In addition, epidemiology is offered in the second year, and scientific English in the first and second years. In the fourth and fifth years, students will have a month of direct community contact, including seven days of living in a village in the fourth year. This includes data gathering and clinical work during the day and an analytical seminar in the evenings, leading to a community diagnosis. As a focus or topic is selected at the beginning of the year, the student is well prepared. The experience is in groups of 50-60 and includes socio-psychological variables as well as

environmental and pathological. Students provide diagnosis and treatment, and specialists are present on selected days to enrich the learning experience. Students write a short report and the grade is included in final grade. Some fourth year students have formed a voluntary group under the title of "Students for Community". The Ministry of Health has designated several units as teaching facilities, thus legitimizing access and strengthening the MOH/University linkage.

As a further effort to increase practical experience and to integrate MOH facilities into the learning matrix, internships are being arranged with district hospitals in the governorate. Beginning in March, 1982, specialists of recognized superiority in cooperating hospitals will be asked to supervise interns. A booklet identifying competencies to be obtained during this internship has been produced and will be available to both intern and specialist. However, each intern must undertake two months each of emergency and specialty practice at the University Hospital, and one of the four required areas of Medicine, Surgery, Obstetrics and Pediatrics must be at the University Hospital.

The Assiut model is similar to the general curriculum in methodology but seeks a stronger community orientation and a stronger linkage with MOH facilities, due in part to innovativeness of the Dean and in part to the Strengthening Rural Health Delivery Project. Any major changes from an established pattern must have the agreement of many people.

Tanta Medical School for the past 11 years has taken fourth year medical students to villages, beginning with a health camp in the village of Nowag in 1971. An annual theme is developed early in the year and a head student for community health services is elected. Groups of about 20 students go to selected villages to study health problems in the community, provide health education, and hold health conferences with the villagers. This year clubs were initiated in 18 villages, with the title "Friends of Public Health Students in the Tanta University Faculty of Medicine." A post-field experience conference is held to synthesize findings and consolidate learning.

2.4 Curriculum-Related Issues

2.4.1 Large classes pose severe problems. Classes are often three times larger than classroom accommodations allow. There is little faculty/student contact and limited practical experience. Forty students may share one cadaver, or one microscope, and it is physically impossible for many students to observe surgical demonstrations. Faculty may have to use a bull horn to be heard by larger groups. This raises the issue of the reason for such large classes--encouraged by a social system which promises prestige and security for high status graduates. An observer is led to question the need for and the cost/benefits of such large numbers of clinically oriented physicians. There is discussion that quality is being sacrificed for quantity. This is not only unfair to current graduates but will reflect on the reputation of older physicians, and on the international reputation of Egyptian physicians. This is a most serious issue with extensive implications for both the universities and the Ministry of Health.

2.4.2 In medical schools the language of instruction is English. Yet there is no English proficiency examination as a prerequisite, nor are there adequate books and journals to provide the constant drill required for proficiency in reading and writing. There is little data on high school English, but it is a second language taught by teachers with limited proficiency and taught only in preparatory and high school years. Language is such a fundamental channel that a study commission might well be formed to examine the relative benefits of using English when Arabic is rapidly assuming stature as an international language. Translations of anatomy and physiology texts have been done. The cost of translating basic material into Arabic may be preferred to the alternative of uncertain education standards. While questions of appropriateness of subject matter may arise, it is presumably more appropriate to have a university text in a familiar language than the same text in an unfamiliar language.

2.4.3 All FGMs appear to be chronically short of textbooks, teaching aides, and library facilities. While there is no good substitute for a university

library, a well-stocked learning resources center, covering major courses, and with 24 hour access, would seem to be an acceptable alternative--at least in the short run.

2.4.4 A serious problem in the medical curriculum is the limited opportunity for practical experience available to the student. Some faculties have arranged for a month or more of community experience as part of public health in the fourth year. Yet this is an isolated event. Even clinical experience in the University Hospital is severely hampered--as many as 30-40 students may examine one patient. This is solved in some hospitals by paying the patient up to L.E. 10 to allow the students to examine him or her. The education system has obviously exceeded the physical resources available for learning.

2.5 Post-University

Following the internship, medical students have to accept an obligatory posting to a rural unit (or other national service) for one year. Postings are more or less favorable depending on grades. All medical students are required to take a 6-8 week pre-service course before assignment. About one-third of the students (the brightest) may avoid the rural posting by applying for entry to a specialty, thus avoiding the general experience available in rural service delivery units. These latter students complete their specialization and may go on to become faculty in the FOM with only limited practical experience, but with a potential bias against service in MOH units in rural areas. For those who do join the Ministry of Health, 30 to 60% voluntarily extend their service for another year or longer. Reasons for this extension are complex and deserve immediate in-depth study, but they seem to include availability of housing and of private practice opportunities.

On completion of the rural experience a physician may choose to:

- take a residency for 2-3 years in an MOH hospital
- enter general practice in an MOH service unit
- work in preventive areas of immunology, school health or MCH

Residency training may be taken in any of 12 clinical disciplines and MOH has recently ruled that there will be no promotion to assistant consultant until the specialized residency training is completed. Table 3 shows MOH specialists (only) per 100,000 population in Egypt.

The Ministry of Health offers grants to their physicians to obtain a Masters degree in association with a Faculty of Medicine or at the High Institute of Public Health in Alexandria. There is recent concern that only 25% of these candidates achieve their degree and the situation is under analysis. Two years ago a Masters in General Practice was initiated and has attracted some 30-40 candidates to the 2-year course.

2.6 Disposition of Medical Graduates

While exact figures are not available, the Ministry of Health estimates that there are approximately 39,000 physicians registered in Egypt. Of these as many as 10,000 may be serving out of the country in Arab countries, in Africa and in Jamaica. Approximately 26,000 are employed by the government, 14,000 by the MOH and the other 12,000 by the military, the universities, the Ministry of Religion, and other relevant agencies. This leaves approximately 3,000 in the private sector.

While the rate per 10,000 population is given at 2.3 per 10,000 in 1979, this has risen to 3.2 in 1981 (14,177/44,000,000). If a graduation rate of 5,500 per year is assumed against a population growth rate of 2.5 % (very conservative) and if 3,000 physicians are absorbed into non-MOH sectors including foreign service, then MOH will absorb 2,500 new physicians per year. Losses from death and retirement may run as high as 5%. See Table 3 for an estimate of physician ratios per 10,000 population to 1990.

There are, however, several variables in this estimate. It is unlikely that the non-MOH sector will absorb 55% of graduates on an annual basis. It is equally unlikely that GOE will continue to offer free university education, and to guarantee employment for all graduates. However, it is probable that

MOH could absorb about 2,500 new physicians annually for the next 6-8 years. (See Table 4, noting other implicit assumptions.)

2.7 In-Service Training and Continuing Medical Education

The necessity of providing 6-8 weeks of pre-service training to physicians prior to their obligatory period in rural health has already been mentioned. Fifteen years ago, when only 400 physicians a year were graduated, all continuing education was done centrally. For the last 6-7 years it is the responsibility of the governorates. There are few guidelines and no quality controls. However, there is a plan to strengthen the Regional Training Centers. Physician instructors will be specially trained in conjunction with medical schools. Materials for in-service training can be prepared at the MOH Center for Educational Technology. (See under Nurses). In-service training centers are to be developed in each governorate. At the present time each rural health physician is supposed to spend one month on refresher training in the District Hospital each year, for up-grading of medical care and emergency medical services. Those physicians who have remained in rural health after the period of obligatory service have established a private practice and are reluctant to spend a month away.

The model being developed through the Assiut Regional Training Center has promise. All physicians in the area were polled on their interests in order of priority. Five topics were selected: Vaccination, Family Planning, Polio, Diarrhea, Tetanus, and Evaluation and Registration of Medical Problems in the Community. A four hour "scientific meeting" on each subject will be presented every second Thursday afternoon in the Regional Training Center, for 50 physicians. This program is designed as a scientific exchange rather than lectures and will be conducted by the Faculty of Medicine in cooperation with the Ministry of Health. Such sessions will be extended to all rural physicians in Upper Egypt. Such interrupted training has proved valuable in other settings. There are regional training centers in 10 governorates and the second population training project provides for six more centers. The recent USAID Training P.I.D. will extend in-service training to 10,000

physicians and such training is seen as essential to orient existing physicians to concepts of community medicine and public health. A second aspect of continuing medical education is membership in the Egyptian Medical Society (EMS), or one of the specialty branches. EMS and the major specialties have periodicals and hold an annual scientific meeting. There is no program for recent graduates and more could be done for them.

Thirdly, there is a plan to arrange for specialists in the larger District Hospitals to lead a "scientific day" on their field of interest for the Faculty of Medicine and all interested physicians in the district or governorate. This type of collaborative MOH/FCM effort has much to commend it.

Fourthly, training occurs at special Conference Centers such as the Sadat Center and the American University Cairo. Usually two conferences are arranged each year for 2-3 weeks for very high level officials such as the General Directors of Governorates and Under Secretaries in the Ministry.

Fifthly, about 1000 people apply for MOH fellowships each year. This covers part time leave in the first year and full time in the second year toward a diploma or masters degree. Study is offered toward:

- General Practitioner - Medicine - Plus all major specialties in the
- Ophthalmology - Surgery curative area
- Tropical Medicine - Obst. & Gyn
- Hygiene - Pediatrics
- School Health

2.8 High Institute of Public Health

This year is the 25th anniversary of the High Institute of Public Health. A new dean has been appointed and he is in the process of having the curriculum revised. This will be available by August for use in the 1982-83 academic year.

The High Institute offers four programs. The most popular is a one-year diploma course which is said to be the equivalent of the M.P.H. A two-year course of study leads to the degree of Master of Science in Public Health. This requires a thesis. A Doctorate of Public Health (or Doctor of Science in Public Health) is offered, mostly to physicians, with a two-year academic period followed by a year of residency. The fourth program is in-service training, tailored on request of national or international agencies. While several nations and organizations arrange courses through H.I.P.H., the principal demand comes from Egypt, followed by nearby Arab countries and then by African countries. The High Institute, operationally, is an international center.

At the present time there are approximately 180 students, 90 in the diploma course, 60 in the Master's program and 30 in the doctoral program. To 1981 over 1,770 students have been graduated. The High Institute gives emphasis to field training and health education. A theme is selected for the year and students explore variations of this theme. For example, the theme for this year is Health Hazards of the Agrarian Family. During the first semester specialists are invited from the School of Agriculture, the Ministry of Health and the Academy of Science to build a background. During the second semester students focus on how to assist in reducing such hazards. Four hours a week of field work are devoted to observation and recording health education, statistics and epidemiology practice, and to interdepartmental liaison. Ten weeks of field practice are mandatory for all diploma and Master's students.

The mechanism of short courses, tailored to needs, could be used by MOH in the reorientation of physicians, or in the training of the tutors and trainers needed by MOH in the regional training centers. The H.I.P.H. is an excellent facility with an international reputation and the Dean reflects a strong public health interest. Visiting faculty might be used to provide the extra staff required for any long term commitment. Such collaboration is immensely practical and to the benefit of all.

The library at the H.I.P.H. is in need of development. The Dean is negotiating with the Rector for more space--either an extension of the present building or a complete move to the building previously occupied by the British Council. The provision of an adequate library of books, periodicals (and audio tapes) would have maximum impact on the quality of the institution and would coincide with the promotion of a new curriculum and a possible major role in physician reorientation in Egypt.

Training and education are not the only products of H.I.P.H. There is a strong research component-- from theses and dissertations, and from contracted research, from MOH, Academy of Science, WHO, etc. While the research worker is the teacher for the students, there is no bridge into program. Some L.E. 37 million annually are said to be spent on research in Egypt, but research may have become an end in itself. There is a challenge, in health, to translate a massive body of research into programmatic terms that can be utilized by administrators. This is a difficult problem in most countries. (There is a Center for the Study of the Utilization of Scientific Knowledge at the University of Michigan). Ways should be sought to support the analysis, synthesis and interpretation of research in medicine and health, of value to Egypt.

2.9 Study Abroad and Other Types of Training

Fellowships for study are available through several channels. USAID offers a number of fellowships to physicians through projects and through the Peace Fellowship project (Annex 3). Several other bi-lateral agencies (including the German, French, and British governments) provide fellowships, as does W.H.O. No aggregate numbers are available on physician fellowships.

Individuals may also apply for study leave for out of country study. Preliminary paid study leave of 2-3 months is granted to approved applicants to prepare for an entrance examination organized by the Medical Syndicate, with foreign examiners present. If successful, the physician can receive a fellowship of up to four years on full Egyptian salary. However, no foreign

money is granted--only leave. Popular courses are F.R.C.S., F.R.C.P. and Anesthesiology.

Other types training include reciprocal visits by experts in their specialties and international seminars, some of which are held in Egypt.

2.10 Physician Training - Issues and Recommendations

2.10.1 Issue: Numbers

In many ways physician training in Egypt has followed Garrett Hardin's "Tragedy of the Commons" scenario. University education is free, employment is assured on graduation and physicians status is high. Enrollment has increased steadily to the current level of 5,500 graduates a year. But classroom accomodation, laboratory equipment and faculty numbers have lagged far behind. In the process, quality appears to have suffered. If half the current numbers were graduated annually, reflecting sound training and high quality practice, perhaps the medical needs of the country would be better served.

2.10.2 Issue: Curriculum

The existing material curriculum has been revised, but many of the faculty are still oriented toward a clinical "case oriented" medical practice. Many of Egypt's major problems in morbidity and mortality are community oriented and require an epidemiological and health education perspective for their solution. Physicians must provide leadership within the community if these health problems are to be resolved. The concept of prevention is poorly understood and this concept is not popular with many faculty.

Secondly, the health problems of Egypt contain major communicable and chronic disease elements. One group are micro-biological in origin, the other group degenerative. Approaches to prevention and control are totally different for each.

As of this year epidemiology and community medicine are included in all curricula. In all districts MOH has designated certain units as "Training Units" to be available for the training of physicians. The change in medical curriculum, if effective, raises another problem. All those trained during the 70's (prior to the curriculum change) will not be oriented to community medicine, yet they will be in senior decision-making posts. There is need for a rapid re-orientation of all physicians in all sectors toward the major morbidity and mortality problems of Egypt--and the search for an Egyptian solution. While the MOH recognizes this need, the task is a massive one and financial and consulting assistance should be made available. The MOH could liaise closely with the High Institute of Public Health in providing a nation-wide reorientation. The recent USAID training P.I.D. could go a long way to solving this problem.

Recommendation: That encouragement be given to MOH and universities (FCM) to develop cross-appointments of key personnel to provide for scientific communication and mutual understanding at the faculty level and a broader and more practical knowledge and skill base for the student.

Recommendation: That all curricula of medical schools be circulated to each faculty of medicine so that faculty members and students could benefit from a detailed knowledge of what others are doing. Minor variations in curricula are positive, as they allow for assessment of innovations.

Recommendation: That the three major members of the Medical Education Committee of the Supreme Council of Universities, together with appropriate members of the Ministry of Health, be invited to examine medical curricula in various states and countries. At the same time, they might review the various systems of accreditation and licensure as they apply to the practice of medicine.

Recommendation: That the University linkage project be reviewed with the purpose of providing broad linkages of practical benefit to both Egyptian and U.S. institutions. At present this project would appear to be esoteric and

restrictive in its application. Summary information regarding the University linkage project is given in Annex 3.

2.10.3 Issue: MOH/University Communication

While the communication structure between those who train physicians and those who use them is not clear, there is dissatisfaction on both sides. The victims are the physicians and in the long run, Egypt itself. The focus of the problem relates to opportunities for physician trainees to have experience in a practical setting. Most medical faculties are associated with a University teaching hospital but none have control over Health Centers or Units which provide a community viewpoint. The establishment of "teaching units" in each district is underway, but the issue is broader than mere designation. There is need for FOM authority in certain units so that the educational experience can be directed and supervised. Speaking bluntly, the MOH will not get physicians with an MOH type orientation until MOH facilities are shared with the FOM for the preparation of physicians. A joint MOH/FOM committee might be formed to work out details for ministerial consideration and eventual collaboration

Recommendation: That MOH consider the development of designated Rural Health Centers and Rural Health Units as training units for use by medical schools. It is recommended that medical schools have access to at least one MOH service unit for every 25 fourth-year students.

2.10.4 Issue: Language and Libraries

The teaching of a science in English may be sound in theory. However, it assumes four points: a) that faculty are proficient in general and scientific English; b) that students are comfortable and competent listening, reading and thinking in English; c) that there is a body of scientific literature freely available in English and not available in Arabic; and d) that there will be a need for scientific English language beyond the period of educational training. It is often argued that these conditions may also pertain for

Egyptian physicians in training. The use of English in the medical faculties may be questioned against each of these assumptions. Points b) and c) raise many questions, particularly in view of large class size and the minimal faculty/student interaction and opportunity to clarify meaning.

A strong case can be made for the translation of major texts into Arabic so that each medical student might have his or her own copy of a set of basic textbooks in a language familiar to him or her. A multi-volume German text on anatomy and physiology has already been translated and printed. Within two to three years, given a concerted effort, an adequate set of reference texts could be produced in Arabic. This does not deny the needs for fluency in a foreign language, but does allow for greater knowledge of the basic subject matter.

A second issue related to language and libraries is the opportunity for the student to study beyond the detail presented in a lecture. Many students exchange notes and in the process may exchange erroneous information. An adequate learning resources center could do much to upgrade the quality of medical knowledge and subject detail. The RODA Center for Educational Technology is a superbly designed and equipped unit and could be used intensively to produce Learning Resource Center (L.R.C.) materials. The development of a 50-60 carrell L.R.C. is a capital investment project which has merit. Exploration of relevant L.R.C. materials available from the U.S. and other countries could provide a base for translation or direct use.

A further need is access to periodicals. There is need to expand the concept of the library as a center for self study and exploration. Libraries are small, poorly maintained, poorly utilized, and have inadequate numbers of carrels. Given space and organization, it may be possible to interest organizations or individuals in providing subscriptions (or complete sets) of appropriate periodicals to the various medical schools. Students should find their richest resources in the library, and a library is the hallmark of a University. It is not by accident that Harvard spends \$11 million annually on its library.

Recommendation: That there be encouragement to appropriate medical scientists to translate major medical textbooks into Arabic and to have these printed for required purchase by medical and nursing students. Translation is independent of the language used in teaching. Translation on a broad scale may be aided by a computer translation facility.

Recommendation: That the library of the High Institute of Public Health be upgraded to a model library facility with a full list of periodicals, properly indexed and, if feasible, that the Institute library have an access arrangement with the Library of Congress, or other appropriate repository, for research and teaching purposes.

Recommendation: That USAID explore support to MOH and to H.I.P.H. in the development of high-quality training teams covering social epidemiology, an analysis of the etiology of major morbidity and mortality in Egypt, and the development of team commitment through skills in human interaction and communication.

Recommendation: That USAID explore support to regional training centers to provide practical in-service training to all physicians in the above areas, assessed against predesigned criteria. It would be desirable that further promotion or salary increase be pegged against completion of such a course or courses.

2.10.6 Issue: Information System

Any assessment of the Egyptian health service indicates widespread infrastructure which could potentially provide a basis for primary health care--there seems to be a wealth of data on treatment and vital registration at the periphery. At the national level, however, there is a limited data base and even less confidence in the validity of that data. The data system is outmoded and provides little of direct value. The installation of an efficient and effective data system on vital registration and morbidity and mortality would provide a base for planning and long range forecasting.

There is an increasing concern with data and the synthesis of information for planning purposes. This is exemplified in the FOM/MOH Data Room at Assiut, where trends in morbidity, mortality, and personnel are presented graphically along with locator maps for "reportable" diseases and health service visits. The Cairo University/MIT study on health and delivery systems, the MOH/NCHS study on the Health Profile of Egypt, the Health Services Research Group's Study by EMRO, and the four country study by EMRO/WHO on family foundations and patterns of health have all been conducted in the last 3-4 years. There is a growing interest in accurate health data and data analysis in Egypt.

Recommendation: That encouragement be given to an immediate and objective review of the information system and data flow, and that it be upgraded with trained personnel to provide political and technical decision makers with an accurate assessment of the health and population picture by governorate and by district.

2.10.7 Issue: Training in Hospital and Health Facility Administration

In Egypt administration and management of health facilities is a physician responsibility. Not only is this task unsuited to physicians, it is an area in which most have had no training. A 1976 analysis of physician time allocations in a Rural Health Unit (Table 5) indicates that she/he spends a third of the time on administration (finances, leave, correspondence, supplies). The physician time required to administer a large hospital would be proportionately greater. Sound administration can ensure considerable technical and budgetary efficiency and at the same time provide invaluable support to the medical director of any institution. A new cadre of health worker is indicated health and/or hospital administrators. Given the excessive number of physicians being produced in Egypt, it might be advisable to give additional training to some who show special competence for this type of work, so that they could later work as health and hospital administrators.

Recommendation: That MOH encourage the appointment of administrators in hospitals and health centers; and that these people be adequately trained through University (Faculty of Commerce or High Institute of Public Health) programs designed in health and hospital administration.

3. Nursing

3.1 Introduction

While physicians establish the quality of technical care given to the sick, nurses translate that care into acceptable terms and provide the most effective interface between the health care system and those who use the system.

Nursing in Egypt has passed through many mutations. Currently three categories of nurses are trained--a graduate B.Sc. nurse, a post secondary Technical Nurse (Diploma) and a Secondary Technical Nurse (Certificate). The first School of Nursing was instituted in the Cairo University in 1926--the same year as the medical school-- and the High Institute of Nursing (degree) was founded in 1964. Extensive changes occurred in 1972-73, when the "old" diploma of nursing course, and the assistant nurse course was dropped. At the same time a nursing branch was set up in the Technical Health Institutes (new diploma) and the Secondary Technical Nursing Schools were established. Other specialties similar in function to nursing are assistant midwives and health visitors. These categories were discontinued from 1976. Table 6 provides MOH figures for 1978 suggesting that over 75% of all categories are employed by MOH. However, only 38% of 458 graduate nurses and about 50% of diploma level nurses were employed by MOH. Almost half of all nurses in this table (1978) are certificate level nurses (15,720 out of a total of 34,590). A more recent statement of personnel on duty in MOH in 1981 indicates that there are 32,584 nurses working at this time -- 273 nurse supervisors, 92 technical nurses, 26,723 general nursing staff including midwives and 5,496 health visitors. Numbers of nurses graduating from various courses since 1971 are given in Table 7.

3.2 High Institutes of Nursing

There are two High Institutes of Nursing (HINs) in Egypt, one in Cairo and one in Alexandria, with a third due to open in the Fall of 1982 at Assiut. These

Institutes operate under the advice of a high status Board. The HIN offers a four year course of study, with a further year of internship. Admission criteria are the same as those for the university generally--a secondary school certificate with an acceptable grade point average, a personal interview, and a medical examination. Tuition is free to Egyptian citizens but students are responsible for all other costs. As undergraduates they are entitled to university dormitory accommodation and some may obtain fellowships. Undergraduates with grades of "excellent" or "very good" are awarded fellowships on an annual basis.

HINs provide B.Sc., M.Sc. and D.Sc. programs. Admission requirements and programs of study are well developed. The curriculum proposed for the HIN at Assuit and that for Alexandria is attached as Table 8 to illustrate the breadth of courses.

The B.Sc. program at Alexandria indicates that students spend from 20-40 hours per week of supervised learning, in a fairly crowded and complex program. Of the 4,000 hours of course work 44% is theoretical--a good balance. However, there are serious questions as to the quality of the practical experience provided. There are two major issues. The first is supervision, rather euphemistically referred to as orientation, and the second is equipment. Most practical experience is in hospitals. Given the 25 years of experience of HINs and the concentration of graduate nurses in university hospitals and teaching institutions, it is difficult to understand why trainees do not have the benefit of their predecessors as supervisors. It is agreed that there is a problem with practical training. It concerns orientation to the hospital unit and nursing duties, guided and supportive supervision and frank and supportive performance assessment. As the HIN graduates become tutors, nursing administrators and role models for the nursing profession, it is essential that they experience and understand the developmental role of practice in the curriculum. It is in practice that a trainee learns the meaning of the word NURSE. A further defining tool for nurses is a job description. There does not appear to be a job description for graduate nurses. Numbers are small and roles are diffuse. Some are with MOH, some

with universities, and some with the private sector. The absence of a defined role description emphasizes the need for well-defined role models and for some control of the learning situation by HIN faculty. This is a similar situation to that faced by medical schools.

Lack of equipment is a chronic complaint. Good theory indicates that a freshly sterilized hypodermic needle be used for each patient, whereas practice may force trainees to use one syringe and the same needle for a ward full of patients. This problem has been reported but not directly observed by this consultant and hopefully represents a temporary situation. Baccalaureate nurses must complete a year of internship before recognition as nurses; this extra year would appear to be unnecessary if the practical training during the degree course were of high quality.

More than 200 B.Sc. nurses are graduated annually and this figure will be enhanced as the Assiut Institute gets under way. It has not been possible to locate the complete number of B.Sc. nurse graduates in Egypt but, as Alexandria has produced 1,400, it may be estimated that it is not less than 3,000. These graduates find many employment opportunities other than MOH hospitals. They are tutors in Technical Health Institutes, Regional Training Centers, and Secondary Technical Nurse Schools, and are nurses in University hospitals and faculty posts. Many of them are attracted out of the country where pay and conditions are seen as more satisfying. Army and private hospitals also compete. The B.Sc. in nursing is a highly attractive career opportunity for the bright young women of Egypt.

The HIN also offers a Master of Science and a Doctor of Science in nursing. Table 10 gives figures and categories for the HIN at Alexandria.

There is no accreditation of nursing institutions nor professional licensure other than the degree. However, there is a Nursing Association which organizes annual conferences, and develops workshops and conferences according to need. There is concern over legal protection for nurses and on ethics in nursing. Senior schools of nursing must provide leadership in developing the

profession. Support for an annual conference of nurses and the publication of selected scientific papers produced by nurses could produce a body of nursing literature relevant to Egypt. A quarterly journal of nursing in Arabic is highly desirable and could be circulated to all nurses on a subscription basis.

HINs face language and library problems similar to medical schools, but probably more acute ones. Faculty appear dedicated and deserve encouragement to produce the highest quality of nurse. The aspirations of the recent Assiut conference on the High Institute of Nursing are worth noting. "In Assiut (HIN) the major emphasis will be on health education and serving the people in a variety of community based settings." The curriculum is to reflect subject integration with:

- community orientation
- history of nursing
- nursing ethics
- need for peer training
- team development with physicians
- good use of libraries

The Director General of Nursing, Effat Kamel, plans to have one B.Sc. nurse for every 5,000 population. At present 8,800 nurses are required to meet this ratio. Given the many employment options open to the nursing B.Sc., it will be some time before the desired MOH ratio is reached.

Technical Health Institute Nurses

The first graduates of this two year diploma course were produced in 1974. Numbers are not great. The new diploma course is a revision of the old diploma using B.Sc. graduates as tutors within the MOH Technical Health Institutes. These tutors brought with them the curriculum from the High Institute of Nursing and compressed it into a two year course. Technical Health Institutes offer this training--two in Alexandria and one in Cairo--and about 50 people a year are graduated. After completion of the Institute

course they attend. 4-6 months training in different specialties of basic health services. Admission criteria require secondary school certificate. Graduates identify themselves as of the same competency as B. Sc. nurses and seek similar positions. As with the B.Sc. nurse, they lack practical nursing experience and move to teaching positions, primarily in Secondary Technical Nurse Schools. They are not adequately prepared to provide practical instruction to trainees and appear to constitute the source of many of the problems associated with STNs.

Diploma nurses may apply for admission to a High Institute of Nursing and if accepted are admitted to the second year of the degree program. Diploma nurses may also undertake specialization within any of the 14 categories of nursing available in the post basic program (see Table 11).

Only about 250 women are currently enrolled as Post Secondary Technical Nurse students.

3.4 Secondary Technical Nurse

This category of nurse training combines completion of high school course work with nursing training over a three year period of study. Begun in 1972 (Ministerial Decision No. 292) there are now 130 STN schools in the country producing some 3,500 certificated nurses annually. This is a joint MOH/MOE project and appears to be operating satisfactorily. Admission criteria is preparatory school certificate (female), age not less than 15 years, agreement by parents, single status (to be maintained during study period), certificate of good character and satisfactory medical and personal examination. The aim of the program is stated as "to prepare qualified girls to serve as highly efficient nurses, and to provide them with the proper scientific, technical and cultural studies to be able to reach a standard required for the nursing profession and to develop the mental, physical, social and national preparations to enable them to perform their duty towards God, their families, the nation and all humanity" (Translation from published Ministerial Decision).

A Higher Council of Secondary Technical Nursing Schools, composed of upper level management personnel in MOH and MOE and other related authorities, determines the establishment of new schools, location, number of students to be accepted, annual budget, modifications to the program, etc.

Secondary Technical Nurse Schools exist in all 26 Governorates (see Table 12). Schools cover science subjects given in regular secondary schools--biology, physics, chemistry, religion, Arabic and English--taught by secondary school teachers. Physicians from local hospitals and some technical (diploma) nurses teach nursing subjects. The curriculum is ambitious, as is shown in Table 13. The nursing curriculum provides 960 hours of nursing and related theory and some 3,360 hours of practical. It will be recalled that in the four year B.Sc. program there are 1,770 hours of academic work and 2,245 hours of practical. Yet the STNs are high school girls aged 15-18 years.

There is a strong demand for STNs at all levels but also widespread criticism of the quality of their work. With over 35,000 already trained and an annual graduating class in excess of 3,000, it is obvious that MOH is investing heavily in this health worker. There are problems in preparation and in employment.

Most training programs begin with a job description. Until recently there was no adequate job description for the STN. This has now been formulated and approved. A copy is attached (Table 14). This job description will allow revision of the curriculum and will provide the supervising physician with some understanding of the skills and competencies of the nurse. The problems, however, are more complex than this. There are faculty and clinical practice difficulties.

In setting up the STNs the MOH/MOE decision was for a limited class of 50 students, though up to 150 could be admitted. Each STN school was to have two nurses for each of 6 clinical areas. This ideal has not been achieved. In a 1980 evaluation there were only 428 nurse instructors for the 130 schools, against an approved strength of 1,560.

In clinical and practice sessions there is said to be little or no supervision. The role of the nurse trainee is to "observe and participate", which is open to a variety of interpretations. Some 50% of all theoretical and clinical instruction is provided by nurses who have no specialized training in these subjects.

Adolescent girls of 15-18 years require role models against which to build their identity. Yet much of the instruction in technical subjects is given by physicians who cannot be expected to understand, nor to interpret, the nurses' role. This is a profound weakness in the system.

Major observations of an MOH study of STN training in 1980 appear to be still valid. Areas of weakness were identified as:

1. insufficient emphasis on public health and family planning
2. insufficient and poorly trained instructors
3. inadequate and unsupervised clinical experience
4. lack of teaching aids and adequate texts
5. poor teaching facilities and equipment.

While it is always easy to identify weaknesses in a system, the observer should not be blind to the existing and potential strengths of the STN Schools. They provide education and employment opportunity to tens of thousands of young Egyptian women. STN Schools provide sorely needed ancillary services in hospitals and primary health care services throughout the country. The STN nurse has a career opportunity as a specialized nurse or even a B.Sc. nurse if she is bright. The total system is an excellent example of cooperation between two ministries for the benefit of all.

There is need for deliberate interventions that will provide clear role models and will encourage STNs to excel at nursing. While initial training is given in the school, the process of supervision is a continuous "on-the-job training". If supervision is supportive and technical, the STN will grow in competence and in job satisfaction. The general need is clearly recognized by MOH.

The development of the job description is a major first step in this process. It is suggested however that the 36 items in the job description require ordering into priorities based on considerations such as--

- A - is primarily responsible for
- B - can also undertake the following duties
- C - can assist with, as needed.

Such prioritizing would assist in the development of a competency- based curriculum and in the conduct of performance evaluation of practical nursing skills.

A draft curriculum is being circulated for discussion by MOH authorities. It emphasizes:

- teaching methodologies
- primary health care skills
- responsibility of the instructor as a role model
- competency oriented instruction
- relevancy of scientific subjects

When finalized it will be submitted to the Ministry of Education and, if approved, will be implemented in 71 STN schools already designated by MOH. The curriculum plan recognizes evaluation and the plan calls for a series of modules illustrated in the following example: "Develop, test and implement evaluation protocols for each nursing competency included in the curriculum." Process and product evaluation will also be implemented.

Nurse tutors are to be trained in four specially designated training centers under the MOH so as to ensure uniformity and an acceptable level of competency. Duties and responsibilities of nurse tutors are to be delineated and a system of monitoring initiated. The new system approaches an ideal in concept. Language used will be Arabic and 400 copies of relevant texts have been translated for use by students. Administratively virtually all details have received attention.

Yet a health care delivery system is more than the sum of its parts. It is a human welfare service and to be successful must work with and communicate with the people it seeks to serve. There must be empathy and understanding beyond technical competency. This relationship cannot be achieved by training or by incentives. It is a product of the health service culture, and rests on the assumptions of staff concerning clients and communication with them. Team work, role models and leadership are key concepts in the interface between the health care team and those who need care. The STN has much to offer. In hospitals her work is valued and her competency recognized. In the more direct interaction of primary health care less is said in her favor. Perhaps because she is of the same economic class as many of the Health Center clients she uses her professional status to create social distance and a heterophilous relationship. Whatever the cause, this nurse appears to need leadership and supportive supervision in performing her duties in rural areas. If her teachers and tutors respect the dignity and worth of rural people and provide a positive image, this may help to make the STN's communication and nursing role more effective in this setting. She must develop a sense of self-worth, a sense of the worth of her clients and a sense of commitment to an important task. These intangibles cannot be conveyed through a curriculum. They are transmitted sub-consciously by significant others and provide the basis for subsequent behavior.

Furthermore, nurses provide a unique linkage in the health care system of any country. Health care is complex. The curative aspect is largely technical, and offers a repair and rehabilitative service which requires only short term compliance from the client. Health care investment for long term gain in health status is in disease prevention and health promotion. The nurse has the unique combination of technical and cultural knowledge and skills to be able to involve clients in the practice of disease prevention and health promotion in their daily lives. This health education component of a nurses responsibilities has long range economic implications for the country. If 30,000 or 50,000 nurses are all actively involved in primary health care, in working with families to prevent disease and promote health, to reduce infant mortality and to promote spacing and limitation of children, then communities

may begin to take an active interest in their own well being and quality of life. The nurse has importance beyond the clinic.

3.5 Post-Basic Training of STN's

Following satisfactory completion of the High School and Nursing program the STN achieves the status of Assistant Nurse. She may be employed immediately or may go on for further study.

- STN study option 1. A course of four months at an approved institution qualifies her as a midwife and she may then go on to practice within an MOH post.
- STN study option 2. Two years of practical work in a general hospital plus one year practical in a university hospital plus one year of supervised teaching, qualifies as a Nurse Tutor at Diploma level.
- STN study option 3. Two years of practical work plus one year Diploma course in any one of 14 specialties (see Table 11) qualifies as a Nurse-Tutor at Diploma level.
- STN study option 4. If the STN grades were above 70% the STN can apply for admission to a High Institute of Nursing and, if admitted, will be accepted into the second year of the B.Sc. program.

The one year Diploma course as offered by the Cairo University includes:

- a 15 day course in audio-visuals at the RODA Center
- meetings with NAMRU
- some teaching experience
- a week long conference on family planning, organized by the Cairo Family Planning Society.

It is noted that Cairo University has more than 200 applicants a year to this post-basic nursing program, plus a number of students from other Arab countries.

3.6 Pre-service and In-service Training

3.6.1 Pre-service Training

All STNs must undertake four months of preservice training with a concentration in MCH or school health. This is done at the governorate level, is practical, and is generally felt to be inadequate to needs.

All Technical Nurses must undertake four months of pre-service training in a specialty area or intensive care unit.

3.6.2 In-service Training

All nurses undergo some in-service training at governorate training centers. Each governorate has a health training section. At the central level the nurse training center (next door to the RODA Center) conducts two week in-service training for 15-20 nurses at a time. The Japanese have a bilateral agreement on this program.

3.6.3 Study leave and internal fellowships

Graduates of the High Institute of Nursing may apply for fellowships for post graduate study in Nursing Supervision or Administration toward a Diploma or Master's degree. (About 1,000 fellowships are awarded annually but most of these go to physicians.)

3.6.4 Fellowships - Out of Country

WHO, USAID and the British all provide fellowships, available to nurses for short or long term study abroad. These usually go to graduate nurses.

3.7 Issues in Nursing

3.7.1 Issue: Reputation

While much is said concerning the poor reputation of nursing as a profession, it continues to attract some 4,000 young women annually. The drop-out rate is negligible and the graduation rate is less than required for the nursing component of the health care system. Reputation is not seen as a major issue.

3.7.2 Issue: Nursing quality

While there is no question on the theoretical preparation of the graduate and Diploma nurse, there are serious questions concerning both theoretical and practical preparation of the STN. Most graduate and Diploma nurses are not involved in "hands-on" nursing (they are tutors and administrators) and therefore not judged as nurses. The STN on the other hand is in demand for her practical skills. Because the total educational system is academic in orientation, many nurse-tutors have little or no practical experience and cannot provide example or supervision in clinical or community practice. Nor do they apparently wish to. A quality nursing service is composed of at least three elements:

Quality Nursing



The STN may develop all these elements as she progresses into her career, but many nurses graduate from the high school training programs lacking all three. Plans now in progress by MOH will address the "competency-in-theory"

element. It is not clear that the curriculum is designed to provide weekly outcome objectives in the practicum. Such outcome objectives would provide focus and a development perspective for faculty and students.

Commitment is an intangible, composed in part of personal interest, in part of ethical approaches and beliefs about men, women and children, which are formed largely from religious philosophy and teachings. There is no reason to believe that the commitment of Egyptian nurses cannot be as great, or greater, than nurses of any other nation.

Recommendation: That the new curriculum design for STNs include a practical emphasis with outcome objectives, organized on a weekly basis, to give focus and direction to practical experience.

Recommendation: That tutors conduct regular sessions with third year STNs on the ethics and challenge of nursing and on the characteristics of quality nursing.

Recommendation: That the necessity of a fifth year of study as internship to the B.Sc. in nursing be examined closely. This adds 20% to the cost of preparation and could be integrated into the four-year curriculum.

3.7.3 Issue: Job Satisfaction

Many nurses speak of limited job satisfaction. Those employed in teaching and administrative roles may define their own function. Generally STNs must take orders and often assigned tasks have been incompatible with the role of nurse. The development of a job description for STNs will go far in defining expected tasks and appropriate utilization. Job satisfaction has a number of components of which appropriate task allocation is one. There should also be room for creativity and discretion in performance to enhance interest, identity and a sense of self-worth. A third component is career opportunity. Is advancement possible for the bright and ambitious? Fourthly, conditions of work and salary should be seen as fair, relative to other cadres of workers.

Recommendation: That, in the training of physicians, joint classes and problem-oriented workshops be held with nurses. These may be held in senior years, around community or clinical problems. As physicians have opportunity to understand the breadth of graduate nurses' knowledge and skills they may expect more of the STN and utilize her practical skills more appropriately.

Recommendation: That the STN job description be clustered into primary and secondary duties to allow the nurse, the supervisor and the physician a clear understanding of competency. STNs might be encouraged to prepare their own C.V. on graduation, listing areas in which they obtained high marks for practice or theory.

Within this issue is the related question of categories of nurses. Although the production of graduate nurses is expanding and a revision of STN training is under way, the purpose of the Technical Nurse is not clear. With only two years of post secondary education she is obviously not at the graduate nurse level yet she aspires to function at that level. In the process she would appear to have a detrimental effect on nursing standards. In an essentially service-oriented profession, the advancement of those who have sound practical experience in MOH facilities (i.e. STNs) to positions of supervision and teaching is to be preferred over those with mostly theoretical training. Role definition and service relationships would be simplified by dropping the technical and academically-oriented technical nurse category. Alternatively, this category could be developed for male nurses, highly appropriate for many male patient services, including the military needs.

Recommendation: That consideration be given to intensive short courses on supportive supervision for tutors and clinical supervisors, and to courses in the principles and practice of management for institutional managers.

Recommendation: That the need for continued training of Technical Health Institute nurses be reviewed and that the feasibility of training male nurses be explored.

3.7.5 Issue: Preparation of Nurse Tutors

Technical qualifications, even with high marks, do not qualify a person to teach. There is need to upgrade the teaching ability of nurse tutors. Teaching in essence is the ability to create a situation in which people will learn. Nurse Tutors have a weighty responsibility. They shape the abilities and commitment of the nursing service. The expressed opinion is that they need help. Much is said concerning the value of the RODA Center for Educational Technology in training nurse tutors. The RODA Center is beautifully equipped and a most valuable unit. However, its principle purpose is the development of teaching aids--audio and visual--not the creation of teachers. Audio visuals are simulations of reality and are useful in the classroom but they do not take the place of direct experience which is the effective teacher. Nurse tutors might undertake a community project in conjunction with their teaching, including themselves and the students in a vaccination project, research project or nutrition project (for example). In preparing nurses as teachers, the trainer of tutors may wish to consider their involvement in nurse-related field projects as a demonstration methodology.

Nurse tutors should have clearly delineated areas of responsibility in the teaching of theory and practices. Student competency in any field would then be recognized as the result of a particular nurse-tutor's work.

Recommendation: That tutors be encouraged to take responsibility for a field demonstration project as part of their teaching methodology at all levels of nursing preparation.

Recommendation: That tutors have defined areas of responsibility for practice and theory and that tutors be recognized for outstanding student competency in their areas.

Recommendation: That MOH negotiate with MOE for authority to provide Nurse-Tutors with Certificates of Merit for outstanding teaching.

3.7.6 Issue: In-service Training

The recent USAID Training P.I.D. covers the in-service training of 10,000 nurses and will go along way to the reorientation of nurses to competencies and skills in primary health care.

The suggestion of need for preservice training of nurses is an indictment of the present training. Nursing is a service profession and their training should emphasize practice. However, a large number of existing STNs who lack the orientation to primary health care contained in the new curriculum. It is not economically feasible to retrain them in all matters; therefore they may be retrained in particular areas.

An analysis of morbidity and mortality, or of hospital manpower needs in a region or governorate, will indicate the two or three major problems to be addressed. A questionnaire to all nurses would provide a list of their areas of need. These areas can be subject to task analysis and an inservice curriculum designed for nurses. Training should be competency-based. Inservice training would then be focused on particular needs.

In order to maintain or improve standards the Egyptian Nursing Association might consider a system of licensure or registration based on inservice training and such other criteria as seem appropriate. Over a period of time (three years for example) a nurse should have attended a certain number of hours of workshops or training to maintain her credentials. To be employed she should present a current certificate of registration. A fee could be charged for licensure and this would provide the financial base for the office of the Nursing Association.

The RODA Center may be willing to produce a quarterly journal of nursing (in Arabic) given that editorial responsibility was carried by the Nursing Association. The cost of such a journal would be part of the licensure fee and would be circulated to all registered nurses in the country. Given that nurses constitute the largest technical health manpower category in Egypt, they could do much within the profession to maintain high standards.

Recommendation: That the Nurses Association explore with MOH the feasibility of taking responsibility for developing nursing registration and a nursing journal for Egypt.

Recommendation: That the in-service assessment shift from classroom evaluation to a performance evaluation conducted by designated senior nursing staff. This would serve to emphasize the essentially practical nature of nursing.

4. Health Technician Programs

These are seven Health Technical Institutes in Egypt, under the management of the Ministry of Health.

The seven institutes are located in:

- Cairo (Imbaba): largest in size-enrollment '78: 1,236
- Alexandria (2)
- Assiut
- Tanta
- Mansora
- Zagazig

Two year programs are offered in:

- Sanitarian
- X-ray technician
- Med. equipment maintenance (Cairo only)
- Lab. technician
- Med. records and statistics (Cairo, Alexandria and Assiut)
- Nursing diploma (Cairo and Alexandria)
- Dental technician

4.1 Numbers

The approximate numbers for these technicians are given in Table 6. In 1979 there were some 6000 technicians, over 50% of whom were sanitarians. There is another category known as assistants. The assistant course is six months and most of them are trained at Khaalig Center in Cairo. As with the technicians about 50% of the assistants are sanitarian assistants.

There is no accreditation or licensing mechanism and standards are said to vary between Institutes.

4.2 Admission criteria

Admission to a Technical Health Institute (THI) is based on grade on completion of high school. Admission to the Assistant course requires either preparatory or primary school certificate. About 75% of applicants are male, except for the nursing course, which are all female. About 1300 technicians are graduated annually of whom one third are sanitarians and one third lab-technicians. While enrollment in 1979-1980 was 4,500 in all categories, it dropped to 3,133 in 1980-81. This drop is attributed to the lack of career opportunity and the very low status accorded to the technician. Almost 80% of qualified high school graduates who wish to go on to University can do so. There is little appeal to enter a 2 year course of study with no status or salary incentive, if it is possible to enter the University with the assurance of future employment.

4.3 Curriculum

A list of courses taught to various categories of technicians at one THI is given in Table 15. Most curricula follow a similar pattern. 90% of all instruction is by physicians whose interest and competency in the technicians' field may be seriously questioned. Some instruction is in Arabic and some in English. The question of language pervades all health training. It seems difficult to justify teaching a whole series of technicians in a foreign language when they neither have access to or use for technical journals nor is there expectation that more than one in 1000 will go to an English-speaking country for further training.

On completion of the two year course of study all graduates must take four weeks of pre-service training before work. No material was available on the Assistant curricula.

4.4 Disposition

There is a strong demand for qualified technicians. However few appear to be qualified adequately and it is reported that most sanitarians are used as administrators. There is no available data on urban/rural postings.

Job descriptions have recently been prepared but no English copy was available. Given job descriptions which relate to health problems, two steps are indicated. All technicians and their supervisors should have copies of relevant job descriptions. This will help to define their roles and to provide a sense of professional identity. The other purpose of the job description is as a base for the teaching curriculum.

4.5 Inservice training

All technicians are supposed to undergo annual refresher courses. This is accomplished through the specially designated Training Rural Health Center in each district or through the training section of each governorate. There are no standards covering these refresher courses, and quality is said to vary. Assistants also undergo refresher courses, but no description was available.

4.6 Diploma option

Recently a diploma option was added to the Technical Health Institute. This is now available to THI graduates with grades of 60% or better in the fields of laboratory technician, nurse, sanitarian, and medical records and statistics. The diploma possibilities are given in Table 16. Some 1183 people applied for the diploma option in 1980. There has been no MOH decision on promotions or salary increases for those who obtain their diploma, but there is recognition that the better students will have careers as trainers. All Institutes except Zagazig offer the diploma course.

This provides some career option to the technicians. There is no career for the assistants as their primary qualifications are insufficient for acceptance in any higher education channel.

4.7 Relevance:

All health services utilize technicians in both curative and preventive areas. They are used in diagnosis - laboratory and X-Ray
in environment - sanitarians
in education - nurses, social workers and sanitarians
in maintenance - mechanics and engineers
in administration - personnel and finances
in records - statistics and computers

While Egypt has many of these categories, they appear to be inadequately trained and inadequately utilized. The development and circulation of carefully developed job descriptions will provide an essential base for the organization of competencies and their use in the health system.

Many physicians resist the further training of technicians as a threat to the competencies and the esoteric knowledge of the physician. More education is needed in this area. The present technicians' curricula are medically oriented and presented by physicians, without the essential integration which combines a series of courses into professional preparation. There is need for a revision of subject matter, for a vastly extended emphasis on practice, and for a recognition of the value of the technician to the physician and to the health services of Egypt.

4.8 Issues

4.8.1 Issues - Practice

Technicians cannot be produced from the classroom. 75-80% of their skills and knowledge should come from practice. This can only come about if they are taught by other technicians who know the field intimately and have advanced enough in their careers not to be competitive with their students. Practice requires not only example and direction. It also requires the tools with which to work. While practice is not highly placed in a theoretically-oriented system, nevertheless it is possible only if adequate equipment is

available with which to gain skill. Microscopes, X-Ray and reasonably equipped labs are fundamental to training of technicians. The only useful technician is one in whom you have total confidence.

Recommendation: That the best teachers among senior experienced technicians be identified and seconded as full time practical tutors in the Technical Health Institutes. That students be enrolled in a ratio of 10 students to one technician tutor, and that enrollments be pegged to the numbers of tutors available.

Recommendation: That a second group of technicians be identified to undertake up to a year of practical training in an appropriate country. The fellowship must be for practice against identified competencies.

4.8.2 Issue - Maintenance of Equipment

As Egypt moves into more esoteric medical care and surgery there is growth in complex and delicate equipment. Much of this equipment may be under warranty or manufacturers' maintenance contracts. Such contracts are often unsatisfactory. There is need for an extensive development of a maintenance and repair capacity for medical equipment, both gross and refined. Prompt repairs to boilers, sterilizers and common electrical items are basic to the function of a health system. But the internal capacity to repair laboratory equipment, sophisticated ICU monitoring devices and X-Ray machines is also important. A stock-taking of health system items requiring repair or maintenance in all governorates would indicate the magnitude of the problem and the type of skills required immediately. Standardization of equipment allows for a more effective repair and maintenance capacity. Most maintenance people would be located centrally, and items could be referred for repair or serviced at the district level by arrangement.

Recommendation: That an inventory be developed of maintenance skills required within the total health system, including University hospitals, and that training be given consistent with need. It must be understood that some

maintenance work may require a prior degree in electronics, or may involve out of country training.

Recommendation: That all equipment in THIs be reviewed and that equipment needs for each specialty be identified. No more than 10 students should be expected to share in the use of one piece of equipment. Equipment should be basic and should include installation costs, water supply, and in the case of sanitarians at least one vehicle per school for student field work. Equipment needed can be negotiated with bilateral donors.

4.8.3 Issue: Curriculum

The present curriculum is neither scientific nor adjusted to the needs of the technician. There is need for a task analysis of the job descriptions and a reconstruction of all curricula, heavily weighted toward skill development and oriented to the conditions and needs of Egypt, especially primary health care.

Recommendation: That a select group of senior technicians be appointed to analyze tasks appropriate to their technical speciality and to construct a curriculum based on competency. That each competency have an acceptable standard of performance and a practical method of performance assessment.

Recommendation: That the RODA Center for Educational Technology and such other sources of audio-visuals as are appropriate be asked to supply appropriate A/VS for use in training technicians. In particular lab. technicians will find visuals of blood and tissue pathology to be of great value.

4.8.4 Issue: Career opportunities and job satisfaction

Many technicians are unhappy with their status and their job definition. The redefining of the technicians role and the more effective utilization of this important cadre of workers will provide more job satisfaction and high quality. However they are currently blocked from advancing beyond the diploma

level. It may be of value if those who do well in their performance assessment on completion of their diploma might be recognized by some type of incentive or substantial grant. Those who do excellently in performance might be given the opportunity for practical study abroad for a short term.

Recommendation: That recognition be given to those technicians demonstrating superior skill in their field and that this recognition take the form of a cash bonus or of a practical study fellowship in an appropriate country.

4.8.5 Issue: Assistant Technicians: In 1979 there were 12000 assistants. A primary education plus six months of training cannot prepare anyone for a technical job. It is suggested that this small army of minimally trained people only serve to distract the technician from the work he or she should be doing. If more people are required in hospitals and health care units they can be hired directly. The technicians task and skills are too important to be done by an assistant. The very presence of the assistant will result in a reduced standard - nor can they contribute anything of substantial value technically.

Recommendation: That training of the assistant technician category be examined critically to determine its contribution to the health service - and that serious thought be given to dropping this category of training and employing these people under a more technical title.

4.8.6 Issues: Language

As noted above some instruction is in Arabic and some in English. Technicians are concerned with skill development, have very limited opportunity for out of country study, and would seldom refer to journals even if available. Arabic as the language of instruction would allow for full comprehension and allow for easier integration of subject matter by the student.

Recommendation: That basic tests on the competencies and skills of the technician be produced or translated in Arabic and that they be updated regularly. In the first instance they could be produced in 3-ring note book form to allow for easy revision and addition over a test period of 4-5 years.

5. Other Categories

Because of restricted time no investigation of curriculum and other issues in training was made for pharmacists and dentists. Recent figures (Table) suggest that there are almost 2000 dentists and over 15,000 pharmacists in Egypt giving a ratio per 10,000 population of 1.6 and 3.4 respectively.

The need for information specialists and hospital administrators has already been addressed.

Training of Assistant Nurses, Assistant Midwives and Health Visitors ceased from 1978. The problem of current use and status could involve training but has not been discussed in this paper.

There is divided opinion on dayas. Dayas will be discussed in the health education paper as they are relevant to that service. It is noted that the training of dayas is proposed under a current P.I.D.

6. Training Needs for an adequate Service Structure: Full discussion of needs must await the position paper on health service structure and needs. It is however appropriate to discuss structure.

Key Issue: The structure of training, as currently constituted, is basically sound. Because of University responsibility for physician and graduate nurse training, these University faculties must have access to and rights of supervision in MOH facilities, particularly in the primary care area (Centers and Units). The major criticism of training in Egypt is the emphasis on theory. Science is also practical. Unless the practice of health care can be seen as valuable, by the professional and by the people, the purpose of the health service will suffer. MOH should offer every encouragement to practical experience in the development of physicians, nurses and technicians.

7. Training other than University and MOH

It must be recognized that there are diverse interests in health training.

Within country, the Health Insurance Organization, the Ministry of Social Services, the Army, the Ministry of Agriculture and Al Maraa al Guedidah are all contributing in different ways to the training of health manpower.

Donor Agencies also have a great interest in health manpower development. World Health Organization provides about a 100 fellowships a year. U.N.D.P. is assisting with the development of an Ecology Center and provides training of staff. Through bilateral agreement training support for nurses is offered by the Japanese and the British. The French offer about 10 fellowships a year to physicians and some in-country training is offered from the German government, who maintain a permanent development advisor in the MOH.

The U.S. role is a major one with short and long term fellowships, the Peace fellowship program, the University linkage program and direct assistance to training institutions.

8. The five year period 1983-1988

The development of health manpower in Egypt is in a period of transition and this experience will consolidate in the next five years. Primary features are a sound delivery structure, a surplus of clinically trained physicians and a lack of auxiliary services (nurses and technicians) while those who are present are poorly trained and have few practical skills.

The current reorganization has great potential if it emphasizes quality and practical skills oriented to primary health care. There is need for role models, for tutors with extensive experience, for clearly defined and clearly understood job descriptions and for pride in the skill of practical nursing. There are human problems which can only be solved by dedicated leadership and example.

There is need for a thorough stock take and overhaul of equipment, for the development of adequate libraries and for sufficient fellowship support to enable leadership to observe and practice in other countries.

There is need to reduce the numbers and increase the standards of physician training. The nursing structure would operate better as a two tier rather than a three tier system and male nurses are appropriate for many duties. Current numbers are probably as much as the system can absorb if adequately trained for competency. There is need for skill-oriented technicians in whom the physician can have confidence. Assistant technicians categories should be dropped as they only reduce the status and the commitment of the technician.

Large hospitals require skilled administrators for personnel and financial matters. Information system specialists are also required to make planning sense of the most amount of data being generated. This will allow for effective planning and forecasting.

In summary the system is well structured but the orientation is academic and not practical. The health of Egypt or any other country demands practical skills and dedicated workers if it is to be maintained or improved.

Table 1

Summary Estimated Medical School Enrollment
and Graduates

| <u>Authority</u> | <u>Location of Faculty of Medicine</u> | <u>Total Enrollment</u> | <u>Approximate Number of Faculty</u> | <u>Graduates per Year</u> |
|------------------|--|-------------------------|--------------------------------------|---------------------------|
| MOE | Cairo University | 8,897 | 700 | 1,350 |
| " | Ain Shams | 7,500 | | 1,125 |
| " | Alexandria | 6,000 | 800 | 900 |
| " | Assiut | 2,100 | | 315 |
| " | Benha | ?* | | - |
| " | Ismailia | 50* | | - |
| " | Mansura | 3,000 | | 450 |
| " | Tanta | 2,500 | | 360 |
| " | Zagazig | 707 | | 100 |
| MOR | Al Azhar | <u>6,000</u> | <u>200</u> | <u>900</u> |
| | | <u>36,800</u> | (Approx.) | <u>5,500</u> |

* New medical school Fall of 1981.

Source: (None cited by author of this report)

Table 2
Medical Curriculum

The curriculum is similar across schools and consists of the following courses of Study.

| | | | |
|---|--|---|----------------|
| <u>Pre-med:</u> | - 9 months study. | Chemistry | |
| <u>First year:</u> (11 months) | Zoology Botany Physics & Chemistry | Physics Biostatistics | |
| <u>Second year:</u> | Anatomy Physiology Bio-chemistry | Histology Labs. | |
| <u>Third year:</u> | As in second year. | | |
| <u>Fourth year:</u> | Pharmacology Clinical Pharmacology Gross pathology | Microbiology Bacteriology Parasitology | Basic Sciences |
| | Plus 2 hours x 3 days a week of response in medical/surgical areas. | | |
| <u>Fifth year:</u> | ENT Ophthalmology Obgyn | Public health and hygiene Forensic Medicine Poisoning | Clinical |
| <u>Sixth year:</u> | Medicine Surgery | Pediatrics | |
| <u>Obligatory Intern ship of 12 months:</u> | | | |
| | Two months each - Pediatrics | Two months in one of the following - | |
| | - Obstetrics | - Neurology | |
| | - Emergency | - Cardiology | |
| | - General Medicine | - Chest | |
| | - Surgery | - Dermatology | |
| | | - ENT. | |

Source: U.S. Institute of Medicine Report on Recommendations for U.S. Assistance in Health in Egypt, 1979.

Table 3

Physician Rates - 1979

Physicians per 10,000 population

| | | |
|---------|----------|------|
| Egypt | MOH rate | 2.3* |
| England | | 13.1 |
| USA | | 16.5 |
| USSR | | 26.7 |
| Israel | | 28.7 |

Specialists per 100,000 population*

| | |
|-----------------|------|
| Gen Surgery | 1.3 |
| Orthopedics | 0.8 |
| Heart & Chest | 0.4 |
| Neurology | .008 |
| ENT | .4 |
| Urology | .4 |
| Plastic Surgery | .02 |

| | |
|------------------|-----|
| Internists | 1.3 |
| Cardiologists | .04 |
| Pediatricians | 1.6 |
| Dermatologists | .4 |
| Ophthalmologists | .6 |
| Ob. Gyne. | .9 |
| Chest Spec. | .6 |
| Psychiatrists | .4 |
| Trop. Med. | .3 |
| X-Ray | .2 |
| Haematologists | .01 |
| Pathologists | .2 |

* Author's note: 3.2/10,000 in 1981.

Source: Strategy for the year 2,000: MOH (Dr. Gomaa), 1979.

Table 4

Possible Physician Population Ratio Based
on Annual Uptake by MOH of 45% of Graduates
at Current Level of Production

| | <u>MOH Physicians</u> | <u>Estimated Population</u> | <u>MOH Physicians per 10,000 population</u> |
|-------------|-----------------------|---------------------------------|---|
| 1981 base | 14,177 | 44.m. | 3:2 |
| + graduates | 2,500 | | |
| - loss 5% | <u>700</u> | | |
| 1982 = | 15,977 | 45.1 | 3.5 |
| + graduates | 2,500 | | |
| - loss 5% | <u>800</u> | | |
| 1983 | 16,627 | | |
| + graduates | 2,500 | 46.2 | 3.6 |
| - 5% | <u>830</u> | | |
| 1984 | 18,347 | 47.4 | 3.87 |
| + graduates | 2,500 | | |
| - 5% | <u>910</u> | | |
| 1985 | 19,939 | 48.6 | 4.1 |
| + graduates | 2,500 | | |
| - 5% | <u>1,000</u> | | |
| 1986 | 21,439 | 49.8 | 4.3 |
| + graduates | 2,500 | | |
| - 5% | <u>1,072</u> | | |
| 1987 | 22,867 | 51 | 4.5 |
| + graduates | 2,500 | | |
| - 5% | <u>1,143</u> | | |
| 1988 | 24,224 | 52.3 | 4.6 |
| + graduates | 2,500 | | |
| - 5% | <u>1,211</u> | | |
| 1989 | 25,513 | 53.6 | 4.7 |
| + graduates | 2,500 | | |
| - 5% | <u>1,275</u> | | |
| 1990 | 26,738 | 54.9 | 4.87 |

Source: calculations by the author of this report.

Table 5

Distribution of Physician Hours/Weeks in Rural Health Unit

| | |
|------------------------------|-----------------|
| Communicable Disease Control | 1.45 |
| Vital Statistics | .75 |
| Environmental Sanitation | .15 |
| Administrative Work | 12.6 |
| M.C.H. and School Health | 4.8 |
| Out Patients | <u>15.95</u> |
| | 35.7 Hours/week |

Source: (Estimation of Physicians Manpower Needed in Rural Areas, Nazif & Fattah, Bulletin of HIPH, Vol VI, 1976)

Table 6

MOH Health Personnel in Egypt

| | MAY '79 | | |
|----------------------------|---------|--------|---------------|
| | MOH | OTHERS | TOTALS |
| Physicians | 13,148 | 1,003 | 14,151 |
| Pharmacists | 1,975 | 300 | 2,275 |
| Dentists | 2,085 | 84 | 2,169 |
| Chemists | 436 | 19 | 455 |
| Chief Nurses | 280 | 204 | 484 |
| Others | | | 3,505 |
| Nurses | 23,632 | 4,120 | <u>27,752</u> |
| Sanitarians | | | 3,348 |
| Technicians | | | |
| Laboratory | | | 1,213 |
| X-ray | | | 1,087 |
| Reg. & Statistical | | | 194 |
| Dental | | | 215 |
| Optical | | | 13 |
| Administrative | | | 13 |
| Medical Instruments | | | <u>20</u> |
| Assistants | | | |
| Laboratory | | | 3,201 |
| Sanitarians | | | 5,456 |
| Pharmacy | | | 58 |
| Administrative | | | 2,210 |
| Nutrition | | | 218 |
| First Aid | | | 139 |
| First Aid 3 years (Exp) | | | <u>810</u> |
| | | | <u>12,092</u> |

SOURCE - Health Profiles 1st May 1979

Table 7

Nursing Education Patterns - Completed Course of Study

Graduates

| <u>Category of Nurse</u> | <u>1971</u> | <u>72</u> | <u>73</u> | <u>74</u> | <u>75</u> | <u>76</u> | <u>77</u> | <u>78</u> | <u>79</u> | <u>80</u> | <u>81</u> |
|-----------------------------|-------------|-----------|-----------|-----------|-----------|--|-----------|---|-----------|-----------|-----------|
| Degree | 121 | ? | 160 | 177 | 125 | 139 | - | Figures not available est. 200 annually. | | | |
| Diploma (Old) | 725 | ? | 470 | 460 | 42 | <u>No further admissions from 1973</u> | | | | | |
| Diploma (New) | | | | 32 | 42 | 59 | 64 | Figures not available 3,500 annually. | | | |
| Certificate | | | | | 3760 | 3730 | 3817 | Figures not available but about 3,500 annually | | | |
| Asst. Nurse and Midwives | 843 | ? | 748 | 403 | 104 | 92 | 87 | <u>No further admissions from 1976</u> | | | |
| Health Visitors | 428 | ? | 551 | 446 | 504 | 435 | 337 | <u>No further admissions from 1976</u> | | | |

Source "Meeting Basic Needs Document-1979"

Table 8. Baccalaureate Curriculum in Nursing for Assiut

Competency Based Curriculum

Source: Chandles/Segall/Project - HOPE (no date)

| Subject | Prerequisites | Semester | Hours Per Semester | | | References |
|---|--|----------|---------------------|------------|----------|------------|
| | | | Theory | Clinical | Lab. | |
| 1. Fundamentals of Nursing I & II | None | 2 | 60 | 90 | - | 10 |
| 2. Nursing Science I-IV | Anatomy & Physiology I & II Fundamentals I & II Human Development I & II | 4 | I - III 75 IV 75 | 225 150 | - - | 1 |
| 3. Anatomy & Physiology I & II | None | 2 | 45 | - | 45 | - |
| 4. Sociology | None | 1 | 45 | - | - | - |
| 5. Human Growth & Development I & II | None | 2 | 45 | 60 | - | 3 |
| 6. Introduction to Psychology | Sociology | 1 | 45 | - | - | - |
| 7. Chemistry | First Year Courses | 1 | 45 | - | - | - |
| 8. Introduction to Nutrition | Sociology & Psychology | 1 | 45 | - | - | - |
| 9. Anthropology | Sociology & Psychology | 1 | 45 | - | - | 3 |
| 10. Microbiology | First Year Plus Chemistry | 1 | 30 | - | 30 | - |
| 11. Application of Nutritional Principles | Introduction to Nutrition | 1 | 30 | - | 45 | - |
| 12. Parasitology & Epidemiology | First Year Plus Chemistry. Taken with Microbiology | 1 | 30 | - | 15 | - |
| 13. Pharmacology | Chemistry Plus Nursing Science I & II | 1 | 45 | - | - | - |
| 14. Community Health Problems | Microbiology, Parist. & Epid. Intro. to Nutrition | 1 | 45 | - | - | - |
| 15. Community Health Nursing | Nursing Science Comm Health Prob., Health Education | 1 | 60 | 180 | - | - |
| 16. Nursing Leadership & Management | Nursing Science I - IV Comm. Health Nursing | <u>1</u> | <u>45</u> | <u>-</u> | <u>-</u> | <u>11</u> |
| Totals: | | 22 | 1,110 | 1,305 | 180 | 28 |

A four year program plus one year of 11,005 hours in Fundamentals of Nursing Science

Table 9

Curriculum for Alexandria HIN

| Subjects | Semester | 1st Year | | 2nd year | | 3rd year | | 4th year | | Total hours |
|---------------------------------|----------|----------|---------|----------|---------|----------|---------|----------|--------|-------------|
| | | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | |
| English | | 45 | 45 | 45 | 45 | 30 | 30 | 30 | 30 | 300 |
| Introduction to Nursing | | 70/30* | 30/90 | | | | | | | 100/120 |
| Anatomy and Histology | | 15 | 35/10 | | | | | | | 50/20 |
| Physiology and Biochemistry | | 30 | 70/30 | | | | | | | 100/30 |
| Behavioral Science | | 60 | - | 30 | 30 | 30 | | | | 150 |
| Physics | | 30/15 | | | | | | | | 30/15 |
| Parasitology + Bacteriology | | - | 60/30 | | | | | | | 60/30 |
| Pharmaeology | | | 30 | | | | | | | 30 |
| Medical-Surgical Nursing | | | | 100/300 | 100/300 | | | | | 200/600 |
| Medicine Surgery & Pathology | | | | 45 | 45 | | | | | 90 |
| Nutrition | | | | 30 | | | | | | 30 |
| Methods of Teaching | | | | 30 | | | | | | 30 |
| Pediatric Nursing | | | | | | 60/360 | | | | 60/360 |
| Pediatric Medecine | | | | | | 30 | | | | 30 |
| Maternity & Gyn. Nursing | | | | | | | 60/360 | | | 60/360 |
| Obstet, Gyn. & Fam. Planning | | | | | | | 30 | | | 30 |
| Nursing Services Administration | | | | | | | 30 | 45/60 | 45/60 | 120/120 |
| Forensic Medicine | | | | | | | 15 | | | 15 |
| Psychiatry & Mental Health | | | | | | | | 30 | 30 | 60 |
| Public Health Nursing | | | | | | | | 60/300 | 75/300 | 135/600 |
| Public Health & Statistics | | | | | | | | 45 | | 45 |
| Prof. Ethics | | | | | | | | 15 | | 15 |
| Introduction to Research | | | | | | | | 30 | | 30 |
| Arab Medecine | | | | | | | | | 30 | 30 |
| | | 250/45 | 270/160 | 280/300 | 220/300 | 150/360 | 165/360 | 225/360 | 40/360 | |

*Indicates Theory/Practices.

Table 10

Post Graduate Education at the
High Institute in Alexandria

| | B. Sc. in Nursing | Master of Science | Doctor of Science |
|-----------------------------|-------------------|-------------------|-------------------|
| <u>Degrees completed</u> | <u>1300</u> | <u>?</u> | <u>7</u> |
| Degrees in progress | 700 | | |
| - Medicine-Surgery | | 76 | 12 |
| - Maternal and Child Health | | 26 | 2 |
| - Pediatrics | | 23 | 1 |
| - Administration | | 47 | 4 |
| - Public Health | | 9 | 2 |
| - Psychiatric Nursing | | <u>7</u> | <u>2</u> |
| | | 186 | 23 |

Table 11

Post Basic Nursing Study Areas
Cairo University

| <u>Subject Area Speciality</u> | <u>Theory</u> | <u>Practical</u> |
|-------------------------------------|----------------------------|------------------|
| 1. Teaching | 360 hours | 10 months |
| 2. Administration | 275 hours | 1 month |
| 3. Public Health | 237 hours | 15 weeks |
| 4. Obstetrics and Gynecology | 360 hours | 10 months |
| 5. Pediatrics | 170 hours | 11.5 months |
| 6. Surgical Nursing | 125 hours | 10.5 months |
| 7. Medical Nursing | 400 hours | not available |
| 8. Operating theatre | 115 hours | 10 months |
| 9. Infection diseases | 195 hours | 11.5 months |
| 10. Chest diseases | 100 hours | 115 hours |
| 11. Massage and Medical Electricity | 350 hours | 145 hours |
| 12. Ophthalmology | 110 of theory and practice | |
| 13. Psychiatric and Mental Health | 130 hours | 12 months |
| 14. Dental Nursing | 330 hours | 12.5 months |

Table 12

Numbers of Graduates for Secondary Technical
Schools of Nursing - First Session 1980

| <u>Governorate</u> | <u>Number of Schools</u> | <u>Numbers of graduates</u> | |
|------------------------|------------------------------|-----------------------------|----------------|
| | | <u>Total</u> | <u>Average</u> |
| Cairo | 15 | 416 | 28 |
| Al Marsa El-El Gedidah | | 48 | 48 |
| Alexandria | 4 | 133 | 33 |
| Port Saeed | 1 | 19 | 19 |
| Suez | 1 | 17 | 1 |
| Ismailia | 1 | 25 | 25 |
| Damietta | 2 | 92 | 46 |
| Al Dakahlia | 8 | 97 | 12 |
| Al Gharbia | 9 | 84 | 9 |
| Al Kalyobeia | 7 | 156 | 22 |
| Kafr El Sheikh | 3 | 134 | 44 |
| Al Gharbeai | 8 | 318 | 40 |
| Al Monofeia | 7 | 135 | 19 |
| Al Beheira | 6 | 272 | 45 |
| Al Giza | 8 | 83 | 10 |
| Bani Suef | 4 | 118 | 30 |
| Al Fayoum | 4 | 65 | 16 |
| Al Menia | 3 | 58 | 19 |
| Assiut | 8 | 183 | 23 |
| Souhag | 1 | 16 | 16 |
| Kena | - | - | - |
| Aswan | - | - | - |
| Matrouh | 1 | 14 | 14 |
| Al Wadi Al Gadeed | 1 | 11 | 11 |
| Al Bahr El Ahmar | - | - | - |
| Sinai | <u>2</u> | <u>240</u> | <u>120</u> |
| 26. Governorates | 105 | 2734 | |

Source: Technical Nurse Training PID., October 1980, Annex II)

Table 13

CURRICULUM SYLLABUS PRESENT PROGRAM
SECONDARY TECHNICAL NURSE TRAINING
SUBJECT PLACEMENT - HOURS OF THEORY AND PRACTICE

| PLACEMENT | FIRST YEAR | | SECOND YEAR | | THIRD YEAR | | TOTAL HOURS |
|-------------------------------|------------|-------------------------|------------------|----------------------|---------------------|----------------------|--------------|
| | Hours: | Theory | Lab | Theory | Lab | Theory | |
| <u>Subjects</u> | | | | | | | |
| Religion | | 30 | | 30 | | 30 | |
| Arabic Language | | 120 | | 120 | | 120 | |
| Foreign Language | | 180 | | 180 | | 180 | |
| Social Study | | 30 | | | | | |
| Physics | | 60 | | 60 | | 60 | |
| Chemistry | | 60 | | 60 | | 60 | |
| Biology | | 60 | | 30 | P.H. and Public | | |
| Nutrition and Diet Therapy | | 30 | | 30 | Health Nursing | 30 | |
| Anatomy and Physiology | | 60 | | 30 | Special Surgery and | | |
| Bacteriology and Parasitology | | 30 | | | Nursing | 30 | |
| Fundamentals of Nursing | 30 | 100 | Pharmacology | 30 | Natural Physics | 30 | |
| History of Nursing | 80 | | Psychology | 30 | Nursing Service | | |
| First AID | 10 | | Health Education | 30 | Administration | 30 | |
| Public Health | 30 | | P.H. and Public | | Statistics | 30 | |
| | | | Health Nursing | 60 | Gynecology and | | |
| | | | Medicine and | | Obstetric Nursing | 60 | |
| | | | Medical Nursing | 60 | Nursing | 60 | |
| | | | General Surgery | | Pediatric and | | |
| | | | and Nursing | 60 | Pediatric Nursing | 30 | |
| | | | | | Psychiatry and | | |
| | | | | | Psychiatric Nursing | 30 | |
| | | | | | Forensic Medicine | 30 | |
| Clinical Training | | 570 | | 570 | | 600 | 1,740 |
| Summer Training | | 540 | | 540 | | 540 | 1,620 |
| <u>TOTAL HOURS</u> | | <u>760</u> | <u>1,210</u> | <u>810</u> | <u>1,110</u> | <u>750</u> | <u>1,140</u> |
| Year of 30 weeks | | 25.3 hours of theory | | 27 hours of theory | | 25 hours of theory** | |
| | | 22.3 hours of practical | | 19 hours of practice | | 20 hours of practice | |
| | | 47.6 hours per week | | 46 hours per week | | 45 hours per week. | |

*Document received from Ministry of Health, Department of Nursing

**Actual hours will be in excess of number stated, as students work 12 hours night-duty for periods (varying by location)

Summer of 12 weeks 45 hours practice

45 hours practice

45 hours of practice.

Job Description of the STN

Responsibilities and duties of the nurse graduate from the secondary technical schools of nursing recommended for the development of the curriculum:

Duties and Responsibilities

The nurse is responsible for undertaking the basic nursing duties of the patients or individuals assigned to her. These duties include the following:

1. Assessment of the patient's nursing needs and put the nursing care plan for every patient.
2. Carry the daily morning evening nursing care of the patient which includes cleanliness, appearance and comfort.
3. Giving bath to the patient in bed partial or complete which include: wash hair, mouth, back.
4. Making beds: occupied, unoccupied, operation.
5. Observation of excreta and making chart of intake and output.
6. Giving all kinds of medication by the different routes of administration: by injections, intradernal
subcautaneous
intramuscular
intravenous
by mouth, ear, nose
through rectum, bladder, skin
7. Do catheterization of female patients.
8. Feeding the patient or helping him to eat his meals.
9. Analyze urine for sugar, albumin and acetone.
10. Care of simple wounds and dressings.
11. Take the patient's weight and height.
12. Transfer the patient from bed to chair to stretch.

13. Keep the patient's environment safe and avoid the following hazards:

- microbiological
- electrical
- radiational
- mechanical
- chemical

14. Prepare and sterilize equipments and instruments needed for the different nursing procedures.

15. Handling sterile equipment and instruments and storing them.

16. Moving patient in and out of bed :

- the different positions for treatment and examination
- the different positions for comfort.

17. Giving all kinds of enema.

18. Observation of patient and taking vital signs:

- temperature
- pulse
- respiration
- blood pressure

19. Health education to individual, family and community in the different health aspects including care of:

- patients with chronic diseases
- patients with infectious diseases
- care of the pregnant mother
- care of the mother after delivery
- care of the new-born
- care of the environment
- care of family health including school age and elderly people
- personal hygiene
- teaching mothers the importance of family planning and methods of using the different contraceptive devices.

20. Do bladder irrigation.
21. Do eye irrigation.
22. Isolation of patient with infectious disease and giving them nursing care.
23. Reception of new patients and follow the regulations of the work setting. She works in especially emergency cases and critically ill patients.
24. Suction from the tracheostomy and care of its opening.
25. Reception of the new patients, following work setting regulations.
Reception of acute cases or accidents.
26. Assisting the doctor in carrying out some surgical or diagnostic procedures, ex. : puncture abdominal and chest aspiration, ECG, X. ray, vaginal examination, etc.
27. Collection of specimens of urine, blood, stools and follow routine procedure of sending it to the lab and receiving results.
28. Assist in training student nurses.
29. Visit the homes
30. Care of the instruments, equipment and machines fixed to the patient.
31. Giving exygen to the patient
32. prepare the patient for operation.
33. Identify cases of diarrhea in children and give oral medication.
34. Record all nursing care activities in patient's record or registration books, etc. according to the policies of the work setting.
35. Carry the routine procedure of discharging the patient.
36. Care of the dying.

Table 15

Curricula for various categories
of Health Technician*

| <u>Category</u> | <u>First Year</u> | <u>Second Year</u> |
|-----------------------|--|---|
| Sanitarian | Anatomy Physiology Bacteriology Parasitology Food Control Bio Chemistry Sanitation Preventive Medicine English | Biostatistics Forensic Medecine Health Education Public Relations Occupational Health |
| Laboratory Technician | Bacteriology Parasitology Histology Physiology Biochemistry Typewriting English | Blood Diseases Pathology Biostatistics Health Education General Relations |
| X-Ray Technician | Physiology Positions Physics Maintenance of equipment Typewriting English | Dark Room X-Ray Treatment X-Ray protection Biostatistics Radiology |
| Dental Technician | Anatomy Physiology Chemistry Physics Dental Materials Stores Medical terms | Similar to first year plus - Biostatistics - General relations |

* No source cited by author.

Table 16

Diploma options for graduates of
Technical Health Institutes

Laboratory Technician

- Hematology
- Bacteriology
- Parasitology
- Chemical Pathology

Sanitarian

- Epidemiology
- Food Central
- Health Education
- Environmental Health

Nurse

- As teacher (Nurse-Tutor)

Medical Records and Statistics

- Health registration and statistics
- Library administration

ANNEX A

REGULATION OF HEALTH PROFESSIONALS

Source: MOH Professed Policies and Instruments 4/81

1. LAW no. 415/1954

Concerned with persons licensed to perform the work of a doctor which was modified by law No. 491/1955, law No. 29/1965 and law No. 46/1965.

2. LAW No. 481/1954

Concerned with those who profess delivery and the conditions that should be fulfilled before they are allowed to register at MOH.

3. LAW No. 537/1954 MODIFIED BY LAW No. 301/1955

It specifies the persons who have the right to perform dental work.

4. LAW No. 127/1955 MODIFIED BY LAW No. 253/1955, LAW No. 7/1956, LAW No. 260/1956 AND LAW No. 61/1959

All these laws are concerned with the pharmacists and the conditions needed for a license for a pharmacy and its specifications.

General Guidelines and sample of specific Problem based objectives for Peri-Natal Unit of Suez Canal University Medical School, Jan. March 1982.

It is a strong preference of the Dean, supported by President Abdel-Meguid Osman, to educate physicians in a manner that has the following characteristics:

- 1) Relates skills and knowledge acquired to current and probable future health care needs of the Suez Canal Zone population as a microcosm of the Arab Republic of Egypt's overall population.
- 2) Recognizes the limited resources, both public and private, available to pay for health care for the indefinite future.
- 3) Recognizes the central role of physicians in determining the content of care and, de facto, the cost of specific services and the extent to which basic care can be extended to the entire population.
- 4) Utilizes urban and rural MOH programs, facilities and staff, both clinical and public health, rural and urban, as key elements for the clinical training of medical students.
- 5) Recognizes primary care as the most basic and needed personal health service of the rural and urban population.
- 6) Recognizes primary health care to be most effectively accepted and affordable if provided by a multidisciplinary team.
- 7) Trains physicians to work with and take a professional and administrative leadership role in the team approach to the delivery of primary care services.

PERINATAL BLOCKR E M A R K SPerinatal Block-General Objectives

By the end of Perinatal Block the first year medical student at Suez Canal University should be able to :-

- 1- Outline the anatomy and physiology of the human reproductive organs "Male and Female".
- 2- Outline general fetal embryology and basic genetics.
- 3- Outline the physiology and clinical manifestations of normal pregnancy and normal labour, principles of ante-natal care and post-natal care.
- 4- Describe the basic concepts in human fetal growth, development and physiology.
- 5- Describe the " problems of over-population and consequences of repeated pregnancies and methods of " Fertility Control!"
- 6- To recognise the interrelation between the social, psychological, economic aspects and the reproductive processes.

| TIME | 9 - 10 | 10 - 11 | 11 - 12 | 12 - 1 | 1 - 2 | 2 - 3 | 3 - 4 |
|-----------|--|---------|--------------------------------|-----------------|-----------------|--|-------|
| SATURDAY | GROUP LEARNING | | | STUDY LANDSCAPE | | BASIC SCIENCES- LABORATORY AND ALIVE DEMONSTRATION (Group B) | |
| SUNDAY | ENGLISH LANGUAGE (Groups 1 + 2) | | LECTURE | STUDY LANDSCAPE | | BASIC SCIENCES LABORATORY AND ALIVE DEMONSTRATION (Group A) | |
| MONDAY | FIELD TRAINING Clinical Training (Group A) Community Health Training (Group B) | | | | | | |
| TUESDAY | FIELD TRAINING Clinical Training Community Health Training | | | | | (Group B) (Group A) | |
| WEDNESDAY | ENGLISH LANGUAGE (Group 3) | | GROUP LEARNING | | | BASIC SCIENCES LABORATORY AND ALIVE DEMONSTRATION (Group A). | |
| THURSDAY | BASIC SCIENCES LABORATORY AND ALIVE DEMONSTRATION (Group B) | | SEMINAR Questions & Answers | | FREE ACTIVITIES | | |

(B-3)

(B-4)

PERINATAL BLOCK

I - 1

REMARKS

I - 1

General Objectives of Problem No.1

By the end of the problem and other learning activities of the week, it is hoped that you will be able to :-

- 1- Outline in words or in diagrams the structure of female genital organs.
- 2- Outline in words or in diagrams the physiology of menstrual cycle and ovulation.
- 3- Outline in words or diagrams the main factors needed for pregnancy to occur.
- 4- Understand the main components of history taking from a woman.
- 5- Describe the subjective and objective existence of pregnancy.
- 6- Outline in words or in diagrams the main embryologic features in early pregnancy including preimplantation and postimplantation stages.

PERINATAL BLOCKREMARKSII-1General Objectives of Problem No. 2 (PNB)

By the end of the problem and learning activities of the week, it is hoped you will be able : -

- 1- To describe the purpose and procedures of antenatal care.
- 2- To identify the normal discomforts of pregnancy and explain their preventive measures and treatment.
- 3- To trace the development of the embryo and foetus along the first trimester of pregnancy
- 4- To outline main maternal physiological adaptations to pregnancy.

III - 1General Objectives of Problem No. III

By the end of the problem and learning activities of the week, it is hoped that you will be able to :-

- 1- To understand the purpose and procedures of antenatal, intranatal and postnatal care.
- 2- To advise a pregnant woman the recommended personal care during pregnancy.
- 3- To advise a pregnant woman the dietary needs during pregnancy.
- 4- To be familiar with the socioeconomical psychological aspects of pregnancy, labour and puerperium.
- 5- To trace the development of the embryo and foetus along the second and third trimesters.
- 6- To outline briefly the different methods used to assess foetal growth and development.
- 7- To list the different factors affecting foetal growth and development.
- 8- To outline in words and in diagram the different stages of the placental formation and development.

III - 1

General Objectives of Problem No. III

By the end of the problem and learning activities of the week, it is hoped that you will be able to :-

- 1- To describe the purpose and procedures of antenatal, intranatal and postnatal care.
- 2- To advise to the pregnant woman the recommended personal care during pregnancy.
- 3- To advise to the pregnant woman the dietary needs during pregnancy.
- 4- To be familiar with the socioeconomical psychological aspects of pregnancy, labour and puerperium.
- 5- To trace the development of the embryo and foetus along the second and third trimesters.
- 6- To outline briefly the different methods used to assess foetal growth and development.
- 7- To list the different factors affecting foetal growth and development.
- 8- To outline in words and in diagram the different stages of the placental formation and development.

IV - 1General Objectives problem No. 4 (PNB)

By the end of the problem and other learning activities of the week, it is hoped that you will be able to :-

- 1- Recognize the importance of continuing antenatal, intranatal and postnatal care.
- 2- Recognize the advantages and disadvantages of home versus hospital deliveries.
- 3- Recognize the importance of a good referral system and indications for referral to different levels of care.
- 4- List the main factors for diagnosis of normal labour.
- 5- List the different factors affecting birth
- 6- To outline immediate care of newborn.
- 7- To describe briefly how the newborn adapts itself to the new life outside the uterus.
- 8- To recognize the significance of building up the mother - baby relationship.
- 9- To recognize the psychological socio-economic aspects of labour and puerperium.

PERINATAL BLOSS

REMARKS

V - 1

General Objectives of Problem No. 5

By the end of the problem and other learning activities of the week it is hoped that you will be able to : -

- 1- To outline the physical, psychological, economical, social hazards of uncontrolled fertility.
- 2- To describe in words or in diagram, the different methods of birth control.
- 3- Advise the patient concerning family planning methods.
- 4- Identify the parameters of population growth in a community and outline the means of over population.

BEST AVAILABLE

ANNEX C

PEACE FELLOWSHIP/UNIVERSITY LINKAGE

Editor's note : The two documents which the author of this report included as Annex C are available from USAID-Cairo. They are :

Agency for International Development, Cairo, Egypt,
"Egypt - United States Peace Fellowship Program", 12/15/1980.

Agency for International Development, Cairo, Egypt,
"Egypt - United States University Linkage Project", (No date).

ANNEX D

Health Manpower Training

People Contacted

Cairo

- Dr. Abdel Ghaefar. Khalaaf. MOH Under Secretary Development and Research.
- Dr. Afaf Abdel Aziz - MOH Manpower Development.
- Dr. A. Buck - AID Consultant-Epidemiology
- Dr. D. Storms - AID Consultant - Manpower.
- Ms. V. Elliott - AID Consultant - Private Voluntary Organization.
- Ms. Jane Stewart - AID - Education Division.
- Dr. Fawzia - Director, RODA Center for Education Technology.
- Ms. Zeinab - Nurse, Assistant to Dr. Fawzia

Assiut

- Dr. Mahmoud F. Fathallah - Dean, Medical School.
- Dr. Mohamed Rashad - Undersecretary for Health, Governorate of Assiut.
- Dr. Mounir - Assiut Urban Health Services.
- Dr. Emil Zaher - Assiut Rural Health Services
- Dr. Ali Zarzour - Family Health
- Dr. Abdel Abdel Hamid.
- Prof. Ahmed N. Nassr - Undergraduate Medical Curriculum
- Prof. Mohamed Abdel Fattah - Student Field Training
- Prof. M. Mokhtar Farag - Post graduate medical education
- Prof. Mohamed I. Seoudi - Continuing Medical Education
- Prof. Ibrahim N. El Akkad - Learning Resource Center
- Dr. Hoda El-Attar - Director Regional Training Center
- Dr. Shoukry Naguib - Director Health Technical Institute

Suez Canal University Medical School

- Prof. Zoheir Nooman - Dean
- Prof. Esmat Ezzat - Vice Dean.
- Prof. Hassan Abu Zeid - Head of Community Health
- Dr. Fathallah Hassan - Lecturer - Bio Chemistry
- Dr. Ezzeldin Azzam - Asst. professor - Ob/Gyn.

Alexandria

- Dr. El Sherbiny : Dean-High Inst. of Public Health
- Dr. Saad Tawfique - Undersecretary for Health Alexandria
- Dr. Hamsa - Coordinating Director, MOH Hospitals
- Dr. Zeinat, Medical Surgical Dept. High Inst. of Nursing.

ANNEX E

Revised Phase I Scope of Work for Health Manpower Training Consultant

To determine, for health care providers in Egypt today, the present situation and current trends with regard to:

- basic and inservice training including types, numbers and resources of training institutions and activities;
- relevance of curricula and training techniques (both to job descriptions and to actual job requirements);
- competency of workers at the end of basic training (in relation to stated training objectives, job descriptions, and actual job requirements, as judged by themselves and others.

To compare the findings for 1.1 above (and planned or foreseen changes) with present estimates of Egyptian health manpower and training requirements for 1983-88.

To list and discuss key manpower training issues.

To list possible health manpower training related interventions through which USAID, Cairo, could assist Egyptian development.

To prepare a report, etc.